

*Report to Congress in  
Response to Public Law 99-240*

**1988 Annual Report on  
Low-Level Radioactive Waste  
Management Progress**



**U.S. Department of Energy**  
Assistant Secretary for Nuclear Energy  
Washington, D.C. 20545

**October 1989**

MASTER

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**The Secretary of Energy**

Washington, DC 20585

October 3, 1989

The Honorable Dan Quayle  
President of the Senate  
Washington, D.C. 20510

Dear Mr. President:

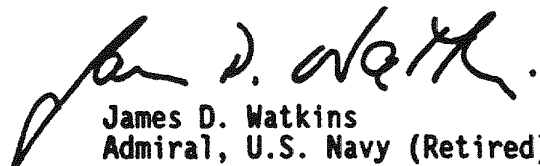
In accordance with Title I, Section 7(b) of Public Law 99-240, "The Low-Level Radioactive Waste Policy Amendments Act of 1985," I am pleased to submit the enclosed report. This report describes the activities and progress of the compacts and unaffiliated States in 1988 in developing new disposal sites for low-level radioactive waste. In addition, the report summarizes information on low-level waste volumes shipped to the three currently operating disposal sites in the States of South Carolina, Washington, and Nevada.

The report also provides the Department's views on the progress of the compacts and unaffiliated States in meeting the milestones established in the Act, and on the challenges that remain before a new national system for management and disposal of low-level waste can be established. Continued progress in this area is crucial to resolving concerns related to low-level radioactive waste. The resolution of these concerns is important to the Nation's energy policy, as well as to industries, universities and medical institutions whose operations rely upon nuclear technologies.

To ensure the report's accuracy and thoroughness, an earlier draft copy of the report was provided to compact and State officials for their review and comment.

The Department pledges continued support to the compacts and States in their efforts to develop new low-level radioactive waste disposal facilities required under the Act. We look forward to assisting the compacts and States in support of this important national objective.

Sincerely,

  
James D. Watkins  
Admiral, U.S. Navy (Retired)

Enclosure

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## ABSTRACT

This report summarizes the progress of States and low-level radioactive waste compacts in 1988 in establishing new low-level waste disposal facilities, and also provides summary information on the volume of low-level waste received for disposal in 1988 by commercially-operated low-level waste disposal facilities. The report is in response to Section 7(b) of the Low-Level Radioactive Waste Policy Amendments Act of 1985.

## EXECUTIVE SUMMARY

The Low-Level Radioactive Waste Policy Amendments Act of 1985 (the Act) reaffirmed policies of an earlier Federal law (1980) making States responsible for disposal of low-level radioactive waste and encouraging States to form compacts in order to fulfill this responsibility. The Act requires the compacts with operating disposal facilities to provide waste generators located outside their regions access to their sites through 1992. It also sets forth a series of milestones, incentives and penalties for the development of new disposal sites. This is the Department of Energy's third annual report to Congress summarizing progress of the States and compacts in developing new disposal sites and managing low-level radioactive waste.

During 1988, the States and compacts progressed toward the establishment of new disposal capacity for low-level radioactive waste at varying rates, in spite of uniform applicability of site development milestones in the Act. This is because the milestone requirements (except for host State identification by 1988, and submission of a disposal site license application by 1992) call for demonstrations of commitment and development of plans, rather than accomplishment of more measurable activities.

Actions were taken during the year to form a new compact and to amend an existing one; to establish institutional frameworks and implement plans leading to site selection; and to execute site selection and site characterization plans. There were notable delays in implementing the site development schedules that had been established during 1987 in response to the January 1, 1988, milestone. Delays were experienced in issuing regulations and criteria for site selection and development, in selecting contractors to implement portions of site development plans and in forming government Boards responsible for initiating actions described in the siting plans. In 1988 States and compacts paid increasing attention to regulatory initiatives taken by Federal agencies that could affect the establishment of new disposal facilities, and began to explore opportunities for interregional and interstate cooperation in developing a more effective national system for management of low-level waste.

By the end of 1988, 41 States had formed 9 compacts. (See Figure S-1) Each of the compacts had received congressional consent. With the pending membership by North Dakota and South Dakota in the Western Compact, this leaves Texas as the only State outside a contiguous block of six States in the northeastern region of the Nation that remains unaffiliated with a compact. The District of Columbia and Puerto Rico also remain unaffiliated. Following are the prospective compact host States and unaffiliated States that plan to develop new disposal sites:

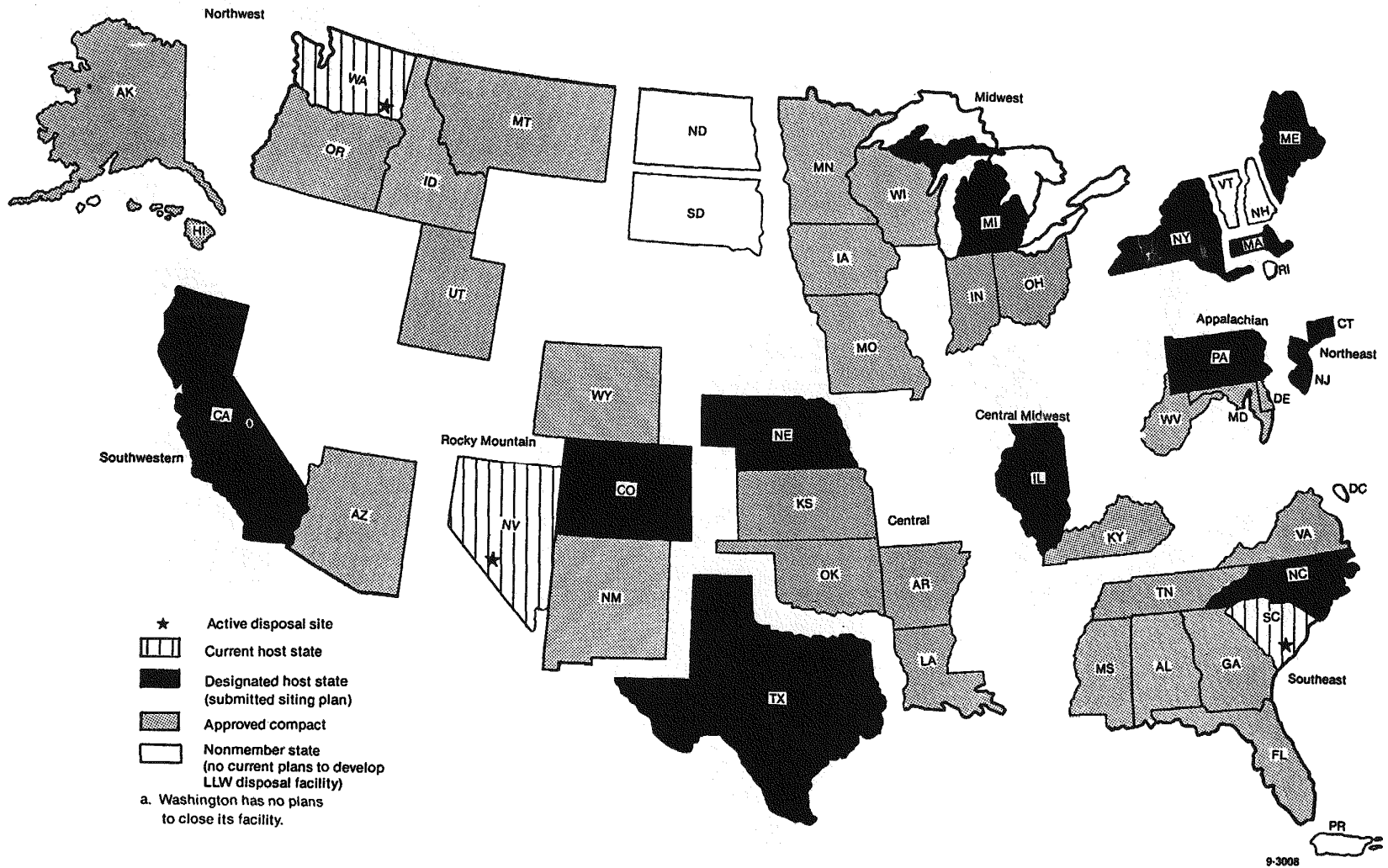


Figure S-1. Status of nonmember States and compact regions (December 31, 1988).

### States (Compacts) Planning to Develop New Disposal Sites

California	(Southwestern Compact)
Colorado	(Rocky Mountain Compact)
Connecticut	(Northeast Compact)
Illinois	(Central Midwest Compact)
Maine	(Unaffiliated)
Massachusetts	(Unaffiliated)
Michigan	(Midwest Compact)
Nebraska	(Central Compact)
New Jersey	(Northeast Compact)
New York	(Unaffiliated)
North Carolina	(Southeast Compact)
Pennsylvania	(Appalachian Compact)
Texas	(Unaffiliated)

The Appalachian Compact was ratified by Congress on May 19, 1988. A new compact, the Southwestern, was formed in 1988 when Arizona enacted compact language adopted the previous year by California. The new compact, which also names North Dakota and South Dakota as eligible member States, was consented to by Congress on November 23, 1988. While joining the Southwestern Compact, Arizona withdrew from the Western Compact, essentially dissolving that Compact by leaving it with only one other member State, South Dakota.

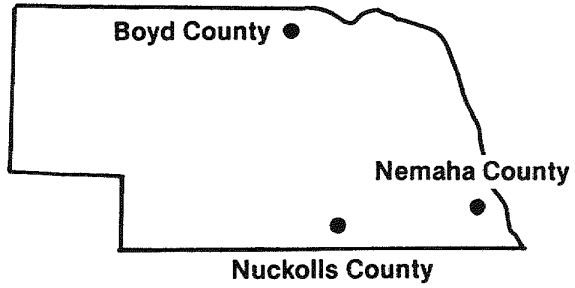
The member States of the Southeast Compact each enacted legislation amending the Compact to limit the right of party States to withdraw once the second regional disposal site begins operation. The amended language is expected to be introduced into Congress for consent during 1989. The States of the Midwest Compact also reached an agreement in principle on an amendment that would address a number of issues, although agreement on the specific language of the amendment was not completed.

The Texas House Committee on Environmental Affairs held a hearing in September to discuss possible compacting options. The committee received testimony from Vermont and Maine and also examined the possibility of compacting with Puerto Rico or New Hampshire.

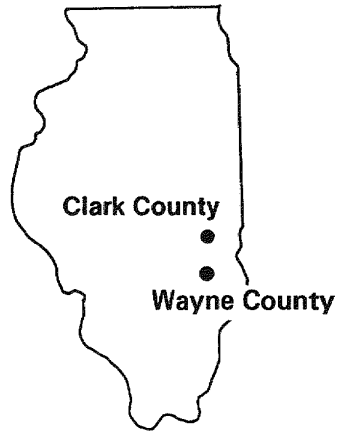
California (Southwestern Compact), Illinois (Central-Midwest Compact), and Texas identified potential locations for disposal sites and began site-specific evaluations. Nebraska (Central Compact) identified several potential locations in early 1989. The general locations of these potential sites is shown in Figure S-2.

New York and North Carolina (Southeast Compact) completed area-level screenings to identify potentially suitable areas for a disposal site. Michigan (Midwest Compact) initiated an area-level screening, which is planned for completion during 1989.

## Nebraska



## Illinois



## California



## Texas

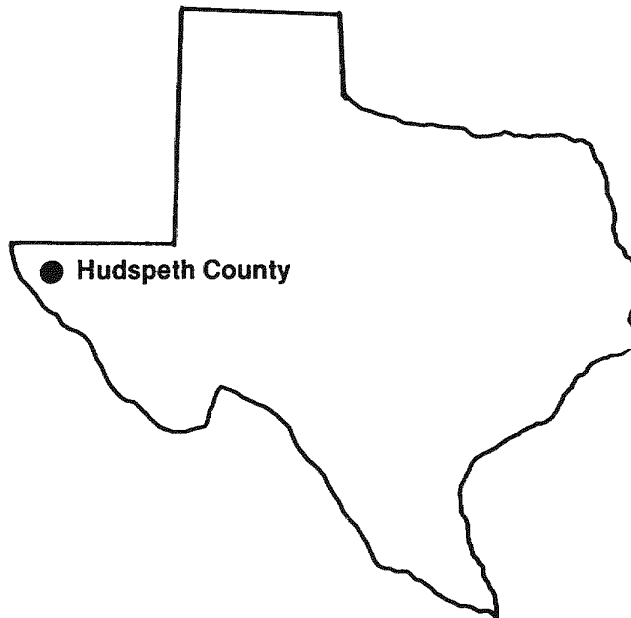


Figure S-2. Potential Disposal Site Locations.

Other States planning new sites took various actions in preparation for identifying the site location and developing the facility. Pennsylvania (Appalachian Compact) received bids for a site operator-license designee who will select the site, obtain a license and operate the facility. Maine and Massachusetts selected contractors to assist them in performing activities related to site identification.

As siting and site development activities progressed, increasing attention was paid to several regulatory issues that could affect these plans. States became increasingly concerned about the complexity and expense of disposing of small amounts of mixed waste under different sets of rules under the jurisdiction of two different agencies, the Environmental Protection Agency and the Nuclear Regulatory Commission. Concerns continued to be expressed over the compatibility of the different disposal requirements and the inability of States and compacts to form agreements to reduce the number of mixed waste disposal units necessary.

Proposed Environmental Protection Agency regulations for protection of groundwater could affect the amount of land area considered suitable for location of a disposal site. During 1988, both the Environmental Protection Agency and the Nuclear Regulatory Commission proposed differing standards to be used to identify waste whose level of radioactivity is too low to warrant disposal and management as low-level waste, a waste form known as "below regulatory concern." These regulations could reduce the volume of waste required to be disposed of in facilities licensed for disposal of low-level waste.

The progress of States and compacts can be measured against the site development schedules announced in their siting plans, which were prepared in response to the January 1, 1988, milestone. Delay in some of these earlier schedules was predictable; the schedules were admittedly optimistic, demonstrating the intention of the compacts and States to comply with subsequent milestones and deadlines. In reviewing the siting plans for compliance with the 1988 milestone, the Department of Energy and the sited States were constrained by the Act to determine only whether the siting plans contained elements listed in the Act. The Act did not direct the Department to make milestone compliance determinations conditional on the Department's views about the feasibility of the schedules contained in the plans.

As Table S-1 indicates, only three States (California, Illinois, Texas) expect to submit disposal site license applications by the January 1, 1990, milestone. Therefore, it appears that the rest of the States and compacts that comply with the milestone will do so by submitting Governors' Certifications to the Nuclear Regulatory Commission. The Certifications should describe how the States plan to store, manage or dispose of their low-level waste if access to the currently operating disposal sites is terminated at the beginning of 1993.

TABLE S-1. HOST STATE SITING SCHEDULES (December 31, 1988)

<u>Host State</u>	<u>Site Selection</u>	<u>License Application</u>	<u>Facility Operational</u>
California (Southwestern) <u>a/</u>	March 1988	Mid 1989	2nd half 1991
Colorado (Rocky Mountain) <u>b/</u>	Undetermined	Undetermined	Undetermined
Connecticut (Northeast)	December 1989	December 1991	April 1994
Illinois (Central Midwest)	September 1989	December 1989	January 1992
Maine	December 1991	December 1991	December 1995
Massachusetts	January 1991	September 1991	September 1993
Michigan (Midwest)	September 1991	October 1991	May 1995
Nebraska (Central)	July 1990	July 1990	January 1993
New Jersey (Northeast)	December 1990	December 1991	September 1994
New York	June 1990	September 1991	January 1993
North Carolina (Southeast) <u>b/</u>	December 1990	December 1990	January 1993
Pennsylvania (Appalachian)	August 1990	January 1992	July 1994
Texas	August 1989	January 1990	December 1992

a/ California indicates the facility will be operational by the second half of 1991.

b/ The 1988 Milestone did not apply because this is a sited compact.

Only six States plan to begin operation of their disposal facilities by January 1, 1993. Of these, New York acknowledges that disposal capabilities may not be ready and plans to accept some low-level waste for interim storage, if necessary.

States (Compacts) Planning to Begin Disposal Site Operations  
by January 1, 1993

	<u>Disposal Site Operational</u>
o California (Southwestern Compact)	2nd Half 1991
o Illinois (Central Midwest Compact)	January 1992
o Nebraska (Central Compact)	January 1993
o New York	January 1993
o North Carolina (Southeast Compact)	January 1993
o Texas	December 1992

Because a number of site development schedules revised in 1988 show target dates near or on the milestone or deadline dates in the Act, any additional delay in the schedules is likely to cause the States or compacts not to comply with the milestone or deadline. Temporary noncompliance with a particular milestone or deadline, however, would not necessarily disrupt or derail a deliberate site development process that has the support of State and compact leaders.

It became increasingly evident in 1988 that a significant number of low-level waste generators will probably store their waste beginning in 1993, unless their States and compacts can negotiate access agreements to operating disposal sites, or unless off-site storage becomes available through efforts of the public or private sectors.

Three years following enactment of the Low-Level Radioactive Waste Policy Amendments Act of 1985, some of the States and compacts have reached a point where further progress will require substantial public commitments and resources. Some States and compacts began to re-examine the economic and safety implications of developing relatively small low-level waste disposal sites. However, broad waste management provisions contained in the terms of the compacts, particularly those related to importation and exportation of low-level waste, have given compacts substantial authority to forge interregional agreements that could reduce the number of facilities that need to be developed. Because of this, there was increased interest in these provisions and related policies.

Some States began to urge that the national policy for disposal of low-level waste be amended by extending the January 1, 1993, date on which access to the three currently operating disposal facilities may be ended, or by realignment of existing compacts and States into larger regions. This year's report concludes that States and compacts retain sufficient flexibility to negotiate mutually agreeable conditions for management and disposal of low-level waste without revision at this time of the fundamental framework embodied in the Federal law or imposition by the Federal Government of new terms and conditions.

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1988 ANNUAL REPORT ON  
LOW-LEVEL RADIOACTIVE WASTE MANAGEMENT PROGRESS

1. INTRODUCTION

The Low-Level Radioactive Waste Policy Act, 1980, P.L. 96-573, made each State responsible for "disposal of low-level radioactive waste generated within its borders except for waste generated as a result of defense activities of the Secretary [Department of Energy] or Federal research and development activities...." The law also found that "low-level radioactive waste can be most safely and efficiently managed on a regional basis" and encouraged States to enter into interstate compacts for the disposal of their low-level waste.

The Low-Level Radioactive Waste Policy Amendments Act of 1985, P.L. 99-240 (the Act), reaffirms these earlier Federal policies and further delineates the responsibilities of the States and the Federal Government for low-level waste from different sources. The Act also provides a series of milestones, incentives, and penalties to encourage States and compacts to fulfill their responsibility for providing disposal capacity for their low-level waste.

The Act requires the Department of Energy to provide Congress an annual report on progress in low-level waste management. This is the third report prepared by the Department in response to the requirement. Section 2 of this report provides a summary of State and compact progress in 1988 and compares the progress made by each with the site development schedules prepared in response to the 1988 milestone. Section 2 also discusses possible impacts of schedule changes on the State or compact's ability to meet upcoming milestones. Section 3 summarizes current regulatory issues that may affect the plans and activities of States and compacts. Section 4 discusses various approaches taken by States and compacts for the regional management of their low-level waste. Section 5 summarizes the volumes of low-level waste received at the currently operating disposal facilities during 1988 and since the beginning of the 7-year interim access period (1986 through 1992). Section 6 summarizes the progress of States and compacts in 1988 in fulfilling their responsibilities under the Act and offers the Department's conclusions.

Appendix A reviews specific activities of each compact and unaffiliated State to meet the milestones and deadlines in the Act. Appendix B, which supplements Section 4 of the report, is a compilation of significant provisions of compact language, State laws, resolutions, and rules concerning importation and exportation of low-level waste into and out of each State or compact region, and policies regarding compact membership and admittance of new compact members. Appendix C provides detailed information on the volume of low-level waste received at the

currently operating disposal facilities during 1988. Appendix D summarizes activities of the Department of Energy related to its responsibilities under the Act. Appendix E reports the status of other topics specified in Section 7(b) of the Act.

Although this report summarizes activities that occurred in 1988, significant activities that have occurred during preparation of the report in early 1989 have been included. This information is noted parenthetically within the text of the report.

## 2. STATE AND REGIONAL PROGRESS DURING 1988

### 2.1 Overview of Low-Level Waste Management Progress

The progress of States and compacts in developing new disposal sites can be determined in three areas of activity.

