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Hazardous Waste

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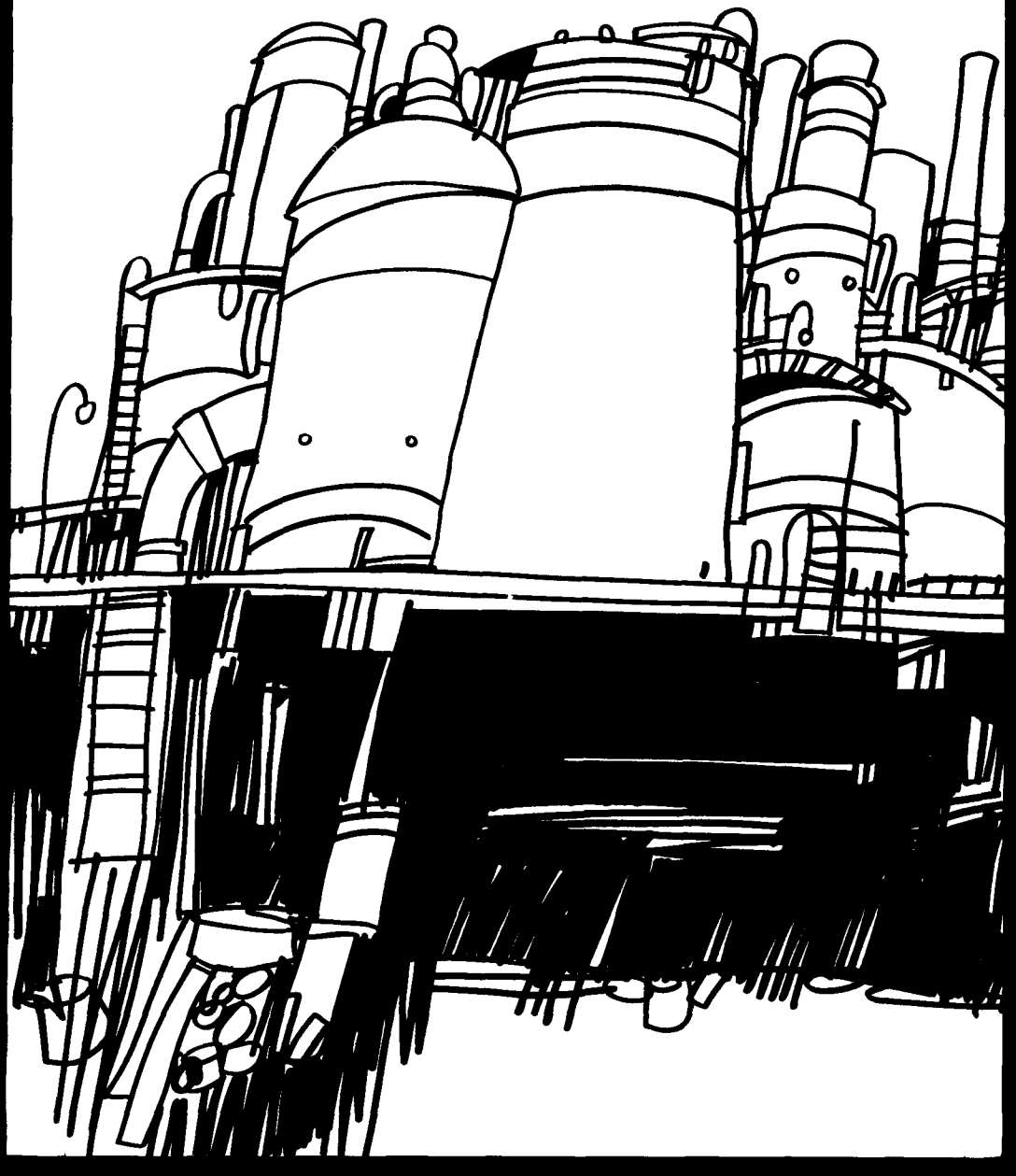
Attack on Hazardous Waste: The Challenge of the 1980's



