

**DRAFT RULE 322 – January 3, 2002**  
For Public Workshop on 1/17/02  
Contact: Patty Nelson, Phone (602) 506-6709, Fax (602) 506-6179  
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Comments due on 2/01/02

## **REGULATION III - CONTROL OF AIR CONTAMINANTS**

### **NEW RULE 322 POWER PLANT OPERATIONS**

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**MARICOPA COUNTY  
AIR POLLUTION CONTROL REGULATIONS**

**REGULATION III - CONTROL OF AIR CONTAMINANTS**

**RULE 322  
POWER PLANT OPERATIONS**

**SECTION 100 – GENERAL**

**101 PURPOSE:** To limit the discharge of nitrogen oxides, sulfur oxides, particulate matter and carbon monoxide emissions into the atmosphere from stationary fossil-fuel-fired equipment at existing power plants and existing cogeneration plants and to limit particulate matter emissions from cooling towers associated with this equipment.

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

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

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

**102.3** Each cooling tower associated with the type of equipment listed in subsections 102.1 and 102.2.

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

**103.1** Combustion equipment associated with nuclear power plant operations.

**103.2** Reciprocating internal combustion equipment.

**104 PARTIAL EXEMPTIONS:**

**104.1** Simple cycle gas turbines that meet any of the following criteria listed below are exempt from Sections 304 and 305 and subsections 307.4, 401.3, and 501.4 of this rule:

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- a. Used as fire fighting gas turbines
- b. Used for flood control.
- c. Used in the military at military training facilities or military gas turbines for use in other than a garrison.
- d. Engaged by manufacturers in research and development of equipment for either gas turbine emission control techniques or gas turbine efficiency improvements.

**104.2** All equipment listed in Section 102 fired with an emergency fuel that is normally fired with natural gas is exempt from Sections 304 and 305 and subsections 301.1, 306.4, 401.3, and 501.4 of this rule.

**104.3** All equipment listed in Section 102 shall be exempt from Sections 304 and 305 and subsections 301.1, 306.4, 401.3, and 501.4 of this rule for 36 cumulative hrs. of firing emergency fuel per year, per unit for testing, reliability and maintenance purposes.

**SECTION 200 - DEFINITIONS:** For the purpose of this rule, the following definitions shall apply:

**201 COGENERATION STEAM GENERATING UNIT** – A steam or hot water generating unit that simultaneously produces both electrical (or mechanical) and thermal energy (such as heat or steam) from the same primary energy source and supplies more than one-third of its potential electric output to any utility power distribution system for sale.

**202 COMBINED CYCLE GAS TURBINE** – A type of stationary gas turbine wherein heat from the turbine exhaust is recovered by a steam generating unit to make steam for use in a steam-electric turbine.

**203 CONTINUOUS EMISSION MONITORING SYSTEM (CEMS)** – The total equipment required to sample and analyze emissions or process parameters such as opacity, nitrogen oxide and oxygen or carbon dioxide, and to provide a permanent data record.

**204 COOLING TOWERS** – Open water recirculating devices that use fans or natural draft to draw or force air through the device to cool water by evaporation and direct contact.

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- 205 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.”
- 206 DRIFT** – Water droplets, bubbles, and particulate matter that escape from cooling tower stacks.
- 207 DRIFT RATE** – Percentage (%) of circulating water loss that passes through a high efficiency drift eliminator on a cooling tower.
- 208 ELECTRIC UTILITY STATIONARY GAS TURBINE** – Any stationary gas turbine that is constructed for the purpose of supplying more than one-third 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 turbine.
- 209 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.
- 210 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.
- 211 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.
- 212 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.
- 213 FUEL OIL** – Liquid fuel derived from crude petroleum and broadly classified into distillate oils such as kerosene (used mostly for domestic and small commercial applications) and residual (used in utility and industrial boilers) oils. Fuel oils are classified into six different grades depending upon the physical and chemical properties for each grade of fuel oil.

