



Emergency Regulation Agency Background Document

Approval authority name	State Air Pollution Control Board
Primary action	9 VAC 5-91
Secondary action(s)	None
Regulation title	Regulation for the Control of Motor Vehicle Emissions in Northern Virginia
Action title	Remote Sensing (Rev. MK)
Document preparation date	September 9, 2003

This information is required for executive review (www.townhall.state.va.us/dpbpages/apaintro.htm#execreview) and the Virginia Registrar of Regulations (legis.state.va.us/codecomm/register/regindex.htm), pursuant to the Virginia Administrative Process Act (www.townhall.state.va.us/dpbpages/dpb_apa.htm), Executive Orders 21 (2002) and 58 (1999) (www.governor.state.va.us/Press_Policy/Executive_Orders/EOHome.html), and the *Virginia Register Form, Style, and Procedure Manual* (http://legis.state.va.us/codecomm/register/download/styl8_95.rtf).

Preamble

The APA (Section 2.2-4011) states that an "emergency situation" is: (i) a situation involving an imminent threat to public health or safety; or (ii) a situation in which Virginia statutory law, the Virginia appropriation act, or federal law requires that a regulation shall be effective in 280 days or less from its enactment, or in which federal regulation requires a regulation to take effect no later than 280 days from its effective date. Please explain why this is an "emergency situation" as described above.

Section F 1 of Item 383 of Chapter 1042, 2003 Acts of Assembly, in part, provides the following: "The Department of Environmental Quality shall initiate, beginning January 1, 2004, a program for on-road testing of motor vehicles pursuant to § 46.2-1178.1, of the Code of Virginia, in all areas designated nonattainment for the 1-hour ozone air quality standard as of January 1, 2003. ...The State Air Pollution Control Board may promulgate any regulations necessary to implement these provisions. Such regulations shall be adopted as final prior to the January 1, 2004, implementation." The legislation was effective July 1, 2003, less than 280 days prior to the due date for the regulations, January 1, 2004.

Summary

Please provide a summary of the key provisions of the new regulation or substantive changes to an existing regulation.

The current program requires that affected vehicles be presented to emissions inspection stations biennially to receive an emissions inspection. This is accomplished through a network of service stations, repair garages, and other similar facilities that perform the inspections. Vehicles which fail the test are denied motor vehicle registration until inspection has been accomplished. Retests, after failure and repair, are free if accomplished within 14 days of the test and performed by the emissions inspection station which performed the initial test. If a motorist wishes to request a waiver of the test, an expenditure of at least \$450 on emissions-related repairs is required. The cost amount is adjusted each January by applying the Consumer Price Index released the previous fall by the federal government.

The geographic coverage of the program consists of the counties of Arlington, Fairfax, Loudoun, Prince William, and Stafford; and the cities of Alexandria, Fairfax, Falls Church, Manassas, and Manassas Park. Cars and trucks weighing up to 10,000 pounds and are 25 years old and newer are subject to an exhaust emissions inspection using ASM equipment which tests cars under "loaded" conditions using a dynamometer. On- Board Diagnostics Systems (OBD) on vehicles so equipped will also be inspected. In addition, random testing of vehicles is accomplished using either roadside pullovers or a remote sensing device next to the roadway. Failing vehicles are required to report to an inspection station for an out-of-cycle test.

The proposed amendments make a number of revisions to the remote sensing provisions of the regulation. These changes include: changes in some definitions, changes in some elements of the remote sensing testing applicability and program procedures and protocol as it pertains to gross polluters and clean car screening, changes to the remote sensing test standards, and changes in some enforcement and compliance procedures.

Legal Basis

Please confirm that the Office of the Attorney General has certified that the agency has the statutory authority to promulgate the emergency regulation. Also, please indicate that the regulation is not otherwise exempt under the provisions of subdivision A.4 of Section 2.2-4006 of the APA.

Section 46.2-1176-1187.3 of the Virginia Air Pollution Control Law (Title 46.2, Chapter 10 of the Code of Virginia) authorizes the State Air Pollution Control Board to promulgate regulations for the control of motor vehicle emissions and for emissions testing including remote sensing. Specifically, § 46.2-1178.1 authorizes the Board to establish by regulation on-road testing requirements. The legal requirements governing the content of the regulations are found in § 46.2-1178.1 and § 46.2-1179 of the Code of Virginia.

The regulation amendments do not otherwise qualify as an exemption under the provisions of § 2.2-4006 A 4 of the APA.

Substance

Please detail any changes that are proposed. Please outline new substantive provisions, all substantive changes to existing sections, or both where appropriate. Set forth the specific reasons the agency has determined that the proposed regulatory action is essential to protect the health, safety, or welfare of Virginians. Delineate any potential issues that may need to be addressed as a permanent final regulation is developed.

