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Regulatory  
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## Notice of Intended Regulatory Action (NOIRA) Agency Background Document

<b>Approving authority name</b>	State Air Pollution Control Board
<b>Primary action</b>	9 VAC 5 Chapter 140
<b>Secondary action(s)</b>	None
<b>Regulation title</b>	Regulation for Emissions Trading
<b>Action title</b>	Clean Air Mercury Rule (Revision F05)
<b>Document preparation date</b>	June 21, 2005

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)).

### Purpose

*Please describe the subject matter and intent of the planned regulatory action.*

The purpose of the proposed action is to control mercury emissions in order to reduce the regional deposition of mercury and its subsequent entry into the food chain, while preventing emissions that may be detrimental to Virginia's environmental needs.

### Statutory Authority

*Please identify the section number and provide a brief statement relating the content of the statutory authority to the specific proposed regulation.*

Section 10.1-1308 of the Virginia Air Pollution Control Law (Title 10.1, Chapter 13 of the Code of Virginia) authorizes the State Air Pollution Control Board to promulgate regulations abating, controlling and prohibiting air pollution in order to protect public health and welfare. Section 10.1-1322.3 indicates that the board may promulgate regulations to provide an emissions trading and banking program that results in net air emission reductions, creates an economic incentive for reducing air emissions, and allows for economic growth. However, no regulation shall prohibit the direct trading of credits or allowances between private industries provided such trades do not have an adverse impact on air quality in Virginia.

## Need

*Please provide a brief explanation of the need for and the goals of the new or amended regulation. In addition, detail the specific reasons why the agency has determined that the proposed regulatory action is essential to protect the health, safety, or welfare of citizens. Finally, delineate any potential issues that may need to be addressed as the regulation is developed.*

Mercury is a toxic, persistent pollutant that accumulates in the food chain. Atmospheric mercury falls to earth through rain, snow and dry deposition and enters lakes, rivers and estuaries. Once there, it can transform into methylmercury, and can build up in fish tissue. Humans are exposed to methylmercury primarily by eating contaminated fish. Because the developing fetus is the most sensitive to the toxic effects of methylmercury, women of childbearing age are regarded as the population of greatest concern. Children who are exposed to methylmercury before birth may be at increased risk of poor performance on neurobehavioral tasks, such as those measuring attention, fine motor function, language skills, visual-spatial abilities and verbal memory. The Clean Air Mercury Rule is expected to reduce emissions from fossil fuel-fired power plants that are transported regionally and deposited domestically, and it will reduce emissions that contribute to atmospheric mercury worldwide.

Previously Virginia focused Mercury testing efforts on locations with possible nearby mercury contamination sources. In recent years, states from Florida to Maryland and from the Great Lakes to New England have discovered elevated levels of mercury in fish from waters that do not have any direct mercury sources. These findings prompted DEQ to conduct additional monitoring in waters without significant, known sources of mercury pollution. Elevated levels of mercury in some fish in the Blackwater River and the Great Dismal Swamp Canal, both in southeastern Virginia, and the Dragon Run Swamp and Piankatank River on the Middle Peninsula have been discovered. These areas are suspected of being contaminated with mercury as a result of air deposition.

Mercury is clearly a toxic pollutant that needs to be targeted at the source. Virginia's rivers and streams have been impacted by mercury, and the likely cause has been deposition of mercury from the air. The proposed regulatory action is essential to protect Virginia's air and water quality from the impacts from mercury emissions, thereby protecting the health of Virginia citizens.

## Legal Requirements

*Please identify the state and/or federal source of the legal requirements that necessitate promulgation of this 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. Also, describe the legal requirements and the extent to which the requirements are mandatory or discretionary.*

### Promulgating Entity

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

### Identification of Specific Applicable Federal Requirements

#### **Specific planning requirements**

As required by § 112(n)(1)(A), EPA announced its finding that it was "appropriate and necessary" to regulate coal- and oil-fired electric utilities. This finding triggered a requirement for EPA to propose regulations to control air toxics emissions, including mercury, from these facilities. On January 30, 2004, EPA proposed a rule with two basic approaches for controlling mercury from power plants. One approach would require power plants to meet emissions standards reflecting the application of the "maximum achievable control technology" (MACT) determined according to the procedure set forth in § 112(d). If implemented, this proposal would reduce nationwide mercury by 14 tons or about 30 percent by early 2008. A second approach proposed by EPA would create a market-based "cap and trade" program that, if implemented, would reduce nationwide utility emissions of mercury in two phases. When fully implemented mercury emissions would be reduced by 33 tons (nearly 70 percent). EPA proposed to pursue the cap and trade approach either under § 111 or § 112.

