

NOTICE OF FINAL RULEMAKING
MARICOPA COUNTY AIR POLLUTION CONTROL REGULATIONS
REGULATION III – CONTROL OF AIR CONTAMINANTS
RULE 322: POWER PLANT OPERATIONS

PREAMBLE

- | <u>1.</u> | <u>Rule affected</u> | <u>Rulemaking action</u> |
|------------------|--|--|
| | Rule 322: Power Plant Operations | 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 24, 2016 | |
| | Notice of Maricopa County Board of Health Meeting: April 25, 2016 | |
| | Notice of Proposed Rulemaking: 22 A.A.R. 1122, 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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| <u>6.</u> | <u>Explanation of the rule, including the department's reasons for initiating the rulemaking:</u> | |

Summary:

Rule 322 (Power Plant Operations) limits the discharge of nitrogen oxides (NO_x), sulfur oxides, particulate matter and carbon monoxide emissions into the atmosphere from stationary fossil-fuel-fired equipment at power plants and cogeneration plants. Revisions to Rule 322 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 322 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”. Stakeholders requested comparisons to comparable agencies to see how they have managed to achieve RACT. In addition, questions were raised regarding the following:

- The stringency of Rule 322 compared to the stringency in the Arizona Department of Environmental Quality’s (ADEQ’s) rules
- Cost effectiveness and its relationship to RACT and the impact on sources
- Most Achievable Control Technology (MACT) standards and the application to the boiler standards
- The compliance schedule and the timing of when sources must show compliance with the proposed emission limitations
- The phrase “owner and/or operator” and the implications of responsibility and liability
- Exemptions for equipment operating hours and during startup and shutdown
- The requirements for continuous emission monitoring systems and allowances for alternative methods

Description of Proposed Amendments:

Regarding Applicability:

- Section 102 (Applicability): Rule 322 no longer applies only to equipment for which construction commenced prior to May 10, 1996. Rule 322 applies to all equipment, except for equipment that was built or modified after May 10, 1996 that is already subject to more stringent federally enforceable standards. This revision made the rule comply with RACT, while also recognizing that sources that are complying with more stringent federally and/or locally enforceable standards are complying with RACT and are therefore in compliance with this rule. Rule 322 included new Section 102.4 (per the U.S. Environmental Protection Agency's (EPA's) comment) a provision that states that facilities subject to Rule 322 may be subject to New Source Performance Standards (NSPS) and/or National Emission Standards for Hazardous Air Pollutants (NESHAP).
- Section 104 (Partial Exemptions): Rule 322 included a partial exemption for equipment that operates less than or equal to 10 percent annual capacity factor per calendar year. This revision made the rule compliant with RACT, while also recognizing that if equipment operates below the specified rate then such equipment would not be expected to discharge into the atmosphere nitrogen oxides in excess of the limits specified in the rule and would therefore be in compliance with this rule. Also, Rule 322 included the definition of "annual capacity factor" in Section 200; definition is similar to definition used in 40 CFR Part 63, Subpart DDDDD (National Emission Standards for Hazardous Air Pollutants for Major Sources: Industrial, Commercial, and Institutional Boilers and Process Heaters)
- Section 104.1(c) (Partial Exemptions): Rule 322 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 included 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 104.2 and 104.3 (Partial Exemptions): Rule 322 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 Definitions:

- Section 235 (Definition of “Steady State”): Rule 322 included a definition of “steady state”; the text of the definition was proposed by one of the Stakeholders/sources subject to Rule 322 – Arizona Public Service (APS). The EPA commented that Rule 322 uses the term “steady state operation” without further description.

Regarding Limitations for Particulate Matter:

- Sections 301.1 and 301.2: The limitations for particulate matter-fuel type and testing were deleted. Stakeholders commented in January 2016 that Sections 301.1 and 301.2 might not be needed because equipment cannot use anything other than natural gas for non-emergency purposes.

Regarding Limitations for Nitrogen Oxides (NO_x):

- Section 305.1: The NO_x limitation when burning gaseous fossil fuel was changed from “155 ppmv” to “42 ppmv”. The EPA advised 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 305.2: The NO_x limitation when burning liquid fossil fuel was changed from “230 ppmv” to “65 ppmv”. The EPA advised 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 Alternative Monitoring Methods:

- Section 200 (Definitions): The definitions of “low mass emissions (LME)” and “predictive emissions monitoring system (PEMS)” were added to Rule 322. The text for the definition of “LME” is from 40 CFR Part 75 (Acid Rain) and the text for the definition of “PEMS” is from the EPA.

- Section 301 (Good Combustion Practices for Turbines): Rule 322 included a provision that if CEMS or another approved monitoring method is used, good combustion practices for turbines are considered to have been met.
- Section 301.1 (Good Combustion Practices for Turbines): Rule 322 included 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 307.1 (Requirements for Emission Control System (ECS) Monitoring Equipment): Rule 322 included a provision that allows for installing an approved combustion control system (as an alternative to installing an emission control system (ECS)), in order to comply with the standards of the rule. Not all “approved combustion control systems” are “emission control systems”; however, approved combustion control systems should be designed and operated in accordance with good engineering practices to reduce emissions (which matches the definition of “emission control system”).
- Section 307.3(d) (Operation and Maintenance (O&M) Plan Required for ECS): Rule 322 included text that the department inserts into Title V permit renewals, which requires facilities to comply with O&M Plan revisions upon submittal not department approval.
- Section 307.4 (Continuous Emission Monitoring Systems): Rule 322 included other methods (other than CEMS) for measuring nitrogen oxides.

Regarding Administrative Requirements:

- Sections 401 (in Existence and in Compliance) and 402 (in Existence and Non-Compliant): Rule 322 included compliance schedules for equipment that is in existence and in compliance and in existence and non-compliant.
- Section 403 (Emergency Standby Units): Rule 322 included a compliance schedule for emergency standby units.

Regarding Compliance Determinations:

- Section 504 (Compliance Determination-Test Methods Incorporated By Reference): Rule 322 included a provision that allows for the use of alternative test methods to determine compliance with the rule

and to clarify 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): Rule 322 deleted the text method “American Society of Testing Materials, ASTM Method D1266-98, (“Standard Test Method for Sulfur in Petroleum Products - Lamp Method”), 1998”. 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 322 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 322 included Reasonably Available Control Technology (RACT) for NO_x.

The department complies with A.R.S. § 49-112(B) in that the amendments to Rule 322 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 322 (Power Plant Operations).

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

The persons directly affected by and bear the costs of this rulemaking are facilities in Maricopa County that operate the following types of equipment built or modified before May 10, 1996, that burn fossil fuel:

- Electric utility steam generating unit or cogeneration steam unit used to generate electric power that has a heat input of equal to or greater than 100 MMBtu/hour (20 MW);
- Electric utility stationary gas turbine with a heat input at peak load equal to or greater than 10 MMBtu/hour (2.9 MW) based upon the lower heating value of the fuel;
- Cooling towers associated with these types of equipment.

The department has issued permits for 5 facilities that are subject to this rule as revised.

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 benefits of the rule revision are anticipated to be a result of the following:

- The revision of the NO_x limitation when burning gaseous fossil fuel from “155 ppmv” to “42 ppmv” to conform to federal performance standards;
- The revision of the NO_x limitation when burning liquid fossil fuel from “230 ppmv” to “65 ppmv” to conform to federal performance standards;

- Exemption a source from the NO_x limitations and continuous emissions monitoring system requirements if the source submits a Reasonable Available Control Technology (RACT) evaluation to the Control Officer if such RACT evaluation if incorporated into the source's permit;
- Minor changes of a purely editorial nature, e.g., corrected typographical or other clerical errors; made minor grammatical changes to improve readability;
- Modification of the format, numbering, order, capitalization, punctuation, or syntax of certain text to increase standardization within and among rules.

The entities with sources subject to revised Rule 322 have submitted a RACT evaluation for their subject units, and have stated that they will not incur costs for compliance with the rule revisions. In their RACT evaluation, these entities determined that the most cost-efficient method to meet the RACT NO_x limitations is to limit the hours of operation for particular power plant units. The entities already have similar limitations in their Title V permits, and as such, there will be no additional burden on them to comply with the new RACT-based hourly limits.

(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 did 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 322 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 revisions did 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 did 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 did not impose increased monetary or regulatory costs on any permitted business, persons, or individuals so regulated.

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

There are no small businesses subject to this rulemaking.

(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, to 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.

There are no small businesses subject to this rulemaking.

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

This rulemaking corrected or clarified 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 corrected or clarified 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 increased monetary or regulatory costs on any permitted 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 1122), the department made the following additional amendments:

- Section 102 (Applicability): Did not include proposed new text “except for equipment that was built or modified after May 10, 1996 that is already subject to more stringent federally and/or locally enforceable standards”. The EPA commented in June 2016 that the exception conflicts with the Clean

- Air Act requirement that “major sources” in ozone nonattainment areas classified at moderate or higher must be regulated under a SIP-approved RACT rule. With this amendment, Rule 322 no longer applies only to equipment for which construction commenced prior to May 10, 1996, but rather applies to all equipment that is listed in Sections 102.1 through 102.3.
- Section 104.1(c) (Partial Exemptions): Deleted the partial exemption for stationary gas turbines used for military training activities. The 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.
 - Sections 104.2 and 104.3 (Partial Exemptions): Did not include proposed new text “and that is or will be incorporated in a permit issued by the Control Officer for that source” and did not include the text “which fires an emergency fuel but”. Also, re-phrased the sections to read in part “...as allowed by a permit”, per the Salt River Project Agricultural Improvement and Power District (SRP) comments.
 - Section 104.4 (Partial Exemptions): Did not include the proposed new text “and that is or will be incorporated in a permit issued by the Control Officer for that source” and included Section 400 to the list of sections from which the equipment is exempt. The Arizona Public Service Company (APS) and SRP commented in June 2016 that if the low capacity exemption is linked to an actual permit, then it would be the equivalent of a case-by-case determination defeating the very purpose of this de minimis exemption. Also, APS and SRP commented that Section 400 should be included to the list of sections from which the equipment is exempt. Also, changed “less than or equal to” to “at or below” and changed “10 percent annual capacity factor per calendar year” to “10 percent calendar year annual capacity factor”.
 - Section 201 (Definition of “Annual Capacity Factor”): Added text to the definition to allow the definition to apply to steam units as well as gas turbines, per APS and SRP comments.
 - Section 218 (Definition of “Low Sulfur Oil”): Deleted the definition of “Low Sulfur Oil”. Added the definition of “Ultra Low Sulfur Diesel” to be consistent with federal standards.
 - Section 220 (Definition of “Low Mass Emission (LME)”): Did not include the definition of “LME” and removed the term from Sections 308.4 and 501.5. The EPA commented in June 2016 that LME is not a

suitable substitute for Continuous Emissions Monitoring Systems (CEMS) for the purposes of SIP compliance determination with an emissions limit.

