

# **APPENDIX A**

## **REVISIONS TO REGULATION NO. 16**

# Regulation No. 16

## Street Sanding Emissions

Colorado Air Quality  
Control Commission



---

Colorado Department  
of Public Health  
and Environment

**REGULATION NO. 16**

**STREET SANDING EMISSIONS**

Table of Contents

	<u>Page</u>
I. Street Sanding Materials Specifications .....	<a href="#">1</a>
II. Street Sanding Requirements Specific to the Denver PM-10 Nonattainment Area .....	<a href="#">4</a>
III. Statements of Basis, Specific Statutory Authority and Purpose .....	<a href="#">7</a>
May 20, 1999 .....	<a href="#">7</a>
VI.B Denver metropolitan area, redesignation to attainment for PM-10.....	
April 19,2001	

*Materials incorporated by references in this regulation are available for public inspection during regular business hours at the Colorado Air Quality Control Commission's office at 4300 Cherry Creek Drive South, Denver, CO 80246-1530, and also at any state publications depository library. The regulation incorporated the materials as they exist at the date of the promulgation of this regulation and does not include later amendments to or editions or the incorporated materials.*

Adopted: August 15, 1991  
Effective: September 30, 1991

Revised: June 24, 1993  
Effective: August 30, 1993

Revised: September 22, 1994  
Effective: November 30, 1994

Revised: March 16, 1995  
Effective: May 30, 1995

Revised: May 20, 1999  
Effective: July 30, 1999

## REGULATION NO. 16

### STREET SANDING EMISSIONS

#### I. Street Sanding Materials Specifications

##### I.A. Applicability

The provisions of this Section I shall apply to street sanding materials purchased after October 1, 1991 or used after June 1, 1992 by: any governmental entity; any employee, official, representative, or agent of such governmental entity; and any person who contracts with such governmental entity for the purpose of applying street sanding material in the AIR program area, as defined in Section 42-4-307(8) C.R.S. This Section I shall also apply to all suppliers of street sanding materials to be used by these governmental entities.

##### I.B. Definitions

- I.B.1. "Percent Fines" means the percent material passing a #100 sieve as determined by the American Society for Testing Materials' (ASTM) "Standard Method for Sieve Analysis of Fine and Coarse aggregates", designation C136-84a (1988) (American Association of State Highway and Transportation Officials designation T27-88.)
- I.B.2. "Durability Index" means the percent loss of weight as determined using ASTM "Standard Test Method for Resistance to Degradation of Small-Size Coarse Aggregate by Abrasion and Impact in the Los Angeles Machine". Designation C131-89.
- I.B.3. "High Degree of Angularity" means that grains exhibit sharply intersecting, planar faces over entire surface.
- I.B.4. "Street Sanding Material(s)," when used in Section I, Street Sanding Materials Specifications, means natural geologic materials, excluding salt and other de-icing chemicals, used to provide increased traction on roadways or paved areas.
- I.B.5. "Recycled Street Sanding Material" means previously used street sanding material which has been collected from roadways or paved areas and is then re-used as is, after washing, or after blending with new street sanding material.
- I.B.6. "Full Deployment" means that all roadways targeted for treatment during a snow/ice event are sanded.
- I.B.7. "Independent Laboratory" means a facility capable of performing the specified tests in a competent, professional, and unbiased manner with no financial, family, or personal connection to the supplier or user of street sanding materials.
- I.B.8. "User(s)" means any governmental entity, and any employee, official, representative, or agent of such governmental entity responsible for the application of street sanding materials,

and any person who contracts with such governmental entity for the purpose of applying street sanding material.

**I.C. Street Sanding Material Standards**

**I.C.1. Material Standards**

All street sanding material, whether new or recycled, shall equal or exceed either of the following standards:

- I.C.1.a. less than 2% fines and less than 45% durability index or;
- I.C.1.b. less than 4% fines, less than 33% durability index, and a high degree of angularity exhibited by the majority of the grains.

**I.D. Testing Requirements**

**I.D.1. General**

Testing of street sanding material covered by this regulation shall consist of the determination of:

- I.D.1.a. the percent fines;
- I.D.1.b. the durability index; and
- I.D.1.c. the high degree of angularity exhibited by the majority of the grains.

**I.D.2. Supplier Requirements**

- I.D.2.a. Suppliers of street sanding material covered by this regulation shall perform at least one test to determine the percent fines each week on the material as it is produced.
- I.D.2.b. Suppliers shall have one test per month performed by an independent laboratory to determine the percent fines on a representative sample of their street sanding material. This shall be performed each month in which street sanding material is produced.
- I.D.2.c. Suppliers shall have one test performed by an independent laboratory to determine the durability index on a representative sample from the pit source between July 1 and September 30 each year in which they sell street sanding material covered by this regulation.
- I.D.2.d. If Section C.1.b. applies, supplier shall furnish once per month of production, a signed statement certifying that a visual examination for angularity was performed on the street sanding material and the results of that visual exam.

**I.D.3. User Requirements**

Users shall have a test performed by an independent laboratory to determine the percent fines index on all recycled materials at least once for the first 250 tons of recycled material used each winter and at least once for every 500 tons of recycled material thereafter.

**I.D.4. Division Audit Authority**

The Air Pollution Control Division (Division) may enter the site of any supplier or user of sanding material covered by this regulation for the purpose of obtaining a sample of material to determine if the material meets the applicable standards.

**I.E. Reporting Requirements**

**I.E.1. Suppliers Requirements**

I.E.1.a. Suppliers shall submit to the Division a monthly report that contains a summary of the results of all percent fines tests performed by the supplier and independent laboratories as required by the provisions of Section I.D.2.a. and b. For material conforming to Section I.C.1.b., suppliers shall submit monthly certification that visual examination of angularity of grains has been performed and the results of that visual exam.

I.E.1.b. For every year that street sanding material is produced, the supplier shall submit to the Division a copy of the results of the annual durability index test performed by independent labs as required by Section I.D.2.c. no later than 60 days after the test is conducted.

