

THE REGIONAL LLW COMPACTING PROCESS:

THE MIDWEST EXPERIENCE

William C. Taylor
Professor of Civil Engineering
Michigan State University
East Lansing, MI 48824

ABSTRACT

Representatives from sixteen states met periodically over an 18-month period to negotiate the Midwest Low-Level Radioactive Waste Compact. The Compact was approved by a majority of the representatives on September 1, 1982. This Compact has subsequently been enacted into law in the State of Michigan and is under consideration by the legislatures of the remaining states in the region. This paper describes the important issues which were addressed in these negotiations, indicating those issues which were resolved in the compact and those left for the host state, the Compact Commission or for the national low-level radioactive waste community to resolve.

INTRODUCTION

The purpose of this paper is to discuss the experience of the Midwest Low-Level Radioactive Waste Compact Committee as our compact was negotiated. There were several issues identified during these negotiations -- some of which were resolved and are incorporated in the compact itself, and some of which were left unresolved pending the formation of a Commission. I will concentrate my comments on these issues, as many of the same issues are common to other regions in the country. There are also differences between regions, depending on whether a site presently exists in the region or a volunteer steps forward during the negotiations. However, several issues will be common to all compacts.

Before discussing these specific issues, there are two procedural items which became relatively important in our negotiations, and thus deserve some discussion. The first of these is the need for "credentialed" negotiators, and the second is the need for a sufficient level of economic analysis to demonstrate the need for a regional approach to radioactive waste disposal. Our failure to recognize the importance of the first of these issues resulted in the loss of approximately one year in our negotiating effort.

The Midwest Compact negotiation process was initiated in January 1980, nearly a year prior to the passage of Public Act 96. Even at that time, we recognized that a coordinated effort among states in our region of the country would be beneficial in assuring the availability of a disposal site, and promised the added benefit of lowered costs due to the economies of scale and the reduction in transportation costs. We had become acutely aware of the potential for the loss of access to available sites when the Governors of South Carolina, Washington and Nevada closed their facilities temporarily in the summer of 1979.

As a result of this awareness, Governor Milliken wrote to each of the Governors in the region from West Virginia to Wisconsin asking that they send a representative to discuss the desirability of forming an interstate compact for the disposal of low-level radioactive waste. Representatives from the Department of Energy, the Nuclear Regulatory Commission, the Department of Transportation, and the U.S. Geological Survey were present and discussed Federal programs that could be used to assist states in implementing such a compact.

As a result of this meeting, representatives from Ohio, Wisconsin, Indiana, and Illinois joined with Michigan, and over the next six months developed and agreed upon the basic concepts of an interstate compact. (The State of Minnesota subsequently joined our negotiations.) A final draft concept paper was prepared which was to be used as the basis for negotiating the compact language. That concept paper was very similar to the concepts ultimately contained in the compact which was passed in the Midwest.

It became obvious that while the representatives of the various states were acting in good faith in agreeing on concepts to be included in a compact, there had not been adequate discussion of these concepts within their own state government circles. The fact that the concepts became final in August 1980 (an election year) probably contributed to the reluctance of any of the states to take the lead in proposing that a site be developed in the Midwest. It had now been over a year since the existing sites were closed, and it was appealing to assume (at least publicly) that the existing sites would remain open and that while the cost might increase, access to a disposal facility would be available.

Our efforts also lost momentum because I was on sabbatical leave from September through December 1980, and was out of the country. When I returned, Congress had passed Public Act 96 and those of us who had been involved in the compact negotiations agreed that the effort to establish a Midwest Regional Compact should be accelerated. With the cooperation of the State Planning Council, the process was reopened when Governor Milliken once again wrote to each of the Governors in the Midwest (the Midwest had now expanded to include the states of North Dakota, South Dakota, Iowa, Kansas, Nebraska, Missouri and Kentucky in addition to the six states originally involved in the negotiations). In this letter, we specifically asked that the Governors send a "credentialed" representative with authorization to negotiate, make decisions, and if necessary vote on specific language of a compact on behalf of the Governor. Our letter further stated that if the Governor of the invited state was not willing to send a delegate with this authority, then we would prefer that they not participate in our negotiations. Thirteen of the fourteen states responded by sending a delegate to our negotiating session. The one exception was the State of West Virginia. Several months later, the States of Virginia, Maryland, and Delaware asked

and were granted permission to join our compact group.

