DEPARTMENT OF PUBLIC HEALTH AND ENVIRONMENT

Air Quality Control Commission

REGULATION NUMBER 7

Control of Ozone via Ozone Precursors and Control of Hydrocarbons via Oil and Gas Emissions

(Emissions of Volatile Organic Compounds and Nitrogen Oxides)

5 CCR 1001-9

[Editor's Notes follow the text of the rules at the end of this CCR Document.]

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XVI. Control of Emissions from Stationary and Portable ~~Engines and Other~~ Combustion Equipment in the 8-Hour Ozone Control Area

XVI.A Requirements for new and existing engines.

XVI.A.1. The owner or operator of any natural gas-fired stationary or portable reciprocating internal combustion engine with a manufacturer's design rate greater than 500 horsepower commencing operations in the 8-hour Ozone Control Area on or after June 1, 2004 shall employ air pollution control technology to control emissions, as provided in Section XVI.B.

XVI.A.2. Any existing natural gas-fired stationary or portable reciprocating internal combustion engine with a manufacturer's design rate greater than 500 horsepower, which existing engine was operating in the 8-hour Ozone Control Area prior to June 1, 2004, shall employ air pollution control technology on and after May 1, 2005, as provided in Section XVI.B.

XVI.B. Air pollution control technology requirements

XVI.B.1. For rich burn reciprocating internal combustion engines, a non-selective catalyst reduction and an air fuel controller shall be required. A rich burn reciprocating internal combustion engine is one with a normal exhaust oxygen concentration of less than 2% by volume.

XVI.B.2. For lean burn reciprocating internal combustion engines, an oxidation catalyst shall be required. A lean burn reciprocating internal combustion engine is one with a normal exhaust oxygen concentration of 2% by volume, or greater.

XVI.B.3. The emission control equipment required by this Section XVI.B shall be appropriately sized for the engine and shall be operated and maintained according to manufacturer specifications.

XVI.C. The air pollution control technology requirements in Sections XVI.A. and XVI.B. do not apply to:

XVI.C.1. Non-road engines, as defined in Regulation Number 3, Part A, Section I.B.31.

XVI.C.2. Reciprocating internal combustion engines that the Division has determined will be permanently removed from service or replaced by electric units on or before May 1, 2007. The owner or operator of such an engine shall provide notice to the Division of such intent by May 1, 2005 and shall not operate the engine identified for removal or replacement in the 8-hour Ozone Control Area after May 1, 2007.

XVI.C.3. Any emergency power generator exempt from APEN requirements pursuant to Regulation Number 3, Part A.

XVI.C.4. Any lean burn reciprocating internal combustion engine operating in the 8-hour Ozone Control Area prior to June 1, 2004, for which the owner or operator demonstrates to the Division that retrofit technology cannot be installed at a cost of less than $5,000 per ton of VOC emission reduction. Installation costs and the best information available for determining control efficiency shall be considered in determining such costs. In order to qualify for such exemption, the owner or operator must submit an application making such a demonstration, together with all supporting documents, to the Division by May 1, 2005. Any reciprocating internal combustion engine qualifying for this exemption shall not be moved to any other location within the 8-hour Ozone Control Area.

XVI.D. Requirements for major sources of NOx

XVI.D.1. Applicability. Except as provided in Section XVI.D.2., the requirements of this Section XVI.D. apply to owners and operators of any stationary combustion equipment that existed at a major source of NOx as of June 3, 2016 located in the 8-Hour Ozone Control Area.

XVI.D.2. Exemptions. The following stationary combustion equipment are exempt from the emission limitation requirements of Section XVI.D.4., the compliance demonstration requirements in Section XVI.D.5., and the related recordkeeping and reporting requirements of Sections XVI.D.7.a-f. and XVI.D.8, but these sources must maintain any and all records necessary to demonstrate that an exemption applies. These records must be maintained for a minimum of five years and made available to the Division upon request. Qualifying for an exemption in this section does not preclude the combustion process adjustment requirements of Section XVI.D.6., when required by XVI.D.6.a.

Once stationary combustion equipment no longer qualifies for any exemption, the owner or operator must comply with the applicable requirements of this Section XVI.D. as expeditiously as practicable but no later than 36 months after any exemption no longer applies. Additionally, once stationary combustion equipment that is not equipped with CEMS or CERMS no longer qualifies for any exemption, the owner or operator must conduct a performance test using EPA test methods within 180 days and notify the Division of the results and whether emission controls will be required to comply with the emission limitations of Section XVI.D.4.

XVI.D.2.a. Any stationary combustion equipment whose utilization is less than: ~~20% of its capacity factor on an annual average basis over a 3-year rolling period.~~

XVI.D.2.a.(i) 20% of its capacity factor on an annual average basis over a 3-year rolling period for boilers; or

XVI.D.2.a.(ii) 10% of its capacity factor on an annual average basis over a 3-year rolling period for stationary combustion turbines and compression ignition reciprocating internal combustion engines.

XVI.D.2.b. An engine testing operation or process line.

XVI.D.2.c. Any gaseous fuel fired stationary combustion equipment used to control VOC emissions from a commercial or industrial process.

XVI.D.2.d. Any stationary combustion equipment with total uncontrolled actual emissions less than 5 tpy NOx on a calendar year basis.

XVI.D.2.e. Any natural gas-fired reciprocating internal combustion engines subject to a work practice or emission control requirement contained in this Regulation 7, Section XVI.A. or B.

XVI.D.2.f. Any stationary combustion equipment subject to a federally enforceable work practice or emission control requirement contained in this Regulation 7, Section XIX.A.-D or Regulation 3, Part F.

XVI.D.3. Definitions

XVI.D.3.a. "Affected unit" means any stationary combustion equipment that is subject to or becomes subject to an emission limitation in Section XVI.D.4.

XVI.D.3.b. "Boiler" means an enclosed device using controlled flame combustion and having the primary purpose of recovering thermal energy in the form of steam or hot water.

XVI.D.3.c. "Capacity factor" means -the ratio of the amount of fuel burned by an emissions unit in a calendar year to the amount of fuel it could have burned if it had operated at the designed heat input rating for 8,760 hours during the calendar year. Alternatively, for electric generating units, capacity factor can mean the ratio of the unit's actual annual electric output (expressed in MWe/hr) to the electric output the unit could have achieved if it operated at its nameplate capacity (or maximum observed hourly gross load (expressed in MWe/hr) if greater than the nameplate capacity) for 8,760 hours during the calendar year.

XVI.D.3.d. "Continuous emission monitoring system" ("CEMS") or "Continuous emission rate monitoring system" ("CERMS") means the total equipment required to sample, condition (if applicable), analyze, and provide a written record of such emissions and/or emission rates, expressed on a continuous basis in terms of an applicable emission limitation. Such equipment includes, but is not limited to, sample collection and calibration interfaces, pollutant analyzers, a diluent analyzer (oxygen or carbon dioxide), stack gas volumetric flow monitors (if appropriate for CERMS), and data recording and storage devices.

XVI.D.3.d. "Compression ignition reciprocating internal combustion engine (RICE)" means a type of stationary RICE that is liquid fuel-fired and not ignited with a spark plug or other sparking device.

XVI.D.3.e. "Digester gas" means any gaseous byproduct of wastewater treatment typically formed through the anaerobic decomposition of organic waste materials and composed principally of methane and carbon dioxide.

XVI.D.3.f. "Duct burner" means a device that combusts fuel and is placed in the exhaust duct from another source (e.g., stationary combustion turbine, internal combustion engine, or kiln) to allow the firing of additional fuel to heat the exhaust gases before the exhaust gases enter a heat recovery steam generating unit.

XVI.D.3.g. "Gaseous fuel" means natural gas, landfill gas, refinery fuel gas, digester gas, methane, ethane, propane, butane, or any gas stored as a liquid at high pressure such as liquefied petroleum gas.

XVI.D.3.h. "Glass melting furnace" means an emissions unit comprising a refractory vessel in which raw materials are charged, melted at high temperature, refined, and conditioned to produce molten glass.

XVI.D.3.i. "Kiln" means the equipment used to remove combined (chemically bound) water and/or gases from mineral material through direct or indirect heating.

XVI.D.3.j. "Lightweight aggregate" means the expanded, porous product from heating shales, clays, slates, slags, or other natural materials in a kiln.

XVI.D.3.k. "Liquid fuel" means any fuel which is a liquid at standard conditions including but not limited to distillate oils, kerosene and jet fuel. Liquefied gaseous fuels are not liquid fuels.

XVI.D.3.l. "Process heater" means an enclosed device using controlled flame and a primary purpose to transfer heat directly to a process material or to a heat transfer material for use in a process.

XVI.D.3.m. "Reciprocating internal combustion engine" means any reciprocating internal combustion engine which uses reciprocating motion to convert heat energy into mechanical work and which is not used to propel a motor vehicle or a vehicle used solely for competition.