I.E.1.c. Prior to, or upon, delivery of street sanding material, suppliers shall provide users of street sanding material covered by this regulation with a report demonstrating that the supplier has met all testing requirements of this regulation applicable to the time period in which deliveries are made.

**I.E.2. Users Requirements**

I.E.2.a. Users of recycled street sanding material shall submit to the Division copies of the results of testing conducted according to Section D.3. no later than 30 days after the tests are conducted.

I.E.2.b. Within 7 calendar days of awarding a contract for the purchase of street sanding material to a supplier, the user shall notify the Division of the supplier's name and the location of the aggregate pit(s) from which the material will be supplied.

I.E.2.c. The user shall maintain on file reports received under the provisions of Section E.1.c. for a period of three (3) years.

I.E.3. Division Audit Authority

All records generated under the provisions of this regulation shall be made available for inspection upon request by the Division.

**I.F. Alternative Test Methods and Standards**

Alternative percent fines and durability index test procedures for percent fines and durability may be approved by the Division and EPA should they be determined to provide a measure that is equivalent to the test procedures of this regulation.

**I.G. Alternative Sanding Materials**

Experimentation with new street sanding materials may be approved by the Division and EPA provided that the impact of such experiments or tests does not contribute appreciably to air quality degradation.

**II. Street Sanding Requirements Specific to the Denver PM10 Attainment/Maintenance Area**

**II.A. Applicability**

II.A.1. The provisions of this Section II shall apply to any governmental entity and any employee, official, representative, or agent of such governmental entity responsible for applying street sanding material to any roadway in the Denver PM10 Attainment/Maintenance area as defined in the AQCC Ambient Air Standards Regulation (effective date: July 30, 1991). The provisions of this Section II shall also apply to any person who contracts with such governmental entity for the purpose of applying street sanding material to any roadway in the Denver PM-10 Attainment/Maintenance area.

**II.B. Additional Definitions**

II.B.1. "Base Sanding Amount" is the average amount of street sanding material applied per lane mile driven by maintenance trucks during snow and ice removal operations. The base sanding amount shall be calculated using 1989 data. If reliable 1989 data is not available, another base year period may be used after approval by the Division.

II.B.2. "Street Sanding Material(s)," when used in Section II, Street Sanding Requirements Specific to the Denver PM10 Attainment/Maintenance Area, means natural geologic material, including sand and sodium chloride rock salt, but excluding other de-icing chemicals, used to provide increased traction or de-icing on roadways.

II.B.3. "Foothills Area" refers to the area defined as follows:

The western edge of the Denver PM10 attainment/maintenance area from the southern Jefferson County line to the northern Boulder County line;

the northern Boulder County line east to the western edge of US Highway 36;

the western edge of US Highway 36 from the northern Boulder County line south to the Boulder City limits;

the western edge of the Boulder City limits south to CO Highway 93;

the western edge of CO Highway 93 south to the Golden City limits;

the western edge of the Golden City limits south to US Highway 40;

the western edge of US Highway 40 southwest to CO Highway 26;

CO Highway 26 south to US Highway 93;

US Highway 93 south to the Morrison City limits;

the western and southern edge of the Morrison City limits to Highway C-470;

the western edge of C-470 south to South Platte Canyon Road;

the western edge of South Platte Canyon Road south to Kassler Road;

the western edge of Kassler Road to the southern edge of Douglas County Road 7;

the southern edge of Douglas County Road 7 east to the western edge of Douglas County Road 5;

the western edge of Douglas County Road 5 south to Roxborough Park Road;

proceeding on a line from the intersection of Douglas County Road 5 and Roxborough Park Road to the intersection of Colorado Highways 67 and 105 (Perry Park Road);

south along the western edge of Perry Park Road to the southern Douglas County line; and

west along the southern Douglas & Jefferson County lines to the western edge of the Denver PM10 attainment/maintenance area.

II.B.4. "Uncontrolled levels of wintertime street sand and road dust emissions" shall be calculated using historical 1989 data.

## **II.C. Requirements**

II.C.1. Each user shall establish and document its base sanding amount. Documentation of the base sanding amount shall be submitted to the Division and the Regional Air Quality Council (RAQC) by September 30, 1993.

II.C.2. Except as otherwise provided in sections II.C.4, II.C.5 and II.C.6; each user shall achieve a 30% reduction of uncontrolled levels of wintertime street sand and paved road dust emissions on roadways within their jurisdiction in the PM10 attainment/maintenance area, excepting those roadways within the foothills area.

- II.C.3. Each user shall achieve a 20% reduction from uncontrolled levels of wintertime street sand and paved road dust emissions on those roadways within the foothills area of their jurisdiction.
- II.C.4. The City and County of Denver shall achieve a 72% reduction from uncontrolled levels of wintertime street sand and paved road dust emissions on roadways in the central business district (CBD). The CBD is defined as the area bounded by and inclusive of Colfax Avenue, Speer Boulevard, Wynkoop Street, 20th Street, and Broadway.
- II.C.5. The Colorado Department of Transportation (CDOT) shall achieve a 54% reduction from uncontrolled levels of wintertime street sand and paved road dust emissions from Interstate 25 and its entrance/exit ramps between 6th Avenue and University Boulevard.
- II.C.6. The City and County of Denver and CDOT shall achieve a 50% reduction from uncontrolled levels of wintertime street sand and paved road dust emissions on roadways within the area bounded by, and including, Federal Boulevard, Downing Street, 38th Avenue, and Louisiana, except as otherwise provided by sections II.C.4 and II.C.5.