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- 214 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.
- 215 HIGH EFFICIENCY DRIFT ELIMINATOR (HEDE)** – 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 HEDE is not categorized as an emission control system but is an inherent part of the cooling towers' design requirements.
- 216 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.
- 217 LOW SULFUR OIL** – Fuel oil containing less than or equal to 0.05% by weight of sulfur.
- 218 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.
- 219 NITROGEN OXIDES (NO<sub>x</sub>)** – Oxides of nitrogen calculated as equivalent nitrogen dioxide.
- 220 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.
- 221 PARTICULATE MATTER (PM)** – Any material, except condensed water containing no more than analytical trace amounts of other chemical elements or compounds, that has a nominal aerodynamic diameter smaller than 100 microns (micrometers), and that exists in a finely divided form as a liquid or solid at actual conditions.
- 222 PARTICULATE MATTER EMISSIONS** – Any and all particulate matter emitted to the ambient air as measured by applicable state and federal test methods.

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- 223 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 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 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 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.”
- 227 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.
- 228 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.
- 229 SULFUR OXIDES (SO<sub>x</sub>)** – 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.
- 230 THIRTY DAY (30) ROLLING AVERAGE** – An arithmetic mean or average of all hourly emission rates for 30 successive combustion equipment operating days calculated by a CEMS every hour.
- 231 THREE (3) HOUR ROLLING AVERAGE** – An arithmetic mean or average of the 180 most recent 1-minute average values calculated by a CEMS every minute.
- 232 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-



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mixed sample through a standard glass fiber filter. The filtrate is evaporated to dryness in a weighed dish and dried to constant weight at 180° C and the increase in dish weight represents the total dissolved solids.

**233 UNCOMBINED WATER** – Condensed water containing no more than analytical amounts of other chemical elements or compounds.

**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 subsection 104.2 and 104.3 of this rule. An owner or operator may burn a fuel other than natural gas for non-emergency purposes providing that the fuel shall not cause to be discharged more than 0.007 lbs. per MMBtu heat input of particulate matter demonstrated and documented through performance testing of this alternate fuel. This usage of different fuels other than natural gas shall be approved by the Control Officer prior to usage.

**301.2 GOOD COMBUSTION PRACTICES:** An owner or operator of any stationary gas turbine listed in subsection 102.2, regardless of fuel type, shall use operational practices recommended by the manufacturer and parametric monitoring to ensure good combustion control. In lieu of a manufacturers' recommended procedure to ensure good combustion practices, one of the following procedures may be used:

**a.** Monitor the maximum temperature differential across the combustion burners or at locations around the back end of the turbine, dependent upon the particular unit, to ensure no more than a 100° F difference using a thermocouple. If a valid maximum temperature differential of greater than 100° F is observed across the burners, corrective action shall be taken within three hours to either reduce the output of the units until the temperature difference is 100° F or less or shut down the unit until the problem causing the temperature imbalance is corrected or

**b.** If the manufacturer recommends that the maximum numerical temperature differential to ensure good combustion is a temperature that is different than 100°F, then proof of this maximum alternate temperature shall be submitted to the Control Officer. The procedure to measure the maximum temperature differential listed above in subsection 301.2a shall

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then be followed using the alternate recommended maximum temperature differential after approval by Control Officer.

**301.3 Cooling Towers:** An owner or operator of a cooling tower associated with applicable units listed in Section 102 shall:

**a.** Equip the cooling tower with a high efficiency drift eliminator (HEDE). The HEDE shall be designed with a drift rate of no more than 0.001% and shall not be manufactured out of wood. The maximum allowable Total Dissolved Solids (TDS) concentration of the water used in the tower shall be 20,000 ppm and

**b.** Visually inspect the HEDE for integrity on a monthly basis only if the HEDE can be viewed safely and does not require an owner or operator to walk into the tower. If the HEDE cannot be safely inspected monthly then subsection 301.5 c shall apply:

**c.** Visually inspect the HEDE for integrity at least once per year during the regularly scheduled outage when the cooling tower is not operating if it cannot be inspected on a monthly basis.

