A Public Interest Group Perspective

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ABSTRACT

In the information age, gathering and sharing data can be a powerful incentive for environmental improvement. Since 1988, the Toxics Release Inventory has altered American business, government, and public perceptions of toxic emissions. Armed with a ready-made, multimedia schedule of high priority chemicals and emission points, corporations, EPA, and state agencies have pursued a new pollution prevention agenda. Public and private partnerships, such as the 33/50 project, seek accelerated emissions reductions by using this national toxic chemical accounting system. States have approved toxics-use reduction audits and created pollution prevention institutes. Congress has passed additional toxic information provisions through the Pollution Prevention Act of 1990, and a Right-to-Know-More proposal now awaits debate before the current session.

Introduction

In September 1990, an international conference convened in Veszprem, Hungary, to discuss emergency planning for, response to, and prevention of chemical accidents. At that meeting, nongovernmental organizations met in a side session to develop a policy dealing with chemical information. Representatives from Bulgaria, Czechoslovakia, Germany, Hungary, Italy, Poland, Romania, the United States, the Soviet Union, and Yugoslavia later signed the 10-point agreement (Table 1) that focused on every citizen's right to be notified about and gather verified information on chemical substances, including quantities processed, stored, and used; specific management of these substances; effects to health and environment; accidents involving these chemical substances; routine emissions; and waste production from privately and government-controlled industrial activities.

These broad-based positions are held by many people operating in the public interest who are trying to alleviate chemical contamination around the globe. In the United States, the Toxics Release Inventory (TRI) has been key to mobilizing enormous public interest about toxic chemical problems.

Background

In the mid-1970s and on into the early 1980s, numerous abandoned hazardous waste sites were polluting communities across the United States. The resulting problems stimulated Congress to address this issue and, in 1980, it passed the Superfund Law, which created a fund to assist in the cleanup of these abandoned waste sites. By the end of the five-year term of that federal statute, the enormous groundswell of public dissatisfaction with the pace of the cleanup provoked Congress to revise the Superfund Law in 1986.

However, that reauthorization was informed by other events. Most notably, in 1984, the news of the tragic chemical release in Bhopal, India, had struck home in the United States, as investigations took place to find out how American

Table 1.—The Veszprem Declaration (September 1990).

Signatories resolved to:

I. Emphasize the principle that every citizen has both the need to have information about potential accidents for preventing their consequences and the right to have information for participation in democratic decisionmaking, and

II. Demand in accordance with the charter on Environmental Rights and Obligations of Individual Groups and Organizations that the governments of participating nations guarantee that:

1. Every citizen has the right to be notified about and to gather verified information about chemical substances (including radioactive materials), quantities processed, stored and used, specific management of these substances, effects to health and the environment of these substances, accidents involving these substances, routine emissions and waste production from private and government-controlled industrial activities.
2. Every citizen has the right to participate in emergency planning, specifically including rights of access to all hazard assessments and other information defining the potential for accidents and subsequent impacts upon workers and communities attributabel to these industrial activities and technologies and management of these risks. Emergency planning is an essential part of land use planning, and must be considered in the conception, design, construction, and operation of industrial facilities.
3. Every citizen has the right to participate in all licensing procedures which permit activities involving these chemical substances.
4. Licenses must be amended whenever technological innovations to reduce specific risks become available.
5. Industries and governments which create public risks associated with chemical activities must assure the public that progress is being made toward technological innovations that reduce these risks.
6. Citizen rights to be notified, to gather information, and to participate in licensing shall not be limited by national boundaries.
7. Every citizen has the responsiblity to utilize these rights of notification and public participation to assure environmental protection. Environmental protection is defined by activities which sustain the air, the water, the soil, and thereby nurture biological diversity.
8. At this moment of human endeavor, technological innovation must not only reduce the acute and chronic risks to public health and the environment in and of itself, but actually improve currently degraded environmental quality.
9. Every citizen has the right to employ technical experts of their choice to review technological information.
10. Nations of the European Community, the United States, and other economically advantaged nations through fees assessed upon activities threatening public health and the environment should support the growth and development of non-governmental organizations because they strengthen democratic values by providing public reassurance of progress toward environmental protection.

facilities of the Union Carbide Corporation were managing methyl isocyanate. It is important to understand that, when the gas escaped, very little information was publicly available about this chemical. Not until seven years later did the *Journal of the American Medical Association* publish a report documenting important toxicological information on methyl isocyanate, and only in 1991 did Union Carbide make a legal settlement toward restitution to the community most damaged by that chemical accident.

The Emergency Planning and Community Right-to-Know Act (Title III of the Superfund Amendments Reauthorization Act of 1986), the most significant federal United States' public policy on toxic emissions, was promulgated within this political context (Table 2). This public policy deals with chemical accidents and public rights of access to data on chemicals in their community.