#### **II.D. Recordkeeping and Reporting**

- II.D.1. No later than June 30, 2001 and each year thereafter, users of street sanding material covered by this section shall submit a report to the Division and the RAQC containing the following information for the preceding twelve months or the preceding calendar year:
- II.D.1.a. the total number of miles driven by maintenance trucks during snow and ice removal operations;
  - II.D.1.b. the total amount of sanding material (both new and recycled), salt, and other de-icing chemicals used;
  - II.D.1.c. the number and dates of full deployment episodes;
  - II.D.1.d. the number of lane miles typically sanded during each full deployment;
  - II.D.1.e. the percent of the sanded roadways swept within 4 days of a sanding event; and
  - II.D.1.f. the type of street sweeping equipment used.
- II.D.2. Those entities with roadways in the foothills area shall provide two reports with the information listed in Section II.D.1. One report shall contain the information for roadways in the foothills area and the other for roadways within the remainder of their jurisdiction.
- II.D.3. The City and County of Denver and CDOT shall provide two reports with the information listed in Section II.D.1. One report shall contain the information for roadways in the areas described in Sections II.C.4 and II.C.5, and the other for other roadways in their jurisdictions within the Denver PM10 attainment/maintenance area.

II.D.4. Beginning June 30, 2002, the City and County of Denver and the CDOT shall provide an additional report of information listed in Section II.D.1. for the area bounded by, and including, Federal Boulevard, Downing Street, 38<sup>th</sup> Avenue, and Louisiana Avenue, as described II.C.6.

## **II.E. Compliance Methodology**

II.E.1. The calculation of the percent reduction from uncontrolled levels of wintertime street sand and paved road dust emissions shall be based on the reduction in street sand from the base sanding amount, the percent of roadways swept within four days of a sanding event, and the latest data on the emission benefits of street sanding materials, de-icing agents, and street sweeping equipment, which is consistent with the methodology used for the 2001 PM10 maintenance plan.

## **III. Statements of Basis, Specific Statutory Authority and Purpose**

### **III.A. May 20, 1999**

This Statement of Basis, Specific Authority, and Purpose complies with the requirements of the Administrative Procedures Act, section 24-4-103 C.R.S. and the Colorado Air Pollution Prevention and Control Act, section 25-7-110.5, C.R.S.

#### Basis

The "Colorado State Implementation Plan (SIP) for Particulate Matter (PM-10); Denver Metropolitan Nonattainment Area Element" signed into law on May 31, 1995 and subsequently approved by the U.S. Environmental Protection Agency includes in Chapter XI.B.3.d the primary PM-10 emissions budget for mobile sources in the metro area.

As amended by § 25-7-105 (1) (a) (III) , C.R.S. (1998), the metro area's mobile source PM-10 emissions budget for the purposes of federal transportation conformity is 54 tons per day from 1998 - 2005 and 60 tons per day in 2006 and beyond.

Currently, in order to demonstrate conformity of regional transportation plans with the established mobile source emissions budgets for the area, the Denver Regional Council of Governments (DRCOG) obtains letters of commitment from city, county, and state agencies to reduce PM-10 emissions through improved street sanding and sweeping programs that go beyond what is currently required by Regulation 16. The emissions reduction achieved through this proposed "state-only" revision to Regulation 16 can be utilized for conformity purposes and will eliminate the need for DRCOG to seek commitment letters in the future.

Also, the provisions of section 25-7-105 (1) (a) (III) include a 44 ton per day mobile source emissions budget which applies exclusively under reserved state authority pursuant to the provisions of C.R.S. 25-7-105 (1). Section 25-7-105 (1) (a) (III) also states that: "Any entity with authority to adopt a transportation plan required under section 43-1-1103, C.R.S., shall consider any mobile source emissions budgets in effect under this article in the development of transportation improvement programs for federal purposes." This includes consideration of the 44 ton per day mobile source emissions budget established under state law in Section V.C.4 of the Colorado Ambient Air Quality Standards Regulation.

As part of the development of the metro area's first comprehensive, long-range air quality plan, called the Blueprint for Clean Air, the Regional Air Quality Council (RAQC), evaluated the costs, benefits, and feasibility of achieving a 44 ton per day mobile source emissions budget as a state-only requirement. The modifications to Regulation 16 proposed in this action will implement the RAQC's final recommendation in the Blueprint for Clean air which, based on current data, will maintain mobile source PM-10 emissions in the budget area at no more than 45 tons per day through 2020.

Maintaining mobile source PM-10 emissions at 45 tons per day through 2020 will ensure the region stays in compliance with EPA's health-based standard for PM-10. Additionally, the emission reductions achieved through this regulatory modification will reduce fine particulate (PM-2.5) levels, providing a margin of safety against future violations of EPA's new standard for this pollutant.

#### Authority

General and specific authority for revising Air Quality Regulations is contained in the Colorado Air Pollution Control Act, Section 25-7-102, 25-7-109, 25-7-109 (1), and 25-7-109 (2) (a&b).

#### Purpose

The purpose of this regulatory modification is to prevent significant increases in mobile source PM-10 emissions in the metro Denver non-attainment area as the number of vehicle miles traveled continues to grow in the future. Adopting this rule as a state-only requirement means that it will not modify the existing State Implementation Plan, nor will these requirements be federally enforceable. However, the emission reductions achieved through implementation of the regulation will provide the region with a margin of safety against future violations of the National Ambient Air Quality Standards for PM-10 and PM-2.5.

The emission reductions proposed in this regulatory modification are already being achieved by most state and local agencies in the area. This state-only regulation will ensure that the emission reductions currently being achieved will be maintained into the future.

#### Findings

The Air Quality Control Commission makes the following findings pursuant to C.R.S. Section 25-7-110.8.

First, the rule revision is based on reasonably available, validated, reviewed and sound scientific methodologies. The uncontrolled emissions estimates and emissions budgets developed by the APCD are based on published EPA guidance. Maintenance levels of emissions are supported by SIP modeling performed in accordance with published EPA guidance. Data on alternative materials and the sand fraction of paved road dust are based on manufacturer's studies and local research conducted by the Colorado Department of Transportation and are acceptable to EPA. Efficiencies used for sweeping equipment are based on EPA guidance. Provisions have been included to allow consideration of additional information in the future which could allow for the achievement of the required reductions at reduced costs.

Second, the emissions reductions required by the revision will maintain the metro area at an emissions level through 2020 that will ensure compliance with the PM-10 NAAQS as demonstrated by SIP modeling and control the growth of PM-10 emissions.