- Section 229 (Definition of “Predictive Emission Monitoring System (PEMS)”): Did not include the proposed definition of “PEMS” and removed the term from Sections 308.4 and 501.5. The EPA commented in June 2016 that the usage of PEMS for compliance purposes be restricted to units with a heat input rate of 250 MMBtu/hr or less, which aligns with other Federal guidance.
- Section 232 (Definition of “Steady State”): Included “with equipment in normal operating conditions” after the phrase “at which a unit”.
- Section 234 (Definition of “Thirty (30) Day Rolling Average”): Deleted the terms “equipment” and “every hour” and added text at the end of the definition to make the definition consistent with common practice, per APS and SRP comments.
- Section 236 (Definition of “Total Dissolved Solids (TDS)”): Deleted the second sentence and revised the first sentence to include test methods for determining TDS. The EPA commented in June 2016 that the second sentence should be removed and the first sentence should be modified to read “...glass fiber filter, as determined by Test Method XXX”.
- Section 237 (Definition of “Ultra Low Sulfur Diesel”): Added the definition of “Ultra Low Sulfur Diesel”. Deleted the definition of “Low Sulfur Oil” to be consistent with federal standards.
- Section 239 (Definition of “Waste Derived Fuel Gas”): Added the definition of “Waste Derived Fuel Gas” to be consistent with the other department “engine” rules – Rule 323 (Fuel Burning Equipment From Industrial/Commercial/Institutional (ICI) Sources) and Rule 324 (Stationary Internal Combustion (IC) Engines).
- Sections 301.1 and 301.2 (Limitations-Particulate Matter): Did not delete Sections 301.1 and 301.2 (the limitations for particulate matter-fuel type and testing). The EPA commented in June 2016 that Sections 301.1 and 301.2 should either be retained or the County should provide an adequate Clean Air Act Section 110(l) demonstration, which supports removing these requirements.
- Section 301.1 (Limitations-Particulate Matter): Included the wording “during steady state operations” after the phrase “more than 0.007 lbs. of particulate matter per MMBtu”.

- Section 302 (Good Combustion Practices for Turbines): Did not include proposed new text “good combustion practices for turbines are considered to have been met” at the end of the last sentence. Instead, included at the end of the last sentence “then the equipment would be exempt from the requirements of Section 302 of this rule”. The EPA commented in June 2016 that it appears that the department intends to say that if equipment is utilizing a CEMS, which already monitors various operating parameters, then the equipment would be exempt from the requirements of Section 302; revise accordingly.
- Section 304.2 (Limitations-Opacity): Did not change “of” to “or” in the phrase “for up to one hour during the startup of switching fuels...” Instead, changed “switching fuels” to “fuel switching startup process” (the term is defined in Rule 322). APS and SRP commented in June 2016 that it would appear that “of” was the correct choice and should not have been changed. To make it clearer, change “switching fuel” to “fuel switching startup process”.
- Section 305 (Limitations-Sulfur in Fuel): Changed “low sulfur oil” to “ultra low sulfur diesel” and added a limitation for sulfur in waste derived fuel gas to be consistent with the other department “engine” rules – Rule 323 (Fuel Burning Equipment From Industrial/Commercial/Institutional (ICI) Sources) and Rule 324 (Stationary Internal Combustion (IC) Engines).
- Sections 306.1 and 306.2 (Limitations-Nitrogen Oxides (NO_x)): Added Section 400 to the list of sections from which a source would be exempt. APS commented in June 2016 that the department should also exempt the case-by-case RACT analysis from the requirements of Section 400 (Administrative Requirements), since it will conflict with the specific permit limit set forth by the case-by-case analysis.
- Sections 306.3 (Limitations-Nitrogen Oxides (NO_x)): Added the wording “during steady state operations” to the end of the last sentence to be consistent with similar standard in Section 307 (Limitations-Carbon Monoxide).
- Section 307 (Limitations-Carbon Monoxide): Did not include proposed new text “and combined cycle gas turbines” at the end of the second-to-the-last sentence. Instead, added the phrase to the last sentence. APS commented in June 2016 that the department incorrectly placed combined cycle gas turbines in the 3% oxygen correction factor section. The correct location of combined cycle gas

turbines is within the 15% oxygen correction factor section; this change lines up Sections 306.3 and 307 to have consistent factors.

- Section 308.1 (Requirements for ECS Monitoring Equipment): Did not include the proposed new text “or another approved combustion control system” at the end-of the sentence in Section 307.1. The EPA commented in June 2016 that the definition of “approved combustion control equipment” is unclear. The EPA commented that the EPA must review and approve any such alternative control systems if the criteria are not specific enough. The EPA asked that the County define the criteria for approval. Instead, the department included new text “a combustion control system which reduces emissions to below the applicable standards in Section 300 of this rule”.
- Section 308.4(b) (Requirements for ECS Monitoring Equipment-Emission Compliance Demonstration): Did not include the proposed new text “or other monitoring system approved by the Control Officer” in Section 308.4(b). The EPA commented in June 2016 that the inclusion of “other monitoring system approved by the Control Officer” is an inappropriate allowance of Director’s discretion; remove this statement or require EPA approval.
- Section 401 (Administrative Requirements-in Existence and in Compliance): Clarified that this section is not intended for units exempt in Section 104.4 by an annual capacity factor equal to or less than 10% or for units which are accepting a case-by-case RACT determination approved by the Control Officer. Include a compliance path for those sources which operate a unit below a 10% capacity factor or under a case-by-case RACT limitation and in the future elect to increase operations and may need to then come into compliance with the limits in Section 306, per APS and SRP comments.
- Section 402.1 (Administrative Requirements-in Existence and Non-Compliant): Clarified that this section is not intended for units exempt in Section 104.4 by an annual capacity factor equal to or less than 10% or for units which are accepting a case-by-case RACT determination approved by the Control Officer. Also, did not include the proposed last sentence regarding “interim compliance”. APS commented in June 2016 that “interim compliance” does not appear to relate to the rulemaking; there are no “interim compliance” options in the rule.
- Section 402.3 (Administrative Requirements-in Existence and Non-Compliance-Removal From Service): Revised this section to be more functional for retiring units by making the effectiveness of

the section not linked to the adoption of the rule but rather linked to the decision by the owner to retire the unit, per APS and SRP comments.

- Section 402.3(c) (Administrative Requirements-in Existence and Non-Compliance-Removal from Service): Removed the one month discrepancy in the sentences in the section. Revised the timeframes so they match.
- Section 403 (Administrative Requirements-Emergency Standby Units): Changed “electric utility stationary gas turbine, electric utility steam generating unit or cogeneration steam generating unit used to generate electric power” to “emergency standby unit”. APS and SRP commented in June 2016 that this section should address emergency standby units.
- Section 501.6 (Recordkeeping and Reporting-Good Combustion Practices): Did not include proposed new text “good combustion practices for turbines are considered to have been met” at the end of the last sentence. Instead, included at the end of the last sentence “then the equipment would be exempt from the requirements of Section 302 of this rule”. The EPA commented in June 2016 that it appears that the department intends to say that if equipment is utilizing a CEMS, which already monitors various operating parameters, then the equipment would be exempt from the requirements of Section 302; revise accordingly.
- Section 501.7 (Recordkeeping and Reporting-Equipment Referenced in Sections 104.4, 306.1, and 306.2): Changed “covering a 12-month rolling period” to “of the annual capacity factor and NO_x emissions”. APS and SRP commented in June 2016 that a 12-month rolling period conflicts with the limits in Sections 306.1 and 306.2, which are concentrations measured during a test conducted annually and also with the measurement of the annual capacity factor.
- Section 503.1 (Compliance Determination-Low Sulfur Oil Verification): Changed “low sulfur oil” to “ultra low sulfur diesel” and clarified that sulfur content verification documents must provide accurate values and be based on enforceable test methods to determine sulfur content.
- Section 503.1(Compliance Determination-Low Sulfur Oil Verification): 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” and revised the new text in Section 503.1(f) from “testing of the fuel oil for sulfur content” to “test results of the fuel for sulfur content”

- Section 503.3 (Compliance Determination-Waste Derived Fuel Gas-Sulfur Verification): Added a provision for verifying sulfur content in waste derived fuel gas to be consistent with the other department “engine” rules – Rule 323 (Fuel Burning Equipment From Industrial/Commercial/Institutional (ICI) Sources) and Rule 324 (Stationary Internal Combustion (IC) Engines).
- 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 and added text that allows test methods as approved by the Administrator to be used, per the EPA’s comments.
- Section 504.15 (Compliance Determination-Test Methods Incorporated By Reference): Added ASTM D5907-13, Standard Methods for the Examination of Water and Wastewater for Filterable Matter (Total Dissolved Solids) and Nonfilterable Matter (Total Suspended Solids) in Water; test method is referenced in the definition of “Total Dissolved Solids (TDS)”.
- Section 504.16 (Compliance Determination-Test Methods Incorporated By Reference): Added test method for determining the sulfur content in waste derived fuel gas to be consistent with the other department “engine” rules – Rule 323 (Fuel Burning Equipment From Industrial/Commercial/Institutional (ICI) Sources) and Rule 324 (Stationary Internal Combustion (IC) Engines); test method is referenced in Section 503.3.

