MILESTONE COMPLIANCE AND VALUE CONFLICTS:

IMPEDIMENTS TO SITING[a]

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ABSTRACT

As compact regions and host states try to fulfill their responsibilities under the 1980 Low-Level Radioactive Waste Policy Act (LLWPA) and its 1985 amendments, they are caught between the competing demands of their stakeholders. These demands are based for the most part on legitimate interests and strongly held principles. But to the extent that those interests and principles differ among stakeholders, conflicts occur -- conflicts that may make meeting the LLWPA milestones difficult if not impossible. This paper, which is part of a multidisciplinary research project on value issues in radioactive waste management, considers where those conflicts are most likely to crop up and what some of their root causes are.

INTRODUCTION

There are five key stages in the nation's evolution from the old, wholly market-based approach to LLW disposal toward the system of publicly initiated facilities envisaged in the LLWPA. Two have passed: (1) the 1980 determination that each state shall be responsible for its own LLW; and (2) the 1985 establishment of milestones and penalties to ensure that this responsibility will be assumed by 1993, together with the ratification of regional waste disposal compacts. The remaining three stages are now in process: (3) the designation of a host state by each compact region; (4) the designated state's acceptance of its host status (or the decision by a state that it will be its own host by "going it alone"), signified by legislation authorizing the development of a LLW facility; and (5) the designation of a host community by each host state.

Those with the greatest interest in the first stage were the federal government (especially Congress and the U.S. Department of Energy), the three states with disposal sites, and the unsited states. By 1985, the focus had shifted: the key stakeholders were, on the one hand, the sited states and the states that had formed compacts with those states; and on the other, the unsited compact regions and unaligned states. Now, with the pressure of the 1988 and 1990 milestones, a further shift in focus is evident: the key stateholders have become the party states in each compact region; officials and legislators in prospective host states; the utility companies using nuclear power; other LLW generators such as medical and research institutions; environmental groups; anti-nuclear groups; officials and grassroots groups in prospective host communities; and the LLW disposal industry.

A number of potentially conflict-ridden issues have arisen or will arise during the five-stage process taking us from 1980 to 1993. Some of the leading ones are discussed below. Their relative importance varies, depending on the stage.

KEY ISSUES

1. Whether the disposal facility is needed, and if so, what its scale will be and what restrictions will be placed on access to it.

Need was a central issue prior to the 1980 LLWPA. To convince the country of the need for an equitable, publicly initiated system of LLW facilities, it took the 1979 crisis of reduced access to existing facilities and firm stands by the governors of South Carolina, Washington, and Nevada that they would not take the nation's waste forever. And even then not all states were thoroughly convinced: the 1985 amendments were required to reaffirm this need.

Although the need for a new system of LLW facilities is now accepted, what is needed remains at issue in some instances. In North Carolina, for example, some groups who object to that state's designation as the host for the Southeast Compact's next LLW facility have suggested that North Carolina withdraw from the Compact and establish a small facility that would be restricted to in-state generators other than nuclear power facilities, with LLW from nuclear power to be stored on site. (According to an April 1986 report by the North Carolina Governor's Waste Management Board, approximately 87% of the total volume and 97% of the total radioactivity of LLW generated in North Carolina in 1984 came from nuclear power plants and nuclear fuel manufacturers.) They see this approach as both safer and more equitable than the proposed regional facility. Their opponents reply that their approach would be both logistically difficult (because of regulations of the U.S. Nuclear Regulatory Commission (NRC) limiting on-site storage of LLW) and inherently less safe and more expensive (because it would result in proliferation of sites) and that regional equity will be achieved over time, as the host state status is rotated among the parties to the Compact at 20-year intervals. But there is doubt in North Carolina that this rotation will occur, and guarantees are being sought.

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2. What methodology is used to identify technically acceptable sites.

The NRC's regulations governing technical requirements for site suitability (10 CFR 61, Subpart D) have established criteria that must be met by any LLW facility. However, these criteria are expressed in general terms, usually by referencing the performance objectives of Subpart C, and they are minimum criteria. How they are interpreted and applied can be controversial, as can be the issues of whether more stringent criteria should be imposed and whether a disposal technology other than shallow land burial should be used. The issues of whether disposal should be permanent or retrievable and below-ground (for security) or above-ground (for monitoring ease) are particularly deep-rooted controversies, stemming from different perceptions about the ability of today's science and technology to guarantee the continued safety of a LLW facility.

3. How prospective risks and other negative impacts of a proposed facility are addressed.

The 10 CFR 61 performance objectives prohibit radioactive releases through any pathway resulting in annual doses to the public of more than 25 millirems to the whole body. Although this objective is generally regarded as sufficiently low, whether it will be met is an issue with any proposed LLW facility, as is the adequacy of proposed monitoring devices and techniques.

