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## Final Regulation Agency Background Document

<b>Approving authority name</b>	State Air Pollution Control Board
<b>Primary action</b>	9 VAC 5-91
<b>Secondary action(s)</b>	None
<b>Regulation title</b>	Regulation for the Control of Motor Vehicle Emissions in Northern Virginia
<b>Action title</b>	Remote Sensing MJ
<b>Document preparation date</b>	November 23, 2004

This information is required for executive review ([www.townhall.state.va.us/dpbpages/apaintro.htm#execreview](http://www.townhall.state.va.us/dpbpages/apaintro.htm#execreview)) and the Virginia Registrar of Regulations ([legis.state.va.us/codecomm/register/regindex.htm](http://legis.state.va.us/codecomm/register/regindex.htm)), pursuant to the Virginia Administrative Process Act ([www.townhall.state.va.us/dpbpages/dpb\\_apa.htm](http://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](http://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](http://legis.state.va.us/codecomm/register/download/styl8_95.rtf)).

### Brief Summary

*Please provide a brief summary of the proposed new regulation, proposed amendments to the existing regulation, or the regulation proposed to be repealed. Alert the reader to all substantive matters or changes. If applicable, generally describe the existing regulation. Also alert the reader to changes made to the regulation since publication of the proposed. Do **not** state each provision or amendment or restate the purpose and intent of the 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 for an out-of-cycle test.

The final amendments make a number of revisions to conform to changes in Virginia law pertaining to remote sensing. In general, the regulation was amended to reflect new emission standards detected via remote sensing as well as criteria for conduction random testing of motor vehicle emissions, procedures to notify owners of test results, provisions for clean screening vehicles, and assessment of civil charges for noncompliance with emissions standards in the current regulation.

Two specific changes to the regulation as a result of changes to the state code include the change in the model year coverage for vehicles subject to remote sensing to include model year 1968 and newer model vehicles, and the requirement to establish a program to subsidize repair costs of some vehicles identified by remote sensing.

## Statement of Final Agency Action

*Please provide a statement of the final action taken by the agency including (1) the date the action was taken, (2) the name of the agency taking the action, and (3) the title of the regulation.*

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On November 3, 2004, the State Air Pollution Control Board adopted final amendments to regulations entitled " Regulation for the Control of Motor Vehicle Emissions in Northern Virginia ", specifically Northern Virginia Vehicle Emission Inspection and Maintenance (I/M) Program (9 VAC 5 Chapter 91.) The regulation amendments are to be effective as provided in the Administrative Process Act.

## Legal Basis

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

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Section 46.2-1176-1187.3 of the Virginia Motor Vehicle Emissions 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, § 46.2-1178.2 and § 46.2-1179 of the Code of Virginia.

Written assurance from the Office of the Attorney General that the State Air Pollution Control Board possesses the statutory authority to promulgate the final 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.*

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The purpose of the regulation is to require that motor vehicles undergo periodic emissions inspection and be maintained in compliance with emission standards for (i) the protection of public health and welfare, and (ii) the attainment and maintenance of the air quality standards. The final amendments are being made to conform to state law and federal Clean Air Act requirements for the testing of emissions, including remote sensing, from motor vehicles located or primarily operated in Northern Virginia.

## Substance

*Please identify and explain the new substantive provisions, the substantive changes to existing sections, or both where appropriate. A more detailed discussion is required under the "All Changes Made in this Regulatory Action" section.*

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The final 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.

The new regulatory amendments would, in part, revise the existing provisions affecting the remote sensing of emissions from motor vehicles located in or primarily operated in Northern Virginia (including out of area commuters) and the subsequent testing of those motor vehicles. Vehicles in or that operate primarily in the program area will be subject to remote sensing emission standards that include limits for not only carbon monoxide and hydrocarbons, as was included in the previous regulation, but also nitric oxide. Vehicles found to be significantly out of compliance with the standards (known as "gross emitters") will be required to have an out-of cycle inspection and if warranted, have the vehicle repaired. Finding and repairing these very dirty vehicles will improve the air quality in Northern Virginia. The regulation amendments also establish a program to subsidize repair costs of some vehicles identified by remote sensing as gross emitters.