- o Compact formation and implementation
- o Activities leading to site selection and characterization
- o Site selection and characterization

There was significant activity in 1988 related to formation and implementation of compacts. In addition to the seven compacts approved by Congress in 1985, Congress granted its consent to the Appalachian Compact in May and the Southwestern Compact in November. At the time of congressional approval, all eligible States had already joined the Appalachian Compact.

The Southwestern Compact was formed in 1988 when Arizona passed legislation joining the Compact with California and withdrew its membership in the Western Compact. California will be the Southwestern Compact's host State, reducing the number of anticipated new facilities from 14 to 13. The Southwestern Compact also names North Dakota and South Dakota as eligible member States. (Update: In February 1989 South Dakota passed legislation to join the Compact; in March 1989 North Dakota passed legislation to join the Compact effective July 1, 1989.)

All member States of the Southeast Compact adopted an amendment to the Compact limiting the ability of States to withdraw and specifying the length of each host State's obligation. The Compact expects to introduce the amendment into Congress for its consent during 1989. The Midwest Compact Commission has endorsed the concept of limiting the ability of member States to withdraw from the Compact and is negotiating uniform language which will be submitted to each State as an amendment to the Compact.

In Texas, the House Committee on Environmental Affairs held a hearing in September to discuss possible compacting options with States producing small volumes of low-level radioactive waste. The committee heard testimony from Vermont and Maine and also began investigating the possibility of compacting with Puerto Rico or New Hampshire. The committee's recommendation is due in 1989.

States and compacts also made progress developing plans, establishing institutions and building public awareness, activities leading to the selection and characterization of a disposal site. These activities

included the development and revision of management plans, creation of necessary boards and authorities and holding public meetings and hearings. These activities are detailed in Appendix B.

Some States and compacts made progress during 1988 in the selection and characterization of potential disposal sites. California named its preferred and alternate sites in March. Texas continued evaluation of a possible site in Hudspeth County. Illinois (Central Midwest Compact) identified four candidate areas for complete characterization. One area was later dropped from consideration. At the end of the year, the Central Compact's site developer/operator designee was preparing to select three candidate sites in host State Nebraska. (Update: In January 1989, candidate sites were identified in Boyd, Nemaha and Nuckolls Counties.) In December, New York selected ten candidate areas for further investigation and consideration as possible sites for the State's disposal facility. North Carolina completed Phase I of its site screening process, eliminating over 60 percent of the State's land area using exclusionary criteria.

There were also activities in 1988 in preparation for area and site selection and site characterization. In November, Massachusetts completed a contract for assistance in preparing the criteria it will use in site screening. In December, Maine selected a contractor to assist in developing site screening methodology, performing broad statewide site screening, and in selecting candidate sites for further evaluation. Pennsylvania (Appalachian Compact) began the process of selecting an operator/licensee who will be responsible for site selection, characterization, as well as facility development and operation.

## 2.2 Progress in Developing Disposal Capacity

The Act set forth a series of four "milestones," a "deadline" and a final target date, each associated with certain incentives and penalties, for developing new disposal sites. States and compacts without currently operating disposal sites are subject to the milestones. The first milestone, July 1, 1986 [Section 5(e)(1)(A) of the Act] required each State that was not a member of a sited compact region to "...ratify compact legislation or, by the enactment of legislation or the certification of the Governor, indicate its intent to develop a site for the location of a low-level radioactive waste disposal facility within such state."

The second milestone, January 1, 1988 [Section 5(e)(1)(B) of the Act] required each compact or State subject to the milestones to develop a siting plan and to delegate authority to implement the plan. In addition, the milestone required that "...each nonsited compact region shall identify the State in which its low-level radioactive waste disposal facility is to be located, or shall have selected the developer for such facility and the site to be developed, and each compact region or the State in which its low-level radioactive waste disposal facility is to be located shall develop a siting plan for such facility providing detailed procedures and a

schedule for establishing a facility location and preparing a facility license application and shall delegate authority to implement such plan;...."

Low-level waste generators located outside the sited compact regions pay a disposal surcharge, one-fourth of which is deposited in an account managed by the Department of Energy. The Department evaluates milestone compliance in order to determine eligibility of States and compacts for rebates of these funds. The three sited States also evaluate milestone compliance in order to determine whether site access penalties may be applied. Table 1 summarizes the milestone compliance determinations of the Department of Energy and the sited States for the 1986 and 1988 milestones.

Following is a review of progress made by States and compacts in developing new disposal capacity, or in making arrangements for access to disposal capacity. The first subsection summarizes the progress during 1988 of States and compact that developed disposal facility siting plans in 1987 in response to the January 1, 1988, milestone. Progress of these States and compacts is measured against the schedules presented in the siting plans. The second subsection summarizes the 1988 activities of States that are subject to the milestones but have not developed disposal facility siting plans. These activities include efforts to obtain access to current or planned disposal capacity in other States and compact regions. The third subsection summarizes the site development activities of compacts that already have operating disposal facilities and are not subject to the milestones in the Act.

## 2.2.1 States and Compacts With Disposal Facility Siting Plans

### 2.2.1.1 Appalachian Compact (Pennsylvania)

The State of Pennsylvania, on behalf of the Appalachian Compact, submitted its siting plan to the Department of Energy in December 1987. During 1988, the State encountered delays in issuing regulations governing facility development and in selecting an operator/licensee for its disposal facility. The final regulations were issued in May 1989, five months later than had been planned. The lack of responses to the original request for proposal for an operator/licensee led to a reissuance of the request, causing a six-month delay in the process of selecting an operator/licensee. A final contract is expected to be in place by June 1989.

Neither the delay in issuing regulations nor the revised schedule for selecting an operator/licensee is expected to affect the scheduled date for opening the facility. Therefore, the Compact does not anticipate changes from the dates in its siting plan for site selection, application for or issuance of a license, or beginning of operation of the facility.

TABLE 1. MILESTONE COMPLIANCE DETERMINATIONS\*

	<u>July 1, 1986 Milestone</u>		<u>January 1, 1988 Milestone</u>	
	<u>DOE</u>	<u>Sited States</u>	<u>DOE</u>	<u>Sited States</u>
<u>Compact Regions</u>				
Appalachian	C	C	C	C
Central	C	C	C	C
Central Midwest	C	C	C	C
Midwest	C	C	C	C
Northeast	C	C	C	C
Northwest	E	E	E	E
Rocky Mountain	E	E	E	E
Southeast	E	E	E	E
Western	C	C	C	C
<u>Nonmember States</u>				
California	C	C	C	C
District of Columbia	N	N	C	C
Maine	C	C	C	C
Massachusetts	C	C	C	C
New Hampshire	O	C	N	N
New York	C	C	C	C
North Dakota	O	C	N	N
Puerto Rico	O	N	O	N
Rhode Island	N	C	C	C
Texas	C	C	C	C
Vermont	C	C	N	N

C = Compliant  
 N = Noncompliant  
 E = Exempt  
 O = Not evaluated by Department of Energy  
 (no surcharge funds to rebate)

\* The Low-Level Radioactive Waste Policy Amendments Act of 1985 makes States and compacts eligible to receive rebates of a portion of disposal surcharges paid by their generators which are held in an account administered by the Department of Energy. The Department reviews milestone documentation to determine whether each State or compact is in compliance and thus eligible to receive rebates. The three States with operating disposal sites also review the documentation to determine whether they may impose additional penalty surcharges and site access restrictions.

#### 2.2.1.2 Central Compact (Nebraska)

U.S. Ecology, Inc., the site developer/operator designee for the Central Compact, expects to select three candidate sites in the host State of Nebraska by January 1989. (Update: In January, U.S. Ecology selected candidate sites in Boyd, Nemaha and Nuckolls Counties.) The company plans to begin preparation of a disposal site license application for each of the sites, then submit one of the applications immediately after selection of the final site around July 1990. This revised procedure will delay site selection by 18 months, from December 1988 to July 1990. However, because preparation of a license application will begin prior to site selection, the submission of the license application is expected to be delayed by only three months, from April 1990 to July 1990.

#### 2.2.1.3 Central Midwest Compact (Illinois)

The Illinois Department of Nuclear Safety expects to select a low-level waste disposal site in September 1989. License issuance is now scheduled for July 1990. Compared to the schedule in the January 1988 siting plan, this will result in advancement of the date for site selection by two months, to September 1989 from November 1989; and in beginning of facility operations by 12 months, to January 1992 from January 1993.

#### 2.2.1.4 Midwest Compact (Michigan)

In late 1988, the Michigan Low-Level Radioactive Waste Authority revised the schedule in its siting plan due, primarily, to delays in developing facility siting criteria and the issuance of a request for proposals for a technical services contractor. At the end of 1988, the compact expected site selection to be delayed by 24 months, from September 1989 to September 1991; submission of the license application by 19 months, from March 1990 to October 1991; and beginning of facility operations by 20 months, from September 1993 to May 1995.

(Update: On January 31, 1989, the Governor of Michigan halted all site selection activities in the State, and announced that action would be taken on July 1, 1989, to withdraw Michigan from the Midwest Compact unless two actions were taken: (a) Midwest Compact States correct flaws in current Compact legislation, and (b) the Governors of the Midwest Compact States join the Governor of Michigan in actively working with their congressional delegations to ensure that Congress moves to reduce the number of low-level waste disposal facilities and to provide the necessary institutional and economic stability for a viable low-level waste management system. On February 26, 1989, the Michigan Governor resumed the site selection process after the Governors in the other States in the compact indicated their support for these two measures.)

#### 2.2.1.5 Northeast Compact (Connecticut and New Jersey)

Each of the member States (Connecticut and New Jersey) plans to host a low-level waste disposal facility. Because specific responsibilities had not been determined by the end of 1988, each State is continuing to plan a disposal facility for a portion of the region's waste. (See Appendix B) A comparison of the January 1, 1988, siting plans to 1988 activities is presented below for each State.

Connecticut. In February 1988, the organizations in Connecticut involved in developing a low-level waste disposal facility submitted to the State General Assembly a bill to amend the State's facility siting law. In May, the amendment was enacted into law (Public Act 88-361). The new law sets forth in more detail the requirements for developing a facility specifically for low-level waste.

In response to the amended siting law, the Connecticut Hazardous Waste Management Service prepared a new schedule for siting the disposal facility. Under the new schedule, site selection is delayed 3 months, from September 1989 to December 1989; submission of the license application is delayed 1 month, from November 1991 to December 1991; license issuance is advanced 1 month, to July 1993 from August 1993; and beginning of facility operation is advanced 3 months, to April 1994 from July 1994.

New Jersey. In September 1988, the newly constituted New Jersey Low-Level Radioactive Waste Disposal Facility Siting Board and its Advisory Committee met. Because of delays in forming these groups, two of the four tasks planned for 1988 were not started: broad area screening and selecting an operator/developer for the disposal facility. However, work began on the other two tasks:

- o The schedule and workplan for completing the disposal plan mandated in the New Jersey Low-Level Radioactive Waste Siting Act was completed and its implementation begun;
- o The Advisory Committee began developing siting criteria for the Siting Board to consider in April 1989.

In spite of its late start, New Jersey has advanced its scheduled date for site selection from December 1990 from October 1991. The other dates have not been changed from the schedule in the 1988 siting plan. Following that schedule, the potential site operator will submit a license application to the Nuclear Regulatory Commission by January 1, 1992; the license is expected to be issued by August 1993; and the facility is expected to be operational by September 1994.

#### 2.2.1.6 Southwestern Compact (California)

The Southwestern Compact was formed in July 1988 when Arizona enacted Compact legislation that had been adopted by California in 1987. California is named in the Compact language as the first host State for a regional disposal facility.

California's preferred and alternate sites were designated in March 1988, two months later than anticipated in the siting plan. Characterization is continuing at the preferred site and is expected to be completed shortly before the license application is submitted to Department of Health Services in mid-1989. Submission of the license application has been delayed 7 to 9 months, from November 1988 to mid-1989; issuance of the license has been delayed 9 to 10 months, from February 1990 to the end of 1990; and beginning of facility operation has been delayed 12 to 18 months, from July 1990 to the second half of 1991.

These delays were caused primarily by the need to further evaluate surface hydrology conditions, to develop plans to mitigate impacts of the facility on migration of the endangered desert tortoise population, and to select facility enhancements acceptable to concerned parties.

#### 2.2.1.7 Maine

The Maine Low-Level Waste Disposal Authority's contract with Maine Yankee Atomic Power for assessment of fees from the company was completed in October 1988, approximately two months behind the schedule presented in the Maine siting plan.

Planning for a community benefit program was not begun until October 1988, which is one month after the date that plans for the program were expected to be complete. The Authority now expects to finalize the program in early 1989.

As 1988 ended, the Authority had not completed its contract with the E.C. Jordan Co., the Authority's designee for technical assistance in site screening and selection. As a result, the start of site screening is expected to be delayed until early 1989.

The selection of a facility design contractor was not begun as scheduled in 1988 and is significantly delayed. This task will be re-scheduled in the annual revision to its plan, which the Authority is required by State law to complete. A public hearing on the revised plan is scheduled for February 1989.

A draft of the revised plan completed in December 1988 indicates that site selection will be delayed 14 months, from October 1990 to December 1991; submission of the license application will be delayed 11

months, from January 1991 to December 1991; issuance of the license will be delayed 13 months, from October 1992 to November 1993; and beginning of facility operations will be delayed 5 months, from July 1995 to December 1995.

#### 2.2.1.8 Massachusetts

The appointment of members of the Massachusetts Low-Level Waste Management Board was completed in July 1988, approximately six months after the date scheduled in the Massachusetts siting plan. The tasks for which the Board was responsible during 1988 have been delayed, including: development of a low-level waste management plan; development of regulations for selection of a facility operator; and a vote by the Board which is necessary to begin the site selection process. The Board has not released a revision or update to the schedule presented in the siting plan. Therefore, the impact of these delays is not apparent.

Development of low-level waste disposal facility siting criteria and related documents, which is the responsibility of the Department of Environmental Quality Engineering, was not completed as scheduled during 1988 due to a delay in issuing a request for proposals for a contractor to assist in the task. The Department issued the request for proposals in mid-summer and reached agreement with a contractor in November 1988. The Department expects draft siting criteria to be completed in July 1989.

Final siting criteria; the Management Board's waste management plan and regulations for selecting a site operator; and the Health Department's regulations on waste minimization and site licensing will each be issued after extensive public review and comment, as required by Massachusetts law.

#### 2.2.1.9 New York

New York State's Siting Plan schedule indicated that in 1988 the New York State Department of Environmental Conservation would develop additional regulations governing many aspects of low-level waste disposal. The Department sought a contractor to assist in developing the regulations. Due to staff reductions, and a delay in completing an agreement with its contractor, the Department expects to issue the draft regulations in the spring of 1989 and final regulations by December 1990. The regulations will be completed before the New York State Low-Level Radioactive Waste Siting Commission applies to the Department of Environmental Conservation for certification of the site and the disposal method to be used at the facility.

Delay of the regulations, however, is not expected to affect the siting activities of the New York State Low-Level Radioactive Waste Siting Commission. New York's 1988 siting plan schedule called for the Siting Commission to submit the certification applications by December 1, 1988. The Siting Commission's revised schedule indicates that it plans to submit its application for the certifications by December 1990.

In light of this revision of the schedule, responsible State agencies are evaluating options for ensuring that all remaining milestones in the Act are met. The State remains committed to beginning acceptance of low-level waste at the site January 1, 1993, although the waste may need to be stored until the disposal facility begins operation.

New York expects site selection to be delayed 12 months from the date indicated in its siting plan, from June 1989 to June 1990; submission of the license application to be delayed 20 months, from January 1990 to September 1991; and issuance of the license delayed 20 months, from February 1991 to October 1992.

#### 2.2.1.10 Texas

Texas submitted its siting plan in response to the January 1, 1988, milestone prior to September 1987, the scheduled date in the plan for site selection. Because of ongoing litigation between the Texas Low-Level Radioactive Waste Disposal Authority and El Paso County, this and other scheduled dates contained in the siting plan have been delayed.

The start of final site characterization, which was scheduled to begin in December 1987, has been delayed until a prime site is named. Although the Authority has been investigating a site in Hudspeth County, the agency decided to delay designating it as the prime site until additional information about the site can be obtained and evaluated. Designation of the prime site is now scheduled for August 1989, a delay of 23 months from the August 1989 date indicated in the siting plan. Final site characterization is to begin the following month and to be completed by March 1990. This is an extension of six to twelve months beyond the previously scheduled date.

Because personnel and financial resources were redirected to address litigation and unanticipated legislative hearings, preliminary designs for the disposal facility were completed in October 1988, a year after the earlier planned date. Preparation of final designs is scheduled to begin in September 1989. Detailed construction plans and specifications will be available by October 1990, approximately 19 months later than planned.

Due to litigation and the extended site qualification process, the license application will not be submitted until January 1990, a 24-month delay from the January 1988 date in the siting plan. Issuance of the license is also delayed 24 months, from April 1988 to April 1990. Construction is planned to begin in early 1992, and is expected to take 250 days. The facility is now expected to be operational by the end of 1992, approximately one year behind the original schedule.

### 2.2.2 States Without Disposal Facility Siting Plans

The following six unaffiliated States (including the District of Columbia and the Commonwealth of Puerto Rico) did not develop siting plans in response to the January 1, 1988, milestone and do not have plans to develop a disposal site:

- o District of Columbia
- o New Hampshire
- o North Dakota
- o Puerto Rico
- o Rhode Island
- o Vermont

The District of Columbia and Rhode Island completed contracts with the Rocky Mountain Compact for disposal of their low-level waste and submitted copies of the contracts to the Department of Energy to demonstrate compliance with the January 1, 1988 milestone.

Because they did not submit milestone compliance documentation, New Hampshire, North Dakota and Vermont were determined by both the Department of Energy and the sited States not to have complied with the January 1, 1988, milestone. For the same reason, the sited States determined that Puerto Rico was out of compliance. Puerto Rico's milestone status was not evaluated by the Department of Energy, which evaluates milestone compliance in order to determine eligibility for surcharge rebates, because there were no funds attributable to Puerto Rico in the Department's surcharge escrow account.

In addition to required forfeiture of potential surcharge rebates, the sited States can impose penalty surcharges on generators in States and compacts not in compliance with the January 1, 1988, milestone. If non-compliant States and compacts are still not in compliance by January 1, 1989, the sited States (and also the sited compacts) can deny access to their disposal sites to low-level waste generators in these States and compacts. Accordingly, the sited States late in 1988 notified New Hampshire, Puerto Rico and Vermont that they would take action to deny access to them effective January 1, 1989. North Dakota came into compliance with the milestone in March 1989 by joining the Southwestern Compact.

#### 2.2.2.1 District of Columbia

The District of Columbia completed a contract for low-level waste disposal with the Rocky Mountain Compact through 1989. A copy of the completed contract was submitted to the Department of Energy to demonstrate compliance with the requirements of the January 1, 1988, milestone.

Additional discussions were conducted between representatives of the Rocky Mountain Compact and the District of Columbia to negotiate renewal of their current disposal contract. In early 1989, the District expects to submit a formal petition for renewal of the contract through December 1992.

#### 2.2.2.2 New Hampshire

New Hampshire did not submit documentation to the Department of Energy and the sited States demonstrating compliance with the January 1, 1988, milestone and was determined to be out of compliance. In December 1988, Washington State notified New Hampshire that its low-level waste would be denied access to the Northwest Compact's disposal facility effective January 1, 1989. At the end of 1988, the other two sited States (Nevada and South Carolina) prepared to deny the State access in early 1989.

During 1988, informal discussions took place with other non-compact member States in the Northeast to examine contracting and compacting possibilities.

#### 2.2.2.3 North Dakota

Prior to the January 1, 1988, milestone date, North Dakota did not submit documentation showing compliance with the milestone, and was determined to be out of compliance. In September 1988, North Dakota completed a contract with the Northwest Compact for disposal of the State's low-level waste through 1990. Upon entering the contract, the State was determined by the sited States to have complied with the 1988 milestone. North Dakota is an eligible member of the Southwestern Compact and is expected to enact legislation early in 1989 to become a member. (Update: In March 1989, North Dakota passed legislation joining the Southwestern Compact effective July 1, 1989. The Southwestern Compact is in compliance with the milestones.)

