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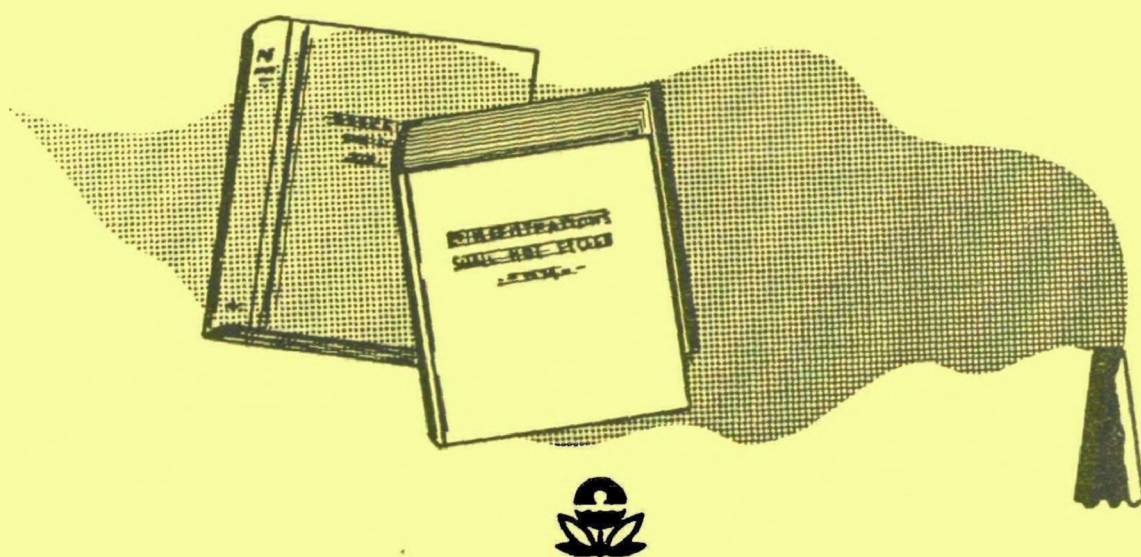
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**BACKGROUND INFORMATION
ON NATIONAL EMISSION STANDARDS
FOR HAZARDOUS AIR POLLUTANTS —
PROPOSED AMENDMENTS
TO STANDARDS FOR ASBESTOS
AND MERCURY**



**U.S. ENVIRONMENTAL PROTECTION AGENCY
Office of Air and Waste Management
Office of Air Quality Planning and Standards
Research Triangle Park, North Carolina 27711**

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1. INTRODUCTION

Section 112 of the Clean Air Act requires the Administrator to list hazardous air pollutants for which he intends to set emission standards and to then establish National Emission Standards for Hazardous Air Pollutants (NESHAP) for such substances. A hazardous air pollutant is defined as ". . .an air pollutant to which no ambient air quality standard is applicable and which in the judgment of the Administrator may cause, or contribute to, an increase in mortality or an increase in serious irreversible, or incapacitating reversible, illness."

National emission standards for three hazardous air pollutants (asbestos, beryllium and mercury) were promulgated on April 6, 1973 (38 FR 8820). Clarifying revisions to these standards were promulgated on May 3, 1974 (39 FR 15396). In April 1973, the Environmental Defense Fund filed a petition for review of the standards with the United States Court of Appeals for the District of Columbia. This petition led to Agency investigation of additional sources of asbestos and mercury emissions. Appendix D presents a summary of the information sources consulted during the Agency's investigation. This investigation, together with information gained through enforcing the standards, has led to the Administrator's determination that the standards should be amended. Such amendments are being proposed in the Federal Register.

The preamble to the proposed amendments includes a brief explanation and rationale for the proposed actions. This document provides a more detailed discussion of the statements made in the preamble concerning the basis for the proposed amendments, which deal mainly with expanding the standards to cover additional major sources. Changes have also been made to improve the uniformity of enforcement and workability of the standards.

