DEPARTMENT OF PUBLIC HEALTH AND ENVIRONMENT

Air Quality Control Commission

REGULATION NUMBER 23

REGIONAL HAZE LIMITS

5 CCR 1001-27

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

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Pursuant to Colorado Revised Statutes § 24-4-103 (12.5), materials incorporated by reference are available for public inspection during normal business hours, or copies may be obtained at a reasonable cost from the Technical Secretary of the Air Quality Control Commission (the Commission), 4300 Cherry Creek Drive South, Denver, Colorado 80246-1530. The material incorporated by reference is also available through the United States Government Printing Office, online at www.gpo.gov/fdsys. Materials incorporated by reference are those editions in existence as of the date of this regulation as promulgated or revised by the Commission and references do not include later amendments to or editions of the incorporated materials.

Federal Regulations Adopted by Reference

40 CFR Part 60 and Appendices (July 1, 2021)

40 CFR Part 63, Subpart A - National Emission Standards for Hazardous Air Pollutants General Provisions (August 23, 2019), Subpart LLL - National Emission Standards for Hazardous Air Pollutants from the Portland Cement Manufacturing Industry (August 3, 2018), and Subpart UUU - National Emission Standards for Hazardous Air Pollutants for Petroleum Refineries: Catalytic Cracking Units, Catalytic Reforming Units, and Sulfur Recovery Units (November 26, 2018)

40 CFR Part 64 (October 22, 1997)

40 CFR Part 75 including Performance Specifications and Appendices (January 18, 2012)

40 CFR Part 51, Appendix Y (July 6, 2005)

PART A Regional Haze Limits – Best Available Retrofit Technology (BART) and Reasonable Progress (RP)

I. Applicability

The provisions of this regulation apply to existing stationary facilities (BART eligible sources), as defined in Section II.M. of this regulation, as well as to reasonable progress (RP) sources.

The provisions of Section IV. (Regional Haze Determinations) and V. (MRR) of Regulation Number 23 are incorporated into Colorado's Regional Haze State Implementation Plan. All other sections of Regulation Number 23 are State-Only.

II. Definitions

II.A. "Adverse Impact on Visibility" means visibility impairment that interferes with the management, protection, preservation, or enjoyment of the visitor's visual experience of the Federal Class I area. This determination must be made on a case-by-case basis taking into account the geographic extent, intensity, duration, frequency and time of visibility impairments, and how these factors correlate with (1) times of visitor use of the Federal Class I area, and (2) the frequency and timing of natural conditions that reduce visibility. This term does not include effects on integral vistas.

II.B. "Area Classifications" mean

II.B.1. Class I areas (may not be redesignated)

II.B.1.a. National Parks

II.B.1.a.(i) Rocky Mountain

II.B.1.a.(ii) Mesa Verde

II.B.1.b. National Wilderness Areas

II.B.1.b.(i) Black Canyon of the Gunnison

II.B.1.b.(ii) Eagle's Nest

II.B.1.b.(iii) Flattops

II.B.1.b.(iv) Great Sand Dunes

II.B.1.b.(v) La Garita

II.B.1.b.(vi) Maroon Bells – Snowmass

II.B.1.b.(vii) Mount Zirkel

II.B.1.b.(viii) Rawah

II.B.1.b.(ix) Weminuche

II.B.1.b.(x) West Elk

II.B.2. All other areas of Colorado, unless otherwise specified by Act of Congress or the Colorado legislature, or the Commission pursuant to Regulation Number 3, Part D, Section IX. are designated Class II; provided, however that in the following areas as they existed on August 7, 1977 (maps available from the Division), the increase allowed in sulfur dioxide concentrations over the baseline concentration shall be the same as the increase established by Section 163(b) of the Federal Act for Class I areas, except that such allowable increases may not be allowed if a Federal Land Manager should make an adverse impact determination under Regulation Number 3, Part D, Section XIII.C. with which the Division concurs and except that such allowable increases, may be exceeded by compliance with the provisions of Regulation Number 3, Part D, Sections XIII.D., XIII.E., or XIII.F.:

II.B.2.a. National Monuments

II.B.2.a.(i) Florissant Fossil Beds

II.B.2.a.(ii) Colorado

II.B.2.a.(iii) Dinosaur

II.B.2.a.(iv) Great Sand Dunes (those portions not included as National Wilderness Areas in Section II.B.1.b.)

II.B.2.b. Forest Service Primitive Areas

II.B.2.b.(i) Uncompahgre Mountain

II.B.2.b.(ii) Wilson Mountain

II.B.2.c. Lands administered by the Federal Bureau of Land Management in the Gunnison Gorge Recreation Area as of October 27, 1977. All areas designated Class II under this section may be redesignated as provided in Regulation Number 3, Part D, Section IX.

II.B.2.d. National Parks: Black Canyon of the Gunnison (those portions not included as National Wilderness Areas in Section II.B.1.b.)

II.B.3. The following areas may be redesignated only as Class I or II.

II.B.3.a. An area that exceeds ten thousand acres in size and is a national monument, a national primitive area, a national preserve, a national recreational area, a national wild and scenic river, a national wildlife refuge, a national lakeshore; and

II.B.3.b. A national park or national wilderness area established after August 7, 1977, that exceeds ten thousand acres in size.

II.B.4. The Commission recognizes out of state Class I areas that have been listed in the Federal Register (44 Fed. Reg. 69124). Emissions from sources in Colorado must not violate any standard in these areas.

II.C. “Available Technology” means that a technology is licensed and available through commercial sales.

II.D. "Applicable Technology" means a commercially available control option that has been or may soon be deployed on the same or a similar source type or a technology that has been used on a pollutant-bearing gas stream that is the same or similar to the gas stream characteristics of the source.

II.E. "Average Cost Effectiveness" means the total annualized costs of control divided by annual emissions reductions (the difference between baseline annual emissions and the estimate of emissions after controls). For the purposes of calculating average cost effectiveness, baseline annual emissions mean a realistic depiction of anticipated annual emissions for the source. The source or the Division may use state or federally enforceable permit limits or estimate the anticipated annual emissions based upon actual emissions from a representative baseline period.

II.F. "BART Alternative" means an alternative measure to the installation, operation, and maintenance of BART that will achieve greater reasonable progress toward national visibility goals than would have resulted from the installation, operation, and maintenance of BART at BART-eligible sources within industry source categories subject to BART requirements.

II.G. "BART Alternative Program Unit" means any unit subject to a Regional Haze emission limit contained in the Table in Regulation Number 23, Section IV.C.

II.H. "BART-Eligible Source" means an existing stationary facility as defined in Section II.M.

II.I. "BART Unit" means any unit subject to a Regional Haze emission limit contained in the Table in Regulation Number 23, Section IV.A.

II.J. "Best Available Retrofit Technology (BART)" means an emission limitation based on the degree of reduction achievable through the application of the best system of continuous emission reduction for each pollutant that is emitted by an existing stationary facility. The emission limitation must be established, on a case-by-case basis, taking into consideration the technology available, the costs of compliance, the energy and non-air quality environmental impacts of compliance, any pollution control equipment in use or in existence at the source or unit, the remaining useful life of the source or unit, and the degree of improvement in visibility which may reasonably be anticipated to result from the use of such technology.

II.K. "Continuous Emission Monitoring System" or "CEMS" means the equipment required by Regulation Number 23, Section VII., to sample, analyze, measure, and provide (using an automated data acquisition and handling system (DAHS)), a permanent record of SO2 or NOx emissions, other pollutant emissions, diluents, or stack gas volumetric flow rate.

II.L. "Deciview" means a measurement of visibility impairment. A deciview is a haze index derived from calculated light extinction, such that uniform changes in haziness correspond to uniform incremental changes in perception across the entire range of conditions, from pristine to highly impaired. The deciview haze index is calculated based on the following equation (for the purposes of calculating deciview, the atmospheric light extinction coefficient must be calculated from aerosol measurements):

Deciview haze index=10 $\ln_e$ (b_{ext}/10 Mm^{-1}) Where b_{ext}= the atmospheric light extinction coefficient, expressed in inverse megameters (Mm^{-1}).

II.M. "Existing Stationary Facility" means any of the following stationary sources of air pollutants, including any reconstructed source, which was not in operation prior to August 7, 1962, and was in existence on August 7, 1977, and has the potential to emit 250 tons per year or more of any visibility impairing air pollutant. In determining potential to emit, fugitive emissions, to the extent quantifiable, must be counted.

II.M.1. Fossil-fuel fired steam electric plants of more than 250 million British thermal units (BTU) per hour heat input that generate electricity for sale.

II.M.1.a. Boiler capacities shall be aggregated to determine the heat input of a plant.

II.M.1.b. Includes plants that co-generate steam and electricity and combined cycle turbines.

II.M.2. Coal cleaning plants (thermal dryers).

II.M.3. Kraft pulp mills.

II.M.4. Portland cement plants.

II.M.5. Primary zinc smelters.

II.M.6. Iron and steel mill plants.

II.M.7. Primary aluminum ore reduction plants.

II.M.8. Primary copper smelters.

II.M.9. Municipal incinerators capable of charging more than 250 tons of refuse per day.

II.M.10. Hydrofluoric, sulfuric, and nitric acid plants.

II.M.11. Petroleum refineries.

II.M.12. Lime plants.

II.M.13. Phosphate rock processing plants, including all types of phosphate rock processing facilities, including elemental phosphorous plants as well as fertilizer production plants.

II.M.14. Coke oven batteries.

II.M.15. Sulfur recovery plants.

II.M.16. Carbon black plants (furnace process).

II.M.17. Primary lead smelters.

II.M.18. Fuel conversion plants.

II.M.19. Sintering plants.

II.M.20. Secondary metal production facilities, including nonferrous metal facilities included within Standard Industrial Classification code 3341, and secondary ferrous metal facilities in the category ‘‘iron and steel mill plants.’’

II.M.21. Chemical process plants, including those facilities within the 2-digit Standard Industrial Classification 28, including pharmaceutical manufacturing facilities.

II.M.22. Fossil-fuel boilers of more than 250 million BTUs per hour heat input.

II.M.22.a. Individual boilers greater than 250 million BTU/hr, considering federally enforceable operational limits.

II.M.22.b. Includes multi-fuel boilers that burn at least fifty percent fossil fuels.

II.M.23. Petroleum storage and transfer facilities with a capacity exceeding 300,000 barrels.

II.M.23.a. 300,000 barrels refers to total facility-wide tank capacity for tanks put in place after August 7, 1962 and in existence on August 7, 1977.

II.M.23.b. Includes gasoline and other petroleum-derived liquids.

II.M.24. Taconite ore processing facilities.

II.M.25. Glass fiber processing plants.

II.M.26. Charcoal production facilities, including charcoal briquette manufacturing and activated carbon production.

II.N. "Incremental Cost Effectiveness" means the comparison of the costs and emissions performance level of a control option to those of the next most stringent option, as shown in the following formula:

Incremental Cost Effectiveness (dollars per incremental ton removed) = [(Total annualized costs of control option) - (Total annualized costs of next control option)] ÷ [(Next Control option annual emissions) - (control option annual emissions)]

II.O. "In Existence" means that the owner or operator has obtained all necessary preconstruction approvals or permits required by Federal, State, or local air pollution emissions and air quality laws or regulations and either has (1) begun, or caused to begin, a continuous program of physical on-site construction of the facility or (2) entered into binding agreements or contractual obligations, which cannot be cancelled or modified without substantial loss to the owner or operator, to undertake a program of construction of the facility to be completed in a reasonable time.

II.P. "In Operation" means engaged in activity related to the primary design function of the source.

II.Q. "Integral Vista" means a view perceived from within the mandatory Class I Federal area of a specific landmark or panorama located outside the boundary of the mandatory Class I Federal area.

II.R. "Natural Conditions" means naturally occurring phenomena that reduce visibility as measured in terms of light extinction, visual range, contrast, or coloration.

II.S. "Operating Day" means any twenty-four-hour period between midnight and the following midnight during which any fuel is combusted at any time in a BART unit, BART alternative program unit, or reasonable progress unit.

II.T. "Plant" means all emissions units at a stationary source.