Current section	Current requirement	Proposed change and rationale
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number		
20, definition of "Affected motor vehicle"	Current definition reflects the legislative provisions for administration of the emissions testing portion of the program. It includes model years less than twenty-five calendar years prior to January 1 of the present calendar year; vehicles designed for the transportation of persons or property; is powered by an internal combustion engine; and has an actual gross weight of 10,000 pounds or less.	The new definition includes models 1968 and newer for vehicles subject to remote sensing in order to comply with the legislative provisions of § 46.2-1179 B
20, definition of "Confirmation test"		New definition establishes the difference between an emission test for vehicle registration compliance and an emissions inspection required due to a determination that the vehicle exceeds the remote sensing exhaust emissions standards.
20, definition of "High emitter index"		New definition provides a means of categorizing the probable failure-rates of engine families to accommodate the enforcement for vehicles that exceed the remote sensing standards
20, definition of "Vehicle specific power" or "VSP"		New definition provides an indicator to estimate vehicle conditions at the time of a remote sensing device measurement. It is calculated as a function of the vehicle speed, acceleration and the grade of the roadway at the time and place a vehicle is measured by remote sensing equipment. This definition is necessary to the formulation of remote sensing standards.
160	Table III-A contains exhaust emission standards for two-speed idle emissions tests. It includes the most recent model year vehicles through 1979	Added exhaust emission standards for model years 1970-74 and 1968-69 to include the vehicles now covered by remote sensing according to § 46.2-1179 B.
180 A	Prohibits vehicles from exceeding the emissions standards for carbon monoxide (CO) and hydrocarbons (HC).	Provision has been changed to include nitric oxide (NO) in addition to CO and HC to accommodate new remote sensing standards.
180 B	A vehicle would be determined to violate the standards if it exceeded the standards at least twice within 90 days when measured by a remote sensing device.	The phrase "at least twice within 90 days" has been removed because the new standards are more stringent.
180 C, D and E		Provisions have been added to address the legislative mandate to implement the new standards in Table III B by January 1, 2004.
180 F	Provision provides for the	The new language ties any adjustment of the existing

	adjustment of the remote sensing standards.	standards to confirmation tests. Adjustments may be for specific models within each model year group based on manufacturer's emissions control technology.
180 G	Provides for clean screening of vehicles.	Specifies that clean screening will begin January 1, 2005. This date has been specified to ensure that adequate remote sensing data is available to determine which vehicles qualify for clean screening.
180 E	Remote sensing measurements used for such purposes shall be from at least two different on-road testing locations.	Provision is being eliminated because the protocol and procedures for determining compliance with remote sensing standards have been changed.
180 F	Remote sensing measurements obtained while a vehicle is decelerating shall not be used for the purpose described in this section.	Provision is being eliminated because the protocol and procedures for determining compliance with remote sensing standards have been changed.
750 B	Motor vehicles determined by remote sensing equipment to have exceeded the applicable emissions standards twice within 90 days shall be considered to have violated such emissions standards.	The phrase "at least twice within 90 days" has been removed because the new standards are more stringent.
750 B 2	Upon a determination by the department that a violation has occurred, motorists shall be informed by the department or its representative of the failure to comply with emissions standards and of the dates, times, and places such remote sensing occurred.	Language has been added for clarity.
750 C	Provision allows for the waiver of civil charges for violation of the remote sensing standards.	Language has been added for clarity.
750 D	Provision allows for the waiver of civil charges for violation of the remote sensing standards if the vehicle is by virtue of its registration date, required to have an emissions inspection within 90 days of the date of the notice of violation.	Language has been added for clarity.
750 E		New provision requires certain vehicles to obtain both an exhaust test (ASM or two-speed idle) in addition to the OBD system test.
760 A, B, C, D, E and F	Provisions provide a method for computing civil charges.	Provisions have been simplified.

760 G		New provision requires vehicles that are 200% over the standard to pay the current waiver rate.
760 H	Provision provides a method for determining the degree of violation for the purpose of applying a civil charge.	Language has been added for clarity.

The current regulation governing the motor vehicle emissions testing (I/M) program meets the applicable federal requirements for on-road testing but does not meet the state code requirements. In order to meet the requirements of the state code, the regulation needs to be amended to include a definitive requirement for random testing of motor vehicle emissions, procedures to notify owners of test results, and assessment of civil charges for noncompliance with emissions standards in the current regulation. The regulation also needs to be amended to establish standards and criteria. Additional background information may be found below following this paragraph.

One of the primary goals of the federal Clean Air Act (Act) is the attainment and maintenance of the National Ambient Air Quality Standards (NAAQS). These standards, designed to protect public health and welfare, apply to six pollutants, of which ozone is the primary focus of this proposed action. Ozone is formed when volatile organic compounds (VOCs) and nitrogen oxides (NO_x) in the air react together in the presence of sunlight. VOCs are chemicals contained in gasoline, polishes, paints, varnishes, cleaning fluids, inks, and other household and industrial products. NO_x emissions are a by-product from the combustion of fuels and industrial processes.