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. 1122), the department received comments from the Arizona Public Service Company (APS), Salt River Project Agricultural Improvement and Power District (SRP), and the U.S. Environmental Protection Agency (EPA). The comments and the department’s responses are provided below.

Comment #1: Section 102 (Applicability)

The draft rule states that subject equipment built or modified after May 10, 1996 must comply with the limits in this rule, unless the equipment is already subject to more stringent federally enforceable standards, such as NSPS and NESHAPs standards. This exception conflicts with the Clean Air Act requirement that “major sources” in ozone nonattainment areas classified at moderate or higher must be regulated under a SIP-approved RACT rule. If the County determines that different levels of RACT are appropriate for

different types, sizes, or ages of equipment, the EPA recommends outlining separate emission limits for these different classes of equipment.

Response #1: Section 102 (Applicability)

The department did not include proposed new text “except for equipment that was built or modified after May 10, 1996 that is already subject to more stringent federally and/or locally enforceable standards”. With this amendment, Rule 322 no longer applies only to equipment for which construction commenced prior to May 10, 1996, but rather applies to all equipment that is listed in Sections 102.1 through 102.3.

Comment #2: Section 104.1(c) (Partial Exemptions)

This provision provides that gas turbines used for military training facilities and military gas turbines used anywhere other than a garrison are exempt from the listed sections. The EPA asks that the County remove this exemption or provide definitions for the terms “military training facilities” and “military gas turbines” and demonstrate in the rule’s Staff report why these gas turbines should not be subject to the specified emission standards.

Response #2: Section 104.1(c) (Partial Exemptions)

The department deleted the partial exemption for stationary gas turbines used for military training activities.

Comment #3: Sections 104.2 and 104.3 (Partial Exemptions)

The County proposed adding the statement “and that is or will be incorporated in a permit issued by the Control Officer”. To add clarity to the intent of the language, SRP proposes changes this phrase to “as long as this is allowed by a permit issued by the Control Officer for that source”.

Response #3: Sections 104.2 and 104.3 (Partial Exemptions)

The department did not include proposed new text “and that is or will be incorporated in a permit issued by the Control Officer for that source” and to not include the text “which fires an emergency fuel but”. Rather than including new text “as long as this is allowed by a permit issued by the Control Officer for that source”, the department re-phrased the sections to read in part “...as allowed by a permit...”

Comment #4: Section 104.4 (Partial Exemptions)

For units that operate at a low capacity factor (10% or less), the County has proposed a de minimis partial exemption. This partial exemption makes sense and works for several APS units that operate at low levels.

However, between the final stakeholder workshop and the Proposed Rulemaking, the County added a counterintuitive requirement that an exempt unit would somehow need to operate under a specific permit limit. Upon reflection, we hope that the County can see the troubles caused by this position. The purpose of Section 104.4 is to provide a partial exemption from the requirements of Section 305, 306, 307.4 and 400 for units that operate at a low capacity factor. If the 10% is linked to an actual permit, then it would be the equivalent of a case-by-case determination under 305.1 defeating the very purpose of this de minimis exemption. Any unit operating under a Section 104.4 partial exemption is still required to keep records. If the unit exceeds the 10% threshold, this exemption no longer applies. At that time the unit would then no longer be excluded from Section 305 and would need to meet RACT through installation of control equipment or seek a case-by-case determination under Section 305.1 which would result in a permit limit. Accordingly, limiting this de minimis exemption by requiring a permit limits defeats the purpose of the partial exemption. To resolve this issue, APS recommends that the County remove the phrase “and that is or will be incorporated in a permit issued by the Control Officer for that source” from the sentence and add “and 400” to the sentence.

Response #4: Section 104.4 (Partial Exemptions)

The department did not include proposed new text “and that is or will be incorporated in a permit issued by the Control Officer for that source” and included Section 400 to the list of sections from which the equipment is exempt. Also, the department changed “less than or equal to” to “at or below” and changed “10 percent annual capacity factor per calendar year” to “10 percent calendar year annual capacity factor”.

Comment #5: Section 104.4 (Partial Exemptions)

The proposed rule language would require a specific permit limitation. The revisions to Rule 322 already incorporate a pathway for compliance if a unit which has taken the partial exemption exceeds a 10% annual capacity factor. This would trigger an emissions limitation in Section 305 and a compliance demonstration in Section 401, and therefore there is no need for a specific limit to be incorporated into the permit.

Additionally, units using this annual capacity factor partial exemption in Section 104.4, as well as units that submit a case-by-case reasonably available control technology (RACT) analysis in Sections 305.1 and 305.2 should be exempted from Section 400, as this section lists the requirements for notification of compliance and avenues to come into compliance, neither of which must be followed by units exempted by

a low annual capacity factor or complying through a case-by-case RACT. Therefore, SRP proposes that the County revert to the previous draft language and add an exemption from Section 400.

Response #5: Section 104.4 (Partial Exemptions)

The department did not include proposed new text “and that is or will be incorporated in a permit issued by the Control Officer for that source” and included Section 400 to the list of sections from which the equipment is exempt. Also, the department changed “less than or equal to” to “at or below” and changed “10 percent annual capacity factor per calendar year” to “10 percent calendar year annual capacity factor”.

Comment #6: Section 104.4 (Partial Exemptions)

The draft rule language presumes that equipment operating at less than or equal to 10% annual capacity factor is exempt from NO_x and CO limits and is exempt from emission control monitoring system requirements in Sections 305, 306, and 307.4. To ensure enforceability, the EPA asks that the County please provide a definition for the term “annual capacity factor” in Section 200.

Response #6: Section 104.4 (Partial Exemptions)

The department included a definition of “Annual Capacity Factor” in Section 200.

Comment #7: Section 201 (Definition of “Annual Capacity Factor”)

The original definition was lacking a relationship to gas turbines. APS suggests the following change to allow it to apply to steam units as well as gas turbines. Add to the end of the last sentence “or the ratio between the actual electrical output of a machine or equipment during a calendar year and the potential electrical output of a machine or equipment had it been operated for 8,760 hours at full nameplate capacity”.

Response #7: Section 201 (Definition of “Annual Capacity Factor”)

The department added text to the definition of “Annual Capacity Factor” to allow the definition to apply to steam units as well as gas turbines.

Comment #8: Section 201 (Definition of “Annual Capacity Factor”)

The definition of “Annual Capacity Factor” is specific to boilers and/or process heaters. In order to make the definition more generic so it can apply to combustion turbines too, SRP proposes adding to the end of the last sentence the phrase “or the ratio between the actual electrical output of a machine or equipment

during a calendar year and the potential electrical output of a machine or equipment had it been operated for 8,760 hours during a year at full nameplate capacity.”

Response #8: Section 201 (Definition of “Annual Capacity Factor”)

The department added to the end of the last sentence of the definition of “Annual Capacity Factor” the phrase “or the ratio between the actual electrical output of a machine or equipment during a calendar year and the potential electrical output of a machine or equipment had it been operated for 8,760 hours during a year at full nameplate capacity.”

Comment #9: Section 234 (Definition of “Thirty (30) Day Rolling Average”)

The 30-day rolling average equation can be deceptively complex. To help make the definition as clear as possible, APS suggests the following changes: Delete “equipment” between “combustion” and “operating” and delete “every hour” at the end of the sentence. Add “at the conclusion of each day for the previous 30 operating” between “CEMS” and “days”.

Response #9: Section 234 (Definition of “Thirty (30) Day Rolling Average”)

The department deleted the terms “equipment” and “every hour” and added text at the end of the definition of “Thirty (30) Day Rolling Average” to make the definition consistent with common practice.

Comment #10: Section 234 (Definition of “Thirty (30) Day Rolling Average”)

SRP proposes a different definition for “Thirty (30) Day Rolling Average” which is more consistent with common practice: “An arithmetic mean or average of all hourly emission rates for 30 successive combustion operating days and calculated by a CEMS at the conclusion of each day for the previous 30 operating days”.

Response #10: Section 234 (Definition of “Thirty (30) Day Rolling Average”)

The department deleted the terms “equipment” and “every hour” and added text at the end of the definition of “Thirty (30) Day Rolling Average” to make the definition consistent with common practice.

Comment #11: Section 236 (Definition of “Total Dissolved Solids (TDS)”)

The second sentence in the definition of “Total Dissolved Solids (TDS)” appears to describe the methodology that should be used to determine TDS. The EPA asks that the County remove the second sentence and re-write the first sentence to read “...glass fiber filter, as determined by Test Method XXX.”

Response #11: Section 236 (Definition of “Total Dissolved Solids (TDS)”)

The department removed the second sentence and re-wrote the first sentence to include test methods for determining TDS.

Comment #12: Section 301 (Limitations-Particulate Matter)

The EPA comments that the current language in Section 301 (Limitations-Particulate Matter) proposed for deletion only applies to two units constructed prior to 1996. Either retain these limits for those units at a minimum or provide an adequate Clean Air Act Section 110(l) demonstration which supports removing these requirements for those units.

Response #12: Section 301 (Limitations-Particulate Matter)

The department did not delete Sections 301.1 and 301.2 (the limitations for particulate matter-fuel type and testing).

Comment #13: Section 302 (Good Combustion Practices for Turbines)

The draft rule language appears to state that “good combustion practices” are met for turbines if CEMS are used (last sentence). It appears that the County intends to say that if equipment is utilizing a CEMS, which already monitors various operating parameters, then the equipment would be exempt from the requirements of Section 302. The EPA asks that the County revise accordingly if this is correct or otherwise clarify the intent of this last sentence. This provision is also found in Section 501.6.

Response #13: Section 302 (Good Combustion Practices for Turbines)

The department did not include proposed new text “good combustion practices for turbines are considered to have been met” at the end of the last sentence. Instead, the department included at the end of the last sentence “then the equipment would be exempt from the requirements of Section 302 of this rule”.