The basic approach used to develop the standards was to first identify ambient concentrations of the pollutants which were judged to provide an ample margin of safety to protect the public health. Allowable emissions were then derived from the safe ambient concentrations by using meteorological procedures. For asbestos, however, it is impossible to prescribe and enforce allowable numerical concentrations or mass emission limitations known to provide an ample margin of safety to protect public health, since no safe level has been identified. Although improvements have been made in asbestos measurement techniques since promulgation of the standard, and although the Agency has used these methods to estimate emissions from two large asbestos waste disposal sites in developing the proposed regulations, the techniques have yet to be sufficiently refined to provide a reliable basis for standard setting. Therefore, the promulgated standard for asbestos includes limitations on visible emissions or, as an option in some cases, the use of designated control equipment; requirements that certain procedures be followed; and prohibitions on the use of certain materials or of certain operations. The promulgated standard for mercury specifies an allowable mass emission rate which was derived from dispersion estimates as the rate which would protect against the violation of an average daily ambient concentration of 1 microgram per cubic meter averaged over a 30-day period.

A complete explanation of the basis and rationale for the asbestos and mercury standards that were promulgated on April 6,

1973, (38 FR 8820) may be found in the preamble to the regulation and in Background Information on Development of National Emission Standards for Hazardous Air Pollutants: Asbestos, Beryllium, and Mercury, EPA Publication No. APTD-1503, March 1973.

2. ASBESTOS: MANUFACTURING

SUMMARY OF PROPOSED AMENDMENT

There shall be no visible emissions of asbestos-containing particulate matter to the outside air from two additional manufacturing operations:

- (1) The manufacture of shotgun shells.
- (2) The manufacture of asphalt concrete.

As an alternative to the no-visible-emission standard, specified air cleaning methods may be used (see Appendix A).

RATIONALE FOR PROPOSED AMENDMENT

Asbestos is a significant raw material in the manufacture of numerous products. The standard promulgated April 6, 1973 (38 FR 8820), limits the emissions of asbestos from nine manufacturing operations. In the course of enforcing the standard for asbestos, the Agency discovered that the manufacture of shotgun shells utilizes a substantial amount of asbestos and observed that asbestos emissions were poorly controlled at some asphalt concrete plants. On the basis of a subsequent investigation of these two source categories (see Appendix D), the Administrator has determined that they are major sources of asbestos emissions and is therefore proposing that the asbestos standard be extended to include these two manufacturing operations.

Shotgun Shell Manufacture

The investigation into the manufacture of shotgun shells included a visit to the only shotgun shell manufacturing plant in the United States that is known to use commercial asbestos,

and discussions with the plant operator and the Asbestos Information Association (AIA).

Asbestos is used to manufacture base wads for shotgun shells. The asbestos is mixed with wood flour and wax, and then pressed into base wads. The weight composition of the final mixture at the plant visited was 54 percent wood flour, 36 percent asbestos, and 10 percent wax. Asbestos emissions can occur during asbestos addition to the mixture, during mixing operations, and at the wad presses. The emission points are vented to the outside air through particulate collection devices.

The quantity of asbestos used in the manufacture of shotgun shells as a category is about 0.06 percent of the total asbestos consumption in the United States, a low usage level for a major source category. However, the annual asbestos consumption for the shotgun shell plant visited is approximately 454 metric tons (ca. 500 tons). The usage of this amount of asbestos at one location is large compared to that of many individual plants that are regulated by the asbestos standard.

The raw material handling and wad pressing operations potentially generate asbestos emissions comparable to those from manufacturing operations presently covered by the asbestos standard. Because asbestos emissions at shotgun shell plants are directly proportional to the asbestos usage rate, and because the plant uses relatively large quantities of asbestos, the Administrator has determined that the manufacture of shotgun shells is a major source of asbestos

emissions and is therefore proposing to cover it under the asbestos standard.

The gas streams that ventilate the material-handling systems and presses present no unique problems in employing commercially available particulate control devices. The promulgated standard for asbestos manufacturing operations allows no visible emissions of asbestos-containing particulate matter to the outside air from the facility or, as an alternative, the use of specified fabric filtration devices or other control devices of equivalent effectiveness. The proposed amendment would make this provision applicable to shotgun shell plants.

Asphalt Concrete Plants

In developing the proposed standard for asphalt concrete plants, Agency personnel visited several asphalt concrete plants and had discussions with the National Asphalt Paving Association (NAPA), the AIA, asphalt plant operators, and distributors of commercial asbestos.

Asbestos is added to asphalt to give it greater strength and longer wear life. The asbestos-asphalt mixture is usually applied as a thin topping layer and is most commonly used on airport roadways, bridges, or street curbing. Only about 50 of the estimated 5000 asphalt concrete plants in the United States use asbestos each year, and the total amount of asbestos consumed by an individual plant will vary greatly from year to year. For example, in 1971, 1972, and 1973 one asphalt plant that was