

## ON THE WAY TOWARD LLW DISPOSAL

Terry R. Lash  
Illinois Department of Nuclear Safety  
1035 Outer Park Drive  
Springfield, Illinois 62704

### ABSTRACT

The framework of radioactive waste disposal has drastically changed over the past 12 years. The changes have primarily been in two areas. From an institutional standpoint, the decision to make low-level radioactive waste disposal a state responsibility effectively removed this issue from the free market system. Secondly, the amount of technical and managerial resources devoted to this problem has increased dramatically.

Using interstate compacts borne of necessity, rather than mutual convenience, has created some interesting political alliances. In addition, state agencies may not have been given sufficient authority or resources to carry out their new responsibilities. Nevertheless, progress has been made in developing a new national low-level waste disposal system based on regional compacts.

This paper explores some of the prerequisites for establishing new disposal capacity. Among these are addressing concerns of citizens, who exercise a great deal of local control, over the safety and equity of disposal technology and site selection. Dealing with these concerns comprehensively and forthrightly will prevent our task from being an impossible mission.

### INTRODUCTION

It is a pleasure to address what has become the most comprehensive and outstanding annual conference on radioactive waste management issues to be held anywhere in the world.

We shall not talk about specific details of our program in Illinois, for those will be the topic of a later session. Instead, we will present some general observations and conclusions based not only on my recent experience at the Illinois Department of Nuclear Safety, but also on my years as an active environmentalist with the Natural Resources Defense Council. In that latter role, by the way, I gave a presentation at this conference a dozen years ago. My message in 1974 was two-fold: the country had not devoted sufficient technical and managerial resources to solving radioactive waste disposal problems, and the country's institutions charged with dealing with radioactive waste disposal issues had to be reformed in order to achieve public acceptance and the goal of disposing of radioactive wastes permanently and safely.

In 1986 the situation is much different. Over the past twelve years there have been several reorganizations of the institutions addressing radioactive waste disposal problems, and the resources devoted to finding solutions has increased substantially. These changes were for the most part forced on the establishment by others. Citizens and states demanded improvements--and they got them.

The major institutional change regarding LLW occurred in 1980 when Congress established as national policy that each state shall be responsible for providing for the disposal of its own LLW. The 1980 LLW Policy Act created a structure and set in motion a process that are unprecedented in both scale and intent. Whether it works or fails, the new approach is certainly a bold, national

experiment. If it works, it may serve as a model for solving other waste stream problems through regional compacts.

It should be clearly and frankly recognized that the regional compact approach represents a significant shift in philosophy for dealing with LLW disposal. Prior to 1980, responsibility for commercial low-level waste disposal was not a federal responsibility. The process in 1980 was to rely on the private sector. A developer who met the licensing requirements of an Agreement State or the NRC could operate a disposal facility for a profit subject to monitoring, inspection, and regulatory enforcement, just as do those firms that build automobiles, package meat, fly airplanes, or deliver health care. In other words, responsibility for the supply of disposal space was left to the profit motive and competition among operators in the market place, subject to government health and safety regulation.

No more. The era of free enterprise has ended and the era of state control has begun. The new amendments to the Policy Act even go so far as to mandate, under certain conditions, that a state must eventually take title to and assume liability for the wastes generated within its borders.

The LLW compacts are an unusual political invention. Traditionally when states form regional compacts with other states it is both voluntary and for an economically beneficial purpose, such as when one or more states in a given river basin form a compact in order to better manage the waterway. It is quite unusual, perhaps unique, for a nationwide system to be imposed by Congress. It is even more unusual for Congress intentionally to restrict interstate commerce by carving up a national market, in this instance, radioactive waste disposal capacity, into a series of 10 or so distinct regional markets, where imports and exports from each is controlled by a commission.

Historically, regional compacts are marriages initiated by the parties for mutual and self-recognized benefit. The LLW compacts, on the other hand, are more akin to a shotgun wedding, forced upon the reluctant parties in order to take responsibility for an unwanted problem. Because of this the compacts are an awkward political fabrication. The negative nature of the incentives behind the formation of the compacts--namely to obtain exclusionary powers--has resulted in a strange patchwork of alliances. For example, neither Nevada nor Connecticut share any borders with their respective compact partners; and geographically strangest of all, California and South Dakota are rumored to be symbiotically flirting with one another.