Editorial: Turning Back the Toxic Tide

On August 1, 1978, on the front page of the *New York Times,* a story appeared about a small neighborhood in up-state New York which few Americans had ever heard of. The community in question surrounded Love Canal, and the events which had taken place there—by any measure—were bizarre and deeply troubling. A brew of chemicals which had been deposited in the ground years ago percolated up from the burial site and invaded the basements of homes. Shrubbery turned black. Children returned from play with burns on their hands and faces. Pets died. An abnormally high incidence of birth defects and miscarriages was documented. And public health officials discovered high white-blood-cell counts among the residents—a possible precursor of leukemia.

But what first appeared to be an isolated health disaster of catastrophic proportions turned out to be more ominous yet. After Love Canal, an explosion of similar incidents burst forth across the nation—in North Carolina, Kentucky, Michigan, California, Louisiana, Pennsylvania, New Jersey, Iowa, Tennessee, Texas, and many other states. We learned that Love Canal was merely the first detonation of a string of chemical time bombs literally strewn across the nation.

The hazardous waste problem stemmed from the industrial chemical revolution which started in the 1940's. If it is to be resolved, it will require an intensive attack on hazardous waste during the 1980's. We have all been the willing beneficiaries of "better living through chemistry," and it is therefore incumbent upon all of us to join this effort.

I do not mean to imply that chemistry is an inherently evil science. Quite the contrary. Synthetics do everything that the television commercials tell us they do—they provide drugs and medicines to protect our health, fertilizers and pesticides to increase our food supplies, materials and fibers to provide us with clothing, shelter, and countless other essentials.

But there is another side of the story which manufacturers fail to talk about in their advertisements: for years, tons of chemical wastes which industry generated have been disposed of haphazardly. Many wastes have simply left by the back door of the factory, so to speak, at slight cost to the producer; but they've ended up in our backyards, at great risk to our health and our fragile environment.

Nothing less than a fundamental change in the way industry does business can alter this increasingly

intolerable situation. Or more accurately, nothing less will do than a fundamental change in the way American industry manages its waste products.

Those changes will have far-reaching implications. The solution will entail placing special demands on waste generators, waste transporters, and waste disposers. It will increase the cost of many products. It will require changes in public attitudes and involvement, particularly regarding the acceptance of new, highly technical disposal facilities (facilities which will have to be sited near *someone's* community).

We find ourselves in a position which is worse than being caught between a rock and hard place. We are literally caught between an annual outpouring of millions of tons of hazardous waste on the one hand, and the arduous, uphill battle of managing that waste properly on the other hand.

The Congress of the United States has charged the Environmental Protection Agency with the enormous task of setting remedies in motion which will induce industry to address our pressing hazardous waste problems. This year, EPA will be phasing in a complex series of regulations which are designed to impact the life-cycle of hazardous wastes from the point of generation to the point of disposal—from cradle to grave. For the first time, comprehensive records will be required on the contents of waste drums, on shipping arrangements, and on disposal operations. Standards will be established to ensure that the best available management techniques are employed. We do not view these measures as the final solution. No single stroke of a regulator's pen can quickly change the old habits of waste mismanagement that industry has become accustomed to. But the new regulations are an essential first step which will pave the way to preventing the creation of new Love Canals.

The new regulations are not EPA's first salvo in the war on waste. Stimulated by Love Canal, the agency adopted an uncompromisingly hawkish attitude toward these problems. We have established a Hazardous Waste Enforcement Task Force—in Washington and in the field—and, in cooperation with the Department of

