Pa. Warns Smelt Shops Could Be Health Hazard

MAR 22 1978 -E

Harrisburg — (UPI) — Health Secretary Leonard Bachman has warned smelt workers and their families of possible exposure to lead poisoning because of working conditions at 23 Pennsylvania factories, including five in the Philadelphia area.

Bachman issued a "potential health hazard" for smelt workers at the Sitkin Smelting and Refining Co. in Maitland, Mifflin County.

Bachman said he took the action yesterday because the company did not cooperate in providing employe health records to the Health Department.

Bachman also said there was a possibility of lead poisoning at other battery plants and smelt shops in the state.

The area plants were listed as ESB, Inc.; Richardson Gaphics; Gould, Inc., and Anthracite Battery Manufacturing Inc., all of Philadelphia, and Eltra Corp., Conshohocken.

Bachman said the contamination may result by exposure to lead dust, which is often transferred to lead workers' homes by clothing.

Lead Poisoning

State health officials are testing patients at the Neuropsychiatric Institute in Skillman following the discovery of four cases of lead poisoning. High levels of lead were discovered among at the institute's training school for the retarded, which houses 615 residents.

Poisonous Fumes

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The government says poisonous lead fumes generated at indoor firing ranges by target-shooting buffs and law officers can be dangerous. The problem was studied by the Law Enforcement Assistance Administration after a number of range instructors were hospitalized with lead poisoning. The danger is sharply reduced if bullets with copper jackets are used.

STUDY CITES HAZARDS FROM AIRBORNE LEAD

Report Says Health Problems Are More Extensive and Complex Than Previously Believed

MAY 8 1978 NYT'S

By BAYARD WEBSTER

A national health organization and a leading public interest law firm have issued a medical report that indicates that health problems associated with airborne lead are more widespread and complicated than has been generally believed.

The report, issued last week by the American Lung Association and the Natural Resources Defense Council, was prepared in connection with the Environmental Protection Agency's proposal to limit the amounts of ambient airborne lead to 1.5 micrograms per cubic meter of air. The E.P.A. standard, the first to limit amounts of airborne lead is to take effect on June 14.

The medical survey was prepared by Dr. Herbert Needleman of the Harvard Medical School and Dr. Sergio Piomelli of the New York University Medical Center, both of whom are specialists in treating lead-poisoned children and in conducting research on the medical effects of lead at low concentrations.

Reports of High Levels

The study cited reports from many areas of the country, either in inner-city environments or situated close to some types of industry, that had found thousands of children and adults with high lead levels in their blood.

The Environmental Protection Agency found in December that levels as low as from 10 to 40 micrograms of lead per 100 milliliters of blood caused unusual enzyme activity, cell malfunction and malformation, subpar mental activity and anemia. Levels between 50 and 120 micrograms caused more severe mental deficiencies and brain damage.

Citing this study, Dr. Needleman and Dr. Piomelli noted that people assimilate lead from many sources—from the air, water, dust, dirt, paint, improperly fired cookware, plumbing and food. Most airborne lead comes from automobiles that use leaded gasoline—about half those now in use. The remainder, about 10 percent, comes from such sources as smelters and paint factories.

A little-known aspect of the regulations governing auto emissions, the report points out, is that as new emission-control devices are developed that obviate the need for catalytic converters (which cannot use leaded gasoline), greater quantities of leaded gas will undoubtedly be used. The Federal Government still intends to reduce the overall amount of lead in gasoline by approximately 60 percent, however.

Increases Exponentially

The medical study also emphasizes that the amount of lead found in blood, compared to the amount in the air, is greater by exponential amounts. The inhalation of air containing minuscule amounts of lead for a period of time can result in transferring from two to 20 times those amounts into the blood stream.

The report cites a number of recent experimental and epidemiological studies indicating that adults engaging in only quiet activity respire about 20 cubic meters of air a day. If the air contained only two micrograms of lead per cubic meter and only 40 percent of the metal was absorbed, the adult intake would be 16 micrograms of lead per 100 milliliters of blood.

"According to the authors of the study, this is a "significantly high blood level" for adults and even more dangerous for children, whose respiratory volumes are higher than those of adults.

Effects in City Areas

The study also found that airborne lead most severely threatens inner-city children living in tenements. In such neighborhoods emissions from older cars using leaded gasoline are trapped in the canyon-like streets, and traces also settle to the ground, reaching concentrations in dust and dirt similar to the concentrations in some leaded paint.

David Schoenbrod of the Natural Resources Defense Council, whose court action forced the E.P.A. to set the lead standard, said that the proposed limit on airborne lead was no guarantee that people would be protected from the effects of low-level exposure.

He added that adverse physical effects had been observed and measured at levels of lead in the blood at below 15 micrograms—a typical level in areas remote from large concentrations of stationary or mobile sources of airborne lead. "The E.P.A. goal," he said in an interview, "means that the average person would be at his blood lead level."

"This would mean that about half of the population would have lead concentrations in their bodies above 15 micrograms per 100 milliliters, and that approximately one million people would have blood lead levels of more than 30 micrograms."

Abrupt Rise After 1940

Until recently, relatively little had been known about the extent of airborne lead pollution, the report notes. But studies of glacial snows in Greenland have shown that a hundred-fold increase in lead contamination occurred abruptly after 1940, coinciding with a heavy increase in the use of leaded gasoline. A fourfold and fivefold increase in lead was noted in tree rings that grew between 1963 and 1973, compared with rings that grew between 1910 and 1920.

Dr. Needleman and Dr. Piomelli cite such studies in their report as evidence that the transfer of lead from the earth's crust to the biosphere was man-made. Their report notes additional studies that estimate that the "natural" contribution of lead from the earth into the air would yield levels of about .0005 micrograms of lead per cubic meter of air. Today, urban air levels of lead are from 4,000 to 5,000 times higher than this.

The natural body lead burden of an adult has been estimated at around .25 micrograms of lead per 100 milliliters. Today, the average urban adult's blood lead level ranges in the area of 75 to 100 times this estimate.

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