**d.** Submit documentation of the physical configuration of the HEDE if the HEDE cannot be inspected monthly to the Control Officer if requested by the Control Officer.

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

**303 LIMITATIONS – SULFUR IN FUEL:**

**303.1** An owner or operator that uses natural gas shall combust natural gas with a maximum total sulfur content of 0.0075 grains per dry standard cubic feet (gr/dscf).

**303.2** An owner or operator of any applicable equipment listed in Section 102 that burns fuel oil as emergency fuel or a combination of fuel oil with any other fuel as emergency fuel shall use only low sulfur oil with one exception. Existing supplies in storage of any fuel oil and/or of any used fuel oil with sulfur content greater than 0.05% by weight may be used by

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the owner or operator until (1.5 years after adoption of rule). This usage shall be reported to the Control Officer, along with the dates of usage.

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

**304.1** 0.20 lb. NO<sub>x</sub> per MMBtu (154-ppmv) heat input, calculated as nitrogen dioxide when burning gaseous fossil fuel. During steady state operations, this test result shall be based upon the arithmetic mean of the results of three test runs. Each test run shall have a minimum sample time of one hour. If a Continuous Emission Monitoring System (CEMS) is used, the test result shall be based upon a 30-day rolling average.

**304.2** 0.30 lb. NO<sub>x</sub> per MMBtu (230 ppmv) calculated as nitrogen dioxide when burning liquid fossil fuel. During steady state operations, this test result shall be based upon the arithmetic mean of the results of three test runs. Each test run shall have a minimum sample time of one hour. If a CEMS is used, the test result shall be based upon a 30-day rolling average.

**305 LIMITATIONS - CARBON MONOXIDE:** No owner or operator of any equipment listed in Section 102 shall cause to be discharged into the atmosphere carbon monoxide (CO) measured in excess of 400 ppmv during steady state compliance source testing. This test result 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. During normal operation (CEMS compliance monitoring, if required) the carbon monoxide shall not exceed 1000 ppmv based upon a 3 hour rolling average. The CO concentration shall be measured dry and corrected to 3% oxygen for electric utility steam generating units and cogeneration steam generating units. The CO concentration shall be measured dry and corrected to 15% oxygen for, stationary gas turbines.

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

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

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

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

a. 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. The 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. An owner or operator that is required to have an O&M Plan pursuant to this rule shall fully 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.

**306.4 Continuous Emission Monitoring Systems (CEMS):**

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

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

**SECTION 400 - ADMINISTRATIVE REQUIREMENTS**

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**401 COMPLIANCE SCHEDULE**

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

**401.2 ECS Modifications:** Any owner or operator required to modify their ECS equipment or system by either reconstructing or adding on new equipment for compliance with this rule shall by (insert 8 months after rule is adopted) file a schedule for the modification with the Control Officer. The plan shall show how the ECS is to be used to achieve full compliance and shall specify dates for completing increments of progress. Any and all ECS(s) used to achieve such compliance shall be in operation by (insert 36 months after date of adoption of rule).

**401.3 CEMS Installation:** An owner or operator required to install or modify a CEMS to satisfy the requirements of this rule shall file a schedule for the installation or modification of the CEMS by (insert 8 months after the rule is adopted) and complete the installation of the CEMS by (insert 36 months after date of adoption of rule).

**SECTION 500 - MONITORING AND RECORDS**

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

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

**501.2 Cooling Towers:** Monthly gravimetric testing reports for TDS and documentation of the physical configuration of the HEDE, if necessary, to prove that the HEDE cannot be inspected monthly.

