

# Virginia Regulatory Town Hall

## Proposed Regulation Agency Background Document

<b>Agency Name:</b>	State Air Pollution Control Board
<b>Regulation Title:</b>	Regulations for the Control and Abatement of Air Pollution
<b>Primary Action:</b>	9 VAC 5-20-206
<b>Secondary Action(s):</b>	9 VAC 5-40-10 et seq.
<b>Action Title:</b>	VOC Early Reduction Credit (Rev. C03)
<b>Date:</b>	January 31, 2003

This information is required pursuant to the Administrative Process Act (§ 2.2-4000 *et seq.* of the *Code of Virginia*), Executive Order Twenty-Five (98), and the *Virginia Register Form, Style and Procedure Manual*. Please refer to these sources for more information and other materials required to be submitted in the regulatory review package.

### Summary \*

*Please provide a brief summary of the proposed new regulation, amendments to an existing regulation, or the regulation being repealed. There is no need to state each provision or amendment or restate the purpose and intent of the regulation.*

Currently, Chapter 40 of the Regulations for the Control and Abatement of Air Pollution contains a number of regulations with VOC emission standards. The geographic applicability of these rules is defined by establishing VOC emissions control areas (in a list located in 9 VAC 5-20-206 of Chapter 20). Chapter 40 also contains a regulation (Rule 4-4) that establishes a process for making case-by-case control technology determinations for major sources of VOC and NO<sub>x</sub>. The geographic applicability of these rules is defined by the VOC emissions control areas as well as NO<sub>x</sub> emissions control areas.

Each of these Chapter 40 rules contains, in the applicability section, the following statement: "The provisions of this article apply to sources of volatile organic compounds in volatile organic compound emissions control areas designated in 9 VAC 5-20-206." Geographic applicability and reference to emissions control areas is also found in the VOC and NO<sub>x</sub> requirements of Article 4. Therefore, in order for these rules to apply in the areas that wish to participate in the early reduction program, the localities must belong to a VOC and a NO<sub>x</sub> Emissions Control Area. To this end, two new VOC and two new NO<sub>x</sub> Emissions Control Areas have been added to the list in 9 VAC 5-20-206: the Northeastern Virginia Emissions Control Area (Caroline, Fauquier, and Spotsylvania Counties and Fredericksburg City), and the Western Virginia Emissions Control Area

(Albemarle, Augusta, Botetourt, Frederick, Pittsylvania, Roanoke, and Rockingham Counties, the portions of Page and Madison Counties containing Shenandoah National Park, and Roanoke, Salem, and Winchester Cities).

### Basis \*

*Please identify the section number and provide a brief statement relating the content of the statutory authority to the specific regulation proposed. Please state that the Office of the Attorney General has certified that the agency has the statutory authority to promulgate the proposed regulation.*

Section 10.1-1308 of the Virginia Air Pollution Control Law (Title 10.1, Chapter 13 of the Code of Virginia) authorizes the State Air Pollution Control Board to promulgate regulations abating, controlling and prohibiting air pollution in order to protect public health and welfare. Written assurance from the Office of the Attorney General that the State Air Pollution Control Board possesses the statutory authority to promulgate the proposed regulation amendments is available upon request.

### Purpose \*

*Please provide a statement explaining the rationale or justification of the proposed regulation as it relates to the health, safety or welfare of citizens.*

The purpose of the regulation is to require owners to limit emissions of air pollution from sources of VOCs and NO<sub>x</sub> to the level necessary for (i) the protection of public health and welfare, and (ii) the attainment and maintenance of the air quality standards. The proposed amendments are being made to implement a program established by EPA for areas potentially designated as nonattainment under the 8-hour ozone standard. This program enables such areas to avoid the nonattainment designation through early reduction credits.

### Substance \*

*Please identify and explain the new substantive provisions, the substantive changes to existing sections, or both where appropriate. Please note that a more detailed discussion is required under the statement providing detail of the regulatory action's changes.*

Currently, Chapter 40 of the Regulations for the Control and Abatement of Air Pollution contains a number of regulations with VOC emission standards. The geographic applicability of these rules is defined by establishing VOC emissions control areas (in a list located in 9 VAC 5-20-206 of Chapter 20). Chapter 40 also contains a regulation (Article 4) that establishes a process for making case-by-case control technology determinations for major sources of VOC and NO<sub>x</sub>. The geographic applicability of these rules is defined by the VOC emissions control areas as well as NO<sub>x</sub> emissions control areas. The VOC and NO<sub>x</sub> regulations found in Chapter 40 are as follows:

Article 4 - General Process Operations

Article 5 - Synthesized Pharmaceutical Products Manufacturing Operations

Article 6 - Rubber Tire Manufacturing Operations

Article 24 - Solvent Metal Cleaning Operations Using Non-halogenated Solvents

Article 25 - Volatile Organic Compound Storage and Transfer Operations  
Article 26 - Large Appliance Coating Application Systems  
Article 27 - Magnet Wire Coating Application Systems  
Article 28 - Automobile And Light Duty Truck Coating Application Systems  
Article 29 - Can Coating Application Systems  
Article 30 - Metal Coil Coating Application Systems  
Article 31 - Paper and Fabric Coating Application Systems  
Article 32 - Vinyl Coating Application Systems  
Article 33 - Metal Furniture Coating Application Systems  
Article 34 - Miscellaneous Metal Parts and Products Coating Application Systems  
Article 35 - Flatwood Paneling Coating Application Systems  
Article 36 - Flexographic, Packaging Rotogravure and Publication Rotogravure Printing Lines  
Article 37 - Petroleum Liquid Storage and Transfer Operations  
Article 39 - Asphalt Paving Operations

Each of these Chapter 40 rules contains, in the applicability section, the following statement: "The provisions of this article apply to sources of volatile organic compounds in volatile organic compound emissions control areas designated in 9 VAC 5-20-206." Geographic applicability and reference to emissions control areas is also found in the VOC and NO<sub>x</sub> requirements of Article 4. Therefore, in order for these rules to apply in the areas that wish to participate in the early reduction program, the localities must belong to a VOC and a NO<sub>x</sub> Emissions Control Area. To this end, two new VOC and two new NO<sub>x</sub> Emissions Control Areas have been added to the list in 9 VAC 5-20-206: the Northeastern Virginia Emissions Control Area (Caroline, Fauquier, and Spotsylvania Counties and Fredericksburg City), and the Western Virginia Emissions Control Area (Albemarle, Augusta, Botetourt, Frederick, Pittsylvania, Roanoke, and Rockingham Counties, the portions of Page and Madison Counties containing Shenandoah National Park, and Roanoke, Salem, and Winchester Cities).