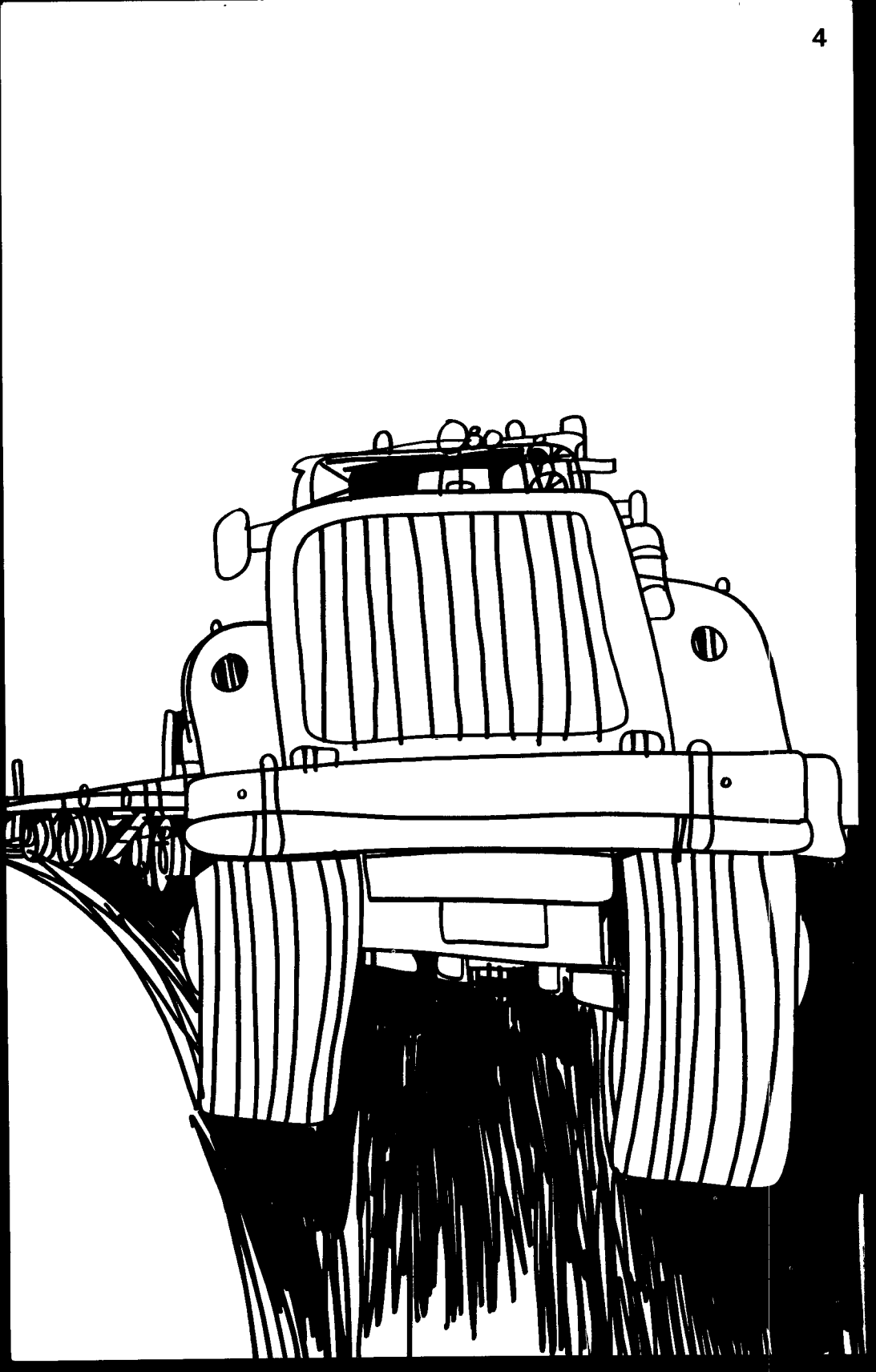
Justice, have and will bring scores of suits against the worst offenders in the fly-by-night waste disposal business. We are working with the Congress to create a "Superfund" to clean up dangerous abandoned dump sites. And we're seeking from the Congress greatly augmented resources—close to 800 EPA employees, as compared to a handful only four years ago, and $30 million to assist the states to become aggressive, vital partners in overseeing industry's management of hazardous wastes.