The value of having designated representatives as negotiators was demonstrated in the disposition of this compact. Following a final vote of the Commission in September 1982, the compact has been formally introduced into the legislature in most of the compact states, and is at least under review by formal legislative committees in the remaining states. The requirement that the Governors of all states become more personally involved, along with continual reminders from the National Governor's Association, The State Planning Council, and others that the availability of existing sites was only temporary, helped assure executive office support in the state legislatures.

The second procedural item which became relatively important early in the negotiation process was the need for documentation of the benefits to be derived from joining a regional compact. The primary benefit -- that of an assured facility -- could only be assured by adopting language guaranteeing access to all party states. There was also a desire on the part of the representatives to document, at least in general terms, the potential economic benefit of a regional facility. Thus, an analysis of the disposal cost for each individual state and various combinations of states was prepared. These economic scenarios were based on existing cost information and were modeled by EG&G Idaho. The cost per cubic foot for disposal on an individual state basis ranged from a low of about \$5.00 per cubic foot to over \$1,000 per cubic foot depending on the volume generated by the state. (These are costs of disposal, not prices to be charged to the user. They do not include transportation, packaging, return on investment, or profit.) In comparison, the cost per cubic foot for the region as a whole was approximately \$3.00 per cubic foot and for five central states in the region about \$3.50 per cubic foot. Thus, even for a state with waste volumes as large as Illinois, the benefit of a regional facility would be approximately a 40 percent cost reduction and for the smaller states the reduction was several hundred percent.

In addition, a transportation cost model was developed and estimates made of the cost of transporting the waste from each state to the existing facilities, each state to a central location within that state, and from each state to a central location within the region. These cost estimates were also made available to the representatives to be used in demonstrating the potential savings possible through a coordinated regional management and disposal program when compared to an individual state disposal facility. The transportation cost differentials are relatively small for a single state versus the regional approach, but significant for either of these options when compared with existing transportation costs to South Carolina and/or Washington.

ISSUES

In addition to these procedural matters, a number of significant issues arose during the negotiations, including: 1) Are all states to be considered as potential host states regardless of the volume of waste generated?; 2) What is the most appropriate sequence of events involving the designation of host states, selection of an operator, enactment of legislation adopting the compact and site selection?; 3) What is the most appropriate authority of the Commission vis-a-vis the party states and the host state?; 4) What criteria and/or procedures should be used in selecting the host states?; 5) What procedures should be used in determining the number and type of facilities to be developed in the region; and 6) Questions of congressional intent regarding the scope of the compact

authority. Many of these issues are inter-related, and it was not possible to resolve any single issue without resolving several others. For example, a procedure for selecting a disposal site could not be developed until the role of the Commission was defined.

There was one combination of such issues that could not be resolved to the satisfaction of all of negotiators, and this failure to reach a resolution resulted in the division of the proposed compact. The issue was -- who should select a site, and what sequence of events should lead up to this decision? The division was based on a disagreement on the relative strength of the Commission and that of the host state. One philosophy was that the compact Commission should select a contractor who would survey the region and make a recommendation as to the best site. Following the recommendations from this contractor, the Commission would then adopt (or modify) the recommendation. This action would designate the host state and select the site simultaneously. Then, depending on whether the site was in an agreement state or a non-agreement state, the license application would be made to the state or to the NRC by the contractor selected for the operation.

The advantage of this approach is that the state legislators in the host state would not be required to become directly involved in site selection, which is admittedly a difficult task. Instead, the Commission, as opposed to the state legislature, would adopt a plan designating the state and the site. The state legislature would not be required to vote on the acceptability of a site or to select from among various communities from within their state to host the repository.