### Issues \*

*Please provide a statement identifying the issues associated with the proposed regulatory action. The term "issues" means: 1) the primary advantages and disadvantages to the public of implementing the new or amended provisions; and 2) the primary advantages and disadvantages to the agency or the Commonwealth. If there are no disadvantages to the public or the Commonwealth, please include a sentence to that effect.*

1. Public: Public health and welfare will benefit through the reduction of ozone air pollution. By implementing this program in advance of EPA's 8-hour implementation policies, these areas will enjoy this benefit sooner than if they waited for final implementation. Additionally, by avoiding official designation as nonattainment, these areas will avoid the consequences of the nonattainment designation, including the imposition of offsets on new major stationary sources, and the need to make transportation and general conformity determinations.

2. Department: The department will benefit from a better understanding of air emissions from these areas, and will benefit from more accurate long- and short-term air quality planning though the state overall. There is a slight disadvantage to the department in that more sources will have to be permitted and inspected, resulting in an increased workload; however, this disadvantage should be outweighed by the benefit of avoiding resource-intensive nonattainment area new source review.

### Localities Particularly Affected \*

*Please provide the identity of any localities particularly affected by the proposed regulation.*

The following localities are potentially affected: the Northeastern Virginia Emissions Control Area of Caroline County, Fauquier County, Fredericksburg City and Spotsylvania County, and the Western Virginia Emissions Control Area of Albemarle County, Augusta County, Botetourt County, Frederick County, Pittsylvania County, Roanoke County, Rockingham County, Roanoke City, Salem City, Winchester City, and the portions of Page County and Madison County containing Shenandoah National Park.

Note that this list is overly inclusive. To date, only two areas - one consisting of Botetourt County, Roanoke County, Roanoke City, and Salem City, and one consisting of Frederick County and Winchester City - qualify for and have made formal commitments to participate in the early reduction program.

### Public Participation \*

*Please indicate the nature of the comments the Department is soliciting pursuant to this notice.*

The department is seeking comment on the proposed regulation and the costs and benefits of the proposal. The department is also seeking comment on the impacts of the proposed regulation on farm and forest lands.

### Impact

*Please identify the anticipated fiscal impacts and at a minimum include: (a) the projected cost to the state to implement and enforce the proposed regulation, including (i) fund source / fund detail, (ii) budget activity with a cross-reference to program and subprogram, and (iii) a delineation of one-time versus on-going expenditures; (b) the projected cost of the regulation on localities; (c) a description of the individuals, businesses or other entities that are likely to be affected by the regulation; (d) the agency's best estimate of the number of such entities that will be affected; and (e) the projected cost of the regulation for affected individuals, businesses, or other entities. Include a description of the beneficial impact the regulation is designed to produce.*

#### 1. Entities Affected

Unlike areas that are currently designated nonattainment or maintenance, very little source-specific data exists for localities which have hitherto been considered to be attainment areas. Additionally, there is still some uncertainty as to which localities will be

participating in the early reduction program, as well as which specific Chapter 40 rules will apply. In order to gain a general sense of what entities may be affected, the department searched its Comprehensive Environmental Data System (CEDS) for information relevant to localities which are, as of this writing, fairly certain to participate in the early reduction program: the Roanoke and Winchester areas. Information derived from data collected by CEDS reveals approximately 5 potentially affected sources in the Roanoke area, and 9 potentially affected sources in the Winchester area; this is discussed in more detail below.

In addition, an unknown number of area sources might become subject to the regulations of Chapter 40. This information is not available from the CEDS database.

## 2. Fiscal Impact

### a. Costs to Affected Entities

#### **General Issues**

Based on EPA guidance, the average cost per ton of VOC removal is generally recognized to be \$2,400. Specific data on projected costs to regulated entities for implementation and compliance is, however, virtually impossible to quantify because the department does not have information available in its database to determine what sources will be affected. Actual costs will vary widely depending on source type, size, location, and controls. It is important to note that sources tend to make changes to their operation - work practices, products used, etc. - in order to avoid imposition of regulatory requirements. Often, sources are able to realize cost savings by improving operation efficiency, seeking alternative processes, use of less-polluting substances, and so forth. It is also important to recognize that a significant element of this action - the control technology requirements of Article 4 - makes its control technology determinations on a case-by-case basis, thereby making it impossible to predict the outcome of each potential source's analysis.

As discussed in the section on public participation, the department is seeking comment on the costs and benefits of the proposal.

#### **RACT Issues**

Emissions from all major sources are to be controlled through reasonably available control technology (RACT). This is accomplished through Article 4, which establishes a process for making case-by-case control technology determinations for major sources of VOCs and NO<sub>x</sub>. Cost effectiveness is one tool in RACT selection. The cost effectiveness of a pollution control system is a simple ratio of the projected cost of the control system to the amount of emissions that would be controlled. The resulting cost effectiveness can then be compared to that of other related controls to provide a measure of how "reasonable" the system is relative to the others. Thus, the cost effectiveness value for a particular control system is usually expressed in terms of dollars per ton of pollutant removed by the

control system. The cost effectiveness value is obtained by adding the capital costs for the control equipment to the operating and maintenance costs and amortizing that sum over an appropriate period of time. The result is called the annualized cost. Dividing this value by the tons of pollutant removed gives the cost effectiveness value.