As a society, we have long been careless and shortsighted in our treatment of the environment. Real change will require the concerted efforts of all of us—business and industry for certain, but also citizens, interest groups and public officials.

It is hard to believe that a decade has passed since the first Earth Day. Much has been accomplished in that time. But I predict that the next decade will be even more critical—and an overriding environmental issue will be hazardous waste management.

By Eckardt C. Beck

Mr Beck is Assistant Administrator for Water and Waste Management, U S Environmental Protection Agency.



Attack on Hazardous Waste: The Challenge of the 1980's

The Problem

Our country has recently endured an unprecedented spate of toxic-related episodes. It has become difficult to pick up a newspaper without reading about drums of hazardous waste left rotting in areas precariously close to aquatic resources, or even human communities. One need only draw on some recent historical events as examples of the effects:

Pollution of Ground Water

In 1978, the water supply of Toone, Tennessee, was found to be contaminated, six years after a nearby landfill containing pesticide wastes had been closed.

Contamination of Rivers and Lakes

In 1978, poisons leached from a dumpsite in Charles City, Iowa, into the Cedar River in quantities sufficient enough to be detected in the water supplies of communities 60 miles downstream.

Air Pollution

In 1972, hazardous chemicals vaporized from a landfill near the towns of Darrow and Geismar, Louisiana. People and livestock were exposed to toxic vapor.

Explosion and Fire

In 1978, a fire erupted at a Chester, Pennsylvania, disposal site. Forty-five firefighters were stricken after inhaling chemical fumes and a major bridge had to be closed.

Poisoning

In 1978, President Carter declared Love Canal the first national disaster area for events other than "an act of God." Miscarriages, birth defects and other serious health problems appear to have been caused by chemical wastes buried nearly a quarter of a century ago.

Although specific horror stories vary greatly in terms of the severity of the impacts upon health and the

environment, the hazardous waste problem has reached epidemic proportions. The seeds of this problem, in many cases, were planted years ago, beginning with the advent of the widespread use of synthetic materials following World War II.

Over the last 20 years, extensive national efforts have focused on cleaning up air and water, as well as on making the workplace safer for the American laborer. These were logical, immediate priorities. But overlooked were the by-product wastes from industrial processes.

We have now become painfully aware that some 50 million metric tons of potentially hazardous wastes are produced annually in the United States. That amount grows at a projected rate of about 3.5 percent a year. And less than 10 percent is probably being disposed of in an environmentally sound manner.

By a combination of ignorance of the hazards and deliberate avoidance of the costs of waste control by some industries, we find ourselves saddled with a problem which will take years to resolve.

How Wastes are Presently Handled

We are the most highly industrialized society the world has ever known. Yet no system has been institutionalized for properly disposing of our toxic wastes. More effort has heretofore gone into the regulation of restaurants or taxicabs than into establishing a safe network for waste disposal.

Furthermore, the number of actors who are involved with hazardous waste is immense:

- over 750,000 businesses generate some amount of hazardous waste
- over 10,000 transporters are involved in shipping it
- over 30,000 sites are used for treatment, disposal, or storage, some on the premises of the generator, others located elsewhere.
- an unknown number of "midnight dumpers"—transporters who take the wastes off generators' hands for a low price, then dispose of it irresponsibly—also operate on a widespread basis. The end product of their

services often turns out to be drums of wastes discarded into sewers, in the woods, in open fields, on the sides of roads. . .often near municipal drinking water supplies.

Hazardous wastes—whether from a chemical plant, battery producer, or electroplater, to cite three examples—are either disposed of at the factory or off-site. In either case, the disposal options are nearly identical:

- disposal on the land
- incineration
- placement in lagoons
- injection wells
- cycling or reclaiming

If wastes are not retained on-site, they are transported elsewhere by truck, barge, or rail.

Most hazardous waste incidents arise as the result of indiscriminate disposal by midnight dumpers, improper management at inadequate treatment, storage or disposal facilities or spills in transport.