II.U. "Reasonable Progress unit" or "RP unit" means any unit subject to a Regional Haze emission limit contained in the Table in Regulation Number 23, Section IV.B.

II.V. "Regional Haze emission limit" means any of the emission limits specified in the tables contained in Regulation Number 23, Section IV.

II.W. "Visibility-Impairing Air Pollutant" includes the following

II.W.1. Sulfur dioxide (SO2).

II.W.2. Nitrogen oxides (NOx).

II.W.3. Particulate matter. (PM10 will be used as the indicator for particulate matter. Emissions of PM10 include the components of PM2.5 as a subset.).

III. Challenge of Division BART Determinations and Enforceable Agreements

III.A. Persons affected or aggrieved by a BART determination may challenge the decision of the Commission pursuant to Article 4 of Title 24, C.R.S.

IV. Regional Haze Determinations

IV.A. BART Determinations

IV.A.1. The provisions of this Section IV.A. of Regulation Number 23 will be incorporated into Colorado's Regional Haze State Implementation Plan.

IV.A.2. The sources listed must not emit or cause to be emitted nitrogen oxides (NOx), sulfur dioxide (SO2), or particulate in excess of the following limits

BART Determinations for Colorado Sources			
Unit	**NOx Emission Limit**	**SO2 Emission Limit**	**Particulate Emission Limit**
CENC Unit 4	0.37 lb/MMBtu (30-day rolling average) or 0.26 lb/MMBtu Combined Average for Units 4 and 5 (30-day rolling average)	1.0 lb/MMBtu (30-day rolling average)	0.07 lb/MMBtu
CENC Unit 5	0.19 lb/MMBtu (30-day rolling average) or 0.26 lb/MMBtu Combined Average for Units 4 and 5 (30-day rolling average)	1.0lb/MMBtu (30-day rolling average)	0.07 lb/MMBtu
Craig Unit 1	*	0.11 lb/MMBtu (30-day rolling average)	0.03 lb/MMBtu
Craig Unit 2	0.08 lb/MMBtu (30-day rolling average)	0.11 lb/MMBtu (30-day rolling average)	0.03 lb/MMBtu

*Refer to Section IV.D. for requirements

BART Determinations for Colorado Sources			
Unit	**NOx Emission Limit**	**SO2 Emission Limit**	**Particulate Emission Limit**
Comanche Unit 1	0.20 lb/MMBtu (30-day rolling average) 0.15 lb/MMBtu (combined annual average for units 1 & 2)	0.12 lb/MMBtu (individual unit 30-day rolling average) 0.10 lb/MMBtu (combined annual average for units 1 & 2)	0.03 lb/MMBtu
Comanche Unit 2	0.20 lb/MMBtu (30-day rolling average) 0.15 lb/MMBtu (combined annual average for units 1 & 2)	0.12 lb/MMBtu (individual unit 30-day rolling average) 0.10 lb/MMBtu (combined annual average for units 1 & 2)	0.03 lb/MMBtu
Hayden Unit 1	0.08lb/MMBtu (30-day rolling average)	0.13 lb/MMBtu (30-day rolling average)	0.03 lb/MMBtu
Hayden Unit 2	0.07 lb/MMBtu (30-day rolling average)	0.13 lb/MMBtu (30-day rolling average)	0.03 lb/MMBtu
Martin Drake Unit 5	0.31 lb/MMBtu (30-day rolling average)	0.26 lb/MMBtu (30-day rolling average)	0.03 lb/MMBtu
Martin Drake Unit 6	0.31lb/MMBtu (30-day rolling average)	0.13lb/MMBtu (30-day rolling average)	0.03 lb/MMBtu
Martin Drake Unit 7	0.29 lb/MMBtu (30-day rolling average)	0.13lb/MMBtu (30-day rolling average)	0.03 lb/MMBtu
CEMEX –Lyons Kiln	255.3 lbs/hr (30-day rolling average) 901.0 tons/year (12-month rolling average)	25.3 lbs/hr (12-month rolling average) 95.0 tons/yr (12-month rolling average)	0.275 lb/ton of dry feed 20% opacity
CEMEX – Lyons Dryer	13.9 tons/yr	36.7 tons/yr	22.8 tons/yr 10% opacity

IV.A.3. Each source listed in the tables must comply with the limits and averaging times as expeditiously as practicable, but in no event later than five years after EPA approval of Colorado's state implementation plan for regional haze, which was January 30, 2013, with the exception of Craig Unit 1, or relevant component thereof. Each source listed in the tables must maintain control equipment or operational practices required to comply with the limits and averaging times, and establish procedures to ensure that such equipment or operational practices are properly operated and maintained.

IV.B. Reasonable Progress Determinations

IV.B.1. The provisions of this Section IV.B of Regulation Number 23 will be incorporated into Colorado's Regional Haze State Implementation Plan.

IV.B.2. The sources listed must not emit or cause to be emitted nitrogen oxides (NOx), sulfur dioxide (SO2), or particulate in excess of the following limits

RP Determinations for Colorado Sources			
Emission Unit	**NOx Emission Limit**	**SO2 Emission Limit**	**Particulate Emission Limit**
Rawhide Unit 101	0.145 lb/MMBtu (30-day rolling average)	0.11 lb/MMBtu (30-day rolling average)	0.03 lb/MMBtu
CENC Unit 3	246 tons per year (12-month rolling total)	1.2 lb/MMBtu	0.07 lb/MMBtu
Nixon	0.21 lb/MMBtu (30-day rolling average)	0.11 lb/MMBtu (30-day rolling average)	0.03 lb/MMBtu
Clark Units 1 & 2 Shutdown 12/31/2013	Shutdown 12/31/2013	Shutdown 12/31/2013	Shutdown 12/31/2013
Holcim - Florence Kiln	2.73 lbs/ton clinker (30-day rolling average) 2,086.8 tons/year	1.30 lbs/ton clinker (30-day rolling average) 721.4 tons/year	246.3 tons/year
Nucla	0.5 lb/MMBtu (30-day rolling average)*	0.4 lb/MMBtu (30-day rolling average)	0.03 lb/MMBtu

*Refer to Section IV.E. for requirements

RP Determinations for Colorado Sources			
Emission Unit	**NOx Emission Limit**	**SO2 Emission Limit**	**Particulate Emission Limit**
Craig Unit 3	0.28 lb/MMBtu (30-day rolling average)	0.15 lb/MMBtu (30-day rolling average)	0.013 lb/MMBtu filterable PM 0.012 lb/MMBtu filterable PM10
Cameo Shutdown 12/31/2011	Shutdown 12/31/2011	Shutdown 12/31/2011	Shutdown 12/31/2011

IV.B.3. Each source listed in the table must comply with the limits and averaging times as expeditiously as practicable, but in no event later than December 31, 2017, except for Nucla. Each source listed in the table must maintain control equipment or operational practices required to comply with the limits and averaging times, and establish procedures to ensure that such equipment or operational practices are properly operated and maintained.

IV.C. Public Service Company of Colorado (PSCo) BART Alternative Program

IV.C.1. The provisions of this Section IV.C. of Regulation Number 23 (with the exception of the SO2 cap of Section IV.C.4.) will be incorporated into Colorado's Regional Haze State Implementation Plan.

IV.C.2. The sources listed must not emit or cause to be emitted nitrogen oxides (NOx), sulfur dioxide (SO2), or particulate in excess of the following limits, after the following compliance dates

BART Alternative Program Determinations for PSCo Sources			
Emission Unit	**NOx Emission Limit**	**SO2 Emission Limit**	**Particulate Emission Limit**
Cherokee * Unit 1 Shutdown No later than 7/1/2012	0 Shutdown No later than 7/1/2012	0 Shutdown No later than 7/1/2012	0 Shutdown No later than 7/1/2012
Cherokee Unit 2 Shutdown 12/31/2011	0 Shutdown 12/31/2011	0 Shutdown 12/31/2011	0 Shutdown 12/31/2011
Cherokee Unit 3 Shutdown No later than 12/31/2016	0 Shutdown No later than 12/31/2016	0 Shutdown No later than 12/31/2016	0 Shutdown No later than 12/31/2016
Cherokee Unit 4	0.12 lb/MMBTU (30-day rolling average) by 12/31/2017 Natural Gas Operation 12/31/2017	7.81 tpy (rolling 12-month average) Natural Gas Operation 12/31/2017	0.03 lbs/MMBtu Natural Gas Operation 12/31/2017
Valmont Unit 5 Shutdown 12/31/2017 (closed April 2017)	0 Shutdown 12/31/2017	0 Shutdown 12/31/2017	0 Shutdown 12/31/2017
Pawnee	0.07 lb/MMBTU (30-day rolling average) by 12/31/2014	0.12 lbs/MMBtu (30-day rolling average) by 12/31/2014	0.03 lbs/MMBtu
Arapahoe** Unit 3 Shutdown 12/31/2013	0 Shutdown 12/31/2013	0 Shutdown 12/31/2013	0 Shutdown 12/31/2013
Arapahoe Unit 4	600 tpy (rolling 12-month average) Natural Gas Operation 12/31/2014	1.28 tpy (rolling 12-month average) Natural Gas operation 12/31/2014	0.03 lbs/MMBtu Natural Gas Operation 12/31/2014

* 500 tpy NOx will be reserved from Cherokee Station for netting or offsets

** 300 tpy NOx will be reserved from Arapahoe Station for netting or offsets for additional natural gas generation

IV.C.3. Each source listed in the table must either shut down or comply with the limits and averaging times no later than the compliance date set forth in the table. Each source listed in the table must maintain any applicable control equipment required to comply with the limits and averaging times, and establish procedures to ensure that such equipment is properly operated and maintained.

IV.C.4. In addition to the listed emission limits and compliance dates, between January 1, 2013, and December 31, 2015, Cherokee Units 3 and 4 and Valmont, considered as a whole, must not emit in excess of 4,200 tons of SO2 per year as determined on a calendar year annual basis. Between January 1, 2016, and December 31, 2017, Cherokee Unit 4 and Valmont considered as a whole, must not emit in excess of 3,450 tons of SO2 per year as determined on a calendar year annual basis.

IV.D. Craig Unit 1 Additional Compliance Requirements

IV.D.1. Craig Unit 1 will close on or before December 31, 2025.

IV.D.2. Craig Unit 1 will meet a NOx emission limit of 0.28 lb/MMBtu 30-day rolling average going forward from January 1, 2017 (first compliance date January 31, 2017), until closure.

IV.D.3. Craig Unit 1 will meet an annual NOx limit of 4,065 tons per year by December 31, 2019, on a calendar year basis beginning in 2020.

IV.E. Nucla Compliance Requirements

IV.E.1. Nucla Station will close on or before December 31, 2022. Nucla Station closed in September 2019.

IV.F. Regional Haze Second Implementation Period, Reasonable Progress Determinations

IV.F.1. The following sources will close no later than the associated date. The sources must comply with the applicable emission limits in Section IV. and monitoring, recordkeeping, and reporting requirements in Section V. until the closure date.

IV.F.1.a. Cherokee Unit 4 will close no later than December 31, 2028.

IV.F.1.b. ColoWyo Coal Mine will cease coal production no later than December 31, 2031.

IV.F.1.c. Comanche Unit 1 will close no later than December 31, 2022.

IV.F.1.d. Comanche Unit 2 will close no later than December 31, 2025.

IV.F.1.d.(i) Comanche Unit 2 will comply with the following SO2 and NOx emission rates beginning when Comanche Unit 1 closes and until Comanche Unit 2 closes.

NOx Emission Limit	**SO2 Emission Limit**
0.20 lb/MMBtu (30-day rolling average) 3,050 tpy (12-month rolling average)	0.12 lb/MMBtu (30-day rolling average) 1,830 tpy (12-month rolling average)

IV.F.1.e. Craig Unit 2 will close no later than September 30, 2028.

IV.F.1.f. Craig Unit 3 will close no later than December 31, 2029.

IV.F.1.g. Martin Drake Units 6 and 7 will close no later than December 31, 2022.

IV.F.1.g.(i) 375 tpy NOx, 10 tpy SO2, and 29 tpy of PM/PM10 will be reserved for Drake Units 6 and 7 for netting or offsets. PM/PM10 includes condensable and filterable fractions from this coal-fired unit. Offsets are subject to requirements in Regulation Number 3, Part A, Section V.

