ISSUES RELATED TO MIXED RADIOACTIVE WASTE MANAGEMENT: THE EPA PERSPECTIVE

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ABSTRACT

The subject of mixed hazardous and radioactive waste is complex. Regulatory problems arise when wastes are both hazardous and radioactive. Three Federal agencies are primarily responsible for the management of such waste. The Environmental Protection Agency (EPA) regulates hazardous waste under the Resource Conservation and Recovery Act (RCRA), but some of these wastes are also radioactive. Low-level nuclear wastes are controlled by the Nuclear Regulatory Commission (NRC) under the Atomic Energy Act (AEA), but some of these are also hazardous wastes and are thus also subject to EPA control under RCRA. Finally, many wastes from Department of Energy (DOE) facilities are mixed hazardous and radioactive waste and are thus regulated under the AEA and RCRA. In addition, most States have regulatory powers over mixed wastes. EPA, NRC, and DOE are attempting to solve the problem of regulating such wastes to avoid duplicate permitting and oversight where appropriate.

It should surprise no one that the subject of mixed hazardous and radioactive waste is complex. There is much overlap in the management of such wastes. I am hopeful that this presentation will make the subject more understandable to you.

PLAYERS IN MIXED RADIOACTIVE WASTE

Perhaps the best starting point is to identify the main players in mixed waste management. The first player is the Environmental Protection Agency (EPA), a regulatory agency whose mission is to protect human health and the environment. The second player is the Nuclear Regulatory Commission (NRC), which, among other things, controls the disposal of low-level nuclear wastes. The third player is the Department of Energy (DOE), which is involved in the mixed waste issue because many wastes from DOE facilities are both hazardous and radioactive. Lastly, most State governments have regulatory powers over mixed waste.

EPA regulates hazardous waste under the Resource Conservation and Recovery Act (RCRA) of 1976; NRC's and DOE's mandate for regulating nuclear wastes is the Atomic Energy Act (AEA) of 1954, as amended. EPA also has general radiation protection power under the AEA.

MIXED WASTES

It is relatively easy to determine who regulates most radioactive wastes. Rags and clothing that may be contaminated by radiation are considered low-level radiation wastes and are controlled by the NRC under the AEA. At present, there are three low-level radioactive waste facilities at Hanford, Washington; Beatty, Nevada; and Barnwell, South Carolina. On the other end of the spectrum, spent fuel rods from nuclear power plants are high-level radiation wastes and are regulated by DOE under the AEA.

Regulatory problems arise when wastes are both radioactive and hazardous. The definition of "solid waste" under RCRA is complex and will be discussed here in its simplest form. A solid waste is "any material that is abandoned by being disposed of, burned, or incinerated - or stored, treated, or accumulated before or in lieu of these activities...." Source, special nuclear, and byproduct materials controlled under the AEA Act are, however, explicity excluded from the RCRA definition of solid waste, and thus from regulatory control under RCRA. Hazardous waste is a subset of solid waste. EPA defines hazardous waste by four general characteristics (ignitability, corrosivity, reactivity, and toxicity) and by listing specific hazardous wastes, such as certain spent halogenated solvents. Furthermore, any waste generated from the treatment, storage, or disposal of a hazardous waste, including any sludge, spill residue, ash, emission control dust, or leachate (but not including precipitation run-off), is also a hazardous waste.

Certain low-level radioactive wastes fall under the RCRA definition of "solid" and "hazardous" wastes. Hospital wastes such as "scintillation cocktails," which contain solvents (a hazardous waste), are good examples. Spent lead shielding is also a mixed waste because lead is a hazardous waste. A recent NRC report estimates, however, that less than 5 percent of all low-level radiation wastes are also RCRA hazardous wastes.

Both EPA and NRC regulate such mixed wastes. If low-level radiation waste sites accept such wastes, they must follow both EPA and NRC rules

simultaneously. NRC's regulations do not preclude EPA's, but the opposite is not true. Under these circumstances, the only way owners of these sites can comply with both sets of regulations is to have different cells at their facilities to dispose of the mixed wastes. This is, of course, a cumbersome situation because two Federal agencies are responsible for permitting and oversight at the same facilities. Similar duplication could exist within State governmental agencies.

