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## Periodic Review and Small Business Impact Review Report of Findings

<b>Agency name</b>	State Air Pollution Control Board
<b>Virginia Administrative Code (VAC) Chapter citation(s)</b>	9VAC5-220
<b>VAC Chapter title(s)</b>	Variance for Rocket Motor Test Operations at Aerojet Rocketdyne, Inc., Orange County Facility
<b>Date this document prepared</b>	November 7, 2022

This information is required for executive branch review and the Virginia Registrar of Regulations, pursuant to the Virginia Administrative Process Act (APA), Executive Order 19 (2022) (EO 19), any instructions or procedures issued by the Office of Regulatory Management (ORM) or the Department of Planning and Budget (DPB) pursuant to EO 19, the Regulations for Filing and Publishing Agency Regulations (1 VAC 7-10), and the *Form and Style Requirements for the Virginia Register of Regulations and Virginia Administrative Code*.

## Acronyms and Definitions

*Define all acronyms used in this Report, and any technical terms that are not also defined in the "Definitions" section of the regulation.*

CFR- Code of Federal Regulations  
EPA- Environmental Protection Agency  
NAAQS- National Ambient Air Quality Standards  
NO<sub>x</sub>- Nitrogen Oxides  
PSD- Prevention of Significant Deterioration  
SIP- State Implementation Plan  
VOCs- Volatile Organic Compounds

## Legal Basis

*Identify (1) the promulgating agency, and (2) the state and/or federal legal authority for the regulatory change, including the most relevant citations to the Code of Virginia or Acts of Assembly chapter number(s), if applicable. Your citation must include a specific provision, if any, authorizing the*

*promulgating agency to regulate this specific subject or program, as well as a reference to the agency's overall regulatory authority.*

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Section 10.1-1307 C 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 grant local variances from regulations and issue orders to that effect.

#### Promulgating Entity

The promulgating entity for this regulation is the State Air Pollution Control Board.

This variance was adopted by the State Air Pollution Control Board in order to relieve Aerojet Rocketdyne, Inc. (formerly Atlantic Research Corporation) rocket test facility located in Orange County, Virginia from compliance with the board's standards for visible emissions in 9VAC5-40-80 and 9VAC5-50-80 during their rocket motor testing operations. The standards for particulate matter with which the facility had to comply required the company to certify compliance through a determination made using the U.S. Environmental Protection Agency (EPA) "Method for the Visual Determination of the Opacity of Emissions from Stationary Sources" (40 CFR Part 60, Appendix A, Method 9) or an alternate method. Method 9, however, was inappropriate because most of ARC's tests lasted less than the 6-minute minimum specified for the opacity readings that demonstrate a source's compliance with the standards. Thus, an inspector could not observe the source's normal performance for the required duration of the test. In addition, the EPA-approved alternate method could not be substituted. A variance eliminated this problem by replacing the opacity standards with a particulate matter limit of 714 pounds per hour. Thus, the company was relieved from the problem of demonstrating compliance with the opacity standards while still meeting state air quality standards.

### **Alternatives to Regulation**

*Describe any viable alternatives for achieving the purpose of the regulation that were considered as part of the periodic review. Include an explanation of why such alternatives were rejected and why this regulation is the least burdensome alternative available for achieving its purpose.*

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Alternatives for achieving the purpose of the regulation have been considered by the department. The department has determined that the first alternative is appropriate as it is the least burdensome and least intrusive alternative that fully meets statutory requirements. The alternatives considered by the department, along with the reasoning by which the department has rejected any of the alternatives considered, are discussed below.

1. Retain the regulation without amendment. This option was selected because the facility is in operation and cannot meet current opacity requirements. However, an alternative method for control is provided for through the variance and is necessary to protect public health and welfare while avoiding unreasonable hardships on the regulated community, the department, and the general public.
2. Amend the regulation. This option was not selected because no issues have been identified that require making any changes to the regulation. Public health and welfare are currently protected without undue hardship on the regulated community.
3. Repeal the regulation. This option was not selected because the regulation is still needed to protect public health and welfare.

### **Public Comment**

*Summarize all comments received during the public comment period following the publication of the Notice of Periodic Review, and provide the agency's response. Be sure to include all comments submitted: including those received on Town Hall, in a public hearing, or submitted directly to the agency. Indicate if an informal advisory group was formed for purposes of assisting in the periodic review.*

<b>Commenter</b>	<b>Comment</b>	<b>Agency response</b>
Aerojet Rocketdyne	<p>Aerojet Rocketdyne requests that the the board continue the existing opacity variance (9VAC5-220) for the Orange County facility without change. The variance is critical to the success of our business operations and for the benefit of U.S. Department of Defense (DOD). The board approved this variance in December 2002. As a result of the variance, the facility was not required to certify or demonstrate compliance with the opacity standards for the rocket test facility using either EPA Method 9 or the EPA-approved Alternate Method 1. In lieu of the opacity standards, the facility was required to demonstrate compliance with an hourly emission limit for particulate matter (PM as total PM, and PM<sub>10</sub>) of 714 pounds per hour (lb/hr). The air emissions from the rocket test events were calculated using the quantity of propellant test-fired and site-specific emission factors for PM and PM<sub>10</sub>. Compliance with the 714 lb/hr permit limit will ensure compliance with the 24-hour and annual NAAQS for PM<sub>10</sub>, and thereby ensure the maintenance of satisfactory air quality. That emission limit is included in the current Title V Permit and MNSR Permit held by Aerojet Rocketdyne for the site, and the facility has maintained strict compliance with that limit and other conditions of our air permits when conducting tests of solid propellant rocket motors as part of its production and R&amp;D programs for DOD. It is important to note that the short-term opacity generated during the periodic rocket motor test events is the result of PM being emitted. The</p>	<p>DEQ agrees that the variance is the most practical and effective means to control emissions of particulate matter even as it enables the facility to continue its operations while accounting for its unique technical situation.</p>