## Issues

*Please identify the issues associated with the proposed regulatory action, including: (1) the primary advantages and disadvantages to the public, such as individual private citizens or businesses, of implementing the new or amended provisions; (2) the primary advantages and disadvantages to the agency or the Commonwealth; and (3) other pertinent matters of interest to the regulated community, government officials, and the public. If there are no disadvantages to the public or the Commonwealth, please indicate.*

1. Public: The primary advantage to the general public is that air quality will improve due to the technical improvements of remote sensing being able to identify gross emitters and require their repair prior to the normal in-cycle inspection requirement. The change to the definition of motor vehicle, for example, will result in a more effective program with the need to inspect, via remote sensing, 1968 and newer model vehicles. Changes in testing procedures will result in faster yet more thorough inspections, which translates into shorter lines at the testing facilities. Changes in certification requirements will mean repairs to vehicles that fail the test will be more effective.

Changes have been made to the exhaust emission standards for remote sensing. The new standards also include a standard for nitric oxide, a prime component of ozone. Vehicles that violate the new standards will be required to receive an out-of-cycle inspection and, if necessary, repair the vehicle or face civil charges. This will impact a number of vehicle owners whose vehicles fail the new remote sensing exhaust standards. Although it is a disadvantage that there will be expenses for repairs, there are also advantages to the vehicle owners in that needed repairs will increase vehicle fuel efficiency and enhance vehicle life, not to mention the improvement in air quality.

To assist with the cost of repair to the vehicles that violate the exhaust standards for remote sensing, sections have been added to address financial assistance for those vehicles: how it works, eligibility and application process.

2. Department: Most of the issues affecting the department are a result of either technical changes in program operation or state requirements. Amendments due to technical changes in program operation include: (i) changes in the wording of some definitions, (ii) changes in some elements of the remote sensing testing procedure, (iii) changes in the timing and flexibility of some test standards and (iv) changes in some permitting and licensing procedures.

Few disadvantages are associated with these regulatory changes. There will be additional data management as a result of the information generated by remote sensing testing; however, the current computer capabilities are more than adequate to address this issue.

The overwhelming advantage from remote sensing testing is the increased emission reductions and cleaner air for Virginia citizens and continued EPA approval of the Commonwealth's I/M program. Tightening the remote sensing exhaust emission standards will have a similar advantageous effect.

**Changes Made Since the Proposed Stage**

*Please describe all changes made to the text of the proposed regulation since the publication of the proposed stage. For the Registrar's office, please put an asterisk next to any substantive changes.*

<b>Section number</b>	<b>Requirement at proposed stage</b>	<b>What has changed</b>	<b>Rationale for change</b>
*20, definitions "Operated primarily"	Definition uses two criteria, vehicle mileage and number of sightings by remote sensing within a specified timeframe.	The references to excessive mileage per year in the program area and the reference to routine operation were deleted. New language was added to clarify motor vehicle usage and explained the criteria that would be used for identifying out of program area vehicles under remote sensing. This criteria will not be used for identifying vehicles subject to the biennial inspection.	Definition was considered too confusing and unenforceable regarding the biennial inspection program. New language was crafted to make definition easier to understand.
*180 C	Provision was added to address the legislative mandate to implement the new standards in Table III B by January 1, 2004.	Effective date has been changed from January 1, 2004 to January 1, 2005.	Testing equipment and software will not be available until 2005.
*180 D	Provision was added to address the legislative mandate to implement the new standards in Table III B by January 1, 2004.	Effective date has been changed from January 1, 2004 to July 1, 2005.	Testing equipment and software will not be available until 2005.
*180	Table III-B contains exhaust emission standards for remote sensing; one violation, two measurements and high emitter index.	Provisions have been added to address the legislative mandate to implement the new standards in Table III B by January 1, 2004	Dates have been changed for single violation to January 1, 2005; for two measurements or high emitter violation, the dates are changed to July 1, 2005.