Another potential advantage is that the Commission would not have to adopt criteria for selecting a host state, as site criteria rather than host state criteria would be used by the consultant in preparing their recommendation. A third advantage of this approach is that the contractor would theoretically select the site with the best potential for success, especially if the contractor were also to be the operator of the site. The contractor would be required to fund the site selection process and the license application and would want to be sure the recommended site was both technically and politically feasible.

The disadvantage of this approach is that the state legislature (and through it the citizens) would not be sufficiently involved in the decision-making process. To many of the negotiators, this lack of control over the process would not be acceptable to the legislators and the compact would never be adopted. In the approach contained in the Midwest Compact, the Commission's role is limited to the adoption of a management plan, and it is not involved in the site selection process. The Commission is required to first adopt a management plan specifying the number of facilities and the states which are to serve as the host states for these facilities. The states so designated then select the site and apply for a license.

The advantage of this approach is that the site selection process will be conducted according to the mandates of the host state. The state legislature will establish the procedures and criteria for site selection in their state. This also provides a stronger host state role in deciding what goes into the license application and site regulations.

This approach should also reduce the time and cost of the site selection process since this process would now be limited to one or two states as opposed to the entire region. A site selection process covering all 16 states should be more costly than a comparable study limited to only those states designated as host states.

This two-step approach of first selecting host states and then selecting sites should result in less time being consumed before a facility is available. There is no guarantee that the host state will move as expeditiously as a contractor might, but at least the number of sites to be looked at and the alternatives to be considered should be less, and hopefully, therefore, time would be reduced as well.

The division in our region seems to be basically between states where citizen groups are most visible and most influential in the legislature versus those states where citizen groups have been less active. Many of us in states where the citizen groups have a long history of involvement with the legislature felt that it would be impossible to go to our state legislature with a compact that says, "Join the Compact, and someone from the outside will determine whether you will be a host state, and if you are, where the site will be". We believe it would be easier to go to the legislature and say, "Join the Compact. You may be designated a host state, but if you are, you will have the responsibility and the opportunity to select the most appropriate site in your state".

ISSUES THAT WERE RESOLVED

All the issues we faced were not irreconcilable, and several issues were resolved in the negotiation process. One such question was whether a state like South Dakota, which generates less than one cubic meter a year, should run an equal risk with the State of Illinois that one or the other might accept the other's waste. To Illinois, taking one more cubic meter of waste from South Dakota would be insignificant, but to South Dakota adding Illinois' waste to their one meter makes a lot of difference.

We recognized that other compacts give preferential treatment to states that generate low volumes, with large generators required to host the first several sites, and at some later date the low-volume states might serve as hosts. We rejected the concept of a separate classification of states, but adopted language that requires the consideration of transportation costs in developing a management plan. Therefore, states that generate larger volumes have a somewhat higher probability of being selected because transportation costs would be less if the facility were located in their states. However, this may not help a state like Indiana, which is a low-volume generator located in the center of all the regional high-volume generators. States like South Dakota and North Dakota have a reasonably low probability of being designated because they are both low-volume generators and on the geographic fringe of the region.

Another specific issue with which we dealt was the development of a mechanism to protect states from being designated as the host state for political or economic reasons rather than technical ones. There was some concern that a majority of the Commissioners could join together to select another state as the host state based on political affiliation or some other extraneous factor.

Two specific provisions were adopted in the Midwest Compact in response to this issue. The first was the incorporation of language which established general guidelines for the selection of a host state, and a provision that public hearings be held both on the criteria adopted by the Commission in refining their guidelines and on the application of the criteria to the region. Thus, the full process will be conducted in a public forum, and the probability of non-relevant criteria being used in the selection process is reduced.