Present Inadequacies

Industry, quite properly, seeks to dispose of wastes at the lowest possible cost, consistent with the requirements imposed upon them by laws and regulations. Presently, in most parts of the United States, such rules and regulations are non-existent or incomplete. As a result, there now are a number of glaring inadequacies in how hazardous wastes are managed in America:

Inadequate identification of wastes that are hazardous

All wastes have the potential to be harmful, but certain wastes are particularly hazardous. Until these wastes are identified as hazardous, mismanagment is likely to continue.

Inadequate assignment of responsibility for safe management

Currently, except in a few states, a generator, after handing waste over to a transporter, need assume no further responsibility. The transporter, in turn, is under no requirement to dispose of the waste properly. No records need be kept, hence liability for midnight

dumping incidents cannot be traced. No one is accountable, and in case of surreptitious dumping or an accident, the public gets stuck with health and environmental damage—and the cleanup tab.

Inadequate standards for waste management facilities

With the exception of some state programs, no process exists to define and enforce rigorous design and operating standards to ensure safe containment or destruction of hazardous wastes, or to ensure that sites are not abandoned and left unmonitored and forgotten.

Inadequate information on wastes

Except in a few states, no one is presently required to keep records of hazardous waste activities, so it is impossible to know who is generating hazardous wastes, how much, how handled, or where.

Inadequate emergency notification system

No method now exists to assure swift cleanup of hazardous waste spills during transport.

Inadequate incentives to improve technology

Safe waste management should embody the best technologies that can be developed. Yet without rules and regulations to ensure protection of public health and the environment, the costs of disposal have been low. As a result, industry has had little incentive to apply resources or brainpower to developing better, safer technologies for managing wastes.

The World According to RCRA

The Congress passed the Resource Conservation and Recovery Act to address these inadequacies and thereby require industry to change its practices to ensure safe management of hazardous waste. RCRA provides specific remedies which will be embodied in EPA regulations to be issued over the next several months:

Identification of wastes that are hazardous

EPA will publish a list of approximately 200 waste streams that are hazardous, as well as characteristics and testing procedures whereby waste generators can identify other waste streams of theirs which are ignitable, corrosive, reactive, or toxic.

Assignment of responsibility for safe management

Generators will determine if their wastes are hazardous by consulting EPA's list, or by testing the wastes. Alternately, a generator may simply declare his waste hazardous based on his knowledge of its properties.

When generators ship wastes to off-site facilities,

they must identify an approved facility to which the wastes are to go; they must contract with a transporter to take it there; and they must initiate a manifest which will track the waste through every step enroute to its destination. Both the transporter and the management facility are required to sign the manifest and return the signed copy to the generator.

Generators must follow up in cases where a signed manifest is not returned and inform EPA of any missing wastes.

Transporters are obligated to follow the generator's instructions and deliver the waste to the designated facility.

Standards for waste management facilities

All facilities which store, treat, or dispose of hazardous waste, whether on-site or off-site, will have to comply with a series of operating standards, which includes proper safety measures, development of emergency procedures, monitoring and training of employees, long-term financial responsibility, and participate in the manifest system.

Those facilities will also require permits based upon the latest technological advances in waste management. Facilities failing to meet standards must close down (or will not be permitted to begin) operations.

As the new national hazardous waste program begins, existing treatment, storage, and disposal facilities which notify EPA and submit a permit application may receive interim status to continue their operations until their permit applications can be reviewed. Those facilities must comply with extensive operating standards during interim status.

Because of the number of sites involved, the permitting process will necessarily be implemented over time. The most potentially dangerous sites will be reviewed first, so that they can be upgraded or closed. Priority will also be given to new hazardous waste facilities.

Information on wastes

During the 90 days following promulgation of the regulation defining hazardous waste—i.e., during May, June, and July of this year—every firm which handles hazardous waste (whether it be a generator, transporter, treater, storer, or disposer) must notify EPA of that fact. EPA will then assign each firm which notifies an identification number. The firm cannot continue any hazardous waste activities without using that identification number.