XVI.D.3.n. "Stationary combustion equipment" means an emissions unit that combusts solid, liquid, or gaseous fuel, generally for the purposes of producing electricity, generating steam, or providing useful heat or energy for industrial, commercial, or institutional use. Stationary combustion equipment includes, but is not limited to, boilers, duct burners, engines, glass melting furnaces, kilns, process heaters and stationary combustion turbines.

XVI.D.3.o. "Stationary combustion turbine" means a non-mobile, enclosed fossil or other fuel-fired device that is comprised of a compressor, a combustor and a turbine, and in which the flue gas resulting from the combustion of fuel in the combustor passes through the turbine, rotating the turbine. Stationary combustion turbines can be simple cycle or combined cycle and they may or may not include a duct burner.

XVI.D.4. Emission limitations. By October 1, 2021, no owner or operator of stationary combustion equipment may cause, allow or permit NOx to be emitted in excess of the following emission limitations. When demonstrating compliance using continuous emissions monitoring pursuant to Section XVI.D.5.a.(i), the following emission limitations are on a 30-day rolling average basis.

XVI.D.4.a. Boilers

XVI.D.4.a.(i) For a gaseous fuel-fired boiler with a maximum design heat input capacity equal to or greater than 100 MMBtu/hr, 0.2 lb/MMBtu of heat input or less than 165 parts per million dry volume corrected to 3% oxygen.

XVI.D.4.a.(ii) For a liquid fuel-fired boiler with a maximum design heat input capacity equal to or greater than 100 MMBtu/hr, 0.2 lb/MMBtu of heat input or less than 165 parts per million dry volume corrected to 3% oxygen.

XVI.D.4.a.(iii) Boilers subject to the categorical limits in Section XVI.D.4.a.(i) or (ii) with a maximum design heat input capacity less than 100 MMBtu/hr must comply with the combustion process adjustment requirements contained in Section XVI.D.6. while burning gaseous fuel, liquid fuel, or any combination thereof, when required by Section XVI.D.6.a.

XVI.D.4.b. Stationary combustion turbines

XVI.D.4.b.(i) Stationary combustion turbines with a maximum design heat input capacity equal to or greater than 10 MMBtu/hr and which commenced construction on or before February 18, 2005 must comply with the applicable NOx emission limits in 40 CFR Part 60, Subpart GG (July 1, 2017).

XVI.D.4.b.(ii) Stationary combustion turbines with a maximum design heat input capacity equal to or greater than 10 MMBtu/hr and which commenced construction, modification or reconstruction after February 18, 2005 must comply with the applicable NOx emission limits in 40 CFR Part 60, Subpart KKKK (July 1, 2017).

XVI.D.4.b.(iii) Stationary combustion turbines subject to the categorical limits in Section XVI.D.4.b.(i) or (ii) above and stationary combustion turbines with a maximum design heat input capacity less than 10 MMBtu/hr must comply with the combustion process adjustment requirements contained in Section XVI.D.6. while burning gaseous fuel, liquid fuel, or any combination thereof, when required by Section XVI.D.6.a.

XVI.D.4.c. Lightweight aggregate kilns. For lightweight aggregate kilns with a maximum design heat input capacity equal to or greater than 50 MMBtu/hr, 56.6 pounds of NOx per hour.

XVI.D.4.d. Glass melting furnaces

XVI.D.4.d.(i) For, glass melting furnaces, 1.2 pounds of NOx per ton of glass pulled. However, days in which a glass melting furnace is operated at less than 35% of maximum designed production may be excluded from the 30-day rolling average for purposes of demonstrating compliance with this Section XVI.D.4.d.(i). During each day excluded from the 30-day rolling average, NOx emissions must be measured continuously in accordance with the applicable monitoring requirements of Section XVI.D.5, and the furnace must be operated in accordance with good air pollution control practices.

XVI.D.4.e. Compression ignition RICE

XVI.D.4.e.(i) For a compression ignition RICE with a maximum design power output equal to or greater than 500 horsepower, 9 grams per brake horsepower-hour.

XVI.D.4.e.(ii) Compression ignition RICE subject to the emission limit in Section XVI.D.4.e.(i) above and compression ignition RICE with a maximum design power output less than 500 horsepower must comply with the combustion process adjustment requirements contained in Section XVI.D.6.

XVI.D.5. Compliance demonstration. By October 1, 2021, the owner or operator of an affected unit must determine compliance with the applicable emission limitations contained in Section XVI.D.4. according to the applicable methods contained in this Section XVI.D.5.

XVI.D.5.a. Emissions monitoring requirements for major source RACT limits

XVI.D.5.a.(i) Continuous emission monitoring

XVI.D.5.a.(i)(A) Owners or operators of an affected unit subject to a NOx emission limit in Section XVI.D.4.a.(i)-(ii), c. or d. must install, operate and maintain a NOx CEMS or CERMS to monitor compliance with the applicable emission limit in accordance with this section XVI.D.5.a.(i). Owners or operators of affected units subject to a NOx emission limit in Section XVI.D.4.b. or e. may install, operate and maintain a NOx CEMS or CERMS to monitor compliance with the applicable emission limit in accordance with this Section XVI.D.5.a.(i) in lieu of performance testing pursuant to Section XVI.D.5.a.(ii).

XVI.D.5.a.(i)(A)(1) The owner or operator of an affected unit that is subject to or becomes subject to the monitoring requirements of 40 CFR part 75 and 40 CFR part 75, Appendices A to I, must use those monitoring methods and specifications for monitoring NOx emissions for purposes of this Section XVI.D.5. and for demonstrating compliance with Section XVI.D.4. The missing data substitution procedures and bias adjustment requirements of 40 CFR Part 75 do not apply for purposes of demonstrating compliance with Section XVI.D.4. or this Section XVI.D.5.

XVI.D.5.a.(i)(A)(2) For an affected unit equipped with a NOx CEMS or CERMS for purposes of demonstrating compliance with an applicable subpart of 40 CFR Part 60, the owner or operator must use the definition of operating day, data averaging methodology, and data validation requirements of the applicable subpart of 40 CFR Part 60 for purposes of demonstrating compliance with an applicable 30-day rolling average emission limit in Section XVI.D.4. The owner or operator must calibrate, maintain, and operate the CEMS or CERMS and validate emissions data according to the applicable requirements of 40 CFR Part 60, Section 60.13, the performance specifications in 40 CFR Part 60, Appendix B, and the quality assurance procedures of 40 CFR Part 60, Appendix F.

XVI.D.5.a.(i)(A)(3) For an affected unit that is not equipped with a NOx CEMS or CERMS for purposes of demonstrating compliance with 40 CFR Part 60 or Part 75, the owner or operator must install, operate, and maintain a NOx CEMS or CERMS that measures emissions in terms of the applicable emission limitation and must calibrate, maintain, and operate the CEMS or CERMS and validate emissions data according to the

applicable provisions of 40 CFR Part 60, Section 60.13, the performance specifications in 40 CFR Part 60, Appendix B, and the quality assurance procedures of 40 CFR Part 60, Appendix F. The owner or operator must use the following methodology for purposes of demonstrating compliance with an applicable 30-day rolling average emission limit in Section XVI.D.4.:

XVI.D.5.a.(i)(A)(3)(a) A unit operating day is a calendar day when any fuel is combusted in the affected unit.

XVI.D.5.a.(i)(A)(3)(b) 30-day rolling average emission rates must be calculated as the arithmetic average emissions rates determined by the CEMS or CERMS for all hours the affected unit combusted any fuel from the current unit operating day and the prior 29 unit operating days.

XVI.D.5.a.(i)(A)(4) When an affected unit utilizes a common flue gas stack system with one or more affected units, but no non-affected units, the owner or operator must follow the applicable procedures of 40 CFR Part 75, Appendix F for the determination of all sampling locations and apportionment of emissions to an individual affected unit.

XVI.D.5.a.(ii) Initial and periodic performance testing

XVI.D.5.a.(ii)(A) An owner or operator of a stationary combustion turbine subject to 40 CFR Part 60, Subparts GG or KKKK that has used and continues to use performance testing to demonstrate compliance with either Subpart GG or KKKK, as applicable, may use those performance testing procedures to demonstrate continued compliance with an applicable limitation contained in Section XVI.D.4.b., thereby satisfying the requirements of this section XVI.D.5.a.(ii).

XVI.D.5.a.(ii)(B) Except as otherwise provided for in Section XVI.D.5.a.(ii)(A), the owner or operator of an affected unit subject to a NOx emission limitation contained in Section XVI.D.4.b. or e. that is not equipped with NOx CEMS or CERMS, must conduct an initial performance test and subsequent performance tests every 2 years thereafter, according to the following requirements, as applicable, to determine the affected unit's NOx emission rate for each fuel fired in the affected unit. A performance test is not required for a fuel used only for startup or for a fuel constituting less than 2% of the unit's annual heat input, as determined at the end of each calendar year.

XVI.D.5.a.(ii)(B)(1) Initial performance test must include a determination of the capacity load point of the unit's maximum NOx emissions rate based on one 30 minute test run at each capacity load point for which the unit is operated, other than for startup and shutdown, in the load ranges of 20 to 30%, 45 to 55%, and 70 to 100%.