IV.F.1.h. Nixon Unit 1 will close no later than December 31, 2029.

IV.F.1.h.(i) 375 tpy NOx, 10 tpy SO2, and 29 tpy of PM/PM10 will be reserved for Nixon Unit 1 for netting or offsets. PM/PM10 includes condensable and filterable fractions from this coal-fired unit. Offsets are subject to requirements in Regulation Number 3, Part A, Section V.

IV.F.1.i. Rawhide Unit 1 will close no later than December 31, 2029.

IV.F.1.i.(i) 200 tpy NOx, 50 tpy SO2, and 50 tpy of PM/PM10 will be reserved for Rawhide Unit 1 for netting or offsets. PM/PM10 includes condensable and filterable fractions from this coal-fired unit. Offsets are subject to requirements in Regulation Number 3, Part A, Section V.

IV.F.2. Emission reductions reserved for netting or offsets provide for reasonable progress toward national visibility goals.

IV.F.3. The following sources are anticipated to remain in operation during the second implementation period. The sources must comply with the applicable emission limits in Section IV. and monitoring, recordkeeping, and reporting requirements in Section V. for the second planning period.

RP Determinations for Colorado Sources**			
Emission Unit	**NOx Emission Limit**	**SO2 Emission Limit**	**Particulate Emission Limit**
Nixon Coal Handling	N/A+	N/A+	1.46 tons PM10 per year, unloading, transfer, conveying, processing, and crushing (12-month rolling total) Cessation of coal unloading and crushing no later than 12/31/2029
Nixon - Front Range Power Plant Turbine 1 & Turbine 2	111 ppmvd @ 15% O_2 (4-hour rolling average)	N/A*	N/A*
Nixon - Clear Spring Ranch Solids Handling and Disposal Facility (SDHF)	N/A*	186.4 lb/hr (12-month rolling calculation) 52.20 tpy (12-month rolling total) 5,000 ppmv H_2S in digester gas	N/A*
Comanche Unit 3	0.08 lb/MMBtu (30-day rolling average) 0.07 lb/MMBtu (annual average)	0.10 lb/MMBtu (30-day rolling average)	0.02 lb/MMBtu 0.012 lb/MMBtu (24-hour average)
Hayden[1] Unit 1	0.07 lb/MMBtu (30-day rolling average)	0.13 lb/MMBtu (30-day rolling average)	0.03 lb/MMBtu
Hayden[2] Unit 2	0.07 lb/MMBtu (30-day rolling average)	0.13 lb/MMBtu (30-day rolling average)	0.03 lb/MMBtu
Hayden Coal Ash Handling & Disposal and Unpaved Roads	N/A+	N/A+	22.39 tons/yr from coal ash, sorbent loading, unloading only (12-month rolling total)
Cherokee Turbine 5	Applicable limits in 40 CFR 60.4300 Table 1 (NSPS KKKK)	NA*	0.1 lb/MMBtu
Cherokee Turbine 6	Applicable limits in 40 CFR 60.4300 Table 1 (NSPS KKKK)	NA*	0.1 lb/MMBtu

[1] Refer to Section IV.F.6 for applicable means of compliance if the PUC approves the PSCo ERP.
[2] Refer to Section IV.F.6 for applicable means of compliance if the PUC approves the PSCo ERP.

RP Determinations for Colorado Sources**			
Emission Unit	**NOx Emission Limit**	**SO2 Emission Limit**	**Particulate Emission Limit**
Pawnee[3] Unit 1	0.07 lb/MMBtu (30-day rolling average)	0.11 lb/MMBtu (30-day rolling average)	0.03 lb/MMBtu
Pawnee Cooling Tower	N/A+	N/A+	36.5 tons per year (12-month rolling total)
Manchief Turbine 1	15 ppmvd @ 15% O_2 (1-hr average) 100 ppmvd @ 15% O_2 and 186 lb/hr during startup (1-hr average) 100 ppmvd @ 15% O_2 and 140 lb/hr during shutdown (1-hr average) 25 ppmvd @ 15% O_2 low load operation between March 1 and October 31 (1-hr average)	N/A*	N/A*
Manchief Turbine 2	15 ppmvd @ 15% O_2 (1-hr average) 100 ppmvd @ 15% O_2 and 186 lb/hr during startup (1-hr average) 100 ppmvd @ 15% O_2 and 140 lb/hr during shutdown (1-hr average) 25 ppmvd @ 15% O_2 low load operation between March 1 and October 31 (1-hr average)	N/A*	N/A*
CEMEX Lyons Kiln	1.85 lb/ton of clinker (30-day rolling average) 901.0 tpy (12-month rolling total)	25.3 lb/hr (12-month rolling average) 95.0 tpy (12-month rolling total)	N/A *
CEMEX Dowe Flats & Lyons Quarries	N/A+	N/A+	58.4 tpy (Dowe Flats Quarry, 12-month rolling total) Current permitted limit for Lyons Quarry below 10 TPY screening threshold
CEMEX Raw Materials Grinding	N/A+	N/A+	Reporting based on the following factors: S010 (Raw Mill) – 0.012 lb/ton of clinker S011 (Raw Mill Air Separator) – 0.032 lb/ton of clinker S012 (Raw Mill Weigh Feeders) – 0.019 lb/ton of

[3] Refer to Section IV.F.7 for applicable means of compliance if the PUC approves the PSCo ERP.

RP Determinations for Colorado Sources**			
Emission Unit	**NOx Emission Limit**	**SO2 Emission Limit**	**Particulate Emission Limit**
			clinker S013 (Iron/Silica Feed Belt) – 0.0031 lb/ton of clinker
Holcim Florence Kiln	2.73 lb/ton of clinker (30-day rolling average) 2,086.8 tpy (12-month rolling total)	1.3 lb/ton of clinker (30-day rolling average) 721.4 tpy (12-month rolling total)	247.6 tpy (12-month rolling total)
Holcim Florence Quarry	N/A *	N/A *	67.3 tpy (12-month rolling total)
Holcim Florence Finish Mill	N/A+	N/A+	34.3 tpy (12-month rolling total)
GCC Pueblo Kiln	2.70 lb/ton of clinker (30-day rolling average) 2.32 lb/ton of clinker (12-month rolling average) 1,100.0 tpy (12-month rolling total)	N/A *	36.01 tpy (Filterable, 12-month rolling total) 293.56 tpy (Condensable, 12-month rolling total)
GCC Pueblo Clinker Cooler	N/A+	N/A+	33.92 tpy (12-month rolling total)
Boiler Support Facility (Formerly CENC) Boiler 1 (operating on gaseous fuel)	0.20 lb/MMBtu 625.4 tpy (Combined 12-month rolling total for Boilers 1, 2, 4, and 5)	N/A*	N/A *
Boiler Support Facility (Formerly CENC) Boiler 2 (operating on gaseous fuel)	0.20 lb/MMBtu 625.4 tpy (Combined 12-month rolling total for Boilers 1, 2, 4, and 5)	N/A*	N/A *
Boiler Support Facility (Formerly CENC) Boiler 4 (operating on gaseous fuel 7/2/2013)	0.12 lb/MMBtu (30-day rolling average) 242.9 tpy (12-month rolling total, Boiler 4 only) 625.4 tpy (Combined 12-month rolling total for Boilers 1, 2, 4, and 5)	N/A *	N/A *
Boiler Support Facility (Formerly CENC) Boiler 5 (operating on gaseous fuel 4/18/2016)	0.10 lb/MMBtu (30-day rolling average) 256.3 tpy (12-month rolling total, Boiler 5 only) 625.4 tpy (Combined 12-month rolling	N/A *	N/A *

RP Determinations for Colorado Sources**			
Emission Unit	**NOx Emission Limit**	**SO2 Emission Limit**	**Particulate Emission Limit**
	total for Boilers 1, 2, 4, and 5)		
EVRAZ Electric Arc Furnace (EAF)	0.28 lb/ton of steel (30-day rolling average) 189.0 tpy (12-month rolling total)	0.15 lb/ton of steel (30-day rolling average) 101.25 tpy (12-month rolling total)	0.0018 grains/dscf (filterable) 0.0052 grains/dscf (filterable+condensable) 163.11 tpy (12-month rolling total)
EVRAZ Ladle Metallurgy Station (LMS)	84.1 tpy (12-month rolling total)	2 ton/day (3-hour rolling average) 234.3 tpy (12-month rolling total)	N/A *
EVRAZ Round Caster	35.6 tpy (12-month rolling total)	N/A*	19.10 tpy (12-month rolling total)
EVRAZ Seamless Mill Rotary Furnace	169.26 tpy (12-month rolling total)	N/A *	N/A *
EVRAZ Seamless Mill Quench Furnace	Reporting based on 280 lbs/MMscf AP-42 emission factor	N/A *	N/A *
EVRAZ Seamless Mill Tempering Furnace	Reporting based on 280 lbs/MMscf AP-42 emission factor	N/A *	N/A *
EVRAZ Rod/Bar Mill Furnace	0.07 lb/MMBtu 30.28 tpy (12-month rolling total)	N/A *	N/A *
EVRAZ Rail Mill Furnace	0.07 lb/MMBtu (30-day rolling average) 32.34 tpy (12-month rolling total)	N/A *	N/A *
EVRAZ Haul Roads	N/A+	N/A+	Compliance with Fugitive Dust Control Plan
EVRAZ Vacuum Tank Degasser Boiler	16.21 tpy (12-month rolling total)	N/A*	N/A *
EVRAZ Ladle Preheaters	23.91 tpy (12-month rolling total, combined for 6 preheaters)	N/A *	N/A *
Rocky Mountain Bottle Company Furnaces B+ and C (common stack)	157.8 tpy (12-month rolling total)	114.8 tpy (12-month rolling total)	0.27 lb/ton of glass (Performance testing every 5 years) 38.7 tpy (Filterable + Condensable, 12-month rolling total)
Suncor Plant 1 Fluidized Catalytic Cracking Unit Catalyst Regenerator (FCCU)	58.7 ppmvd @ 0% O2 (365-day rolling average)	25 ppmvd @ 0% O2 (365-day rolling average)	85.4 tpy (12-month rolling total)

RP Determinations for Colorado Sources**			
Emission Unit	**NOx Emission Limit**	**SO2 Emission Limit**	**Particulate Emission Limit**
Suncor Plant 2 Fluidized Catalytic Cracking Unit Catalyst Regenerator (FCCU)	160 ppmvd @ 0% O2 (7-day rolling average) 80 ppmvd @ 0% O2 (365-day rolling average)	37.2 ppmvd @ 0% O2 (365-day rolling average)	53.1 tpy (12-month rolling total)
Suncor Plant 1 Sulfur Recovery Unit Tail Gas Unit (SRC TGU)	N/A*	59.7 tons/year (12-month rolling total)	N/A*
Suncor Plant 2 Sulfur Recovery Unit Tail Gas Incinerator (SRC TGI)	N/A*	1.20% volume SO2 (12-hour rolling average) 271 tons/year (12-month rolling total) 120 tons/year (12-month rolling total) Optimization no later than 12/31/2023 and compliance with 12-month rolling total 12 months after optimization is complete and no later than 12/31/2024. Application for permit modification and limits based on operating data no later than 18 months after optimization project implementation or Comply with alternative in Section IV.F.7.c. and Section V.A.1.d.(ii)(C).	N/A*
Suncor Plant 1 Main Plant Flare		162 ppmv H2S (3-hour rolling average)	N/A*
Suncor Heater H-11	12.78 tpy (12-month rolling total)	N/A*	N/A*
Suncor Heater H-17	24.83 tpy (12-month rolling total)	N/A*	N/A*
Suncor Heater H-27	32.84 tpy (12-month rolling total)	N/A*	N/A*
Suncor Heaters H-28/29/30	20.40 tpy (12-month rolling total)	N/A*	N/A*
Suncor Heater H-37	10.41 tpy (12-month rolling total)	N/A*	N/A*
Suncor Heater H-101	55.85 tpy (12-month rolling total)	N/A*	N/A*
Suncor Heater H-402	21.16 tpy (12-month rolling total)	N/A*	N/A*
Suncor Heater H-2101	52.19 tpy (365-day rolling total)	N/A*	N/A*
Suncor Boiler 4	0.06 lb/MMBtu (30-day rolling average)	N/A*	N/A*

RP Determinations for Colorado Sources**			
Emission Unit	**NOx Emission Limit**	**SO2 Emission Limit**	**Particulate Emission Limit**
Suncor Boiler 505	0.044 lb/MMBtu (30-day rolling average)	N/A*	N/A*

**Referenced Federal Regulations are listed in the "Federal Regulations Adopted by Reference" section at the beginning of Regulation Number 23.