#### 2.2.2.4 Puerto Rico

Puerto Rico did not have funds attributable to it in the Department of Energy's surcharge escrow account for the January 1, 1988, milestone period and, therefore, the Department did not determine whether Puerto Rico had complied with the milestone. Puerto Rico did not submit documentation demonstrating milestone compliance to the sited States, and was determined by them not to have complied with the milestone. Access to the current

disposal facilities, however, had already been denied by the sited States because Puerto Rico had not complied with the earlier July 1, 1986, milestone. In 1988, Puerto Rico was invited to present testimony before the Texas House Committee on Environmental Affairs regarding the possibility of forming a compact with Texas, but did not send a representative.

#### 2.2.2.5 Rhode Island

Rhode Island completed a contract with the Rocky Mountain Compact for disposal of the State's low-level waste at the regional disposal site through 1989. A copy of the contract was submitted to the Department of Energy to demonstrate compliance with the the January 1, 1988, milestone. In early 1989, the State expects to petition the Rocky Mountain Compact to renew the contract through December 1992. Because the contract requires the State itself, and not waste generators, to pay disposal surcharges additional to those specifically authorized in the Act, the State in 1988 enacted legislation permitting surcharge funds paid by the State of Rhode Island to be recovered from the organizations that generated the waste.

#### 2.2.2.6 Vermont

Vermont did not submit documentation demonstrating compliance with the January 1, 1988, milestone to the Department of Energy and the sited States, and was determined not to have complied with the milestone. Anticipating that it would be denied access to the operating disposal facilities, Vermont began plans for interim storage of waste until the State can obtain disposal access. In December, Washington State notified Vermont that it would be denied access to its disposal facility effective January 1, 1989. At the end of 1988, the other two sited States, Nevada and South Carolina, prepared to deny the State access in early 1989.

The Vermont Advisory Commission on Low-Level Radioactive Waste received information and heard testimony on various approaches to managing Vermont's waste. A request to contract with the Rocky Mountain Compact for disposal of the State's waste was denied; and testimony was presented before the Texas House Committee on Environmental Affairs, which was considering options for compact formation. The Texas Committee recommended not to actively pursue compact formation but did not discourage States from submitting compact proposals.

#### 2.2.3 Sited Compacts Not Subject to Milestones

Two of the three compacts with currently operating disposal facilities, the Rocky Mountain and the Southeast, plan to develop new disposal facilities to replace these sites. The target dates for beginning of operation of these new sites happens to coincide with the deadline in the Act for access to the currently operating facilities, January 1, 1993. However, the schedules for development of new disposal sites in compacts that already have operating disposal facilities are not required to conform to the milestones in the Act.

### 2.2.3.1 Rocky Mountain Compact (Colorado)

The Rocky Mountain Compact's currently operating facility at Beatty, Nevada, is scheduled to close by December 31, 1992, in accordance with an agreement between the Governor of Nevada and the Rocky Mountain Compact Board. Based on the Compact language provision that any party State expected to generate 20 percent or more of the region's waste has an obligation to become a host State, the Compact Board designated Colorado to follow Nevada as the next host State.

In August 1988, the Colorado Department of Health submitted an application to the Compact Board asking the Board to designate a proposed disposal site near Uravan, Colorado, as the regional disposal facility to succeed the Beatty, Nevada, site. The disposal site, which was proposed by UMETCO Mineral Corporation, would have separate facilities for disposal of uranium mill tailings from the Denver area, and low-level waste from the Rocky Mountain Compact region. The consolidation of disposal capabilities for these two kinds of waste was intended to make economically viable the disposal of the small amounts of low-level waste generated in the Rocky Mountain region. After significant public concern was expressed in a series of hearings, the Department of Health withdrew its application in November, pending further analysis of economic and licensing issues.

To provide a framework for evaluation of proposals for disposal of low-level waste in Colorado and other alternatives for management and disposal of the region's low-level waste, the Department of Health began in late 1988 to develop a low-level waste management plan, which is scheduled for completion in 1989.

### 2.2.3.2 Southeast Compact (North Carolina)

The terms of the Southeast Compact provide that its currently operating disposal facility at Barnwell, South Carolina, will cease to be the regional disposal facility by December 31, 1992. The Southeast Compact Commission has designated North Carolina as the next host State.

North Carolina enacted legislation creating the North Carolina Low-Level Radioactive Waste Authority and specifying a series of facility development milestones (not to be confused with the "milestones" in the Act that apply to compacts and States that do not have currently operating disposal facilities). The Authority is directed to: identify potentially suitable siting areas by December 1, 1988; select a facility developer/operator by January 31, 1989; complete site selection by November 15, 1990; submit the facility license application by December 31, 1990; start facility operation by January 1, 1993.

The Authority met its first key milestone in November 1988, when it completed first-stage screening of the State and identified 38 percent of the State's area as potentially suitable for a low-level waste disposal facility.

During 1988, the Authority received and evaluated proposals for a disposal facility site developer/operator from Chem-Nuclear Services, Inc., and Westinghouse Electric Corporation. The Authority expects to conduct negotiations with both companies leading to the completion of draft contracts with each, and announce its contractor selection in July 1989, approximately six months after North Carolina's milestone date.

The Authority projects that it will meet future key milestone dates, although some intermediate facility development tasks may be affected by the delay in selecting a facility developer/operator.

### 2.3 Meeting Upcoming Milestones and Deadlines

In addition to the milestones that have passed, the Act prescribes "milestones" for January 1, 1990, and January 1, 1992; a "deadline" January 1, 1993; and a final target date January 1, 1996. States and compacts are eligible to receive surcharge rebates from the Department of Energy following the 1990 and 1993 dates. The sited States may deny access to generators in States/compacts that do not meet the 1990 milestone. The penalty prescribed for not meeting the 1992 milestone is payment of triple the regular disposal surcharge (up to \$120 per cubic foot). The currently sited States may discontinue access to their disposal sites permanently on January 1, 1993. The date coincides with the date that two of the three sites are scheduled to close.

#### 2.3.1 The 1990 and 1992 Milestones

The January 1, 1990, milestone [Section 5(e)(1)(C)] provides that each compact without an operating disposal facility, and each State not a member of a compact comply with the following requirements:

- "(i) a complete application (as determined by the Nuclear Regulatory Commission or the appropriate agency of an Agreement State) shall be filed for a license to operate a low-level radioactive waste disposal facility within each non-sited compact region or within each non-member State; or
- "(ii) the Governor (or, for any State without a Governor, the chief executive officer) of any State that is not a member of a compact region in compliance with clause (i), or has not complied with such clause by its own actions, shall provide a written certification to the Nuclear Regulatory Commission, that such State will be capable of providing for, and will provide for, the storage, disposal, or management of any low-level radioactive waste generated within such State and requiring disposal after December 31, 1992, and include a description of the actions that will be taken to ensure that such capacity exists."

Except for the Governor's certification option (Paragraph ii) of the January 1, 1990, milestone, the January 1, 1992, milestone [Section 5(e)(1)(D)] is identical to Subpart (i) of the earlier milestone. Therefore, the 1992 date (not 1990) is the final deadline for filing disposal site license applications.

The Nuclear Regulatory Commission has developed plans (NUREG-1274, August 1987) for reviewing disposal site license applications within 30 days after they are submitted, in order to determine whether the applications are "complete" as specified in the Act. In the case of disposal site license applications submitted to Agreement State agencies, the Department of Energy will work with each agency in order to expedite the process by which the State or compact may become eligible for surcharge rebates and to avoid imposition of penalty surcharges.

The Act does not provide guidance to the sited States or the Department for evaluating the documentation submitted to the Nuclear Regulatory Commission under Subpart (ii) of the January 1, 1990, milestone requirement (the Governor's certification option). The Act requires the Commission to transmit the documentation to Congress and to publish the Governors' Certifications in the Federal Register.

In January 1989, the Governors of the three sited States (Nevada, South Carolina and Washington) sent a joint letter regarding the January 1, 1990 milestone to Governors of States subject to the milestones. The letter included the following milestone compliance assessment criteria:

#### "ASSESSMENT CRITERIA

"A. In reference to [submittal of a complete license application], the sited states will not require any additional documentation other than what is required to be provided to the U.S. Nuclear Regulatory Commission (NRC) or the applicable Agreement State. However, the sited states shall be provided with a copy of the license application transmittal letter. It is anticipated the NRC or agreement state will provide verification to the sited states within a reasonable time of the adequacy of the license application, and that the elements of the application meet current regulatory criteria.

"B. In reference to [Governor's certifications] the sited states will expect the following minimum elements of a Governor's written certification:

- "1. A volume projection of waste generated after December 31, 1992, for the state, subdivided by class and generator type.

- "2. The means by which a state will provide for the storage/disposal/management of waste if a disposal facility is not operational by December 1992. Options include a storage or disposal facility, contract with a site, onsite storage by generator, etc. The option to be used should be evaluated in perspective with the projected volume.
- "3. The evaluation of the option should also include the designated authority, processes, and scheduling necessary to obtain licensing, operations, and administration for the management option.
- "4. Verification that all proposed actions and options are consistent with statutes, regulation, and policies of the NRC, Agreement State, and applicable legal authorities.

"It is anticipated that a copy of the Governor's certification will be forwarded simultaneously to each sited State authority.

"C. In reference to (c)(i) and (ii) above, the sited States will require that all low-level radioactive waste in a State or region be addressed. This includes Class A, Class B, and Class C waste, as well as mixed waste (LLW having a hazardous component)."

On January 23, 1989, and February 22, 1989, the Department of Energy and the Nuclear Regulatory Commission, respectively, published Federal Register Notices announcing the policies and procedures of the agencies for administering their responsibilities related to the January 1, 1990, milestone.

The Department of Energy is responsible for disbursing disposal surcharge rebate funds held by the Department to States and compacts in compliance with the milestone. The Nuclear Regulatory Commission is named in the Act as recipient of Governors' Certification documentation. The agencies have worked together to develop procedures whereby the Commission would notify the Department of its receipt of the documentation. The Department has requested that the Commission formally notify the Department that:

- (1) a Governor's Certification as described in the Act was filed by January 1, 1990;
- (2) the Certification was signed by the Governor; and
- (3) the Certification provides for the storage, disposal or management of the low-level waste for which the State is responsible under the Act.

Disposal site license applications may also be submitted to the Nuclear Regulatory Commission, or applicable Agreement State agencies, in satisfaction of the milestone. For a license application submitted to the Commission, the Department has requested that the Commission notify the Department that:

- (1) the application was filed by January 1, 1990; and
- (2) the application is complete.

Because a State or compact may choose to develop a disposal site for a portion of the low-level waste for which it is responsible, and make other plans to manage the remainder after 1992, the Department will permit a State or compact to submit both a disposal site license application and Governors' Certifications, together documenting plans for managing all the low-level waste for which the entity is responsible. Alternatively, a State or compact that submits a license application for a disposal site for part of its waste, may elect not to submit the license application as milestone documentation but instead include a description of plans for the disposal facility as part of its Governor's Certification.

The Department's Federal Register Notice includes guidance on the content of Governors' Certifications from the reports of the congressional Committees that approved the final version of this provision of the Amendments Act. The Nuclear Regulatory Commission has provided the following additional guidance in its Notice:

"NRC believes that the description of actions (in the Governor's certification) should include the following points:

- "1. An estimate of the volume and types of waste and who will generate it after 12/31/92.
- "2. A description of the proposed storage, disposal or management actions to be taken with respect to any low-level radioactive waste generated within the State and requiring disposal after 12/31/92, including low-level radioactive waste contaminated with non-radioactive hazardous waste (i.e., mixed waste). Where the certification provides for continued storage of such waste by the generator, the certification shall set forth the actions to be taken by the State to secure all applicable permits and approvals, including...comments, if any, of such generators on the feasibility and acceptability of on-site storage.
- "3. A statement that the proposed actions are within existing legal authorities and are consistent with NRC or Agreements State regulations and guidance.
- "4. The logistics of the proposed action in terms of organizational responsibility, timing and scheduling."

As listed in Table 2 and shown in Figure 1, only three host States anticipate submitting license applications by January 1, 1990.

<u>State (Compact)</u>	<u>Scheduled License Application Submission</u>
o California (Southwestern Compact)	Mid 1989
o Illinois (Central Midwest Compact)	December 1989
o Texas	January 1990

The other ten host States plan to use Governors' Certifications to meet the requirements of the January 1, 1990, milestone. This includes both host States of the Northeast Compact, Connecticut and New Jersey.

All the States developing new disposal facilities, except Connecticut, Maine and New Jersey, plan to license and regulate their new facilities themselves as Nuclear Regulatory Commission Agreement States. Figure 1 illustrates that a number of license review processes may be under way at the same time. Therefore, the technical expertise available to the States from both the public and private sector to assist them in reviewing license applications may be limited.

### 2.3.2 The 1993 Deadline and the 1996 Date

The Act establishes January 1, 1993, as the "deadline" when the three current sited States may deny access to their disposal sites to generators outside their compact regions. However, because the Act contemplates that some States and compacts may not have disposal capacity available by that date, it includes provisions governing surcharge rebates, and liability for and possession of low-level waste after that date. Section 5(d)(2)(C) of the Act contains the following requirements:

"...If, by January 1, 1993, a State (or, where applicable, a compact region)...is unable to provide for the disposal of all such waste generated within such State or compact region--

"(i) each State in which waste is generated, upon the request of the generator or owner of the waste, shall take title to the waste, shall be obligated to take possession of the waste, and shall be liable for all damages directly or indirectly incurred by such generator or owner as a consequence of the failure of the State to take possession of the waste as soon after January 1, 1993 as the generator or owner notifies the State that the waste is available for shipment; or

"(ii) if such State elects not to take title to, take possession of, and assume liability for such waste, pursuant to clause (i), twenty-five percentum of any amount collected by a State...during the period beginning January 1, 1990 and ending December 31, 1992 shall be

TABLE 2. HOST STATE PROGRESS VS. 1988 SITING PLANS

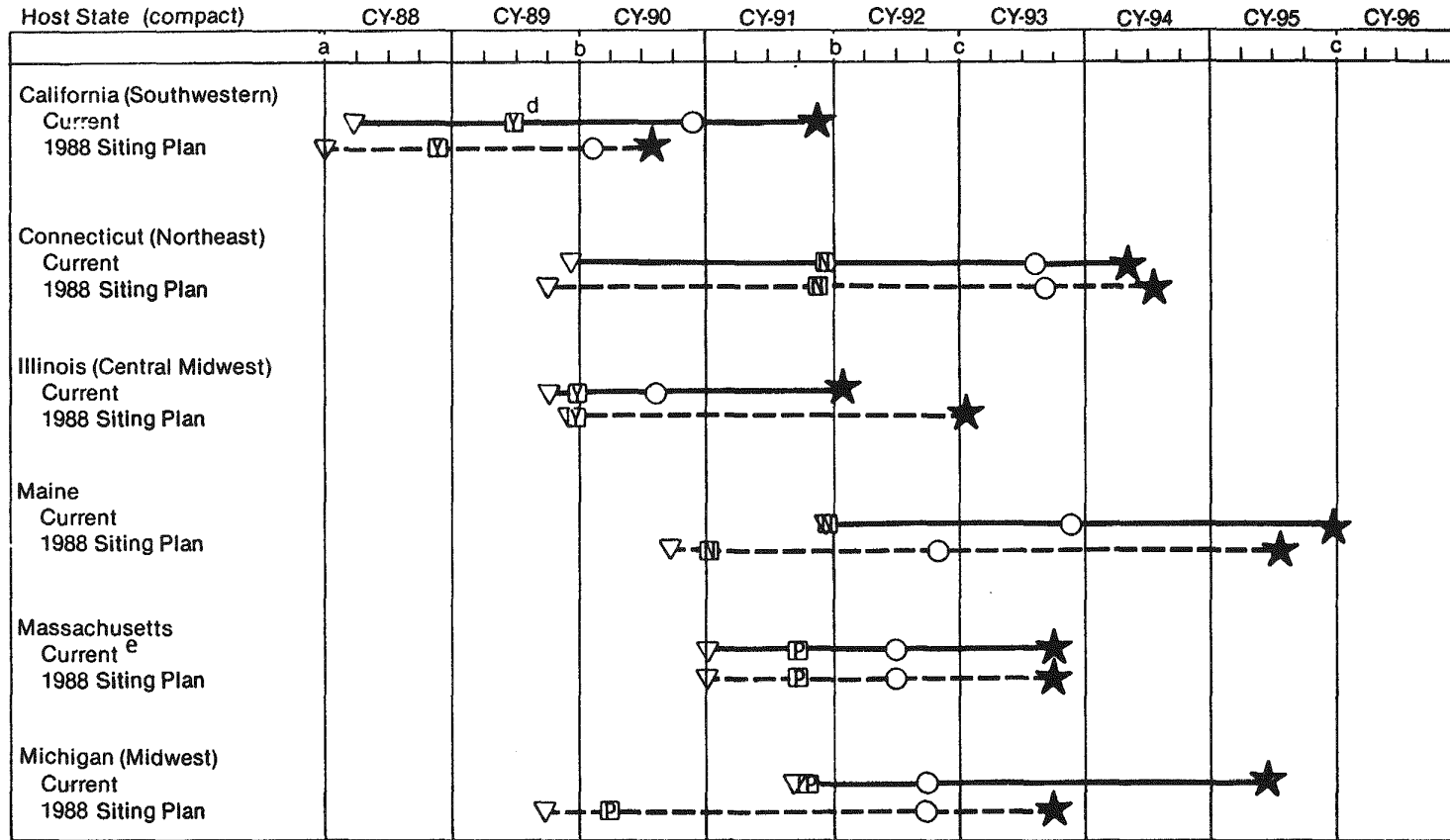
<u>Host State (Compact)</u>	<u>Site Selection</u>	<u>License Application<sup>a</sup></u>	<u>License Issuance</u>	<u>Facility<sup>b</sup> Operational</u>	<u>NRC Agreement State Status</u>
California (Southwestern) Current 1988 Siting Plan	March 1988 January 1988	Mid 1989 November 1988	End 1990 February 1990	2nd half 1991 July 1990	Yes
Colorado (Rocky Mountain) <sup>c</sup> Current	Undetermined	Undetermined	Undetermined	Undetermined	Yes
Connecticut (Northeast) Current 1988 Siting Plan	December 1989 September 1989	December 1991 November 1991	July 1993 August 1993	April 1994 July 1994	No
Illinois (Central Midwest) Current 1988 Siting Plan	September 1989 November 1989	December 1989 December 1989	July 1990 Undetermined	January 1992 January 1993	Yes
Maine Current 1988 Siting Plan	December 1991 October 1990	December 1991 January 1991	November 1993 October 1992	December 1995 July 1995	No
Massachusetts <sup>d</sup> Current 1988 Siting Plan	January 1991 January 1991	September 1991 September 1991	June 1992 June 1992	September 1993 September 1993	Planned
Michigan (Midwest) Current 1988 Siting Plan	September 1991 September 1989	October 1991 March 1990	September 1992 September 1992	May 1995 September 1993	Planned
Nebraska (Central) Current 1988 Siting Plan	July 1990 December 1988	July 1990 April 1990	April 1991 April 1991	January 1993 January 1993	Yes
New Jersey (Northeast) Current 1988 Siting Plan	December 1990 October 1991	December 1991 December 1991	August 1993 August 1993	September 1994 September 1994	No
New York Current 1988 Siting Plan	June 1990 June 1989	September 1991 January 1990	October 1992 February 1991	January 1993 January 1993	Yes
North Carolina (Southeast) <sup>c</sup> Current	December 1990	December 1990	Undetermined	January 1993	Yes
Pennsylvania (Appalachian) Current 1988 Siting Plan	August 1990 April 1990	January 1992 January 1992	July 1993 July 1993	July 1994 July 1994	Planned
Texas Current 1988 Siting Plan	August 1989 September 1987	January 1990 January 1988	April 1991 April 1989	December 1992 September 1992	Yes

a. See Section 2.3.1 for descriptions of the January 1, 1990 and January 1, 1992 milestone requirements.

b. See Section 2.3.2 for descriptions of the January 1, 1993 and January 1, 1996 deadline requirements.

c. The 1988 milestone does not apply because this is a sited compact.

d. Massachusetts' siting plan schedule was not revised during 1988.