Third, the emissions reduction is cost effective and allows for flexibility of choice of control strategies to achieve the requirement. It is also equitable and fair in that all entities are required to achieve the same overall reduction, and it makes provisions for the foothills areas which are already at the limit of safely achievable and cost effective reductions.

Fourth, the emissions reduction is reasonably achievable in that most entities are presently achieving reductions greater than required. This proposal received approval from many of the effected parties who participated in the RAQC's Street Sanding Subcommittee as part of the Blueprint for Clean Air. This measure also was recommended by the full RAQC when it formally adopted the Blueprint on January 7, 1999.

#### Federal Requirements

There are no federal requirements for this revision at this time.

### **III.B. Denver metropolitan area, redesignation to attainment for PM10**

**Adopted: April 19, 2001**

The amendments to the Regulation No. 16 are a component of the maintenance plan and redesignation request also adopted by the Commission on April 19, 2001 to redesignate the area as attainment for particulate matter less than ten microns in diameter (PM10).

The April 19, 2001 revisions to the regulations do three things. First, the revisions make federally enforceable the existing state-only requirements adopted by the Commission on May 20, 1999. The Commission adopted the state-only requirements in May 1999, which require a 20% to 30% reduction in emissions from wintertime street sand and paved road dust throughout the area, to keep emissions from exceeding the state-only emissions budget then in effect. According to the Division's air quality models, the measures will be necessary to maintain the PM10 NAAQS and, therefore, must be made part of the federally-enforceable SIP.

Second, the revisions require further reductions in road dust emissions in the central Denver area, effective October 1, 2001. The revisions require emissions to be reduced by 50% to 72% from an established baseline.

Third, the revisions reorganize and simplify the regulations by describing all requisite emission reductions in terms of 1989 data.

#### Statutory Authority

General and specific authority for revising Air Quality Regulations is contained in the Colorado Air Pollution Control Act, §§ 25-7-105(1)(a)(I), 25-7-107(2.5), 25-7-109(1), (2)(a) and (2)(b).

### Federal Requirements.

The provisions adopted by the Commission do not exceed the federal requirements. 42 USC 7505a(a) requires the maintenance plan to include control measures as may be necessary to ensure maintenance of the NAAQS for at least ten years following redesignation. The revisions adopted by the Commission are necessary to demonstrate such maintenance of the NAAQS.

### Findings

The Air Quality Control Commission makes the following findings pursuant to § 25-7-110.8, C.R.S.

Maintenance levels of emissions are supported by SIP modeling performed in accordance with published EPA guidance. Data on alternative materials and the sand fraction of paved road dust are based on manufacturer's studies and local research conducted by the Colorado Department of Transportation and are acceptable to EPA. Efficiencies used for sweeping equipment are based on EPA guidance and testing performed in Colorado. Provisions have been included to allow consideration of additional information in the future which could allow for the achievement of the required reductions at reduced costs. The Commission believes the EPA-approved models and guidance documents are inaccurate, but federal rules require the State to use such models and guidance to demonstrate the adequacy of the maintenance plan. Thus, the rule revisions are based on the only methodology authorized for use by federal law. All methodologies and information made available by interested parties have been considered.

The record reflects that reduced use of sand on paved roadways, and the clean-up of sanding material once applied, reduces ambient concentrations of PM10 in the ambient air. Thus, evidence in the record supports the finding that the rule will result in a demonstrable reduction in air pollution.

# APPENDIX B

## REVISIONS TO AMBIENT STANDARDS REGULATION

---

# Ambient Air Quality Standards

Colorado Air Quality  
Control Commission



---

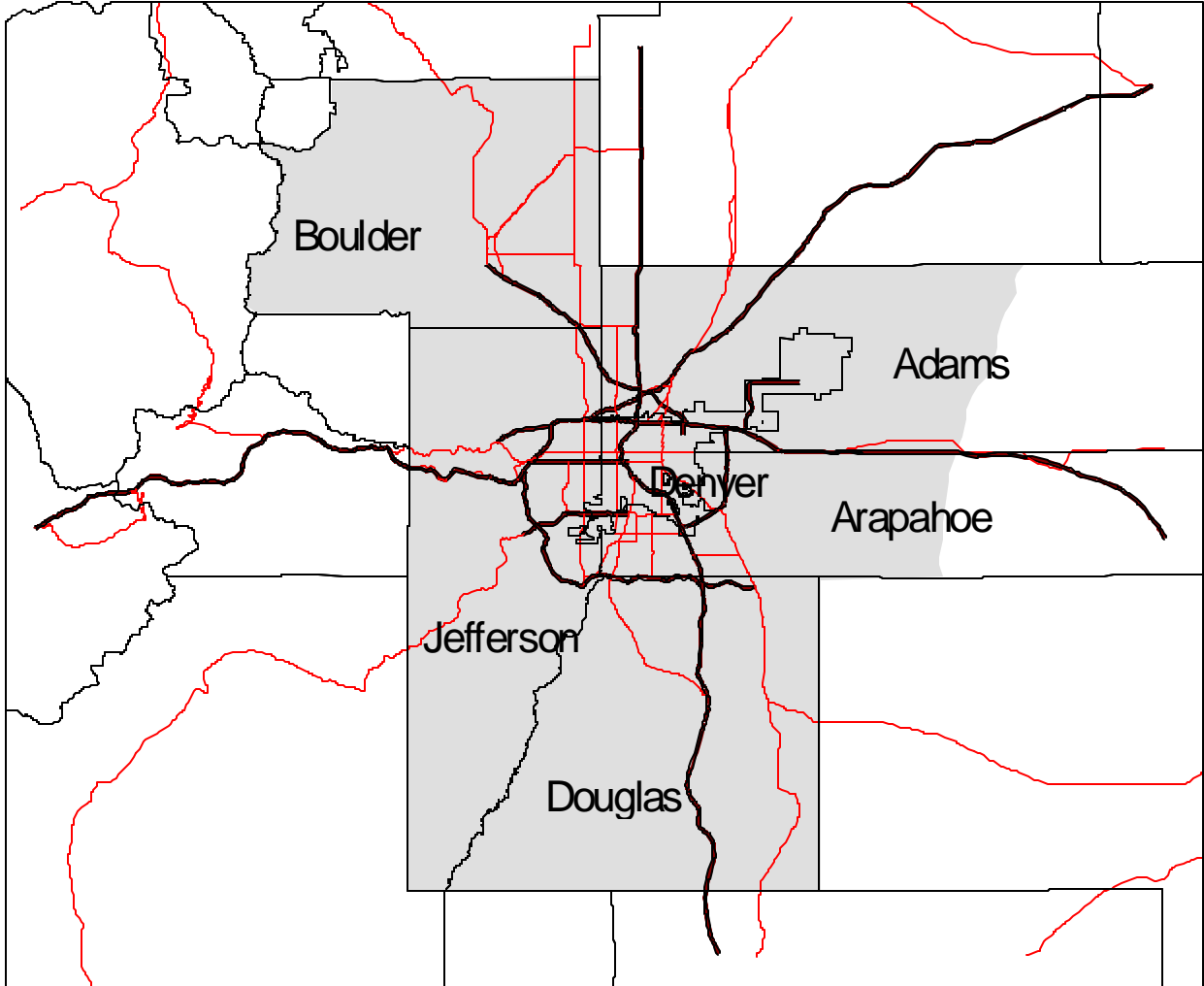
Colorado Department  
of Public Health  
and Environment