Specifically, the compact requires that: "The Commission shall adopt a regional management plan designed to ensure the safe and efficient management of waste generated within the region. In adopting a regional waste management plan the Commission shall:

- a. Adopt procedures for determining, consistent with considerations for public health and safety, the type and number of regional facilities which are presently necessary and which are projected to be necessary to manage waste generated within the region;
- b. Develop and consider policies promoting source reduction of waste generated within the region;
- c. Develop and adopt procedures and criteria for identifying a party state as a host state for a regional facility. In developing these criteria, the Commission shall consider all the following:
 1. The health, safety, and welfare of the citizens of the party states.
 2. The existence of regional facilities within each party state.
 3. The minimization of waste transportation.
 4. The volumes and types of wastes generated within each party state.
 5. The environmental, economic, and ecological impacts on the air, land and water resources of the party states.
- d. Conduct such hearings, and obtain such reports, studies, evidence and testimony required by its approved procedures to identifying a party state as a host state for a needed regional facility;
- e. Prepare a draft management plan, including procedures, criteria and host states, including alternatives, which shall be made available in a convenient form to the public for comment. Upon the request of a party state, the Commission shall conduct a public hearing in that state prior to the adoption of the management plan. The management plan shall include the Commission's response to public and party state comment."

The second provision is that any state designated as a host state may withdraw from the Compact if they believe the process was not applied fairly. The penalty for withdrawing is loss of membership in the Compact. Thus, while there is no direct cost for seceding, the state is then required to either develop their own site or petition another compact group for admission.

ISSUES FOR THE COMMISSION

While the issues discussed above were resolved in the compact negotiation process, there are several other issues which remain to be resolved by the Commission or the host state. One of the most critical is the determination of the number and type of facilities which will be included in the management plan. While there must be at least one disposal facility, the management plan could also include multiple facilities, back-up facilities, incinerators and/or volume reduction stations. All of these facility types were discussed by the negotiators and the decision as to the number and type of facilities was left to the Commission. One reason for this is that the economics of multiple facilities or different types of facilities is dependent on the total volume of waste. Since more than half of the states eligible for membership in the Midwest Compact are also eligible for membership in other compacts, it is difficult to predict the ultimate size (and therefore volume) of our region.

The preliminary economic analysis conducted for our region indicated that the siting of incinerators in the region would not drastically alter the economics of waste disposal if the region contains all six-

teen states. That is, the reduction in transportation costs would probably offset the cost of constructing and siting an incinerator. Because of the reduced volume at the disposal facility, the unit cost at this facility would probably increase, but the total cost for the region would be comparable to that for a region without the incinerator. This might result in a different distribution of costs across various states, depending on the exact location of the incinerator and whether the generating state was closer to the incinerator or to the disposal facility.

One of the factors considered in this decision will be the desirability of sharing responsibility for implementation of the management plan. It may well be easier for a given state to accept the designation of a host state for the disposal facility if they are assured that some other state in the region will share the responsibility by hosting an incinerator or a volume-reduction site. Thus, the question may be as much one of political acceptability as of economics. This is particularly true if our preliminary economic analysis holds true, and the cost to the generators is comparable for a management plan with or without additional facilities.

While we had some discussion regarding the concept included in the Northwest Compact -- that the disposal of hazardous waste be considered in the determination of host states for low-level radioactive waste, this was rejected. The basic reason for this rejection is the difficulty in determining the volume of such waste, and the uncertainty that transporting these large volumes is feasible or desirable. While we are reasonably confident that low-level radioactive waste can be transported within the region without introducing a significant hazard to our citizens, it is not so clear that transporting hazardous waste throughout the region does not pose a significant hazard. In addition, it is not clear that a regional compact has the authority to mandate the disposal location for hazardous chemicals.

A second unresolved issue is the exact procedures and criteria for selecting host states. As I outlined previously, there is language in the compact to assure that the criteria are identified prior to the adoption of a management plan, and that these criteria are subject to public scrutiny and comments by party states. However, the specific process by which these criteria are developed was left to the Commission. One alternative is to utilize a contractor (probably a firm currently involved in waste disposal) to specify what they would look for in selecting a site for licensing and operation. A second alternative is to utilize NRC Regulations 10CFR61 and successively eliminate areas within the region, until a sufficiently small number of areas remain as candidates for the site. This choice was left to the Commission to resolve in adopting their bylaws and operating practices.