In addition, other negative impacts to the area surrounding a LLW facility -- e.g., lowered property values and increased demands on local services -- can be expected. Unlike risks to health, which are difficult to calculate and which involve a commodity regarded by many as priceless, these negative impacts can be more readily identified and compensated. However, there is no single accepted means of assessing the degree of negative impact of a LLW facility at different distances from the facility or the appropriate levels of compensation.

4. What political process is used to select a host state or host community.

In compacts where one state generates by far the greatest amount of LLW (e.g., the Central Midwest Compact and the Appalachian Compact) or where a state with an existing facility has agreed to continue to serve its region (the Northwest Compact), the host state has been known from the compact's inception. But in compacts where the host state is not a foregone conclusion, the selection process is an important issue. Various approaches are being tried: in the Southeast Compact, the process has focused on politically weighted standards of technical suitability and of equity based on amounts of Class A, B, and C waste generated; in the Midwest Compact, all seven states are regarded as having technically suitable sites, and a host state/host community incentives package together with waste generation and transportation criteria are being emphasized; in the Central States Compact, the Commission will select from among proposals made by prospective developers (originally, without naming the proposed sites or states, but this stipulation has been removed because of its practical difficulties).

These host state selection processes represent varying blends of technical, political, and equity considerations. None have resorted to the lottery, although the Central States selection method as originally conceived would have had lottery-like aspects. In some respects "blind justice" would be the fairest approach: although it cannot take into account real differences, it precludes any possibility of bias. However, lotteries are unpalatable in a process that must, to be politically acceptable, be guided at least in part by technical standards.

With the selection of a host community, distributional equity cannot be used as one of the guiding standards since only a few communities will end up taking their region's LLW -- an inherently unequal situation. Technical standards and compensatory packages then become even more important. Both have pitfalls, however. Using technical standards as the primary guide for site selection suggests that a "best" site can be identified. If it could, an equity principle based not on distribution but on capability -- a kind of "deep pockets" equity -- could be invoked. But identifying a best site is a scientific and technical nightmare, leaving open the possibility of endless disagreement over what is "best." Identifying a satisfactory site is a more realistic goal, but then the "deep pockets" equity principle can only be weakly invoked. More is needed to persuasively argue for the selection of a particular host community. Compensation and incentives packages can help to correct the equity imbalance, but they may be seen as bribes unless the site selection is seen as technically valid.

The state LLW facility acts passed to date all attempt in different ways to find a political process for site selection that can juggle technical and compensatory factors convincingly. They vary considerably in the roles prescribed for state agencies, consultants, prospective developers, and local governments; the extent to which standards and procedures are legislatively spelled out; and the timing of the siting process.

5. What voice a prospective host has in the process leading up to its selection.

Although this issue is an aspect of the political process of selecting a host state or host community, it is significant enough to be mentioned separately.

On the surface, the situations of a prospective host state and a prospective host community are quite different: whereas a state can drop out of a compact, a community usually has no formal mechanism for refusing its host status. In fact, however, states have more good reasons -- apart from incentives packages -- for accepting host status than do communities. While accepting host status could have immediately negative political repercussions for a state, these repercussions may be counterbalanced by the prospect of avoiding the even more negative (although further off) effects of penalty surcharges, the possibility of closed access, and the high costs of a small state facility. Host states thus may choose to accept an immediate lesser evil in order to avoid a greater prospective evil. Whether they do so depends partly on what rate they use to discount the future. A prospective host community, however, incurs no negative effects from not having a facility; it simply foregoes the prospective benefits of an incentives package -- but it also avoids incurring the prospective negative impacts of having the facility. Again, how these considerations are weighed depends partly on what rates the community uses to discount the respective values of future goods and bads.

With host communities, then, a de facto rejection of host status (by public protests, delays through lawsuits, etc.) is at least as possible as de jure

rejection by a prospective host state, and engaging a prospective host community in the site selection process by allowing them a voice in it becomes at least as important. However, what that voice should be is much less clear with a prospective host community: whereas a state is regarded as sovereign and a peer among equals when it participates in an interstate compact (and therefore usually has an equal, although not a representative, vote on a compact commission), a community has subordinate legal status with respect to its state. Thus, its voice is not likely to carry a weight equivalent to that of a state's on a compact commission.

6. Whether the site identification methodology and host selection process, once agreed upon, are "written in stone" or whether they can be modified while being carried out.

Contractarian views of political process suggest that the process should be played out as agreed upon; its justice depends upon scrupulous adherence to its rules, which have been drawn up behind a Rawlesian "veil of ignorance." But when the political process involves a body of knowledge that changes as the process is carried out, then a modifiable process may appear to be more appropriate. As discussed further below, the tension between these two views poses one of the central dilemmas for siting a LLW facility, particually when the outcome of the siting process is in sight.

7. Whether the allocation of risk or other negative impacts and of social responsibility adheres to accepted principles of equity, and if not, whether inequities can be adequately compensated.