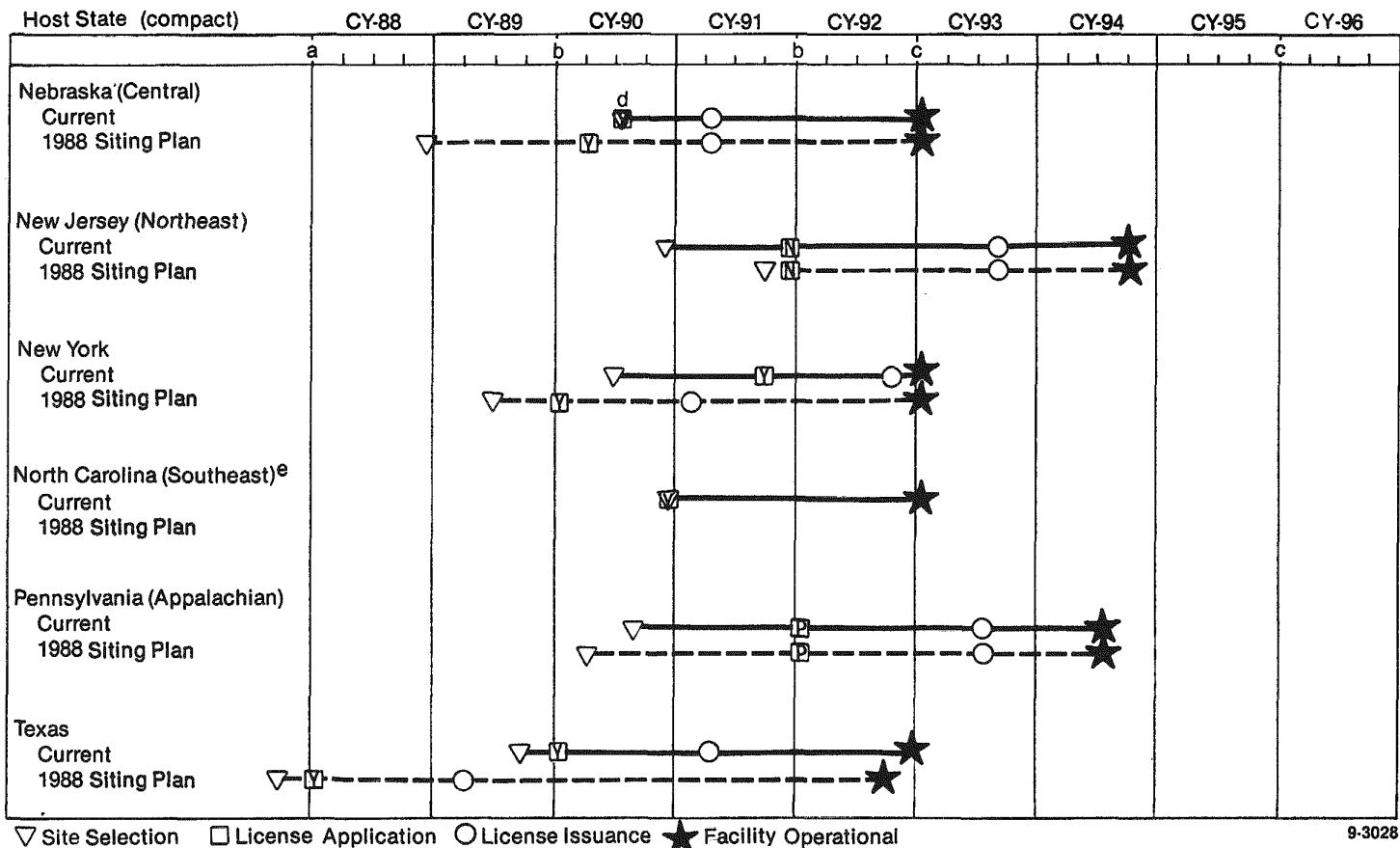


▽ Site Selection □ License Application ○ License Issuance ★ Facility Operational

9-3027

- a. See Section 2.2 for description of January 1, 1988 milestone requirements.
- b. See Section 2.3.1 for descriptions of the January 1, 1990 and January 1, 1992 milestone requirements.
- c. See Section 2.3.2 for descriptions of the January 1, 1993 and January 1, 1996 deadline requirements.
- d. Indicates agreement State Status: Y = yes; N = no; P = planned.
- e. Massachusetts' siting plan schedule was not revised during 1988.

Figure 1. Host State progress vs. 1988 siting plans.



▽ Site Selection   □ License Application   ○ License Issuance   ★ Facility Operational

9-3028

- a. See Section 2.2 for description of January 1, 1988 milestone requirements.
- b. See Section 2.3.1 for descriptions of the January 1, 1990 and January 1, 1992 milestone requirements.
- c. See Section 2.3.2 for descriptions of the January 1, 1993 and January 1, 1996 deadline requirements.
- d. Indicates agreement State Status: Y = yes; N = no; P = planned.
- e. The 1988 milestone did not apply to the Southeast Compact because it is a sited compact.

Note: "Undetermined" dates on Table 2 are not shown on this Figure.

Figure 1. (Cont.) Host State progress vs. 1988 siting plans.

repaid, with interest, to each generator from whom such surcharge was collected [in monthly installments of one thirty-sixth of the total] and shall continue until the State (or, where applicable, compact region) in which such low-level radioactive waste is generated is able to provide for the disposal of all such waste generated within such State or compact region or until January 1, 1996, whichever is earlier."

Table 2 and Figure 1 show that six host States intend to begin accepting waste at their disposal facilities by January 1, 1993. The States are:

<u>State (Compact)</u>	<u>Scheduled Beginning of Disposal Facility Operations</u>
o California (Southwestern Compact)	2nd Half 1991
o Illinois (Central Midwest Compact)	January 1992
o Nebraska (Central Compact)	January 1993
o New York	January 1993
o North Carolina (Southeast Compact)	January 1993
o Texas	December 1992

Colorado has not established a target date for beginning operation of a new facility. The six other host States intend to begin operating new facilities after January 1, 1993:

<u>State (Compact)</u>	<u>Scheduled Beginning of Disposal Facility Operations</u>
o Connecticut (Northeast Compact)	April 1994
o New Jersey (Northeast Compact)	September 1994
o Maine	December 1995
o Massachusetts	September 1993
o Michigan (Midwest Compact)	May 1995
o Pennsylvania (Appalachian Compact)	July 1994

The deadline in the Act for operation of new facilities is January 1, 1993. However, acknowledging that facilities may not be operational by that date, the Act sets January 1, 1996 as the target date after which

States that cannot provide for disposal of their waste and do not take title and possession of the waste may be liable for the consequences of not doing so. Between 1993 and 1996, as noted above, States without access to disposal sites (or the compacts in which they are members) also forfeit disposal surcharge funds attributable to them back to the generators who paid the surcharges. The Department of Energy is to issue these rebates in monthly installments until the funds are exhausted or until the States can provide for disposal of their waste. Section 5(d)(2)(C) of the Act requires that:

"...If a State (or, where applicable, a compact region) in which low-level radioactive waste is generated is unable to provide for the disposal of all such waste generated within such State or compact region by January 1, 1996, each State in which such waste is generated, upon the request of the generator or owner of the waste, shall take title to the waste, be obligated to take possession of the waste, and shall be liable for all damages directly or indirectly incurred by such generator or owner as a consequence of the failure of the State to take possession of the waste as soon after January 1, 1996, as the generator or owner notifies the State that the waste is available for shipment."

### 3. REGULATORY ISSUES

Regulatory issues and proposed rules related to disposal of low-level waste can affect the plans and progress of States and compacts developing new disposal facilities. The disposal of mixed waste received special emphasis during 1988 because of its potential impact on State and compact compliance with upcoming milestones. New rules were proposed for the disposal of low-level radioactive waste "below regulatory concern," and the disposal of "naturally occurring and accelerator-produced radioactive material" in facilities licensed for disposal of low-level waste.

#### 3.1 Mixed Waste Management

Mixed waste is radioactive waste that also contains hazardous (chemical) constituents. Because of its dual nature, it is subject to two distinct sets of laws and regulations governing site selection, characterization, design, licensing, operation, closure and long-term care. In response to concerns about potential procedural and substantive conflicts between the different requirements, the Nuclear Regulatory Commission and the Environmental Protection Agency in 1987 issued joint guidance in three regulatory areas:

- o Definition of mixed wastes
- o Siting guidelines for mixed waste disposal facilities
- o Conceptual design for mixed waste disposal units meeting the disposal regulations of both agencies

Additional joint guidance is planned in the areas of sampling/testing and inspection enforcement.

Both the Department of Energy and the sited States believe that the Act requires States and compacts to provide for disposal of mixed as well as non-mixed low-level waste. At the end of 1988, however, only three of the thirteen host States were implementing plans for developing mixed waste disposal capacity:

#### States (Compacts) Developing Mixed Waste Disposal Capacity

- o Illinois (Central Midwest Compact)
- o Nebraska (Central Compact)
- o Texas

Some States contend that the goals and methods embodied in the different approaches to disposing of low-level and hazardous waste are fundamentally inconsistent and not reconcilable. Some States are also

concerned that guidance provided at the present time will need to be revised or supplemented in the future, in response to improvements in waste treatment methods, storage practices, disposal requirements and waste characteristics.

Several States have surveyed potential generators of mixed waste to determine the amount and composition of the waste. The efforts reportedly have been limited by hesitancy on the part of waste generators to provide information because of regulatory uncertainties in the absence of existing treatment and disposal facilities, and lack of familiarity with regulatory guidance for identifying mixed waste. Some State officials believe that the results of past surveys may underestimate the actual amount of mixed waste requiring disposal in mixed waste facilities. Access to mixed waste disposal facilities might also discourage waste generators from applying procedures and technologies that would render the waste less hazardous, unless investigation of available treatment requirements were made a condition of disposal access.

State and compact officials have expressed concern that collectively they may be developing more low-level waste disposal sites than necessary to dispose of the Nation's low-level waste. These concerns are magnified with respect to development of mixed waste disposal capacity because of the level of effort and expense required to establish disposal capacity for this small volume of specific waste.

### 3.2 Proposed Rules for Low-Level Waste "Below Regulatory Concern" and Naturally Occurring and Accelerator-Produced Radioactive Material

The Act requires the Nuclear Regulatory Commission to establish guidelines, procedures and technical capabilities to act quickly on petitions to exempt from its regulations certain wastes whose radioactivity is "below regulatory concern." "Below Regulatory Concern" wastes may be disposed of in facilities not licensed for disposal of low-level waste. Both the Environmental Protection Agency and the Nuclear Regulatory Commission are developing standards prescribing limits for public exposure from below regulatory concern waste and for determining what kinds of waste may be granted exemptions from disposal in low-level waste facilities.

The Environmental Protection Agency plans to issue draft rules containing proposed environmental standards for low-level waste management in 1989. The proposed standards (40 CFR 193, "Environmental Radiation Protection Standards for the Management and Land Disposal of Low-Level Radioactive Wastes") would set numerical limits on radiation exposure to the public from management of low-level waste, and would prescribe groundwater degradation limits for these activities. The rules could limit the number of potentially suitable areas for locating low-level waste disposal sites.

In addition, the Agency expects to issue proposed regulations (40 CFR 764, "Land Disposal of Naturally Occurring and Accelerator-Produced Radioactive Materials") requiring relatively concentrated forms of "NARM" waste (in excess of 2 nanocuries per gram) to be disposed of in facilities licensed for disposal of low-level waste. Unlike low-level waste, however, the Federal law has not explicitly made the States responsible for disposal of NARM waste. Therefore, regulatory approval for its disposal in licensed low-level waste facilities does not mean that the facilities must be allowed by their State or compact authorities to accept this kind of waste.

At the time of publication of this report, the proposed standards were undergoing review within the Federal agencies. The potential impacts of the proposed rules on the plans of States and compacts will be analyzed in forthcoming annual reports.

#### 4. APPROACHES TO REGIONAL MANAGEMENT OF LOW-LEVEL WASTE

Provisions of State laws, regulations, and administrative actions of the State agencies and compact commissions, compact statutes, and compact regional management plans establish the framework for the evolving system of regional management of low-level waste. The status of development of low-level waste management strategies is included in this year's report because of the potential impact of these provisions and policies on interstate and interregional cooperation. The development of waste management strategies also provides a means for measuring progress in establishing an effective national system for management of low-level waste.

In determining how best to manage a State's low-level waste, several key questions normally need to be answered. These include:

- o What are the State's specific low-level waste management goals given the volume and characteristics of its waste; and the interests of its citizens, waste generators, elected officials and regulators?
- o Would these goals be accomplished best in a compact with other States or alone as an unaffiliated State?
- o If a compact is advantageous, which group of States would work best together and what criteria should be used to evaluate additional States for membership in the compact?
- o What facilities are needed to accomplish the specific waste management goals?
- o Should importation and exportation of waste be allowed for disposal and/or treatment and under what conditions?

Based on the answer to these questions, States have developed several different waste management approaches. Nine compact regions have been formed, leaving eleven states (including the District of Columbia and Puerto Rico) without compact affiliation. Unaffiliated States may be aware of the advantages of compact membership, but are limited in their ability to join a compact because they are unable to agree on compact terms or meet the membership criteria of the desired compact. Three of the eleven unaffiliated States have entered into contracts for waste disposal (Rhode Island and the District of Columbia) with the Rocky Mountain Compact; and North Dakota with the Northwest Compact). Under Section 5(e)(1)(F) of the Act, these contracts may be used to demonstrate compliance with the milestones.

Compacts consented to by Congress contain various provisions governing waste shipped into and out of compact regions and the extent to which the Compact Commission may establish additional policies. For example, the

Northwest Compact has established an agreement with the Southeast Compact to provide disposal of waste from that region that does not meet the license conditions of the Southeast Compact's disposal facility. In 1988, the Northwest Compact's regional facility disposed of 9,511 cubic feet of waste from the Southeast region under this arrangement. In return, the Northwest Compact host State, Washington, assesses a surcharge on this waste above the regularly charged disposal fees.

The exercise of regional management authorities by the compacts is limited in one respect by Title II, Section 211(3) of the Act and identical provisions in the congressional consent legislation of the Appalachian and Southwestern Compacts. These provisions state that consent is "...granted only for so long as the regional commission, committee, or board...complies with all of the provisions of the Act." In response to that limitation, the sited compacts acted shortly after passage of the Act to authorize the use of their disposal facilities to the extent required in the Act. Similarly, the compacts without operating disposal sites acted to authorize their waste generators to export low-level waste to the disposal sites and processing centers outside their respective regions.

There was increased interest during 1988 in the implementation of authorities and establishment of policies regarding regional management of low-level waste. However, the compacts have not fully explored the use of interregional agreements as a way to consolidate their efforts and reduce the number of facilities necessary for the management and disposal of low-level waste. Appendix C is a compilation of statutes, rules, administrative actions and resolutions of the compacts and States related to importation and exportation of low-level waste, and to compact membership and admittance by compacts of new member States.

## 5. LOW-LEVEL RADIOACTIVE WASTE RECEIVED BY COMMERCIAL DISPOSAL FACILITIES IN 1988

In 1988, the three currently operating disposal sites at Beatty, Nevada; Barnwell, South Carolina; and Richland, Washington, received 1,428,127 cubic feet of low-level radioactive waste according to information reported by regulatory agencies of the three sited States. For details on the amounts of waste shipped to these sites, see Table C-1 in Appendix C.

### 5.1 Disposal Capacity Limitations

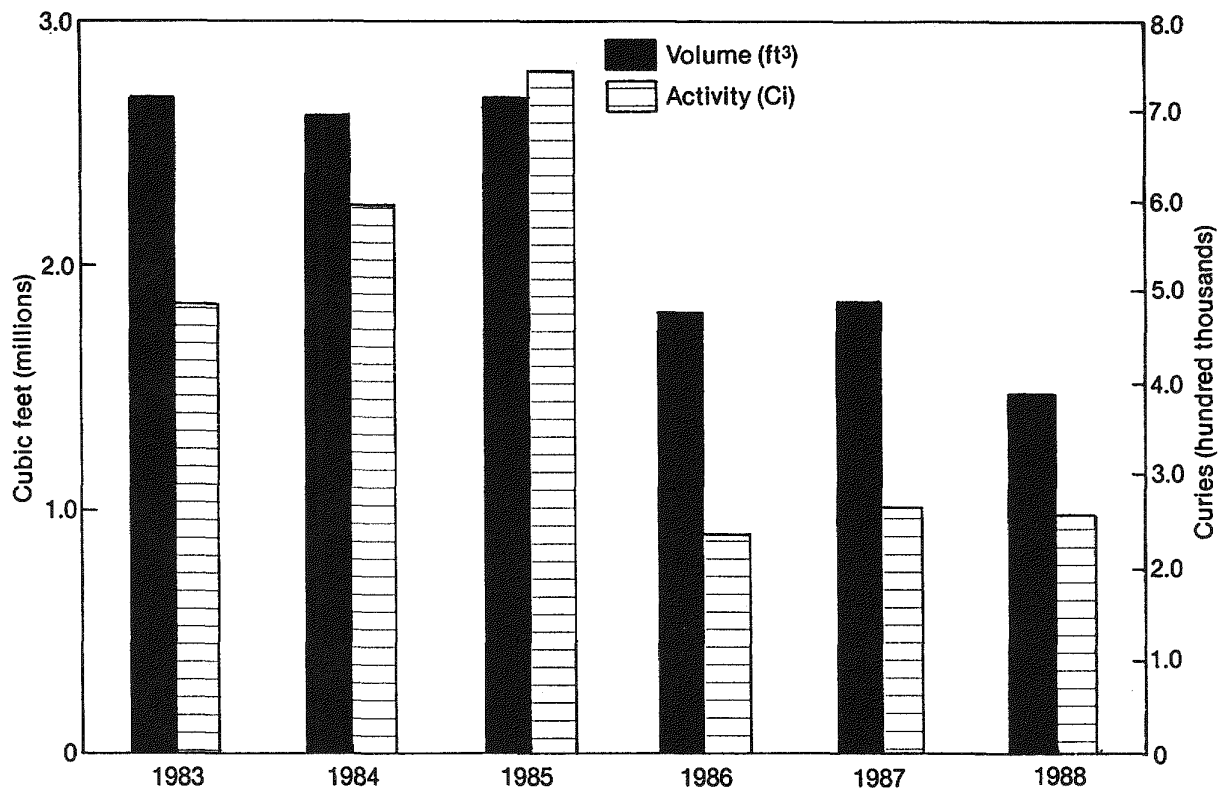
The Act allows each of the three currently operating disposal sites to limit the volume of low-level waste it accepts to the specific ceiling amounts specified in the Act. It also provides that a disposal site is not required to exceed its annual ceiling amount unless each of the other two sites also reaches its ceiling. The combined total of these amounts during the 7-year interim access period from 1986 to 1992 is 19.6 million cubic feet. These ceilings are as follows:

Site	Annual Ceiling (cu ft)	7-Year Ceiling (cu ft)
Beatty, NV	.2 million	1.4 million
Barnwell, SC	1.2 million	8.4 million
Richland, WA	<u>1.4 million</u>	<u>9.8 million</u>
Total	2.8 million	19.6 million

Figure 2 illustrates that the total annual ceiling authorized by the Act is comparable to the volume of waste disposed of at the three sites in the years preceding 1986. However, the volume of low-level waste actually received at the operating sites from 1986 through 1988 has been significantly below the total annual ceiling. This has alleviated concerns that access to current disposal capacity might be disrupted if the sites reached their annual disposal ceilings. As indicated in Figure 3, only 26.0 percent of the 7-year disposal ceiling has been used during the first three years of the access period.