Comment #14: Section 304.2 (Limitations-Opacity)

Section 304.2 appears to be related to the issue of fuel switching. The change proposed by the County seems to confuse the matter by inserting “or” into the sentence in place of “of”. It would appear that “of” was the correct choice and should not have been changed. To make it clearer, APS would suggest changing “switching fuel” to “fuel switching”, which lines up better with the final sentence in that section which also uses “fuel switching”.

Response #14: Section 304.2 (Limitations-Opacity)

The department did not change “of” to “or” in the phrase “for up to one hour during the startup of switching fuels...”. Instead, the department changed “switching fuels” to “fuel switching startup process” (the term is defined in Rule 322).

Comment #15: Section 304.2 (Limitations-Opacity)

The County seems to inadvertently have replaced the word “of” in the second sentence with the word “or”. This should be changed back to “of” since the exemption allowed by this section pertains to the first hour during startup of fuel switching for those units that are allowed to fire emergency fuels. To avoid future confusions with this section of the rule, SRP proposes that the County consistently use the term “fuel switching startup process” throughout the rule, as defined in Section 217 (Definition of “Fuel Switching Startup Process”).

Response #15: Section 304.2 (Limitations-Opacity)

The department did not change “of” to “or” in the phrase “for up to one hour during the startup of switching fuels...”. Instead, the department changed “switching fuels” to “fuel switching startup process” (the term is defined in Rule 322).

Comment #16: Section 306 (Limitations-Nitrogen Oxides (NO_x))

As part of the RACT assessment, a unit may choose to use a case-by-case RACT analysis. The County has made provision for the case-by-case RACT analysis within Sections 306.1 and 306.2. Because the case-by-case RACT analysis is separate from the emission limit in Sections 306.1 and 306.2, the County correctly sought to exempt the case-by-case RACT analysis from these sections. However, it is important that the County also exempt the case-by-case RACT analysis from the requirements of Section 400 (parts 401 and 402), since it will conflict with the specific permit limit set forth by the case-by-case analysis. Accordingly, APS recommends that the County insert “Section 400” into the exemptions listed in Sections 306.1 and 306.2.

Response #16: Section 306 (Limitations-Nitrogen Oxides (NO_x))

The department added Section 400 to the list of sections from which a source would be exempt.

Comment #17: Section 307 (Limitations-Carbon Monoxide)

The County appears to have misplaced some clarifying language that was offered during the final workshop. In Section 307, the County incorrectly placed combined cycle gas turbines in the 3% oxygen

correction factor section. The correct location of combined cycle gas turbines is within the 15% oxygen correction factor section, not the 3% section. This change also lines up Section 306.3 to have consistent factors.

Response #17: Section 307 (Limitations-Carbon Monoxide)

The department did not include proposed new text “and combined cycle gas turbines” to the end of the second-to-the-last sentence. Instead, the department added the phrase to the last sentence.

Comment #18: Section 307 (Limitations-Carbon Monoxide)

SRP believes the County incorrectly inserted “...and combined cycle gas turbines” in the wrong sentence of Section 307. That language should be inserted in the last sentence of that section: “The CO concentration shall be measured dry and corrected to 15% oxygen for stationary turbines and combined cycle gas turbines, during steady state operations”.

Response #18: Section 307 (Limitations-Carbon Monoxide)

The department did not include proposed new text “and combined cycle gas turbines” to the end of the second-to-the-last sentence. Instead, the department added the phrase to the last sentence.

Comment #19: Section 308.1 (Requirements for ECS Monitoring Equipment)

The definition of “approved combustion control equipment” is unclear. The EPA asks that the County define the criteria for approval. The EPA must review and approve any such alternative control systems if the criteria are not specific enough.

Response #19: Section 308.1 (Requirements for ECS Monitoring Equipment)

The department did not include proposed new text “or another approved combustion control system” at the end-of the sentence in Section 308.1. Instead, the department included new text “a combustion control system which reduces emissions to below the applicable standards in Section 300 of this rule”.

Comment #20: Section 308.4 (Requirements for ECS Monitoring Equipment-Emission Compliance Demonstration)

The EPA recognizes that a Predictive Emissions Monitoring System (PEMS), if certified in accordance with the applicable provisions of Performance Specification 16, may be appropriate for certain emissions units. The EPA recommends, in their comments in June 2016, that their usage for compliance purposes be restricted to units with a heat input rate of 250 MMBtu/hr or less, which aligns with other Federal guidance.

Response #20: Section 308.4 (Requirements for ECS Monitoring Equipment-Emission Compliance Demonstration)

The department did not include the proposed definition of “PEMS” and to remove the term from Sections 308.4 and 501.5.

Comment #21: Section 308.4(b) (Requirements for ECS Monitoring Equipment-Emission Compliance Demonstration)

The inclusion of “other monitoring system approved by the Control Officer” is an inappropriate allowance of Director’s discretion. The EPA asks the County to remove this statement or require EPA approval.

Response #21: Section 308.4(b) (Requirements for ECS Monitoring Equipment-Emission Compliance Demonstration)

The department did not include the proposed new text “or other monitoring system approved by the Control Officer” in Section 308.4(b).

Comment #22: Section 308.4(b) (Requirements for ECS Monitoring Equipment-Emission Compliance Demonstration)

The provision that allows the Control Officer to approve any other monitoring system to be equivalent to a CEMS is too broad. The EPA asks the County to strike this language or also require that the EPA must approve any such alternative monitoring system.

Response #22: Section 308.4(b) (Requirements for ECS Monitoring Equipment-Emission Compliance Demonstration)

The department did not include the proposed new text “or other monitoring system approved by the Control Officer” in Section 308.4(b).

Comment #23: Section 308.4(b) (Requirements for ECS Monitoring Equipment-Emission Compliance Demonstration)

The EPA comments that Low Mass Emissions (LME) as cited in Sections 219 and 308.4 is not a suitable substitute for Continuous Emissions Monitoring Systems (CEMS) for the purposes of SIP compliance determination with an emissions unit

Response #23: Section 308.4(b) (Requirements for ECS Monitoring Equipment-Emission Compliance Demonstration)

The department did not include the proposed definition of “LME” and to remove the term from Sections 308.4 and 501.5.

Comment #24: Section 401 (Administrative Requirements-in Existence and in Compliance)

Section 400 is the operative section that helps define how the RACT standard will be implemented by the affected units. There are several disconnects and inconsistencies that should be addressed to make this section work as intended. First, it is important to make sure that partially exempt units are not pulled into Section 400. For example, Section 104.4 is a partial exemption as long as the unit maintains a capacity factor of 10% or less, and should not be required to comply with Section 400. In fact, it would be inconsistent, if not impossible, to do both. Second, it is important that any unit which chooses to undertake a case-by-case RACT analysis under Section 305.1 not be required to also comply with Section 400. That analysis is outside the scope of Section 400. Accordingly, a case-by-case RACT analysis under Section 305.1 should be exempt from Section 400. Third, the proposed rule language in Section 401 states that the owner of a unit “in compliance with” Section 305 shall submit a Notification of Compliance. It would appear that a better way to say this is to say “and subject to”, since it will trigger the obligation, rather than assuming one is already met. Fourth-relates to the timeframe for submitting a notice. The proposed rule set the timeframe at 6 months from rule adoption. However, this creates a disconnect for a unit that may be exempt under Section 104.4 for a year because it ran at a capacity factor of less than 10%. If that unit in year two exceeded the partial exemption capacity factor and needed to comply with Section 305, there is no way it could submit a notice 6 months from rule adoption. Accordingly, APS thinks it would read better if the section said “6 months from becoming subject to Section 305 limits”. Fifth-is to create a correlation between Step 1 (Section 401) and Step 2 (Section 402). If a unit cannot submit a Notification of Compliance, there needs to be an “if-then” response. APS proposes the language that says if you cannot comply with Section 401, then go to Section 402. Currently, the two sections are not linked and this creates a disconnect.

Response #24: Section 401 (Administrative Requirements-in Existence and in Compliance)

The department clarified that this section is not intended for units exempt in Section 104.4 by an annual capacity factor equal to or less than 10% or for units which are accepting a case-by-case RACT determination approved by the Control Officer and the department included a compliance path for those

sources which operate a unit below a 10% capacity factor or under a case-by-case RACT limitation and in the future elect to increase operations and may need to then come into compliance with the limits in Section 306.

Comment #25: Section 401 (Administrative Requirements-in Existence and in Compliance)

Section 401 is intended for those units which are (or will be) in compliance with the NO_x limits in Section 305 by the date this rule is adopted. This section is not intended for units exempted in Section 104.4 by an annual capacity factor equal to or less than 10% or for units which are accepting a case-by-case RACT determination approved by the Control Officer and this should be clarified. Additionally, this section is missing a compliance path for those sources which operate a unit below a 10% capacity factor or under a case-by-case RACT limitation and in the future elect to increase operations and may need to then come into compliance with the limits in Section 305. Therefore, SRP is proposing to add to the beginning of the first sentence in Section 401 the phrase “except as set forth in Sections 104.4 and 305.1 of this rule”.

Response #25: Section 401 (Administrative Requirements-in Existence and in Compliance)

The department clarified that this section is not intended for units exempt in Section 104.4 by an annual capacity factor equal to or less than 10% or for units which are accepting a case-by-case RACT determination approved by the Control Officer and the department included a compliance path for those sources which operate a unit below a 10% capacity factor or under a case-by-case RACT limitation and in the future elect to increase operations and may need to then come into compliance with the limits in Section 306.

Comment #26: Section 402.1 (Administrative Requirements-in Existence and Non-Compliant)

APS would recommend adding the exceptions of Sections 104.4 and 305.1 to Section 402. Additionally, APS would recommend deleting the last sentence of Section 402, as it does not appear to relate to the rulemaking. APS is unaware of any “interim compliance” options within the rule.