The January 2004 EPA proposal also proposed to revise the agency's prior finding that is "appropriate and necessary" to regulate utility hazardous air emissions using § 112 MACT standards. This action would give EPA the flexibility to consider a more efficient and more cost-effective way to control mercury emissions. EPA also proposed to revise its original finding that it is "appropriate and necessary" to regulate utility hazardous air emissions using the MACT standards, an action that would give EPA the flexibility to consider a more cost-effective way to control mercury emissions.

In the context of § 111, EPA has interpreted the term "standard of performance" to include a cap-and-trade program, and has determined that a cap-and-trade program based on control technology available in the relevant time frame is the best system for reducing mercury emissions from existing coal-fired utility units.

On March 15, 2005, EPA issued the final Clean Air Mercury Rule (CAMR), which builds on EPA's Clean Air Interstate Rule (CAIR) to significantly reduce mercury emissions from coal-fired power plants. It is anticipated that these rules will reduce utility emissions of mercury from 48 tons a year to 15 tons, a reduction of nearly 70 percent.

CAMR establishes standards of performance limiting mercury emissions from new and existing utilities and creates a market-based cap-and-trade program that will reduce nationwide utility emissions of mercury in two distinct phases. In the first phase, due by 2010, emissions will be reduced by taking advantage of co-benefit reductions that is, mercury reductions achieved while reducing SO<sub>2</sub> and NO<sub>x</sub> under CAIR. In the second phase, due in 2018, utilities will be subject to a second cap, which will reduce emissions to 15 tons upon full implementation.

Emissions guidelines for coal-fired utility units existing as of January 30, 2004 have been promulgated under § 111(d) of the Act. In order for § 111 to be effected, the specific guidelines are promulgated in the Code of Federal Regulations at subpart HHHH of 40 CFR Part 60. States have some flexibility in how they implement the program, but at a minimum, regulations must be at least as stringent as the guidelines.

EPA's final rule was published in the Federal Register of May 18, 2005 (70 FR 28606), and consists of a cap-and-trade program for emissions of mercury. State plans are due by November 17, 2006.

### **Emissions trading requirements**

Section 111(d)(1) authorizes EPA to promulgate regulations that establish a SIP-like procedure under which each state submits to EPA a plan that establishes standards of performance for any existing source for certain air pollutants, and which provides for the implementation and enforcement of such standards. A standard of performance is a rule that reflects emission limits to the degree achievable through the best system of emission reduction that EPA determines has been adequately demonstrated, considering costs and other factors. A cap-and-trade program reduces the overall amount of emissions by requiring sources to hold allowances to cover their emissions on a one-for-one basis; by limiting overall allowances so that they cannot exceed specified levels (the cap); and by reducing the cap to less than the amount of emissions actually emitted, or allowed to be emitted, at the start of the program. In addition, the cap may

be reduced further over time. Authorizing the allowances to be traded maximizes the cost-effectiveness of the emissions reductions in accordance with market forces. Sources have an incentive to endeavor to reduce their emissions cost-effectively; if they can reduce emissions below the number of allowances they receive, they may then sell their excess allowances on the open market. On the other hand, sources have an incentive to not put on controls that cost more than the allowances they may buy on the open market.

EPA has on a prior occasion authorized emissions trading under § 111(d): the Emission Guidelines and Compliance Times for Large Municipal Waste Combustors that are Constructed on or Before September 20, 1994 (40 CFR Part 60, subpart Cb) allows for a NO<sub>x</sub> trading program implemented by individual states. It states (in § 60.33b(C)(2) that a state plan may establish a program to allow owners or operators of municipal waste combustor plants to engage in trading of NO<sub>x</sub> emission credits. A trading program must be approved by EPA before implementation.