When the 1980 Act was forced into existence during the lame duck days of the Carter administration by the governors of the three states with sites--particularly South Carolina--almost all state agencies were ill-prepared for their new responsibilities. In 1980 they did not have enough technical staff, a proper organizational structure, funding, and legal authority to deal adequately with the LLW disposal problem. In retrospect, the five-year time frame for the formation and ratification of compacts and the development of new regional disposal facilities was not realistic. Whether the present compact alignments, overall structure, and the talents of the various compacts and host states are equal to the difficult tasks of the next seven years is yet to be seen.

Not all of the institutional and legal problems have been resolved. Let me give you our case as an example. The Illinois Department of Nuclear Safety derives its authority regarding LLW disposal primarily from the Illinois Low-Level Radioactive Waste Management Act of 1983, which was adopted in response to the 1980 federal LLW Policy Act. This state law does not give the Illinois Department of Nuclear Safety (or any other state agency) the legal authority to build and operate a site; that is, to provide actual disposal capacity. Thus, under existing law, the Department cannot guarantee the availability of disposal capacity. Indeed, nothing in the Illinois law extends the role of the Department beyond those duties and activities which typically fall within the usual bounds of a state regulatory agency, with the possible exception that the Director is charged with selecting one of at least three potential sites recommended by a developer-operator as the final site.

In other words, Congress has given all states the serious responsibility of assuring the availability of LLW disposal capacity. But Congress may not have simultaneously given the states sufficient authority to meet that responsibility. Moreover, many, perhaps most, states do not yet have the capability, in terms of technical and financial resources, to answer all the questions and perform all of the work that must be accomplished before there will be new LLW disposal facilities.

Well, as you can imagine, the difficulties faced by state governments in providing for new LLW disposal facilities are enough to keep agency directors worried and concerned, even away from the office. A while back, late at night when local television stations fill time slots with old movies

and reruns, I fell asleep in my chair with the television on. I simply had dozed off. While I was half asleep, in a drowsy state of semi-consciousness, I heard the theme song--or at least I thought I did--of an old TV program popular back in the late 1960's. It was followed by a few moments of silence, then, as if from a tape-recorder, a voice said:

Good morning, Mr. Lash. As you know, the Nacirema people have had a waste disposal problem for some time. This problem is compounded by a complexity of factors. First, the waste is radioactive waste, of which the Nacirema people have an abnormal dread. Second, the gatekeepers of the three existing radioactive waste disposal facilities in Nacirema-land have threatened to close their doors. Third, the Nacirema culture exhibits a strange, masochistic tendency whereby the Nacirema love to sue one another, waste money, create delays, and thereby flummox socially beneficial projects. So seriously do they take this perverse delight, that an entire well-to-do professional caste is trained specifically for conducting these rituals. Last, Mr. Lash, the Nacirema government has refused responsibility for such wastes, assigning it instead to provincial authorities. Whether these provincial authorities will be able to accomplish the necessary task in the time allotted is not certain. Through difficult, last minute negotiations with the gatekeepers of the disposal facilities, the government has recently managed to arrange a seven-year reprieve for the Nacirema people. But at a ransom. Between now and 1993 the people, their hospitals, their industries, etc., will be heavily penalized. After 1992 there may well be chaos in the LLW disposal business unless action is taken now to avert it. It is therefore urgent that new disposal capacity be brought on-line as soon as possible.

Your mission, Mr. Lash, should you choose to accept it, is to:

- overcome the fears of the Nacirema people and convince a local community in your region to accept a LLW disposal facility as a neighbor;
- convince them that there are compensations sufficient to offset their sense of risk and inequity in hosting such a facility, but do not bribe them;
- do this with a process that is simultaneously scientifically valid and politically acceptable;
- avoid litigation by proceeding openly, honestly, and without making any enemies or errors; be circumspect and impeccable in all your actions and associations; and maintain your composure even in the face of threats;
- open a facility in your region by the end of 1992; no later.

Of course, Mr. Lash, the secretary, the governor, the legislature, and the entire federal government will disavow any knowledge of your activities and disavow any responsibility or liability for your errors or failures. So, too, will half your staff. Good luck, Mr. Lash. This opportunity will self-destruct in 3 years . . . maybe less.