Subsequent performance tests must be performed within the capacity load range determined to result in the maximum NOx emissions rate.

XVI.D.5.a.(ii)(B)(2) Performance tests must determine compliance with Section XVI.D.4. based on the average of three 60-minute test runs performed at the capacity load determined in XVI.D.5.a.(ii)(B)(1).

XVI.D.5.a.(ii)(C) All performance tests must be conducted in accordance with EPA test methods and a test protocol submitted to the Division for review at least thirty (30) days prior to testing and in accordance with AQCC Common Provisions Regulation Section II.C.

XVI.D.5.a.(iii) For affected units subject to a production-based or output based emission limit contained in Section XVI.D.4. (e.g. lb of NOx/ton of product), the owner or operator must install, operate, and maintain monitoring equipment for measuring and recording the affected unit's production or output, on an hourly basis, in units consistent with the applicable emission limitation.

XVI.D.5.a.(iv) Where measuring fuel use is necessary to calculate an emission rate in the units of the applicable standard, fuel flowmeters must be installed, calibrated, maintained, and operated according to manufacturer's instructions for measuring and recording heat input in terms of the applicable emission limitation. Alternatively, fuel flowmeters that meet the installation, certification, and quality assurance requirements of 40 CFR Part 75, Appendix D are acceptable for demonstrating compliance with this section. The installation of fuel-flowmeters is not required where emissions of NOx in terms of the applicable standard can be calculated in accordance with applicable provisions of EPA Method 19 or where the standard is concentration based (e.g. parts per million dry volume corrected for oxygen).

XVI.D.6. Combustion process adjustment

XVI.D.6.a.

~~XVI.D.1.~~ As of January 1, 2017, this Section XVI.D.6. applies to ~~the following combustion equipment with uncontrolled actual emissions of NOx equal to or greater than five (5) tons per year, and that are located at existing major sources of NOx, as listed in Section XIX.A~~boilers, duct burners, process heaters, stationary combustion turbines, and stationary reciprocating internal combustion engines with uncontrolled actual emissions of NOx equal to or greater than five (5) tons per year that existed at major sources of NOx as of June 3, 2016.

~~XVI.D.1.a. Boiler: an enclosed device using controlled flame combustion and having the primary purpose of recovering thermal energy in the form of steam or hot water.~~

~~XVI.D.1.b. Duct burner: a device that combusts fuel and is placed in the exhaust duct from another source (e.g., stationary combustion turbine, internal combustion engine, or kiln) to allow the firing of additional fuel to heat the exhaust gases before the exhaust gases enter a heat recovery steam generating unit.~~

~~XVI.D.1.c. Process heater: an enclosed device using controlled flame and a primary purpose to transfer heat indirectly to a process material or to a heat transfer material for use in a process.~~

~~XVI.D.1.d. Stationary combustion turbine.~~

~~XVI.D.1.e. Stationary internal combustion engine.~~

XVI.D.~~2~~6.b. Combustion process adjustment

XVI.D.~~2~~6.~~a~~b.(i) When burning the fuel that provides the majority of the heat input since the last combustion process adjustment and when operating at a firing rate typical of normal operation, the owner or operator must conduct the following inspections and adjustments of boilers and process heaters, as applicable:

XVI.D.~~2~~6.~~a~~b.(i)(A) Inspect the burner and combustion controls and clean or replace components as necessary.

XVI.D.~~2~~6.~~a~~b.(i~~i~~)(B) Inspect the flame pattern and adjust the burner or combustion controls as necessary to optimize the flame pattern.

XVI.D.~~2~~6.~~a~~b.(i~~ii~~)(C) Inspect the system controlling the air-to-fuel ratio and ensure that it is correctly calibrated and functioning properly.

XVI.D.~~2~~6.~~a~~b.(i~~v~~)(D) Measure the concentration in the effluent stream of carbon monoxide and nitrogen oxide in ppm, by volume, before and after the adjustments in Sections XVI.D.~~2~~6.b.(i)(A) through (~~iii~~C). Measurements may be taken using a portable analyzer.

XVI.D.~~2~~6.b.(ii) The owner or operator of a duct burner must inspect duct burner elements, baffles, support structures, and liners and clean, repair, or replace components as necessary.

XVI.D.~~2~~6.~~c~~b.(iii) The owner or operator of a stationary combustion turbine must conduct the following inspections and adjustments, as applicable:

XVI.D.~~2~~6.~~c~~b.(ii)(A) Inspect turbine inlet systems and align, repair, or replace components as necessary.

XVI.D.~~2~~6.~~c~~b.(ii)(B) Inspect the combustion chamber components, combustion liners, transition pieces, and fuel nozzle assemblies and clean, repair, or replace components as necessary.

XVI.D.~~2~~6.~~c~~b.(iii)(C) When burning the fuel that provides the majority of the heat input since the last combustion process adjustment and when operating at a firing rate typical of normal operation, confirm proper setting and calibration of the combustion controls.

XVI.D.~~2~~6.~~d~~b.(iv) The owner or operator of a stationary internal combustion engine must conduct the following inspections and adjustments, as applicable:

XVI.D.~~2~~6.~~d~~b.(iv)(A) Change oil and filters as necessary.

XVI.D.~~2~~6.~~d~~b.(~~ii~~iv)(B) Inspect air cleaners, fuel filters, hoses, and belts and clean or replace as necessary.

XVI.D.~~2~~6.~~d~~b.(~~iii~~iv)(C) Inspect spark plugs and replace as necessary.

XVI.D.~~2~~6.~~e~~b.(v) The owner or operator must operate and maintain the boiler, duct burner, process heater, stationary combustion turbine, or stationary internal combustion engine consistent with manufacturer's specifications, if available, or good engineering and maintenance practices.

XVI.D.~~2~~6.~~f~~b.(vi) Frequency

XVI.D.~~2~~6.~~f~~b.(vi)(A) The owner or operator must conduct the initial combustion process adjustment by April 1, 2017. An owner or operator may rely on a combustion process adjustment conducted in accordance with applicable requirements and schedule of a New Source Performance Standard in 40 CFR Part 60 or National Emission Standard for Hazardous Air Pollutants in 40 CFR Part 63 to satisfy the requirement to conduct an initial combustion process adjustment by April 1, 2017.

XVI.D.~~2~~6.~~f~~b.(~~ii~~vi)(B) The owner or operator must conduct subsequent combustion process adjustments at least once every twelve (12) months after the initial combustion adjustment, or on the applicable schedule according to Sections XVI.D.~~4.a.~~6.c.(i) or XVI.D.~~4.b~~6.c.(ii).

~~XVI.D.3. Recordkeeping~~

~~XVI.D.3.a. The owner or operator must create a report once every calendar year identifying the combustion equipment at the subject to Section XVI.D. and including for each combustion equipment:~~

~~XVI.D.3.a.(i) The date of the adjustment;~~

~~XVI.D.3.a.(ii) Whether the combustion process adjustment under Sections XVI.D.2.a. through XVI.D.2.e. was followed, and what procedures were performed;~~

~~XVI.D.3.a.(iii) Whether a combustion process adjustment under XVI.D.4.a. and XVI.D.4.b. was followed, what procedures were performed, and what New Source Performance Standard or National Emission Standard for Hazardous Air Pollutants applied, if any; and~~

~~XVI.D.3.a.(iv) A description of any corrective action taken.~~

~~XVI.D.3.a.(v) If the owner or operator conducts the combustion process adjustment according to the manufacturer recommended procedures and schedule and the manufacturer specifies a combustion process adjustment on an operation time schedule, the hours of operation.~~

~~XVI.D.3.a.(vi) If multiple fuels are used, the type of fuel burned and heat input provided by each fuel.~~

~~XVI.D.3.b. The owner or operator must retain manufacturer recommended procedures, specifications, and maintenance schedule if utilized under Section XVI.D.4.a. for the life of the equipment, and make available to the Division upon request.~~

~~XVI.D.3.c. The owner or operator must retain annual reports for at least 5 years, and make available to the Division upon request.~~

XVI.D.~~4~~6.c. As an alternative to the requirements described in Sections XVI.D.~~2.a. through XVI.D.2.e~~6.b.(i) through XVI.D.6.b.(v)~~. and XVI.D.3.a.~~:

XVI.D.~~4~~6.~~a~~c.(i) The owner or operator may conduct the combustion process adjustment according to the manufacturer recommended procedures and schedule; or

XVI.D.~~4~~6.~~b~~c.(ii) The owner or operator of combustion equipment that is subject to and required to conduct a period tune-up or combustion adjustment by the applicable requirements of a New Source Performance Standard in 40 CFR Part 60 or National Emission Standard for Hazardous Air Pollutants in 40 CFR Part 63 may conduct tune-ups or adjustments according to the schedule and procedures of the applicable requirements of 40 CFR Part 60 or 40 CFR Part 63.

