Economic Impact Analysis
Virginia Department of Planning and Budget

9 VAC 5-40 – Existing Stationary Sources
Air Pollution Control Board
July 26, 2001

The Department of Planning and Budget (DPB) has analyzed the economic impact of this proposed regulation in accordance with Section 9-6.14:7.1.G of the Administrative Process Act and Executive Order Number 25 (98). Section 9-6.14:7.1.G requires that such economic impact analyses include, but need not be limited to, the projected number of businesses or other entities to whom the regulation would apply, the identity of any localities and types of businesses or other entities particularly affected, the projected number of persons and employment positions to be affected, the projected costs to affected businesses or entities to implement or comply with the regulation, and the impact on the use and value of private property. The analysis presented below represents DPB's best estimate of these economic impacts.

Summary of the Proposed Regulation

The toxic pollutant emissions sources that are subject to or exempted from federal regulations will no longer be required to comply with the state regulations. In addition, the proposed changes will clarify that the toxic pollutants subject to these regulations are those listed in the federal Clean Air Act.

Estimated Economic Impact

Hazardous air pollutants, also known as toxic air pollutants from new, modified, or existing stationary sources are regulated under the current regulations. These pollutants may exist as particulate matter or as gases, and include metals, other particles, gases absorbed onto particles, and vapors from fuels and other sources. Examples of toxic air pollutants include benzene, which is found in gasoline; perchlorethlyene, which is emitted from some dry cleaning facilities; and methylene chloride, which is used as a solvent and paint stripper by a number of industries. Toxic pollutants may originate from natural sources such as the radon gas coming up

from the ground or from the manmade sources. Most air toxics originate from manmade mobile, indoor, and stationary sources. Stationary sources include chemical plants, steel mills, oil refineries, power plants, and hazardous waste incinerators. These sources may release air toxics from equipment leaks, during transfer of materials from one location to another, or during discharge through emission stacks or vents. The Department of Environmental Quality (the agency) indicates that the Commonwealth has significant air emissions of hazardous air pollutants. In 1999, Virginia was ranked 22nd in the nation for total releases of toxic chemicals; 75% of those releases were into the air.

The emissions of toxic substances into the air can be damaging to human health and to the environment. Human exposure to these toxics at sufficient concentrations and durations can result in increased chance of getting cancer, poisoning, and rapid onset of sickness, such as nausea or difficulty in breathing. Other less measurable effects include immunological, neurological, reproductive, and developmental problems. Pollutants deposited onto soil or into lakes and streams where they are taken up by plants and ingested by animals affect ecological systems and eventually human health through consumption of contaminated food.

State and federal regulatory approaches to toxic pollutants have evolved in two distinct periods. Between 1970 and 1990, the Environmental Protection Agency (EPA) provided a framework for protecting people and the environment from the harmful effects of toxic pollutants through establishing risk-based standards. According to the agency, the decision-making process was slow and only a limited number of national emission standards were promulgated. The process was lengthy, involving a determination of a critical level that triggered significant health effects, followed by a determination of those industry categories that contributed the highest emission level of the hazardous air pollutants under review. Concurrent with the slow progress of the federal assessment of toxic pollutants, a series of significant chemical accidents occurred worldwide, including the kepone incident that took place in Hopewell, Virginia 25 years ago. These circumstances led the State Air Pollution Control Board and policy-making groups in many other states to develop state-specific regulations for toxic pollutants. The states wanted a more expeditious process to assess and regulate hazardous pollutants than that used at the federal level. Many states, including Virginia, used occupational standards and extrapolated them for use in the ambient air. In short, the lack of confidence in federal regulations led to the development of the state regulations to address the toxic pollutants.

However, the agency believes that since 1990, EPA has made significant improvements in the federal regulations concerning toxic air pollutants.

According to the agency, by the late 1980s, the federal government realized that its approach to the evaluation and regulation of toxics was not addressing the problem quickly enough. Instead of taking the health-based approach, the 1990 Clean Air Act accelerated the process. First, it established a list of 188 critical hazardous air pollutants. Then, directed EPA to first use a technology-based approach to significantly reduce emissions of air toxics from major sources of air pollution, and then use a risk-based approach to address any remaining, or residual health risks. Under the technology-based approach, EPA sets source categories and standards to control the emissions of air toxics. These rules, known as maximum achievable control technology (MACT) standards, are based on emissions levels that are already being achieved by the better-controlled and lower-emitting sources in an industry. EPA issued 45 air toxics rules to date, which cover many major industrial sources, such as chemical plants, oil refineries, aerospace manufacturers, and steel mills, as well as categories of smaller sources, such as dry cleaners, commercial sterilizers, and secondary lead smelters. Unlike other rules, there are no emission limits in MACT standard itself. However, the rules do provide significant ambient air concentration guidelines as a mechanism for EPA to require the source, on a case-by-case basis, to reduce emissions after analysis and review.

The proposed amendments will provide an exemption from state regulations for those sources that are subject to or exempt from the federal hazardous air pollutant standards. Under the current rules, sources must comply with both federal and state regulations. Thus, the sources have to comply with the MACT rules and perform additional actions necessary to bring the source into compliance with the state regulations. Under the proposed amendments, the sources that are subject to an emission standard under §112 of the federal Clean Air Act or that have been determined by EPA to require no regulation will be exempted from applicability of the state regulations. Thus, the sources will comply with only one set of regulations, either federal or state, but not both. During the development and evaluation of the federal MACT standards, the state program will remain in effect, but more sources will be exempt gradually as federal toxic rules are developed. The proposed amendments will phase out the applicability of the state air toxics program to the sources as they become regulated under the rapidly maturing federal program.