PM10		
Area	Classification	Boundary
Denver Metro	ATTAINMENT/ MAINTENANCE* #	All of Denver, Jefferson, and Douglas Counties; Boulder County (excluding Rocky Mountain National Park) and the Automobile Inspection and Readjustment Program portions of Adams and Arapahoe Counties. See attached map.
Steamboat Springs	Moderate	Steamboat Springs Area Airshed as adopted by the Routt County Commissioners May 28, 1991. See attached map.
Pagosa Springs	Attainment/ Maintenance*	See attached map.
Telluride/Mt. Village/ San Miguel County	Attainment/ Maintenance*	See attached map.
Aspen/Pitkin County	Attainment/ Maintenance*	See attached map.
Cañon City/Fremont County	Attainment/ Maintenance	See attached map.
Prowers County	Moderate	Lamar City Limits as of July 30, 1991.
Ozone		
Denver Metro Area	Attainment/ Maintenance*	All of Denver, Jefferson, and Douglas Counties; Boulder County (excluding Rocky Mountain National Park) and the Automobile Inspection and Readjustment Program portions of Adams and Arapahoe Counties. See attached map.
<p>*The designation of asterisked areas as attainment/maintenance shall become effective upon publication in the Federal Register of EPA approval of such designation. Until such approval and publication, the areas remain nonattainment for the respective pollutant.</p> <p>#The classification of the Denver Metro Area as an attainment/maintenance area shall not affect Air Quality Control Commission Regulations No. 1, 5 CCR 1001-3, section VIII; or No. 3, 5 CCR 1001-5, Part B, section IV.D.2(d)(i) or (ii). Such provisions shall apply in the Denver Metro Area in the same manner as they would apply if the Denver Metro Area were a nonattainment area for PM-10.</p>		

---

Description and Maps

III.F. Denver PM10 and Ozone Attainment/Maintenance Area



V. Emission Budgets for Nonattainment Areas in the State of Colorado

V.A. Budgets

V.A.1. The following Motor Vehicle Emissions Budgets shall be utilized to assess the conformity of Transportation Plans, TIPs, and where appropriate, Projects, for the applicable periods and geographic areas indicated:

Denver Attainment/Maintenance Area (Modeling Domain)	<u>PM<sub>10</sub></u> :	
	2015 and Beyond:	51 tons/day
	<u>Nitrogen Oxides</u>	
	2015 and Beyond:	101 tons/day

V.A.4.g. Denver PM10

The 51 tons/day (2015 and beyond) PM10 emission budget and the 101 tons/day (2015 and beyond) NOx emission budget established in section V.A.1. shall take effect as a matter of state law when such budget takes effect as a matter of federal law pursuant to 40 CFR section 93.118. Until such time as the 51 tons/day (2015 and beyond) PM10 budget and the 101 tons/day (2015 and beyond) NOx budget take effect pursuant to this section and 40 CFR section 93.118, the PM10 emission budgets for the Denver PM10 nonattainment area shall be 54 tons/day (1998-2005) and 60 tons/day (2006 and beyond), while the NOx budget for the Denver PM10 nonattainment area shall be 119.4 tons/day. The 51 tons/day PM10 emissions budget and the 101 tons/day NOx emissions budget shall expire if such budgets are revised by the commission based on MOBILE6. Such expiration shall occur at such time as any revised budgets are deemed adequate pursuant to 40 CFR 93.118.

V.B. Requirement Regarding Enforceability

- V.B.1. Projects, programs, or control measures which require a regulation in order to be implemented shall not qualify for credit toward attainment of the applicable Motor Vehicle Emissions Budget in the conformity determination unless the regulation has been adopted by the enforcing jurisdiction. Adopted regulations are required for demand management strategies and other measures that are not specifically identified in the Applicable Implementation Plan or a fiscally constrained Plan or TIP, and for control programs which are external to the transportation system itself, such as tailpipe or evaporative emission standards, limits on gasoline volatility, inspection and maintenance programs, and oxygenated or reformulated gasoline or diesel fuel programs.
- V.B.2. A regulatory program may be considered to be adopted if an opt-in to a Federally enforced program has been approved by EPA, if EPA has promulgated the program, or the Clean Air Act requires the program without need for individual state action and without any discretionary authority for EPA to set its stringency, delay its effective date or not implement the process.
- V.B.3. Any control measure which does not require a regulation in order to be implemented must be made enforceable in order for resulting emissions reduction to qualify for credit toward attainment of the Motor Vehicle Emissions Budget in the Conformity determination. A project shall be considered to be an enforceable control measure for purposes of this provision if it is included in a fiscally constrained Plan or TIP, and the project sponsor and/or operator has provided written commitments to construct the project and operate the resulting

facility or service prior to the conformity finding. Although control measures must be enforceable prior to the conformity determination, such control measures need not become effective until such a date, which may be later than the date of the conformity determination, as necessary to ensure conformity with the Applicable Implementation Plan.