*180 G	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 and identifies criteria for clean screen vehicles.	Effective date has been changed to July 1, 2005. Additional language has been included to specify how clean screen vehicles will be determined and to adjust the number of clean screen vehicles based upon impact on emissions reduction.	Delay implementation of clean screening to July 1, 2005 to correspond to the availability of data due to delay in implementation of standards. Provided clarity as to how screening will be done.
*750 F		Language has been added to clarify that no more than two notices of violation of remote sensing standards and corresponding civil charges can be issued to any motorist for the same vehicle in a 365 day period.	This change reflects the more simplified structure for calculating civil charges and corresponds to waiver amount currently in the biennial I/M inspection program.
*760 B	First tier: violation measurements up to 120% of standard, civil charge 20% of waiver amount.	First tier: violation measurements up to 150% of standard, civil charge 50% of waiver amount.	Simplified civil charge structure. Charges better reflect repair costs and waiver amount.
*760 C	Second tier: Violation measurements over 120% but not exceeding 140% of standard, civil charge 40% of waiver amount.	Deleted	Simplified civil charge structure. Charges better reflect repair costs and waiver amount.
*760 D	Third tier: Violation measurements over 140% but not exceeding 160% of standard, civil charge 60% of waiver amount.	Deleted	Simplified civil charge structure. Charges better reflect repair costs and waiver amount.
*760 E	Fourth tier: Violation measurements over 160% but not exceeding 180% of standard, civil charge 80% of waiver amount.	Deleted	Simplified civil charge structure. Charges better reflect repair costs and waiver amount.
*760 F	Violation measurements over 180% charge shall not exceed the adjusted maximum charge in subsection A of this section.	Second tier: violation measurements over 150% of standard, civil charge not to exceed waiver amount.	Simplified civil charge structure. Charges better reflect repair costs and waiver amount.

760 G	Formatted as "760 G".	changed "G" to "D".	Needed to reformat due to deletions of 760 C. D. and E.
*760 H	Provisions describe how degree of violation will be determined. Changed	Added additional language to better explain how violation determinations will be made.	Additional language added for clarity.

**Public Comment**

*Please summarize all public comment received during the 60-day period following the publication of the proposed stage, and provide the agency response. If no public comment was received, please so indicate.*

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A summary and analysis of the public testimony, along with the basis for the decision of the Board, is attached.

**All Changes Made in this Regulatory Action**

*Please detail all changes that are being proposed and the consequences of the proposed changes. Detail new provisions and/or all changes to existing sections.*

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<b>Current section number</b>	<b>Current requirement</b>	<b>Proposed change and rationale</b>
20, definitions	See below.	See below.
"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.

<p>"Chargeable inspection"</p>	<p>Added language to differentiate between an I/M inspection for registration purposes and an I/M inspection due to violating remote sensing standards.</p>	<p>Language has been added for clarity.</p>
<p>"Confirmation test"</p>		<p>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.</p>
<p>"Heavy duty gasoline vehicle"</p>		<p>New definition establishes the difference between gasoline and diesel powered vehicles.</p>
<p>"High emitter index"</p>		<p>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.</p>
<p>"Light duty gasoline vehicle, "Light duty gasoline truck 1", and "Light duty gasoline truck 2"</p>		<p>New definition establishes the difference between gasoline and diesel powered vehicles and trucks.</p>
<p>"Operated primarily"</p>	<p>"Operated primarily" means vehicle operation which constitutes a significant use in the program area. For the purpose of this definition, significant use shall be (i) mileage in excess of 6,000 miles per year or (ii) routine operation into or within the program area as evidenced by recordation of travel in the program area at least three times in a two-week period by remote sensing or on-road testing.</p>	<p>Definition establishes the criteria distinguishing significant use for vehicles violating the exhaust emission standards for vehicle registration compliance and those determined to exceeds the remote sensing exhaust emissions standards.</p>
<p>"Vehicle specific power" or "VSP"</p>		<p>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.</p>



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).	Added clarifying language to pertain only to affected vehicles and added a provision to include nitric oxide (NO) in addition to CO and HC to in 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.	Added clarifying language to pertain only to affected vehicles and 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 adjustment of the remote sensing standards.	The new language ties any adjustment of the existing 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 identifies criteria for clean screen vehicles.
180 H	Provides for clean screening of vehicles to by-pass registration I/M inspection.	Provisions have been added to allow clean screen vehicles to by-pass registration inspection if criteria are met.
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.
740 C		Added language for clarity.
741 A-D		Provisions have been added to provide for a financial assistance program for certain vehicles.

742 A-C		Provisions have been added to identify eligibility requirements for financial assistance.
743 A-B		Provisions have been added to identify application and documentation requirements for financial assistance.
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 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.

Changes made since the publication of the emergency regulation.