EPA has also had significant experience with the cap-and-trade program for utilities. Title IV, for the acid rain program, provides a national cap-and-trade program that covers SO<sub>2</sub> emissions from utilities. Non-electricity generating units are also included in the states' programs. Title IV requires sources to hold allowances for each ton of SO<sub>2</sub> emissions, on a one-for-one basis. EPA allocates the allowances for annual periods, in amounts initially determined by the statute, that decrease further at a statutorily specified time. This program has resulted in an annual reduction in SO<sub>2</sub> emissions from utilities from 15.9 million tons in 1990 (the year the Amendments were enacted) to 10.2 million tons in 2002 (the most recent year for which data is available). Emissions in 2002 were 9 percent lower than 2000 levels and 41 percent lower than 1980, despite a significant increase in electrical generation. As discussed elsewhere, at full implementation after 2010, emissions will be limited to 8.95 million tons, a 50 percent reduction from 1980 levels. The Acid Rain program allowed sources to trade allowances, thereby maximizing overall cost-effectiveness.

In addition, in the 1998 NO<sub>x</sub> SIP Call, EPA promulgated a NO<sub>x</sub> reduction requirement that affects 21 states and the District of Columbia. All of the affected jurisdictions are implementing the requirements through a cap-and-trade program for NO<sub>x</sub> emissions primarily from utilities. These 61 programs are contained in SIP that EPA has approved; and EPA is administering the trading programs.

#### General Federal Requirements

##### **§ 111, Standards of Performance for New Stationary Sources**

Section 111(d) of the Clean Air Act requires U.S. Environmental Protection Agency (EPA) to establish procedures under which states submit plans to control certain existing sources of certain pollutants. EPA implemented § 111(d) by promulgating Subpart B of 40 CFR Part 60 establishing procedures and requirements for adoption and submittal of state plans for control of "designated pollutants" from "designated facilities". Designated pollutants are pollutants which are not included on a list published under § 108(a) of the Clean Air Act (National Ambient Air Quality Standards) or § 112(b)(1)(A) (Hazardous Air Pollutants), but for which standards of performance for new sources have been established under § 111(b). A designated facility is an existing facility which emits a designated pollutant and which would be subject to a standard of performance for that pollutant if the existing facility were new.

Subpart B of 40 CFR Part 60 provides that EPA publish guideline documents for development of state emission standards after promulgation of any standards of performance for designated pollutants. The documents must specify emission guidelines and times for compliance and include other pertinent information such as discussion of the pollutant's effects on public health and welfare and description of control techniques and their effectiveness and costs. The emission guidelines reflect the degree of emission reduction attainable with the best adequately demonstrated systems of emission reduction, considering costs as applied to existing facilities.

After publication of a final guideline document for the pollutant in question, the states must develop and submit plans for control of that pollutant from designated facilities. After the final plan submittal date, EPA

approves or disapproves each plan (or portion thereof). If a state plan (or portion thereof) is disapproved, EPA promulgates a federal plan (or portion thereof). These and related provisions of Subpart B are basically patterned after § 110 of the Clean Air Act and 40 CFR Part 51 (concerning adoption and submittal of state implementation plans under § 110).

Because failure to develop adequate designated pollutant regulations result in imposition of a federal program, meeting the basic requirements of the law and its associated regulations ensure that Virginia retains its rights to govern Virginia sources, and result in the efficient and economical performance of an important governmental function.

Designated pollutant controls are critical for two reasons. First, only a limited number of air pollutants potentially harmful to human health are regulated at the federal level. Second, health risks from small exposures to designated air pollutants can be high, depending on the substances involved. Designated pollutant emissions consist of particulate matter, carbon monoxide, dioxin/furan, and other substances, such as mercury, that are known or suspected of serious health effects. Mercury, in particular, can cause impaired neurological development, neuromuscular changes, performance deficits on tests of cognitive function, kidney effects, respiratory failure and death.

### **§ 112, Hazardous Air Pollutants**

Under § 112, EPA is required to develop and maintain a list of hazardous air pollutants (HAPs), and to develop emission standards for these pollutants. Section 112(b) establishes the initial list of HAPs. This list includes pollutants that present a risk to human health and other serious environmental effects. EPA is required to review and modify this list from time to time; further, any person who wishes to modify the list may petition EPA to do so.

EPA, according to § 112(c), must establish a list of all categories and subcategories of major and area sources of the pollutants listed in § 112(b). Emission standards for the categories and subcategories must then be developed under § 112(d), including a certain percentage of the most-polluting area sources.