### 5.2 Utility Allocations

During the interim access period from 1986 through 1992, the currently operating disposal sites may limit the combined volume low-level waste they accept from commercial nuclear power reactors to 11.9 million cubic feet. A formula for determining the disposal capacity allocation for each reactor is described in Section 5(c)(2) of the Act. Each eligible reactor receives a "regular" disposal allocation for the period January 1, 1986, through December 31, 1989; and another regular allocation effective January 1990,



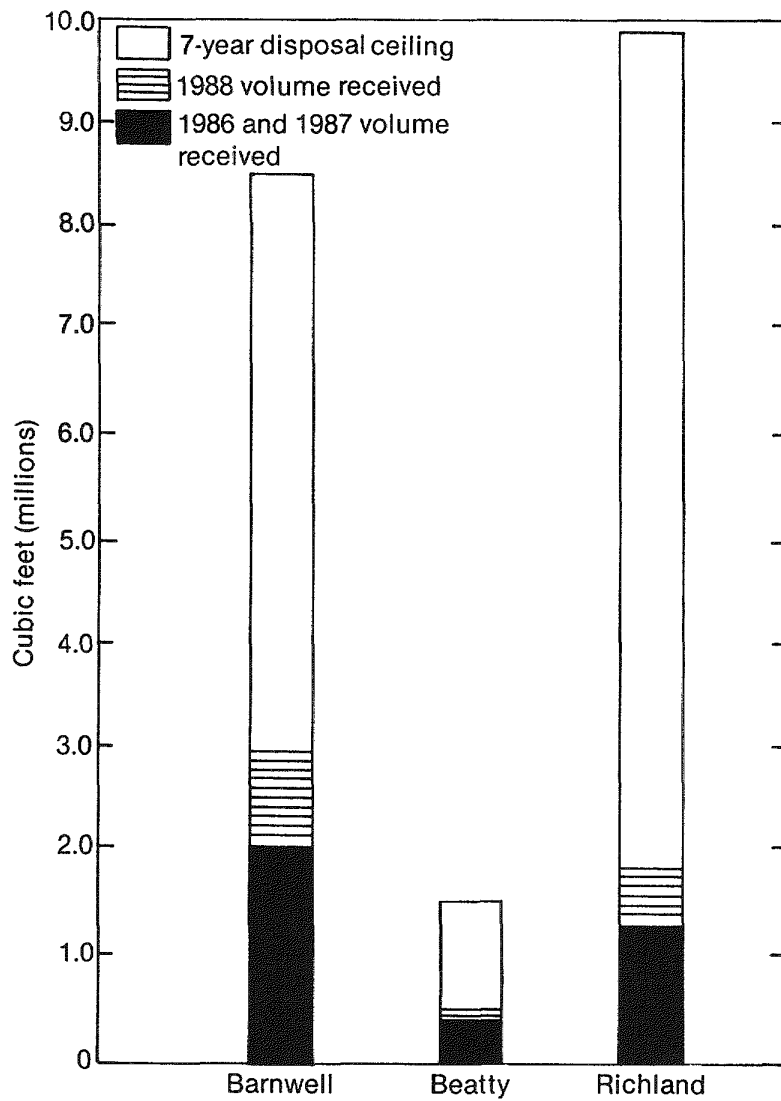
Disposal Site	1983 (ft <sup>3</sup> )	1984 (ft <sup>3</sup> )	1985 (ft <sup>3</sup> )	1986 (ft <sup>3</sup> )	1987 (ft <sup>3</sup> )	1988 (ft <sup>3</sup> )
Barnwell, SC	1,240,668	1,231,715	1,214,339	1,045,808	955,176	931,758
Beatty, NV	39,244	28,167	49,058	94,222	331,222	92,694
Richland, WA	1,428,718	1,358,803	1,417,168	665,023	555,192	403,675
<b>Total (ft<sup>3</sup>)</b>	<b>2,708,630</b>	<b>2,618,685</b>	<b>2,680,565</b>	<b>1,805,053</b>	<b>1,841,590</b>	<b>1,428,127</b>

Disposal Site	1983 (Ci)	1984 (Ci)	1985 (Ci)	1986 (Ci)	1987 (Ci)	1988 (Ci)
Barnwell, SC	500,971	385,079	460,571	116,108	210,965	218,902
Beatty, NV	1,356	544	454	672	11,101	8,691
Richland, WA	3,013	215,286	287,849	116,960	47,484	32,06
<b>Total (Ci)</b>	<b>505,340</b>	<b>600,909</b>	<b>748,874</b>	<b>233,740</b>	<b>269,550</b>	<b>259,661</b>

Note: Volume and activity totals are subject to ongoing verification and may be adjusted slightly.

Figure 2. Volume and activity received at currently operating disposal facilities (1983 through 1988).



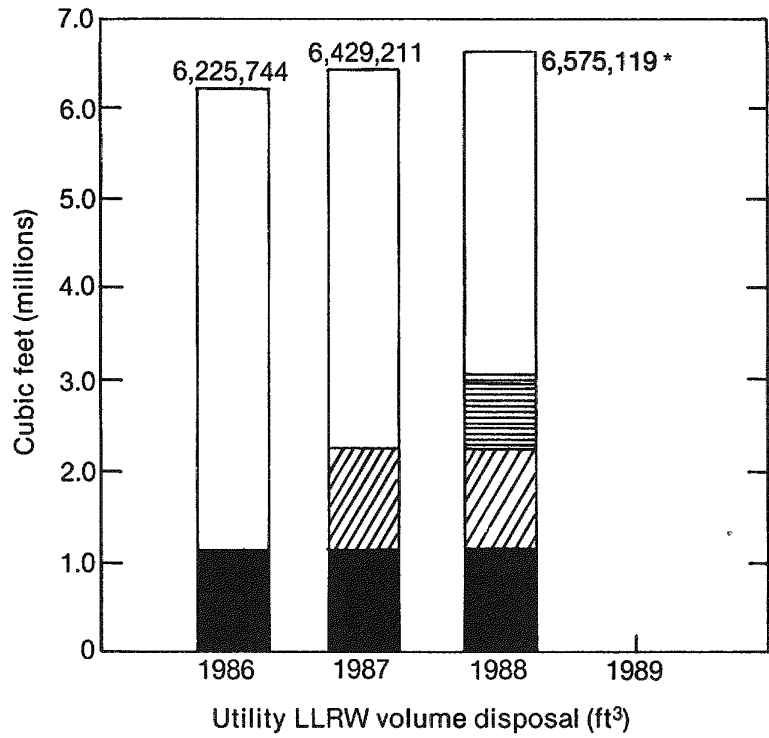
	7-Year Disposal Ceiling (ft <sup>3</sup> )	Waste Received in 1986 (ft <sup>3</sup> )	Waste Received in 1987 (ft <sup>3</sup> )	Waste Received in 1988 (ft <sup>3</sup> )	Total Waste Received (ft <sup>3</sup> )	% Total Ceiling Used
Barnwell, SC	8,400,000	1,045,808	955,223	931,758	2,932,789	35.0
Beatty, NV	1,400,000	94,222	331,222	92,694	518,138	37.0
Richland, WA	9,800,000	665,023	555,192	403,675	1,623,890	17.0
Total	19,600,000	1,805,053	1,841,637	1,428,127	5,074,817	26.0

Figure 3. Use of disposal ceiling volumes (1986 through 1988).

that may be used through December 31, 1992. Disposal allocations not used during the first period are carried forward and added to the allocation awarded January 1990. Based on Section 5(c)(2) of the Act, 6,575,119 cubic feet of regular allocations were issued through December 31, 1988, for commercial power reactors.

During 1988, commercial power reactors disposed of 810,430 cubic feet of low-level waste at the three disposal sites. Figure 4 shows that the total volume of reactor waste received at the three operating sites from 1986 through 1988, 2,829,382 cubic feet, represents only 43.0 percent of the current total regular reactor allocations issued for the 4-year period, 1986-1989.

In addition to regular allocations, Section 5(c)(5) of the Act authorizes the Department of Energy to allocate up to 800,000 cubic feet of disposal capacity to permit disposal of commercial power reactor waste generated from "unusual or unexpected" operating, maintenance, repair, or safety activities. Through 1988, the Department granted "unusual volume" allocations totalling 161,833 cubic feet on a case-by-case basis in response to petitions submitted by five utilities (Table 3). This amounted to 20.2 percent of the 800,000 cubic foot total for unusual volume allocations for the seven-year transition period.



□ Authorized transition allocation (1986-1989)  
 ▨ 1988 volume received  
 ▩ 1987 volume received  
 ■ 1986 volume received

	1986 (ft <sup>3</sup> )	1987 (ft <sup>3</sup> )	1988 (ft <sup>3</sup> )	Total Allocation Used
Barnwell, SC	732,045	625,948	597,500	1,955,493
Beatty, NV	24,594	90,864	33,546	149,004
Richland, WA	278,200	267,301	179,384	724,885
<b>Total</b>	<b>1,034,839</b>	<b>984,113</b>	<b>810,430</b>	<b>2,829,382</b>

\* Additional allocation is the result of two new power reactors receiving full-power operating licenses in 1988 and two approved special requests.

Braidwood Unit 2 ..... May 88  
 Pathfinder ..... Spec. Req.  
 Saxton ..... Spec. Req.  
 South Texas Unit 1 ..... Mar 88

Figure 4. Three-year cumulative use of utility allocation volumes (1986 through 1988).

TABLE 3. UTILITY UNUSUAL VOLUME ALLOCATIONS GRANTED (December 31, 1988)

Utility	Reactor Unit	Volume Allocated (cu ft)
American Electric Power Services Corp.	Donald C. Cook, Unit 2	46,538 <sup>a</sup>
Arizona Nuclear Power Project	Palo Verde, Units 1,2,3	27,970
Commonwealth Edison	Dresden, Unit 3	17,250
General Public Utilities Nuclear Corp.	Three-Mile Island, Unit 2	46,000
Philadelphia Electric Corp.	Peach Bottom, Unit 3	24,075
Total		161,833

a. 13,205 cu ft of this allocation will be issued effective 1/1/89.

## 6. CONCLUSIONS

This report indicates that some States and compacts are progressing toward establishment of new disposal facilities more quickly than others, in spite of uniform applicability of site development milestones in the Act.

As with the compacts that have currently operating disposal sites, the States and compacts making significant progress in developing their own sites have a growing stake in preserving the institutional framework established by the Act. Some States, on the other hand, have begun to press for amendments to the national policy by extending the January 1, 1993, date on which access to the three currently operating disposal sites may be ended, or by forcing realignment of existing compacts and States into larger regions.

The current Federal laws regarding low-level waste give States broad discretion to form cooperative agreements with other States and compacts. Through such agreements, compacts that believe that their limited size makes operation of low-level waste disposal and management facilities impractical are provided the opportunity to form larger market areas in which waste management facilities may be shared, responsibility for certain types of low-level waste divided, or obligations for hosting facilities rotated among a larger number of States. To date, however, cooperative agreements among compacts have not been used for these purposes.

The report reviews disposal contracts that have been completed between unaffiliated States and sited compacts. In each case where contracts have been submitted to the Department of Energy and the sited States as a substitute for milestone compliance (as permitted in the Act), the contracts have been for disposal of waste during the interim access period only. No contracts have been entered into that would provide States that generate small amounts of low-level waste access to disposal sites after the interim access period ends in 1992. The use of disposal agreements in lieu of milestone compliance, therefore, does not contribute to the goal of providing disposal access after 1992, unless the State given interim access also implements other plans to provide for disposal capacity after 1992.

Regardless of whether a State generates large amounts of low-level waste, or virtually none at all, the State must commit substantial resources to finding ways to dispose of its waste within the time period set forth in the Act. States that generate very small amounts of low-level waste continue to face legal, financial and political challenges disproportional to their contribution to the national waste management burden. For example, six unaffiliated States (Maine, New Hampshire, North Dakota, Rhode Island, South Dakota and Vermont) and the District of Columbia and Puerto Rico, shipped a total of 16,080 cubic feet of low-level waste for disposal in 1988. This represents about 1 percent of the total volume of waste shipped for disposal nationally. Several other States that

have been able to become members of compacts generate comparably small volumes of low-level waste. By providing small-generating States disposal access past 1992, the compacts and major waste generating States could remove a significant source of potential opposition to the current national policy for management and disposal of low-level waste. However, the compacts and States with disposal sites and those making substantial progress toward development of new sites, have yet to provide assurances of long-term disposal access, either through compact membership or contract arrangements, to unaffiliated States that generate small amounts of waste.

All but two host States or compact commissions (Illinois and New Jersey) have reported some delay in the schedules announced in the siting plans. In most cases the siting plan schedules developed for the January 1, 1988, milestone were admittedly optimistic, demonstrating the compact or State's intent to comply with subsequent milestones. States expecting to submit a license application on or shortly before the January 1, 1992, milestone are listed below.

States (Compacts) with License Applications Scheduled  
for Submission Close to the January 1, 1992 Milestone

Connecticut (Northeast Compact)	December 1991
Maine	December 1991
Massachusetts	September 1991
Michigan (Midwest Compact)	October 1991
New Jersey (Northeast Compact)	December 1991
New York	September 1991
Pennsylvania (Appalachian)	January 1992

In addition, Maine and Michigan currently plan to begin operation of new facilities in 1995, very close to the January 1, 1996, date on which States are required to take title to low-level waste or become liable for the consequences of not taking title. Therefore, even under the revised schedules, which themselves may be optimistic target dates, it appears likely that a number of large waste-generating compact regions and States will not meet all the forthcoming milestones and deadlines. However, temporary noncompliance with a milestone entails potential penalties that, by themselves, need not disrupt or derail a deliberate site development process that has the support of State and compact leaders.

Delays in the beginning of operation of disposal facilities could also be caused by changes in plans made in response to regulatory initiatives currently underway, and by decisions regarding implementation of existing regulations. New groundwater protection standards could affect the criteria used to site new facilities, during or after execution of the siting processes. New regulations could exempt from disposal as low-level waste significant amounts of waste that do not have concentrations of radionuclides sufficient to justify such disposal, thereby reducing the volume of low-level waste requiring disposal in the new facilities currently being planned. The complexity of managing and disposing of mixed low-level waste under two sets of regulations (those of the Nuclear Regulatory Commission and the Environmental Protection Agency) could either forge cooperation among States and compacts responsible for small volumes of the waste, or could lead to development of small, but expensive special mixed waste disposal units located in each State or compact.

As 1988 ended, the convergence of these trends and issues appears to have renewed interest among some State officials in interstate and inter-regional cooperation. As recognition of the interdependence of States and compacts has grown, compact and State officials have become more interested in their counterparts' provisions and policies for management of low-level waste. Except as noted above and in Appendix B of this report, however, many of these authorities have not been exercised to reduce the number of low-level waste disposal and management facilities necessary.

This year's report concludes, therefore, that States and compacts retain sufficient flexibility to negotiate mutually agreeable conditions for management and disposal of low-level waste for which they are responsible without revision of the fundamental framework embodied in the Low-Level Radioactive Waste Policy Amendments Act of 1985, and without imposition by the Federal Government of new terms and conditions.

APPENDIX A  
ACTIVITIES OF COMPACTS AND NON-COMPACT-MEMBER STATES  
DURING 1988

## ACTIVITIES OF SITED COMPACT REGIONS DURING 1988

This section of Appendix A reviews 1988 activities of the three sited compacts and their host States related to closure of the currently operating disposal facilities, development of new disposal sites, and regional management of low-level waste. The second section of this Appendix addresses activities of compacts and non-compact member States without currently operating disposal facilities.

The sited compact regions reviewed in this section are:

- o Northwest Interstate Compact on Low-Level Radioactive Waste Management: Alaska, Hawaii, Idaho, Montana, Oregon, Utah, Washington
- o Rocky Mountain Low-Level Radioactive Waste Compact: Colorado, Nevada, New Mexico, Wyoming
- o Southeast Interstate Low-Level Radioactive Waste Management Compact: Alabama, Florida, Georgia, Mississippi, North Carolina, South Carolina, Tennessee, Virginia.

The operating facilities in both the Rocky Mountain and Southeast Compacts are scheduled to close by December 31, 1992. Both compacts, therefore, are making plans to provide disposal capacity for their waste after this date. The operating facility in the Northwest Compact region is not scheduled to close in the foreseeable future.

NORTHWEST INTERSTATE COMPACT ON LOW-LEVEL RADIOACTIVE WASTE MANAGEMENT  
(Congressional consent: Public Law 99-240, January 15, 1986)

Member States: Alaska  
Hawaii  
Idaho  
Montana  
Oregon  
Utah  
Washington (Current Host State)

Contact: Northwest Interstate Low-Level Waste  
Management Compact Committee  
Washington Department of Ecology, PV-11  
Olympia, Washington 98504  
206/459-6244  
(Contact State of Washington at same address)

Site Closure - No Date Determined

The Northwest Compact has not established a date for closure of the regional disposal facility near Richland, Washington.

In December 1988, Washington State completed phase two of its studies on site closure and perpetual care and maintenance requirements for the currently operating regional disposal site. Phase two focused on alternative trench cover systems, perpetual care, surveillance, and maintenance programs. The designs, technical specifications, and cost estimates developed in phase two were based on existing regulations, existing descriptions of in-place waste, available subsurface data, and current technology.

Establishment of a New Disposal Facility

As noted above, the Compact has not established a date for closing the regional disposal facility. Therefore, no activities to develop a new disposal facility have been undertaken.

In February 1988, Utah licensed a facility west of Salt Lake City for disposal of certain naturally occurring and accelerator-produced radioactive materials. These materials are not defined as low-level waste in the Act, or in the provisions of the Northwest Compact. Therefore, the Compact does not limit the use of the disposal site to naturally occurring and accelerator-produced radioactive materials generated within the Compact region.

## Regional Planning and Other Activities

In accordance with the terms of congressional consent in Title II of the Act (see Section 4: Approaches to Regional Management of Low-Level Waste), the Northwest Compact authorizes importation of low-level waste from compacts and States without disposal sites into the region for disposal at its regional facility through January 1, 1993. The Northwest Compact has also agreed to accept low-level waste from the Southeast Compact that is not suitable for disposal at that region's site due to license restrictions.

In September 1988, North Dakota and the Northwest Compact Committee entered a contract allowing disposal of North Dakota's waste at the Richland, Washington, facility through 1990. The contract requires North Dakota to "...use its best efforts to continue to attempt to become a member of another compact region or to enter into a contract which will provide a long-term solution to the problem of providing for disposal of North Dakota waste." (Update: In March 1989, North Dakota passed legislation to join the Southwestern Compact, effective July 1, 1989. Although North Dakota's contract with the Northwest Compact remains in effect, the State also has access to the two other disposal sites by virtue of its membership in a compact that is in compliance with the milestones.)

In December 1988, the State of Washington notified Vermont and New Hampshire that they would be denied access to the Richland, Washington, facility on January 1, 1989, because of noncompliance with the January 1, 1988, milestone.

In February 1988, Washington State performed an informal, confidential survey of potential mixed waste generators in the seven Northwest Compact States, and contacted most major low-level waste brokers in the country. The survey found:

- o Annual mixed waste volumes are small compared to volumes of low-level radioactive waste
- o Most generators manage their mixed wastes using decay, treatment, and dilution
- o Disposal costs and perceived future liabilities would probably influence the amount of mixed waste shipped for disposal at future disposal facilities

ROCKY MOUNTAIN LOW-LEVEL RADIOACTIVE WASTE COMPACT  
(Congressional consent: Public Law 99-240, January 15, 1986)

Member States: Colorado (Next Host State)  
Nevada (Current Host State)  
New Mexico  
Wyoming

Contact: Rocky Mountain Low-Level Radioactive  
Waste Board  
1675 Broadway, Suite 1400  
Denver, Colorado 80202  
303/825-1912

Radiation Control Division  
Colorado Department of Health  
4210 East 11th Avenue  
Denver, Colorado 80220  
303/331-8497

Site Closure - By January 31, 1992

The currently operating disposal facility at Beatty, Nevada, is scheduled to close by December 31, 1992, under an agreement between the Governor of Nevada and the Rocky Mountain Compact Board. The Compact language provides that any party State identified by the Compact Board as likely to generate 20 percent or more of the region's low-level waste has an obligation to become a host State. Using this criterion, the Compact Board designated Colorado to replace Nevada as the Compact's host State by January 1, 1993.

Establishment of a New Disposal Facility

In August, Colorado asked the Compact Board to evaluate the possibility of designating a proposed facility in Uravan, Colorado, as the next regional disposal site. The site was proposed by UMETCO Mineral Corporation. The State withdrew its request in November, pending further analysis by the State of several factors, including site economics, licensing issues and public acceptability.

Colorado intends to develop a low-level radioactive waste management plan in 1989 to identify a permanent solution to Colorado's responsibilities for regional low-level radioactive waste disposal. The plan would include an analysis of the UMETCO proposal and other disposal options, and determine whether the limited waste volumes of the region, together with site development costs, would make a facility economically viable.

## Regional Planning and Other Activities

In accordance with the terms of congressional consent in Title II of the Act, the Rocky Mountain Compact authorizes importation of low-level waste into the region for disposal at its regional facility until January 1, 1993. The Compact also authorizes the importation of waste into the region by brokers for processing. (See Section 4: Approaches to Regional Management of Low-Level Waste.)

Compact language specifically prohibits the exportation of waste generated in the region, unless authorized by the Compact Board. The Board has granted a blanket authority for exporting certain types of waste for processing that are not suitable for disposal at the regional facility. Once processed, however, these wastes must be returned to the regional facility for disposal.

In December 1987, the Compact Board entered into contracts with the State of Rhode Island and the District of Columbia to dispose of their low-level waste through 1989. These contracts were the first disposal agreements designed to conform with Section 5(e)(1)(F) of the Act, which permits such agreements in lieu of compliance with the provisions of the milestones. At the end of 1988, the Rocky Mountain Compact Region was preparing to deny Vermont and New Hampshire access to the regional disposal facility because of noncompliance with the January 1, 1988 milestone.