Current section number	Current requirement	Proposed change and rationale
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20, definitions	See below.	See below.
"Chargeable inspection"	Added language to differentiate between an I/M inspection for registration purposes and an I/M inspection due to violating remote sensing standards.	Language has been added for clarity.
"Operated primarily"	Added language to clarify "Operated primarily" means, with regard to remote sensing that the vehicle is identified three times in a two-month period with no less than 30 days between recordation by remote sensing.	New definition establishes the criteria distinguishing significant use for vehicles violating the exhaust emission standards for vehicle registration compliance and those determined to exceeds the remote sensing exhaust emissions standards.
"Heavy duty gasoline vehicle"	Added language to clarify heavy duty gasoline vehicles for purposes of the remote sensing standards.	New definition establishes the difference between gasoline and diesel powered vehicles.
"Light duty gasoline vehicle, "Light duty gasoline truck 1", and "Light duty gasoline truck 2"	Added language to clarify light duty gasoline vehicles and trucks for purposes of the remote sensing standards.	New definition establishes the difference between gasoline and diesel powered vehicles and trucks.
180 G	Provides for clean screening of vehicles and identifies criteria for such 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 identifies criteria for clean screen vehicles.
180 H	Provides for clean screening of vehicles to by-pass registration I/M inspection.	Provisions have been added to allow clean screen vehicles to by-pass registration inspection if criteria is met.
740 C		Added language for clarity.
741 A-D		Provisions have been added to provide for a financial assistance program for certain vehicles.
742 A-C		Provisions have been added to identify eligibility requirements for financial assistance.
743 A-B		Provisions have been added to identify application and documentation requirements for financial assistance.

760 A, B, C, D, E and F and G	Provisions provide a method for computing civil charges.	Eliminated emergency regulation changes for the calculation of civil charge.
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**Legal Requirements**

*Please identify the state and/or federal source of the legal requirements that necessitate promulgation of the proposed regulation, including: (1) the most relevant law and/or regulation, including Code of Virginia citation and General Assembly bill and chapter numbers, if applicable, and (2) promulgating entity, i.e., the agency, board, or person. Describe the legal requirements and the extent to which the requirements are is mandatory or discretionary.*

Promulgating Entity

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

Specific Requirements

Section 182(c)(3)(B)(i) of the Clean Air Act requires states to establish a program for periodic testing of motor vehicle emissions, including on-road emission testing. Section 51.351(b) requires the on-road testing of at least 0.5% of the subject vehicle population. Additional background information may be found below under "federal requirements".

Section 46.2-1178.1 of the Code of Virginia authorizes the Board to establish by regulation on-road testing requirements. Section 46.2-1178.2 requires the Board to establish by regulation a program to subsidize repairs of some vehicles identified by on-road testing pursuant to § 46.2-1178.1. Additional background information may be found below under "state requirements".

Federal Requirements

The 1990 Amendments to the Clean Air 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 its own class.

Effective March 25, 2003, the ozone pollution problem in the Northern Virginia area was reclassified by the EPA from "serious" to "severe". The problem is a result of emissions from both industrial sources and motor vehicles. The Act requires that all areas classified as serious and above must implement an enhanced vehicle emissions inspection and maintenance program, commonly referred to as I/M.

Section 182(c)(3) of the Clean Air Act requires that the state submit revisions to the state implementation plan to "provide for an enhanced program to reduce hydrocarbon emissions and NOx emissions from in-use motor vehicles...." The program "shall comply in all respects with guidance..by the Administrator..." The Act requires that enhanced I/M Programs be implemented within two years of enactment (11/16/90) of the Clean Air Act Amendments of 1990. The program implemented by the state must achieve a performance standard equal to:

(i) "...a program combining emission testing, including on-road emission testing, with inspection to detect tampering with emission control devices and misfueling for all light-duty vehicles and all light-duty trucks subject to standards under section 202; and

(ii) program administration features necessary to reasonably assure that adequate management resources, tools, and practices are in place to attain and maintain the performance standard."

The compliance method is to be established, per the Act, by EPA. The state program, per the Act, must include, at a minimum:

- Computerized emission analyzers, including on-road testing devices.
- No waivers for vehicles and parts covered by an emission control performance warranty.
- For non-warranty situations, waivers only after \$450 (in 1990 dollars) has been spent for emissions-related repairs.
- Enforcement through registration denial.
- Annual testing unless biennial testing, in combination with other features, will equal or exceed emissions reductions obtainable through annual inspections.
- Operation on a centralized basis unless the state demonstrates to the satisfaction of the Administrator that a decentralized program will be equally effective.