A third issue discussed but not fully resolved is that of liability of the Commission and the host state. The consensus in our discussions was that assigning the full responsibility for siting to the host state also placed the liability with that state. The host state could levy user fees to provide insurance against this liability, but any liability resulting from the site selection and licensing process would not be borne by other states or the Commission. It is not clear that any liability traced back to the management plan or the host state designation could be avoided by the Commission and the party states to the Compact. This is one of the questions which must be addressed by the Commission in establishing both their bylaws and their operating budget as it relates to insurance and other liability protection.

A final issue of concern for the Commission is whether the protection for individual states provided in the Compact will create other problems. There is always the danger that states will adopt the Compact with the intent to withdraw if they are selected as the designated host state. If this occurs, as a minimum the region has lost time (perhaps as much as one to two years), and, at worst, the whole Compact could collapse. I don't know of any process that the Commission can use to avoid this threat. Perhaps our best assurance that this does not occur lies with Congress and the compacts which include existing facilities. If it is made clear that a state designated as a host state that does not fulfill that responsibility (without just cause), will be denied access to existing facilities, this may be a sufficient threat to dissuade a state from withdrawing from the Compact. Hopefully, this problem will not occur as the prologue to the Compact to be adopted by the State Legislators and signed by the Governor states that this is a good-faith effort on the part of all party states to resolve the regional problem to the mutual benefit of all states.

HOST STATE ISSUES

In addition to the issues left to be resolved by the Commission, there were also issues left to be resolved by the host state. The first of these is the authority to impose regulations and fees. Our compact states: "to the extent permitted by federal and state law, a host state shall regulate and license any facility within its borders and insure the extended care of that facility"; and "a host state may establish a fee system for any regional facility within its borders. The fee system shall be reasonable and equitable. This fee system shall provide the host state with sufficient revenue to cover any costs, including but not limited to, the planning, siting, licensure, operation, decommissioning, extended care and long term liability, associated with such facilities. This fee system may also include reasonable revenue beyond the cost incurred for the host state, subject to approval by the Commission." Issues left to be resolved are the extent to which host state laws will affect the regulations adopted by the host state, and what constitutes "reasonable" revenue beyond costs incurred by the host state. The intent of our negotiators was to provide both protection and incentive for a state to either volunteer or at least willingly accept the host state designation. By stating that regulations can reflect state laws, the host state is assured that they have some flexibility in regulating the shipment and disposal of low-level radioactive waste.

Other sections of the compact provide that "each party state has the right to have all waste generated within its borders managed at regional facilities..."; and "all party states have an equal right of access to any facility made available to the region by an agreement entered into by the Commission". These sections are intended to protect the party states from discriminatory action by the host state legislature. Thus, while the host state has authority to enact legislation to protect their citizens, such legislation cannot be utilized to effectively prohibit the shipment of waste from other party states to the regional facility. The definition of what legislation is "necessary" and what is "prohibitive" will probably remain an issue for some time.

A second issue that the host state will have to resolve relates to the siting of a facility. Our Compact states that each host state is responsible for determining possible facility locations within its borders. The only restrictions imposed by the compact are that "The selection of a facility site shall not

conflict with applicable federal and host state laws, regulations and rules not inconsistent with this compact and shall be based on factors including, but not limited to, geological, environmental, and economic viability of possible facility locations". Since our states are contiguous, it would be possible for a host state to locate a facility near the border of an adjoining state. One of the issues that probably needs resolution is whether the adjoining state has any voice in the siting process. This issue may be particularly troublesome if the management plan includes incineration. Depending on the direction of the prevailing winds, the potential impact of an incinerator may be more pronounced on an adjoining state than in the host state. Thus, some provision probably needs to be made for input from affected states in any siting decision.

NATIONAL ISSUES

Finally, there are some issues which need to be resolved at the national level. These include the authority of commissions prior to Congressional ratification of the compacts, the availability of facilities in other regions for emergencies, and the timing of the development of regional facilities.