*Emissions did not meet the screening threshold established by the Regional Haze program. Thus, this point was not subject to four-factor analysis for Colorado's Round 2 regional haze SIP planning period.

+This pollutant is not emitted.

IV.F.4. Each source listed in the table must comply with the limits and averaging times, record keeping, and reporting requirements in addition to its applicable permit requirements as expeditiously as practicable, but in no event later than five years after EPA approval of Colorado's Round 2 SIP for regional haze. Sources must maintain control equipment or operational practices required to comply with the limits and averaging times, record keeping, and reporting requirements, and establish procedures to ensure that such equipment or operational practices are properly operated and maintained.

IV.F.5. Hayden Units 1 and 2 must comply with the applicable emission limits in Section IV. and monitoring, recordkeeping, and reporting requirements in Section V. if the PUC does not approve the ERP/CEP or until the approved closure date. Contingent upon PUC approval of the proposed PSCo Electric Resource Plan and Clean Energy Plan in 2022 and specific approval of the proposed closure dates in PUC Docket No. 21A-0141E, Hayden Unit 1 will close no later than December 31, 2028 and Hayden Unit 2 will close no later than December 31, 2027. If closure is approved by the PUC, 28 tpy of SO_2, 22 tpy of PM_{10}, and 135 tpy of NO_X will be reserved for netting or offsets. Offsets are subject to requirements in Regulation Number 3, Part A, Section V.

IV.F.6. Pawnee Unit 1 must comply with the applicable emission limits in Section IV. and monitoring, recordkeeping, and reporting requirements in Section V. if the PUC does not approve the ERP/CEP or until the approved closure date. Contingent upon PUC approval of the proposed PSCo Electric Resource Plan and Clean Energy Plan in 2022 and specific approval of the proposed date in PUC Docket No. 21A-0141E, Pawnee Unit 1 will convert from coal to natural gas fuel no later than December 31, 2028. If approved, some amount of emissions may be reserved for netting or offsets. Offsets are subject to requirements in Regulation Number 3, Part A, Section V.

IV.F.7. Suncor Plant 2 Sulfur Recovery Unit SO2 optimization or alternative control requirements

IV.F.7.a. Beginning February 14, 2022, the Plant 2 Sulfur Recovery Unit Tail Gas Incinerator (SCR TGI) will meet a 1.20% volume SO2 (12-hour rolling average) and an annual SO2 limit of 271 tons per year (12-month rolling total).

IV.F.7.b. The owner/operator must implement optimization of air flow through the Plant 2 Sulfur Recovery Unit (SRU) no later than December 31, 2023. The Plant 2 Sulfur Recovery Unit Tail Gas Incinerator (SRC TGI) will meet an SO2 limit of 120 tons per year (12 month rolling total) within twelve (12) months after optimization and by no later than December 31, 2024.

IV.F.7.c. If the owner/operator fails to implement air flow optimization or fails to achieve the limit in Section IV.F.7.b. by the specified timeline, the owner/operator will install SUPERCLAUS 2+1 on the SRU by no later than December 31, 2028. The SRU must achieve at least a 98.65% sulfur recovery efficiency, by no later than December 31, 2029. The SRC TGI will meet an SO2 limit of 120 tons per year (12-month rolling total) within twelve (12) months after SUPERCLAUS 2+1 installation and by no later than December 31, 2029.

V. Monitoring, Recordkeeping, and Reporting for Regional Haze Limits

The provisions of this Section V. of Regulation Number 23 will be incorporated into Colorado's Regional Haze State Implementation Plan.

V.A. Monitoring/Compliance Determination: SO2 and NOx Regional Haze Limits

V.A.1. BART, RP, and BART alternative program units with SO2 and NOx CEMS.

V.A.1.a. All Boilers, except CENC, Clark, and Suncor Refinery boilers.

The owner or operator of a boiler subject to this section must comply with the 40 CFR Part 75 monitoring and recordkeeping requirements as incorporated by reference into this regulation with the exception of the continuous emission monitoring system (CEMS) data substitution and bias adjustment requirements. At all times after the compliance deadline specified in Regulation Number 23, Sections IV.A.3., IV.B.3., IV.C.3., or IV.F.4., the owner/operator of each BART, RP, or BART alternative program unit must maintain, calibrate, and operate a CEMS, in full compliance with the requirements found at 40 CFR Part 75 not excluded above, to accurately measure from such unit SO2, NOx, diluents, and stack gas volumetric flow rate as such parameters are relevant to the applicable emission limit. The CEMS must be used to determine compliance with the SO2 and NOx regional haze emission limits for each such unit. Such limits are expressed in units of pounds per million Btu. The owner/operator must calculate emissions in the applicable units. In determining compliance with the SO2 and NOx regional haze limits, all periods of emissions must be included, including startups, shutdowns, emergencies, and malfunctions.

V.A.1.a.(i) Pounds per Million Btu Regional Haze Limits

For any hour in which fuel is combusted in the BART, RP, or BART alternative program unit, owner/operator must calculate hourly average SO2 and NOx concentrations in pounds per million Btu at the CEMS in accordance with the requirements of 40 CFR Part 75 except for 40 CFR Part 75 requirements excluded by Section V.A.1.a. These hourly averages must then be used to determine compliance in accordance with the particular limit's averaging period, as follows.

V.A.1.a.(i)(A) Regional haze limits with a 3-hour averaging period: emissions must be calculated on a 3-hour rolling average basis. At the end of each operating hour, the owner/operator must calculate and record a new 3-hour average emission rate in lb/MMBtu from the arithmetic average of the valid hourly emission rates from the CEMS for the previous three operating hours. (An operating hour is any hour in which fuel is combusted for any time in the unit.)

V.A.1.a.(i)(B) Regional haze limits with a 30-day averaging period: before the end of each operating day, the owner/operator must calculate and record the 30-day rolling average emission rate in lb/MMBtu from all valid hourly emission values from the CEMS for the previous 30 operating days.

V.A.1.a.(i)(C) Regional haze limits with a 90-day averaging period: before the end of each operating day, the owner/operator must calculate and record the 90-day rolling average emission rate in lb/MMBtu from all valid hourly emission values from the CEMS for the previous 90 operating days.

V.A.1.a.(i)(D) Regional haze limits with a 12-month averaging period: before the end of each month, the owner/operator must calculate and record the 12-month rolling average emission rate in lb/MMBtu from all valid hourly emission values from the CEMS for the previous 12 months.

V.A.1.a.(i)(E) Regional haze limits with an annual calendar averaging period: emissions must be calculated on a calendar year basis. Within 30 days after the end of each calendar year, the owner/operator must calculate and record a new emission rate in lb/MMBtu from the arithmetic average of all valid hourly emission rates from the CEMS for the preceding year.

V.A.1.a.(i)(F) Comanche Units 1 and 2 regional haze combined annual average limits. The combined annual limitations for NOX and SO2 are on a 365-operating day rolling average. Before the end of each operating day, the owner/operator must calculate and record an annual rolling average using data from the previous 365 operating days in accordance with the following equation.

Combined emission rate (lb/MMBtu) = [(ER1)(HI1) + (ER2)(HI2)]/(HI1 + HI2)

Where: ER1 = average emission rate over the 365 operating day period. This is an average of all valid hours within the 365 operating day period for Unit 1.

HI1 = total heat input over the 365 operating day period for Unit 1.

ER2 = average emission rate over the 365 operating day period. This is an average of all valid hours within the 365 operating day period for Unit 2.

HI2 = total heat input over the 365 operating day period for Unit 2.

V.A.1.b. Portland Cement Kilns, CENC, Clark, and Suncor Refinery Boilers, and Suncor Process Heater H-2101: At all times after the compliance deadline specified in Regulation Number 23, Sections IV.A.3., IV.B.3., or IV.F.4., the owner/operator of each BART or RP unit must maintain, calibrate, and operate a CEMS in full compliance with the requirements in 40 CFR Part 60, Section 60.13 and 40 CFR Part 60, Appendices A, B, and F to accurately measure, as applicable based on the regional haze limits in Sections IV.A.2, IV.B.2, or IV.F.3, SO2, NOX, and diluents, if diluent is required. The CEMS must be used to determine compliance with the applicable SO2 and NOx regional haze emission limits for each such unit. For particular units, such limits are expressed in units of pounds per hour, tons per year, pounds per ton clinker, or pounds per million Btu. The owner/operator must calculate emissions in the applicable units. In determining compliance with the SO2 and NOx regional haze limits, all periods of emissions must be included, including startups, shutdowns, emergencies, and malfunctions. For CENC, compliance with the SO2 emissions limitations are demonstrated when the boilers are operated on gaseous fuels.

V.A.1.b.(i) Pounds per Hour and Tons per Year Regional Haze Limits and Pounds per Million Btu Regional Haze Limits.

For any hour in which fuel is combusted in the BART or RP unit, the owner/operator must calculate hourly NOx and SO2 emissions in the appropriate units (lbs/hr) or (lbs/MMbtu) in accordance with the provisions in 40 CFR Part 60. These hourly values must be used to determine compliance in accordance with the particular limits averaging time, as follows.

V.A.1.b.(i)(A) Pounds per Hour or Pounds per Million Btu Regional Haze Limits on a 30-day rolling average. Before the end of each operating day, the owner/operator must calculate and record the 30-day rolling average emission rate in lb/MMBtu or lb/hr from all valid hourly emission values from the CEMS for the previous 30 operating days.

V.A.1.b.(i)(B) Pounds per Hour or Pounds per Million Btu Regional Haze limits on a 365-day rolling average. Before the end of each operating day the owner/operator must calculate and record the 365-day rolling average emission rate in lb/hr or lb/MMBtu from all valid hourly emission values from the CEMS for the previous 365 operating days.

V.A.1.b.(i)(C) Pounds per Hour Regional Haze limits on a 12-month rolling average. Before the end of each month, the owner/operator must calculate and record the 12-month rolling average emission rate in lb/hr from all valid hourly emission values from the CEMS for the previous 12 months.

V.A.1.b.(i)(D) Tons per year regional haze Limits on a 12-month rolling average or total. Before the end of each month, the owner/operator must calculate and record the total emissions in tons/yr from all valid hourly emission values from the CEMS for the previous 12 months.

V.A.1.b.(ii) 30-Day Rolling Average Pounds per Ton Clinker Regional Haze Limits. Hourly clinker production must be determined in accordance with the requirements in 40 CFR Part 60, Subpart F, Section 60.63(b). An operating day includes all valid data obtained in any daily 24-hour period during which the kiln operates and excludes any measurements made during the daily 24-hour period when the kiln was not operating. The 30-operating day rolling emission rate of NOx and SOx must be calculated and recorded as the total of all hourly emissions data for a cement kiln in the preceding 30 operating days, divided by the total tons of clinker produced in that kiln during the same 30-day operating period in accordance with the equation in 40 CFR Part 60, Subpart F, Section 60.64(c).

V.A.1.b.(iii) CENC Units 4 and 5 NOX Regional Haze limits

For any hour in which fuel is combusted in CENC Unit 4 or Unit 5, the owner/operator must calculate hourly NOx emissions in the appropriate units (lbs/MMbtu) in accordance with the provisions in 40 CFR Part 60. These hourly values must be used to determine compliance with the Regional Haze limits, as follows.