This law is implemented by EPA through 40 CFR Part 51, subpart S. The performance standard for the program is contained in § 51.351, "Enhanced I/M Performance Standard". It includes:

- Centralized testing.
- Annual testing.
- Testing of 1968 and later model year vehicles.
- Transient, mass emissions testing on 1986 and later model year vehicles, two-speed idle testing of 1981-1985 vehicles, and single-speed idle testing of pre-1981 vehicles.
- Testing of light duty vehicles and trucks.
- Emissions standards according to model year and weight class as enumerated in § 51.351(f)(7).
- Visual inspection of the catalyst and fuel inlet restrictor on all 1984 and later model year vehicles.
- Evaporative system integrity (pressure) test on 1983 and later vehicles and an evaporative system transient purge test on 1986 and later vehicles.
- Twenty percent emission test failure rate among pre-1981 model year vehicles.
- Three percent (3%) waiver rate.
- Ninety-six percent (96%) compliance rate.
- Remote sensing or on-road testing of at least 0.5% of the subject vehicle population.

Under the current rule, the state has considerable flexibility to design its own program and demonstrate that it is as effective as the EPA model program in reducing emissions.

### State Requirements

Section 46.2-1176 through Section 46.2-1187.3 of the Virginia Motor Vehicle Emissions Control Law (Title 46.2, Chapter 10, Article 22 of the Code of Virginia) requires a "test and repair enhanced emissions inspection program" for vehicles that have actual gross weights of 10,000 pounds or less and are registered in the Counties of Arlington, Fairfax, Loudoun, Prince William, and Stafford, and the and the Cities of Alexandria, Fairfax, Falls Church, Manassas, and Manassas Park. Key provisions of the legislation include:

- A biennial inspection;
- An inspection fee cap of \$28.00;
- A minimum repair cost of \$450.00 (in 1990 dollars) in order to qualify for a waiver, and requirement that repairs to qualify for a waiver be done by a certified repair technician;
- Motor vehicles being titled for the first time may be registered for up to two ears without being subject to an emissions inspection;
- An exemption for any of the following vehicles: (i) vehicles powered by a clean special fuel as defined in § 58.1-2101, (ii) motorcycles, (iii) vehicles which, at the time of manufacture were not designed to meet emission standards set or approved by the federal government, (iv) any antique motor vehicle as defined in § 46.2-100 and licensed pursuant to § 46.2-730, or (v) vehicles for which no testing standards have been adopted by the Board;
- The requirement for the inspection to apply to all vehicles registered and/or operated in the affected area including (i) vehicles owned by government entities, (ii) vehicles owned by military personnel residing in the affected areas, and (iii) vehicles owned by leasing or rental companies;
- The certification of motor vehicle emissions repair technicians and emissions repair facilities, including the suspension or revocation of such certification;
- In addition to biennial testing of all subject vehicles, the requirement for on-road testing of motor vehicles (model year 1968 and newer) and for follow-up testing of those vehicles which exceed emissions standards; and
- The requirement for the State Air Pollution Control Board to adopt regulations to implement the program including regulations for standards, criteria and procedures for a program to subsidize repairs of vehicles identified by remote sensing.

## Need

*Please explain the need for the new or amended regulation and the potential consequences that may result in the absence of the regulation. Detail the specific reasons the regulation is essential to protect the health, safety or welfare of citizens. Discuss the goals of the proposal and the problems the proposal is intended to solve.*

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The current regulation governing the motor vehicle emissions testing (I/M) program does not meet the state code requirements (see section on "legal requirements" above). 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, criteria, and procedures to implement a program to subsidize repairs of some vehicles identified by on-road testing as being non-compliant when the owner is financially unable to afford the repairs. 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 regulatory action. Ozone is formed when volatile organic compounds (VOCs) and nitrogen oxides (NOx) 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. NOx emissions are a by-product from the combustion of fuels and industrial processes.

The National Ambient Air Quality Standard (1-hour) 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 1-hr 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. RSD is the most cost effective way to achieve this.
- The State Implementation Plan 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. DEQ will consider this data in setting the standards and conditions.