SOUTHEAST INTERSTATE LOW-LEVEL RADIOACTIVE WASTE MANAGEMENT COMPACT  
(Congressional consent: Public Law 99-240, January 15, 1986)

Member States: Alabama  
Florida  
Georgia  
Mississippi  
North Carolina (Next Host State)  
South Carolina (Current Host State)  
Tennessee  
Virginia

Contact: Southeast Compact Commission for Low-Level  
Radioactive Waste Management  
3901 Barrett Drive, Suite 100B  
Raleigh, North Carolina 27609  
919/781-7152

Low-Level Radioactive Waste Management Authority  
State of North Carolina  
116 West Jones Street, Suite 2109  
Raleigh, North Carolina 27603  
919/733-0682

Site Closure - December 31, 1992

The currently operating disposal facility in Barnwell County, South Carolina, is scheduled to close December 31, 1992 under provisions of the Southeast Compact and South Carolina State law. The Southeast Compact Commission in September 1986 designated North Carolina as the region's second host State following South Carolina. The Governor of South Carolina formally notified the Southeast Compact Commission in November 1988 that the Barnwell facility will close on December 31, 1992, in compliance with a provision of the Compact requiring notification four years in advance of closing a regional facility.

Establishment of a New Disposal Facility

The North Carolina Low-Level Waste Management Authority began work on the site selection process in 1988. In May, the Authority adopted criteria and procedures for area and site selections. The Authority contracted with Ebasco Services, Inc. to perform Phase I of a study of the site selection process to identify potentially suitable areas for siting/operating a low-level radioactive waste disposal facility.

In November, the Authority released the results of its statewide site screening. The potentially suitable areas identified by the Authority constitute 20,446 square miles (13.1 million acres), or about 38 percent of

the State. The coastal plains region and areas with high population density made up the largest portions of land excluded in the screening process. The Authority identified the potentially suitable areas on the basis of exclusionary criteria, and did not apply "suitability" criteria at this phase of screening.

The next phase of the process is to develop suitability criteria that will be used by the Authority to identify sites for preliminary characterization. This characterization work will eliminate all but the most promising candidate sites, at least two of which will be selected for complete site characterization. The Authority is required by State law to identify the sites for complete site characterization by August 1, 1989.

The Low-Level Waste Management Authority is also responsible for the design, construction, and operation of the facility. Although these tasks may be performed by the private sector under contract, the Authority will own the disposal facility.

In June the Authority issued a Request for Proposal for a contractor(s) to develop and operate the disposal facility. Chem-Nuclear and Westinghouse Electric Corporation submitted bids. North Carolina law requires that any disposal facility must incorporate engineered barriers into all waste disposal units. Both Westinghouse and Chem-Nuclear proposed abovegrade vault concepts. The specific disposal technology used will be determined through negotiations between the Authority and the selected contractor. (Update: In 1989, the Authority initiated parallel open-ended negotiations with both companies. The object is to complete a draft contract with each company before making a final selection in July 1989.)

In 1988, North Carolina also enacted legislation outlining the process for State preemption of local ordinances prohibiting low-level radioactive waste facilities. This legislation amends the North Carolina Radiation Protection Act (Chapter 104E).

North Carolina is a Nuclear Regulatory Commission Agreement State. Standards and criteria for licensing were developed with public participation by the North Carolina Department of Human Resources' Radiation Commission with participation by the public. The site developer/operator is required to submit a license application by December 31, 1990. The Department of Human Resources is responsible for coordinating the licensing review process.

#### Regional Planning and Other Activities

At the end of 1988, the State of South Carolina was preparing to deny Vermont and New Hampshire access to its Barnwell, South Carolina, facility because of noncompliance with the January 1, 1988 milestone. In accordance with the terms of congressional consent in Title II of the Act, the

Southeast Compact Commission authorizes importation of low-level waste into the region for disposal at Barnwell until January 1, 1993. (See Section 4: Approaches to Regional Management of Low-Level Waste.)

Waste generated within the region can be exported from the region for processing but must be returned for eventual disposal. However, waste generated in the Compact can be disposed of outside the region if an authorized agent of the Compact Commission certifies that the waste is not suitable for disposal at the regional disposal facility.

During the year, each party State enacted legislation amending the Compact language to:

- o Limit each host State's tenure to 20 years (or 32 million cubic feet of waste, whichever comes first)
- o Limit the right of any party State to withdraw from the compact.

These amendments were adopted to address concerns raised by the second host State, North Carolina. North Carolina has enacted legislation that withdraws the State from the Compact if, by December 3, 1992, Congress has not granted its consent to the Compact amendments.

ACTIVITIES OF STATES AND COMPACTS  
WITHOUT CURRENTLY OPERATING DISPOSAL SITES DURING 1988

This section of Appendix A reviews 1988 site development and planning activities in compacts and non-compact member States without currently operating low-level waste disposal facilities. These compacts and States are:

- o Appalachian States Low-Level Radioactive Waste Compact:  
Delaware, Maryland, Pennsylvania, West Virginia
- o Central Interstate Low-Level Radioactive Waste Compact:  
Arkansas, Kansas, Louisiana, Nebraska, Oklahoma
- o Central Midwest Interstate Low-Level Radioactive Waste Compact:  
Illinois, Kentucky
- o Midwest Interstate Low-Level Radioactive Waste Management  
Compact: Indiana, Iowa, Michigan, Minnesota, Missouri,  
Ohio, Wisconsin
- o Northeast Interstate Low-Level Radioactive Waste Management  
Compact: Connecticut, New Jersey
- o Southwestern Low-Level Radioactive Waste Disposal Compact:  
Arizona, California
- o District of Columbia
- o Maine
- o Massachusetts
- o New Hampshire
- o New York
- o North Dakota
- o Puerto Rico
- o Rhode Island
- o South Dakota
- o Texas
- o Vermont

APPALACHIAN STATES LOW-LEVEL RADIOACTIVE WASTE COMPACT  
(Congressional consent: Public Law 100-319, May 19, 1988)

Member States: Pennsylvania (Host State)  
Delaware  
Maryland  
West Virginia

Contact: Commonwealth of Pennsylvania  
Department of Environmental Resources  
Post Office Box 2063  
Harrisburg, Pennsylvania 17120  
717/787-2163

Compact Commission not yet established.

July 1, 1986 Milestone

The party States of the Appalachian Compact enacted compact legislation prior to the milestone date. Therefore, the Department of Energy and the sited States determined that the Compact was in compliance with the milestone.

January 1, 1988 Milestone

The language of the Appalachian Compact names Pennsylvania as the initial host State. Because the Appalachian Compact Commission had not been appointed prior to January 1, 1988, the Governor of Pennsylvania submitted a siting plan and other documentation, in response to the milestone, to the Department of Energy and the sited States on behalf of the Appalachian Compact in December 1987. These entities determined that the Compact was in compliance with the milestone.

Upcoming Milestones and Deadlines

According to the siting plan submitted by Pennsylvania on behalf of the Appalachian Compact, a disposal site license application will not be submitted by January 1, 1990. Therefore, the Appalachian Compact intends to comply with the January 1, 1990, milestone by submitting Governors' Certifications.

The disposal site operator-designee is expected to submit a license application by January 1992, near the January 1, 1992 milestone date for such applications. Under the current schedule beginning of operation of the facility is planned for July 1994. This date is after the January 1, 1993, date on which access to the currently operating disposal facilities

may be ended, but prior to the January 1, 1996, date after which States may be required to take title to low-level waste or assume liability for the consequences of not taking title.

SUMMARY OF PLANS FOR UPCOMING MILESTONES

January 1, 1990 -- License application or Governors' Certifications

- o Governors' Certifications planned

January 1, 1992 -- Submit license application

- o Submit license application: January 1992

January 1, 1993 -- End of access to currently operating sites

January 1, 1996 -- If no site, take title to waste or assume liability

- o Operation of regional site planned: July 1994

Establishment of a Disposal Facility

During 1988, the Department of Environmental Resources held twelve public meetings and three public hearings on proposed low-level waste regulations. The proposed regulations will be revised as necessary to incorporate recommendations obtained through the public hearings, and are expected to be submitted to the Pennsylvania Environmental Quality Board for final approval in February 1989. Final regulations should be issued in May 1989.

In April, a request for proposals for a disposal site operator-licensee designee was issued by the Department of Environmental Resources. Although six letters of intent were received, all were officially withdrawn by the bid deadline. In response, the Department revised and reissued the request for proposal in July 1988. Two companies, U.S. Ecology Appalachian and Chem Nuclear Systems, submitted proposals in response to the revised request. The Department plans to complete a contract with the developer-licensee designee by June 1989.

### Regional Planning and Other Activities

The Compact Commission will consist of two representatives from each of the member States, four from the host State, and one from the host municipality. As of the end of 1988, only Commissioners from Pennsylvania had been appointed. The other Compact member States plan to appoint Commissioners so that the Commission can convene during 1989. The States expect the Commission to hire an executive director and locate its offices in Harrisburg, Pennsylvania.

CENTRAL INTERSTATE LOW-LEVEL RADIOACTIVE WASTE COMPACT  
(Congressional consent: Public Law 99-240, January 15, 1986)

Member States: Arkansas  
Kansas  
Louisiana  
Nebraska (Host State)  
Oklahoma

Contact: Central Interstate Low-Level Radioactive  
Waste Compact Commission  
3384 Peachtree Road, Suite 260  
Atlanta, Georgia 30326  
404/261-7114

Nebraska Department of Environmental Control  
301 Centennial Mall South  
Lincoln, Nebraska 68509  
402/471-3372

July 1, 1986 Milestone

The party States of the Central Compact enacted compact legislation prior to the milestone date. Therefore, the Department of Energy and the sited States determined that the Compact was in compliance with the milestone.

January 1, 1988 Milestone

On December 15, 1987, the Central Compact designated Nebraska as its first host State for a regional disposal facility. Also in December of that year, the Compact Commission submitted a siting plan and other documentation in response to the milestone to the Department of Energy and the sited States. These entities determined that the Compact was in compliance with the milestone.

Upcoming Milestones and Deadlines

Under the Compact's current schedule, a disposal site license application will not be submitted by January 1, 1990. Therefore, the Central Compact plans to comply with the January 1, 1990, milestone by submitting Governors' Certifications.

The disposal site license application is scheduled to be submitted by July 1990, prior to the January 1, 1992, milestone for submission of such applications. The facility is scheduled to begin operation January 1993, near the January 1, 1993 date on which access to the currently operating disposal facilities may be ended.

### SUMMARY OF PLANS FOR UPCOMING MILESTONES

January 1, 1990 -- License application or Governors' Certifications

- o Governors' Certifications planned

January 1, 1992 -- Submit license application

- o Submission of license application planned: July 1990

January 1, 1993 -- End of access to currently operating sites

January 1, 1996 -- If no site, take title to waste or assume liability

- o Operation of regional site planned: January 1993

### Establishment of a Disposal Facility

The Central Compact selected U.S. Ecology as its site developer/operator and entered a contract with the company in January 1988. Three candidate sites will be selected by U.S. Ecology in January 1989. A complete site characterization program will be conducted on each site beginning in April 1989. The project is proceeding on schedule to meet each of the milestones and the deadline in the Act. The disposal facility will use an abovegrade reinforced concrete vault design.

U.S. Ecology formed a Citizens Advisory Committee to provide guidance to the company on the site selection approach and state-wide exclusionary screening criteria. The Nebraska League of Women Voters moderated a series of public workshops to assist the Advisory Committee in making recommendations to U.S. Ecology on these processes.

U.S. Ecology solicited volunteer communities for preliminary siting studies and was subsequently contacted by forty-nine communities and eleven counties.

The Nebraska Low-Level Radioactive Waste Disposal Act became effective in April 1988. The State's Department of Environmental Control is designated as the agency responsible for administration of the Act. The Act directs the Department to develop a program to regulate low-level waste disposal based on "zero-release" objective. The Act declares that it is the intent of the Legislature that potential host communities be actively

and voluntarily involved in the siting process. A specific appropriation is provided to establish and operate a local monitoring committee for each proposed site area, with provisions for continuing the local monitoring committee in the site area that is finally selected.

#### Regional Planning and Other Activities

In late 1988, the Nebraska League of Women Voters and the University of Nebraska Extension Service co-sponsored a day-long televised conference on low-level waste management in the State. A panel of national experts on low-level waste management discussed issues and responded to questions from public audiences assembled in twelve locations across the State. Nebraska officials who evaluated the results of the teleconference, reported that the approach was a cost effective method of communicating with the public, especially in areas with widely dispersed populations.

A referendum on the November 1988 ballot to withdraw Nebraska from the Central Compact and require local and statewide voter approval of a site was defeated by 64 to 34 percent. All eleven potential volunteer counties voted to defeat the measure.

CENTRAL MIDWEST INTERSTATE LOW-LEVEL RADIOACTIVE WASTE COMPACT  
(Congressional consent: Public Law 99-240, January 15, 1986)

Member States: Illinois (Host State)  
Kentucky

Contact: Central Midwest Compact Commission  
for Low-Level Radioactive Waste Management  
1035 Outer Park Drive  
Springfield, Illinois 62704  
217/785-9937  
(Contact State of Illinois at same address)

July 1, 1986, Milestone

The party States of the Central Midwest Compact enacted compact legislation prior to the milestone date. Therefore, the Department of Energy and the sited States determined that the Compact was in compliance with the milestone.

January 1, 1988 Milestone

The Central Midwest Compact language stipulates that any member State that produces less than 10 percent of the region's waste may not be selected to host a facility. With Kentucky thereby excluded, in 1987 the Central Midwest Compact Commission designated Illinois as the host State for a period of 20 years.

The Central Midwest Compact Commission submitted a siting plan and documentation to the Department of Energy and the Sited States in December 1987. These entities determined that the Compact was in compliance with the milestone.

Upcoming Milestones and Deadlines

Under the current schedule, the developer/operator of the proposed disposal facility, should submit a disposal facility license application to the Illinois Department of Nuclear Safety in December 1989, prior to the January 1, 1990, milestone. Therefore, it appears that the Compact will comply with the milestone by submitting the license application, and not by submitting Governors' Certifications. Submission of a complete license application would also fulfill the requirements of the January 1, 1992, milestone.

The current schedule calls for beginning of operation of the facility in January 1992, prior to the January 1, 1993 date on which access to the currently operating disposal sites may be ended.

### SUMMARY OF PLANS FOR UPCOMING MILESTONES

January 1, 1990 -- License application or Governors' Certifications

- o License application planned

January 1, 1992 -- Submit license application

- o Submission of license application planned: December 1989

January 1, 1993 -- End of access to currently operating sites

January 1, 1996 -- If no site, take title to waste or assume liability

- o Operation of regional site planned: January 1992

### Establishment of a Disposal Facility

In January 1988, the Illinois Department of Nuclear Safety announced that sixty areas, four square miles each, in seventeen counties had been identified as potential candidate areas for the disposal facility. Battelle and Hansen Engineering, contractors for siting the facility, began detailed characterization studies at one site in Clark County in March. Subsequently, site characterization studies were initiated in another Clark County location and in two Wayne County locations. The Department of Nuclear Safety cancelled site characterization activities at one of the Wayne County sites in November because of difficulties in negotiating access agreements with affected landowners.

In May the Department of Nuclear Safety announced its selection of Westinghouse Electric Company to negotiate for the construction and operation of the Central Midwest region's low-level waste disposal facility. Westinghouse had proposed an engineered disposal facility using the company's SUREPAK concept. At year's end, the Department and Westinghouse had not completed a final agreement. (Update: In May 1989, the Illinois Department of Nuclear Safety announced that it was opening negotiations with Chem-Nuclear Systems for construction, operation and closure of the low-level waste disposal facility.)

Nonbinding referendums were held in November in both Clark and Wayne Counties on whether or not to host a low-level waste disposal facility. Both Counties voted to recommend that a disposal facility not be developed. However, a large majority of voters in Martinsville township, which has jurisdiction over both potential site locations in Clark County, voted to recommend that a disposal site be developed.

### Regional Planning and Other Activities

On July 21, 1988, the Compact Commission adopted its Regional Management Plan. The Plan contains policies of the Compact regarding importation and exportation of waste and access to regional low-level waste management facilities. (See Appendix B)

MIDWEST INTERSTATE LOW-LEVEL RADIOACTIVE WASTE MANAGEMENT COMPACT  
(Congressional consent: Public Law 99-240, January 15, 1986)

Member States: Indiana  
Iowa  
Michigan (Host State)  
Minnesota  
Missouri  
Ohio  
Wisconsin

Contact: Midwest Interstate Low-Level Radioactive  
Waste Commission  
350 N. Robert Street, Room 588  
St. Paul, Minnesota 55101  
612/293-0126

Michigan Low-Level Radioactive Waste Authority  
Hollister Building, 108 W. Allegan St., Suite 554  
Lansing, Michigan 48909  
517/335-0430

July 1, 1986 Milestone

The party States of the Midwest Compact enacted compact legislation prior to the milestone date. Therefore, the Department of Energy and the sited States determined that the Compact was in compliance with the milestone.

January 1, 1988 Milestone

Michigan was selected as the host State on June 30, 1987, by resolution of the Midwest Compact Commission. In December, the Michigan Low-Level Radioactive Waste Authority submitted a siting plan and other documentation in response to the milestone to the Department of Energy and the sited States. These entities determined that the Compact was in compliance with the milestone.

Upcoming Milestones and Deadlines

Under the current schedule a disposal facility license application will not be submitted by January 1, 1990. Therefore, the Midwest Compact plans to comply with the January 1, 1990, milestone by submitting Governors' Certifications.

The disposal site license application is scheduled to be submitted October 1991, prior to the January 1, 1992, milestone for submission of such applications.

Beginning of facility operation is scheduled for May 1995. This is after the January 1, 1993, date when access to the currently operating disposal sites may be ended; but prior to the January 1, 1996, date on which States are to take title to low-level waste or assume liability for the consequences of not taking title.

**SUMMARY OF PLANS FOR UPCOMING MILESTONES**

**January 1, 1990 -- License application or Governors' Certifications**

- o Governors' Certifications planned

**January 1, 1992 -- Submit license application**

- o Submission of license application planned: October 1991

**January 1, 1993 -- End of access to currently operating sites**

**January 1, 1996 -- If no site, take title to waste or assume liability**

- o Operation of regional site planned: May 1995

**Establishment of a Disposal Facility**

The Michigan Low-Level Radioactive Waste Authority plans to select three sites for characterization. The Authority began developing area exclusionary screening criteria in 1988. A study using a Geographical Information System was initiated by Michigan State University to identify suitable areas within the State. The study will be completed in 1989 after the exclusionary criteria are finalized. Final site selection is scheduled for September 1991.

Facility development is the responsibility of the Authority which will contract with a developer-operator. Financial assurances for long-term liability fund, remedial action fund, and long-term care fund are included in Michigan law (P.A. 204 of 1987).

(Update: On January 31, 1989, the Governor of Michigan halted all site selection activities in the State, and announced that action would be taken on July 1, 1989, to withdraw Michigan from the Midwest Compact unless two actions were taken: (a) Midwest Compact States correct flaws in current Compact legislation, and (b) the Governors of the Midwest Compact States join the Governor of Michigan in actively working with their congressional delegations to ensure that Congress moves to reduce the number of low-level waste disposal facilities and to provide the necessary institutional and economic stability for a viable low-level waste management system. On February 26, 1989, the Michigan Governor resumed the site selection process after the other Governors indicated their support for these two measures.)

### Regional Planning and Other Activities

The Compact Commission began negotiating terms of an amendment to the Compact to address issues of concern to the member States. Following agreement on specific language, each State would need to amend the Compact through its legislative process. Provisions that have been discussed include:

- o Shared costs and liability
- o Member-state withdrawal
- o Host State withdrawal
- o Sovereign immunity
- o Dispute resolution.

The Compact Commission and the Michigan Authority signed a pre-operational funding agreement which provides Michigan with site development funding. The fund is based on export fees levied on the utilities within the Compact region that have operating commercial nuclear power reactors. The appropriation from the Compact to the Michigan Authority must be approved annually by the Compact Commission. The State of Michigan does not intend to provide funding for disposal site development.

