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Toxic Pollutant Standards: Paralysis or Progress?

After three years of PL 92-500, the victories and defeats of the EPA in implementing that comprehensive law are well known to many. Whether one agrees or disagrees with the Act, its implementation has caused considerable birth pains for the agency, state and local governments, and engineers.

On the whole, EPA has had success in administering such a complex and demanding law with limited resources. But perhaps the most glaring example of the agency's inability to carry out the intent of Congress has been its performance under section 307(a), the toxic effluent standards provision. Not only has EPA failed to meet the deadlines established, it has yet to issue any standards or comply with the stated policy of prohibiting the discharge of toxic pollutants in toxic amounts.

This article will briefly examine that section of the law, the performance of the agency under it, and the reasons why, three years after the Act become law, there are still no effluent standards regulating the discharge of toxic pollutants.

Timetable Overrun. Section 307(a) is probably one of the shortest sections in the Act, occupying slightly less than one

The consequences--

One of the chemicals that was included in the initial list of toxic pollutants was a group of closely related compounds known as polychlorinated biphenyls, or PCB's. These chemicals are widely used in some industrial processes and are characterized by their stability, fire resistance, and electrical insulating properties. Their chemical structure is similar to DDT's and, like that pesticide, they are readily incorporated into human tissue. Their stability also means they are remarkably persistent in the environment and degrade very slowly.

The concern about them is twofold. First, they have been linked to several health effects including skin disorders in humans and failures to reproduce in some animal species. Recently, experiments have shown that these chemicals cause a type of cancer in rats that may indicate that they are also capable of causing cancer in humans. Although the potential for injury is disturbing, what is more significant is their ubiquitous nature; they are found, like DDT, throughout the environment. In recent studies to measure the amount of PCB's in humans, researchers found levels approaching 1 ppb in 75 percent of the persons tested.

Attention on PCB's has focused lately on the fish in New York's Hudson River. These fish, taken by sport fishermen, have levels of PCB's that range from 4 to 49 ppm, with an average of over 15 ppm, three times the maximum concentration allowed in food by the Food and Drug Administration.

Control of PCB's in industrial effluents has been possible for some time. When the 1899 Refuse Act was revived in the late 1960's the problems caused by PCB's were receiving considerable publicity. In April 1972 John Quarles, then assistant administrator for enforcement and general counsel at EPA, stated that discharges of PCB's should be limited to the lowest possible levels to ensure that accumu-

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page. The controversy surrounding it is considerably great, however. Basically, the section requires EPA to publish, 90 days after enactment, a list of toxic water pollutants and to follow that in another 60 days with proposed effluent limitations (including prohibitions) to control their discharge. After the proposal has been published, EPA has 30 days in which to hold a public hearing and six months to publish the final standards. Sources must meet the standard within one year of publication of the final standards.

Thus, PL 92-500 optimistically envisioned that EPA would have published a list of toxic pollutants by January 16, 1973, proposed effluent standards for them by July 15, 1973, and issued the final effluent standards by January 14, 1974. All sources would then be in compliance by January 14, 1975. As will be seen, however, things did not work out as intended.

It was not until July 6, 1973, six months after the deadline, that EPA, acting under a court order, finally proposed a list of nine toxic pollutants. That list included aldrin, dieldrin; benzidene and all its salts; cadmium and all cadmium compounds; cyanide and all cyanide compounds; DDD, DDE, and DDT; endrin; mercury and all mercury compounds; polychlorinated biphenyls

The case of PCB's

lation of PCB's in fish did not exceed the FDA maximum.

When PL 92-500 became law six months later, the EPA had two new tools to control PCB's, the National Pollutant Discharge Elimination System (NPDES) permits and the toxic pollutant effluent standards. The above article relates the difficulties encountered in establishing toxic effluent standards, but NPDES permits were still available to limit PCB emissions.

However, only six permits containing limits on PCB's have been issued to manufacturers with process wastewater effluents. Although more than 500 of the 700 permits issued to steam electric generating plants have a PCB standard, these plants normally discharge no PCB's. Meanwhile, most manufacturers of electrical products (the most extensive users of PCB's) are not limited on the amount of the chemicals they can discharge. Paper mills, especially those handling recycled paper, also have significant discharges of PCB's.