~~XVI.D.4.c. The owner or operator may comply with applicable recordkeeping requirements related to combustion process adjustments conducted according to a New Source Performance Standard in 40 CFR Part 60 or National Emission Standard for Hazardous Air Pollutants in 40 CFR Part 63.~~

XVI.D.7. Recordkeeping. The following records must be kept for a period of five years and made available to the Division upon request:

XVI.D.7.a. The applicable emission limit and calculated heat input weighted emission limit for stationary combustion equipment demonstrating compliance for multiple fuels.

XVI.D.7.b. The 30-day rolling average emission rate calculated on a daily basis for sources using CERMS to comply with Section XVI.D.

XVI.D.7.c. The type and amount of fuel used.

XVI.D.7.d. The stationary combustion equipment's annual capacity factor on a calendar year basis.

XVI.D.7.e. All records generated to comply with the reporting requirements contained in Section XVI.D.8.

XVI.D.7.f. For stationary combustion equipment subject to the combustion process adjustment requirements in Section XVI.D.6., the following recordkeeping requirements apply:

XVI.D.7.f.(i) The owner or operator must create a record once every calendar year identifying the combustion equipment at the source subject to Section XVI.D. and including for each combustion equipment:

XVI.D.7.f.(i)(A) The date of the adjustment;

XVI.D.7.f.(i)(B) Whether the combustion process adjustment under Sections XVI.D.6.b.(i) through XVI.D.6.b.(v) was followed, and what procedures were performed;

XVI.D.7.f.(i)(C) Whether a combustion process adjustment under Sections XVI.D.6.a. and XVI.D.6.b. was followed, what procedures were performed, and what New Source Performance or National Emission Standard for Hazardous Air Pollutants applied, if any; and

XVI.D.7.f.(i)(D) A description of any corrective action taken.

XVI.D.7.f.(i)(E) If the owner or operator conducts the combustion process adjustment according to the manufacturer recommended procedures and schedule and the manufacturer specifies a combustion process adjustment on an operation time schedule, the hours of operation.

XVI.D.7.f.(i)(F) If multiple fuels are used, the type of fuel burned and heat input provided by each fuel.

XVI.D.7.f.(ii) The owner or operator must retain manufacturer recommended procedures, specifications, and maintenance schedule if utilized under Section XVI.D.6.a. for the life of the equipment.

XVI.D.7.f.(iii) As an alternative to the requirements described in Section XVI.D.7.f.(i), the owner or operator may comply with applicable recordkeeping requirements related to combustion process adjustments conducted according to a New Source Performance Standard in 40 CFR Part 60 or National Emission Standard for Hazardous Air Pollutants in 40 CFR Part 63.

XVI.D.7.g. All sources qualifying for an exemption under Section XVI.D.2. must maintain all records necessary to demonstrate that an exemption applies.

XVI.D.8. Reporting

XVI.D.8.a. For affected units demonstrating compliance with Section XVI.D.4. using CEMS or CERMS in accordance with Section XVI.D.5.a.(i)(A), the owner or operator must submit to the Division the following information:

XVI.D.8.a.(i) Quarterly or semi-annual excess emissions reports no later than the 30th day following the end of each semi-annual or quarterly period, as applicable. Excess emissions means emissions that exceed the applicable limitations contained in Section XVI.D.4. Excess emission reports must include the information specified in 40 CFR Part 60, Section 60.7(c) (July 1, 2018).

XVI.D.8.b. For affected units demonstrating compliance with Section XVI.D.4 using performance testing pursuant to Section XVI.D.5.a.(ii)(C), the owner or operator must submit to the Division the following information:

XVI.D.8.b.(i) Performance test reports within 60 days after completion of the performance test program. All performance test reports must determine compliance with the applicable emission limitations set by Section XVI.D.4.

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XIX. Control of Emissions from Specific Major Sources of VOC and/or NOx in the 8-hour Ozone Control Area

~~XIX.A. The following major sources, that emit or have the potential to emit 100 tons per year of VOC or NOx as of January 1, 2017, and are located in the 8-hour Ozone Control Area, were analyzed in Colorado's Moderate Area SIP for the 2008 8-Hour Ozone NAAQS.~~

~~Anheuser-Busch, Fort Collins Brewery (069-0060) and Nutri-Turf (123-0497) (major for VOC and NOx)~~

~~Ball Metal Beverage Container Corporation (059-0010 major for VOC)~~

~~Buckley Air Force Base (005-0028 major for NOx)~~

~~Carestream Health (123-6350 major for NOx)~~

~~Cemex Construction Materials (013-0003 major for VOC and NOx)~~

~~Colorado Interstate Gas, Latigo (005-0055 major for NOx)~~

~~Colorado Interstate Gas, Watkins (001-0036 major for VOC and NOx)~~

~~Colorado State University (069-0011 major for NOx)~~

~~Corden Pharma Colorado (013-0025 major for VOC)~~

~~DCP Midstream, Enterprise (123-0277 major for VOC and NOx)~~

~~DCP Midstream, Greeley (123-0099 major for VOC and NOx)~~

~~DCP Midstream, Kersey/Mewbourn (123-0090 major for VOC and NOx)~~

~~DCP Midstream, Lucerne (123-0107 major for VOC and NOx)~~

~~DCP Midstream, Marla (123-0243 major for VOC and NOx)~~

~~DCP Midstream, Platteville (123-0595 major for VOC and NOx)~~

~~DCP Midstream, Roggen (123-0049 major for VOC and NOx)~~

~~DCP Midstream, Spindle (123-0015 major for VOC and NOx)~~

~~Denver Regional Landfill, Front Range Landfill, Timberline Energy (123-0079 major for NOx)~~

~~Elkay Wood Products (001-1602 major for VOC)~~

~~IBM Corporation (013-0006 major for NOx)~~

~~Kerr-McGee Gathering, Frederick (123-0184 major for VOC and NOx)~~

~~Kerr-McGee Gathering, Hudson (123-0048 major for VOC and NOx)~~

~~Kerr-McGee Gathering, Fort Lupton/Platte Valley/Lancaster (123-0057 major for VOC and NOx)~~

~~Kodak Alaris (123-0003 major for VOC)~~

~~Metal Container Corporation (123-0134 major for VOC)~~

~~MillerCoors Golden Brewery, Rocky Mountain Metal Container (059-0006), MMI/EtOH (059-0828), and Colorado Energy Nations Company, LLC (059-0820) (major for VOC and NOx)~~

~~Owens-Brockway Glass (123-4406 major for NOx)~~

~~Phillips 66 Pipeline, Denver Terminal (001-0015 major for VOC)~~

~~Plains End (059-0864 major for VOC and NOx)~~

~~Public Service, Cherokee (001-0001 major for NOx)~~

~~Public Service, Denver Steam Plant (031-0041 major for NOx)~~

~~Public Service, Fort Lupton (123-0014 major for NOx)~~

~~Public Service, Fort Saint Vrain (123-0023 major for NOx)~~

~~Public Service, Rocky Mountain Energy Center (123-1342 major for NOx)~~

~~Public Service, Valmont (013-0001 major for NOx)~~

~~Public Service, Yosemite (123-0141 major for NOx)~~

~~Public Service, Zuni (031-0007 major for NOx)~~

~~Rocky Mountain Bottle Company (059-0008 major for NOx)~~

~~Sinclair Transportation Company, Denver Terminal (001-0019 major for VOC)~~

~~Spindle Hill Energy (123-5468 major for NOx)~~

~~Suncor Energy, Commerce City Refinery Plants 1, 2, and 3 (001-0003 major for VOC and NOx)~~

~~Thermo Cogeneration, JM Shafer (123-0250 major for NOx)~~

~~Tri-State Generation, Frank Knutson (001-1349 major for NOx)~~

~~TXI Operations (059-0409 major for NOx)~~

~~University of Colorado Boulder (013-0553 major for NOx)~~

~~WGR Asset Holding, Wattenberg (001-0025 major for VOC and NOx)~~

~~XIX.B. Owners or operators of the following major sources must submit a RACT analysis for the facility or specified emission points to the Division no later than December 31, 2017. Approved RACT determinations will be addressed in the relevant source permit or through rule revisions, as appropriate.~~

~~Anheuser-Busch (069-0060) – emission points equal to or greater than 2 tpy VOC or 5 tpy NOx~~

~~Buckley Air Force (005-0028) – engines and engine test cell (pt 102, 103, 104, 105, 101)~~

~~Carestream Health (123-6350) – boilers (pt 004)~~

~~Colorado State University (069-0011) – boilers (pt 003, 005, 007, 013)~~

~~IBM (013-0006) – engines and boilers (pt 088, 090, 001, 011, 095)~~

~~MillerCoors Golden Brewery (059-0006) – emission points with emissions equal to or greater than 2 tpy VOC or 5 tpy NOx~~

~~MMI/EtOH (059-0828) – emission points with emissions equal to or greater than 2 tpy VOC or 5 tpy NOx~~

~~Nutri-Turf (123-0497) – emission points with emissions equal to or greater than 2 tpy VOC or 5 tpy NOx~~