The difficulty of determining and compensating for unequal risks and other negative impacts was discussed under the fourth issue. However, even if these can be taken into account, there may be a residual inequity: that of having to do more than a "fair share." This concept, which entails assuming responsiblity for a problem that others have produced and have benefited from, is part of what lies between objections to being burdened with others' LLW. If risk and other negative impacts are dealt with adequately, then this residual sense of inequity may not be strong enough to be voiced. But if they are not, then a sense of inequity from an imbalanced allocation of social responsibility will add fuel to the fire. The selection processes now underway for host states and, especially, for host communities tacitly take residual inequity into account by offering incentives that are intended to exceed the prospective negative impacts. But because residual inequity is not quantifiable, it is difficult to determine how big that incentive should be and what form(s) it should take. The fact that this inequity stretches into the future, involving unknown future residents of the community, is a further complication.

A CONCEPTUAL FRAMEWORK

Using a typology that we had developed to clarify radioactive waste management issues, the first three issues -- those of need, site identification, and impact assessment -- could be categorized as evidential; that is, they primarily entail considerations that are thought to have a rational, scientific basis for assessment. The next three issues -- those of the political process of selecting a host, the voice allowed that host, and the flexibility of the process -- are procedural; they entail considerations about how and by whom decisions are made. The last issue -- that of the allocation of risk, other negative impacts, and social responsibility -- is distributional; it primarily entails considerations about who gets which costs (or perceived costs) and benefits.

Obviously, these issues cannot be wholly categorized. As is evidenced by the above discussion, each inevitably involves strands from all three categories. Nevertheless, this typology helps to reveal the issues' dominant characteristics, and it also helps to elucidate the positions taken by different stakeholders at each stage in the evolution toward a new system of LLW facilities.

When thinking about this conceptual framework, two other points should be kept in mind. First, each stakeholder may not (in fact, often will not) have a position on each issue -- i.e., a stakeholder may concentrate on one or two issues but not take a stand on others. And second, a stakeholder's position on an issue will be grounded both in personal interests, and, frequently, in more than one type of principle. The latter point is illustrated by the following brief discussion of two disagreements that can dominate a host state or host community selection process: disagreements over the selection process itself and disagreements over facility safety.

TWO DOMINANT CONCERNS

A state or community's objections to being designated as a host for a LLW facility are likely to focus on the technical methodology and political process by which it has been selected. These objectives may be voiced as a procedural disagreement: e.g., "the rules of the game are not being followed" or, alternatively, "the rules of the game are too rigid." But these objections may also be grounded in an evidential principle -- e.g., "data should be as accurate as possible" -- which can conflict with alternative evidential principles -- e.g., "first and foremost, data should be consistent." Even more fundamentally, objections may be grounded in a rejection of the selection process's outcome, especially if that outcome is perceived as inequitable (regardless of how it was reached). If this happens, explicit or tacit appeals may be made to principles such as "those who pollute should clean up after themselves" (a generator responsibility principle) or "those who enjoy the benefits should bear the burdens" (a consumer responsibility principle).

The safety of the proposed facility is another important concern. This is seemingly a purely evidential question: conflicts over the safety of LLW disposal facilities reflect basic evidential differences about what is needed to "prove" that a technology is safe or unsafe; whether a technology should be given the benefit of the doubt until so proven; how, in making this assessment, past safety records should be weighed against current claims; and what the credibility of scientists, waste industry technologists and managers, and regulators is in this process of proof. But positions taken by stakeholders in these conflicts are also affected by procedural and distributional concerns. For example, if risks from the facility can be minimized by rigorous monitoring procedures and regulatory enforcements ("don't desert us once the facility is in place"), evidential conflicts about the inherent safety of the disposal technology may be lessened. However, those who are hosting the facility are likely to be those who are most suspicious both of the facility's inherent safety and of the adequacy of subsequent monitoring and enforcement, since they are already feeling piqued by distributional inequities.

CONCLUSION

These two closely related areas of potential disagreement suggest that of the seven issues identified above, those involving facility safety and distributional equity appear to be especially significant in the third and fifth stages of the nation's LLW management process, when host states and host communities are selected. During the first stage, a simple, straightforward principle of distributional equity could be invoked: each state is responsible for the LLW generated within its own borders. However, this principle has become increasingly difficult to apply as we approach the 1988 and 1990 milestones. While nearly everyone benefits from processes involving LLW, only a handful of states and communities will host waste disposal facilities. And to the extent that agreement cannot be reached on the safety of those facilities, the potential for conflict over the inequitable distribution of responsibility, risk, and other negative impacts becomes more grave. Although compensatory measures may help to alleviate this conflict, it is by no means certain that they can do so adequately. Scrupulously fair procedures become the fallback position in the face of inequity, but, as suggested, procedural issues are affected by evidential and distributional concerns. When a host state or host community is selected, the only procedure acceptable to it may be that which allows for its veto.

If veto -- de jure or de facto -- by the host state or host community occurs, can the 1988 and 1990 milestones be met? This paper has not attempted to answer that question. Instead, it has tried to point to what some of the fundamental issues are and where some of the pitfalls may lie.