V.B.4. Any control measures relied on for a conformity determination shall be included in a revised attainment or maintenance SIP unless it is not necessary to demonstrate attainment or maintenance of the standard.

V.C. Additional Requirements for the Denver PM<sub>10</sub> Attainment/Maintenance Area

V.C.1. -Geographic Coverage

The geographic coverage for the Denver PM<sub>10</sub> Motor Vehicle Emissions Budget is the modeling domain contained in the most recent revision to the Denver PM<sub>10</sub> state implementation plan and technical support documentation, which are available for inspection at the offices of the AQCC located at 4300 Cherry Creek Drive South, Denver, Colorado.

V.C.2. Regional Emissions Analysis

The emissions budgets set out in this section shall be used for regional emissions analyses required for conformity determinations.

VIII.L Denver metropolitan area, redesignation to attainment for PM-10

Adopted: April 19, 2001

The amendments to the "Ambient Air Quality Standards for the State of Colorado" Regulation adopted by the Commission change the air quality classification of the Denver metropolitan area for particulate matter. The purpose of this rule change is to implement the direction in section 25-7-107 (2.5), C.R.S. (1999) to take expeditious action to redesignate the area as attainment for particulate matter less than ten microns in diameter (PM-10). In conjunction with this redesignation, the Commission revised Regulation No. 16, "Street Sanding Emissions" to implement the control measures necessary to maintain the national standard for PM-10 for at least ten years.

The change in the classification of the Denver area affects the regulatory requirements applicable to stationary sources. For most types of sources, the threshold for determining whether or not a source is a "major stationary source" for PM, NO<sub>x</sub> or SO<sub>2</sub> increases from 100 tons-per-year to 250 tons-per-year. Similarly, the requirements for new major stationary sources to use the lowest achievable emissions rate, and to obtain offsets, are relaxed. The rule change adopted by the Commission, however, maintains existing requirements in Regulation No. 3 for minor sources in the Denver area to use reasonably available control technology. The Commission intends, however, to review this requirement when it reviews Regulation No. 3.

The amendments to the "Ambient Air Quality Standards for the State of Colorado" also revise the PM-10 mobile source emissions budget for the Denver metropolitan area. The emissions budget is used to determine whether transportation plans and projects conform to the State Implementation Plan.

#### Federal Requirements

42 USC 7407(d)(3) provides that the State may request redesignation to attainment status for areas of the State that qualify for such redesignation based on air quality data, and planning and control considerations. In order for the EPA to approve such a redesignation request, sections 42 USC 7407(d)(3)(E) and 7505a require the State to submit a maintenance plan that will provide for maintenance of the standard for ten years following the approval of the redesignation request. The federal requirements for preparation, adoption and submittal of implementation plans, including the maintenance plan, are set out at 40 CFR, Part 51. The maintenance plans adopted by the Commission will maintain the national standard for PM-10 for the requisite ten-year period.

The federal requirements for emissions budgets are set out at 42 USC 7506(c) and 40 CFR 93.124. The emissions budget establishes a test for determining whether transportation plans or projects may cause or contribute to a violation of the national ambient air quality standard (NAAQS). The emissions budget is based on the analysis that supports the maintenance demonstration.

The regulatory revisions do not include any provisions that are not required by provisions of the federal act or that are otherwise more stringent than requirements of the federal act.

### Statutory Authority

Specific statutory authority to redesignate areas to attainment is provided in section 25-7-107, C.R.S. (1999). The authority to establish emissions budgets is included in the general authority to adopt a State Implementation Plan set out in section 25-7-105(1), C.R.S. (1999).

### Findings pursuant to section 25-7-110.8

The mobile source emissions budgets are the only control measures included in the amendments to the Ambient Air Quality Standards rule that will operate to reduce air pollution. The reference to Regulation No. 3 added to the Ambient Air Quality Standards merely maintains the *status quo*; it does not establish any new requirement. The emissions budgets establish caps on mobile source emissions and are administered through the transportation conformity regulations. Air Quality Control Commission Regulation No. 10, Part B; 40 CFR Part 93. By capping mobile source emissions at a prescribed limit, the emission budget could result in a demonstrable reduction in air pollution.

The emissions budgets are based on EPA-approved models and assumptions for estimating PM-10 emissions from mobile sources. The Commission believes the EPA-approved models are inaccurate, but federal rules require the State to use such models to demonstrate the adequacy of the maintenance plan. Thus, the emissions budgets are based on the only methodologies authorized for use by federal law. All methodologies and information made available by interested parties have been considered.

The alternative to redesignation is for the Denver area to remain a PM-10 nonattainment area. Redesignation to attainment is the more cost-effective alternative. Redesignation provides the regulated community with more flexibility and achieves the reductions in air pollution necessary to maintain the NAAQS. The revisions to the ambient air quality standard will maximize the air quality benefits of the Commission's regulations in the most cost-effective manner.

# APPENDIX C

## REVISIONS TO REGULATION NO.1

# Regulation No. 1

## Particulates, Smokes, Carbon Monoxide, & Sulfur Oxides

Colorado Air Quality  
Control Commission



---

Colorado Department  
of Public Health  
and Environment

VII. EMISSION REGULATIONS FOR CERTAIN ELECTRIC GENERATING STATIONS OWNED AND OPERATED BY THE PUBLIC SERVICE COMPANY OF COLORADO

A. The electric generating stations owned and operated by the Public Service Company of Colorado listed below shall not emit or cause to be emitted nitrogen oxides (NO<sub>x</sub>) or sulfur dioxide (SO<sub>2</sub>) in excess of the following limits. The emission rates for NO<sub>x</sub> and SO<sub>2</sub> are measure in terms of pounds of pollutant per million British Thermal Units of fuel fired in the unit (lb/mmBTU).

1. Cherokee Electric Generating Station, 6198 North Franklin Street, Denver, CO

a. NO<sub>x</sub> and SO<sub>2</sub> limits.

