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Statement  
of  
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Salt Lake City, Utah

Public Hearing on Emission of Hazardous Pollutants  
Los Angeles, February 16, 1972

My name is K. W. Nelson. I am Director of the Department of Environmental Sciences of the American Smelting and Refining Company. I have been in environmental health work for 30 years, 26 of them with American Smelting. Because we have an interest in asbestos production and in all the trace metals associated with our principal products - copper, lead, and zinc - I wish to comment on the proposed national emission standards for asbestos and mercury.

During World War II, as a member of a Navy team assigned to develop industrial hygiene programs in shipyards building ships for the Navy and Maritime Commission, I had occasion to observe closely all jobs done in ship construction. One of them was the installation of asbestos insulation, particularly in the boiler rooms of ships. Amosite, chrysotile, and crocidolite forms of asbestos were used.

We knew very well then that inhalation of excessive asbestos dust over a period of time could cause asbestosis. We were appalled to see that asbestos handling, cutting and application were done almost always without regard to dust exposures. Workmen would literally be covered with dust and visibility in engine and boiler rooms would often be diminished by floating dust. My memories of those scenes are vivid.

We urged dust control wherever practicable - which was not often the case then - and at least we urged the wearing of respirators

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approved by the U.S. Bureau of Mines for protection against pneumoconiosis-producing dust. But I must say our recommendations were often not followed assiduously.

Also during the war I had occasion to inspect an asbestos textile plant providing Navy goods. Again I saw workrooms with visible dust. Every light fixture or other hanging appurtenance was festooned with fiber masses like trees adorned with Spanish moss. Dust control consisted of sprays of water mist in the room to keep the asbestos damp and to allay dust. The hanging fiber accumulations were evidence that the control was not very successful.

There is no doubt in my mind that the cavalier practices of insulation installers of 30 years ago and perhaps in ensuing years were responsible for the asbestosis discovered in recent years and for the markedly increased incidence of lung cancer which is apparently the result of cigarette smoking plus massive occupational exposures to asbestos dust.

My special interest in mercury began in 1941 when Dr. E. P. Laug and I, working for the Food and Drug Administration in Washington, developed an improved method for determining mercury in biological materials - a method which is still the official one of the Association of Official Agricultural Chemists, though there have since been developed a number of better and faster methods. I assisted also in toxicological studies of mercury's effects on animals.

Since those early experiences I have followed with care the expanding scientific literature on asbestos and mercury and their relationships to environmental health.

The first specific comment I have on the proposed national emission standards for asbestos and mercury is that neither substance, in my opinion, deserves being set aside as an especially hazardous air pollutant. Health effects from excessive exposure to airborne asbestos and mercury have been related almost exclusively to occupational situations which involve exposures for greater than any which the public could experience. An exception may be the "neighborhood" illness cases ascribed to asbestos, but almost certainly such cases resulted from lack of dust collection which would be routine today in order to maintain in-plant airborne fiber levels within occupational health standards.

My point is that almost any substance capable of being airborne and causing "irreversible, or incapacitating reversible, illness" could be classified as a hazardous air pollutant. Carbon monoxide is an obvious example and of course the total national man-hours annually of public exposure to carbon monoxide in significant quantities would far exceed the total man-hours of public exposure to asbestos or mercury. By "significant exposure" I mean one which would be likely to provoke significant physiological change.

My further point is that distinguishing asbestos and mercury as "hazardous" means to the public "extremely hazardous" and arouses unnecessary anxieties. Our environmental anxieties these days may indeed be overshadowing those more deserving of serious public attention. President Nixon's recent message to Congress on environmental pollution effects on health raised questions about our classifications of hazardous substances. He said, in discussing the identification and distribution of adverse agents, "In some cases the grounds for alarm are

well-founded; in other cases beyond the evidence. The reasons for inclusion are varied and not always well-founded. There has been little attempt to review the whole range of environmental agents systematically, or to adopt a consistent basis for judging an environmental agent as a hazard."

I would urge the Environmental Protection Agency to re-consider the need for national emission standards for mercury and asbestos on grounds that fears go beyond the evidence. /

Paragraph 61.21,(1), defines asbestos tailings as any solid waste product of asbestos mining or milling operations which contain asbestos. This definition is too broad. In the mining industry the word "tailings" applies to the finely divided product of milling or, less commonly, to the oversize material passing over screens. As defined now, the term "tailings" would mean virtually any material from an asbestos mine. The definition should be modified.

Paragraph 61.22,(a),(3), prohibits visible emissions from any mine road surfaced with asbestos tailings. Under the existing tailings definition any road in an open pit mine surfaced with waste rock from the pit, or not especially surfaced at all, would be surfaced with asbestos tailings. And the rock would in all likelihood contain some asbestos.

Both because of this situation and because we believe it impossible not to have, at any time, some visible emission from trucking on roadways, we believe the visible emission prohibition should be dropped. It is routine practice to prevent dusting of roadways and it would be necessary to meet the OSHA airborne asbestos standard for truck drivers

and miners in the area. These facts would preclude, in our opinion, any possibility of significant neighborhood asbestos contamination from a mining operation.

The complete prohibition of emissions seems to us an impossible requirement in paragraph 61.22,(b),(1), referring to visible emissions from ore dumps, storage areas, conveyors, and tailings dumps, in (d), referring to building demolition, and in (e),(1) and (2), referring to asbestos spraying. Again it seems to us that good dust prevention practices should be applied, but that absolute prevention of a visible emission is impossible.

Paragraph 61.22,(f), is objected to because of the use of the word "tailings" in its overly broad sense. The restriction as it stands would mean hauling in materials from outside a mine area when an abundance of rock, overburden or other waste rock, was immediately available for road construction.

The various categories of fabric permeability specified in paragraph 61.23,(a),(c), and (d) are unnecessary. The high efficiency of fabric filter bags for collecting dust and fibers is principally a function of the filter cake which quickly builds up on the bags when in use. It is a superfluous refinement, in our opinion, to have the various grades. A single specification of 35 or 40 CFM/ft<sup>2</sup> is recommended.

No risk to the public from airborne mercury in particle or vapor form has ever come to our attention. U.S. Geological Survey professional paper 713 reports atmospheric mercury concentrations at ground level near mercury ore deposits of 20  $\mu\text{g}/\text{m}^3$ , diminishing to 0.1  $\mu\text{g}/\text{m}^3$  400 feet

above ground. Air at ground level over precious metal ores has reached  $1.5 \mu\text{g}/\text{m}^3$ . Again we raise the question of why mercury should be set aside as a hazardous pollutant. It's relative rarity, relatively high cost, and the lack of any observed community air problems argue against its hazardous classification. We may be creating a problem in trying to solve a non-existent one.

The five-pound per 24-hour emission limitation specified in paragraph 61.53 appears to be purely arbitrary. No allowances are made for the concentration of mercury in a given effluent or for stack height and subsequent dilution. At the very least, an option should be permitted to meet an appropriate ambient air standard, as in the case of beryllium. What the ambient air standard should be is unknown at present, but  $1 \mu\text{g}$  seems very conservative. In any case, there is surely time to develop and agree upon an ambient air standard. There is no emergency.

The stack testing and record keeping would be eliminated if an ambient air option were available and chosen. Ambient air monitoring should be permitted on a 26-day a year schedule like that followed by the national air sampling network. After two years of such monitoring, permission to discontinue it should be granted, provided satisfactory evidence is submitted to the administration that ambient air levels have been satisfactory. Changes in plant practices that would increase mercury emission would automatically mean a resumption of ambient air monitoring.

We appreciate this opportunity to express our views on this proposed legislation.