This conference focuses on the issues surrounding the fourth point of Title III policy: collecting data on release of toxics and making it available to the public. However, those interested in Right-to-Know policy shouldn't lose sight of the first three points in which Congress required industry, the U.S. Environmental Protection Agency (EPA), and the public not only to know about the potential for accidents in their community but also to actively gather information about accidents and develop plans to prevent them. The 1990 amendments to the United States Clean Air Act will expand public access to detailed hazard assessments of industrial facilities handling extremely dangerous chemicals.

Table 2.—Major Provisions of the United States Emergency Planning and Community Right-to-Know Act.

1. Emergency Planning Requirements
2. Emergency Notification and Follow-up Notification after an accident
3. Right-to-Know Requirements about Possible Catastrophic Releases
4. Right-to-Know Requirements about Routine Releases

Other portions of the Right-to-Know Act that provide access to additional information, such as material safety data sheets, build upon this right for people in the workplace and expand it to the public at large. In addition, the act includes provisions for inventories or data about the housing, amounts, and types of hazardous chemicals being stored at industrial facilities and accidental and annual releases into air, water, and soil. With the Toxics Release Inventory, for the first time, Americans possessed multimedia, annual snapshots of the flow of toxic chemicals into the surrounding environment.

The Toxics Release Inventory

The TRI is a geographically based data set that identifies releases of carcinogenic and other hazardous chemicals to the environment. TRI data are incorporated into an annual report on these 300-plus chemicals and their emissions to air (both fugitive emissions as well as those from smokestacks), water, land, and waste sent to offsite facilities.

In 1987, one immediate focus of the TRI was on the chemicals' effect on plants and animals. EPA developed health effects information to augment the TRI, a good part of which deals with carcinogenic chemicals. Cancer is a disease of developed nations, and the United States has devoted many resources to combating it. During our history of testing chemicals for carcinogenicity, Americans have standardized toxicological evaluation and risk characterization, and therefore, data on the many chemicals that can cause cancer.

However, scientists in the United States are just beginning to understand the impacts of toxic chemicals on other systems. In July 1991, a major conference was held at the Wingspread Facility in Racine, Wisconsin, that addressed another aspect of toxic chemicals — their ability to interrupt normal sexual development of organisms. This concern was stimulated by environmental problems in the Great Lakes that have become widely known and feared. Some widely used chemicals are known to operate as hormonal disruptors. Depending upon the organism's stage of development, ingestion of these chemicals can produce dire consequences that may be observed only at the point of sexual maturation when organisms are no longer capable of carrying on normal reproduction. These data parallel fieldwork carried out in the Great Lakes that indicate a massive collapse in certain wildlife populations, particularly those dependent upon fisheries.

While information on health effects is important, TRI data have had impacts in other ways. On June 30, 1988, the day before the first release of the TRI data set, Richard Mahoney, the chief executive officer of Monsanto Company, made a bold announcement. He announced that, within four years, Monsanto would reduce by 90 percent its airborne emissions of toxic chemicals worldwide. This change in policy has set off a rush of activities toward pollution prevention.

American public interest groups use TRI data from one part of the country to influence policy and regulations under a different federal environmental statute. For example, Clean Water Action examined data on releases to water discharges in the Houston Ship Channel, an important industrial area of the United States that has received large amounts of industrial effluents. It used that information to designate the channel as a toxic hotspot, an area that requires a much higher degree of public investigation and regulatory rigor.

Chemical contamination is now ripping holes in the stratospheric ozone layer, producing an influx of ultraviolet radiation that some predict will result in millions of incidences of skin cancer over the next several decades. These data have caused global alarm and concern. Public interest groups, such as the Silicon Valley Toxics Coalition, are using TRI information in the United States to accelerate the schedule for reducing those particular chemical emissions as well as their usage.

Many people thought that the TRI would spur public debate about risk assessment. However, the center of debate has focused on pollution prevention — determining the process by which industry causes emissions. The TRI has identified opportunities for people to choose

- chemical and product substitution,
- process modifications,
- on-site closed processed recycling, or
- improved housekeeping at facilities

to change the way chemicals are being used and reduce pollution at the source rather than control it at the end.

Public interest groups have also used the citizen suit provisions of TRI to promote pollution prevention and education. In 1990, the Atlantic States Legal Foundation reached a $68,000 settlement with Murray Sandblast and Paint

Company in Buffalo, New York. Under the citizen suit provisions of the Right-to-Know Act, the foundation discovered that Murray Sandblast had failed to report information to the public, so it took the company to court, sued it, and settled outside of court. That settlement required the company to hire a pollution prevention expert to review its processes and reduce the toll on the environment. The foundation also set up conferences to educate citizens about this information statute.

Why does the TRI work? Among the many reasons, two are key. First, the information must be made publicly available in a computer-accessible data format — a revolutionary piece of public policy in the United States. Equally important are TRI's trade secrecy provisions. In 1976, the Toxic Substances Control Act was passed, but it has not been able to accelerate the growth of clean technologies, partly because of trade secrecy. Under TRI provisions, it is extremely onerous for industry to claim frivolously that it cannot disclose information. During the first year, fewer than 40 claims of trade secrecy were allowed for more than 78,000 different TRI reports. That's a real measure of TRI's success.