To help inform those affected, EPA will mail

information about notification to over 350,000 firms which it believes may be involved. The mailing will contain a notification form to be completed and returned to EPA. If any waste handler fails to be contacted, it is still his responsibility to notify EPA within the 90-day period.

Subsequently, every firm which generates, transports, stores, treats, or disposes of hazardous waste will submit an annual report to EPA, providing information what wastes were handled, in what volume, and in what way.

Emergency notification system

Generators must make sure that wastes which are being shipped are properly containerized and labeled.

Transporters are obligated to take prompt cleanup actions and report any spills or accidents to the proper authorities.

Incentives to improve technology

With responsibilities clearly assigned, and with standards of safe practice clearly defined, a new era will begin in which industry will have a strong incentive to put its best, most imaginative minds to work toward developing new technologies and new approaches to the complex problems of safe waste management.

When Will This Happen?

On *February 26,* EPA will issue regulations defining the responsibilities of generators of hazardous waste, of transporters of hazardous waste, and the requirements of the notification process. These regulations will specify how the manifest system is to work. Because these regulations are being issued early, the regulated firms will have extra time to understand their new responsibilities.

In *April,* EPA will issue regulations defining what wastes are hazardous and set forth operating standards for treatment, storage, and disposal facilities. It will also issue procedural regulations stating how the permit program will work, and what states must do to be authorized to run the Federal program.

During *May, June, and July,* all firms which handle hazardous waste must notify EPA.

By *October,* all firms that store, treat, or dispose of hazardous waste must apply for a permit. Those who notify and apply for a permit can obtain interim status to continue their operations.

Also in *October,* the program takes effect and goes into operation. The manifest system must be used for all

waste shipments. All sites with interim status must be in compliance with the interim operating standards.

In the *fall,* EPA will issue the standards on which the permits for storage, treatment, and disposal sites will be developed.

In the spring of 1981, permitting of facilities will begin.

State involvement is critical to the success of RCRA. Under the law, EPA can authorize States to implement and enforce RCRA—on an interim basis for two years and then on a final basis. A State program must be equivalent to the Federal program (substantially equivalent during the interim period) to be authorized. Many States have indicated a strong interest in operating the program. EPA hopes that some 37 states will qualify for authorization. EPA will administer the program in any unauthorized States.

Will RCRA Work?

To carry out the mandates of RCRA will require a massive transformation in the way that industry has been accustomed to managing its wastes. A skeptic might question whether these changes will occur. But a variety of forces will be at work to press towards the rapid adoption of safer approaches to waste management.

Public Opinion

Public policy is an outgrowth of public demand. There is no greater force in a democratic society than that of public opinion. And by any measure, the current public attitude is one of outrage directed against the indiscriminate poisoning of our environment through hazardous waste mismanagement. Lawmakers, regulators, the business community—all are aware of a strong national mood toward tightening the screws on chemical carelessness.

Forces in the Marketplace

Under the influence of the new hazardous waste controls, a number of incentives will be introduced into the economic marketplace which were previously missing. Firms offering advanced treatment and disposal approaches, which formally could not sell their services, will be swamped by the demand. New firms will enter the waste management field. Waste storers, treaters and disposers will seek out more sophisticated technological processes to properly handle their wastes. And the costs of environmentally sound waste management will rise, producing a powerful incentive

...hange methods of production so as ... minimize their output of hazardous wastes.

The Courts and Liability

RCRA contains numerous provisions designed to make those who handle hazardous waste legally and financially liable for violations of the regulations. The degree of liability will, of course, depend on the circumstances. Through liability suits and other lawsuits based on RCRA infractions, the judicial system will play a large role in interpreting the RCRA program and clearly defining the penalties for non-compliance.