~~Owens-Brockway (123-4406) – emission points with emissions equal to or greater than 5 tpy NOx (pt 001-023, 025)~~

~~Public Service Company, Cherokee (001-0001) – turbines (pt 028, 029)~~

~~Public Service Company, Fort Saint Vrain (123-0023) – turbines (pt 010, 011, 001)~~

~~Rocky Mountain Bottle (059-0008) – glass melt furnaces (pt 001)~~

~~Suncor (001-0003) – boilers (pt 309, 019, 021, 023)~~

~~Tri-State Generation and Transmission, Frank Knutson (001-1349) – turbines (pt 001, 003)~~

~~TXI (059-0409) – shale kiln (pt 001)~~

~~University of Colorado (013-0553) – Power House and East District – boilers (pt 001, 002, 012, 013) and Williams Village – boilers (pt 016, 017)~~

~~XIX.C. Stationary combustion turbines at the following major sources must comply with the applicable NOx emission limits and associated monitoring, recordkeeping, and reporting requirements in either 40 CFR Part 60, Subpart GG (July 1, 2016) or 40 CFR Part 60, Subpart KKKK (July 1, 2016) as expeditiously as practicable, but no later than January 1, 2017:~~

~~XIX.C.1. DCP Midstream, Kersey/Mewbourn (123-0090) – turbines (pt 111, 112, 118).~~

~~XIX.C.2. DCP Midstream, Lucerne (123-0107) – turbines (pt 044, 045).~~

~~XIX.C.3. Kerr-McGee, Fort Lupton/Platte Valley/Lancaster (123-0057) – turbine (pt 052).~~

~~XIX.C.4. Public Service Company, Fort Saint Vrain (123-0023) – turbines (pt 004, 005, 008).~~

~~XIX.C.5. Public Service Company, Rocky Mountain Energy Center (123-1342) – turbines (pt 001, 002).~~

~~XIX.C.6. Spindle Hill (123-5468) – turbines (pt 001, 002).~~

~~XIX.C.7. Thermo Cogeneration, JM Shafer (123-0250) – turbines (pt 001-005).~~

~~XIX.C.8. University of Colorado (013-0553) – Powerhouse turbines (pt 003, 005).~~

~~XIX.C.9. WGR Wattenberg (001-0025) – turbines (pt 021).~~

XIX.~~D~~A. Stationary internal combustion engines at the following major sources must comply with applicable NOx emission limits and associated monitoring, recordkeeping, and reporting requirements in 40 CFR Part 60, Subpart IIII (July 1, 2016), 40 CFR Part 60, Subpart JJJJ (July 1, 2016), and/or 40 CFR Part 63, Subpart ZZZZ (July 1, 2016) as expeditiously as practicable, but no later than January 1, 2017:

XIX.~~D~~A.1. Buckley Air Force (005-0028) – engines (pt 120, 118, 119, 124, 128, 138, 139).

XIX.~~D~~A.2. Colorado State University (069-0011) – engines (pt 018).

XIX.~~D~~A.3. DCP Midstream, Greeley (123-0099) – engine (pt 102).

XIX.~~D~~A.4. DCP Midstream, Kersey/Mewbourn (123-0090) – engine (pt 101).

XIX.~~D~~A.5. DCP Midstream, Spindle (123-0015) – engines (pt 059, 075).

XIX.~~D~~A.6. IBM (013-0006) – engines (pt 092, 094).

XIX.~~D~~A.7. Owens-Brockway (123-4406) – engine (pt 024).

XIX.~~D~~A.8. Plains End (059-0864) – engine (pt 005).

XIX.~~D~~A.9. PSCo Cherokee (001-0001) – engine (pt 031).

XIX.~~D~~A.10. Spindle Hill (123-5468) – engine (pt 005).

XIX.~~D~~A.11. Suncor (001-0003) – engines (pt 150, 151).

XIX.~~D~~A.12. Timberline Energy (123-0079) – engines (pt 010, 011).

XIX.~~E~~B. Elkay Wood Products (001-1602) must comply with applicable requirements in 40 CFR Part 63, Subpart JJ (July 1, 2016) as expeditiously as practicable, but no later than January 1, 2017.

XIX.~~F~~C. Cemex Construction Materials (013-0003) must comply with applicable THC requirements and associated monitoring, recordkeeping, and reporting in 40 CFR Part 63, Subpart LLL (July 1, 2016) as expeditiously as practicable, but no later than January 1, 2017.

XIX.~~G~~D. Denver Regional Landfill and Front Range Landfill (123-0079) (pt 007, 013) must comply with applicable flare requirements in 40 CFR Part 60, Subpart WWW (July 1, 2016) as expeditiously as practicable, but no later than January 1, 2017.

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XX. Statements of Basis, Specific Statutory Authority and Purpose

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XX.P. November 16, 2017 Revisions to Section II., XII., Section XVII., and Section XVIII.

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XX.Q. July 19, 2018 (Sections XVI. and XIX.)

This Statement of Basis, Specific Statutory Authority, and Purpose complies with the requirements of the Colorado Administrative Procedures Act Sections 24-4-103(4), the Colorado Air Pollution Prevention and Control Act, C.R.S. §§ 25-7-110 and 25-7-110.5., and the Air Quality Control Commission's ("Commission") Procedural Rules.

Basis

On May 21, 2012, the Denver Metro/North Front Range ("DMNFR") area was designated as Marginal nonattainment for the 2008 8-hour Ozone National Ambient Air Quality Standard ("NAAQS"), effective July 20, 2012, with an attainment date of July 20, 2015 (77 Fed. Reg. 30088). On May 4, 2016, the U.S. Environmental Protection Agency ("EPA") published a final rule that determined that DMNFR area failed to attain the 2008 8-hour Ozone NAAQS by the applicable Marginal attainment deadline and therefore reclassified the DMNFR area to Moderate, effective June 3, 2016, and required attainment of the NAAQS no later than July 20, 2018, based on 2015-2017 ozone season data.

Due to the reclassification, Colorado must submit revisions to its State Implementation Plan ("SIP") to address the Clean Air Act's ("CAA") Moderate nonattainment area requirements, as set forth in CAA § 182(b) and the final SIP Requirements Rule for the 2008 Ozone NAAQS (*See* 80 Fed. Reg. 12264 (March 6, 2015)). The SIP revision must include Reasonably Available Control Technology ("RACT") requirements for major sources of VOC and/or NOx (i.e. sources that emit or have the potential to emit 100 tons per year ("tpy") or more). The CAA does not define RACT. However, EPA has defined RACT as the "lowest emission limitation that a particular source is capable of meeting by the application of control technology that is reasonably available considering technological and economic feasibility." 44 Fed. Reg. 53762 (Sept. 17, 1979). RACT can be adopted in the form of emissions limitations or work practice standards or other operation and maintenance requirements as appropriate.

Statutory Authority

The Colorado Air Pollution Prevention and Control Act, C.R.S. §§ 25-7-101, et seq., ("Act"), Section 25-7-105(1)(a) directs the Commission to promulgate such rules and regulations necessary for the proper implementation and administration of a comprehensive SIP that will assure attainment and maintenance of national ambient air quality standards. Section 25-7-301 directs the Commission to develop a program providing for the attainment and maintenance of each national ambient air quality standard in each nonattainment area of the state. Section 25-7-106 provides the Commission flexibility in developing an effective air quality program and promulgating such combination of regulations as may be necessary or desirable to carry out that program. Section 25-7-106(1)(c) and (2) also authorize the Commission to promulgate emission control regulations applicable to the entire state, specified areas or zones, or a specified class of pollution, and monitoring and recordkeeping requirements. Section 109(1)(a) authorizes the Commission to promulgate regulations requiring effective and practical air pollution controls for significant sources and categories of sources of air pollutants.

Purpose

The Regional Air Quality Council ("RAQC") and the Colorado Department of Public Health and Environment, Air Pollution Control Division ("Division") conducted a public process to develop the associated SIP and supporting rule revisions.

In response to the reclassification, the Commission revised Regulation Number 7 to satisfy RACT SIP requirements for Moderate nonattainment areas by establishing categorical RACT requirements for major sources of VOC and/or NOx in the DMNFR. Specifically, the Commission adopted RACT requirements in Section XVI.D. for existing boilers, stationary combustion turbines, lightweight aggregate kilns, glass melting furnaces, and compression ignition reciprocating internal combustion engines ("RICE") (collectively referred to as "stationary combustion equipment") located at major sources of NOx in the DMNFR as of June 3, 2016.

The revisions also correct typographical, grammatical, and formatting errors found through the regulation.

The following explanations provide further insight into the Commission's intention for certain revisions and, where appropriate, the technological or scientific rationale for the revision.