The costs to affected entities will vary widely according to source size and type, and the particular options chosen by each source in order to comply with the regulations. It appears that most, if not all, of the potentially affected sources in the area will remain below the threshold for applying NO<sub>x</sub> RACT.

The emission standards for VOCs in Article 4 do not contain set emission limits or other specific requirements. For this reason, no definitive cost impact data can be established for Article 4. The standards are structured to provide a process for the establishment of the specific emission limits achievable by the use of RACT and other necessary requirements on a case-by-case basis. This approach was taken because most of the sources subject to Article 4 are unique as to source type and size. The specific requirements, once determined, will be enforced through an operating permit issued by the board.

### **VOC Issues**

VOC emission standards for rules other than Article 4 do contain set emission limits and other specific requirements relating to compliance, testing, monitoring, recordkeeping, and reporting. For this reason, the available cost impact data for these other rules is more definitive than it is for Article 4. As mentioned earlier, the average cost per ton of VOC removal is generally recognized to be \$2,400. However, as discussed elsewhere, sources may make changes to their operation - work practices, products used, etc. - in order to avoid imposition of regulatory requirements. Often, sources are able to realize cost savings by improving operation efficiency, seeking alternative processes, use of less-polluting substances, and so forth.

The following sources and the amount of VOCs they emitted in 2001 are located in the Roanoke area and could possibly be affected by Chapter 40 VOC rules.

Three sources potentially subject to Article 4 (General Process Operations): 61 tons, 79 tons, and 155 tons.

One source potentially subject to Article 6 (Rubber Tire Manufacturing Operations): 81 tons.

One source potentially subject to Article 34 (Miscellaneous Metal Parts/Products Coating Application): 185 tons.

The following sources and the amount of VOCs they emitted in 2001 are located in the Winchester area and could possibly be affected by Chapter 40 VOC rules:

Eight sources potentially subject to Article 4 (General Process Operations): 36 tons, 52 tons, 90 tons, 98 tons, 112 tons, 206 tons, 270 tons, and 559 tons.

One source potentially subject to Article 36: 24 tons

b. Costs to Localities

Because this is a voluntary program in which localities enter into agreements with EPA, localities will experience administrative costs relative to planning and recordkeeping. It is not expected that these costs will be beyond the localities' current capacities to perform. Once these initial costs are experienced, ongoing costs should be minor. Any such costs to localities will be outweighed by improvements in air quality and the avoidance of a nonattainment designation.

c. Costs to Agency

Because the specific number of affected sources is as yet unknown, it is not possible to quantify costs to the agency, although preliminary inventories suggest that the number will be small. The department will need to perform additional inspection, monitoring and recordkeeping to ensure that the emissions limitations are being met, which will require increased expenditure in personnel and equipment. However, the increase in data to be gathered and analyzed will benefit the department by enhancing its ability to make both short- and long-term planning decisions. It is also expected that long-term savings will be achieved by avoidance of nonattainment area new source review. The sources of department funds to carry out this regulation are the general fund and the federal trust (grant money provided by EPA under § 105 of the federal Clean Air Act or permit fees charged to affected entities under the permit program). The activities are budgeted under the following program (code)/subprogram (code): (i) Environmental and Resource Management (5120000)/Air Quality Stationary Source Permitting (5122000) and Air Quality Stationary Source Compliance Inspections (5122100) and (ii) Environmental Research and Planning (5130000)/Air Quality Research and Planning (5130700). The costs are expected to be ongoing.

d. Benefits

The regulation will benefit the citizens of the Commonwealth by helping to prevent air pollution, the source of damage to health, welfare, and property. While no specific data on the cost benefits from the controls are available, costs are, to a degree, offset by the benefits in human health and welfare, including a reduction in the number of cancer cases and other disease, reduction in structural damage, and an increase in welfare factors such as visibility. Citizens living in the affected localities will also enjoy the benefits of reductions in emissions sooner than if they waited for the implementation of EPA's new 8-hour requirements.

By avoiding the need for resource-intensive conformity review, the state, and therefore the localities, will realize considerable savings. While no specific data is available, the Virginia Department of Transportation estimates costs savings to be considerable.

Industries directly affected by this regulation will experience a number of benefits. Existing companies will be able to identify whether they are operating efficiently, and if they require more efficient equipment, or perhaps a more efficient process. Industries seeking to locate a major new source, and localities seeking such sources, will benefit by avoiding resource-intensive nonattainment area new source review, and the necessity of obtaining offsets.

Benefits to the department and board stemming from the regulation include better determination of compliance and monitoring, as well as a better knowledge of emissions in the affected areas. The regulations will also contribute to statewide regulatory consistency. Increased Title V fees may be realized if additional sources are required to obtain operating permits. Finally, the department will benefit from avoiding resource-intensive nonattainment area new source review.

As evidenced by the lack of comprehensive inventory and cost data available for the potentially affected areas, one of the significant benefits from implementation of this action will be the improved knowledge of what sources are affected and what their emissions are.

e. Small Business Impact

The impact upon facilities that meet the definition of small business provided in § 9-199 of the Code of Virginia is addressed in paragraph 2a above.

## Legal Requirements

*Please identify the state and/or federal source of the legal requirements that necessitate promulgation of the contemplated regulation. The discussion of these requirements should include a description of their scope and the extent to which the requirements are mandatory or discretionary. Full citations for the legal requirements and web site addresses, if available, for locating the text of the cited legal provisions should be provided.*

### Federal Requirements

Federal Clean Air Act (CAA):

<http://www.epa.gov/ttn/oarpg/gener.html>

Code of Federal Regulations (CFR):

<http://www.access.gpo.gov/nara/cfr/cfr-retrieve.html>

Federal Register (FR):

[http://www.gpo.gov/su\\_docs/aces/aces140.html](http://www.gpo.gov/su_docs/aces/aces140.html)

Section 110(a) of the Clean Air Act (CAA) mandates that each state adopt and submit to EPA a plan which provides for the implementation, maintenance, and enforcement of each primary and secondary air quality standard within each air quality control region in the state. The state implementation plan shall be adopted only after reasonable public notice

is given and public hearings are held. The plan shall include provisions to accomplish, among other tasks, the following:

1. establish enforceable emission limitations and other control measures as necessary to comply with the provisions of the CAA, including economic incentives such as fees, marketable permits, and auctions of emissions rights;
2. establish schedules for compliance;
3. prohibit emissions which would contribute to nonattainment of the standards or interference with maintenance of the standards by any state; and
4. require sources of air pollution to install, maintain, and replace monitoring equipment as necessary and to report periodically on emissions-related data.