Suddenly I awakened. You can imagine my relief when I realized it was all a dream and none of it was true. Still I was shaken; it had an eerie familiarity to me. I looked in the encyclopedia to see where the Nacirema tribe lived. I could not find it. So the next day I saw a professor friend and asked him. He said I had nothing to worry about, that it was probably an anthropology documentary about some obscure tribe, and that the fact that Nacirema spelled backwards is "American" was just a coincidence. I, again, was relieved.

Seriously, although the tasks facing us are daunting, basically I am optimistic about the future. Progress has been made toward developing a nationwide system of compacts. Serious steps toward siting new disposal facilities and alleviating the waste disposal burden, now unhappily borne by South Carolina, Washington, and Nevada, have been taken. The State of Illinois and other states are going full steam ahead in their efforts to provide new disposal capacity.

But the Illinois Department of Nuclear Safety and similar agencies in other states cannot do it alone. We want and need to work in cooperation with all groups seriously committed to solving the commercial LLW problem, and this includes potential developers, industries concerned with source and volume reduction, site operators, environmentalists, legislators, and others. Those of you in the nuclear industry must experiment with new techniques to reduce the amounts of LLW; those of you in disposal industries must conceive of innovative, advanced technologies for disposal; and we in state government must create new approaches to facility siting, public participation, and responsible oversight. The problems faced by the states in siting new LLW disposal facilities are substantial, but they can be overcome.

States must recognize that a tremendous amount of control with respect to land use has shifted to the local level in recent decades. As those who have attempted to site a locally unwanted facility (whether a half-way house, an army base, or a landfill) will testify, this reality can be ignored only at one's peril.

With respect to siting radioactive waste disposal facilities, public concern and resistance are focused along two major dimensions: safety and equity. Regardless of what specific siting process a compact or a host state may choose to implement, it must, I believe, effectively address the components of these two issues--safety and equity--before a community will accept a site as a good neighbor.

The questions concerning the safety issue include the following:

Is the technology adequate? Are the geology and hydrology appropriate? What are the pathways, actual and potential, of release? What are the risks? Whose technical judgment should be trusted (the developer, the state, the environmentalists, independent researchers)?

The questions of equity that must be addressed are:

Why here? Who gets the benefits? Who bears the costs? What are the incentives? What are the compensations? Why in a rural area? What are the socioeconomic impacts?

Regardless of the weight assigned to these two dimensions in a given location, one theme which runs through all of these issues is that in addressing issues of safety and equity, it is extremely important that the state agencies and others responsible for locating such facilities proceed with unimpeachable integrity. We must honestly and clearly communicate our knowledge--all of our knowledge, and our lack of knowledge--relevant to these issues. Opportunism, political vulnerability, and sociological exploitation should not short-circuit solid science and engineering.

- o We must admit and convey as precisely as possible the cone of all risks and uncertainties which expand out from the present into the future.
- o We must implement a meaningful public participation program, one in which stakeholders have a meaningful influence on the course of events, including the authority to suspend operations if public health or safety is jeopardized.
- o We must explain the new technologies--the alternatives to shallow-land burial--and what the advantages and disadvantages of each are. We should expect the host community to have a voice in that selection.
- o We must set forth a coherent system of waste management (including acceptable waste forms, packaging, labeling, shipping, handling, inspection and disposal) which is reliable and open to criticism and correction.
- o We must explain the importance of the facility as part of that system and explain its costs and benefits in the full context of the larger society.

That is, we must, by our actions, demonstrate that the purpose of the state is to protect its citizens.

In sum, we have embarked on a unique process to solve an important national problem. Although a good start has been made toward establishing new low-level radioactive waste disposal facilities, much work remains. The states have the major responsibility, and they must therefore acquire the resources and develop the mechanisms necessary to assure the availability of new disposal capacity. But, the states cannot solve the problem on their

own. State administrators will need the cooperation, assistance and, most importantly, the understanding of others--the private sector, concerned citizens, and state and local elected officials. We are optimistic that the states will be able to develop the means necessary and that we

shall be able to cooperate with all of the diverse parties who have an interest in the low-level radioactive waste disposal problem. Your mission, ladies and gentlemen, should you choose to accept it, is to help me and the other state *officials* in this challenging, but rewarding task.