

MANAGEMENT OF TOXIC AND HAZARDOUS WASTES

Harasiddhiprasad G. Bhatt
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Edited by

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PREFACE

This book is a product of the Third Ohio Environmental Engineering Conference held in Columbus, Ohio in 1983. The conference was sponsored by the Central Ohio Section of the American Society of Civil Engineers and the Ohio State University Department of Civil Engineering.

Chapters presented here have been updated to reflect present conditions. This book, therefore, is a current reference work on the management of toxic and hazardous wastes.

Increasing attention is now being focused on the problem of groundwater pollution in this country. The demand for cleaning of hazardous waste disposal sites has also grown stronger since the passage of the Comprehensive Environmental Response Compensation and Liability Act of 1980 (commonly known as Superfund). In sections on the impact of groundwater and disposal site cleanup, this book presents twelve chapters on these important aspects of hazardous waste management. Attention has also been focused on waste treatment and recycle, risk assessment, public participation and land disposal. The section on legal considerations provides valuable pointers on the precautions to be taken and pitfalls to be avoided to minimize legal liabilities.

The editors wish to thank the sponsoring organizations and all members of the Conference Committee. Ralph Cox, Tom Davis, Doug Uhren, Dave Pritchard, Bob Smith, Lorey Rogenkemp, Marcia Gibson, and Peggy Vince put in a lot of effort to make the conference a success. Thanks are due to Jerry Jones of Malcolm Pirnie, Inc. who prepared the index. Without the tremendous assistance of Shirley Marlowe, Teresa Grimmer, Marilyn Hunter and Carolyn Strutner of Malcolm Pirnie's word processing staff, this book could not have been completed on schedule. Anne M. Roosen, of the publisher's staff, is responsible for the final form of the book, for which she deserves thanks from all of us.

Finally, we thank all contributors to this book. Their understanding, patience and readiness to update their chapters has enabled us to present to you a truly up-to-date work on this important subject.

Harasiddhiprasad G. Bhatt
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CHAPTER 1

IMPLEMENTATION OF RCRA AND SUPERFUND BY THE U.S. EPA - THE STATES PERSPECTIVE

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Vermont Agency of Environmental Conservation

INTRODUCTION

With the passage of the Clean Air and Water Acts in the early 70s, Congress unwittingly enhanced the problems associated with solid and hazardous waste disposal. Hazardous sludges produced by the treatment of air and water emissions and wastes that would have been discharged to streams and rivers prior to the Clean Water Act were disposed of in landfills, lagoons, underground injection wells, etc. To further complicate this situation, the unforeseen legacy of America's industrialization was beginning to manifest itself in the form of Love Canal, the Kin-buc landfill in New Jersey, and other old waste disposal sites. To close the loop of environmental regulation, in 1976 Congress enacted the Resource Conservation and Recovery Act (RCRA) to deal with the ongoing problems of hazardous waste management. In order to provide for the clean up of closed or inactive hazardous waste disposal sites and emergency spill response, in 1980 Congress passed the Comprehensive Environmental Response, Compensation, and Liability Act (CERCLA), more commonly called Superfund. The following is a discussion of the effect on the states of EPA's implementation of these two Acts.

RCRA

In the interim period between the enactment of RCRA and the promulgation of the first major portion of the RCRA regulations in May 1980, many states took the initiative and developed hazardous waste programs of their own. Once the Federal program was established, however, these programs were pre-empted. In order to remain the sole regulatory authority in the hazardous waste area, these states and other states with no pre-existing programs which wanted primacy had to be authorized by the U.S. EPA. Under RCRA Section 3006, there are two types of authorization, interim and final. Interim authorization is temporary and was created to provide states with enough time to prepare their applications for

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final authorization while maintaining primacy.

