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Environmental Risk Management

Although the Environmental Protection Agency has compiled a reasonably good record during its 13-year history, its prestige has never matched its accomplishments. When the agency began its operations, municipal sewers were discharging large quantities of untreated waste into streams. Industrial stacks were emitting millions of tons of particulates. Automobiles were discharging ten times as much pollution per mile of travel as they do now. Today the water in Lake Erie is said to be drinkable, and fish have returned to formerly polluted rivers.

However, these accomplishments are ignored and EPA finds itself in a virtually untenable position as it seeks to deal with concerns about toxic chemicals. In part, the problem stems from lack of information concerning the toxicities of the over 65,000 different industrial chemicals listed as having been in commercial production since 1945. Contributing heavily to EPA management problems is the fact that it operates under eight different federal environmental statutes, each dealing with a different aspect of environmental protection and each carried out in different branches of EPA. Some of the eight statutes require or allow EPA to base its regulatory decision directly on risk reduction regardless of cost. Other regulatory decisions, such as control of toxic pollutants in the Clean Water Act Effluent Guidelines Regulations, are to be based on available technology and cost instead of risk reduction. As a result of such differing mandates, program integration has been a continuing problem for the leadership of EPA. Failure to coordinate has led to duplicative research and uncoordinated regulation of the same industry or same substance by different programs.

The combination of lack of knowledge of the toxicities of chemicals and internal inconsistencies in EPA has left the agency vulnerable when confronted with unfounded claims of great hazards to the public. The media are seemingly uncritical in their treatment of so-called deadly chemicals. In recent scares about dioxin they have roused sufficient public anxiety to force the agency to give a minor matter top attention at the expense of more important risks to the public.

The EPA has been moving toward a more surefooted and internally consistent approach that is set forth in a report on risk assessment and risk management.* Emphasis is being placed on identifying and reducing major risks. This is to be accomplished by a two-step process—risk assessment followed by risk management. Risk assessment takes into account such evidence as is available about toxicity. More important, it factors in the degree and extent of exposure of the populace to the agent. When such an analysis was performed with respect to a proposed regulation of benzene emissions from maleic anhydride and ethylbenzene plants and benzene storage plants, the regulation was subsequently withdrawn. It was found that the total expected incidence of leukemia arising from such emissions was one case in 13 years. In the same period more than 4 million deaths would occur from cigarette-induced cancer.

Risk assessment of toxic chemicals will remain controversial. Most studies are performed on animals whose sensitivity is well known to differ in unpredictable ways from that of humans. The assumption of a no-threshold effect for carcinogens is also unproved. However, it is the intention at EPA to arrive at internal consistency in risk assessment and then to make public the basis for its assessment. Risk management will then occur with procedures and decisions dictated by the relevant federal statutes.

The EPA is to be commended for arriving at a sensible policy for identifying and managing environmental risks. When the public understands what is being done, the agency should encounter less capricious buffeting and should be more free to formulate an appropriate set of priorities to its tasks of improving the environment.—PHILIP H. ABELSON

*Environmental Protection Agency, *Risk Assessment and Risk Management: Framework for Decisionmaking* (Washington, D.C., in press).