Meanwhile, on the Hudson River things were getting worse. In early 1975, one striped bass was caught and found to have a PCB concentration in its flesh of 350 ppm. That fish was caught close to the outfall of a General Electric plant that was known to be discharging PCB's. That finding so alarmed the U.S. Department of Health, Education and Welfare that an official wrote to EPA requesting that the agency review the discharge permit of the plant with the aim of eliminating or reducing the discharge of PCB's. After studying the matter, EPA declined to review the permit.

Shortly after the EPA decision, officials of the New York Department of Environmental Conservation, which has been granted authority to issue NPDES permits for that state, announced that it would establish a zero discharge standard for PCB's from that plant and would require the firm to meet the standard by July 1978. Further action in that case is pending.

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(PCB's); and toxaphene (chlorinated comphene).

In establishing that list EPA followed six criteria that included evidence that the pollutant was toxic at extremely low concentrations in water; it is discharged in significant amounts from point sources; such point sources have been involved in incidents severely affecting human health; there is a potential for occurrence of such incidents; the nature and seriousness of the problem are such that they cannot be addressed under other sections of the Act; and adequate data are available to establish the standards.

It was clear from comments received by the agency that there was confusion about what could be considered a toxic pollutant within the meaning of the criteria. The criteria were attacked as being both vague and inadequate. Responding to those charges, the agency revised its criteria. When the final list was published on September 7, 1973, however, it was identical to the one proposed earlier.

At the same time that it published the final list, EPA also listed over 25 other pollutants that were being studied for designation as toxic pollutants. Some of the pollutants listed were asbestos, lead, arsenic, zinc, heavy metals, organophosphates, and industrial carcinogens.

Despite the publication of the list of possible future toxic pollutants, environmental groups were still unsatisfied with the limited coverage of the list and filed suit. In December 1973, the Natural Resources Defense Council (NRDC), Environmental Defense Fund (EDF), and others asked the court to require EPA to amend those criteria and to include additional substances on the list. In March 1974, however, the court ruled that EPA had the discretion to limit the initial listing to those substances that met logical and relevant selection criteria. That decision was appealed later that month and finally returned by the Appeals Court to the District Court for further action on September 15, 1975.

One of the legal challenges to EPA's list of toxic pollutants centers on the agency's decision initially to list only nine pollutants from among the many that are known to have toxic properties.

In late December 1973, EPA proposed effluent limitations for the nine toxic pollutants. The standards were based heavily on the revised water quality criteria document and designed primarily to protect the beneficial uses of water from damage caused by toxic pollutants.

As might be expected, the standards were attacked by both industry and environmentalists. Arguments against the standards cited deficient assumptions, inadequate data, lack of economic considerations, exclusion of municipal treatment plants from coverage, and the unavailability of equipment to detect the very low concentrations proposed.

Because the law required EPA to hold formal, trial-type, rule-making hearings to consider the objections, the agency commenced the adjudicatory hearings in April 1974. These hearings, which lasted two months, were to play a critical part in the delay in developing the standards because the formal procedures prohibited EPA from introducing new evidence after the hearings began. Thus, the agency was severely constrained in its ability to defend the standards.

The law also requires that any revision to the proposed standards resulting from the hearings be made on the basis of evidence presented at the hearings. Because EPA could not present new in-

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formation to defend its case, the agency decided to withdraw its standards and redraft them rather than have them modified on the basis of data supplied by industry. Thus, the whole process began anew.

Angered by what they believed were unconscionable delays in establishing the standards, NRDC and EDF again went to court, this time to get the agency to publish the final effluent standards. That court case is still pending, as is the issuance of any toxic effluent standards. The agency does hope, however, to repropose the standards beginning in mid-December 1975.

Counterproductive Requirements. The problems of implementing the toxic pollutants section of the Act are obvious. But what about the reasons behind those problems? While some of the causes are equally obvious, others are more subtle and reflect the counterproductive nature of some of the law's provisions.

The strict time requirements placed on EPA to publish rules and regulations are certainly not unique to section 307 (a). Such deadlines are found throughout the Act and have been a major source of problems in implementing the law. The requirement to propose a totally different type of effluent limitations within six months of the law's enactment was an extreme hardship on the agency, however. That strict deadline, even though it was missed by many months, meant that the agency was forced to establish and defend such standards before the necessary technical data base had been developed.