The first and third of these issues are significantly related. It is reasonably clear that regions without an existing facility or a volunteer host state will not be able to develop and license a facility by 1986. This means that even if the party states enact the legislation this year, and all party states act in good faith in the expeditious development of a facility, there will probably be at least a two year time period when existing facilities are authorized to close (if their compacts have been ratified) prior to the availability of disposal capability within other regions. I believe it is important that the intent of states and regions with existing facilities be resolved prior to ratification of their compacts. It is not likely that representatives from Michigan and other Midwest states could support ratification of the Northwest, Southeast, and Rocky Mountain Compacts unless some provision is made for the disposal of our waste during this interim period.

There must be further discussion among the various regions on solutions to this issue. We recognize that those compacts which have been formed need Congressional ratification for their compacts to be valid. The ratification process will also answer questions which we all have regarding the scope of these compacts. We are all interested in determining what degree of management will be allowed within the scope of a regional compact, and whether regulations proposed by states will be found in conflict with applicable state and federal laws. These questions can probably only be answered when Congress ratifies one or more of the regional compacts. However, as much as we would like to see these questions answered, we still cannot support ratification without a resolution of the question of access to facilities beyond 1986.

I believe it will be possible to reach an agreement on this issue following more discussion among the regional representatives. Options include the utilization of federal facilities for an interim period or a guarantee that existing facilities will provide access for those states which are making "satisfactory" progress toward development of their own regional facility. This guarantee might be in the form of loaned capacity -- to be repaid when new facilities are open, or, if capacity is not a critical problem at the existing facilities, it might be continued operation with a surcharge added to waste from outside their region. Any such guarantee would have to be accompanied by a

definition of "satisfactory" progress. This is essential both for the protection of the existing facilities, and to maintain reasonable progress in the regions developing new facilities. If the perception exists that the facilities in Washington, Nevada or South Carolina will remain open indefinitely, then I fear that progress in many of the other regions might be slowed. A firm time schedule for ratification of the compact, selection of the host state and submittal of the license application might be included in any agreement between regions with existing facilities and regions developing new facilities. These check points should be fairly tight, to assure that continued progress is made in regions like ours.

There is an additional issue which must be addressed at the national level, as it affects all regions. This is the authority of compact commissions prior to Congressional ratification. We are concerned, for example, that the adoption of a management plan specifying a host state for facilities in our region will be challenged by the citizens of that state. As Public Act 96 reads, it is not clear that the Commission has legal status and thus can take any action prior to Congressional ratification. If not, then presumably commission action prior to Congressional ratification could be successfully challenged in court.

A final issue to be resolved by the various regions are agreements regarding the transshipment of waste from one region to another. This issue has two components: 1) What provisions will be made for shipments as a function of the waste form?; and 2) Can the regions reach an agreement on the use of sites in other regions for emergencies? The first of these issues probably will only be resolved over time, as specific waste forms are identified which need treatment different than that available in each region. However, the second issue will have to be addressed early in the process of developing facility plans by each region.

The Midwest Compact has a provision for the designation of a state to host a disposal facility to be used if the primary facility is closed due to an emergency. It would seem more desirable if our region could reach an agreement with another region to permit our generators to ship waste to their facility in case of an emergency closure, and in return we would offer the same guarantee to their region. If this cannot be agreed to, then each region will probably require its own back-up facility, and I doubt that this would be cost effective.

CONCLUSION

I believe the Midwest Compact is a workable document that will result in the development of a sound management program for low-level radioactive waste in our region of the country. For this to happen, continued good-faith efforts on the part of each of the states involved will be required as the issues left unresolved are addressed. The Compact provides for a great deal of authority for the host state, with the Commission playing primarily a management role. This role includes determination of the number and types of facilities as well as agreements on shipments into or outside the regional boundaries. If the Commission members appointed by the governors show the same degree of responsibility and cooperation as the delegated negotiators, the Midwest should successfully meet its obligation to accept responsibility for low-level waste generated in this region.