V.A.1.b.(iii)(A) Individual unit pound per Million Btu on a 30-day rolling average regional haze limit: before the end of each operating day, the owner/operator must calculate and record the 30-day rolling average emission rate in lb/MMBtu from all valid hourly emission values from the CEMS for the previous 30 operating days, or

V.A.1.b.(iii)(B) Combined units 4 and 5 lbs/MMbtu 30-day rolling average regional haze limit: before the end of each operating day, the owner/operator must calculate and record a 30-day rolling average using data from the previous 30 operating days in accordance with the following equation.

Average ER = [(ER4)(HI4)+(ER5)(HI5)] / [(HI4)+(HI5)]

Where:

ER4 = average NOX emission rate, in pounds per MMbtu over the 30-day period. This is an average of all valid hours within the 30 operating day period for Unit 4.

ER5 = average NOX emission rate, in pounds per MMbtu over the 30-day period. This is an average of all valid hours within the 30 operating day period for Unit 5.

HI4 = Total heat input over the 30 operating day period for Unit 4.

HI5 = Total heat input over the 30 operating day period for Unit 5.

V.B.1.b.(iii)(C) The owner or operator must indicate in the excess emission reports required by Section V.E., which compliance demonstration method has been followed for the reporting period.

V.A.1.c. Combustion Turbines (NOx only)

The owner or operator of a turbine subject to this section must comply with monitoring and recordkeeping requirements as incorporated by reference into this regulation with the exception of the continuous monitoring system (CEMS) data substitution and bias adjustment requirements. At all times after the compliance deadline specified in Section IV.F.4., the owner/operator of each BART, RP, or BART alternative program unit must maintain, calibrate, and operate a CEMS to accurately measure from such unit NOx and diluents, as such parameters are relevant to the applicable emission limit. The CEMS must be used to determine compliance with the NOx regional haze emission limits in Section IV.F.3. for each such unit. The owner/operator must calculate emissions in the applicable units.

V.A.1.c.(i) The owner/operator of the Manchief turbines must maintain, calibrate, and operate a CEMS in compliance with the requirements found at 40 CFR Part 75 not excluded above. All valid CEMS concentration data points shall be summarized at the end of each clock hour to generate the one-hour average NOx concentration in accordance with the requirements in Part 75. Data used to generate the one-hour average NOx concentration shall not include replaced data, nor shall the data be bias-adjusted.

V.A.1.c.(ii) The owner/operator of the Nixon Front Range Power Plant turbines must maintain, calibrate, and operate a CEMS and demonstrate compliance with the NOx emission limit in Section IV.F.3. in accordance with the provisions of 40 CFR Part 60, Section 60.334.

V.A.1.c.(iii) The owner/operator of the Cherokee turbines must maintain, calibrate, and operate a CEMS and demonstrate compliance with the NOx emission limit in Section IV.F.3. in accordance with the provisions of 40 CFR Part 60, Sections 60.4345, 60.4350, and 60.4380.

V.A.1.d. Suncor Refinery Sulfur Recovery Units (SO2 only)

At all times after the compliance deadline specified in Section IV.F.4. the owner/operator of each RP unit must maintain, calibrate, and operate a CEMS to accurately measure SO2, diluents, and air flow from each unit, as such parameters are relevant to the applicable emission limit. The CEMS must be used to determine compliance with the SO2 regional haze emission limits in Section IV.F.3. for each such unit. The owner/operator must calculate emissions in the applicable units.

V.A.1.d.(i) Plants 1 and 3, Sulfur Recovery Complex and Tail Gas Unit

V.A.1.d.(i)(A) The owner/operator must demonstrate compliance with the SO2 emission limits in Section IV.F.3 through the methodologies and procedures in the applicable requirements of 40 CFR Part 60 Subparts A and J and 40 CFR 63.1568.

V.A.1.d.(i)(B) The owner/operator must install a CEMS for SO2, O2, and air flow. The CEMS must meet the requirements in 40 CFR 60.105(a)(5). Hourly mass emissions shall be summed to determine monthly SO2 emissions. Monthly emissions shall be used in a twelve-month rolling total to monitor compliance with the annual limit. Each month a new twelve-month total shall be calculated using the previous twelve months of data.

V.A.1.d.(ii) Plant 2, Sulfur Recovery Complex Tail Gas Incinerator

V.A.1.d.(ii)(A) The owner/operator must demonstrate compliance with the SO2 emission limits in Sections IV.F.3 and IV.F.7. through the methodologies and procedures in the applicable requirements of 40 CFR 63.1568.

V.A.1.d.(ii)(B) A continuous monitoring system for measuring SO2 and diluent from the Claus plant must be installed, calibrated, maintained, and operated in accordance with the applicable requirements in 40 CFR Part 60, Section 60.13 and Appendices A, B, and F. For every hour in which gases are routed to the tail gas incinerator, an hourly average SO2 concentration must be calculated. At the end of each operating hour the owner/operator must calculate and record a new 12-hour average emission rate.

V.A.1.d.(ii)(C) No later than 18 months after the air flow optimization specified in Section IV.F.7.b. or installation of SUPERCLAUS 2+1 specified in Section IV.F.7.c. is complete the owner/operator must submit a permit application to update permit limits based on operating data.

V.A.1.e. Suncor Refinery FCC Units

At all times after the compliance deadline specified in Section IV.F.4., the owner/operator of each RP unit must maintain, calibrate, and operate a CEMS to accurately measure from such unit SO2, NOx, and O2, as such parameters are relevant to the applicable emission limit. The CEMS must be used to determine compliance with the SO2 and NOx regional haze emission limits in Section IV. F.3. for each such unit. The owner/operator must calculate emissions in the applicable units.

V.A.1.e.(i) FCCU1 Reactor Regenerator

V.A.1.e.(i)(A) The SO2, NOx, and O2 CEMS must be installed, certified, calibrated, maintained and operated in accordance with the requirements of 40 CFR Part 60, Section 60.13, and Appendices A, B, and F. In lieu of the requirements of Appendix F, Sections 5.1.1, 5.1.3, and 5.1.4, the owner/operator must conduct either a Relative Accuracy Audit (RAA) or a Relative Accuracy Test Audit (RATA) once every twelve (12) calendar quarters, provided that a Cylinder Gas Audit (CGA) is conducted each calendar quarter.

V.A.1.e.(i)(B) Emissions must be calculated on a 365-day rolling average basis. At the end of each operating day, the owner/operator must calculate and record new 365-day average emission rates from the arithmetic average of the valid hourly emission rates from the CEMS for the previous 365 operating days.

V.A.1.e.(ii) FCCU2 Reactor-Regenerator

V.A.1.e.(ii)(A) A continuous monitoring system for measuring SO2, NOx, and O2 must be installed, calibrated, maintained, and operated in compliance with the requirements of 40 CFR Part 60, Section 60.13 and Appendices A, B, and F. In lieu of the requirements of Appendix F, Sections 5.1.1, 5.1.3, and 5.1.4, the owner/operator must conduct either a RAA or a RATA at least once every three years and a CGA each calendar quarter during which a RAA or RATA is not performed. NOx emissions must be calculated on a 12-hour rolling average basis. At the end of each operating hour, the owner/operator must calculate and record a new 12-hour average NOx emission rate. SO2 emissions must be calculated on a 365-day rolling average basis. At the end of each operating day, the owner/operator must calculate and record a new 365-day average emission rate from the arithmetic average of the valid hourly emission rates from the CEMS for the previous 365 operating days.

V.A.2. BART and RP Units without NOx and SO2 CEMS

V.A.2.a. CENC Unit 3. Compliance with the SO2 limitations must be determined by sampling and analyzing each shipment of coal for the sulfur and heat content using the appropriate ASTM Methods. In lieu of sampling, vendor receipts may be used provided the sampling and analysis was conducted in accordance with the appropriate ASTM Method. Each sample or vendor receipt must indicate compliance with the SO2 limitation. Compliance with the annual NOx limits must be monitored by recording fuel consumption and calculating emissions monthly using the appropriate AP-42 emission factor.

Monthly emissions must be calculated by the end of the subsequent month and must be used in a rolling twelve-month total to monitor compliance with the annual limitations. Each month a new twelve-month total must be calculated using the previous 12 months' data. [*Note: CENC Unit 3 is not subject to annual SO2 limits.] Unit 3 was shut down on 6/30/2011.

V.A.2.b. CEMEX Dryer. Unless performance tests were completed within the previous 6 months, within 60 days of the compliance deadline specified in Regulation Number 23, Section IV.A.3., the owner/operator must conduct a stack test to measure NOx and SO2 emissions in accordance with the appropriate EPA test methods. Frequency of testing thereafter must be every five years. Each test must consist of three test runs, with each run at least 60 minutes in duration.

In addition to the stack tests described, compliance with the annual NOx and SO2 limits must be monitored by calculating emissions monthly using the emission factors (in lb/hr) determined from the most recent Division-approved stack test and hours of operation for the month. Monthly emissions must be calculated by the end of the subsequent month and used in a twelve-month rolling total to monitor compliance with the annual limitations. Each month a new twelve-month total must be calculated using the previous 12 months' data.

V.A.2.c. Molson Coors Boiler Support Facility Boilers 1 and 2. Compliance with the RP NOx limit of 0.20 lb/MMBtu must be demonstrated using stack testing or CEMS. Stack testing frequency is as follows.

V.A.2.c.(i) A performance test must be performed on each boiler during the next planned maintenance outage for which each boiler provides scheduled service for the plant or by 12/31/2024, whichever occurs first.

V.A.2.c.(ii) Subsequent performance tests must be performed according to the following schedule, based on annual capacity factor of each boiler, according to the most stringent schedule that applies.

V.A.2.c.(ii)(A) If the annual capacity factor exceeds 40% for a calendar year, the next test shall be performed during the following calendar year,

V.A.2.c.(ii)(B) If the annual capacity factor exceeds 20% and is equal to or less than 40% for a calendar year, the next test shall be performed within 2 calendar years of the exceedance of the 20% capacity factor, or

V.A.2.c.(ii)(C) If the annual capacity factor is maintained at or below 20% for the calendar year, the next test shall be performed within 5 years of the previous test.

V.A.2.c.(iii) The performance test requirement will no longer apply if a CEMS is installed and certified per the requirements of 40 CFR Part 60 to measure NOx emissions and used to demonstrate compliance with the applicable limit. Upon certification of the CEMS, compliance with the limit will be demonstrated on a 30-day rolling average.

V.A.2.c.(iv) For the Boiler Support Facility Boilers 1 and 2, to demonstrate their compliance with the combined 12-month rolling total tpy emission limit, monthly NOx emissions from Boilers 1 and 2 must be calculated using the boiler-specific emission factors for NOx in lb/MMBtu determined from the most recent source tests required in V.A.2.c, the monthly gaseous fuel usage and the most recent heat value for the gaseous fuel (based on the higher heating value of the fuel, from the most recent supplier billing data or analysis) in the following equation: tons per month = Emission Factor (lb/MMBtu) x gaseous fuel use (MMScf/month) x fuel heat value (MMBtu/MMscf) x (ton/2000 lb).

V.A.2.d. Clear Spring Ranch Boilers and Flares (SO2 only)

V.A.2.d.(i) To determine compliance with the emission limits in Section IV.F.3., monthly emissions of SO2 must be calculated by the end of the subsequent month using monthly fuel consumption and the concentration of H2S in the digester gas based on collection and analysis of a digester gas sample at least once per calendar month. Each month a new twelve-month total must be calculated using the previous twelve month's data.

V.A.2.d.(ii) The hourly average SO2 emissions rate must be calculated for each calendar day by dividing the calculated daily emissions by the number of operating hours for the calendar day. The following emission calculation procedure must be used:

SO2 (lb/time) = (a + b) x (c) x (lb-mole H2S/379.5 ft3 H2S) x (lb-mole SO2/lb-mole H2S) x (64 lb SO2/lb-mole SO2)

Where:

a = volume of digester gas combusted through boilers (10^6 SCF)

b = volume of digester gas combusted through flares (10^6 SCF)

c = concentration of H2S in digester gas (ppmv)

V.A.2.e. Suncor Refinery

V.A.2.e.(i) Process Heaters (NOx only)

Compliance with the emission limits in Section IV.F.3. must be determined by recording fuel consumption and calculating monthly emissions using the emission factors in the following table. Monthly emissions must be calculated by the end of the subsequent month. Monthly emissions must be used in a twelve-month rolling total to monitor compliance with the annual limitation. Each month a new twelve-month total must be calculated using the previous twelve months of data. The owner/operator must calculate emissions in the applicable units.