The proposed amendments are expected to produce various cost savings. A significant source of the cost savings is the reduced number of reviews for toxics. The agency currently issues new source review (NSR) permits and permit modifications to an average of 866 sources annually.[1] Of these 866 sources, approximately 300 major sources have toxics conditions written into their permits, and about 88 sources receive a toxics review as part of their evaluation each year. Each review requires about 40 to 80 hours of time on the part of the agency permit writer and costs the state about $1,040 to $2,080 per source.[2] Under the proposed amendments, approximately two-thirds of these sources might be either subject to a federal MACT standard or exempt from regulation by the federal government. In both cases, these sources would be exempt from the revised state toxics program. This would save the state the staffing needs for about 59 toxics reviews annually, or about $61,383 to $122,767. The current staff assigned to these duties is expected to be utilized in other tasks.

Of the 88 sources that get a toxics review, about nine sources may also require approximately 8 to16 hours of research on the part of an environmental specialist at the agency to assess the risks through technical research and consulting. This research generally costs the state $208 to $416 per source.[3] Under the proposed revised state toxics program, about nine sources would probably be subject to a federal MACT standard and therefore exempt from the state program. This is expected to save the agency about $1,872 to $3,745 in risk assessment costs annually.

About four of the 88 sources that get a toxics review annually are required to have toxics modeling done. The toxic modeling uses a computer to estimate concentrations of pollutant emissions in specific geographic areas. These four sources that require modeling are expected to be subject to federal MACT standards. The federal regulations do not require modeling. Thus, all of the modeling costs are expected to be saved. The modeling usually costs $20,000 to $50,000 per source. The agency has the obligation to do the modeling but the source may choose to undertake this task. About half of these sources choose to hire consultants to do the

[1] This figure is derived from agency's Comprehensive Environmental Database System. Several members of the agency engineering staff provided other estimates in this analysis.
[2] The cost for a permit writer is estimated for a salaried classified employee earning about $38,645 annually. The hourly cost of this employee's time is $26.
[3] The cost for an environmental specialist is estimated for a salaried classified employee earning about $46,183 annually. The hourly cost of this employee's time is $31.

modeling; for the other half, the agency does it. The annual total cost savings is expected to be about $80,000 to $200,000 for the regulated community and for the state together.

There are other expected cost savings from permit modifications. The agency's permit application procedures look back at historical emissions changes in addition to the emissions changes directly resulting from the physical or operational change to determine applicability. For sources with fully permitted facilities, applying for a modification means organizing and verifying information already set out in the permits in effect for the source. This effort is time-consuming and costs the source approximately $4,200.[4] Under the proposed revised state toxics program, it is expected that all of these amendment costs would be eliminated for approximately 22 sources that receive permit amendments annually because MACT sources will be subject to the federal program. This is expected to save the regulated community approximately $92,400 annually.

The agency does not expect any increases in health risks. According to the agency, the proposed changes should not directly produce an increase in the number of sources and an increase in the types and quantity of pollutants emitted. However, expected cost savings are likely to promote business activities of regulated toxics sources as they will be able to offer slightly cheaper services or products. [5] This may indirectly cause a very small increase in the quantity of regulated pollutants emitted.

It is also proposed to reduce the number of regulated pollutants to those regulated under the federal program. The list of toxic air pollutants covered by the regulations will be limited to the 188 substances regulated under §112 of the Clean Air Act. According to the agency, this has been Virginia's policy and practice at least since 1991, but that practice has not been articulated in the regulation. The policy required to focus on a number of important chemicals. Prior to 1991 the policy required regulation of 364 pollutants included in American Conference of Government Industrial Hygienists. In 1991, the policy was revised to focus on 188 pollutants listed in §112. The agency has not been enforcing regulations for the other pollutants not listed in §112 since then. This was because emission levels were too low, there was not enough staff, the agency did not have emissions factors for many pollutants, and output emissions contained

[4] The Agency
[5] Personal conversations with Tom Knauer, a representative for the Virginia Manufacturers Association, indicated that such increases in production are likely to be insignificant.

many different toxics making them difficult to regulate. The proposed changes incorporate the current practice into regulations. Since there will be no change in practice, this proposed amendment is not expected to have a significant economic impact.

In addition, the amended regulations are expected to be clearer than the current regulations. The proposed clarifications include that the owner should originate the request for exemption, that the outdoor applications of pesticide are exempt from regulations, and that the fugitive emissions should be included in determining a source's potential to emit. These clarifications are expected to help the enforcement staff at the agency and the regulants.

Businesses and Entities Affected

Approximately 300 toxics pollutant sources may be subject to this proposal and about 59 sources may be affected annually.

Localities Particularly Affected

The proposed regulations apply throughout the Commonwealth.

Projected Impact on Employment

The proposed changes are likely to reduce staffing needs of the agency and the toxics consultants combined by about two full time positions. Some of the savings in staffing needs are likely to accrue to the agency and are likely to be utilized in other tasks. On the other hand, lower costs associated with toxic pollutants may stimulate business activities of regulated sources and increase labor demand by a small margin. Thus, the net effect of the proposed changes on employment cannot be determined.

Effects on the Use and Value of Private Property

To the extent that the reduced costs to the regulated sources improve profits, a small increase in the value of toxic sources is expected.