	NO <sub>x</sub> (lb/mmBTU)	SO <sub>2</sub> (lb/mmBTU)
Unit 1	-	1.1
Unit 2	-	1.1
Unit 3	0.60	1.1
Unit 4	0.45	1.1

- The NO<sub>x</sub> limit will be calculated based on a 30-day rolling average, and is effective November 1, 1994.
- The SO<sub>2</sub> limit will be calculated as a three-hour rolling average, and is effective November 1, 1994.
- Public Service Company of Colorado shall install, certify and operate continuous emission monitoring equipment in accordance with 40 CFR Part 60.13 for measuring opacity, SO<sub>2</sub>, NO<sub>x</sub>, and either O<sub>2</sub> or CO<sub>2</sub> on Units 1, 2, 3 and 4 no later than January 1, 1995.

b. Effective January 1, 2005, the NO<sub>x</sub> limit for Unit 1 shall be 0.60 lb/mmBTU, provided EPA approves the designation of the Denver area as a PM-10 attainment/maintenance area. Such limit shall be calculated based on a 30-day rolling average.

c. Upon EPA approval of the designation of the Denver area as a PM-10 attainment/maintenance area, the SO<sub>2</sub> emission rate from units 1 and 4 shall not exceed 0.88 lb/mmBTU, calculated separately for each unit, based on a 30-day rolling average. Such emission limit shall apply seasonally from November 1 through March 1. The additional SO<sub>2</sub> limit set out in this subsection VII.A.1.c. shall not apply unless EPA repeals the incorporation of SO<sub>2</sub> permit limits into the SIP at 40 CFR 52.320(c)(82)(i)(E).

2. Arapahoe Electric Generating Station, 2601 South Platte River Drive, Denver, CO

a. NO<sub>x</sub> and SO<sub>2</sub> limits.

	NO <sub>x</sub> (lb/mmBTU)	SO <sub>2</sub> (lb/mmBTU)
Unit 1	-	1.1
Unit 2	-	1.1
Unit 3	-	1.1
Unit 4	.60	1.1 +20% annual tonnage reduction

- The NO<sub>x</sub> limit will be calculated based on a 30-day rolling average, and is effective November 1, 1994.
- The SO<sub>2</sub> limit will be calculated as a three-hour rolling average, and is effective January 1, 1995.
- The 20% SO<sub>2</sub> limit from Unit 4 shall be calculated on a calendar year, total annual tonnage basis.
- Public Service Company of Colorado shall install, certify and operate continuous emission monitoring equipment, in accordance with 40 CFR Part 60.13, for measuring opacity, SO<sub>2</sub>, NO<sub>x</sub>, and either O<sub>2</sub> or CO<sub>2</sub> on Units 1, 2, 3 and 4 no later than January 1, 1995.

b. Upon EPA approval of the designation of the Denver area as a PM-10 attainment/maintenance area, the SO<sub>2</sub> emission rate from unit 4 shall not exceed 0.88 lb/mmBTU, calculated on a 30-day rolling average. Such emission limit shall apply seasonally from November 1 through March 1.

c. Retirement of units 1 and 2

- i. Units 1 and 2 shall be permanently retired by January 1, 2003. This section VII.A.2.c. shall become effective upon EPA approval of the designation of the Denver area as a PM-10 attainment/maintenance area.
- ii. This section VII.A.2.c shall not be construed to prevent the construction or operation of a new source on the site of such units, provided any such new source complies with all laws and regulations applicable to new sources.

3. Valmont Electric Generating Station, 1800 North 63rd Street, Boulder, CO

	NO <sub>x</sub> (lb/mmBTU)	SO <sub>2</sub> (lb/mmBTU)
Unit 5	0.45	1.1

- The NO<sub>x</sub> limit will be calculated based on a 30-day rolling average, and is effective November 1, 1994.
- The SO<sub>2</sub> limit will be calculated as a three-hour rolling average, and is effective November 1, 1994.
- Public Service Company of Colorado shall install, certify and operate continuous emission monitoring equipment, in accordance with 40 CFR Part 60.13, for measuring opacity, SO<sub>2</sub>, NO<sub>x</sub>, and either O<sub>2</sub> or CO<sub>2</sub> on Units 1, 2, 3 and 4 no later than January 1, 1995.

## VIII. RESTRICTIONS ON THE USE OF OIL AS A BACKUP FUEL

### A. Applicability

The provisions of this section are applicable to all points at the following stationary sources in the Denver PM10 attainment/maintenance area that use oil as a backup fuel for natural gas, which is the primary process fuel:

1. Public Service Company of Colorado, Zuni Electric Generating Station;
2. Public Service Company of Colorado, Valmont Electric Generating Station;
3. Public Service Company of Colorado, Delgany Steam Generating Station;
4. University of Colorado Health Sciences Center (Fitzsimmons);
5. US Department of Energy, Rocky Flats Plant;
6. Gates Rubber Company; and
7. Trigen-Colorado Energy, Golden, CO.

### B. Requirements

Beginning November 1, 1993, natural gas shall be the only fuel used from November 1 to March 1 of each year, except under the following circumstances:

1. the supplier of transporter or natural gas imposes a curtailment or an interruption of service;
2. for necessary testing of equipment used to operate the unit on oil, testing of fuel and training of personnel; or
3. when an equipment malfunction at the facility makes it impossible or unsafe for the unit to operate on natural gas.

C. Recordkeeping

Each stationary source subject to the provisions shall maintain records for a period of two years, which include the following information:

1. dates and number of hours fuel oil is burned;
2. percent sulfur analysis of the fuel oil that is burned;
3. number of gallons burned each day; and
4. reason(s) for the use of the fuel oil.

D. Reporting

Beginning April 1, 1994 and by April 1 of each year thereafter, each stationary source subject to these provisions shall submit to the division a report containing the information listed in Section VIII.C.

E. Alternate Recordkeeping and Reporting

Where the information required under subsections C and D above is otherwise made available to the Division, for example in EIS reports submitted by the source or pursuant to operating permit requirements, the requirements of subsections C and D of this Section VIII are satisfied.