## Impact on Family

*Please assess the impact of the proposed 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 related health and welfare problems.

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**COMMONWEALTH OF VIRGINIA**  
**STATE AIR POLLUTION CONTROL BOARD**  
**SUMMARY AND ANALYSIS OF PUBLIC TESTIMONY FOR**  
**REGULATION REVISION MJ**  
**CONCERNING**

**REMOTE SENSING**  
**(9 VAC 5 CHAPTER 91)**

**INTRODUCTION**

At the November, 2003 meeting, the Board authorized the Department to promulgate for public comment a proposed regulation revision concerning remote sensing.

A public hearing was advertised accordingly and held in Woodbridge on September 9, 2004 and the public comment period closed on October 8, 2004. The proposed regulation amendments subject to the hearing are summarized below followed by a summary of the public participation process and an analysis of the public testimony, along with the basis for the decision of the Board.

**SUMMARY OF PROPOSED AMENDMENTS**

The proposed regulation amendments concerned provisions covering remote sensing. A summary of the amendments follows:

<b>Current section number</b>	<b>Current requirement</b>	<b>Proposed change and rationale</b>
20, definitions	See below.	See below.

<p>"Affected motor vehicle"</p>	<p>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.</p>	<p>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.</p>
<p>"Chargeable inspection"</p>	<p>Added language to differentiate between an I/M inspection for registration purposes and an I/M inspection due to violating remote sensing standards.</p>	<p>Language has been added for clarity.</p>
<p>"Confirmation test"</p>		<p>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.</p>
<p>"Heavy duty gasoline vehicle"</p>		<p>New definition establishes the difference between gasoline and diesel powered vehicles.</p>
<p>"High emitter index"</p>		<p>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.</p>
<p>"Light duty gasoline vehicle, "Light duty gasoline truck 1", and "Light duty gasoline truck 2"</p>		<p>New definition establishes the difference between gasoline and diesel powered vehicles and trucks.</p>

<p>"Operated primarily"</p>	<p>"Operated primarily" means vehicle operation which constitutes a significant use in the program area. For the purpose of this definition, significant use shall be (i) mileage in excess of 6,000 miles per year or (ii) routine operation into or within the program area as evidenced by recordation of travel in the program area at least three times in a two-week period by remote sensing or on-road testing.</p>	<p>Definition establishes the criteria distinguishing significant use for vehicles violating the exhaust emission standards for vehicle registration compliance and those determined to exceeds the remote sensing exhaust emissions standards.</p>
<p>"Vehicle specific power" or "VSP"</p>		<p>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.</p>
<p>160</p>	<p>Table III-A contains exhaust emission standards for two-speed idle emissions tests. It includes the most recent model year vehicles through 1979.</p>	<p>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.</p>
<p>180 A</p>	<p>Prohibits vehicles from exceeding the emissions standards for carbon monoxide (CO) and hydrocarbons (HC).</p>	<p>Added clarifying language to pertain only to affected vehicles and added a provision to include nitric oxide (NO) in addition to CO and HC to in new remote sensing standards.</p>
<p>180 B</p>	<p>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.</p>	<p>Added clarifying language to pertain only to affected vehicles and the phrase "at least twice within 90 days" has been removed because the new standards are more stringent.</p>
<p>180 C, D and E</p>		<p>Provisions have been added to address the legislative mandate to implement the new standards in Table III B by January 1, 2004.</p>
<p>180 F</p>	<p>Provision provides for the adjustment of the remote sensing standards.</p>	<p>The new language ties any adjustment of the existing standards to confirmation tests. Adjustments may be for specific models within each model year group based on manufacturer's emissions control technology.</p>

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 identifies criteria for clean screen vehicles.
180 H	Provides for clean screening of vehicles to by-pass registration I/M inspection.	Provisions have been added to allow clean screen vehicles to by-pass registration inspection if criteria is met.
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.
740 C		Added language for clarity.
741 A-D		Provisions have been added to provide for a financial assistance program for certain vehicles.
742 A-C		Provisions have been added to identify eligibility requirements for financial assistance.
743 A-B		Provisions have been added to identify application and documentation requirements for financial assistance.
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 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.

Changes made since the publication of the emergency regulation.