Major VOC and NOx source RACT

Colorado has major sources of VOC and/or NOx in the ozone nonattainment area. The following sources were known by the Commission to be major sources of VOC and/or NOx as of June 3, 2016 and were analyzed in Colorado's Moderate Area SIP for the 2008 8-Hour Ozone NAAQS:

Anheuser-Busch, Fort Collins Brewery (069-0060) and Nutri-Turf (123-0497) (major for VOC and NOx)

Ball Metal Beverage Container Corporation (059-0010 major for VOC)

Buckley Air Force Base (005-0028 major for NOx)

Carestream Health (123-6350 major for NOx)

Cemex Construction Materials (013-0003 major for VOC and NOx)

Colorado Interstate Gas, Latigo (005-0055 major for NOx)

Colorado Interstate Gas, Watkins (001-0036 major for VOC and NOx)

Colorado State University (069-0011 major for NOx)

CoorsTek (059-0066 major for VOC)

Corden Pharma Colorado (013-0025 major for VOC)

DCP Midstream, Enterprise (123-0277 major for VOC and NOx)

DCP Midstream, Greeley (123-0099 major for VOC and NOx)

DCP Midstream, Kersey/Mewbourn (123-0090 major for VOC and NOx)

DCP Midstream, Lucerne (123-0107 major for VOC and NOx)

DCP Midstream, Marla (123-0243 major for VOC and NOx)

DCP Midstream, Platteville (123-0595 major for VOC and NOx)

DCP Midstream, Roggen (123-0049 major for VOC and NOx)

DCP Midstream, Spindle (123-0015 major for VOC and NOx)

Denver Regional Landfill, Front Range Landfill, Timberline Energy (123-0079 major for NOx)

Elkay Wood Products (001-1602 major for VOC)

IBM Corporation (013-0006 major for NOx)

Kerr-McGee Gathering, Frederick (123-0184 major for VOC and NOx)

Kerr-McGee Gathering, Hudson (123-0048 major for VOC and NOx)

Kerr-McGee Gathering, Fort Lupton/Platte Valley/Lancaster (123-0057 major for VOC and NOx)

Kodak Alaris (123-0003 major for VOC)

Metal Container Corporation (123-0134 major for VOC)

Metro/Suez Waste Water Cogeneration Facility (001-0097 major for NOx)

MillerCoors Golden Brewery, Rocky Mountain Metal Container (059-0006), MMI/EtOH (059- 0828), and Colorado Energy Nations Company, LLC (059-0820) (major for VOC and NOx)

Owens-Brockway Glass (123-4406 major for NOx)

Phillips 66 Pipeline, Denver Terminal (001-0015 major for VOC)

Plains End (059-0864 major for VOC and NOx)

Public Service Company, Cherokee (001-0001 major for NOx)

Public Service Company, Denver Steam Plant (031-0041 major for NOx)

Public Service Company, Fort Lupton (123-0014 major for NOx)

Public Service Company, Fort Saint Vrain (123-0023 major for NOx)

Public Service Company, Rocky Mountain Energy Center (123-1342 major for NOx)

Public Service Company, Valmont (013-0001 major for NOx)

Public Service Company, Yosemite (123-0141 major for NOx)

Public Service Company, Zuni (031-0007 major for NOx)

Rocky Mountain Bottle Company (059-0008 major for NOx)

Sinclair Transportation Company, Denver Terminal (001-0019 major for VOC)

Spindle Hill Energy (123-5468 major for NOx)

Suncor Energy, Commerce City Refinery Plants 1, 2, and 3 (001-0003 major for VOC and NOx)

Thermo Cogeneration, JM Shafer (123-0250 major for NOx)

Tri-State Generation, Frank Knutson (001-1349 major for NOx)

TRNLWB, LLC (Trinity Construction Materials, Inc.) (059-0409 major for NOx)

University of Colorado Boulder (013-0553 major for NOx)

WGR Asset Holding, Wattenberg (001-0025 major for VOC and NOx)

Many of the major sources listed above are subject to regulatory RACT requirements. Some of the sources or source emissions points are subject to regulatory RACT requirements in Colorado's SIP; other sources or source emissions points are subject to individual RACT requirements established in federally enforceable permits as a minor source RACT requirement of inclusion of an applicable federal New Source Performance Standards ("NSPS") or National Emission Standard for Hazardous Air Pollutants ("NESHAP"). However, as a Moderate nonattainment area, Colorado must include in the SIP, provisions to implement RACT for Colorado's major sources. During the November 17, 2016 rulemaking, the Commission adopted source specific RACT for a number of major sources of VOC and/or NOx (again greater than or equal to 100 tons per year) in the DMNFR. These were originally adopted as Sections XIX.C.-XIX.G. for stationary combustion turbines, stationary internal combustion engines, wood furniture manufacturing, and municipal landfills, respectively, during the November 17, 2016 rulemaking. These sections have changed to Sections XVI.D.4.b. and XIX.A.-D. during this July 19, 2018 rulemaking, where requirements for stationary combustion turbines were removed and consolidated into Section XVI.D.4.b. The original Section XIX.C.-XIX.G. RACT requirements became effective on January 1, 2017. However, during the November 17, 2016 rulemaking, the Commission determined that little, if any, additional controls could be implemented by certain major sources by January 1, 2017. The Commission also determined that not all major sources or major source emission points were subject to existing regulatory RACT requirements in Regulation Number 7 or federally enforceable emission limits in Regulation 3, Part F. Therefore, the Commission opted to adopt RACT for Colorado's existing major sources of NOx on a categorical basis in this July 19, 2018 rulemaking.

Establishing RACT on a categorical basis is a distinctly different process from Colorado's minor source RACT permitting requirement found in Regulation 3, Part B, Section III.D.2. Minor source RACT permitting is specific to new or modified sources (i.e. sources that have already committed to a capital expenditure to construct or modify a process), and the designs of which can more easily accommodate changes prior to construction. Categorical RACT applies much more broadly to source category, including both existing sources/equipment and new/modified sources/equipment. This inclusion of existing equipment significantly impacts costs, as those sources are not already committed to a capital expenditure and any associated shut down to add controls. This ultimately impacts the decision on what controls are determined to be reasonably available, technologically and economically feasible for the source category as a whole. Thus, categorical RACT may in some cases be different from any RACT established for a specific source or piece of equipment under the minor source permitting RACT requirement.

To determine RACT on a categorical basis, the Commission required specific owners or operators to submit a RACT analysis for the facility or specific emission points to the Division by December 31, 2017. In these RACT analyses, sources were required to identify potential options to reduce VOC and/or NOx emissions from the facility or emission point(s), propose RACT for that facility or point(s), propose associated monitoring, propose a schedule for implementation, and include economic and technical information demonstrating why the proposal established RACT for the particular facility or emission point(s). The following major sources were required to submit RACT analyses:

Anheuser-Busch (069-0060) – emission points equal to or greater than 2 tpy VOC or 5 tpy NOx

Buckley Air Force (005-0028) – engines and engine test cell (pt 102, 103, 104, 105, 101)

Carestream Health (123-6350) – boilers (pt 004)

Colorado Energy Nations Company, LLC (059-0820) – boilers (pt 001, 002)

Colorado Interstate Gas, Latigo (005-0055) – engines (001, 011)

Colorado Interstate Gas, Watkins (001-0036) – engines (001, 002)

Colorado State University (069-0011) – boilers (pt 003, 005, 007, 013)

IBM (013-0006) – engines and boilers (pt 088, 090, 001, 011, 095)

Kerr-McGee Gathering, Fort Lupton/Platte Valley/Lancaster (123-0057) – turbine (pt 052) and engines (pt 038 through 044, and 047 through 049)

Metro/Suez Waste Water Cogeneration Facility (001-0097 major for NOx)

MillerCoors Golden Brewery (059-0006) – emission points with emissions equal to or greater than 2 tpy VOC or 5 tpy NOx

MMI/EtOH (059-0828) – emission points with emissions equal to or greater than 2 tpy VOC or 5 tpy NOx

Nutri-Turf (123-0497) – emission points with emissions equal to or greater than 2 tpy VOC or 5 tpy NOx

Owens-Brockway (123-4406) – emission points with emissions equal to or greater than 5 tpy NOx (pt 001-023, 025)

Public Service Company, Cherokee (001-0001) – turbines (pt 028, 029)

Public Service Company, Fort Saint Vrain (123-0023) – turbines (pt 010, 011, 001)

Public Service Company, Denver Steam Plant (031-0041) – boilers (pt 001, 002)

Public Service Company, Zuni (031-0007) – boilers (pt 001, 002, 003)

Public Service Company, Fort Lupton (123-0014) – turbines (pt 001, 002)

Public Service Company, Valmont (013-0001) – turbine (pt 002)

Rocky Mountain Bottle (059-0008) – glass melt furnaces (pt 001)

Suncor (001-0003) – boilers (pt 309, 019, 021, 023)

Tri-State Generation and Transmission, Frank Knutson (001-1349) – turbines (pt 001, 003)

TRNLWB, LLC (Trinity Construction Materials) (059-0409) – shale kiln (pt 001)

University of Colorado (013-0553) – Power House and East District – boilers (pt 001, 002, 012, 013) and Williams Village– boilers (pt 016, 017)

WGR Asset Holding, Wattenberg (001-0025) – boiler (pt 012), turbine and duct burner (pt 021) and engines (pt 004 and 018)

Based on the information provided in these RACT analyses as well as the Division's own in-depth review of rules adopted by Moderate nonattainment areas in other states and EPA guidance such as the

RACT/BACT/LAER Clearinghouse, the Commission adopted RACT requirements in Section XVI.D. for stationary combustion equipment located at existing major sources of NOx in the DMNFR. The requirements of Section XVI.D. only apply to existing stationary combustion equipment located at sources in the DMNFR that were major for NOx as of June 3, 2016 (i.e. the effective date of the DMNFR's reclassification to Moderate nonattainment).