The National Ambient Air Quality Standard for ozone is currently 0.12 parts per million (ppm) and was established by the U.S. Environmental Protection Agency (EPA) to protect the health of the general public with an adequate margin of safety. When concentrations of ozone in the ambient air exceed the federal standard the area is considered to be out of compliance and is classified as "nonattainment." Several counties and cities within the Northern Virginia area have been identified as ozone nonattainment areas according to provisions of the Act.

States are required to develop plans to ensure that areas will come into compliance with the federal health standard. Failure to develop adequate programs to meet the ozone air quality standard: (i) may result in the continued violations of the standard and subsequent negative affects on human health, (ii) may result in assumption of the program by EPA at which time the Commonwealth would lose authority over matters affecting its citizens, and (iii) may result in the implementation of sanctions by EPA, such as more restrictive requirements on new major industrial facilities and loss of federal funds for highway construction. Furthermore, 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 control requirements.

Motor vehicle emissions inspection programs, known as inspection and maintenance (I/M) programs, are an integral part of the effort to reduce mobile source air pollution. Cars and trucks create about half of the ozone air pollution. Of all highway vehicles, passenger cars and light trucks emit most of the vehicle-related carbon monoxide and ozone-forming hydrocarbons. Tremendous progress has been made in reducing these pollutants; however, total vehicle emissions remain high. This is because the number of vehicle miles traveled on our highways has doubled in the last 20 years, offsetting much of the technological progress in vehicle emission control over the same two decades. Ongoing efforts to reduce emissions from individual vehicles will be necessary to achieve our air quality goals.

I/M programs achieve their objective by identifying vehicles that have high emissions as a result of one or more malfunctions and requiring them to be repaired. Minor malfunctions in the emissions control system can increase emissions significantly. The average car on the road can emit three to four times the carbon monoxide and hydrocarbons allowed by new car standards if emission control systems are malfunctioning. Unfortunately, rarely is it obvious which cars have malfunctions as the emissions themselves may not be noticeable and emission control malfunctions do not necessarily affect vehicle driveability.

I/M programs provide a way to check whether the emission control systems on a vehicle are working correctly. All new passenger cars and trucks sold in the United States today must meet stringent air pollution standards and those standards became more stringent in model year 1994 and again in 1998, but they can only retain this low-polluting profile if the emission controls and engine are functioning properly. An I/M program is designed to ensure that vehicles stay clean in actual use. This, in turn, can substantially reduce the amount of volatile organic compounds, carbon monoxide, and nitrogen oxides emitted to the ambient air, thereby reducing the formation of ozone, lowering ozone concentrations, and contributing toward attainment of the NAAQS.

The aspect of on-road testing, i.e. remote sensing, is needed as an addition to the existing enhanced emissions inspection program for several reasons.

- Remote sensing is a requirement of the Federal Clean Air Act amendments of 1990. The act requires that at least 0.5% of the vehicles receive "on-road" testing. Use of Remote Sensing Device (RSD) is the most cost effective way to achieve this.
- The State Implementation Plan (SIP) for Northern Virginia already assumes that remote sensing will be used to identify high polluting vehicles and to require their verification, testing and, if needed, repair out-of-cycle (in addition to the existing 2-year testing requirement). The Department of Environmental Quality is committed to fulfilling this SIP requirement.
- Remote sensing is an effective means of identifying vehicles that are subject to the enhanced emissions inspection program by virtue of being "primarily operated in" (but registered outside) the I/M area per the current I/M rule. Some of these vehicles may be improperly registered outside their actual residence in violation of Virginia law.
- Remote sensing is an effective means of identifying vehicles that are eligible for "clean screening" or exemption from their next schedule regular I/M test. Under certain limited conditions, this would relieve very clean vehicles from having to be tested at the next inspection cycle.

A remote sensing pilot study conducted in 2002 found that approximately twenty-eight percent of the vehicles observed in the I/M area were registered outside the I/M area, including nine percent from other Virginia jurisdictions. Emissions from these vehicles contribute to the air quality nonattainment status. High emitter vehicles from Virginia identified by remote sensing would be subject to verification testing and repairs if needed. Information on high emitter vehicles from other states would be shared with appropriate I/M administrators through agreements currently authorized by Virginia statute.

The study data are being analyzed to determine exactly how many high emitter vehicles would be expected and how much air quality benefit would be obtained from RSD. This data will be considered in setting the standards and conditions.

Alternatives

Please describe all viable alternatives to the proposed regulatory action that have been or will be considered to meet the essential purpose of the action.

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 regulations 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, develop a regulation revision which conforms to state law for the testing of emissions, including remote sensing, from motor vehicles located or primarily operated in Northern Virginia.

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 it does not provide for implementation of a motor vehicle emissions testing program that meets the provisions, or meets alternative provisions of the state code.

3. Take no action to amend the regulation and operate under the existing regulation. This option is not being selected because it does not meet the requirements of state law.

Family impact

Please assess the impact of the emergency regulatory action on the institution of the family and family stability including to what extent 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 fertility disorders, fetal mutation and deformity, chronic and acute illness, premature death, and property damage. It is recognized that some vehicles subject to remote sensing will be identified as gross polluters and will need repair.

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