In § 112(d)(1), EPA is required to promulgate regulations establishing emission standards for each category or subcategory of major and area sources of hazardous air pollutants listed according to the requirements of §§ 112(b) and (c). Once EPA has identified the specific source categories of major and area sources that it intends to regulate, it must promulgate MACT standards for each. As provided in § 112(d)(2), MACT is "the maximum degree of reduction in emissions of the hazardous air pollutants subject to this section," taking into account cost, and any non-air quality health and environmental impacts and energy requirements. Section 112(d)(3) specifies that MACT for new sources must be as stringent as the emission control achieved in practice by the best controlled similar source. For existing sources, MACT must not be less stringent than the emission control that is achieved by the best controlled 12 percent of existing sources. Sources that have achieved an emission rate or reduction which complies with the applicable lowest achievable emission rate within a specified time period before the standard is proposed may be exempt.

Section 112(g) requires that after the effective date of a title V permit program, new and modified major sources must apply MACT. As described in §§ 112(g)(2)(A) and (B), modifying sources must meet the MACT for existing sources, and new sources must meet the MACT for new sources. If no applicable emissions limitations have been established, MACT will be determined on a case-by-case basis by states with approved title V programs. Section 112(g)(1)(A) also allows sources to avoid requirements for modifications through the substitution of offsets; § 112(g)(1)(B) requires EPA to publish guidance that identifies the relative hazard to human health resulting from HAP emissions in order to facilitate any offset.

Section 112(n) requires that EPA perform a study of the hazards to public health reasonably anticipated to occur as a result of emissions by electric utility steam generating units of pollutants listed under subsection (b). In this report, EPA must develop and describe alternative control strategies for emissions which may warrant regulation, including regulation of electric utility steam generating units if the results of the study

warrant it. Additionally, this section requires that EPA conduct a study of mercury emissions from electric utility steam generating units, municipal waste combustion units, and other sources, including area sources. Such study shall consider the rate and mass of such emissions, the health and environmental effects of such emissions, technologies which are available to control such emissions, and the costs of such technologies. Finally, this section requires that the National Institute of Environmental Health Sciences conduct, a study to determine the threshold level of mercury exposure below which adverse human health effects are not expected to occur. This study must include a threshold for mercury concentrations in the tissue of fish which may be consumed (including consumption by sensitive populations) without adverse effects to public health.

### State Requirements

Section 10.1-1322.3 of the Code of Virginia indicates that the board may promulgate regulations to provide for an emissions trading program to achieve and maintain the NAAQS. The banking and trading program shall result in net air emission reductions, create economic incentive for reducing air emissions and allow for economic growth. In developing the regulations, the board shall consider (i) the definition and use of emissions reduction credits from mobile and stationary sources, (ii) offsets, (iii) interstate or regional trading, (iv) mechanisms needed to facilitate trading and banking, and (v) emissions allocations. However, no regulation shall prohibit the direct trading of credits or allowances between private industries provided such trades do not adversely impact air quality in Virginia. The regulations applicable to the electric power industry shall foster competition in the electric power industry, encourage construction of clean, new generating facilities, provide without charge new source set-asides of five percent for the first five plan years and two percent per year thereafter, and provide an initial allocation period of five years.

## Substance

*Please detail any changes that will be proposed. For new regulations, include a summary of the proposed regulatory action. Where provisions of an existing regulation are being amended, explain how the existing regulation will be changed.*

The department is considering a number of alternatives (see below) with regard to this regulatory action. Several would involve the promulgation of regulations patterned after the EPA model rule or some variation thereof. If the department selects the emissions trading approach to meet the EPA requirements, it would necessitate the addition of a trading rule covering mercury. This program is similar in concept and structure to the NO<sub>x</sub> SIP call emissions trading program now found in 9 VAC 5 Chapter 140. If the department selects other alternatives, it is not possible to specifically identify the resulting regulation at this time.

## 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. Also, describe the process by which the agency has considered, or will consider, other alternatives for achieving the need in the most cost-effective manner.*

Alternatives (one or more or a combination thereof) to meet the purpose of this regulatory action are being considered by the Department. The alternatives being considered by the Department are discussed below. The degree to which the resultant regulation would (i) be approvable by EPA and enable Virginia to participate in the trading program, (ii) affect the costs to the regulated entities, and (iii) impact the environment will vary depending on the alternative selected.