Response #26: Section 402.1 (Administrative Requirements-in Existence and Non-Compliant)

The department clarified that this section is not intended for units exempt in Section 104.4 by an annual capacity factor equal to or less than 10% or for units which are accepting a case-by-case RACT determination approved by the Control Officer. Also, the department did not include the proposed last sentence regarding “interim compliance”.

Comment #27: Section 402.3 (Administrative Requirements-in Existence and Non-Compliance-Removal from Service)

This section provides an avenue for units that would be retired from service in lieu of emissions controls or a case-by-case RACT analysis and permit limit. To make this section more functional for the retiring units, it is important to make the effectiveness of the section not linked to the adoption of the rule, but rather linked to the decision by the owner to retire the unit. For example, Section 402.3 limits the window of opportunity to only 24 months. If a Section 104.4 partial exemption unit is exempt for 2 years and then exceeds its capacity factor, rather than installing emissions controls to meet Section 305, it may seek removal from service. As proposed, this would not be possible since this section would only be available for 24 months after the rule is adopted. Instead, APS suggests that Section 402.3 be based on when a unit otherwise becomes subject to Section 305 emission limits. The offered language makes this possible without changing obligations on existing units which do not have a partial exemption. The second issue is to add a similar scope to the Section 402.3(a) which, as written, limits the ability of a unit to submit a notice for removal from service to only 6 months after rule adoption. As noted above, by linking it to when a unit becomes subject to Section 305 emissions limits provides an option for units which may be otherwise exempt during the first 6 months after the rule is adopted. The third issue is to remove the requirement for “requesting an exemption” and instead require that the owner or operator merely submit a notice of proposed removal. This reduces the burden on the County to create and issue an exemption when there is no reason for the extra paperwork. Additionally, it reduces any delay caused by waiting on the County to issue the exemption. As amended, the unit would submit the notice and then proceed to the formal submittal of the decommissioning plan and permit revision, which is the document upon which the County can focus its efforts. Finally, Section 402.3(c) appears to have a mismatch between the use of 4 months of plan approval and in the final sentence a limitation on operations past 3 months. This inconsistency can be fixed by merely changing the 3 months to 4 months.

Response #27: Section 402.3 (Administrative Requirements-in Existence and Non-Compliant-Removal from Service)

The department made this section more functional for retiring units by making the effectiveness of the section not linked to the adoption of the rule but rather linked to the decision by the owner to retire the unit.

Comment #28: Section 402.3 (Administrative Requirements-in Existence and Non-Compliance-Removal from Service)

Section 402.3 defines the requirements for units that will be removed from service within 24 months of the rule being adopted. Such units will exempt from the limits of Section 305 as long as the owner or operator notifies the County of the intent to remove from service within 6 months of rule adoption. To avoid any delays in the timing of the notification, the decommissioning plan and permit revision (required in Section 402.3(b)), SRP proposes this section require a notification of removal of service, rather than requesting an exemption, which is already granted in the previous paragraph in that rule section. This section is also missing a compliance path for those sources which operate a unit below a 10% capacity factor or under a case-by-case RACT limitation and in the future elect to increase operations and may need to then come into compliance with the limits in Section 305. SRP suggests removing the phrase “requesting an exemption from the emission limits in Section 305 of this rule” and removing the phrase “receiving the exemption”.

Response #28: Section 402.3 (Administrative Requirements-in Existence and Non-Compliant-Removal from Service)

The department made this section more functional for retiring units by making the effectiveness of the section not linked to the adoption of the rule but rather linked to the decision by the owner to retire the unit.

Comment #29: Section 402.3(c) (Administrative Requirements-in Existence and Non-Compliant-Removal from Service)

There is a one month discrepancy in the sentences in this section; it makes it seem as if the County is requiring affected sources that choose to take the full 4 months after plan/revision approval to discontinue operations to come into compliance with the limits of the rule (and possibly install controls) for one month before the final removal from service. SRP believes that to make this section clearer, the timeframes should be revised to match.

Response #29: Section 402.3(c) (Administrative Requirements-in Existence and Non-Compliant-Removal from Service)

The department removed the one month discrepancy in the sentences in the section. The department revised the timeframes so they match.

Comment #30: Section 403 (Administrative Requirements-Emergency Standby Units)

In this Section, the County appears to be limiting the affected units to “emergency standby units”; however, the sentence includes all affected units. APS comments that the solution for this paragraph would be to limit the affected units.

Response #30: Section 403 (Administrative Requirements-Emergency Standby Units)

The department changed “electric utility stationary gas turbine, electric utility steam generating unit or cogeneration steam generating unit used to generate electric power” to “emergency standby unit”.

Comment #31: Section 403(Administrative Requirements-Emergency Standby Units)

SRP comments that Section 403 incorrectly addresses electric utility stationary gas turbines, electric utility steam generating units and cogeneration steam generating units, when the section should be addressed to emergency standby units only.

Response #31: Section 403 (Administrative Requirements-Emergency Standby Units)

The department changed “electric utility stationary gas turbine, electric utility steam generating unit or cogeneration steam generating unit used to generate electric power” to “emergency standby unit”.

Comment #32: Section 501.6 (Recordkeeping)

The draft rule language appears to state that “good combustion practices” are met for turbines if CEMS are used (last sentence). It appears that the County intends to say that if equipment is utilizing a CEMS, which already monitors various operating parameters, then the equipment would be exempt from the requirements of Section 301. The EPA asks that the County revise accordingly if this is correct or otherwise clarify the intent of this last sentence. This provision is also found in Section 501.6.

Response #32: Section 501.6 (Recordkeeping)

The department did not include proposed new text “good combustion practices for turbines are considered to have been met” at the end of the last sentence. Instead, the department included at the end of the last sentence “then the equipment would be exempt from the requirements of Section 302 of this rule”.

Comment #33: Section 501.7 (Recordkeeping)

Under the recordkeeping requirements, the County proposes that the records demonstrating compliance with Sections 104.4, 305.1, and 305.2 include 12 month rolling averages. The inclusion of “12 month rolling period” conflicts with the measurements set forth in Section 305.1 and 305.2. The general purpose

of this section appears to be a requirement to keep records. By eliminating the contradictory language, APS can still maintain the necessary records and not introduce confusion to the compliance obligation.

Response #33: Section 501.7 (Recordkeeping)

The department changed “covering a 12-month rolling period” to “of the annual capacity factor and NO_x emissions”.

Comment #34: Section 501.7 (Recordkeeping)

While SRP agrees that records must be kept to demonstrate compliance with the annual capacity factor and the limitations, a “12-month rolling period” conflicts with the limits in Sections 305.1 and 305.2, which are concentrations measured during a test conducted annually, and also with the measurement of the annual capacity factor. SRP proposes the following: “Records of the annual capacity factor and NO_x emissions demonstrating compliance with Sections 104.4, 305.1 and 305.2”.

Response #34: Section 501.7 (Recordkeeping)

The department changed “covering a 12-month rolling period” to “of the annual capacity factor and NO_x emissions”.

Comment #35: 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 delete this provision or include language that also requires EPA approval for alternative methods.

Response #35: 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 the following sections of the rule:

Section 308.4 (Continuous Emission Monitoring Systems)

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 322

POWER PLANT OPERATIONS

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	<u>218</u>	LOW-SULFUR OIL
249	<u>220</u>	LOWER HEATING VALUE (LHV) <u>OR NET HEATING VALUE</u>
220	<u>221</u>	NATURAL GAS CURTAILMENT
221	<u>222</u>	OPACITY
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222	<u>224</u>	PARTICULATE MATTER EMISSIONS
223	<u>225</u>	PEAK LOAD
224	<u>226</u>	POWER PLANT OPERATION
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227	<u>229</u>	RESIDUAL OIL
228	<u>230</u>	SIMPLE CYCLE GAS TURBINE
229	<u>231</u>	STATIONARY GAS TURBINE
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~~Adopted 7/02/03~~

~~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 322
POWER PLANT OPERATIONS

SECTION 100 - GENERAL

101 PURPOSE: To limit the discharge of nitrogen oxides, sulfur oxides, particulate matter and carbon monoxide emissions into the atmosphere from stationary fossil-fuel-fired equipment at ~~existing power plants and existing cogeneration plants~~ electric utility stationary gas turbines, electric utility steam generating units or cogeneration steam generating units and to limit particulate matter emissions from cooling towers associated with this equipment.

102 APPLICABILITY: This rule applies to ~~any of~~ the following types of equipment that burn fossil fuel: ~~for which construction commenced prior to May 10, 1996~~

102.1 Each electric utility steam generating unit or cogeneration steam generating unit used to generate electric power that has a heat input of equal to or greater than 100 million (MM) Btu/hour (29 megawatts (MW)).

102.2 Each electric utility stationary gas turbine with a heat input at peak load equal to or greater than 10 MMBtu/hour (2.9 MW) based upon the lower heating value of the fuel.

102.3 Each cooling tower associated with the type of equipment listed in ~~subsections 102.1 and 102.2~~ Sections 102.1 and 102.2 of this rule.

102.4 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 Combustion equipment associated with nuclear power plant operations; or

103.2 Reciprocating internal combustion equipment.

104 PARTIAL EXEMPTIONS:

~~104.1 Stationary gas turbines that meet any of the following criteria listed below are exempt from Sections 304 and 305 and subsections 301.1, 301.2, 306.4, and 501.4 of this rule:~~

~~a. Used for fire fighting; or~~

~~b. Used for flood control; or~~

~~e. Used in the military at military training facilities or military gas turbines for use in other than a garrison; or~~

~~d. Engaged by manufacturers in research and development of equipment for either gas turbine emission control techniques or gas turbine efficiency improvements.~~

~~104.2 All equipment listed in Section 102 fired with an emergency normally fired with natural gas is exempt from Sections 304 and 305 and subsections 301.1, 301.2, and 306.4, 501.4 of this rule.~~

~~104.3 All equipment listed in Section 102 shall be exempt from Sections 304 and 305 and subsections 301.1, 301.2, and 306.4 306.6, of this rule for 36 cumulative hrs. of firing emergency fuel per year, per unit for testing, reliability, training, and maintenance purposes.~~

104.1 Stationary gas turbines that meet any of the criteria listed below are exempt from Sections 301.1, 301.2, 306, 307, 308.4 and 501.4 of this rule:

a. Used for fire-fighting

b. Used for flood control

c. Engaged by manufacturers in research and development of equipment for either gas turbine emission control techniques or gas turbine efficiency improvements

104.2 Any equipment listed in Section 102 of this rule that is normally fired with natural gas, as allowed by a permit issued by the Control Officer for that source, is exempt from Sections 301.1, 301.2, 306, 307, 308.4, 400 and 501.4 of this rule while firing emergency fuel.