Future Uses of the TRI

A next step for Right-to-Know will be integration of the TRI data with other statutes and provisions of law as well as expansion of the Right-to-Know Act beyond this current statute.

One focus of integration will be to improve the protection of public drinking water supplies. Using the Graphic Exposure Modelling program and TRI data, EPA's Office of Toxic Substances will allow concerned citizens to locate their source of public drinking water and identify annual toxic discharges from upstream industrial facilities.

Today, American environmentalists are proposing a new law — the Right-to-Know-More legislation. This proposal would expand TRI's focus by increasing data about additional chemicals that could be released accidentally and expanding the right-to-know to include additional facilities. The Right-to-Know-More legislation would include data on all facilities that handle toxic chemicals.

The TRI is our annual snapshot. To propose explicit pollution prevention prescriptions, industrial facilities must be characterized far better than is done currently Therefore, the public interest community seeks to include a maximum hourly rate of release to air, water, and soil and a description of the causes, source, and frequency of these maximum hourly releases of toxic chemicals, to set a much higher priority list for pollution prevention or clean technologies — and to keep the public focused on that issue.

One of the TRI's failures is that it avoids looking at many important chemicals, such as pesticides. Each year in the United States, nearly two billion pounds of pesticides are applied to the landscape. Put that into the perspective of 5.7 billion pounds of chemicals identified as the annual TRI emissions inventory for 1989 and you can see that TRI misses a major segment of toxic loading. Pesticide production in the United States has increased at an alarming rate: almost 2.5 billion pounds of active pesticides are being produced yearly. Conventional practices — agricultural (both on fields and crop systems), industrial applications, and home applications — amount to almost 1.1 billion pounds. The wood preservative industry uses a billion pounds of those chemicals.

These are just the active ingredients; in the United States, we describe the carriers for active ingredients as "inert ingredients" — a misnomer because those chemicals can be the same toxic chemicals identified under TRI as solvents.

Other cross-cutting issues involve boundary areas. The United States and Canada are studying the Great Lakes, which form an important liquid boundary between those two nations. The International Joint Commission that governs those waterbodies has established a scientific task force to investigate persistent pollutant problems in the Great Lakes Basin. This commission has called for virtual elimination of persistent chlorinated chemicals as well as toxic metals. Their report on virtual elimination recommends asking the countries and states that govern the Great Lakes to establish a sunset task force for some of the worst and most pervasive chemical problems. One recommendation was to investigate every use of chlorine by January 1, 1993, and issue a time schedule to eliminate this chemical in paper and pulp bleaching processes. Around the globe, environmentalists have accelerated interest in chlorine chemistry and challenges its rampant use, which has led to some persistent chemical problems.

The Veszprem Agreement declared that "citizen rights to be notified, gather information, and participate in licensing shall not be limited by

national boundaries." A Canadian group, Pollution Probe, has aggressively tracked toxics release inventories along the borders of the Great Lakes. Any consideration of computer-accessible databases within Europe must take into account movement of materials across borders and the vested interest that communities downwind and downstream have in understanding that process.

A final cross-cutting emergent issue deals with another major missing element in this release inventory — the loading of toxic chemicals into products for the home. All over the United States, communities are deciding how to deal with municipal waste. Should they bury garbage in landfills or incinerate it, and what happens if they do? What would complex mixtures of plastics and remains of liquid household solvents do to the environment around a landfill? In a nation where its use is widespread, many environmental groups are challenging the use of polyvinyl chloride packaging. TRI has prompted many Americans to think not just about the point of production but also about the justification of product lines. Currently, more Europeans think about a cradle-to-grave life cycle analysis of products than Amer-icans. They are concerned not only about production points and consumption of resources at that point of production but also the implications when products are used in households as well as disposed by municipalities.

Conclusion

Mismanagement of toxic chemicals and hazardous waste threatens environmental health and economic security. The increasing amount of chemical emissions and waste production is truly alarming. Existing and potential impacts of toxic chemicals on the environment and public health are monumental. Fish poisoned through accumulations of persistent PCBs and pesticides are now injuring humans and other species in the Great Lakes; in the United States, more than 20,000 serious hazardous waste sites require expensive cleanups; and the world's stratospheric ozone layer has become eroded from wasteful uses of halogenated compounds. Inefficient chemical management consumes scarce industrial and governmental resources that could otherwise be devoted toward improving industrial competitiveness and resolving other pressing economic and environmental issues.

Pollution prevention is the key to solving the toxic threat. Pollution prevention means source reduction: any practice that reduces the amount of any hazardous substance, pollutant, or contaminant entering any product or waste stream before recycling, treatment, or disposal. Pollution prevention is a public responsibility.

In the United States, TRI has raised the level of public debate about chemical consumption patterns of Americans and promoted pollution prevention. Every world citizen has a stake in increasing the scope and pace of this debate around the globe. One start would be expansion of publicly accessible multimedia emissions and usage databases.