40 CFR Part 51 sets out requirements for the preparation, adoption, and submittal of state implementation plans. These requirements mandate that any such plan shall include several provisions, including those summarized below.

Subpart G (Control Strategy) specifies the description of control measures and schedules for implementation, the description of emissions reductions estimates sufficient to attain and maintain the standards, time periods for demonstrations of the control strategy's adequacy, an emissions inventory, an air quality data summary, data availability, special requirements for lead emissions, stack height provisions, and intermittent control systems.

Subpart K (Source Surveillance) specifies procedures for emissions reports and record-keeping, procedures for testing, inspection, enforcement, and complaints, transportation control measures, and procedures for continuous emissions monitoring.

Subpart L (Legal Authority) specifies the requirements for legal authority to implement plans.

Section 51.230 under Subpart L specifies that each state implementation plan must show that the state has the legal authority to carry out the plan, including the authority to perform the following actions:

1. adopt emission standards and limitations and any other measures necessary for the attainment and maintenance of the national ambient air quality standards;
2. enforce applicable laws, regulations, and standards, and seek injunctive relief;
3. abate pollutant emissions on an emergency basis to prevent substantial endangerment to the health of persons;
4. prevent construction, modification, or operation of a facility, building, structure, or installation, or combination thereof, which directly or indirectly results or may result in

emissions of any air pollutant at any location which will prevent the attainment or maintenance of a national standard;

5. obtain information necessary to determine whether air pollution sources are in compliance with applicable laws, regulations, and standards, including authority to require record-keeping and to make inspections and conduct tests of air pollution sources;
6. require owners or operators of stationary sources to install, maintain, and use emission monitoring devices and to make periodic reports to the state on the nature and amounts of emissions from such stationary sources; and
7. make emissions data available to the public as reported and as correlated with any applicable emission standards or limitations.

Section 51.231 under Subpart L requires the identification of legal authority as follows:

1. the provisions of law or regulation which the state determines provide the authorities required under this section must be specifically identified, and copies of such laws or regulations must be submitted with the plan; and
2. the plan must show that the legal authorities specified in this subpart are available to the state at the time of submission of the plan.

Subpart N (Compliance Schedules) specifies legally enforceable compliance schedules, final compliance schedule dates, and conditions for extensions beyond one year.

Part D of the Clean Air Act specifies state implementation plan requirements for nonattainment areas, with Subpart 1 covering nonattainment areas in general and Subpart 2 covering additional provisions for ozone nonattainment areas.

Section 171 defines "reasonable further progress," "nonattainment area," "lowest achievable emission rate," and "modification."

Section 172(a) authorizes EPA to classify nonattainment areas for the purpose of assigning attainment dates. Section 172(b) authorizes EPA to establish schedules for the submission of plans designed to achieve attainment by the specified dates. Section 172(c) specifies the provisions to be included in each attainment plan, as follows:

1. the implementation of all reasonably available control measures as expeditiously as practicable and shall provide for the attainment of the national ambient air quality standards;
2. the requirement of reasonable further progress;
3. a comprehensive, accurate, current inventory of actual emissions from all sources of the relevant pollutants in the nonattainment area;

4. an identification and quantification of allowable emissions from the construction and modification of new and modified major stationary sources in the nonattainment area;
5. the requirement for permits for the construction and operations of new and modified major stationary sources in the nonattainment area;
6. the inclusion of enforceable emission limitations and such other control measures (including economic incentives such as fees, marketable permits, and auctions of emission rights) as well as schedules for compliance;
7. if applicable, the proposal of equivalent modeling, emission inventory, or planning procedures; and
8. the inclusion of specific contingency measures to be undertaken if the nonattainment area fails to make reasonable further progress or to attain the national ambient air quality standards by the attainment date.

Section 172(d) requires that attainment plans be revised if EPA finds inadequacies. Section 172(e) authorizes the issuance of requirements for nonattainment areas in the event of a relaxation of any national ambient air quality standard. Such requirements shall provide for controls which are not less stringent than the controls applicable to these same areas before such relaxation.

Under Part D, Subpart 2, §182(a)(2)(A) requires that the existing regulatory program requiring reasonably available control technology (RACT) for stationary sources of volatile organic compounds (VOCs) in marginal nonattainment areas be corrected by May 15, 1991, to meet the minimum requirements in existence prior to the enactment of the 1990 amendments. RACT is the lowest emission limit that a particular source is capable of meeting by the application of control technology that is reasonably available considering technological and economic feasibility. EPA has published control technology guidelines (CTGs) for various types of sources, thereby defining the minimum acceptable control measure or RACT for a particular source type.

Section 182(b) requires stationary sources in moderate nonattainment areas to comply with the requirements for sources in marginal nonattainment areas. The additional, more comprehensive control measures in §182(b)(2)(A) require that each category of VOC sources employ RACT if the source is covered by a CTG document issued between enactment of the 1990 amendments and the attainment date for the nonattainment area. Section 182(b)(2)(B) requires that existing stationary sources emitting VOCs for which a CTG existed prior to adoption of the 1990 amendments also employ RACT.

Section 182(c) requires stationary sources in serious nonattainment areas to comply with the requirements for sources in both marginal and moderate nonattainment areas.