Definitions

The definition for "stationary combustion equipment" refers to individual emission points and not grouped emission points.

Emission limitations and operational requirements

The Commission adopted categorical emission limitations (Section XVI.D.4.), which vary based on fuel type and size of the stationary combustion equipment, where applicable. Affected stationary combustion equipment is required to comply with these exemptions by October 1, 2021. This compliance period is necessary in order to allow affected sources sufficient time to complete any capital expenditures, install any control or monitoring equipment, and/or satisfy any permitting requirements necessary to comply with the applicable emission limitation. The heat input size threshold for determining whether an emission limitation applies refers to the maximum design value of the stationary combustion equipment. De-rated heat input is not the equivalent of maximum design value heat input. Therefore, stationary combustion equipment cannot simply de-rate to fall below the size threshold. For certain categories of stationary combustion equipment, if the equipment's heat input is below the applicability threshold for the emission limitations, then the equipment would still be required to comply with the combustion process adjustment requirements originally adopted by the Commission during the November 17, 2016 rulemaking (now in Section XVI.D.6.) The compliance date for the categorical emission limits (i.e. XVI.D.4 and XVI.D.5) is independent of the compliance date for the combustion process adjustment (i.e. XVI.D.6(b)(vi)(A)).The combustion process adjustment requirements shall apply as RACT to a particular piece of equipment in accordance with the applicability provision, Section XVI.D.6.a., regardless of whether or not that piece of equipment is subject to a categorical emission limit in Section XVI.D.4. As described in Section XVI.D.6.a., the combustion process adjustment requirements only apply to stationary combustion equipment with uncontrolled actual emissions of NOx equal to or greater than 5 tons per year located at major sources of NOx. For stationary combustion turbines, the heat input capacity threshold for the emission limitations takes into account to the heat input capacity of the stationary combustion turbine only and not the heat input capacity of the stationary combustion turbine and any duct burner that may be used.

For glass melting furnaces at major sources of NOx, the Commission adopted a production-based categorical emission limitation (Section XVI.D.4.d.). Emissions from some glass melting furnaces are routed through a common stack, where total emissions from multiple furnaces are monitored on a continuous basis. Where this is the case, the total emissions, as monitored from the common stack, shall be divided by the total glass production from all glass melting furnaces associated with the common stack to demonstrate compliance with the categorical RACT limit.

Exemptions

The Commission determined several exemptions from compliance with the categorical RACT standards to be appropriate for Colorado's source mix. In Section XVI.D.2.a., the Commission adopted a 20% capacity factor exemption for boilers and a 10% capacity factor exemption for stationary combustion turbines and compression ignition reciprocating internal combustion engines. The Commission established the 20% and 10% capacity factor exemptions, in part, as a consolidation of a number of limited-use exemptions that were analyzed and considered by the Division to limit the complexity of the categorical rules and adequately accommodate technical and cost concerns for limited-use equipment. A number of stakeholders requested reasonable exemptions for specific equipment types involving seasonal operation, limited-use, natural gas curtailment, emergency electric generation, provision of replacement capacity during periods of extended primary unit outage for major maintenance, and the lack

of manufacturer emission rate guarantees for low capacity units. The Commission determined that the capacity factor exemptions addressed each of these concerns, and thus that additional individual exemptions were not necessary beyond the capacity factor exemption.

At low capacities, controls are often cost prohibitive or technologically infeasible. The Commission determined that there are multiple facilities with excess steam capacity that have the ability to shift capacity (and therefore emissions) away from older higher emitting boilers that are not currently configured to comply with the categorical standard or monitoring requirements. Many of the older boilers are not equipped with continuous emission monitoring systems ("CEMS") and may require add-on controls to comply with the categorical standard. The shift in capacity to newer, lower emitting boilers which are already equipped with NOx controls and CEMS will result in a net emissions reduction. The 20% capacity factor exemption for boilers provides a secondary compliance option and incentive to facilities that have this ability, and the resulting shift in emissions from high emitting units to low emitting units will result in an overall environmental benefit.

Some stakeholders expressed concerns that a few boilers with low historical use (e.g. heat input below 25%) may need to install controls that cannot meet the RACT standard because manufacturer emission rate guarantees usually apply only when the units operate between 25-100% of the boiler maximum continuous rating ("MCR"). Generally, the boiler burners have a limited range of heat input where the manufacturer can guarantee compliance with a specific emission rate. Emissions from boilers operating at heat inputs below 25% MCR are generally classified as startup/shutdown emissions. Thus, if the Division proposed a RACT standard that a particular low utilization boiler was unable to meet and the Division did not offer an adequate capacity factor exemption, the operator would need to install controls and operate the boiler at higher capacity factors to ensure the installed controls meet manufacturer guaranteed emission rates in order to comply with the RACT standard. The installation of boiler controls coupled with increasing boiler heat input in order to ensure compliance with a categorical RACT standard runs contrary to the original intent of reducing emissions, thus the Commission concludes that it is reasonable to allow exclusion of limited-use boilers from the categorical standard and associated CEMS requirements, particularly regarding boilers with historically low heat inputs that could not rely on the manufacturer emission rate guarantees if the installation of emission controls are needed in order to comply with the categorical standard. Consequently, the Commission determined that a 20% capacity factor averaged over a 3-year period is reasonable for these limited-use boilers.

For stationary combustion turbines and compression ignition RICE, a 10% capacity factor exemption from the proposed categorical emission standards and monitoring requirements is appropriate because combustion turbines and compression ignition RICE are more likely to operate during the summer months. Moreover, for turbines and compression ignition RICE that are used primarily for emergency power generation or peak demand, historic capacity factors are extremely low (0%-5%), and a 10% capacity factor exemption will provide enough operational flexibility to respond to emergency and peak demand events.

Separately, the categorical RACT for glass melting furnaces provides a 35% low usage allowance similar to capacity factor.

The capacity factor is determined based on the rolling 3-year average of the actual heat input for each calendar year divided by maximum allowable heat input. Alternatively, for electric generating units, the proposal allows for capacity factor to be determined based on electric output, which is consistent with the federal Acid Rain Program.

The Commission intended that the exemption for stationary combustion equipment with total uncontrolled actual emissions less than 5 tpy NOx was based on the permitting threshold in Regulation 3. Similarly, this equipment was not exempted from having to undergo a RACT analysis. The owner or operator must use the most recent air pollution emission notice ("APEN") submitted to the Division to determine total uncontrolled actual emissions.

Stationary combustion equipment that meets one of the exemptions contained in Section XVI.D.2. is not required to comply with the emission limitations, the compliance demonstration requirements and the related recordkeeping and reporting requirements contained in Sections XVI.D.4., XVI.D.5., XVI.D.7., and XVI.D.8., except for XVI.D.7.g, which requires a source that qualifies for an exemption under Section XVI.D.2., to maintain records demonstrating an exemption applies. All stationary combustion equipment is subject to some level of recordkeeping and may also be subject to combustion process adjustment requirements.

Once stationary combustion equipment no longer qualifies for any exemption, the owner or operator must comply with the applicable requirements of Section XVI.D. as expeditiously as practicable but no later than 36 months after the equipment is no longer exempt. Therefore, if any stationary combustion equipment has to undertake a capital expenditure, such as installing a CEMS, in order to comply with Section XVI.D., then they have up to a maximum of three years to come into compliance. However, if no such capital expenditure or change in operational practice is required, then the stationary combustion equipment should comply sooner than three years (i.e. as expeditiously as practicable.) Additionally, once stationary combustion equipment no longer qualifies for any exemption, the owner or operator must conduct a performance test using EPA test methods within 180 days and notify the Division of the results and whether emission controls will be required to comply with the emission limitations. This means that a source can fall into and out of having to comply with the emission limitation, monitoring, recordkeeping and reporting requirements of the rule if they satisfy the performance test requirements (i.e. the Division will not follow a “once in/always in” approach with respect to emission control requirements of exemptions.) Similarly, this 180 day period starts once the equipment is no longer exempt.

Monitoring, recordkeeping and reporting requirements

The Commission determined that affected stationary combustion equipment comply with certain monitoring, recordkeeping and reporting requirements by October 1, 2021. In order to provide clarity and regulatory certainty, many of the monitoring requirements adopted by the Commission incorporate by reference existing federal requirements and are consistent with rules in Moderate nonattainment areas in other states establishing RACT for these source categories.