There are four criteria by which a state's application for final authorization are judged. The state program must be: equivalent to the Federal program; consistent with the Federal program; no less stringent than Federal program; and provide adequate enforcement. While these criteria in and of themselves may not seem unreasonable, EPA's interpretation and application of the criteria have created a number of problems for the states, some of which are major stumbling blocks in the authorization process. In particular, EPA has taken the equivalency and no less stringent requirements and determined that a state program including its regulations, must be identical to the Federal program. This position will not only force those states with pre-existing regulatory programs to revise extensive portions of their regulations, but it also places the states in a situation where continual regulatory amendments are necessary. This is due to the fact that even at this point in time the EPA regulatory program is not complete. EPA promulgated "Phase I" of its regulations in May 1980 but did not promulgate "Phase II, Component C" until July 26, 1982 and more regulations need to be developed to cover all types of hazardous waste facilities. On top of this, EPA is currently planning potentially major revisions to the regulations it already has on the books. These additions and revisions to the Federal regulations will be putting a strain on both the states and those persons who have to follow and comply with the regulations.

Another difficulty which arises as the result of an identical regulation approach is the inability of state permit writers to allow variances or waivers from the federal permitting requirements on a case by case basis. Both the Clean Air and Clean Water Acts use some form of "best engineering judgment" and other mechanisms which give a permit writer some latitude. Due to the no less stringent criteria of RCRA Section 3009, however, a permit writer cannot consider any site specific conditions which might justify a variance from the technical standards usually applied to a hazardous waste facility unless the regulation involved specifically allows for a variance. This position fails to take into account both the fact that facility sites can be radically different and the fact that technology for dealing with hazardous waste is constantly changing and upgrading. Researchers and engineers are developing new treatment techniques and technologies almost every day. Without the ability to variance, these innovative methods will be more difficult to permit. As the Federal government should not only be encouraging this kind of research but also creating a regulatory program that contains an element of common sense, the states are currently working with EPA to resolve this problem.

The problems the states are experiencing in obtaining final authorization are compounded by the fact that all interim authorizations granted to the states expire on January 26, 1985. If

a state with interim authorization has not received final authorization by that date, the primacy for the operation of the program reverts back to EPA. Considering the obstacles to the authorization process that I have described, the potential for program reversion seems to increase each day. If reversions occur, the regulated community will face even further confusion than it is now experiencing as the program shifts back and forth between the states and EPA. If primacy shifts, there will also be double regulation; i.e., by both EPA and the state, in those states which have enacted their own hazardous waste laws. With the proposed cut back on EPA funding, operating duplicative programs is a waste of resources we cannot afford.

Once a state overcomes the difficulties inherent in the authorization process, it then faces the myriad problems associated with the actual implementation of the program. These problems arise in the context of facility permitting, the maintenance of a national data base, Federal funding and resources available to the states, and other areas.

The permitting and proper operation of hazardous waste treatment, storage, and disposal facilities is of vital importance in order to prevent the creation of future Superfund sites. The first step, and perhaps the most difficult, is the siting of a facility. The prevalent "not in my backyard" attitude and mistrust of state and federal regulatory authorities, resulting in part, from past abuses by permitted facilities, have caused companies to go through long, painful, and often unsuccessful attempts to site a facility. To deal with this situation, some states have enacted facility siting laws which establish independent boards with the primary authority for siting decisions. Two state's laws, New Jersey and Massachusetts, illustrate the different approaches that have been taken. New Jersey's siting board is comprised of three industry representatives, three local officials and three environmentalists. The Board either proposes sites itself or acts on the request of industry. If the Board finds that site meets the criteria established by the State Department of Environmental Protection, the site is approved without regard to any local requirements, ordinances or potential objections.

The Massachusetts approach differs from New Jersey's in that its law is predicated on the belief that siting considerations are best addressed through negotiations between developers and the host communities. The Board is comprised of eight state representatives, six representatives of state professional organizations, and seven members of the public. The Board addresses the social and economic impact of proposed facilities and awards technical assistance grants to local assessment committees for the evaluation of the proposed facility and the determination of the compensation a facility developer will have to pay to communities abutting the facility. Siting decisions are reached through compromise and any impasse is resolved through binding

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arbitration. EPA has not yet promulgated comprehensive federal siting standards, and until it takes that step it is likely that an increasing number of states will enact siting laws. The siting process is not the only cause for delay in facility permitting. Once a site has been finalized, Section 7004 of RCRA requires extensive public participation, including notice of draft permits in major local newspapers and radio stations and a mandatory 45 day comment period. In my opinion, informed and rational public comment on a draft permit is of great assistance to a state agency. Unfortunately, due to past problems and the publicity they received, public comment is often highly emotional and almost impossible to respond to in a manner which helps to allay the concerns that have been expressed. Responding to and interacting with the public can add months to the permitting process.