EPA has issued detailed guidance that sets out its preliminary views on the implementation of the air quality planning requirements applicable to nonattainment areas. This guidance is titled the "General Preamble for the Implementation of Title I of the Clean Air Act Amendments of 1990" (or "General Preamble"). See 57 FR 13498 (April 16, 1992) and 57 FR 18070 (April 28, 1992). The General Preamble has been supplemented with further guidance on Title I requirements. See 57 FR 31477 (July 16, 1992) (announcing the availability of draft guidance for lead nonattainment areas and serious PM<sub>10</sub> nonattainment areas); 57 FR 55621 (Nov. 25, 1992) (guidance on NO<sub>x</sub> RACT requirements in ozone nonattainment areas). For this subject, the guidance provides little more than a summary and reiteration of the provisions of the Act.

On June 21, 2001, EPA issued formal guidelines for the "Ozone Flex Program." These guidelines set out eligibility requirements, what measures may be taken and how, and how localities, states and EPA are to develop and implement early reduction plans. On November 14, 2002, EPA issued a schedule for 8-hour ozone designations and its effect on early action compacts for potential 8-hour nonattainment areas.

### State Requirements

Code of Virginia:

<http://leg1.state.va.us/000/cod/codec.htm>

Virginia Administrative Code (VAC):

<http://leg1.state.va.us/000/reg/toc.htm>

Code of Virginia § 10.1-1308 provides that the board shall have the power to promulgate regulations abating, controlling, and prohibiting air pollution throughout or in any part of the Commonwealth in accordance with the provisions of the Administrative Process Act.

## Comparison with Federal Requirements

*Please describe the provisions of the proposed regulation which are more restrictive than applicable federal requirements together with the reason why the more restrictive provisions are needed.*

The proposed regulation amendments are not more restrictive than the applicable legal requirements.

## Need

*Please provide an explanation of the need for the proposed regulation and potential consequences that may result in the absence of the regulation. Also set forth the specific reasons the agency has determined that the proposed regulatory action would be essential to protect the health, safety or welfare of citizens or would be essential for the efficient and economical performance of an important governmental function. Include a discussion of the problems the regulation's provisions are intended to solve.*

Among the primary goals of the federal Clean Air Act are the attainment and maintenance of the National Ambient Air Quality Standards (NAAQS) and the prevention of significant deterioration (PSD) of air quality in areas cleaner than required by the NAAQS.

The NAAQS, developed and promulgated by EPA, establish the maximum limits of pollutants that are permitted in the outside ambient air. EPA requires that each state submit a plan (called a State Implementation Plan or SIP), including any laws and regulations necessary to enforce the plan, that shows how the air pollution concentrations will be reduced to levels at or below these standards (attainment). Once the pollution levels are within the standards, the SIP must also demonstrate how the state will maintain the air pollution concentrations at the reduced levels (maintenance).

A SIP is the key to the state's air quality programs. The Clean Air Act is specific concerning the elements required for an acceptable SIP. If a state does not prepare such a plan, or EPA does not approve a submitted plan, then EPA itself is empowered to take the necessary actions to attain and maintain the air quality standards—that is, it would have to promulgate and implement an air quality plan for that state. EPA is also, by law, required to impose sanctions in cases where there is no approved plan or the plan is not being implemented, the sanctions consisting of loss of federal funds for highways and other projects and/or more restrictive requirements for new industry. Generally, the plan is revised, as needed, based upon changes in the federal Clean Air Act and its requirements.

The basic approach to developing a SIP is to examine air quality across the state, delineate areas where air quality needs improvement, determine the degree of improvement necessary, inventory the sources contributing to the problem, develop a control strategy to reduce emissions from contributing sources enough to bring about attainment of the air quality standards, implement the strategy, and take the steps necessary to ensure that the air quality standards are not violated in the future.

The heart of the SIP is the control strategy. The control strategy describes the emission reduction measures to be used by the state to attain and maintain the air quality standards. There are three basic types of measures: stationary source control measures, mobile source control measures, and transportation source control measures. Stationary source control measures are directed at limiting emissions primarily from commercial/industrial facilities and operations and include the following: emission limits, control technology requirements, preconstruction permit programs for new industry and expansions, and source-specific control requirements. Stationary source control measures also include area source control measures which are directed at small businesses and consumer activities. Mobile source control measures are directed at tailpipe and other emissions primarily from motor vehicles and include the following: Federal Motor Vehicle Emission Standards, fuel volatility limits, reformulated gasoline, emissions control system anti-tampering programs, and inspection and maintenance programs. Transportation source control measures limit the location and use of motor vehicles and include the following: carpools, special bus lanes, rapid transit systems, commuter park and ride lots, bicycle lanes, signal system improvements, and many others.

Federal guidance on states' approaches to the inclusion of control measures in the SIP has varied considerably over the years, ranging from very general in the early years of the Clean Air Act to very specific in more recent years. Many regulatory requirements were adopted in the 1970s when no detailed guidance existed. The legally binding federal mandate for these regulations is general, not specific, consisting of the Clean Air Act's broad-based directive to states to attain and maintain the air quality standards. However, in recent years, the Clean Air Act, along with EPA regulations and policy, has become much more specific, thereby removing much of the states' discretion to craft their own air quality control programs.

Generally, a SIP is revised, as needed, based upon changes in air quality or statutory requirements. For the most part the SIP has worked, and the standards have been attained for most pollutants in most areas. However, attainment of NAAQS for one pollutant--ozone--has proven problematic. While ozone is needed at the earth's outer atmospheric layer to shield out harmful rays from the sun, excess concentrations at the surface have an adverse effect on human health and welfare. Ozone is formed by a chemical reaction between volatile organic compounds (VOCs), nitrogen oxides (NO<sub>x</sub>), and sunlight. When VOC and NO<sub>x</sub> emissions from mobile sources and stationary sources are reduced, ozone is reduced.

Congress enacted the 1977 Amendments to the Clean Air Act in order to address unsuccessful SIPs and areas that had not attained the NAAQS (that is, nonattainment areas). Although SIP revisions submitted pursuant to the requirements of the 1977 amendments did achieve some progress in eliminating nonattainment areas, some areas remained.