104.3 Any equipment listed in Section 102 of this rule that only fires 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, is exempt from Sections 301.1, 301.2, 306, 307, 308.4, and 400 of this rule.

104.4 Any equipment listed in Section 102 of this rule that operates at or below 10 percent calendar year annual capacity factor is exempt from Sections 306, 307, 308.4 and 400 of this rule.

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** **ANNUAL CAPACITY FACTOR:** The ratio between the actual heat input to a boiler or process heater from the fuels burned during a calendar year and the potential heat input to the boiler or process heater had it been operated for 8,760 hours during a year at the maximum steady state design heat input capacity or the ratio between the actual electrical output of a machine or equipment during a calendar year and the potential electrical output of a machine or equipment had it been operated for 8,760 hours during a year at full nameplate capacity.
- ~~201~~ **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 and supplies more than one-third of its potential electric output to any utility power distribution system for sale.
- ~~202~~ **203** **COMBINED CYCLE GAS TURBINE:** A type of stationary gas turbine wherein heat from the turbine exhaust is recovered by a steam generating unit to make steam for use in a steam-electric turbine.
- ~~203~~ **204** **CONTINUOUS EMISSION MONITORING SYSTEM (CEMS):** The total equipment required to sample and analyze emissions or process parameters such as opacity, nitrogen oxide, and oxygen or carbon dioxide, and to provide a permanent data record.
- ~~204~~ **205** **COOLING TOWERS:** Open water recirculating devices that use fans or natural draft to draw or force air through the device to cool water by evaporation and direct contact.
- ~~205~~ **206** **CORRECTIVE ACTION PLAN (CAP):** A methodical procedure that is used to evaluate and correct a turbine operational problem and that includes, at a minimum, improved preventative maintenance procedures, improved ECS operating practices, possible operational changes, and progress reports.
- ~~206~~ **207** **DISTILLATE OIL:** A petroleum fraction of fuel oil produced by distillation that complies with the specifications for fuel oil numbers 1 or 2, as defined by the American Society for Testing and Materials in ASTM D396-01, "Standard Specification for Fuel Oils."
- ~~207~~ **208** **DRIFT:** Water droplets, bubbles, and particulate matter that escape from cooling tower stacks.
- ~~208~~ **209** **DRIFT ELIMINATOR:** Device used to remove drift from cooling tower exhaust air, thus reducing water loss by relying on rapid changes in velocity and direction of air-droplet mixtures by impaction on eliminator passage surfaces. A drift eliminator is not categorized as an emission control system but is an inherent part of the cooling tower's design requirements.

- ~~209~~ **210** **DRIFT RATE:** Percentage (%) of circulating water flow rate that passes through a drift eliminator on a cooling tower.
- ~~240~~ **211** **ELECTRIC UTILITY STATIONARY GAS TURBINE:** Any stationary gas turbine that is constructed for the purpose of supplying more than 1/3 of its potential electric output capacity to any utility power distribution system for sale. Both simple and combined cycle gas turbines are types of electric utility stationary gas turbines.
- ~~244~~ **212** **ELECTRIC UTILITY STEAM GENERATING UNIT:** Any steam electric generating unit that uses fossil fuel and is constructed for the purpose of supplying more than one-third of its potential electric output capacity and more than 25 MW electric output to any utility power distribution system for sale.
- ~~242~~ **213** **EMERGENCY FUEL:** Fuel fired only during circumstances such as natural gas emergency, natural gas curtailment, or breakdown of delivery system such as an unavoidable interruption of supply that makes it impossible to fire natural gas in the unit. Fuel is not considered emergency fuel if it is used to avoid either peak demand charges or high gas prices during on-peak price periods or due to a voluntary reduction in natural gas usage by the power company.
- 214** **EMERGENCY STANDBY UNIT:** A stationary gas turbine that is limited by permit condition to be operated only as a mechanical or electrical power source for a facility when the primary power source for a facility has been rendered inoperable due to failure beyond the reasonable control of the operator, except due to power interruption pursuant to an interruptible power supply agreement. Electricity generated by such a unit cannot be sold.
- ~~243~~ **215** **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.
- ~~244~~ **216** **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.
- ~~245~~ **217** **FUEL SWITCHING STARTUP PROCESS:** The act of changing from one type of fuel to a different type of fuel.

- 246 **218** **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.
- 247 **219** **HIGHER HEATING VALUE (HHV) OR GROSS HEATING VALUE:** The amount of heat produced by the complete combustion of a unit quantity of fuel determined by a calorimeter wherein the combustion products are cooled to the temperature existing before combustion and all of the water vapor is condensed to liquid.
- 248 **LOW SULFUR OIL:** ~~Fuel oil containing less than or equal to 0.05% by weight of sulfur.~~
- 249 **220** **LOWER HEATING VALUE (LHV) OR NET HEATING VALUE:** The amount of heat produced by the complete combustion of a unit quantity of fuel determined by a calorimeter wherein the combustion products are cooled to the temperature existing before combustion and all of the water vapor remains as vapor and is not condensed to a liquid. The value is computed from the higher heating value by subtracting the water originally present as moisture and the water formed by combustion of the fuel.
- 220 **221** **NATURAL GAS CURTAILMENT:** An interruption in natural gas service, such that the daily fuel needs of a combustion unit cannot be met with natural gas available due to one of the following reasons, beyond the control of the owner or operator:
- 220.1 **221.1** An unforeseeable failure or malfunction, not resulting from an intentional act or omission that the governing state, federal or local agency finds to be due to an act of gross negligence on the part of the owner or operator; or
- 220.2 **221.2** A natural disaster; or
- 220.3 **221.3** The natural gas is curtailed pursuant to governing state, federal or local agency rules or orders; or
- 220.4 **221.4** The serving natural gas supplier provides notice to the owner or operator that, with forecasted natural gas supplies and demands, natural gas service is expected to be curtailed pursuant to governing state, federal or local agency rules or orders.
- 221 **222** **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.
- 223** **OPERATING DAY:** A 24-hour period between 0000 and 2359 during which any fuel is combusted at any time in the unit. It is not necessary for fuel to be combusted continuously for the entire 24-hour period.

- ~~222~~ 224 **PARTICULATE MATTER EMISSIONS:** Any and all particulate matter emitted to the ambient air as measured by applicable state and federal test methods.
- ~~223~~ 225 **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).
- ~~224~~ 226 **POWER PLANT OPERATION:** An operation whose purpose is to supply more than one-third of its potential electric output capacity to any utility power distribution system for sale.
- ~~225~~ 227 **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 such that its maximum heat input is different than the heat input capacity on the name plate, the maximum heat input shall be considered the rated heat input capacity.
- ~~226~~ 228 **REGENERATIVE CYCLE GAS TURBINE:** Any stationary gas turbine that recovers thermal energy from the exhaust gases and utilizes the thermal energy to preheat air prior to entering the combustion unit.
- ~~227~~ 229 **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.”
- ~~228~~ 230 **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.
- ~~229~~ 231 **STATIONARY GAS TURBINE:** Any simple cycle gas turbine, regenerative gas turbine or any gas turbine portion of a combined cycle gas turbine that is not self-propelled or that is attached to a foundation.
- 232 **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.
- ~~230~~ 233 **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.

~~231~~ **234** **THIRTY (30) DAY ROLLING AVERAGE:** An arithmetic mean or average of all hourly emission rates for 30 successive combustion ~~equipment~~ operating days and calculated by a CEMS ~~every hour~~ at the conclusion of each day for the previous 30 operating days.

~~232~~ **235** **THREE (3) HOUR ROLLING AVERAGE:** An arithmetic mean or average of the most recent three one (1) hour tests, or an arithmetic mean or average over a period of three hours which is newly calculated with each hourly measurement.

~~233~~ **236** **TOTAL DISSOLVED SOLIDS (TDS):** The amount of concentrated matter reported in milligrams/liter (mg/l) or parts per million (ppm) ~~left after filtration of a well-mixed sample through a standard glass fiber filter, as determined by an applicable method in the Standard Methods for the Examination of Water and Wastewater, a conductivity/TDS meter, or ASTM D5907. The filtrate is evaporated to dryness in a weighed dish and dried to constant weight at 180° C and the increase in dish weight represents the total dissolved solids.~~

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

~~234~~ **238** **UNCOMBINED WATER:** Condensed water containing no more than analytical trace amounts of other chemical elements or compounds.

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

SECTION 300 – STANDARDS

301 LIMITATIONS – PARTICULATE MATTER:

301.1 Fuel Type: An owner or operator of any combustion equipment listed in Section 102 shall burn only natural gas except when firing emergency fuel per ~~subsections~~ Sections 104.2 and 104.3 of this rule. An owner or operator may burn a fuel other than natural gas for non-emergency purposes providing that the fuel shall not cause to be discharged more than 0.007 lbs. of particulate matter per MMBtu during steady state operations, demonstrated and documented through performance testing of this alternate fuel using Test Method 5. This usage of different fuels other than natural gas shall be approved by the Control Officer prior to usage.

301.2 Particulate Matter Testing: A backhalf analysis shall be performed, using Reference Method 202 referenced in ~~subsection~~ Section 504.6 of this rule, each time a compliance test for particulate

matter emissions to meet the standard in ~~subsection~~ Section 301.1 of this rule is performed using Test Method 5.