	<p>hourly and annual emissions of PM and PM<sub>10</sub> are limited by standards set forth in the current Title V Permit and MNSR Permit for the facility. Those emission limits are based in part on DEQ and EPA considerations of the technological and economic impracticability of reducing or eliminating the emissions from the rocket motor test operations.</p>	
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**Effectiveness**

*Pursuant to § 2.2-4017 of the Code of Virginia, indicate whether the regulation meets the criteria set out in the ORM procedures, including why the regulation is (a) necessary for the protection of public health, safety, and welfare, and (b) is clearly written and easily understandable.*

The regulation is necessary for the protection of public health and welfare, as it is needed to meet the primary goals of the federal Clean Air Act (CAA): 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 the NAAQS.

The NAAQS, developed and promulgated by the U.S. Environmental Protection Agency (EPA), establish the maximum limits of pollutants that are permitted in the outside ambient air in order to protect public health and welfare. EPA requires that each state submit a State Implementation Plan (SIP), including any laws and regulations necessary to enforce the plan, which 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 CAA 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 CAA 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.

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 CAA 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 CAA's broad-based directive to states to attain and maintain the air quality standards. However, in

recent years, the CAA, 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, 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 are reduced, ozone is reduced.

The CAA establishes 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 CAA includes specific provisions requiring these sanctions to be issued by EPA if so warranted.

Once a nonattainment area is defined, each state is then obligated to submit a SIP demonstrating how it will attain the air quality standards in each nonattainment area. Certain specific control measures and other requirements must be adopted and included in the SIP. In cases where the specific federal control measures are inadequate to achieve the emission reductions or attain the air quality standard, the state is obligated to adopt additional control measures as necessary to achieve this end.

The regulation provides for the control of particulate matter from a facility that cannot meet the opacity standard. Due to the nature of the testing operations, the company had no appropriate method by which it could demonstrate compliance with the board's opacity standards. The board, therefore, granted a variance for the testing facility that enabled it to demonstrate compliance through meeting a particulate matter standard as an alternative to the opacity standard.

The variance for Aerojet Rocketdyne, Inc., was adopted by the board in 2002. No significant changes have occurred at the facility that would require a modification to the variance.

The regulation has been effective in protecting public health and welfare with the least possible cost and intrusiveness to the citizens and the facility. The regulation ensures that the owners comply with air pollution emission limits and control technology requirements in order to control levels of particulate matter emitted into the ambient air during rocket testing and prohibiting emissions that would contribute to nonattainment of the national air quality standards or interference with maintenance of those standards.

The department has determined that the regulation is clearly written and easily understandable by the individuals and the facility affected. It is written so as to permit only one reasonable interpretation, is written to adequately identify the affected entity, and, insofar as possible, is written in non-technical language.

## Decision

*Explain the basis for the promulgating agency's decision (retain the regulation as is without making changes, amend the regulation, or repeal the regulation).*

*If the result of the periodic review is to retain the regulation as is, complete the ORM Economic Impact form.*

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The variance for Aerojet Rocketdyne, Inc., is necessary as the facility is still in operation. The variance is required to address the need for control of particulate matter in lieu of the opacity limitations. Therefore, the regulation is being retained.

### **Small Business Impact**

*As required by § 2.2-4007.1 E and F of the Code of Virginia, discuss the agency’s consideration of: (1) the continued need for the regulation; (2) the nature of complaints or comments received concerning the regulation; (3) the complexity of the regulation; (4) the extent to which the regulation overlaps, duplicates, or conflicts with federal or state law or regulation; and (5) the length of time since the regulation has been evaluated or the degree to which technology, economic conditions, or other factors have changed in the area affected by the regulation. Also, discuss why the agency’s decision, consistent with applicable law, will minimize the economic impact of regulations on small businesses.*

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This regulation continues to be needed. It provides sources with the most cost-effective means of fulfilling ongoing state and federal requirements that protect air quality.

The regulation’s level of complexity is appropriate to ensure that the regulated entity is able to meet its legal mandate as efficiently and cost-effectively as possible.

This regulation does not overlap, duplicate, or conflict with any state law or other state regulation.

This regulation was last reviewed in 2018. Over time, it generally becomes less expensive to characterize, measure, and mitigate the regulated pollutants that contribute to poor air quality. This regulation continues to provide the most efficient and cost-effective means to determine the level and impact of excess emissions and to control those excess emissions.

The department, through examination of the regulation and relevant public comments, has determined that the regulatory requirements have no impact on small businesses. The affected facility is owned by Aerojet Rocketdyne, which employs 5,000 persons and thus does not qualify as a small business under Virginia law.

TEMPLATES\ EXISTING-REVIEW\TH07  
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