<b>Current section number</b>	<b>Current requirement</b>	<b>Proposed change and rationale</b>
20, definitions	See below.	See below.
"Chargeable inspection"	Added language to differentiate between an I/M inspection for registration purposes and an I/M inspection due to violating remote sensing standards.	Language has been added for clarity.
"Operated primarily"	Added language to clarify "Operated primarily" means, with regard to remote sensing that the vehicle is identified three times in a two-month period with no less than 30 days between recordation by remote sensing.	New definition establishes the criteria distinguishing significant use for vehicles violating the exhaust emission standards for vehicle registration compliance and those determined to exceeds the remote sensing exhaust emissions standards.
"Heavy duty gasoline vehicle"	Added language to clarify heavy duty gasoline vehicles for purposes of the remote sensing standards.	New definition establishes the difference between gasoline and diesel powered vehicles.

"Light duty gasoline vehicle, "Light duty gasoline truck 1", and "Light duty gasoline truck 2"	Added language to clarify light duty gasoline vehicles and trucks for purposes of the remote sensing standards.	New definition establishes the difference between gasoline and diesel powered vehicles and trucks.
180 G	Provides for clean screening of vehicles and identifies criteria for such 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 identifies criteria for clean screen vehicles.
180 H	Provides for clean screening of vehicles to by-pass registration I/M inspection.	Provisions have been added to allow clean screen vehicles to by-pass registration inspection if criteria is met.
740 C		Added language for clarity.
741 A-D		Provisions have been added to provide for a financial assistance program for certain vehicles.
742 A-C		Provisions have been added to identify eligibility requirements for financial assistance.
743 A-B		Provisions have been added to identify application and documentation requirements for financial assistance.
760 A, B, C, D, E and F and G	Provisions provide a method for computing civil charges.	Eliminated emergency regulation changes for the calculation of civil charge.

**SUMMARY OF PUBLIC PARTICIPATION PROCESS**

A public hearing was held in Woodbridge, Virginia on September 9, 2004. Four persons attended the hearing, with two of those offering testimony; and one additional written comment was received during the public comment period. As required by law, notice of this hearing was given to the public on or about August 9, 2004 in the Virginia Register and in one major newspaper in the affected Air Quality Control Region. In addition, personal notice of this hearing and the opportunity to comment was given by mail to those persons on the Department's list to receive notices of proposed regulation revisions. A list of hearing attendees and the complete text or an account of each person's testimony is included in the hearing report which is on file at the Department.

**ANALYSIS OF TESTIMONY**

Below is a summary of each person's testimony and the accompanying analysis. Included is a brief statement of the subject, the identification of the commenter, the text of the comment and the Board's response (analysis and action taken). Each issue is discussed

in light of all of the comments received that affect that issue. The Board has reviewed the comments and developed a specific response based on its evaluation of the issue raised. The Board's action is based on consideration of the overall goals and objectives of the air quality program and the intended purpose of the regulation.

1. **SUBJECT:** Exemption of Antique Motor Vehicles

**COMMENTER:** Stephen B. McDonald, Vice President, Government Affairs, Specialty Equipment Market Association (SEMA).

**TEXT:** SEMA is concerned that the revisions to the definition of "affected motor vehicle" in this proposal fails to recognize that the remote sensing requirements do not apply to vehicles registered in Virginia as antiques and offered language (in italics) to be added to the 9 VAC 5-91-20, definition of "affected motor vehicle" number 5.:

5. For vehicles subject to the remote sensing requirements of 9 VAC 5-91-180, was designated by the manufacturer as model year 1968 or newer, except for any motor vehicle registered as an antique motor vehicle.

**RESPONSE:** The current regulation clearly states that the definition "affected motor vehicle" doesn't apply to antique motor vehicles. No change has been made to the proposal.

2. **SUBJECT:** Uniform Regulation

**COMMENTER:** Paul Sisson, Gunston Hall Shell, Gunston Hall, Virginia

**TEXT:** The goal should be a uniform regulation for vehicles. Now that the requirements for remote sensing are included the regulation, it is anything but uniform. The vehicles subject to the I/M inspection are a different vehicle population than those that are now subject to the remote sensing requirements.