In 1990 Congress once again enacted comprehensive amendments to the Act to address SIP requirements for nonattainment areas. The new Act established a process for evaluating the air quality in each region and identifying and classifying each nonattainment area according to the severity of its air pollution problem. Nonattainment areas are classified as marginal, moderate, serious, severe and extreme. Marginal areas are subject to the least stringent requirements and each subsequent classification (or class) is subject to successively more stringent control measures. Areas in a higher classification of nonattainment must meet the mandates of the lower classifications plus the more stringent requirements of their class. In addition to the general SIP-related sanctions, nonattainment areas have their own unique sanctions. If a particular area fails to attain the federal standard by the legislatively mandated attainment date, EPA is required to reassign it to the next higher classification level (denoting a worse air quality problem), thus subjecting the area to more stringent air pollution control requirements. The Clean Air Act includes specific provisions requiring these sanctions to be issued by EPA if so warranted.

The new Act required EPA, based on the air quality data from each state, to propose geographic boundaries and pollution classification levels for all nonattainment areas to each state's governor. If states disagreed with EPA's proposals, they had the opportunity

to propose different boundaries; however, EPA had the authority to make the final decision.

Once the nonattainment areas were defined, each state was then obligated to submit a SIP demonstrating how it would attain the air quality standards in each nonattainment area. First, the new Act requires that certain specific control measures and other requirements be adopted and included in the SIP; a list of those that necessitated the adoption of state regulations is provided below. In addition, the state had to demonstrate that it would achieve a VOC emission reduction of 15%. Finally, the SIP had to include an attainment demonstration by photochemical modeling (including annual emission reductions of 3% from 1996 to 1999) in addition to the 15% emission reduction demonstration. In cases where the specific control measures shown below were inadequate to achieve the emission reductions or attain the air quality standard, the state was obligated to adopt other control measures as necessary to achieve this end.

#### ALL AREAS

- correct existing VOC regulatory program (controls on certain sources identified in EPA control technology guidelines)
- requirement for annual statements of emissions from industries
- permit program for new industry and expansions (with variable major source definition, variable offset ratio for addition of new pollution, and special requirements for expansions to existing industry in serious areas)
- procedures to determine if systems level highway plans and other federally financed projects are in conformity with air quality plans

#### MODERATE AND ABOVE AREAS

- requirement for controls for all major (100 tons per year) VOC sources
- requirement for vapor recovery controls for emissions from filling vehicles with gasoline (stage II)
- requirement for controls for all major (100 tons per year) NO<sub>x</sub> sources
- case by case control technology determinations for all major VOC and NO<sub>x</sub> sources not covered by a EPA control technology guideline

#### SERIOUS AND ABOVE AREAS

- requirement for controls for all major (50 tons per year) VOC sources
- requirement for controls for all major (50 tons per year) NO<sub>x</sub> sources

- enhanced monitoring (source emissions) program
- correct existing motor vehicle emissions inspection and maintenance (I&M) program
- enhanced motor vehicle emissions I&M program
- clean fuel fleet vehicle program
- oxygenated fuels program

On July 18, 1997 (62 FR 38856), EPA issued a regulation replacing the 1-hour, 0.12 ppm ozone standard with an 8-hour, 0.08 ppm standard. The new primary standard became effective on September 16, 1997. Considerable time and litigation later, the new standard was upheld, and EPA began the process of developing an implementation strategy. EPA hopes to finalize a set of requirements by late 2003, so that states can begin to develop their implementation plans.

In the meantime, the Clean Air Act requires that governors make recommendations to EPA concerning the geographic boundaries with respect to attainment or nonattainment after promulgation of new or revised air quality standards. In July 2000, the Governor of Virginia recommended the following areas:

- ◆ Frederick: Frederick County, City of Winchester
- ◆ Fredericksburg: Caroline County, Spotsylvania County, Stafford County, City of Fredericksburg
- ◆ Northern Virginia: Arlington County, Fairfax County, Fauquier County, Loudoun County, Prince William County, City of Alexandria, City of Fairfax, City of Falls Church, City of Manassas, City of Manassas Park
- ◆ Shenandoah National Park: portions of Shenandoah National Park located in Page and Madison Counties
- ◆ Roanoke: Botetourt County, Roanoke County, City of Roanoke, City of Salem
- ◆ Richmond: Charles City County, Chesterfield County, Hanover County, Henrico County, City of Colonial Heights, City of Hopewell, City of Richmond
- ◆ Hampton Roads: James City County, York County, City of Chesapeake, City of Hampton, City of Newport News, City of Norfolk, City of Poquoson, City of Portsmouth, City of Suffolk, City of Virginia Beach, City of Williamsburg

EPA responded with the following proposed additions:

- ◆ Rockingham County, Augusta County, Albemarle County, Pittsylvania County

Currently, EPA and the states are in the process of determining what the final designations will be. Governors will have the opportunity to amend their original proposals in mid-2003. It is anticipated that the final designations will be made and become effective in April 2004.

EPA has established a program to allow areas that may potentially become designated nonattainment under the 8-hour ozone standard to voluntarily adopt local emission control programs to avoid air quality violations and the potential of mandated controls. By avoiding the nonattainment designation, these areas will avoid new source review for major sources, including the requirement to make offsets, and conformity review. These areas will also experience a reduction in ozone air pollution, and thus experience improved public health and welfare.

Areas that meet the 1-hour ozone standard are eligible to participate. In order to participate, state and local governments and EPA must develop and sign an intergovernmental agreement known as a memorandum of agreement (MOA). The MOA describes the local control measures the state or local community intends to adopt and implement to reduce emissions of ozone-forming air pollutants in advance of air quality violations. In the MOA, the state or local community agrees to prepare emission inventories and conduct air quality modeling and monitoring, if necessary, to support its selection of emission controls.

Areas that participate in the program have the flexibility to institute their own approach in maintaining clean air and providing public health protection. Participants receive positive public reaction for voluntarily addressing air pollution problems ahead of federal requirements. Early, local controls can improve air quality in advance of EPA's designating areas as attainment or nonattainment for the 8-hour ground-level ozone standard. For a period of time (generally not to exceed 5 years), participating areas can avoid a nonattainment designation.

