

Filling in hazardous waste loopholes

Current federal regulations for hazardous waste management may not effectively detect, prevent or control the release of dangerous substances into the environment, says a Congressional Office of Technology Assessment (OTA) report released last week. Millions of metric tons of hazardous waste currently exempt from Environmental Protection Agency rules and sometimes disposed of in sanitary landfills or mixed with fuel oil and burned pose substantial risks, the report adds.

The OTA report, "Technologies and Management Strategies for Hazardous Waste Control," analyzes the current federal program as implemented under two laws. The Resource Conservation and Recovery Act (RCRA) is concerned with proper management of present and future wastes. The Comprehensive Environmental Response, Compensation, and Liability Act (CERCLA, also known as "Superfund") deals with hazards posed by old, often abandoned, sites (SN: 2/26/83, p. 132). The report also suggests five policy options that include: continuing with the present program; extending federal controls and restricting disposal of high-level waste on land; establishing fees on waste generators to reduce waste amounts; studying the advantages of classifying wastes by their degree of hazard; and integrating

federal environmental programs for more consistency.

OTA estimates that the EPA program regulates about 40 million metric tons of hazardous waste annually. However, when state controls, which sometimes encompass a wider range of wastes, are included, the amount generated annually adds up to about 250 million tons.

Of special concern is land disposal, used for as much as 80 percent of regulated hazardous waste. "Inappropriate disposal of hazardous waste on land creates the risk of contaminating the environment, particularly groundwater," the report states. Joel S. Hirschhorn, OTA project director, says, "There are technological solutions; there are alternatives to land disposal. The real issue is what do you do to make people use the alternatives."

A new National Academy of Sciences study, "Management of Hazardous Industrial Wastes," which focuses on research needs, also argues that land disposal should be the disposal option of last resort. The study says, "There currently exists some technology or combination of technologies capable of dealing with every hazardous industrial waste in a manner that eliminates the need for perpetual storage." The NAS report suggests

In California, is more burning better?

Efforts to suppress fires in southern California may make the situation worse, with fires larger than they might be if more burning were allowed.

Richard A. Minnich, a geographer with the University of California at Riverside, arrived at this conclusion after comparing images from the earth-sensing satellite Landsat taken from 1972 to 1980 over southern California and the adjacent area of Mexico, Baja California, where little or no fire suppression is practiced. He reports in the March 18 *SCIENCE* that suppression techniques have little effect on coastal sage scrub and grassland, and that in areas of chaparral — the evergreen shrubs that grow thickly on California's rocky slopes — fire suppression actually leads to larger, more intense blazes.

The primary method of fire control practiced by California land managers in recent years has been to extinguish fires as soon as possible. Very little controlled burning, where land managers set fires and allow them to burn in prescribed areas, is done. Consequently, vegetation accumulates and catastrophic blazes are more likely. Once a fire reaches a certain size, fire-fighters are virtually powerless, and the fire burns out of control. Each decade, about 200,000 hectares (ha) (about 500,000 acres) of wild vegetation are consumed in California by uncontrol-

lable fires, Minnich says.

Because suppression is practiced so extensively in southern California, Minnich turned south to Baja California to learn how fire behaves without human intervention. He found that fires there, particularly in chaparral, are smaller than the fires that burn out of control in California.

The Landsat images show a clear mosaic pattern in the Baja California wild land. The mosaic reflects that fires stop when they reach the sites of previous fires because there is too little growth. Young chaparral is greener and less flammable than older chaparral. In fire-suppressed areas of southern California, where stands of chaparral are 50 years to 80 years old, fires as large as 100,000 ha (about 250,000 acres) are possible, Minnich says.

Minnich recommends that the fire policy be altered in southern California chaparral to incorporate controlled burns of 1,000 ha to 2,000 ha — about the average size of fires in Baja California. In order to maintain a mosaic, controlled fires should be allowed to consume 250,000 ha to 300,000 ha per decade, or about one-third more than currently burns out of control. Creation of chaparral mosaics in southern California ultimately would lead to smaller fires, he writes, as "was apparently the case in southern California before fire management." —C. Simon

that in-plant process modifications or recycling to reduce waste volumes and toxicity are the most effective and economical means of managing hazardous wastes.

Stacy L. Daniels of the Environmental Sciences Research Laboratory at Dow Chemical Co. and a member of the advisory panel for the OTA study says present regulations do not provide direct incentives for reducing waste by recycling and recovering materials. Superfund taxes, for example, are collected on the basis of raw materials used rather than on the amount and type of waste produced. The OTA report notes, "... EPA has not generally pursued the resource recovery aspects of RCRA."

Daniels says, "Generally, I'm satisfied with the report itself, but I'm rather strongly dissatisfied with the interpretation the congressional committees are making. They're more worried about loopholes than improving the program." He believes that the current system hasn't really been given a chance to show whether it's adequate.

On the day of the OTA report's release, Rep. James J. Florio (D-N.J.) and Rep. John D. Dingell (D-Mich.) introduced a bill to close some of the loopholes in the hazardous waste laws. The bill removes the exemption for "small-quantity generators" that allowed these companies to dispose of up to one ton of hazardous waste per month in sanitary landfills or open dumps rather than in proper facilities. It also requires the introduction of standards for industrial boilers that burn hazardous waste and waste oils. Florio says, "Not only must we enforce existing laws, but moreover, the regulations themselves must not provide sanctuary for harmful practices."

Richard L. Hanneman of the National Solid Wastes Management Association supports the proposed changes. "Hazardous wastes, if they are hazardous by whatever definition, ... should be regulated," he says. Then, the regulations should be tailored to the characteristics of the waste and its hazard. At the very least, Hanneman says, waste collectors should be notified if hazardous materials are mixed in with other solid wastes. "It's up to Congress to do it, and for EPA to follow through vigorously in enforcing it," he says.

Last week, EPA moved to remove the loophole that allowed dioxins to be mixed with used oil that was sprayed onto dirt roads for dust control, as happened at Times Beach, Mo. (SN: 1/22/83, p. 60). The proposed rule also regulates the clean-up residues removed from contaminated sites such as Times Beach so that problems aren't created elsewhere.

Hirschhorn complains that although EPA has taken care of the dioxin problem, the real fault is with the toxicity test specified by EPA. The test allows toxic materials like dioxins to slip through and go unregulated. He warns, "There may be many more still unregulated materials." —I. Peterson