## Statement of Basis, Specific Statutory Authority, and Purpose

### Revisions to Regulation No. 1, Section VII, concerning emission limits for electric generating stations

The April 19, 2001 amendments to Regulation No. 1, section VII were adopted to support the redesignation of the Denver metropolitan area to an attainment area for particulate matter. The rule amendments codify emission limitations and shut-down requirements for the purpose of incorporating such limitations and requirements into the federally-enforceable SIP.

#### Basis and Purpose

One of the emission limitations used to show maintenance of the NAAQS (the 20% SO<sub>2</sub> limit for the Public Service Company of Colorado Cherokee facility) was previously found only in a state permit; it was not in a regulation. (Public Service Company is now doing business as Xcel Energy.) In 1997 EPA incorporated the permit for the Cherokee facility, together with the permits for several other stationary sources, into the SIP by reference. The EPA asserts that such incorporation is necessary to the extent the State relies on emission limits in the permits to demonstrate attainment of the PM-10 NAAQS. The incorporation of the permits into the SIP means that any revision to such permits must go through the extensive SIP revision process. The maintenance demonstration also relies on NO<sub>x</sub> limitations at the plant. NO<sub>x</sub> emissions are already subject to federal regulations that achieve the same result, albeit with a different averaging time and calculation method. EPA, however, has asserted that the limitation must be expressed as a short-term limit incorporated into the SIP. The Division disagrees with EPA's interpretation of federal law, but does not believe that the circumstances warrant challenging EPA's position. Public Service Company has consented to the inclusion of certain SO<sub>2</sub> and NO<sub>x</sub> emission limitations (calculated on a rolling thirty-day average basis) in the regulation and the SIP in order to resolve the matter with EPA. EPA has indicated that these limitations are adequate to resolve its concerns and, with them as a substitute, will agree that the Cherokee and all other permits may be removed from the SIP.

Therefore, all permit limits and conditions contained in permits for the following facilities are specifically removed from the SIP: Trigen-Colorado Energy; Public Service Company; Purina Mills; Electron Corporation; Ultramar Diamond Shamrock; Conoco Refinery; Rocky Mountain Bottle; and Robinson Brick. A SIP revision shall not be required to modify permit limits and conditions for these facilities. Any increases in emission limits contained in Regulation No. 1 that are also incorporated into the SIP would require a SIP revision.

For these reasons, the Commission has determined that it is appropriate to include the requirements in the SIP and the regulation. Public Service Company has asked, and the Commission agrees, that these new emission limitations should not become effective unless and until EPA approves the SIP.

In 1998, the Commission approved a voluntary emission reduction agreement between Public Service Company and the Division pursuant to C.R.S. §25-7-1201et seq. Under that agreement as amended, Public Service Company agreed, among other things, that it would permanently shut down and retire Arapahoe Units 1 and 2 on January 1, 2003. This retirement of these two units was also used to show maintenance of the NAAQS. Despite the fact that the retirement is an enforceable commitment of the company under state law, EPA objected to the assumption that Arapahoe Units 1 and 2 will shut-down in 2003. The EPA asserts that the maintenance plan must include a federally-enforceable provision mandating the closures. Again, the Division disagrees with the EPA's position and believes that it may properly rely upon the provisions of

the voluntary agreement to demonstrate maintenance of the standard. However, again in order to resolve the disagreement with the EPA, the Public Service Company consented to the inclusion of the shut-down requirements in the State regulations and the federally-enforceable SIP.

In the voluntary agreement, the retirement of Arapahoe Units 1 and 2 does not forbid Public Service Company (or some other person) from reusing the Arapahoe 1 and 2 plant site or equipment, provided that such reuse is subject to new source permitting requirements. The Company, as is its right under C.R.S. §25-7-1203(6), consented to the EPA's desire to include the retirement in the SIP only if the SIP and the state regulations recognize that such reuse is allowed subject to the new source permitting requirements. Therefore, the Commission has determined that language in the proposed regulation allowing for such reuse is necessary and appropriate. This language will allow PSCo or some other party to use the Arapahoe Unit 1 or 2 equipment or plant site for the construction and operation of a new source, provided that, depending on its level of emissions, the new source obtains the applicable minor or major source permit.

The Company also asked that the regulatory SIP provision should not apply if EPA disapproves the maintenance plan and redesignation request. Therefore, the regulation expressly states that it will take effect upon EPA approval of the redesignation request. This provision in the regulation is not to be construed to mean that approval of redesignation request is required in order for the voluntary agreement between the State and the Public Service Company to take effect. The regulation is not intended to supercede or modify the agreement. The agreement shall be effective whether or not the regulation takes effect. The Commission adopted the regulation in order to satisfy EPA's demand to incorporate the shut-down requirement in the SIP, without incorporating the entire agreement into the SIP. Only the provisions applicable to the Arapahoe 1 and 2 retirement described in the regulation have been incorporated into the SIP.

#### Statutory Authority

Specific statutory authority to redesignate areas to attainment is provided in section 25-7-107, C.R.S. (1999). The authority to adopt the regulations necessary to maintain the NAAQS is set out at section 25-7-105(1)(a)(I). C.R.S. The authority to control particulate emissions is set out in section 25-7-109(2)(b), C.R.S.

#### Findings pursuant to section 25-7-110.8

Section 25-7-110.8 requires the Commission to make specific findings concerning any regulation intended to reduce air pollution. The April 2001 amendments to Regulation No. 1 put into regulation pre-existing requirements. Although the regulations change the averaging time for SO<sub>2</sub> and NO<sub>x</sub> limitations, and thus appear to make the existing requirements more stringent, the units were already in compliance with the revised standards based on the shorter averaging times. Thus, some of the determinations required by section 25-7-110.8 are irrelevant. To address the remaining, applicable requirements of 25-7-110.8, the Commission determines that: (1) all validated, reviewed and sound scientific methodologies and information made available by interested parties has been considered; and (2) the amendments adopted represent the most cost-effective option.

Adopted April 19, 2001

COLORADO AIR QUALITY CONTROL COMMISSION