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Regulating Exposure to Carcinogens

A small but increasing number of academic scientists have become alarmed at the threat of crippling federal regulation of their laboratories. They are concerned about rules in the process of being adopted by the Occupational Safety and Health Administration (OSHA) governing exposures to suspected carcinogens. The rules will be applicable to all industrial laboratories and most colleges and universities. No one quarrels with the desirability of guarding against exposure to chemicals of known toxicity. Controversy arises when substances of limited toxicity are placed on OSHA lists and users are to be subject to regulations designed for very dangerous substances.

In compiling its lists OSHA spurned repeated offers of help from the National Academy of Sciences. Instead it employed a private firm to make a literature survey. In reviewing each chemical, if the firm found two positive results for carcinogenic or neoplastic effects, it looked no further. It stated that negative findings were not taken into account.

At the moment, OSHA asserts that its lists are tentative. However, once a substance is placed in category I, it can be removed only by the Secretary of Labor, who in turn must follow stringent guidelines.

Items are assigned to category I when they produce cancer in humans or in at least two species of test animals. Hematite (iron oxide) was given this classification on questionable evidence. Other substances in the group include benzene, chloroform, carbon tetrachloride, and a host of nonvolatile inorganic salts.

Items are placed in category II if there is suggestive evidence for production of cancer. Ethyl alcohol is one of the items in this category. Cases of liver cancer have been noted among alcoholics. However, the concentration ordinarily present in a laboratory atmosphere is less than that at a cocktail party. A practical regulation for volatile substances such as benzene would be to require that operations with them be conducted in an efficient hood. This would eliminate any hazard.

The proposed OSHA rules for handling substances in categories I and II are set forth in the *Federal Register*, written in gobbledygook apparently by lawyers for lawyers. From a large number of pages the following was extracted by William P. Schaefer of the California Institute of Technology. The employer must monitor each workplace to determine the concentration of the toxic substances at least quarterly. Each employee must be given in writing a report of his or her exposure.

The employer must provide at no cost to the employee, and ensure that employees wear, protective clothing and other equipment. The clothing must be kept clean by the employer, and the employer must ensure that the employee removes all protective clothing at the end of the work shift.

The employer must institute a program of medical surveillance, including individual medical examinations and tests for each employee exposed to any toxic substance, all at no cost to the employee. There must be an initial examination and periodic examinations thereafter.

Records must be kept of all monitoring in the workplace and of all employees who are exposed to any toxic substance. The records must be kept for 40 years, or 20 years after termination, whichever is longer.

One of the galling features of the OSHA regulations is that professional scientists who have only occasional exposure to chemicals such as benzene must comply with rules designed for untrained workers exposed chronically. Were the regulations designed realistically, the several hundred scientists working with dangerous carcinogens would be carefully protected while expensive and useless annoyance would be avoided for perhaps 100,000 others whose most serious laboratory exposure is to ethyl alcohol. If OSHA had its eyes on the main chance, its highest priority would be to ban cigarette smoking in all workplaces. The present OSHA proposals invite ridicule, contempt, and noncompliance.—PHILIP H. ABELSON