OPTIONS FOR DEALING WITH MIXED WASTES

EPA and NRC have explored at least eight options for the management of low-level wastes at both RCRA and AEA sites. In the spirit of trying to make a complex subject more understandable, I will not go into all the details here. Suffice it to say that EPA and NRC now both agree that the best solution for controlling mixed low-level radioactive waste is for NRC to regulate such waste under RCRA authorities. There is a catch, however. This solution requires a RCRA amendment because the statute does not provide for EPA to delegate its authorities to another Federal agency.

RCRA would have to be amended in two ways. First, EPA must be authorized to delegate authority to the NRC to carry out the RCRA program at NRC facilities and to issue such facilities RCRA permits. Second, the NRC must be authorized to delegate to the States the authority to issue RCRA permits to NRC sites. EPA is strongly encouraging Congress to pass this legislation.

While the legislation discussed above would solve the problem regarding mixed low-level radioactive wastes regulated by EPA under RCRA and the NRC under the AEA, it does not account for mixed wastes controlled by DOE.

DOE WASTES

A little history may be helpful in understanding the EPA/DOE interface issue. In 1980, DOE took the position that §1006 of RCRA could be construed to mean that RCRA rules do not apply to wastes generated at DOE facilities. A Federal court in Oak Ridge, Tennessee, subsequently ruled that nonradioactive hazardous waste generated at DOE facilities must be regulated under RCRA. DOE has agreed to comply with this judgment. A problem remains, however - the court decision did not address handling at DOE facilities of radioactive wastes that are also hazardous. DOE has identified a number of such wastes. The question is which of these wastes are subject to RCRA control.

RCRA excludes from its regulations "source, special nuclear and byproduct materials" as they are defined under the AEA. Source and special nuclear materials are easy to identify. Byproduct materials are not. On November 1, 1985, DOE proposed a definition of "Byproduct Material" for use in determining its "obligations under the Resource Conservation and Recovery Act with regard to radioactive waste substances owned or produced by the Department of Energy pursuant to the exercise of its authority under the Atomic Energy Act of 1954, as amended." DOE proposed to define byproduct material as "a waste substance containing radioactivity that is either directly yielded in the process of producing or utilizing Special Nuclear Material as that term is defined in the Atomic Energy Act of 1954, as amended, or its being made radioactive is a direct and necessary consequence of that process." Presumably, radioactive waste materials produced at DOE facilities that are not source, special nuclear, or byproduct materials as so defined would be subject to RCRA controls. EPA believes this definition has a number of problems that EPA, DOE, and the NRC must work out.

There are two areas that need to be clarified and addressed in the EPA/RCRA rules, in addition to the DOE definition. These are the classified nature of some of the DOE waste material and the fact that some of the RCRA rules may be inappropriate for radioactive waste. EPA intends to propose waivers for such classified and radioactive materials this year.

LACK OF SITES

A final area of concern regarding low-level radioactive wastes is the 1980 law that gave States until the end of 1985 to find ways to handle such waste produced in their State or cooperatively with neighboring States. No State has met the deadline. As a consequence, the three States with low-level radioactive waste facilities (Nevada, Washington, and South Carolina) threatened to close their sites to the other States unless Congress extends the deadline and makes the law potent enough to force the States to act. If this were not done, the problem could reach crisis proportions for the dozens of nuclear power plants and thousands of hospitals, clinics, and laboratories that would be unable to dispose of their approximately 2.8 million cubic feet of low-level radioactive waste each year. As a result of this situation, Congress passed the Low-Level Radiation Waste Bill of 1985; it was signed by the President on January 15. This bill gives interim milestones for States to establish compacts under which facilities will be sited. Penalties are instituted should these milestones not be met.

CONCLUSION

The subject of mixed hazardous and radioactive waste is complex. I hope that I have clarified the subject to some degree. EPA recognizes the problems involved and has a strong desire to solve these problems.

Thank you for giving me the opportunity to present my views and comments on this important matter.