1. Develop a regulatory program that would meet the requirements of the EPA CAMR and would regulate coal-fired EGUs and include all elements of the EPA model trading rule.
2. Develop a regulatory program that would meet the requirements of the EPA CAMR and would regulate coal-fired EGUs and include all elements of the EPA model trading rule. In addition, develop a regulatory mechanism (source-specific permits with emission caps or emission rate limits) that would regulate coal-fired EGUs to the extent necessary to keep associated emissions within Virginia's budget.
3. Develop a regulatory program that would regulate coal-fired EGUs to the extent necessary to keep associated emissions within Virginia's budget would not include any elements of the EPA model trading rule.
4. Develop a regulatory program that would regulate sources that are not coal-fired EGUs to the extent necessary to achieve the necessary reductions as would be required from coal-fired EGUs to keep associated emissions within Virginia's budget and would not include any elements of the EPA model trading rule.
5. Develop a regulatory program that would meet the requirements of the EPA CAMR and would regulate coal-fired EGUs and include all elements of the EPA model trading rule, except that the compliance dates would be more restrictive.
6. Develop a regulatory program that would meet the requirements of the EPA CAMR and would regulate coal-fired EGUs and include all elements of the EPA model trading rule. In addition, develop a regulatory mechanism that would regulate sources that are not coal-fired EGUs to the extent necessary to keep associated emissions at a level necessary to meet Virginia's environmental needs.
7. Take no action to develop a plan that would meet the requirements of the EPA CAMR.

## Public Participation

*Please indicate the agency is seeking comments on the intended regulatory action, to include ideas to assist the agency in the development of the proposal and the costs and benefits of the alternatives stated in this notice or other alternatives. Also indicate whether a public meeting is to be held to receive comments on this notice. Indicate that: (1) the agency is not holding a public meeting because the agency has authorized proceeding without holding a meeting or (2) the agency is holding a meeting. If a public meeting is to be held, indicate that the date, time and place of the meeting may be found in the calendar of events section of the Virginia Register of Regulations.*

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The department is soliciting comments on (i) the intended regulatory action, to include ideas to assist the department in the development of the proposal, (ii) the impacts of the proposed regulation on farm and forest land preservation, and (iii) the costs and benefits of the alternatives stated in this notice or other alternatives. All comments must be received by the department by 5:00 p.m. on August 10, 2005 in order to be considered. It is preferred that all comments be provided in writing to the department, along with any supporting documents or exhibits; however, oral comments will be accepted at the meeting. Comments may be submitted by mail, facsimile transmission, e-mail, or by personal appearance at the meeting, but must be submitted to Mary E. Major, Environmental Program Manager, Office of Air Regulatory Development, Department of Environmental Quality, P.O. Box 10009, Richmond, Virginia, 23240 (e-mail: memajor@deq.virginia.gov) (fax number: 804-698-4510). Comments by facsimile transmission will be accepted only if followed by receipt of the signed original within one week. Comments by e-mail will be accepted only if the name, address and phone number of the commenter are included. All testimony, exhibits and documents received are a matter of public record. Only comments

(i) related to the information specified in this notice and (ii) provided in accordance with the procedures specified in this notice will be given consideration in the development of the proposed regulation amendments.

A public meeting will be held by the department to receive comments on and to discuss the intended action. Information on the date, time, and place of the meeting is published in the Calendar of Events section of the Virginia Register. Unlike a public hearing, which is intended only to receive testimony, this meeting is being held to discuss and exchange ideas and information relative to regulation development.

### Participatory Approach

*Please indicate the extent to which an ad hoc advisory group will be used in the development of the proposed regulation. Indicate that: (1) the agency is not using the participatory approach in the development of the proposal because the agency has authorized proceeding without using the participatory approach; (2) the agency is using the participatory approach in the development of the proposal; or (3) the agency is inviting comment on whether to use the participatory approach to assist the agency in the development of a proposal.*

Subject to the stipulations noted below, the department will form an ad hoc advisory group to assist in the development of the regulation. If you want to be on the group, notify the agency contact in writing by 5:00 p.m. on July 22, 2005 and provide your name, address, phone number and the organization you represent (if any). Notification of the composition of the ad hoc advisory group will be sent to all applicants. If you want to be on the group, you are encouraged to attend the public meeting mentioned above. The primary function of the group is to develop recommended regulation amendments for department consideration through the collaborative approach of regulatory negotiation and consensus. At its discretion, the department may dispense with the use of an ad hoc advisory group if it receives less than five applications. Multi-applications from a single company, organization, group or other entity count as one for purposes of making the decision specified in the preceding sentence.

### Impact on Family

*Please provided an assessment of the potential 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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