~~301.3~~ **302** **GOOD COMBUSTION PRACTICES FOR TURBINES:** ~~An~~ During steady state operations, an owner or operator of any stationary gas turbine listed in ~~subsection 102.2~~ Section 102.2 of this rule, regardless of fuel type, shall use operational practices recommended by the manufacturer and parametric monitoring to ensure good combustion control as listed below. One of the following procedures may be used. For the purposes of this rule, if a CEMS or another approved monitoring method is used, then the equipment would be exempt from the requirements of Section 302 of this rule.

- a. **302.1** 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. **302.2** 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 302.1 of this rule shall then be followed using this alternate recommended maximum temperature differential after approval by the Control Officer.
- e. **302.3** If the frequency of failure to meet the proper temperature differential of 100°F or to meet the alternate temperature differential recommended by the manufacturer reflects a pattern that the turbine is not being operated in a manner consistent with good combustion practices, then the Control Officer may require the owner or operator to submit a Corrective Action Plan (CAP).

~~301.4~~ **303** **COOLING TOWERS:** An owner or operator of a cooling tower associated with applicable units listed in Section 102 of this rule shall:

- a- **303.1** Equip the cooling tower with a drift eliminator. The drift eliminator shall not be manufactured out of wood.
- b- **303.2** The concentration of Total Dissolved Solids (TDS) multiplied by the percentage of drift rate shall not exceed the maximum numerical limit of 20.
- e- **303.3** Visually inspect the drift eliminator on a monthly basis only if the drift eliminator can be viewed safely and does not require an owner or operator to walk into the tower. If the drift eliminator cannot be safely inspected monthly then ~~subsection 301.4d~~ **Section 303.4 of this rule** shall apply:
- d- **303.4** Visually inspect the drift eliminator for integrity during a regularly scheduled outage when the cooling tower is not operating, if it cannot be inspected on a monthly basis. This visual inspection shall be no less than once per year.

~~302~~ **304** **LIMITATIONS – OPACITY:**

- ~~302.1~~ **304.1** ~~No person shall~~ **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, except as provided in ~~subsection 302.2~~ **Section 304.2 of this rule.**
- ~~302.2~~ **304.2** Opacity may exceed the applicable limits established in ~~subsection 302.1~~ **Section 304.1 of this rule** for up to one hour during the ~~startup of switching fuels~~ **fuel switching startup process**; however, opacity shall not exceed 40% for any six (6) minute averaging period in this one hour period, provided that the Control Officer finds that the owner or operator has, to the extent practicable, maintained and operated the source of emissions in a manner consistent with good air pollution control practices for minimizing emissions. The one hour period shall begin ~~at the moment of startup of fuel switching~~ **when the fuel switching startup process begins.**
- ~~302.3~~ **304.3** Determination of whether good air pollution control practices are being used shall be based on information provided to the Control Officer upon request, which may include, but is not limited to, the following:
 - a. Monitoring results.
 - b. Opacity observations.
 - c. Review of operating and maintenance procedures.
 - d. Inspection of the source.

303 **305** **LIMITATIONS - SULFUR IN FUEL:** An owner or operator of any applicable equipment listed in Section 102 of this rule that burns fuel oil alone or in combination with any other fuel as either emergency fuel or non-emergency fuel ~~that meets the standards in subsection 301.1~~ shall use only low sulfur oil ultra low sulfur diesel. An owner or operator using waste derived fuel gas shall use only waste derived fuel gas that contains no more than 0.08% sulfur by weight, alone or in combination with other fuels.

304 **306** **LIMITATIONS – NITROGEN OXIDES (NO_x):** ~~No~~ An owner or operator of any applicable equipment listed in ~~subsection 102.1~~ Section 102.1 and 102.2 of this rule ~~that commenced construction or a major modification after May 30, 1972~~ shall not cause to be discharged into the atmosphere nitrogen oxides in excess of the following limits:

304.1 **306.1** ~~155 ppmv~~ 42 ppmdv, calculated as nitrogen dioxide when burning gaseous fossil 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 time of one hour. ~~If a Continuous Emission Monitoring System (CEMS) is used for the compliance demonstration, the test result compliance demonstration shall be based upon a 30-day rolling average. Any source for which the owner or operator submits to the department a case-by-case reasonably available control technology analysis that is or will be incorporated in a permit issued by the Control Officer for that source, is exempt from Sections 306, 308.4, and 400 of this rule.~~

304.2 **306.2** ~~230 ppmv~~ 65 ppmdv calculated as nitrogen dioxide when burning liquid fossil 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 time of one hour. ~~If a CEMS is used for the compliance demonstration, the test result compliance demonstration shall be based upon a 30-day rolling average. Any source for which the owner or operator submits to the department a case-by-case reasonably available control technology analysis that is or will be incorporated in a permit issued by the Control Officer for that source, is exempt from Sections 306, 308.4, and 400 of this rule.~~

~~304.3~~ **306.3** The nitrogen oxides concentration shall be measured dry and corrected to 3% oxygen for electric utility steam generating units and cogeneration steam generating units. The nitrogen oxides concentration shall be measured dry and corrected to 15% oxygen for stationary gas turbines and for combined cycle gas turbines, during steady state operations.

~~305~~ **307** **LIMITATIONS - CARBON MONOXIDE:** An owner or operator of any equipment listed in Section 102 of this rule 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 and performed during steady state compliance source testing, shall be based upon the arithmetic mean of the results of three test runs. Each test run shall have a minimum sample time of one hour. The CO concentration shall be measured dry and corrected to 3% oxygen for electric utility steam generating units and cogeneration steam generating units. The CO concentration shall be measured dry and corrected to 15% oxygen for stationary gas turbines and for combined cycle gas turbines, during steady state operations.

~~306~~ **308** **REQUIREMENTS FOR AIR POLLUTION CONTROL EQUIPMENT AND ECS MONITORING EQUIPMENT:**

~~306.1~~ **308.1** ~~Emission Control System Required:~~ For affected operations which may exceed any of the applicable standards set forth in Section 300 of this rule, an owner or operator may comply by installing and operating an emission control system (ECS) or a combustion control system which reduces emissions to below the applicable standards in Section 300 of this rule.

~~306.2~~ **308.2** ~~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 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~~ **308.3** **Operation and Maintenance (O&M) Plan Required for ECS:**

- a. **General Requirements:** An owner or operator shall provide and maintain an O&M Plan for any ECS, any other emission processing equipment, and any ECS monitoring devices that are used pursuant to this rule or to an air pollution permit.
- b. **Approval by Control Officer:** An owner or operator shall submit to the Control Officer for approval the O&M Plans of each ECS and each ECS monitoring device that is used pursuant to this rule.
- c. **Initial Plans:** An owner or operator ~~that~~ who is required to have an O&M Plan pursuant to this rule shall comply with all O&M Plans that the owner or operator has submitted for approval, but which have not yet been approved, unless notified by the Control Officer in writing. Once the initial plan has been approved in writing by the Control Officer, an owner or operator shall then comply with the approved plan.
- d. **Revisions to Plan:** ~~If revisions to the initial plan have been approved by the Control Officer in writing, an owner or operator shall comply with the revisions to the initial plan. If revisions to the plan have not yet been approved by the Control Officer, then an~~ An owner or operator shall comply with the newest recent may revise an initial O&M plan by submitting written revisions to the Control Officer on file at Maricopa County Air Quality Department. The owner or operator shall at all times comply with the latest version of the O&M Plan submitted to the Control Officer.
- e. **Control Officer Modifications to Plan:** After discussion with the owner or operator, the Control Officer may modify the plan in writing prior to approval of the initial O&M plan. An owner or operator shall then comply with the plan that has been modified by the Control Officer.

306.4 **308.4** ~~Continuous Emission Monitoring Systems (CEMS)~~ **Emission Compliance Demonstration:**

- a. An owner or operator of ~~a combustion unit~~ an electric utility stationary gas turbine, electric utility steam generating unit or cogeneration steam generating unit used to generate electric power subject to Section ~~304~~ 306 of this rule with a heat input of greater than 250 MMBtu/hr, regardless of fuel type, shall install, calibrate, maintain, and operate a CEMS or conduct stack tests as approved by the Control Officer for measuring nitrogen oxides. ~~and recording the output of the system.~~ Where nitrogen oxide emissions are monitored by a CEMS, then a CEMS shall

also be required for the measurement of the oxygen content of the flue gases. All CEMS shall comply with the provisions in ~~40 CFR Subpart Da, Part 60, 60.47 (a)~~ 40 CFR Part 60.

- b. An owner or operator of any affected ~~unit~~ electric utility stationary gas turbine, electric utility steam generating unit or cogeneration steam generating unit used to generate electric power listed above that requires a CEMS for nitrogen oxides that meets and is continuing to meet the requirements of 40 CFR Part 75 or Part 60 may use that CEMS to meet the requirements of ~~subsection 306.4 a~~ Section 308.4(a) of this rule.

307 **309** **EMERGENCY FUEL USE NOTIFICATION:** An owner or operator of ~~a unit~~ an electric utility stationary gas turbine, electric utility steam generating unit or cogeneration steam generating unit used to generate electric power that is fired with emergency fuel but is normally fired with natural gas shall notify the Control Officer verbally no later than 24 hours after declaration of the emergency that necessitates its use in compliance with ~~subsections 104.2 and 212~~ Section 104.2 of this rule. This verbal report shall be followed by a written report within 48 hours of initial emergency fuel usage. The written report shall also include identification of the nature of the emergency, initial dates of usage, and the expected dates of usage.