The law also places a severe time constraint on the industrial dischargers of toxic pollutants. After the final standards are issued, industries have only one year to design, procure, and construct the needed treatment facilities. Even when dealing with more conventional pollutants, it is nearly impossible to compress that amount of work into a 12-month period. Thus, EPA has been reluctant to issue standards that it knows cannot be met by the statutory deadline, thereby subjecting dischargers to enforcement actions through no fault of their own. The agency is sympathetic with the problem and has proposed legislative changes to Congress, which is currently considering the matter (see the accompanying article on HR 9560). To date, however, no extension has been passed.

Although it is evident that the one-year deadline is infeasible, there are arguments that the tight time schedule was put in the law to stimulate industry to develop innovative solutions to the problem and not to rely on conventional treatment techniques. The Congress wanted to use the Act to force the development of new and improved technologies and to prod industries into taking a more inventive approach to the problem of controlling toxic discharges. Whether that strategy succeeds remains to be seen.

Perhaps the *most* serious deficiency written into the law is the requirement that the agency conduct formal rule-making hearings after it has proposed the effluent standards. One of the goals of the Act was to develop standards quickly so that dischargers could begin meeting them as soon as possible. While that is an appropriate goal, section 307 (a) of the Act actually frustrates achievement of that goal by requiring lengthy, trial-type adjudicatory hearings. Under the rules that govern such hearings, EPA must make its total presentation at the start and is not allowed to introduce any new information during the course of the hearings.

Perhaps more important from the standpoint of public policy are the restrictions that such hearings effectively place on the participants in the process. Formal hearings of this type place a tre-

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Perhaps the biggest single impediment to the establishment of toxic effluent standards has been the lack of adequate scientific information of the effect of these pollutants at extremely low concentrations in water.

mendous financial burden on those taking part in the proceedings. The time and expense of adjudicatory hearings can usually be borne only by large industries. Thus, while Congress intended to open up the rule-making process to more public participation, the formal hearings required by section 307(a) effectively preclude meaningful citizen involvement in developing the standards for toxic pollutants.

Clearly, such hearings are not conducive to the open, constructive review of complicated technical standards. It is necessary for EPA to have the authority to devise hearing procedures that are better suited to the gathering and review of information, which is essential to the rule-making process, than to the case-by-case fact finding for which the adjudicatory hearings were designed.

Last year, EPA proposed such an amendment to enable it to conduct the standards-setting process more efficiently. Curiously, that amendment was rejected by the Office of Management and Budget, and EPA was never allowed to send the recommendation to Congress. Even the current legislation (HR 9560) that would, in part, extend the compliance deadline does not contain any relief for the agency from the burden of formal regulatory hearings.

Other questions and issues surrounding the development of the standards remain unresolved. Issues such as revision of the list of toxic pollutants, the adequacy of the criteria used to select the pollutants, and the priority of research programs to establish a better understanding of the environmental behavior of chemicals so that future toxic standards will rest on a firmer scientific base need to be addressed.

Increasing Importance. Despite the delays in developing the toxic standards, the issue is assuming an increasingly important and visible role in pollution control and environmental health programs. The continuing disclosure of toxic chemicals found in drinking water supplies highlights the need for effective control of such substances at their source. The Safe Drinking Water Act, signed into law a year ago, will provide additional impetus to the agency to control the discharge of toxic pollutants from industrial effluents.

Congress is more concerned than ever with toxic chemicals and is currently considering legislation that would give EPA broad authority to regulate the manufacture and distribution of any chemical that posed a risk to human health or the environment. If enacted, the law will focus EPA's attention even more directly on the problems caused by toxic chemicals and the need to control their release into the environment.

According to some observers, the sorriest chapter in the history of PL 92-500 has been the agency's failure to control the discharge of toxic pollutants. But those first efforts reflected the enormity of the task EPA had to perform in an unreasonably short time. Legal confrontations, inadequate scientific data, stringent timetables, and a lack of resources all conspired against success. Now, with the wisdom of hindsight and a greater realization of the need to control toxic pollutants, EPA will, hopefully, do better the second time around.

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