**RESPONSE:** In 2000 the General Assembly amended the law to change the model year coverage of vehicles subject to the I/M inspections to a "rolling" 25 years. As each new model year of vehicles is added, the oldest model year is removed. This ensures that only 25 model years of vehicles are subject to the program. In 2002, the law was modified again to require that all owners of 1968 and newer model year vehicles (except those registered as antique vehicles and other special exemptions) would be subject to remote sensing provisions. The "rolling" 25 model year requirements still apply to the biennial I/M inspection, but some older vehicles, although not required to have an I/M inspection, will be subject to the remote sensing requirements. These requirements add additional complexity to the program; however, they are mandated in law and cannot be changed via regulation. No changes have been made to the proposal.

3. **SUBJECT:** Definition of "Operated Primarily"

**COMMENTER:** Paul Sisson, Gunston Hall Shell, Gunston Hall, Virginia

**TEXT:** Under section 9 VAC 5-91-740, General requirements, it appears that there will be two types of vehicles tested: those vehicles registered in the program five-county area and those vehicles that commute in the area. And the regulation states that the vehicles that are subject to these provisions will be tested biennially with an I/M test that currently costs \$28.00. The program also applies to any motor vehicle operated primarily in the area. The problem is that there is no way to enforce the biennial inspection for those commuting vehicles through the DMV registration procedures so now we're going to use remote sensing or remote testing.

However, the remote testing requirements are completely different from what is stated in the General Provisions of the regulation. Paragraph C under the provisions for remote testing states that these provisions will apply to both vehicles registered in the program area and those operated primarily in the area. The problem is how do we define operate primarily? The regulation under the remote sensing provisions says if you are caught twice in a 90 day period you will be subject to civil fines that may be waived.

If we are going to use that as the definition for operated primarily that is fine, lets be consistent. What is surprising is if a car owner travels here twice and gets caught by remote sensing, he gets a letter that states he has two choices: One, he can either pay the fine or two, he can get an I/M test within 90 days and prove that the vehicle did pass. The program for the vehicles registered in the program area that we are testing now, the state assumes that your car is going to fail; therefore, you must get it inspected every two years at a cost of \$28.00. Roughly 89% to 90% of the vehicles pass. None-the-less, that car owner has to spend \$28.00 every two year to get a pass to be able to get his car registered. In on road testing we don't do that at all. We send a letter stating the car failed and he can pay a civil fine or prove the state wrong.

There is a conflict. A vehicle registered in the program area pays \$28.00, gets a test. He pays whether he passes the test or fails. If he fails he gets the car repaired, comes back and gets a free retest and usually passes. For on road testing you've got a letter stating that you violated the standard and that entitles you to a free test. Chances are if a guy gets a letter he is going to get the car repaired then come into my shop an get a free test, forward that to the state and it only costs him the price of repairs. I do the confirmation test for free. The cars in the program area pay \$28.00 for the test whether they pass the test or not. For on road testing we are telling the guy we caught you failing the standards; however, if you take it to a shop and get it tested, the shop has to do that test for free. That is a conflict and is not uniform. The shops are penalized by having to do this inspection and absorb this cost.

**RESPONSE:** The proposal has been modified. The definition has been changed to clearly indicate how "operated primarily" will be determined in both the biennial inspection program as well as for remote sensing.

4. **SUBJECT:** Civil Charges



**COMMENTER:** Paul Sisson, Gunston Hall Shell, Gunston Hall, Virginia

**TEXT:** The civil charge is currently listed as a percentage of the consumer price index (CPI) correlated to the severity of violation of the standard. The greater the violation of the standard, the greater the fine. The civil charges are cheaper than getting the vehicle fixed. This doesn't make sense. Its too cheap. The cost of the fine should be the full CPI otherwise violators will just pay the fine and not get the vehicle fixed.

**RESPONSE:** The proposal has been modified to simplify the calculation mechanism from a four-tier system to only two-tiers. This will also result in a greater charge per violation.

5. **SUBJECT:** Statewide Application of Regulation

**COMMENTER:** Paul Sisson, Gunston Hall Shell, Gunston Hall, Virginia

**TEXT:** Realize it isn't politically possible, but the program should be applied statewide and Virginia should not let a vehicle get registered until it is in compliance. All vehicles should be subject to the I/M at a minimum.

**RESPONSE:** Different areas of the Commonwealth have different air quality needs. The enhanced program is necessary in Northern Virginia due to the air quality in that area. The air quality situations are different in the Richmond and Hampton Roads areas and therefore, the enhanced program is not necessary for those areas. No changes have been made to the proposal.

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