The Commission is requiring CEMS or continuous emissions rate monitoring systems (“CERMS”) for boilers with a maximum design heat input capacity equal to or greater than 100 MMBtu/hr, lightweight aggregate kilns with a maximum heat input design capacity equal to or greater than 50 MMBtu/hr, and glass melting. CERMS may require a stack gas flow rate monitor, where necessary, in order to measure volumetric flow rate and mass emissions. Where stack gas velocity is extremely low, as may be the case for a glass melting furnace, flow can be measured using a Division approved calculation methodology if flow cannot be accurately measured using traditional differential pressure or ultrasonic flow measuring devices. Moreover, where measuring emission rates in terms of emissions per unit of heat input (i.e. lb/MMBtu), EPA Method 19 calculations may be used using the appropriate F factor (i.e. the ratio of combustion gas volumes to heat inputs). Further, it is the Commission’s intent to allow electric utility boilers and stationary combustion turbines subject to the Acid Rain Program to use the quality assurance/quality control and data validation procedures in 40 CFR Part 75 for monitoring emissions to satisfy monitoring, recordkeeping and reporting requirements in this rule. Affected units that are subject to a NOx emission limitation in an NSPS and use CEMS or CERMS to monitor compliance with that limit can use those monitoring, recordkeeping and reporting requirements to demonstrate compliance with this rule.

Similarly, owners or operators of stationary combustion turbines using performance testing to demonstrate compliance with NOx emission limitations of NSPS GG or KKKK may utilize those procedures for demonstrating compliance with the emission limitation in this rule. Where an initial performance test has already been conducted to determine compliance with NSPS GG or KKKK, it is not expected that another initial performance test must be performed for purposes of demonstrating compliance with Section XVI.D. Where an initial performance test has not been previously conducted, it must be completed by October 1, 2021 to demonstrate compliance.

For each initial or periodic test, sources should calculate the backup fuel's heat input for the calendar year prior to the year in which the performance test is required to determine if a test is required for each fuel or only for the primary fuel. Moreover, periodic performance tests must be conducted no more than 24 months apart.

With respect to the fuel flowmeter requirements, the Division reserves the right to audit quality assurance procedures with respect to manufacturer's instructions. The heat input measured and recorded by the fuel flowmeter is to be in the same unit of measurement as the applicable emission limitation.

With respect to the quarterly or semi-annual reporting requirement, the Commission intended to only require that reports be submitted no less than semi-annually, but a source may submit quarterly reports in order to be consistent with existing reporting frequencies established in a permit and/or applicable NSPS or NESHAP.

With respect to the performance test reports, all performance test reports must compare average emissions determined by the performance test with the applicable emission limitation using the same number of significant figures as the emission limitation.

Incorporation by Reference in Sections XIX. and XVI.

Section 24-4-103(12.5) of the Colorado Administrative Procedure Act allows the Commission to incorporate by reference federal regulations. The criteria of §24-4-103(12.5) are met by including specific information, making the regulations available and because repeating the full text of each of the federal regulations incorporated would be unduly cumbersome and inexpedient. However, these regulations are included in the SIP in order to establish RACT, which must be included in the SIP to satisfy CAA Sections 172(c) and 182(b). Therefore, in order to comply with Part D of the CAA, the Commission has incorporated federal regulations in Sections XVI.D.5. and XIX.A. through D. by reference.

Additional Considerations

Colorado must revise its ozone SIP to address the ozone Moderate nonattainment area requirements. The CAA does not expressly address all of the provisions adopted by the Commission. Rather, federal law establishes the 8-hour ozone NAAQS and requires Colorado to develop a SIP adequate to attain the NAAQS. Therefore, the Commission adopted certain revisions to Regulation Number 7 to ensure attainment with the 2008 8-hour ozone NAAQS and satisfy Colorado's Moderate nonattainment area obligations, including those related to RACT. These revisions do not exceed or differ from the federal act due to state flexibility in developing nonattainment area SIPs; however, in accordance with C.R.S. § 25-7-110.5(5)(b), the Commission nonetheless determines:

(I) The revisions to Regulation Number 7 address RACT requirements for major sources of VOC and NOx in Colorado's ozone nonattainment area. Colorado's major sources of VOC and NOx are subject to various and numerous NSPS or NESHAP, Regulation Number 7 RACT requirements, or RACT/beyond RACT analyses. The Commission revised Regulation Number 7 to include regulatory RACT requirements for Colorado's major sources of VOC and NOx in the SIP. Specifically, the Commission adopted RACT requirements in Section XVI.D. for combustion equipment located at major sources of NOx in the DMNFR. MACT DDDDD, MACT JJJJJJ, MACT ZZZZ, MACT YYYY, NSPS Db, NSPS GG, NSPS KKKK, NSPS IIII, NSPS JJJJ, NSPS OOOO, NSPS OOOOa, and the compliance demonstration requirements in 40 CFR Parts 60 and 75 may apply to such stationary combustion equipment. However, the Regulation Number 7 revisions apply on a broader basis to specific existing stationary combustion equipment in the DMNFR.

(II) The federal rules discussed in (I) are primarily technology-based in that they largely prescribe the use of specific technologies in order to comply. EPA has provided some

flexibility in certain NSPS and MACT. Certain stationary combustion equipment with a lower heat input may trigger the combustion process adjustment work practice requirements of this rule.

(III) The CAA establishes the 8-hour ozone NAAQS and requires Colorado to develop SIP revisions that will ensure attainment of the NAAQS. The ozone NAAQS was not determined taking into account concerns unique to Colorado. In addition, Colorado cannot rely exclusively on a federally enforceable permit or federally enforceable NSPS or NESHAP to satisfy Colorado's Moderate nonattainment area RACT obligations. Instead, Colorado must adopt applicable provisions into its SIP directly, as the Commission has done here.

(IV) Colorado will be required to comply with the lower 2015 ozone NAAQS. These current revisions may improve the ability of the regulated community to comply with new requirements needed to attain the lower NAAQS insofar as RACT analyses and efforts conducted to support the revisions adopted by the Commission may prevent or reduce the need to conduct additional RACT analyses for the more stringent NAAQS.

(V) EPA has established a January 1, 2017, deadline for this SIP submission. There is no timing issue that might justify changing the time frame for implementation of federal requirements.

(VI) The revisions to Regulation Number 7, Sections XVI. and XIX. establish categorical RACT for major sources of VOC and/or NOx, and thus are necessary to satisfy RACT SIP requirements for Moderate nonattainment areas and are specific to existing emission points at major sources of VOC and NOx, allowing for continued growth at Colorado's major sources.

(VII) The Revisions to Regulation Number 7, Sections XVI., and XIX. establish reasonable equity for major sources of VOC and/or NOx by providing the same categorical standards for similarly situated and sized sources.

(VIII) If Colorado does not attain the 2008 ozone NAAQS by July 20, 2018 (Colorado has requested a 1-year clean data extension), EPA will likely reclassify Colorado as a serious ozone nonattainment area, which automatically reduces the major source thresholds from 100 tons per year of VOC and NOx to 50 tons per year; thus subjecting more sources to major source requirements. If EPA does not approve Colorado's SIP, EPA may promulgate a Federal Implementation Plan; thus potentially determining RACT for Colorado's sources. Either of these outcomes may subject others to increased costs.

(IX) Where necessary, the revisions to Regulation Number 7 include minimal additional monitoring, recordkeeping, and reporting requirements that correlate, where possible, to similar federal or state requirements.

(X) Demonstrated technology is available to comply with the revisions to Regulation Number 7. The revisions concerning major sources of VOC and/or NOx generally reflect current emission controls and work practices.

(XI) As set forth in the Economic Impact Analysis, the revisions to Regulation Number 7 contribute to the prevention of ozone in a cost-effective manner.

(XII) Although alternative rules could also provide reductions in ozone and help to attain the NAAQS, the Commission determined that the Division's proposal was reasonable and cost-effective. However, a no action alternative would very likely result in an un-approvable SIP and possibly an EPA FIP and/or sanctions.

As part of adopting the revisions to Regulation Number 7, the Commission has taken into consideration each of the factors set forth in C.R.S. § 25-7-109(1)(b).

Colorado must revise Colorado's ozone SIP to address the Moderate nonattainment area requirements. However, to the extent that C.R.S. § 25-7-110.8 requirements apply to this rulemaking, and after considering all the information in the record, the Commission hereby makes the determination that:

(I) These rules are based upon reasonably available, validated, reviewed, and sound scientific methodologies, and the Commission has considered all information submitted by interested parties.

(II) Evidence in the record supports the finding that the rules shall result in a demonstrable reduction of the ozone precursors VOC and NOx.

(III) Evidence in the record supports the finding that the rules shall bring about reductions in risks to human health and the environment that justify the costs to implement and comply with the rules.

(IV) The rules are the most cost-effective to achieve the necessary and desired results, provide the regulated community flexibility, and achieve the necessary reduction in air pollution.

~~(I)~~(V) The rule will maximize the air quality benefits of regulation in the most cost-effective manner.