

Rachel's Environment & Health News

#31 -- Will New 'Mass Burn' Incinerators Produce Any Air Pollution That Threatens To Harm Human Health June 28, 1987

Are there valid reasons for people to be worried about air pollution from garbage incinerators?

The incineration of garbage (often called "mass burn," "resource recovery" or "waste-to-energy") seems to produce the family of toxic chemicals known as dioxins. The dioxins are partly released from the smoke stack of the incinerator, and they are partly retained in the ash, which is eventually sent to a landfill. No one seems to dispute that burning garbage produces dioxins. People argue about the amount of dioxins produced, and they argue about which particular components of garbage cause the production of dioxins. But no one seems to argue that you can burn garbage without producing dioxins.

Given that mass burn produces dioxins, whenever someone proposes a mass burn incinerator for garbage, we need to ask ourselves whether dioxins are really dangerous to humans. No one seems to doubt that dioxins are harmful to animals. The only unsettled question seems to be whether dioxins are harmful to humans.

Writing in the JOURNAL OF THE AMERICAN MEDICAL ASSOCIATION April 18, 1986 (pgs. 2031-2038) a team of doctors and scientists reported on their study of 154 humans who had been exposed to dioxins during a two-year period (and their study of a control group of 155 people who had not been exposed to dioxins). The exposed group had lived for several years in a trailer park where dioxins had been mixed with waste oil and sprayed on roads to suppress dust.

The doctors reported no differences in the medical histories of the exposed and non-exposed groups; physical exams showed no differences; studies of blood and urine chemistry showed no differences; neurologic tests showed no differences. Yet the doctors reported that protective cells in the immune systems of the dioxin-exposed humans were reduced in number or impaired, not operating at peak levels, compared to the immune systems of the unexposed control group. The results were expressed in terms of impaired liver function, and in terms of impaired T-cell characteristics. It is the immune system in humans that fights off disease, so an impaired immune system would expose a person to risk of disease from non-dioxin-related causes.

For a free reprint of the medical article, write to Dr. Richard E. Hoffman, MD, Division of Environmental Hazards and Health Effects, Center for Environmental Health, Centers for Disease Control, U.S. Department of Health and Human Services, Atlanta, GA 30333; or phone (404) 329-3311 and ask for Dr. Hoffman. Request a copy of "Health Effects of Long-term Exposure to 2,3,7,8-Tetrachlorodibenzo-p-Dioxin."

The California Air Resources Board (the state agency concerned with air pollution) in 1986 asked a Scientific Review Panel on Toxic Air Contaminants to look at available evidence on dioxins. Dr. Emil M. Mrak, Chancellor Emeritus of the University of California at Davis, on May 23, 1986, submitted the findings of the Scientific Review Panel, which he chaired. The report says, in part, "Dioxins are potent toxins and are known carcinogens and/or promoters of carcinogenesis in animals. Dioxins... are potential carcinogens or promoters of carcinogenesis in humans. The current and planned waste-to-energy facilities in California will provide a high potential for emissions of dioxins into air in the state. An exposure level [at] which no significant health effects will occur cannot be identified. For these reasons, we agree that dioxins should be listed by the ARB [Air Resources Board] as toxic air contaminants with no determined threshold below which adverse health effects will not occur."

The report goes on to say, "Dioxins and dibenzofurans are stable, lipophilic [fat-soluble] compounds that may be expected to accumulate up the food chain. Thus, airborne dioxins emitted

during combustion may contribute to dioxin intake by humans not only via inhalation but by other routes such as ingestion of food. Assessment of dioxin intake only via inhalation may thus underestimate total intake.

"Given that tissue levels of these compounds [in humans] are measurable, we expect measurable levels in air, and we feel that the expense involved in obtaining baseline data [on dioxins in air] is small compared to the potential risk. Monitoring of ambient dioxin levels should be commenced before any waste-to-energy facilities go on line....

"Since there is good evidence that dioxins can enhance the action of other carcinogens, the potential for the harmful interaction of dioxins with other environmental toxins could be important and must not be forgotten or underestimated when considering research reports on the actions of dioxins alone."

The two-page report, "Findings of the Scientific Review Panel on the Report on Chlorinated Dioxins and Dibenzofurans as Adopted at the April 16, 1986 Meeting" is available from Mr. William Lockett, California Air Resources Board, P.O. Box 2815, Sacramento, CA 95812; phone (916) 322-8168; or from Dr. Emil Mrak, Chancellor Emeritus, University of California at Davis, Davis, CA 95616; phone (916) 752-2442.

--Peter Montague

=====

NEW STUDY SHOWS HOW ONE TOWN CAN RECYCLE AND CUT LANDFILL USE 70%

The town of East Hampton, New York, hired Barry Commoner's Center for the Biology of Natural Systems (CBNS) to devise a plan for handling the town's garbage without using an incinerator. The town has 15,000 winter time residents but it swells with tourists during summer. The resulting report recommends a combination of recycling and composting that would reduce by 70% the amount of garbage going to the landfill. Get AN INTENSIVE TRASH SEPARATION AND RECYCLING SYSTEM FOR THE TOWN OF EAST HAMPTON for \$10 from CBNS, Queens College, Flushing, NY 11367; phone (718) 670-4182.

--Peter Montague, PhD

=====

Descriptor terms: air pollution; msw; incineration; dioxin; landfilling; jama; immune system; cdc; hhs; cbns; ca; ca air resources board; chlorine; studies; health; emissions; food chain; carcinogens; emil mrak; cbns; recycling; composting; msw;