I have been discussing the delays that occur in the permitting process itself, but for a number of different types of facilities, even the initiation of the permitting process can be delayed. As I mentioned earlier, EPA still needs to promulgate additional technical facility standards. Facilities that are lacking standards include underground storage tanks, boilers that burn hazardous wastes, thermal treatment facilities, and facilities that conduct chemical, physical or biological treatment. Chemical, physical or biological treatment alone covers a significant number of existing facilities. EPA has stated that it intends to promulgate these standards within the next two years, but only time will tell.

In order to effectively manage the RCRA program, a nation wide data base is needed. EPA has established a data base using the information submitted through the RCRA Section 3010 notification requirement for hazardous waste generators, transporters, and facilities and information contained in the preliminary permit application forms ("Part A" of the application) submitted by facilities. Unfortunately this data base is comparatively useless due to the faulty information EPA has received. A number of the notification and application filings were protective; i.e., persons who were unsure of their status under the RCRA program filed rather than face the penalties associated with non-filing. Some of the filings were totally erroneous, made by persons who were confused by the exceedingly complex RCRA regulations. Some of the filings are no longer accurate as the company involved has gone out of business or started to store its waste for less than 90 days (an activity which has been exempted from the full scope of the permitting requirements). Even though it acknowledges the deficiencies, EPA continues to use this data for statistical purposes, mailing lists, etc. States and the regional EPA offices are starting to do this now.

While facility permitting and inaccuracies in the data base may present difficulties in implementation, the most serious problem facing the states is EPA's cut back in funding of state programs and the proposed elimination of all funding within five to ten years. All environmental programs, including the hazardous waste

program, have experienced cut backs in available Federal monies in the past year and further cut backs are proposed for fiscal year 1984. These decreases have a significant impact on state programs as they are taking the place at the same time that states are gearing up for facility permitting, a process which is very resource intensive. It seems paradoxical that at the same time EPA is requiring authorized state programs to be identical to the complex Federal program, it is initiating cut backs. Top EPA officials have claimed that states can replace Federal funding through the imposition of user fees, generator taxes, licensing fees, and other mechanisms. While these measures may help a state to supplement necessary resources, I know of no state that is currently using any of these mechanisms which could totally support its program with the monies it obtains. EPA should provide funding of state hazardous waste programs in excess of the levels that were available in the fiscal year 1983 and continue that funding for the indefinite future. Without this reversal, there is a good possibility that some states will return or decline to run the RCRA program. Ironically, the recent controversy at EPA may end up helping the states in this area due to increasing Congressional concern over management of the program.

SUPERFUND

From the enactment of Superfund in 1980 to the current controversy over its management by EPA and the firing of top EPA officials, the implementation of the Act has been constantly beset by problems. Some of these involve the actual function of the Act itself at the Federal level, such as the failure to finalize the National Contingency Plan required under Section 105 until July 16, 1982. Others have a more direct impact on the states, such as the development and content of the list of all sites which should have top priority for clean up.

In October 1981, EPA published an interim priority list of 115 hazardous waste sites which was subsequently expanded to 160 sites in July 1982 and to 418 sites in December 1982. One of the problems the states encountered during this process was EPA's failure to provide the states with notification of what sites were to be included on the list until the list was ready for publication in the Federal Register. This is despite the fact that the selection of the sites themselves was based on data gathered primarily by the states. This degree of secrecy on the part of EPA is both irresponsible and violates the spirit of the State/Federal partnership mandated by CERCLA itself. To remedy this situation, future additions to and the subsequent prioritization of sites on the list must be jointly agreed on by the individual states and EPA. In this regard, EPA individual states and EPA. In this regard, EPA should place strong reliance on the state's recommendations as they are usually more familiar with the past

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history and current status of the sites.