Virginia's strategy for participating in the early reduction program and avoiding future violations of the standard is to have the proposed nonattainment areas be subject to volatile organic compound (VOC) and nitrogen oxides (NO<sub>x</sub>) control strategies from which they had hitherto been exempt. In order to enable the affected localities to implement these VOC and NO<sub>x</sub> controls, the regulation must be revised to include these affected localities. To this end, the list of VOC and NO<sub>x</sub> emissions control areas is being expanded to include two new VOC and NO<sub>x</sub> emissions control areas. By doing so, the VOC and NO<sub>x</sub> control rules of Chapter 40 will become applicable in these areas.

## Detail of Changes

*Please detail any changes, other than strictly editorial changes, that are being proposed. Please detail new substantive provisions, all substantive changes to existing sections, or both where appropriate. This statement should provide a section-by-section description of changes implemented by the proposed regulatory action. Where applicable, include cross-referenced citations when the proposed regulation is intended to replace an existing regulation.*

1. Two new VOC Emissions Control Areas have been added to the list in Chapter 20: Northeastern Virginia Emissions Control Area (Caroline, Fauquier, and Spotsylvania Counties and Fredericksburg City), and the Western Virginia Emissions Control Area (Albemarle, Augusta, Botetourt, Frederick, Pittsylvania, Roanoke, and Rockingham

Counties, the portions of Page and Madison Counties containing Shenandoah National Park, and Roanoke, Salem, and Winchester Cities). [9 VAC 5-20-206 1 d and e]

2. Two new NO<sub>x</sub> Emissions Control Areas have been added to the list in Chapter 20: Northeastern Virginia Emissions Control Area (Caroline, Fauquier, and Spotsylvania Counties and Fredericksburg City), and the Western Virginia Emissions Control Area (Albemarle, Augusta, Botetourt, Frederick, Pittsylvania, Roanoke, and Rockingham Counties, the portions of Page and Madison Counties containing Shenandoah National Park, and Roanoke, Salem, and Winchester Cities). [9 VAC 5-20-206 2 d and e]

3. A note indicating that VOC standards prescribed in 9 VAC 5 Chapter 40 (9 VAC 5-40-10 et seq.) are not applicable in certain localities in the Hampton Roads Emissions Control Area has been expanded to indicate that this exception is not applicable to the emission standards for VOCs prescribed in Article 37 (9 VAC 5-40-5200 et seq.) of Part II of 9 VAC 5 Chapter 40. These localities are subject to Article 37 by state law. [footnote to 9 VAC 5-20-206 1 c]

4. In Article 4 of Chapter 40, the Northeast and Western Emissions Control Areas are added to the applicability section of the standard for VOCs. [9 VAC 5-40-300 B]

5. In Article 4 of Chapter 40, the Northeast and Western Emissions Control Areas, with dates by which sources are to notify the board of their applicability status, commit to making a VOC RACT determination, and provide a determination and compliance schedule, are added. The theoretical potential to emit for these areas is 25 tons per year or greater. [9 VAC 5-40-300 C 4]

6. In Article 4 of Chapter 40, the Northeast and Western Emissions Control Areas are added to the applicability section of the standard for NO<sub>x</sub>. The theoretical potential to emit for major sources in these areas is 25 tons per year or greater. [9 VAC 5-40-310 C]

7. In Article 4 of Chapter 40, the Northeast and Western Emissions Control Areas, with dates by which sources are to notify the board of their applicability status, commit to making a NO<sub>x</sub> RACT determination, and provide a determination and compliance schedule, are added. [9 VAC 5-40-310 D and E]

8. In Article 37 of Chapter 40, the applicability section is revised to clarify what localities must comply with or be exempt from certain requirements. This is necessary for consistency with Virginia law. [9 VAC 5-40-5200 B]

9. In Article 37 of Chapter 40, a minor correction has been made to a reference to kerosene and fuel oil. [9 VAC 5-40-5200 C]

10. In Article 37 of Chapter 40, 9 VAC 5-40-5220 F 3 has been deleted, as the information has been moved to the applicability section of 9 VAC 5-40-5200 B.

## Alternatives

*Please describe the process by which the agency has considered less burdensome and less intrusive alternatives for achieving the need. Also describe, to the extent known, the specific alternatives to the proposal that have been considered to meet the need, and the reasoning by which the agency has rejected any of the alternatives considered.*

As provided in the public participation procedures of the State Air Pollution Control Board, the department included, in the Notice of Intended Regulatory Action, a description of the department's alternatives and a request for comments on other alternatives and the costs and benefits of the department's alternatives or any other alternatives that the commenters provided.

Following the above, alternatives to the proposed regulation amendments were considered by the department. The department determined that the first alternative is appropriate, as it is the least burdensome and least intrusive alternative that fully meets the purpose of the regulation. The alternatives considered by the department, along with the reasoning by which the department has rejected any of the alternatives being considered, are discussed below.

1. Amend the regulation to satisfy the provisions of the law and associated regulations and policies. This option is being selected because it meets the stated purpose of the regulatory action: to enlarge the scope of the emissions control areas to include the proposed 8-hour ozone nonattainment areas in order for these areas to participate in EPA's early reduction credit program.
2. Make alternative regulatory changes to those required by the provisions of the law and associated regulations and policies. This option is not being selected because localities that become designated nonattainment for ozone are subject to more restrictive requirements for new industry, including the need to obtain offsets, and to conduct conformity review. It would also delay the reduction of pollution and thus health and welfare benefits to the affected localities.
3. Take no action to amend the regulation. This option is not being selected because localities that become designated nonattainment for ozone are subject to more restrictive requirements for new industry, including the need to obtain offsets, and to conduct conformity review. Taking no action would also delay the reduction of pollution and thus health and welfare benefits to the affected localities.

## Public Comment

*Please summarize all public comment received during the NOIRA comment period and provide the agency response. If no public comment was received, please include a statement indicating that fact.*

1. **SUBJECT:** Applicability.