NORTHEAST INTERSTATE LOW-LEVEL RADIOACTIVE WASTE MANAGEMENT COMPACT  
(Congressional consent: Public Law 99-240, January 15, 1986)

Member States: Connecticut (Host State)  
New Jersey (Host State)

Contact: Northeast Interstate Low-Level  
Radioactive Waste Commission  
195 Nassau Street, 2nd Floor  
Princeton, New Jersey 08542  
609/497-1447

Connecticut Hazardous Waste Management Service  
900 Asylum Avenue  
Suite 360  
Hartford, Connecticut 06105-1904  
203/244-2007

New Jersey Low-Level Radioactive Waste Disposal Facility Siting  
Board permanent office location not established at the time of  
this report.

July 1, 1986 Milestone

The party States of the Northeast Interstate Low-Level Radioactive Waste Management Compact enacted compact legislation prior to the milestone date. Therefore, the Department of Energy and the sited States determined that the Compact was in compliance with the milestone.

January 1, 1988 Milestone

In December 1987, the Northeast Compact Commission designated both of its member States, Connecticut and New Jersey, as host States for a disposal facility. The Compact Commission explored a variety of options for dividing disposal responsibilities equitably between the two States. These included:

- o a disposal facility in each State that would dispose of each State's low-level waste
- o a disposal facility for Class A waste in one State, and a disposal facility for Classes B and C waste in the other State
- o a treatment and interim storage facility in one State and a disposal facility in the other State
- o a disposal facility for mixed waste in one State, and a disposal facility for non-mixed low-level waste in the other State.

Also in December, the Compact Commission submitted a siting plan and other documentation in response to the milestone to the Department of Energy and the sited States. The siting plan consisted of two parts that had been prepared by Connecticut and New Jersey, each describing plans for establishing a disposal facility. The Department of Energy and the sited States determined that the Compact was in compliance with the milestone.

#### Upcoming Milestones and Deadlines

Both Connecticut and New Jersey plan to submit disposal site license applications after the January 1, 1990, milestone. Therefore, the Compact plans to comply with the milestone by submitting Governors' Certifications.

Both disposal site license applications are scheduled for submission December 1991, prior to the January 1, 1992, milestone for submission of such applications.

Beginning of operation of the disposal sites in Connecticut and New Jersey currently is scheduled for April 1994 and September 1994, respectively. These dates are after the January 1, 1993, date on which access to the currently operating disposal facilities may be denied; but prior to the January 1, 1996, date on which States may be required to take title to low-level waste or assume liability for the consequences of not taking title.

#### SUMMARY OF PLANS FOR UPCOMING MILESTONES

##### Connecticut

**January 1, 1990 -- License application or Governor's Certification**

- o Governor's Certification planned

**January 1, 1992 -- Submit license application**

- o Submission of license application planned: December 1991

**January 1, 1993 -- End of access to currently operating sites**

**January 1, 1996 -- If no site, take title to waste or assume liability**

- o Operation of regional site planned: April 1994

## SUMMARY OF PLANS FOR UPCOMING MILESTONES

### New Jersey

January 1, 1990 -- License application or Governor's Certification

- o Governor's Certification planned

January 1, 1992 -- Submit license application

- o Submission of license application planned: December 1991

January 1, 1993 -- End of access to currently operating sites

January 1, 1996 -- If no site, take title to waste or assume liability

- o Operation of regional site planned: September 1994

### Establishment of a Disposal Facility

Connecticut. In May 1988, the Connecticut General Assembly enacted an amendment (Public Law 88-361) to the State's facility siting law. The Hazardous Waste Management Service, which is responsible for site selection, began planning revisions to the "1988 Connecticut Hazardous Waste Management Plan." As a result of the amendment and the planned revisions to the Management Plan, the Service prepared a new schedule for siting the Connecticut disposal facility. The revisions to the Management Plan will also provide the Governor information necessary to prepare a Governor's Certification in response to the January 1, 1990, milestone.

The Hazardous Waste Management Service also began compiling applicable Federal and State site selection criteria (which will be reviewed for inclusion) as part of the State's site selection methodology. The Connecticut Siting Council issued siting regulations and procedures that will be used by the Service in obtaining the Council's certification of the site. Although Connecticut is not a Nuclear Regulatory Commission Agreement State, the Department of Environmental Protection is in the process of developing low-level waste regulations comparable to those of the Commission, as required by State law.

New Jersey. The New Jersey Low-Level Radioactive Waste Disposal Facility Siting Board and its Advisory Committee began meeting in September 1988. By the end of the year, the groups had implemented a workplan for completing the requirements of the New Jersey Low-Level Radioactive Waste Siting Act. The groups also began the process of developing siting criteria for the Board to adopt in November 1989. The current schedule calls for site selection by December 1990.

The Board began developing a request for proposals for a consultant to assist in the siting process and intends to require the potential site developer/operator to submit a license application to the Nuclear Regulatory Commission by January 1, 1992.

The New Jersey Department of Environmental Protection is evaluating the need for enabling regulations in the area of low-level radioactive waste reporting requirements, inspection responsibilities, and funding to support its mandated activities.

At the end of 1988, the Advisory Committee to the Siting Board was developing siting criteria for the Board to consider in April 1989. However, the Committee does not expect siting criteria to be issued until November 1989. The Siting Board is also developing a request for proposals for consultant services to assist in the siting effort. The current schedule calls for selection by December 1990.

#### Regional Planning and Other Activities

The New Jersey Low-Level Radioactive Waste Disposal Facility Siting Board undertook efforts to obtain continued funding for the siting effort, to hire an executive director and to develop a public participation/education plan. The Department of Environmental Protection began evaluating the need for regulations detailing low-level waste reporting requirements, inspection responsibilities and funding to support the mandated activities of the Department.

SOUTHWESTERN LOW-LEVEL RADIOACTIVE WASTE DISPOSAL COMPACT  
(Congressional consent: Public Law 100-712, November 23, 1988)

Member States: Arizona  
California (Host State)  
North Dakota (Eligible)  
South Dakota (Eligible)

(Update: In February 1989 and March 1989, South Dakota and North Dakota, respectively, joined the Southwestern Compact. The North Dakota legislation specified that its membership would become effective July 1, 1989.)

Contact: California Department of Health Services  
714/744 P Street  
Sacramento, California 95814  
916/445-0498

Compact Commission not yet established.

July 1, 1986 Milestone

The Southwestern Compact was formed on July 8, 1988, when Arizona became a member of the Compact. Because funds in the Department of Energy's surcharge escrow account for the July 1, 1986, milestone period had already been disbursed, the Department did not evaluate the compliance status of the Compact with respect to this milestone. However, formation of the Compact through enactment by the member States of compact legislation would fulfill the requirement of the milestone. The sited States, who review the milestone compliance status of compacts and States on an ongoing basis, consider the Southwestern Compact to be in compliance with the milestone.

January 1, 1988 Milestone

Prior to formation of the Southwestern Compact, California, as a non-compact member State, was determined by the Department of Energy and the sited States to be in compliance with the January 1, 1988, milestone. Because California was designated host State under the terms of the Compact, and because its siting plan and implementation authority are unaffected by membership in the compact, the Southwestern Compact is in compliance with the January 1, 1988, milestone.

Upcoming Milestones and Deadlines

Under the current schedule, a disposal site license application should be submitted in mid-1989, prior to the January 1, 1990, milestone, which requires submission of a disposal site license application or submission of

Governors' Certifications. However, because the planned disposal facility may not be licensed to accept all the waste for which the State is responsible under the Act (mixed low-level waste may be excluded from the disposal facility), the Compact may also submit Governors' Certifications in response to the milestone, describing plans for management of the excluded waste after 1992.

The current schedule calls for beginning of operation of the disposal site in late 1991, prior to the January 1, 1992, milestone, and well before the January 1, 1993, date on which access to the currently operating disposal sites may be ended.

#### SUMMARY OF PLANS FOR UPCOMING MILESTONES

January 1, 1990 -- License application or Governors' Certifications

- o License application planned
- o Governors' Certifications for mixed waste

January 1, 1992 -- Submit license application

- o Submission of license application planned: Mid 1989

January 1, 1993 -- End of access to currently operating sites

January 1, 1996 -- If no site, take title to waste or assume liability

- o Operation of regional site planned: 2nd Half 1991

#### Establishment of a Disposal Facility

In March 1988, the California Department of Health Services accepted a recommendation from its contractor, U.S. Ecology, to designate a site in the Ward Valley as its preferred facility location. A site in the Silurian Valley site was selected as an alternative location, and a site in the Panamint Valley was dropped from further consideration.

U.S. Ecology began full site characterization of the Ward Valley site in March 1988. Site characterization which requires collection of at least 12 months of site data, will continue into 1989. The company will also collect a limited amount of site data on the alternative site over this time period.

The disposal facility will use enhanced shallow-land burial technology, using deeper burial depths than those required by Nuclear Regulatory Commission regulations. The selection of a technology was based partly on the results of an evaluation prepared for the State by the Envirosphere Company, which examined various enhancements to shallow-land burial suitable for the California environment and the costs and safety benefits of each.

#### Regional Planning and Other Activities

The Compact-member States do not plan to establish a Compact Commission until July 1990.

## DISTRICT OF COLUMBIA

Contact: Government of the District of Columbia  
Department of Consumer  
and Regulatory Affairs  
614 H Street, NW  
Washington, DC 20001  
202/727-7190

### July 1, 1986 Milestone

Although the provisions of the Northeast Compact do not name the District of Columbia as an eligible member, the Government of the District passed temporary enabling legislation for membership in the Northeast Compact. Because the District had thereby "enacted compact legislation," the sited States found the District in compliance with the July 1, 1986, milestone. The Department of Energy, however, determined that, for purposes of eligibility for a surcharge rebate, the District had not complied with the milestone.

### January 1, 1988 Milestone

In March 1987, the District of Columbia petitioned the Rocky Mountain Low-Level Radioactive Waste Board to enter into a contract for disposal of the District's waste. Following discussions throughout the year, a contract, effective through 1989, was approved by both parties in December 1987.

The District submitted the contract to the Department of Energy as evidence of compliance with the January 1, 1988 milestone under Section 5(e)(1)(F) of the Act. This section provides that if a State enters into "...an agreement with the compact commission of a region in which a regional disposal facility is located to provide for the disposal of all low-level radioactive waste generated within such State...", it may "...be deemed to be in compliance..." with the milestones. Using this mechanism, the District of Columbia was determined to be in compliance with the requirements of this milestone.

### Upcoming Milestones and Deadlines

In early 1989, the District expects to submit a formal petition for renewal of its disposal contract with the Rocky Mountain Compact through December 1992.

#### SUMMARY OF PLANS FOR UPCOMING MILESTONES

January 1, 1990 -- License application or Governor's Certification

- o Disposal contract planned

January 1, 1992 -- Submit license application

- o Disposal contract planned

January 1, 1993 -- End of access to currently operating sites

January 1, 1996 -- If no site, take title to waste or assume liability

- o Disposal contract planned

### Establishment of a Disposal Facility

The District of Columbia has no plans to establish a low-level waste disposal facility.

## MAINE

Contact: Maine Low-Level Radioactive Waste Authority  
99 Western Avenue, Suite 101  
Augusta, Maine 04330  
207/626-3249

### July 1, 1986 Milestone

The State of Maine enacted legislation indicating its intent to develop a disposal facility (Public Law 705, 1986). Therefore, the Department of Energy and the sited States determined Maine to be in compliance with the milestone.

### January 1, 1988 Milestone

Maine submitted a siting plan and other documentation in response to the milestone to the Department of Energy and the sited States. The Department of Energy determined Maine to be in compliance with the milestone. Initially, the sited States determined that Maine was out of compliance. After reviewing additional material furnished by Maine subsequent to the determination, the sited States determined Maine to be in compliance in early 1988.

### Upcoming Milestones and Deadlines

Under the current schedule, Maine does not plan to submit a disposal site license application prior to January 1, 1990. Therefore, the State plans to comply with the milestone by submitting a Governor's Certification.

Maine plans to submit a disposal site license application December 1991, just prior to the January 1, 1992, milestone date for such applications.

Under the current schedule the facility would become operational in December 1995. This is after the January 1, 1993, date on which access to the current disposal sites may be ended; and just prior to January 1, 1996, the date after which States may be required to take title to low-level waste or assume liability for the consequences of not taking title.

### SUMMARY OF PLANS FOR UPCOMING MILESTONES

January 1, 1990 -- License application or Governor's Certification

- o Governor's Certification planned

January 1, 1992 -- Submit license application

- o Submission of license application planned: December 1991

January 1, 1993 -- End of access to currently operating sites

January 1, 1996 -- If no site, take title to waste or assume liability

- o Operation of regional site planned: December 1995

### Establishment of a Disposal Facility

In June 1988, the Maine Low-Level Radioactive Waste Authority sponsored a site selection workshop for its members, State officials, and interested members of the public. The purpose of the workshop was to discuss various approaches to site selection in the context of current Federal requirements for disposal site performance.

In December, the Authority established a contract with the E. C. Jordan Company of Portland, Maine, to develop a site screening methodology, perform broad statewide site screening, and select candidate sites for further evaluation. Final site selection is scheduled for December 1991.

Maine State law requires the Board of Environmental Protection to conduct hearings on any proposed low-level waste storage or disposal facility. Taking into account these findings and the conclusions drawn from them, the Board will either recommend approval of the facility to the State legislature or deny permission for construction and operation of the proposed facility. In April, the Maine Department of Environmental Protection issued draft rules governing low-level waste generated within the State of Maine. After extensive public comment, the rules were issued in final form in October.

### State Planning and Other Activities

In September, the State Public Advocate provided testimony on behalf of Maine to a Texas legislative subcommittee, which is considering options for compact formation.

The law creating the Maine Low-Level Radioactive Waste Authority authorizes the group to assess each of the State's low-level waste generators a service fee to fund its administrative and operational costs. The service fee schedule is to be based 50 percent on volume and 50 percent on radioactivity level of each generator's low-level waste generated during the previous year. The Authority is to assess a total of \$200,000 per year in this manner. In September 1988, the Authority issued rules for assessing the service fee and sent notices of assessment to each of the State's low-level waste generators. In October, the Department of the Navy notified the Maine Authority that it would not pay its generator assessment. The Authority referred the notification to the Maine Attorney General for any action on the part of the State.

Maine law also requires the Authority to assess any nuclear power plant in the State up to a total of \$10 million through 1992 for the cost of planning, siting, licensing and constructing a disposal facility. In October 1988, the Authority and Maine Atomic Power Company, operator of the only nuclear power plant in the State, reached an agreement on the assessment including a schedule of annual payments for an assessment totaling \$10 million from 1988 through 1992.

In December, as required by State law, the Authority completed an annual revision to its low-level waste management plan (siting plan) and scheduled a public hearing on the revised plan for the first week of January 1989.

## MASSACHUSETTS

Contact: Commonwealth of Massachusetts  
Low-Level Radioactive Waste Management Board  
100 Cambridge Street  
Boston, Massachusetts 02202  
617/727-9800

### July 1, 1986 Milestone

On May 12, 1986, the Governor of the Commonwealth of Massachusetts provided the Department of Energy and the sited States a certification that the State intended to develop a disposal facility for low-level waste. Therefore, the Department of Energy and the sited States determined Massachusetts to be in compliance with the milestone.

### January 1, 1988 Milestone

Massachusetts submitted a siting plan and other documentation in response to the January 1, 1988, milestone to the Department of Energy and the sited States. These entities determined Massachusetts to be in compliance with the milestone.

### Upcoming Milestones and Deadlines

Under the current schedule, Massachusetts does not plan to submit a disposal site license application prior to the January 1, 1990, milestone. Therefore, the State plans to comply with the milestone by submitting a Governor's Certification.

The disposal site license application is scheduled for submission September 1991, prior to the January 1, 1992, milestone for such applications.

The disposal facility is scheduled to begin operation September 1993. This is after the January 1, 1993 date on which access to the currently operating disposal sites may be ended; but prior to the January 1, 1996, date after which States may be required to accept title to low-level waste or assume liability for the consequences of not taking title.

### SUMMARY OF PLANS FOR UPCOMING MILESTONES

January 1, 1990 -- License application or Governor's Certification

- o Governor's Certification planned

January 1, 1992 -- Submit license application

- o Submission of license application planned: September 1991

January 1, 1993 -- End of access to currently operating sites

January 1, 1996 -- If no site, take title to waste or assume liability

- o Operation of regional site planned: September 1993

#### Establishment of a Disposal Facility

In November the Department of Environmental Quality Engineering established a contract with the Arthur D. Little Co. of Cambridge, Massachusetts, to assist the Department in preparing siting criteria. Site selection is scheduled for completion by January 1991.

#### State Planning and Other Activities

Appointments to the Massachusetts Low-Level Radioactive Waste Management Board were completed in July 1988. The Board held its first meeting in September. A temporary chairperson was appointed to act until July 1989, at which time the Board will hold its regular election.

In subsequent meetings through the end of 1988, the Board initiated several administrative actions required to begin operation as a new State agency. The Board prepared and submitted for the Governor's approval, a budget for operating funds through the end of FY 1989. The Board also prepared a budget for FY 1990. A long-term-funding committee was formed to prepare a capital budget for expenditures beginning in 1991. The Board began preparing the job descriptions and administrative actions necessary to fill its key staff positions.

During 1988, the Massachusetts Department of Public Health held several hearings concerning its intended actions to obtain authorization from the Environmental Protection Agency to regulate mixed wastes generated within the State.

The Board expects to issue a request for proposals early in 1989 for a contractor to assist in preparing the low-level waste management plan, for which it is responsible under State law.

## NEW HAMPSHIRE

Contact: New Hampshire Department of  
Environmental Services  
6 Hazen Drive  
Concord, New Hampshire 03301  
603/271-3503

### July 1, 1986 Milestone

The State of New Hampshire enacted compact legislation on May 20, 1986. The Northern New England Compact named Vermont and Maine as eligible member States. Although the Compact legislation has not been repealed, neither of the other States has taken action on the proposal. The Department of Energy did not evaluate New Hampshire for compliance with the July 1, 1986, milestone because the State had no funds attributable to it for potential rebate in the Department's surcharge escrow account. The sited States determined New Hampshire to be in compliance with the milestone.

### January 1, 1988 Milestone

New Hampshire did not submit documentation to the Department of Energy or the sited States in response to the January 1, 1988, milestone. Therefore, these entities determined that New Hampshire was not in compliance with the milestone. In December, Washington State notified New Hampshire that it would not accept the State's low-level waste at the Northwest Compact's regional disposal facility. The other sited States are preparing to take similar action in early 1989.

### Upcoming Milestones and Deadlines

New Hampshire does not have plans to develop a low-level waste disposal facility.

During 1988, informal discussions took place with other unaffiliated northeastern States to examine contracting and compacting possibilities. Leaders of the State legislature and other involved parties expect to meet with the new governor early in 1989 to establish the State's direction on low-level waste management.

**SUMMARY OF PLANS FOR UPCOMING MILESTONES**

**January 1, 1990 -- License application or Governor's Certification**

- o Evaluating options

**January 1, 1992 -- Submit license application**

- o Evaluating options

**January 1, 1993 -- End of access to currently operating sites**

**January 1, 1996 -- If no site, take title to waste or assume liability**

- o Evaluating options

## NEW YORK

Contact: New York State Energy Research  
and Development Authority  
Two Rockefeller Plaza  
Albany, New York 12223  
518/465-6251  
(Disposal facility development)

New York State Low-Level  
Radioactive Waste Siting Commission  
1215 Western Avenue  
Albany, New York 12203  
518/438-6130  
(Disposal site location)

### July 1, 1986 Milestone

In 1986, the State of New York enacted legislation indicating its intent to develop a low-level waste disposal facility. The law also established the framework for development, operation, closure, and long-term care of the facility. The Department of Energy and the sited States determined New York to be in compliance with the milestone.

### January 1, 1988 Milestone

In December 1987 the New York State Energy Research and Development Authority submitted a siting plan and other documentation to the Department of Energy and the sited States in response to the January 1, 1988, milestone. These entities determined New York to be in compliance with the milestone.

### Upcoming Milestones and Deadlines

Under the current schedule, New York does not plan to submit a disposal site license application prior to the January 1, 1990 milestone. Therefore, the State plans to comply with the milestone by submitting a Governor's Certification.

The disposal site license application is scheduled for submission September 1991. This is prior to the January 1, 1992, milestone for submission of such applications.

The disposal facility currently is scheduled to begin operations by January 1, 1993, the date on which access to the currently operating disposal facilities may be ended. The State is currently reviewing the anticipated opening date for its disposal facility, but is committed to beginning acceptance of low-level waste at the facility by this date.