The Role of Citizens

"Public participation" has become a bureaucratic platitude in many quarters. That is unfortunate, because RCRA contains many real and potent opportunities for citizens to exert meaningful influence: RCRA provides for public hearings as part of the facility permitting process; it grants citizens opportunities to petition to add additional wastes to the hazardous waste list; it provides means for citizens to register complaints about existing sites or procedures which may pose public health threats; and it authorizes citizens to bring legal suits against corporate non-compliers. In short, RCRA authorizes citizens to play a central role in protecting themselves against the dangers brought on by the excesses of our synthetic-oriented society.

Monitoring and Enforcement

Federal regulations carry the force of law. Enforcement activities to ensure compliance with the various aspects of the RCRA program will be conducted at the State, regional, and national levels. Failure to comply with specific provisions will result in prosecution. The initial enforcement effort will be on making sure that the manifest system and interim status standards are complied with. Once facilities have been permitted, major emphasis will be placed on ensuring that permit requirements are met. But equally as important, the flexing of RCRA's legal muscle will establish a system for responsible waste management which will be buttressed by public opinion, forces in the marketplace, the courts and liability, and the role of individual citizens.

What the Future Holds

As this decade begins, so too begins a new effort to control the serious threats posed by mismanagement of hazardous waste. If the initiation of RCRA opens the door to better managerial practices, by the mid 1980's we should begin to realize noticeable changes in treatment, storage and disposal of hazardous wastes. New, safer facilities with highly developed technological capabilities should appear. Also, the cost and responsibility of properly handling wastes will be placed where it belongs—on the generators. This in turn will create incentives to reduce the production of hazardous waste in the second half of the 80's, as alternative products and production processes are developed.

But the 1980's will also bring a continuing array of difficult issues which must be dealt with as the attack on hazardous waste moves forward:

Uncontrolled and Abandoned Sites

Tens of thousands of disposal sites exist all across the nation. Many are uncontrolled and/or abandoned. These sites need to be identified, analyzed, and, where necessary, brought under control, which will be an enormous task by any measure.

EPA, Justice, and the States are aggressively developing enforcement cases against such sites. But enactment of a Superfund by the Congress is essential to provide better tools. With a Superfund, EPA will be able to move in and protect health by cleaning up problem sites before, not after, time-consuming litigation. Further, a Superfund will provide funds for cleanup of abandoned sites, for which no resources are now available.

Capacity and Siting

Our nation lacks sufficient hazardous waste management facilities. Establishment of new facilities almost always results in intense opposition of local citizens. Current public hostility to new waste disposal facilities is understandable; people are afraid. But industry can't properly manage wastes without sites at which improved management can take place. Hence every citizen has a personal stake in the resolution of the siting issue. Our society needs new processes and procedures whereby sites can be selected at which the best technologies can be applied to assure the safe management of hazardous waste.

Liability

Persons who store, treat, or dispose of hazardous waste must be required to assume some liability for their actions to assure high standards of performance. But if liability exposure is too great, responsible industry may be driven from, or never enter, the marketplace. If that happens, private capital may fail to finance the new hazardous waste management facilities which our nation desperately needs, and the way will be open for midnight dumpers to resume their illicit operations on a black-market basis.

Expanded Listing of Hazardous Waste

Knowledge of which wastes are hazardous is still imperfect. A continuing process must go forward to expand and refine the listing and management of hazardous wastes.

Refined Standards for Hazardous Waste Management Facilities

EPA's standards for treatment, storage and disposal facilities are based on state-of-the-art knowledge about how wastes can best be managed. But the base of knowledge will expand and improve, and so too must the standards. Hazardous waste management facilities must be upgraded and improved over time so as to reflect an evolving understanding of how wastes can be managed most safely.

These are only a few of the issues which the hazardous waste Hydra will force us to confront throughout the foreseeable future. For, if the truth be known, the problem of hazardous waste management will be never ending. As long as society generates toxic wastes, society will be forced to find safe ways to manage these wastes—and the solutions will not be easy. *Nevertheless—as any former resident of Love Canal can* tell you—there comes a time when hazardous waste management problems can no longer be ignored or shoved under the rug. That time is now.

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