Process Heater	Emission Factor
H-11, H-27	100 lbs/MMscf
H-17	0.098 lb/MMBtu
H-28/29/30	0.049 lb/MMBtu
H-37	0.042 lb/MMBtu
H-101	0.083 lb/MMBtu
H-402	0.075 lbMMBtu

V.A.2.e.(ii) Plant 1 Main Plant Flare. The owner/operator must demonstrate compliance with the H2S limit in Section IV.F.3. through the methodologies and procedures in the applicable requirements in 40 CFR Part 60, Subpart Ja.

V.A.2.f. EVRAZ Steel Mill

V.A.2.f.(i) Rod/Bar Mill Furnace (NOx Only)

Compliance with the lb/MMBtu NOx limit shall be monitored with annual compliance testing. Compliance testing for NOX shall be performed on the furnace using EPA approved methods to monitor compliance with the annual and short-term emission limitations of this permit. Subsequent testing must be performed in accordance with the following schedule:

V.A.2.f.(i)(A) If any subsequent test results indicate emissions are less than or equal to 50% of the 0.07 lb/MMBtu emission limit, another test is required within five years;

V.A.2.f.(i)(B) If any subsequent test results indicate emissions are more than 50%, but less than or equal to 75% of the 0.07 lb/MMBtu emission limit, another test is required within three years;

V.A.2.f.(i)(C) If any subsequent test results indicate emissions are greater than 75% of the 0.07 lb/MMBtu emission limit, an annual test is required until the provisions of V.A.2.f.(i)(A) or V.A.2.f.(i)(B) are met.

V.B. Monitoring/Compliance Determination: Particulate Regional Haze Limits

V.B.1. Particulate Regional Haze Limits for all boilers except CENC and Clark boilers

Unless particulate compliance testing was completed within the previous 6 months, within 60 days of the compliance deadline specified in Regulation Number 23, Sections IV.A.3., IV.B.3., or IV.C.3., the owner/operator must conduct a stack test to measure particulate emissions in accordance with the requirements and procedures set forth in EPA Test Method 5 as set forth in 40 CFR Part 60, Appendix A. Stack testing for particulate matter must be performed annually, except that: (1) if any test results indicate emissions are less than or equal to 50% of the emission limit, another test is required within five years; (2) if any test results indicate emissions are more than 50%, but less than or equal to 75% of the emission limit, another test is required within three years; and (3) if any test results indicate emissions are greater than 75% of the emission limit, an annual test is required until the provisions of (1) or (2) are met. A test run must consist of three test runs, with each run at least 120 minutes in duration. Test results must be converted to the applicable units and compliance will the based on the average of the three test runs.

In addition, to the stack tests described, the owner/operator must monitor compliance with the particulate matter limits in accordance with the applicable compliance assurance monitoring plan developed and approved in accordance with 40 CFR Part 64.

V.B.2. Portland Cement Plant Particulate Regional Haze Limits.

V.B.2.a. Kilns: Compliance with the particulate matter limitations must be monitored using a PM CEMS that meets the requirements in 40 CFR Part 63, Subpart LLL. The owner or operator must calculate emissions in the applicable units. If a PM CEMS is used to monitor compliance with the PM limits, the opacity limits specified in this Regulation Number 23 do not apply.

In the event that the provisions in 40 CFR Part 63, Subpart LLL are revised, stayed or vacated, such that a PM CEMS is not required, compliance with the PM limitations must be monitored by conducting stack tests in accordance with the requirements of Section V.C.3. except that the results of the test must be converted to the appropriate units (lb/ton clinker or lb/ton dry feed) and compliance will be based on the average of three test runs. In addition, if no PM CEMS is required, as discussed in Section V.B.2.a., the opacity limits specified in this Regulation Number 23 still apply. In order to monitor compliance with the opacity limit, the owner or operator must install, calibrate, maintain, and continuously operate a COM located at the outlet of the PM control device to continuously monitor opacity. The COM must be installed, maintained, calibrated, and operated as required by 40 CFR Part 63, Subpart A, and according to PS-1 of 40 CFR Part 60, Appendix B

V.B.2.b. Dryers: Performance tests must be conducted in accordance with the requirements in Section V.C.3. Opacity monitoring must be conducted in accordance with the requirements in 40 CFR Part 63, Subpart LLL.

V.B.3. Particulate Regional Haze Limits for the CENC and Clark boilers and the CEMEX dryer. Within 60 days of the compliance deadline specified in Regulation Number 23, Sections IV.A.3. or IV.B.3., the owner/operator must conduct a stack test to measure particulate emissions in accordance with the requirements and procedures set forth in EPA Test Method 5, 5B, 5D or 17, as appropriate, as set forth in 40 CFR Part 60, Appendix A. Stack testing for particulate matter must be performed annually, except that: (1) if any test results indicate emissions are less than or equal to 50% of the emission limit, another test is required within five years; (2) if any test results indicate emissions are more than 50%, but less than or equal to 75% of the emission limit, another test is required within three years; and (3) if any test results indicate emissions are greater than 75% of the emission limit, an annual test is required until the provisions of (1) or (2) are met. Each test must consist of three test runs, with each run at least 60 minutes in duration. For CENC, compliance with the PM emissions limitations are demonstrated when the boilers are operated on gaseous fuels.

In addition, to the stack tests described, compliance with the annual limitations (ton/yr limits) applicable to the Clark boilers and CEMEX dryer must be monitored by calculating emissions monthly using the emission factors (in lb/hr) determined from the most recent Division-approved stack test and hours of operation for the month. Monthly emissions must be calculated by the end of the subsequent month and used in a twelve-month rolling total to monitor compliance with the annual limitations. Each month a new twelve-month total must be calculated using the previous 12 months' data. In addition to the stack tests described, the owner/operator must monitor compliance with the particulate matter limits in accordance with the applicable compliance assurance monitoring plan developed and approved in accordance with 40 CFR Part 64.

V.B.4. Particulate Regional Haze Limits for Nixon coal handling, Hayden coal ash and sorbent loading/unloading, Cherokee Turbines 5 and 6, Pawnee cooling tower, and Suncor FCC Units

V.B.4.a. Nixon: Fugitive emissions from the coal stockpile must be controlled using pile maintenance and the application of chemical binders. Monthly PM emissions from coal unloading, transfer, conveying, stockpile reclaiming, and crushing must be calculated by the end of each month. Monthly emissions must be used in a rolling twelve-month total to monitor compliance with the annual limitation. Each month a new twelve-month total must be calculated using the previous twelve months of data. Emissions must be calculated using the following equations:

Coal Handling Emissions = Coal unloading and transfer emissions + Coal processing, crushing, and transfer emissions

Where:

Coal unloading and transfer includes railcar unloading, transfer and conveying, and discharge to stackout pile

Coal unloading and transfer PM10 = Coal unloaded from rail cars (tons) x 0.00174 (lb PM10/ton coal) / 2000 (lbs/ton)

Coal processing, crushing, and transfer includes reclaim from the coal stockpile, drop to the coal crusher, crushing, and transfer and conveying from the stockpile to the coal bunker inlet cascade.

Coal processing, crushing, and transfer PM10 = Coal loaded to the processing facility (tons) x 0.000915 lb PM10/ton coal) / 2000 (lbs/ton)

V.B.4.b. Hayden: Fugitive emissions from coal ash and sorbent handling must be controlled using proper truck loading and water spray as needed. Fugitive emissions from unpaved haul roads and the disposal site must be controlled using posted speed limits, gravel, water spray, and dust suppressants, as needed. Monthly PM emissions from coal ash and sorbent silo loading and unloading must be calculated by the end of each month using the monthly quantity of ash and sorbent processed and the following equations. Monthly emissions must be used in a rolling twelve-month total to monitor compliance with the annual limitation. Each month a new twelve-month total must be calculated using the previous twelve months of data.

Ash Silo Emissions = Silo Loading + Silo Unloading

Where:

Silo Loading = [0.61 (lb/ton ash) x ash loaded (tons/month)]/ 2000 lbs/ton

Control efficiency = 99.9%

Silo Unloading = [1.5 (lb/ton ash) x ash unloaded (tons/month)]/ 2000 lbs/ton

Control efficiency = 90%

V.B.4.c. Cherokee Turbines 5 and 6: Compliance with the PM limit in Section IV.F.3. is demonstrated by fuel limitation. Only pipeline quality natural gas is used as fuel in the turbines.

V.B.4.d. Pawnee: Monthly PM emissions from the cooling tower must be calculated by the end of each month using the following equation. Monthly emissions must be used in a twelve-month rolling total to monitor compliance with the annual limitations. Each month a new twelve-month total must be calculated using the previous twelve months of data.

PM (tons/month) = Q x d x % drift x 31.3% drift dispersed x total solids concentration/ 2000 lbs/ton

Where:

Q = water circulated, gal/month

d = density of water, lb/gal (d = 8.34 lbs/gal)

% drift = 0.001%

Total solids concentration = total solids concentration, in ppm (lbs solids/10^6 lbs water) - determined by semi-annual cooling water sample analysis

V.B.4.e. Suncor FCC Units

V.B.4.e.(i) The owner/operator must demonstrate compliance with the emission limits in Section IV.F.3. through the methodologies and procedures in the applicable requirements of 40 CFR Part 60, Subparts A and J and 40 CFR 63.1564.

V.B.4.e.(ii) Suncor: Emissions from the Suncor FCC Units must be calculated monthly using the quantity of coke burn-off in the following equation. Monthly emissions must be calculated by the end of the subsequent month and used in a twelve-month rolling total to monitor compliance with the annual limitations. Each month a new twelve-month total must be calculated using the previous twelve months of data.

PM Emissions (Tons/Month) = [1 (lb/1,000 lbs coke burn-off) x coke burn-off (lbs/month)]/2000 lbs/ton

V.C. Recordkeeping

Owner/operator must maintain the following records for at least five years

V.C.1. All CEMS data as required in the applicable regulation, stack test data, and data collected pursuant to the CAM plan, including the date, place, and time of sampling, measurement, or testing; parameters sampled, measured, or tested and results; the company, entity, or person that performed the testing, if applicable; and any field data sheets from testing.

V.C.2. Records of quality assurance and quality control activities for emissions measuring systems including, but not limited to, any records required by 40 CFR Parts 60, 63, or 75.

V.C.3. Any other records required by 40 CFR Part 60, Subpart F, Sections 60.65 and 63, Subpart LLL, 64 or 75.

V.D. Reporting requirements

The owner/operator of a BART, RP or BART alternative program unit must submit semi-annual excess emissions reports no later than the 30th day following the end of each semi-annual period unless more frequent reporting is required. Excess emissions means emissions that exceed the regional haze emissions limits. Excess emission reports must include the information specified in 40 CFR Part 60, Section 60.7(c).

The owner/operator of a BART, RP, or BART alternative program unit must submit reports of any required performance stack tests for particulate matter to the Division within 60 calendar days after completion of the test. The owner/operator must also submit semi-annual reports of any excursions under the approved compliance assurance monitoring plan in accordance with the schedule specified in the source's Title V permit. The owners or operators of units in Sections IV.D. or IV.F. must submit APENs to the Division within 90 days of the applicable, or actual if sooner, closure date.

PART B STATEMENTS OF BASIS, SPECIFIC STATUTORY AUTHORITY AND PURPOSE

I. Adopted: December 16, 2020

Relocation of and revisions to Regulation Number 3, Part F into the new Regulation Number 23.

This Statement of Basis, Specific Statutory Authority, and Purpose complies with the requirements of the State Administrative Procedure Act, § 24-4-103(4), C.R.S., the Colorado Air Pollution Prevention and Control Act, §§ 25-7-110 and 25-7-110.5., C.R.S., and the Air Quality Control Commission's ("Commission") Procedural Rules, 5 Code Colo. Reg. §1001-1.