**COMMENTER:** BEST Consulting on behalf of members of the Virginia Independent Power Producers, Inc. (VIPP)

**TEXT:** Last year, DEQ promulgated a NO<sub>x</sub> Budget Trading Program (9 VAC 5 Chapter 140) to implement the reductions in NO<sub>x</sub> emissions from large industrial boilers and electric generating facilities required by the EPA (40 CFR 51.121). These reductions will be realized beginning with the summer of 2004. Accordingly, we recommend that the reductions associated with the implementation of the NO<sub>x</sub> Budget Trading Program be considered during the determination of the amount of additional reductions that may be required in the new control areas. If it is determined that additional NO<sub>x</sub> reductions are required, such additional reductions should come from sectors of the inventory other than electric generating facilities and large industrial boilers.

**RESPONSE:** We agree with the commenter that the NO<sub>x</sub> Budget Trading Program will result in reductions in NO<sub>x</sub> emissions from large industrial boilers and electric generating facilities, and are hopeful that no additional requirements need be imposed on NO<sub>x</sub> sources in order to meet the state's attainment goals. However, depending on the outcome of the emissions inventory process, additional reductions may indeed be needed. In the interest of fairness, all industrial sectors must be considered. Note that the number, type, and size of sources that exist in the area from which reductions can be obtained will ultimately determine what additional reductions are necessary. It is also important to note that if the areas become designated nonattainment because the gap between emissions goals and emissions reductions cannot be met, the nonattainment area requirements that electrical power generating facilities must then meet are considerably more comprehensive.

2. **SUBJECT:** Eligibility.

**COMMENTER:** U.S. EPA, Region III

**TEXT:** EPA encourages the expansion of the scope of the VOC emission control areas for the purpose of improving the air quality of the Commonwealth. Participating areas would not avoid nonattainment designations as part of EPA's designation process for the 8-hour standard. There are two EPA programs under which the deferral of nonattainment designation was possible: the first was the Ozone Flex program for the 1-hour ozone standard, the second is the Early Action Compact (EAC) Program for the 8-hour ozone standard. In accordance with EPA's November 14, 2002 guidance memorandum regarding the schedule for 8-hour ozone designations and its effect on EACs, all EACs were required to be completed and signed by EPA, state, and local officials on or before December 31, 2002. In Virginia, the Roanoke Metropolitan Statistical Area (Cities of Roanoke and Salem, Counties of Roanoke, Botetourt, and the Town of Vinton), and the City of Winchester/Frederick County (Northern Shenandoah Valley Area) entered into EACs by the December 31, 2002 deadline. Therefore, only the aforementioned areas are eligible for deferral of the effective date of any nonattainment designation for 8-hour ozone, should such a designation occur for these areas, and contingent upon the area meeting all terms and milestones of the compact. We note that

EPA has not yet determined which areas are to be designated as attainment or nonattainment in respect to the 8-hour standard.

**RESPONSE:** The primary purpose of this action is to revise the regulations in order to enable certain localities to participate in the early action compact program. At the same time, this action is also intended to provide the state and localities flexibility with upcoming attainment planning activities. The NOIRA was intentionally written to be as inclusive as possible, realizing that even though not all areas would participate in the early reduction program, others may wish to implement the regulatory changes in order to contribute to attainment of the 1-hour standard. We recognize that only areas that have met the December 31, 2002 deadline are eligible to participate in the formal early action program. At the time the Notice of Intended Regulatory Action (NOIRA) was prepared (November 2002), the referenced guidance memo was not available; further, we were still in the process of determining which localities were both eligible and willing to participate. The proposed regulation will be revised to reflect the outcome of the eligibility determination process, as well as the outcome of currently ongoing attainment plan discussions with other localities.

3. **SUBJECT:** Support for the proposal.

**COMMENTER:** County of Fairfax

**TEXT:** We believe that the proposed amendments will have a positive effect on air quality in our region, and will help in our efforts to comply with the federal ozone standard. Therefore, we support Virginia's strategy to amend the regulation to enlarge the scope of VOC emissions control areas in order for these areas to participate in EPA's early reduction credit program.

**RESPONSE:** Support for the proposal is appreciated.

### Clarity of the Regulation

*Please provide a statement indicating that the agency, through examination of the regulation and relevant public comments, has determined that the regulation is clearly written and easily understandable by the individuals and entities affected.*

The department, through examination of the regulation, has determined that the regulation is clearly written and easily understandable by the individuals and entities affected.

### Periodic Review

*Please supply a schedule setting forth when the agency will initiate a review and re-evaluation to determine if the regulation should be continued, amended, or terminated. The specific and measurable regulatory goals should be outlined with this schedule. The review shall take place no later than four years after the proposed regulation is expected to be effective.*

The department will initiate a review and re-evaluation of the regulation to determine if it should be continued, amended, or terminated within four years after its effective date.

The specific and measurable goals the proposed regulation amendments are intended to achieve are as follows:

1. To protect public health and welfare with the least possible cost and intrusiveness to the citizens and businesses of the Commonwealth.
2. To ensure that owners comply with air pollution emission limits and control technology requirements in order to control levels of VOC and NO<sub>x</sub> emissions being emitted into the ambient air.
3. To prohibit emissions which would contribute to nonattainment of the national air quality standards or interference with maintenance of the standards.

### Family Impact Statement

*Please provide an analysis of the proposed regulatory action that assesses the potential impact on the institution of the family and family stability including the extent to which the regulatory action will: 1) strengthen or erode the authority and rights of parents in the education, nurturing, and supervision of their children; 2) encourage or discourage economic self-sufficiency, self-pride, and the assumption of responsibility for oneself, one's spouse, and one's children and/or elderly parents; 3) strengthen or erode the marital commitment; and 4) increase or decrease disposable family income.*

It is not anticipated that these regulation amendments will have a direct impact on families. However, there will be positive indirect impacts in that the regulation amendments will ensure that the Commonwealth's air pollution control regulations will function as effectively as possible, thus contributing to reductions in related health and welfare problems.