**501.3 Emergency Fuel Usage:** Type of emergency fuel used, dates and hours of operation using emergency fuel, nature of the emergency or purpose for the use of emergency fuel as stated in subsections 104.2 and 104.3 and monthly totals for twelve-month log of hours of operation in the emergency mode.

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**501.4 CEMS:** All CEMS measurements, results of CEMS performance evaluations, CEMS calibration checks, and adjustments and maintenance performed on these systems.

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

**503 COMPLIANCE DETERMINATION:**

**503.1 Low Sulfur Oil Verification:**

a. An owner or operator shall submit fuel oil 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.

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

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.

**503.2 Verification of Sulfur Content of Natural Gas:** An owner or operator shall submit either natural gas purchase contracts, pipeline transportation contracts, or vendor certification based upon fuel sampling, stating that the sulfur content of the natural gas natural is equal to or less than 0.0075 gr/dscf, if proof of sulfur content of the natural gas is requested by the Control Officer.

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

**504 TEST METHODS ADOPTED BY REFERENCE:** The EPA test methods as they exist in the Code of Federal Regulations (CFR) (July 1, 2001), as listed below, are adopted by reference. These adoptions by reference include no future editions or amendments. Copies of test methods referenced in this Section are available at the Maricopa Environmental Services Department, 1001 N. Central Avenue, Phoenix, AZ 85004-1942. The ASTM methods (1971, 1978, 1990, 1996

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and 1998) and the Standard Methods listed below (1995) are also adopted by reference. When more than one test method as listed in subsections 504.10 through 504.13 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”), 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 Method 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”), 3C (“Determination of Carbon Dioxide, Methane, Nitrogen and Oxygen from Stationary Sources”) (40 CFR 60, Appendix A).
- 504.4** EPA Reference Method 4 (“Determination of Moisture Content in Stack Gases”) (40 CFR 60, Appendix A).
- 504.5** EPA Reference Method 5 (“Determination of Particulate Emissions from Stationary Sources”) (40 CFR 60, Appendix A) and possibly, if requested by the Control Officer, EPA Reference Method 202 (“Determination of Condensable Particulate Emissions from Stationary Sources”) (40 CFR 51, Appendix M).
- 504.6** EPA Reference Method 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”), 7E (“Determination of

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Nitrogen Oxide Emissions from Stationary Sources – Instrumental Analyzer Method”) (40 CFR 60, Appendix A).

- 504.7** EPA Reference Method 9 (“Visual Determination of the Opacity of Emissions from Stationary Sources”) (40 CFR 60, Appendix A).
- 504.8** EPA Reference Method 10 (“Determination of Carbon Monoxide Emissions from Stationary Sources”) (40 CFR 60, Appendix A).
- 504.9** EPA Reference Method 20 (“Determination of Nitrogen Oxides, Sulfur Dioxide and Diluent Emissions from Stationary Gas Turbines”) (40 CFR 60, Appendix A).
- 504.10** American Society of Testing Materials, ASTM Method #D2622-98, (“Standard Test Method for Sulfur in Petroleum Products by Wavelength Disperse X-Ray Fluorescence Spectrometry”), 1998.
- 504.11** American Society of Testing Materials, ASTM Method #D1266-98, (“Standard Test Method for Sulfur in Petroleum Products - Lamp Method”), 1998.
- 504.12** American Society of Testing Materials, ASTM Method #D2880-71, 78, or 96, (“Standard Specification for Gas Turbine Fuel Oils”), 1971, 1978, or 1996.
- 504.13** American Society of Testing Materials, ASTM Method #D4294-90 or 98, (“Standard Test Method for Sulfur in Petroleum Products by Energy-Dispersive X-Ray Fluorescence Spectroscopy”), 1990 or 1998.
- 504.14** Standard Methods for the Examination of Water and Wastewater, (“Dissolved Solids Dried at 180°C, Method #2540C”), American Public Health Association, 19<sup>th</sup> edition, 1995, or ASTM Method 2510B.