Basis

In 1999, EPA promulgated the final Regional Haze Rule, which requires each state to submit a state implementation plan (SIP) to address regional haze (see 40 CFR Sections 51.300-51.309). Colorado submitted its regional haze SIP to EPA in 2008 and 2009. The Commission adopted revisions to the regional haze requirements in 2011, 2014, and 2016. The regional haze rule, Section 51.308(f), requires states to revise and submit its regional haze SIP to EPA by July 31, 2021 (i.e., second implementation period). States must continue to make progress toward their reasonable progress goals. In this rulemaking, the Commission moved the regional haze requirements from Regulation Number 3, Part F to a new Regulation Number 23, removed past provisions, and adopted closure dates for specific sources.

Specific Statutory Authority

The Colorado Air Pollution Prevention and Control Act, § 25-7-106, C.R.S. provides the Commission the maximum flexibility in establishing an air quality control program and authorizes the Commission to promulgate regulations as necessary or desirable to carry out that program. § 25-7-105 directs the Commission to promulgate such rules and regulations as are consistent with the legislative declaration set forth in § 25-7-102 and are necessary for the proper implementation and administration of Article 7, including a comprehensive state implementation plan which will prevent significant deterioration of air quality. § 25-7-109 authorizes the Commission to adopt emission control regulations pertaining to air pollutants. § 25-7-106(6) further authorizes the Commission to require owners and operators of any air pollution source to monitor, record, and report information.

Purpose

EPA's regional haze rule requires states to reduce emissions of visibility impairing pollutants that negatively impact class I areas. The Commission has previously approved revisions to Regulation Number 3 that included emission reduction requirements for sources subject to Best Available Retrofit Technology (BART) and Reasonable Progress (RP) requirements during the first planning period of the regional haze program. Moving the revisions from Regulations Number 3 to Regulation Number 23 is intended to improve the readability of both Regulation Number 3 and the regional haze requirements.

The Commission moved the provisions discussing applicability of the regional haze provisions, relevant definitions, the BART and RP determinations from the first 10-year planning period, and the monitoring and recordkeeping requirements to Regulation Number 23. Regulation Number 23 will also contain new emissions reductions requirements to meet or exceed the RP goals for the second 10-year planning period. The existing emission limits and new requirements placed on identified sources will eliminate significant emissions of nitrogen oxides (NOx), sulfur dioxide (SO2), and particulate matter (PM10) to improve visibility in Colorado's twelve class I areas. These emission reductions, even accounting for emissions reserved for netting or offset purposes provide for reasonable progress toward national visibility goals, and therefore, meet the Clean Air Act requirements for the second 10-year Regional Haze planning period. For units using emission reservations for offsets, an application for Emission Reduction Credits (ERC) should be submitted to the division approximately 60 days prior to unit closure.

Specifically, the Commission adopted closure dates for the following units: Cherokee Unit 4; ColoWyo Coal Mine; Comanche Units 1 and 2; Craig Units 2 and 3; Martin Drake Units 6 and 7; Nixon Unit 1; and Rawhide Unit 1. The Commission revised the requirements for Craig Unit 1 to remove the alternative compliance option to convert to natural gas. Craig Unit 1 will now only close on or before December 31, 2025. The Commission also updated the provisions for Valmont Station to include the date Valmont closed. Lastly, the Commission updated the provisions for Nucla Station to include the date Nucla Station closed, which was before the specified date, and remove requirements that were no longer necessary as they would have applied after the actual closure date.

The Commission uses the terms “closure” and “retirement” of the electric units to mean that the burning of coal for electric generation and the resulting air emissions would cease by the closure dates. It is understood that the decommissioning period following cessation of electric generation is a multi-year process involving significant dedication of resource. These closures achieve reductions and co-benefits beyond RP recommendations that do not consider closure options. The closure of these units will result in significant reductions of NOx, SO2, PM10, and GHG emissions. In addition to meeting the requirements for these units for the second 10-year Regional Haze planning period, closure of these units will have important co-benefits that will contribute to Colorado achieving other important air quality goals. Specifically, the emission reduction requirements from these unit closures will help achieve Colorado’s GHG emission reduction goals set forth in HB19-1261, reduce ground level ozone, reduce nitrogen deposition in Rocky Mountain National Park, and reduce GHG emissions pursuant to the requirements of the federal Affordable Clean Energy (ACE) rule.

The Commission recognizes concerns regarding grid reliability and demand needs are substantiated. Utilities have noted publicly in Electric Resource Plans (ERPs) and Electric Integrated Resource Plans (EIRPs) filed with the PUC as required by 4 CCR 723-3 Rules 3600 and 3605 that these issues are key to the closure date announcements. The Commission considered an alternative proposal to advance the closure dates for the Nixon, Rawhide, and Craig 3 power plants to the end of 2028. While this proposal was not ultimately adopted, the Commission encourages the utilities and the PUC to further advance closure dates for these facilities in order to secure cost effective emissions reductions that are needed to address Colorado's GHG and Regional Haze goals.

The Commission did not move into Regulation Number 23 but deleted Regulation Number 3, Part F, Sections III. and IV. As discussed in the March 16, 2006, Regulation Number 3 Statement of Basis and Purpose, EPA’s regional haze regulations require states to define BART-eligible facilities and require sources subject to BART to complete a BART analysis. Regulation Number 3, Part F, Sections III. and IV. identified which sources were required to perform a BART analysis and specified the elements of the BART analysis. The federal rules also require states to submit a SIP identifying the BART-eligible sources and either the BART controls or the BART alternative. The Commission adopted BART controls and/or BART alternatives for the BART-eligible sources in December 19, 2008, January 7, 2011, November 20, 2014, and December 15, 2016. EPA last approved Colorado’s Regional Haze SIP on July 5, 2018 (83 Fed. Reg. 31332). Therefore, the provisions identifying which sources must perform a BART analysis and specifying the elements of a BART analysis are no longer necessary. The Commission also did not move but deleted Regulation Number 3, Part F, Sections VI.A.4. and VI.B.4. These provisions required sources to submit and the Division to publish compliance schedules for the sources in the BART and RP determinations tables. As these requirements have passed, and were complied with, they are no longer necessary. Removing these provisions will improve and facilitate the readability and better allow the regulated community and other interested persons to identify and understand the provisions governing their activities. The revisions also correct typographical, grammatical, and formatting errors found in the regional haze provisions.

Incorporation by Reference

§ 24-4-103(12.5) of the State 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 and making the regulations available because repeating the full text of each of the federal regulations incorporated would be unduly cumbersome and inexpedient. To fully comply with these criteria, the Commission includes reference dates to rules and reference methods incorporated in Regulation Number 23. The Commission also notes that other Air Quality Control Commission regulations reference the regional haze provisions, either as regional haze or Regulation Number 3 Part F. Specifically, regional haze requirements are referenced in Regulation Number 6, Part B, Section VIII.C.3.f.(ii) and the SBAP Section XXV; Regulation Number 7, Part E, Sections I.D.3.a., II.A.2.f., and III.B.4.n and the SBAP Sections L., O., Q., R., and S., and Regulation Number 9, SBAP Section N. The Commission will update regulatory references as needed as opportunities arrive.

Additional Considerations

These revisions do not exceed or differ from the federal act due to state flexibility in determining what strategies to implement to reduce impacts to visibility under the Regional Haze rule. However, where the proposal may differ from federal rules under the federal act, in accordance with § 25-7-110.5(5)(b), C.R.S., the Commission determines:

(I) EPA's regional haze requirements are performance based. The regional haze rule sets forth factors that the states must consider when determining Reasonable Progress (RP) for sources reasonably anticipated to cause or contribute to the impairment of visibility in federal Class I areas. States have the discretion to select the appropriate controls for such sources.

(II) EPA's regional haze rule guides how states must determine RP for their RP-eligible sources. However, state discretion is a cornerstone of the regional haze rule (*70 FR 39137*). Colorado considered Colorado's issues of concern when developing these revisions.

(III) EPA's regional haze rule was not determined taking into account concerns unique to Colorado. The adopted revisions will improve Colorado's ability to comply with the goals of the regional haze rule while preventing or reducing the need for costly retrofits potentially required in Colorado's next reasonable progress planning period.

(IV) Concerning this revision, the Division must submit a SIP revision to EPA no later than July 31, 2021. The proposed shut-downs will reduce the need for costly retrofit to meet more stringent requirements later.

(V) EPA has established a SIP submittal due date of July 31, 2021. There is no timing issue that might justify changing the time frame for implementation of federal requirements.

(VI) The adopted rule will assist in establishing and maintaining a reasonable margin for accommodation of uncertainty and future growth.

(VII) The adopted rule establishes reasonable equity for sources because the Regional Haze Rule applies the same standards for determining RP to all RP-eligible sources. RP determinations are source specific and different controls and emission limits are to be expected.

(VIII) If the revisions were not adopted and EPA does not approve Colorado's SIP, EPA may promulgate a Federal Implementation Plan; thus potentially determining requirements for Colorado's sources. This outcome could subject others to increased costs.

(IX) These revisions do not modify the currently approved procedural, reporting, or monitoring requirements in Colorado's Regional Haze SIP.

(X) Demonstrated technology is available to comply with the revisions.

(XI) The revisions will contribute to further reductions of NOx emissions and therefore contribute to the prevention of pollution.

(XII) A no action alternative would not address the required standard as these revisions; however, alternative rules could achieve the emission reductions to be achieved through these revisions, including setting specific RP control requirements instead of closure or specifying different closure dates.

As part of adopting the revisions to Regulation Number 3, Part F, the Commission has taken into consideration each of the factors set forth in C.R.S. § 25-7-109(1)(b).

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 NOx emissions.

(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 reduction in air pollution and provide the regulated entity flexibility.

(V) The selected regulatory alternative will maximize the air quality benefits of regulation in the most cost-effective manner.

II. Adopted: December 17, 2021

This Statement of Basis, Specific Statutory Authority, and Purpose complies with the requirements of the State Administrative Procedure Act, § 24-4-103(4), C.R.S., the Colorado Air Pollution Prevention and Control Act, §§ 25-7-110 and 25-7-110.5., C.R.S., and the Air Quality Control Commission's ("Commission") Procedural Rules, 5 Code Colo. Reg. §1001-1.

Basis

In 1999, EPA promulgated the final Regional Haze Rule, which requires each state to submit a state implementation plan (SIP) to address Regional Haze (see 40 CFR Sections 51.300-51.309). Colorado submitted its Regional Haze SIP to EPA in 2008 and 2009. The Commission adopted revisions to the Regional Haze requirements in 2011, 2014, and 2016.

Under Regional Haze, states must continue to make progress toward their reasonable progress goals. The Regional Haze Rule, Section 51.308(f), requires states to revise and submit its Regional Haze SIP to EPA by July 31, 2021 (i.e., second implementation period). In December 2020, the Commission adopted a partial update to the SIP to address the phase 1 sources. This action is the second phase ("phase 2") of the SIP adoption to meet the requirements for round 2 progress by 2028.

Specific Statutory Authority

The Colorado Air Pollution Prevention and Control Act, § 25-7-106, C.R.S. provides the Commission the maximum flexibility in establishing an air quality control program and authorizes the Commission to promulgate regulations as necessary or desirable to carry out that program. § 25-7-105 directs the Commission to promulgate such rules and regulations as are consistent with the legislative declaration set forth in § 25-7-102 and are necessary for the proper implementation and administration of Article 7, including a comprehensive SIP which will prevent significant deterioration of air quality. § 25-7-109 authorizes the Commission to adopt emission control regulations pertaining to air pollutants. § 25-7-106(6) further authorizes the Commission to require owners and operators of any air pollution source to monitor, record, and report information.

Pursuant to HB 21-1266, signed into law on July 2, 2021, the Division must enhance to create new ways to gather input from disproportionately impacted communities across the state. The Division shall conduct outreach to and engagement of these communities by (1) giving proper notice of public input opportunities; (2) utilizing a variety of locations and methods to receive public input; (3) creating outreach materials concerning the proposed rule in laypersons' terms; (4) translating the outreach materials into the top two languages spoken in that community; and (5) scheduling variable times of day and days of the week for public input on the proposed rule. The Division continues incorporating these enhanced requirements as effectively as possible.