SECTION 400 - ADMINISTRATIVE REQUIREMENTS (~~NOT APPLICABLE~~)

401 **IN EXISTENCE AND IN COMPLIANCE:** Except as set forth in Section 104.4 of this rule and the case-by-case RACT analysis of Section 306.1 of this rule, the owner or operator of any electric utility stationary gas turbine, electric utility steam generating unit or cogeneration steam generating unit used to generate electric power in existence on November 2, 2016 and subject to the emission limits in Section 306 of this rule shall submit a Notification of Compliance within 6 months of becoming subject to Section 306 of this rule. This Notification shall indicate how compliance with the NO_x limit has been determined and if performance testing is required to demonstrate compliance. If performance testing is required to demonstrate compliance, the Notification shall include a timeline for the test. Performance test results from a past test may be used for this determination, as long as the test was conducted within 5 years before November 2, 2016. If compliance under Section 401 of this rule cannot be demonstrated, an owner or operator of any electric utility stationary gas turbine, electric utility steam generating unit or cogeneration steam generation unit used to generate electric power shall comply with Section 402 of this rule.

402 **IN EXISTENCE AND NON-COMPLIANT:**

402.1 Except as set forth in Section 104.4 of this rule and the case-by-case RACT analysis of Section 306.1 of this rule, when air pollution control equipment is required to achieve the emission limits in Section 306 of this rule, the owner or operator shall comply with the increments of progress in Section 402.2 of this rule and be in compliance with the emission limits by the date specified in Section 402.2 of this rule.

402.2 **Increments of Progress:** The owner or operator of any electric utility stationary gas turbine, electric utility steam generating unit or cogeneration steam generating unit used to generate electric power subject to the emission limits in Section 306 of this rule shall comply with the following increments of progress. The Control Officer, upon the request of the owner or operator, may extend the increments of progress. The following compliance schedule does not apply to units already compliant with this rule as of November 2, 2016:

- a.** Within 18 months of becoming subject to the emission limits in Section 306 of this rule, submit a compliance schedule and permit application to the Control Officer.
- b.** Within 36 months of final permit issuance, be fully compliant with the emission limits in Section 306 of this rule and submit to the Control Officer a complete source test report indicating compliance.

402.3 **Removal From Service:** The owner or operator of any electric utility stationary gas turbine, electric utility steam generating unit or cogeneration steam generating unit used to generate electric power in existence on November 2, 2016 that is expected to be removed from service within 24 months of becoming subject to Section 306 of this rule shall be exempt from the emission limits in Section 306 of this rule if it complies with the following:

- a.** Within 6 months of becoming subject to the limits in Section 306 of this rule, submit to the Control Officer a notification of proposed removal from service.
- b.** Within 14 months of submitting notification under Section 402.3(a) of this rule, submit to the Control Officer a decommissioning plan and a permit revision providing that the units will be decommissioned by a certain date.
- c.** Within 4 months of decommissioning plan and permit revision approval, discontinue operation of the electric utility stationary gas turbine, electric utility steam generating unit or

cogeneration steam generating unit used to generate electric power, disconnect the fuel supply line(s), and notify the Control Officer in writing of the removal from service. Operation of any electric utility stationary gas turbine, electric utility steam generating unit or cogeneration steam generating unit used to generate electric power beyond 4 months of decommissioning plan and permit revision approval, shall be conducted in compliance with the emission limits in Section 306 of this rule.

403 **EMERGENCY STANDBY UNITS:** The owner or operator of any emergency standby unit in existence prior to November 2, 2016 shall by January 2, 2017, submit to the Control Officer a notification requesting an exemption from the requirements of Section 300 of this rule.

SECTION 500 - MONITORING AND RECORDS

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

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

501.2 **Cooling Towers:** Monthly gravimetric testing reports for TDS shall be recorded for six months in succession and thereafter quarterly reports shall be recorded. Results of the monthly or yearly visual inspection of the drift eliminator shall also be recorded. If the drift eliminator cannot be visually inspected monthly, then documentation of the physical configuration of the drift eliminator shall be submitted to the Control Officer to demonstrate that the drift eliminator cannot be inspected monthly.

501.3 **Emergency Fuel Usage:** Type and amount of emergency fuel used, dates and hours of operation using emergency fuel, nature of the emergency or reason for the use of emergency fuel as stated in ~~subsections 104.2 and 104.3~~ Sections 104.2 and 104.3 of this rule.

501.4 **Fuel Switching:** Monthly records of fuel switching including stop and start times, monthly records of hours of operation for testing, reliability and maintenance purposes per ~~subsection 104.3~~ Section 104.3 of this rule, and a yearly log total of these hours.

501.5 ~~CEMS~~ **Continuous Emission Monitoring Systems**: All CEMS measurements, results of CEMS performance evaluations, CEMS calibration checks, and adjustments and maintenance performed on these systems.

501.6 **Good Combustion Practices**: Measurements of the temperature differential across the burners of turbines per ~~subsection 301.3 a, b, or c~~ Section 302 of this rule, results of evaluation and of corrective action taken to reduce the temperature differential or a finding that the temperature differential returned to the range listed in ~~subsection 301.3 a or b~~ Sections 302.1 or 302.2 of this rule without any action by the owner or operator. For the purposes of this rule, if a CEMS or other approved monitoring method is used, then the equipment would be exempt from the requirements of Section 302 of this rule.

501.7 **Equipment Referenced in Sections 104.4, 306.1, and 306.2**: Maintain records of the annual capacity factor and NO_x emissions to demonstrate compliance with Sections 104.4, 306.1, or 306.2 of this rule, as applicable.

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**: 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:

- a.** Fuel receipts, or
- b.** Contract specifications, or
- c.** Pipeline meter tickets, or
- d.** Fuel supplier information, or
- e.** Purchase records, or
- f.** Test results of the fuel for sulfur content

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

- a. ~~An owner or operator shall submit fuel oil or liquid fuel receipts from the fuel supplier indicating the sulfur content of the fuel or verification that the oil used to generate electric power meets the 0.05% sulfur limit if requested by the Control Officer; or~~
- b. ~~If fuel receipts are not available then an owner or operator shall submit a statement of certification or proof of the sulfur content of the oil or liquid fuel from the supplier to the Control Officer; or~~
- c. ~~An owner or operator may elect to test the fuel for sulfur content in lieu of certification from the fuel supplier or fuel receipts using one of the test methods listed in subsections 504.11, 504.12, 504.13 or 504.14.~~

503.2 Drift Rate Verification: An owner or operator shall submit design drift rate verification from the manufacturer of the drift eliminator used in the cooling towers to the Control Officer if proof of the design drift rate is requested by the Control Officer.

503.3 Waste Derived Fuel Gas – Sulfur Verification: 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.

504 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 prior 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 ~~595~~125, Phoenix, AZ 85004-1942. ~~The Standard Methods listed below (1995) are also incorporated by reference. When more than one test method as listed in subsections 504.11 through 504.14 is permitted for the same determination, an exceedance of the limits established in this rule determined by any of the applicable test methods constitutes a violation.~~

- 504.1** EPA Reference Methods 1 (“Sample and Velocity Traverses for Stationary Sources”), and 1A (“Sample and Velocity Traverses for Stationary Sources with Small Stacks and Ducts”) (40 CFR 60, Appendix A).
- 504.2** EPA Reference Methods 2 (“Determination of Stack Gas Velocity and Volumetric Flow Rate”), 2A (“Direct Measurement of Gas Volume through Pipes and Small Ducts”), 2C (“Determination of Stack Gas Velocity and Volumetric Flow Rate in Small Stacks or Ducts”), and 2D (“Measurement of Gas Volumetric Flow Rates in Small Pipes and Ducts”) (40 CFR 60, Appendix A).
- 504.3** EPA Reference Methods 3 (“Gas Analysis for the Determination of Dry Molecular Weight”), 3A (“Determination of Oxygen and Carbon Dioxide Concentrations in Emissions From Stationary Sources (Instrumental Analyzer Procedure)”), 3B (“Gas Analysis for the Determination of Emission Rate Correction Factor of Excess Air”), and 3C (“Determination of Carbon Dioxide, Methane, Nitrogen and Oxygen from Stationary Sources”) (40 CFR 60, Appendix A).
- 504.4** EPA Reference Method 4 (“Determination of Moisture Content in Stack Gases”) (40 CFR 60, Appendix A).
- 504.5** EPA Reference Method 5 (“Determination of Particulate Emissions from Stationary Sources”) (40 CFR 60, Appendix A).
- 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 from Stationary Sources”), 7B (“Determination of Nitrogen Oxide Emissions from Stationary Sources - Ultraviolet Spectrometry”), 7C (“Determination of Nitrogen Oxide Emissions from Stationary Sources - Alkaline-Permanganate Colorimetric Method”), 7D (“Determination of Nitrogen Oxide Emissions from Stationary Sources – Alkaline-Permanganate Chromatographic Method”), and 7E (“Determination of Nitrogen Oxide Emissions from Stationary Sources – Instrumental Analyzer Method”) (40 CFR 60, Appendix A).

- 504.8** EPA Reference Method 9 (“Visual Determination of the Opacity of Emissions from Stationary Sources”) (40 CFR 60, Appendix A).
- 504.9** EPA Reference Method 10 (“Determination of Carbon Monoxide Emissions from Stationary Sources”) (40 CFR 60, Appendix A).
- 504.10** 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 D2622-98~~16, (“Standard Test Method for Sulfur in Petroleum Products by Wavelength Disperse X-Ray Fluorescence Spectrometry”), 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~~15, (“Standard Specification for Gas Turbine Fuel Oils”), 2000.
- ~~504.14~~ **504.13** ~~American Society of Testing Materials, ASTM Method D4294-90 or 98~~16e1, (“Standard Test Method for Sulfur in Petroleum Products by Energy-Dispersive X-Ray Fluorescence Spectrometry”), 1990 or 1998.
- ~~504.15~~ **504.14** Standard Methods for the Examination of Water and Wastewater, (“Dissolved Solids Dried at 180°C, Method #2540C”), American Public Health Association, 19th edition, 1995.
- 504.15** ASTM D5907-13, Standard Methods for the Examination of Water and Wastewater for Filterable Matter (Total Dissolved Solids) and Nonfilterable Matter (Total Suspended Solids) in Water.
- 504.16** South Coast Air Quality Management District Method 307-94 Determination of Sulfur in a Gaseous Matrix.