This State/Federal co-operation should also include efforts to correctly categorize the listed sites so that the general public is made more aware of the true status of each site. This categorization should include the enforcement status (is the site the subject of the state, federal or joint litigation) and the remedial status (is the site currently the subject of local, state, federal or private clean up actions and is clean up by parties who disposed of waste at the site in progress or expected in the near future). Although EPA has made an initial effort to provide this data, much of the information was inaccurate and the implications of the categorization were not elaborated upon.

The priority list is not the only listing of hazardous waste sites that EPA has developed. Under Section 103(c) of CERCLA, persons who owned or disposal sites were required to notify EPA by June 1981. This notification program resulted in the listing of a total of 14,000 sites nationwide. While the notifications contained the basic information needed, it was readily apparent that more the situation. Therefore, in 1982, Congress appropriated 10 million dollars to be used by the states for the assessment, inspection and the eventual production of an inventory of sites under Section 3012 of RCRA. The inspection and verification of these sites is of vital importance as there is a question of the validity of the data received under the notification program for hazardous waste generators, transporters, and facilities, there is a good probability that the information received contains protective or erroneous filings. Again, the result of all this is a faulty data base in the EPA computers. Once the states have initiated their investigations, EPA should establish some procedure which would allow states to remove sites from the list when they prove to be no threat to human health or the environment or when they are shown to be outside the scope of the Superfund program.

With the promulgation of the national priority list, the next stop in the process is the investigation of the sites on the list and the development of remedial plans. As is true in all phases of a Superfund clean up, the states must provide matching funds for these activities. In this case, the states must provide 10% of the necessary amount. This requirement has created serious problems. In general, it is difficult to come up with the amount of money needed particularly in those states with a large number of sites and the smaller states. Specifically, as it is often near to impossible for a state to get required money all at once from a state legislature, a vicious cycle is created. It is difficult to justify the appropriation of large sums of money unless a preliminary investigation has taken place. Then it is difficult to obtain money for the final clean up of the site until the results of the remedial studies are in and an approximate cost for closure has been determined. Therefore, to implement the program the state agency responsible for Superfund must first get the money for the preliminary investigation, go back again for the amount needed for

the detailed investigation and remedial planning, and go back again for the amount needed for final clean up. These continual requests for money make the appropriation process far more difficult and time consuming than it should be and delay the actual clean up. To avoid this problem, the states should get an initial outlay for investigation and planning without 10% matching funds requirement.

If there is difficulty in obtaining money for the initial work and final clean up, there is even further difficulty in obtaining the money necessary for the post-remedial operation and maintenance of the site by the state which is mandated by Section 103(c) (3) of CERCLA. The states have a real problem with this provision as there is no clear definition of the time a state must perform post-remedial operation and maintenance. At the present, state obligations could be construed to last indefinitely. Some limiting factors and termination criteria must be established. These could potentially be drawn from the criteria already established under RCRA for the termination of the post-closure maintenance period for hazardous waste land disposal facilities.

Even if limits are set, the states are looking at potentially enormous amounts of money to conduct all the necessary activities. Once again, there are very real problems in obtaining the money from state legislatures. One solution to this dilemma is to amend CERCLA to allow the states to use a portion of the Superfund money for investment purposes on a site specific basis. These could include certificates of deposit and other safe high yielding investments. Ideally the states could then use the interest generated to perform the necessary actions in addition to the invested capital. This scheme is particularly appropriate if EPA decides on a 30 year post-remedial operation and maintenance period; i.e., the time period currently required under RCRA for closed facilities.

I have described a number of specific problems that the states have been experiencing, but there is also an overall problem with the implementation of Superfund caused by EPA's current practice of centralizing the administration of the program in its Washington headquarters. The initial decisions on sites are made by the EPA regional offices working in conjunction with the individual states. Often, however, draft contracts, documents, reports, bid packages, etc., and agreements or decisions mutually approved by a state and the regional office are rejected or unacceptably altered by EPA Headquarters. This causes an inordinate delay in program implementation and an increase in costs. Many of these delays are the result of EPA Headquarters' staff's unfamiliarity and lack of involvement with individual sites. These difficulties are often trivial and could be avoided by some degree of decentralization in administration which would give the regional offices greater authority and discretion in making the necessary decisions.

In hindsight, it is relatively easy to recognize all of these problems. If I had been in charge of the program from its