Purpose

EPA's Regional Haze Rule requires states to reduce emissions of visibility impairing pollutants that negatively impact class I areas. The Commission has previously approved revisions to Regulation Number 3, which were later moved into new Regulation Number 23 in 2020, that included emission reduction requirements for sources subject to Best Available Retrofit Technology (BART) and Reasonable Progress (RP) requirements during the first planning period of the Regional Haze program.

Regulation Number 23 contains the new emissions reductions requirements to meet or exceed the RP goals for the second 10-year planning period (through 2028). The existing emission limits and new requirements placed on identified sources will eliminate significant emissions of nitrogen oxides (NO_x), sulfur dioxide (SO_2), and particulate matter (PM10) to improve visibility in Colorado's twelve class I areas. These emission reductions, even accounting for emissions reserved for netting or offset purposes, provide for reasonable progress toward national visibility goals, and therefore, meet the Clean Air Act requirements for the second 10-year Regional Haze planning period. Where emission reductions are or may be reserved for offsets, an application for Emission Reduction Credits (ERCs) should be submitted to the division approximately sixty (60) days prior to unit closure.

Specifically, the Commission adopted closure dates in December 2020's phase 1 proceeding for thirteen units at nine facilities. The Commission revised the requirements for sources from the first planning period in accordance with changes made at those facilities, specifically Craig Unit 1, Nucla Station, and Valmont Station. The Commission uses the terms "closure" and "retirement" of the electric units to mean that the burning of coal and/or other fossil fuels for electric generation and the resulting air emissions would cease by the closure dates. It is understood that the decommissioning period following cessation of electric generation is a multi-year process involving significant dedication of resources. These closures achieve reductions and co-benefits beyond other RP recommendations that do not consider closure options.

In HB 19-1261, the General Assembly declared that "climate change adversely affects Colorado's economy, air quality and public health, ecosystems, natural resources, and quality of life[,]" acknowledged that "Colorado is already experiencing harmful climate impacts[,]" and that "many of these impacts disproportionately affect" certain disadvantaged communities. Colorado's statewide GHG reduction goals require the Commission to implement regulations to achieve a 26% reduction of statewide GHG emissions by 2025; 50% reduction by 2030; and 90% reduction by 2050 as compared to 2005 levels. Voluntary closure of the EGUs and additional controls to the other facilities proposed in this second Regional Haze planning period will result in significant reductions of NO_x, SO_2, and PM10. In addition to meeting the requirements for these units for the second 10-year Regional Haze planning period, voluntary closure of the EGUs have important co-benefits that will contribute to Colorado achieving other important air quality goals. Specifically, the emission reduction requirements from the EGU closures will provide the co-benefit of assisting in the achievement of Colorado GHG emission reduction goals, and reduce ground level ozone. The Division did not propose any unit retirements, fuel switching, or changes to permitted fuel consumption limits as a reasonable progress control strategy. Therefore, no proposed control strategies for this Regional Haze SIP revision can be stated to directly reduce GHG emissions. However, voluntary closures will achieve the additional co-benefit of reducing GHG emissions contingent upon PUC approval of the utility-proposed EGU closure and fuel switching dates.

Phase II of the second round implementation period proposes additional controls, and accounts for voluntary closures and fuel switching of seventeen facilities across the state. The facilities analyzed under the RP four-factor analysis are:

- Utilities Nixon Power Plant Coal Handling;
- Utilities Front Range Power Plant (FRPP) Turbines 1 and 2;
- Utilities Clear Spring Ranch Solids Handling and Disposal Facility, 4 digester gas-fired boilers and 2 flares;
- PSCo Comanche Station Unit 3;
- PSCo Hayden Station Units 1 and 2, coal ash and sorbent handling and disposal, and fugitive dust from unpaved roads;
- PSCo Cherokee Station Turbines 5 and 6;
- PSCo Pawnee Station Unit 1 and the cooling tower;
- Manchief Generating Station Turbines 1 and 2, co-located with PSCo Pawnee Station;
- CEMEX Lyons Portland cement plant Kiln, Quarries, and Raw Materials Grinding;
- Holcim Florence Portland cement plant Kiln, Quarry, and Finish Mills;
- GCC Pueblo Portland cement plant Kiln and Clinker Cooler;
- Molson Coors Boiler Support Facility Boilers 1, 2, 4, and 5;
- EVRAZ Rocky Mountain Steel Mill Points Electric Arc Furnace (EAF), Ladle Metallurgy Station (LMS), Ladle Preheaters, Round Caster, Rotary Furnace, Quench Furnace, Tempering Furnace, Rod/Bar Mill Furnace, Rail Mill Furnace, Vacuum Tank Degasser (VTD) Boiler, Haul Roads;
- Rocky Mountain Bottle Company Furnaces B+ and C;

- Suncor Energy Denver Refinery; Plant 1 and 2 Fluid Catalytic Cracking Units (FCCU), Plant 1 and 2 Sulfur Recovery Complexes (SRCs), Plant 1 Main Plant Flare, Process Heaters H-11, H-17, H-27, H-28/29/30, H-37, H-101, H-401/402, and H-2101, and Boilers 4 and 505;

- Denver International Airport (DIA) Boilers, Cooling Tower, Emergency Generators, and Miscellaneous Engines (smaller generators and fire water pump engines) [4]

- Craig Cooling Towers 1, 2, and 3. [5]

[4] Point sources at DIA were not subject to a full 4-factor analysis based on actual emissions below the 10 TPY threshold.

[5] Craig cooling towers were not subject to a full 4-factor analysis based on actual emissions below the 10 TPY threshold.

The Commission recognizes concerns regarding grid reliability and demand needs are substantiated. Electric Utilities have noted publicly in Electric Resource Plans (ERPs) and Electric Integrated Resource Plans (EIRPs) filed with the PUC as required by 4 CCR 723-3 Rules 3600 and 3605 that these issues are key to the closure date announcements. To the extent technically feasible and cost effective, the Commission encourages the utilities and the PUC to further advance closure dates or other operational changes that reduce emissions for these facilities in order to secure cost effective emissions reductions.

Revisions incorporate equipment changes that have occurred at the Molson Coors' Boiler Support Facility (formerly CENC) since the first planning period. Boiler 3 was shutdown on June 30, 2011. Boilers 1, 2, 4 and 5 have been converted from combusting coal to combusting gaseous fuel, with the last conversion completed on April 18, 2016. These changes have been incorporated into the federally enforceable facility operating permit and form the basis for the technical analysis in this rulemaking. Revisions to Regulation Number 23 SO_2 CEMS and PM testing requirements reflect the change to gaseous fuel combustion and that compliance with SO_2 and PM requirements is demonstrated when the boilers are operating on gaseous fuels.

Regarding the Suncor Energy Denver Refinery's Plant 2 SRC, the Division proposed for the Commission's consideration a requirement for Suncor to optimize the Plant 2 Sulfur Recovery Unit (SRU) to achieve at least the unit design sulfur recovery efficiency by the end of the Regional Haze Round 2 implementation period. The National Parks Conservation Association and Sierra Club, a joint party to the rulemaking hearing, proposed an alternate proposal for the Commission's consideration, to require Suncor to install a SUPERCLAUS 2+1 retrofit on the Plant 2 SRU No. 3 by the end of the Regional Haze Round 2 implementation period. The Commission recognized that Suncor's facility is adjacent to and impacts multiple Disproportionately Impacted Communities and achieving emission reductions from Suncor sooner rather than later is important for addressing environmental justice concerns in Colorado. Taking environmental justice into consideration was a consistent theme raised by the public, parties, and the Environmental Protection Agency. Therefore, the Commission adopted a modified version of each proposal requiring Suncor to either 1) optimize the Plant 2 SRU by December 31, 2023 or 2) install a SUPERCLAUS 2+1 retrofit by the end of the Regional Haze Round 2 implementation period as a backstop. The Commission maintained the 120 tpy SO2 limit associated with the optimization that was proposed by the Division for the SUPERCLAUS 2+1 option. For both options, the 120 tpy limit becomes enforceable 12 months after the project is completed so that there is a full period of data with the control requirement in service to evaluate against the new 12-month rolling limit. For both options, the associated SO2 tpy limit will be re-evaluated using actual emissions data within 18 months of the completion of the project. The revisions made to Regulation Number 23 in phase 2 also correct typographical, grammatical, and formatting errors found in the Regional Haze provisions.

Incorporation by Reference

§ 24-4-103(12.5) of the State 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 and making the regulations available because repeating the full text of each of the federal regulations incorporated would be unduly cumbersome and inexpedient. To fully comply with these criteria, the Commission includes reference dates to rules and reference methods incorporated in Regulation Number 23.

The Commission also notes that other Air Quality Control Commission regulations reference the Regional Haze provisions, either as Regional Haze or Regulation Number 3 Part F. Specifically, Regional Haze requirements are referenced in Regulation Number 6, Part A, Section VIII.C.3.f.(ii) and the SBAP Section XXV; Regulation Number 7, Part E, Sections I.D.3.a., II.A.2.f., and III.B.4.n. and the SBAP Sections L., O., Q., R., and S., and Regulation Number 9, SBAP Section N. The Commission will update regulatory references as needed as opportunities arrive.

Additional Considerations

These revisions do not exceed or differ from the federal act due to state flexibility in determining what strategies to implement to reduce impacts to visibility under the Regional Haze rule. However, where the proposal may differ from federal rules under the federal act, in accordance with § 25-7-110.5(5)(b), C.R.S., the Commission determines:

(I) EPA's Regional Haze requirements are performance based. The Regional Haze rule sets forth factors that the states must consider when determining Reasonable Progress (RP) for sources reasonably anticipated to cause or contribute to the impairment of visibility in federal Class I areas. States have the discretion to select the appropriate controls for such sources.

(II) EPA's Regional Haze rule guides how states must determine RP for their RP-eligible sources. However, state discretion is a cornerstone of the Regional Haze rule (*70 FR 39137*). Colorado considered Colorado's issues of concern when developing these revisions.

(III) EPA's Regional Haze rule was not determined taking into account concerns unique to Colorado. The adopted revisions will improve Colorado's ability to comply with the goals of the Regional Haze rule while preventing or reducing the need for costly retrofits potentially required in Colorado's next reasonable progress planning period.

(IV) EPA has established a SIP submittal due date for round 2 of July 31, 2021. During round 2, the complexity of the Regional Haze technical analysis coupled with coordination among so many states, tribes, federal land managers (FLMs), and EPA has produced delays in the release of some of the data products that are instrumental to completing the Regional Haze SIP. Final data products were just recently completed from this coordinated process.

(V) The adopted rule will assist in establishing and maintaining a reasonable margin for accommodation of uncertainty and future growth.

(VI) The adopted rule establishes reasonable equity for sources because the Regional Haze Rule applies the same standards for determining RP to all RP-eligible sources. RP determinations are source specific and different controls and emission limits are to be expected.

(VII) If the revisions were not adopted and EPA does not approve Colorado's SIP, EPA may promulgate a Federal Implementation Plan (FIP); thus potentially determining requirements for Colorado's sources. This outcome could subject others to increased costs.

(VIII) These revisions do not modify the currently approved procedural, reporting, or monitoring requirements in Colorado's Regional Haze SIP.

(IX) Demonstrated technology is available to comply with the revisions.

(X) The revisions will contribute to further reductions of NOx, SO_2, and PM emissions and therefore contribute to the prevention of pollution.

(XI) A no action alternative would not address the required standard as these revisions; however, alternative rules could achieve the emission reductions to be achieved through these revisions, including setting specific RP control requirements.

The Commission has taken into consideration each of the factors set forth in C.R.S. § 25-7-109(1)(b) when revising Regulation Number 23.

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 NO_x, SO_2, and PM emissions.

(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 reduction in air pollution and provide the regulated entity flexibility.

(V) The selected regulatory alternative will maximize the air quality benefits of regulation in the most cost-effective manner.

Editor's Notes

History

New rule eff. 02/14/2021.

Rules Federal Regulations Adopted by Reference, Part A IV.F.3-IV.F.7.c, V.A.1.a, V.A.1.b, V.A.1.b.(i)(B)-(D), V.A.1.c.- V.A.2.f.(i)(C), V.B.3, V.B.4, Part B II eff. 01/30/2022.