### SUMMARY OF PLANS FOR UPCOMING MILESTONES

**January 1, 1990 -- License application or Governor's Certification**

- o Governor's Certification planned

**January 1, 1992 -- Submit license application**

- o Submission of license application planned: September 1991

**January 1, 1993 -- End of access to currently operating sites**

**January 1, 1996 -- If no site, take title to waste or assume liability**

- o Operation of regional site planned: January 1993

### Establishment of a Disposal Facility

The New York State Low-Level Radioactive Waste Siting Commission plans to file an application for certification of its selected site(s) and disposal method(s) in December 1990. The certification procedure is essentially phase one of a two-phase regulatory approval process. In the second phase, the Energy Authority will file an application for the licenses and permits required to construct and operate the State's disposal facilities. Given the current Siting Commission schedule, the Energy Authority anticipates filing its applications in September 1991.

The Siting Commission has acquired the services of Roy F. Weston, Inc. to provide assistance in a broad range of areas, including the selection and characterization of candidate disposal sites, evaluation of alternative disposal methods, and development of an application for certification of the site and disposal method by the Department of Environmental Conservation. Following these certifications, the Energy Authority will submit applications for all required State licenses and permits for construction and operation of the facility. New York is a Nuclear Regulatory Commission Agreement State.

By the end of 1988, the Commission had established procedures for selection of a site and disposal method, collected applicable data, performed statewide exclusionary site screening, and developed a generic plan for the Environmental Impact Statement necessary to support the selection of a site and disposal method.

On December 20, 1988 the Siting Commission selected 10 candidate areas of New York for further specific investigation and consideration as possible sites for the State's disposal facility. Following selection of the final site in June 1990, site characterization is scheduled for completion by October 1990.

#### State Planning and Other Activities

New York State's 1988 Siting Plan schedule (as established by the New York State Low-Level Radioactive Waste Management Act) indicated that in 1988 the New York State Department of Environmental Conservation would establish additional regulations governing the following aspects of low-level radioactive waste disposal:

- o Financial assurance
- o Operations
- o Safety plans (emergency response)
- o Environmental monitoring
- o Site closure and post-closure management
- o Permits.

The New York Department currently plans to issue the regulations in draft form in the spring of 1989. Final regulations are planned for issuance by the end of 1990, prior to the Siting Commission's application for certification of the site(s) and disposal method(s). The Department indicates that, since the regulations will apply only to the Energy Authority, and not to the Siting Commission, this delay will not affect the State's siting efforts.

## NORTH DAKOTA

Contact: North Dakota Department of Environmental  
Engineering  
1200 Missouri Avenue, Room 304  
Bismarck North Dakota 58502-5520  
701/224-2348

### July 1, 1986 Milestone

In 1985 North Dakota enacted two sets of compact legislation, a Dakota Interstate Compact (naming South Dakota as the other member) and the Rocky Mountain Compact. The Rocky Mountain Compact was to have become effective in July 1, 1987, unless South Dakota joined the Dakota compact by that date. (South Dakota did not join North Dakota in the Dakota Compact, and the Rocky Mountain Compact did not accept North Dakota as a new member State under its provisions for adding new members.) Because the State had enacted compact legislation, the sited States determined that North Dakota was in compliance with the milestone. North Dakota did not have any funds attributable to it in the Department of Energy surcharge escrow account for the milestone period. Therefore, the Department did not evaluate the State's milestone compliance status.

### January 1, 1988 Milestone

North Dakota did not submit documentation in response to the January 1, 1988, milestone. The Department and the sited States, therefore, found North Dakota not in compliance.

### Upcoming Milestones and Deadlines

North Dakota is named as an eligible member State of the Southwestern Compact, in which California is the host State for the first disposal facility. (Update: In March 1989, North Dakota enacted legislation joining the Southwestern Compact. Its membership becomes effective on July 1, 1989. Please see the entry for Southwestern Compact for information about plans and schedules for disposal facility site development in that Compact.)

SUMMARY OF PLANS FOR UPCOMING MILESTONES

January 1, 1990 -- License application or Governor's Certification

- o Plans to be member of Southwestern Compact
- o Governor's Certification for mixed waste

January 1, 1992 -- Submit license application

- o Plans to be member of Southwestern Compact

January 1, 1993 -- End of access to currently operating sites

January 1, 1996 -- If no site, take title to waste or assume liability

- o Plans to be member of Southwestern Compact

Establishment of a Disposal Facility

(See Southwestern Compact)

State Planning and Other Activities

Following discussions that began in 1987, North Dakota and the Northwest Compact Committee signed a contract in September 1988 allowing disposal of North Dakota's waste at the Richland, Washington, facility through 1990. (Update: Although the contract giving North Dakota access to the Northwest Compact's regional disposal facility is still in effect, the State's membership in a Compact in compliance with milestones gives the State access to the other two disposal facilities as well.)

## PUERTO RICO

Contact: Puerto Rico Environmental Quality Board  
P. O. Box 11488  
San Turce, Puerto Rico 00910  
809/725-5140

### July 1, 1986 Milestone

The Department of Energy did not evaluate Puerto Rico for compliance with the July 1, 1986, milestone because there were no surcharge funds for the milestone period attributable to it in the Department's surcharge escrow account. Because Puerto Rico did not submit to the sited States documentation showing its compliance with the milestone, the sited States determined that Puerto Rico was not in compliance. The sited States denied Puerto Rico access to the operating disposal facilities in January 1987.

### January 1, 1988 Milestone

The Department of Energy did not evaluate Puerto Rico for compliance with the January 1, 1988, milestone because there were no surcharge funds for the milestone period attributable to it in the Department's surcharge escrow account. Because Puerto Rico did not submit to the sited States documentation showing its compliance with the milestone, the sited States determined that Puerto Rico was not in compliance.

### Upcoming Milestones and Deadlines

In 1988, Puerto Rico initiated preliminary discussions with the State of Texas regarding possible contract arrangements that would allow low-level waste generators in Puerto Rico access to the planned Texas disposal facility.

**SUMMARY OF PLANS FOR UPCOMING MILESTONES**

**January 1, 1990 -- License application or Governor's Certification**

- o Evaluating options

**January 1, 1992 -- Submit license application**

- o Evaluating options

**January 1, 1993 -- End of access to currently operating sites**

**January 1, 1996 -- If no site, take title to waste or assume liability**

- o Evaluating options

## RHODE ISLAND

Contact: Rhode Island Department of  
Environmental Management  
83 Park Street  
Providence, Rhode Island 02903-1037  
401/277-3434

### July 1, 1986 Milestone

On June 25, 1986, Rhode Island enacted a Rhode Island-Massachusetts Compact. Because the State had "enacted Compact legislation" it was determined by the sited States to have complied with the milestone. The Department of Energy, however, determined that, without corresponding action by the other eligible member State, the action was not a sufficient basis for compliance with the milestone.

### January 1, 1988 Milestone

Following discussions that began in June 1987, Rhode Island and the Rocky Mountain Compact Board signed a contract in December 1987 for disposal of Rhode Island's waste through 1989.

Rhode Island submitted the contract to the Department of Energy in accordance with Section 5(e)(1)(F) of the Act. This paragraph provides that, if a state enters into "...an agreement with the compact commission of a region in which a regional disposal facility is located to provide for the disposal of all low-level radioactive waste generated within such State...", it may "...be deemed to be in compliance..." with the milestones. Using this mechanism, Rhode Island was found in compliance with the January 1, 1988, milestone.

### Upcoming Milestones and Deadlines

At the end of 1988, Rhode Island was preparing to request that the Rocky Mountain Compact renew its existing contract for disposal of the State's low-level waste at the Beatty, Nevada, facility. The current contract expires December 31, 1989, and therefore could not be used in lieu of requirements of the January 1, 1990, milestone.

SUMMARY OF PLANS FOR UPCOMING MILESTONES

January 1, 1990 -- License application or Governor's Certification

- o Disposal contract planned

January 1, 1992 -- Submit license application

- o Disposal contract planned

January 1, 1993 -- End of access to currently operating sites

January 1, 1996 -- If no site, take title to waste or assume liability

- o Disposal contract planned

State Planning and Other Activities

During 1988, the State enacted legislation and set up the necessary systems to collect from waste generators supplemental surcharges that the State pays to the Rocky Mountain Compact for disposal of low-level waste under the current contract.

## SOUTH DAKOTA

Contact: South Dakota Department of Water  
and Natural Resources  
523 E. Capitol, Joe Foss Building  
Pierre, South Dakota 57501  
605/773-3329

### July 1, 1986 Milestone

At the time of this milestone, South Dakota was a member of the Western Compact. The Department of Energy and the sited States determined the Western Compact to be in compliance with the milestone.

### January 1, 1988 Milestone

The Western Compact language named Arizona as host State for the disposal facility. Because a commission or authority to execute compact functions had not been constituted, the State of Arizona submitted milestone documentation to the Department of Energy and the sited States on behalf of the Compact member States. The Department and the sited States determined that the Compact was in compliance with the milestone.

### Upcoming Milestones and Deadlines

In July 1988, Arizona became a member of the Southwestern Compact and repealed its membership in the Western Compact. This dissolved the Western Compact by leaving it with only one member State, South Dakota.

(Update: In February 1989 South Dakota enacted legislation joining the Southwestern Compact. Please see the entry for Southwestern Compact for information about plans and schedules for disposal facility site development in that Compact.)

**SUMMARY OF PLANS FOR UPCOMING MILESTONES**

**January 1, 1990 -- License application or Governor's Certification**

- o Plans to be member of Southwestern Compact
- o Governor's Certification for mixed waste

**January 1, 1992 -- Submit license application**

- o Plans to be member of Southwestern Compact

**January 1, 1993 -- End of access to currently operating sites**

**January 1, 1996 -- If no site, take title to waste or assume liability**

- o Plans to be member of Southwestern Compact

**Establishment of a Disposal Facility**

(See Southwestern Compact)

## TEXAS

Contact: Texas Low-Level Radioactive Waste  
Disposal Authority  
7703 North Lamar Blvd., Suite 300  
Austin, Texas 78752  
512/451-5292

### July 1, 1986 Milestone

In June 1981, Texas enacted legislation indicating its intent to develop a disposal facility. The legislation also established the Texas Low-Level Radioactive Waste Disposal Authority and established the framework for establishment of a disposal site. The Department of Energy and the sited States determined Texas to be in compliance with the July 1, 1986, milestone.

### January 1, 1988 Milestone

In September 1987, the Authority submitted to the Department of Energy and the sited States a siting plan and other documentation in response to the January 1, 1988, milestone. The Department of Energy and the sited States determined Texas to be in compliance with the milestone.

### Upcoming Milestones and Deadlines

Under the current schedule, Texas plans to submit a disposal facility license application to its Agreement State licensing agency January 1990. Submission of a complete application on or before January 1, 1990, would fulfill the requirements of the January 1, 1990, milestone.

The disposal facility is planned to begin operation December 1992, just prior to January 1, 1993, the date on which access to the currently operating disposal facilities may be ended.

### SUMMARY OF PLANS FOR UPCOMING MILESTONES

January 1, 1990 -- License application or Governor's Certification

- o License application planned

January 1, 1992 -- Submit license application

- o Submission of license application planned: January 1990

January 1, 1993 -- End of access to currently operating sites

January 1, 1996 -- If no site, take title to waste or assume liability.

- o Operation of regional site planned: December 1992

### Establishment of a Disposal Facility

In February 1987, El Paso County obtained a temporary restraining order against the Authority to delay selection of a final site for the disposal facility. The District Court reversed the decision, allowing siting activities to continue, and, in January 1988 the Texas Supreme Court refused to hear an appeal from El Paso County.

However, in response to public concerns raised during the litigation, the Authority entered into negotiations with a local group, Concerned Citizens from West Texas. The negotiations resulted in modification of the Authority's approach for site designation and characterization. The modified approach allows site characterization to be performed and the resulting data analyzed to ensure that the site is environmentally suitable before a final site is designated. Public groups, including the Hudspeth County Commission, will participate in the review. Under the new approach, site characterization, previously scheduled to begin in December 1987, began in June 1988. The Authority plans to officially designate a site in August 1989.

In November 1988, the Hudspeth County Commission withdrew support from an inter-local agreement with El Paso County. This action allows Hudspeth County to withdraw its support from any future legal actions that may be taken by El Paso County against the Authority.

The Authority has overall responsibility for the development of a license application. In support of this, the Authority has entered into agreements with the Texas Bureau of Economic Geology and the University of Texas Center for Research and Water Resources to assist in acquiring the information necessary to support a license application.

Preliminary designs for the proposed Texas facility were completed in October 1988. The Authority believes these to be sufficiently detailed to support a license application. The technologies developed include belowground modular concrete canisters for Class A wastes; and belowground vaults for Class B, C, and Class A wastes that require remote handling. The design also includes a mixed waste disposal unit based on a conceptual design developed jointly by the Environmental Protection Agency and the Nuclear Regulatory Commission.

Final design work is scheduled to begin on September 1989 with a projected completion date of October 1990. Construction of the facility is due to begin in early 1992.

#### State Planning and Other Activities

In September, a hearing of the Texas House Committee on Environmental Affairs was held to discuss possible options for forming a low-level waste compact. Representatives of Maine and Vermont provided testimony expressing an interest in such a compact. The Committee did not find sufficient evidence to warrant Texas entering into an interstate compact agreement. However, the Committee recommended that the Texas legislature should be prepared to explore compacting as a viable alternative if there were any significant change in conditions related to the benefits of compacting.

## VERMONT

Contact: Vermont Low-Level Radioactive Waste  
Advisory Commission  
103 South Main Street  
Waterbury, Vermont 05676  
802/828-7347

### July 1, 1986 Milestone

The legislature of the State of Vermont passed a resolution indicating the State's intent to establish a disposal facility, if necessary. After reviewing correspondence from the Governor of Vermont certifying the State's intent to develop a disposal facility, the sited States and the Department of Energy determined Vermont to be in compliance with the milestone.

### January 1, 1988 Milestone

Vermont did not submit documentation to the Department of Energy and the sited States demonstrating its compliance with the milestone. Therefore, these entities determined that Vermont did not comply with the milestone.

In December 1988, Washington State notified Vermont it would deny access to the regional disposal facility to low-level waste generated in Vermont beginning January 1, 1990. The other sited states were preparing to take similar action in early 1989. In anticipation of being denied access to the current disposal facilities, Vermont began planning for interim storage of its low-level waste.

### Upcoming Milestones and Deadlines

Legislation to establish a State authority for siting a low-level waste disposal facility, and legislation delegating authority to Vermont Yankee Corporation, the State's largest generator of low-level waste, were introduced into the Vermont legislature in 1988. The bills were not acted upon during the session.

The Vermont Advisory Commission on Low-Level Waste arranged for a number of low-level waste management experts to provide testimony in three hearings before the House Natural Resources and Energy Committee. The testimony focused on potential impacts of locating a disposal facility in the State and the economics of developing and operating such a facility.

At its May meeting, the Advisory Commission considered a number of options for management of low-level waste. These included membership in a compact, contractual arrangements for disposal access, and storage of low-level waste.

In September 1988, a representative from Vermont testified before a Texas legislative panel that the establishment of a congressionally-approved compact between the two States, if given congressional consent, would give Texas statutory authority to limit use of its disposal site to waste generated within the compact region. Vermont also indicated that additional waste from a small waste generating State would lower units costs for disposal of waste at the site.

During 1988 prior to establishment of the Southwestern Compact (California, Arizona), Vermont also exchanged correspondence regarding compact options with the State of California.

During the year, Vermont also contacted the Northwest, Southeast and Rocky Mountain Compacts regarding the possibility of forming a contract for disposal of the State's low-level waste. (Update: In early 1989, the Rocky Mountain Compact was considering a contract under which the regional disposal facility would accept non-utility low-level waste from Vermont through 1992.)

In fall 1988, the Governor's administration drafted legislation to establish a Low-Level Waste Disposal Authority, which would be responsible for developing and implementing a siting plan for a low-level waste disposal facility. (Update: In May 1989 the legislature adjourned without taking action on the bill.)

#### SUMMARY OF PLANS FOR UPCOMING MILESTONES

January 1, 1990 -- License application or Governor's Certification

- o Evaluating options

January 1, 1992 -- Submit license application

- o Evaluating options

January 1, 1993 -- End of access to currently operating sites

January 1, 1996 -- If no site, take title to waste or assume liability

- o Evaluating options

Establishment of a Disposal Facility

See above

State Planning and Other Activities

See above

APPENDIX B

PROVISIONS OF COMPACTS AND STATES  
REGARDING IMPORTATION AND EXPORTATION OF LOW-LEVEL WASTE  
AND COMPACT MEMBERSHIP

PROVISIONS OF COMPACTS AND STATES  
REGARDING IMPORTATION AND EXPORTATION OF LOW-LEVEL WASTE  
AND COMPACT MEMBERSHIP

During 1988, State and compact officials, and others, became increasingly interested in ways that the compacts and States could work cooperatively to provide a more effective and efficient National system for low-level waste management. Knowledge of each compact's and State's provisions regarding importation and exportation of low-level waste for purposes of management and disposal; and provisions related to compact membership and admittance of new compact members is necessary in determining the potential for interregional and interstate cooperation.

This appendix summarizes the approach to these issues of each compact and each State with a disposal facility siting plan, and each of the compacts with currently operating disposal facilities.

Some non-compact member States have established policies regarding the use of disposal and management facilities being developed in the States. However, only compacts ratified by Congress have been given Federal statutory authority to limit the use of their disposal facilities to low-level waste generated within their borders. In ratifying compacts, Congress has also consented to specific compact provisions that authorize the Compact authorities to control the importation and exportation of low-level waste for purposes other than disposal.

## APPALACHIAN STATES LOW-LEVEL RADIOACTIVE WASTE COMPACT

### Importation and Exportation of Low-Level Waste

"After establishment of the regional facility(s), it shall be unlawful for any person to dispose of any low-level waste within the region unless the waste was generated within the region or unless authorized to do so both by the Commission and by law of the host state in which said disposal takes place..." [Compact, Article 4(B)]

"Any and all low-level waste generated within the region shall be disposed of at a regional facility, except for specific cases agreed upon by the Commission, with the affirmative votes by the majority of the Commission members of the host state(s) affected by the decision." [Compact, Article 4(C)]

"No low-level waste shall be accepted for disposal at the regional facility unless the waste was generated within the Appalachian Compact States or the Commission has entered into a reciprocal contingency agreement for the emergency disposal of out-of-compact low-level waste..." [PA LLW Disposal Act, Chapter 3, Section 309(A)]

"No agreement shall permit the disposal of out-of-compact waste for a period exceeding three months unless a continuation of the agreement is approved by the general assembly or the Governor..." [PA LLW Disposal Act, Chapter 3, Section 309(B)]

### Acceptance of New Compact Member States

"Only the States of Pennsylvania, West Virginia, Delaware and Maryland are eligible to become parties to this compact." [Compact, Article 5(A)]

## CENTRAL INTERSTATE LOW-LEVEL RADIOACTIVE WASTE COMPACT

### Importation and Exportation of Low-Level Waste

"Unless authorized by the Commission, it shall be unlawful after January 1, 1986 for any person:

1. To deposit at a regional facility, waste not generated within the region;
2. to accept, at a regional facility, waste not generated with the region;
3. to export from the region, waste which is generated within the region; and
4. to transport waste from the site at which it is generated, except to a regional facility." [Compact, Article III(g)]

### Acceptance of New Compact Member States

Any State may petition the Commission for eligibility. A petitioning State shall become eligible for membership in the compact upon the unanimous approval of the commission. [Compact, Article VII(b)]

An eligible State shall become a member of the compact and shall be bound by it after such State has enacted the compact into law. [Compact, Article VII(c)]

## CENTRAL MIDWEST INTERSTATE LOW-LEVEL RADIOACTIVE WASTE COMPACT

### Importation and Exportation of Low-Level Waste

A "regional facility" is defined as "a facility which is located within the region and which is established by a party state pursuant to designation of that state as a host state by the Commission." [Compact, Art. II(r)]

The Commission may: "Enter into an agreement or contract with any person, state or group of states for the right to use regional facilities for waste generated outside of the region and for the right to use facilities outside the region for waste generated within the region. No person may use a regional facility for waste generated outside the region unless both a majority of the members of the Commission and all members from the host state in which any affected regional facility is located vote in favor of permitting such use. No person in the region may use a storage, treatment or disposal facility outside the region without prior Commission approval. No such agreement or contract shall be valid unless specifically approved by a law enacted by the legislature of the host state." [Compact, Art. III(i)(1)]

The Commission may: "Approve the disposal of waste generated within the region at a facility other than a regional facility." [Compact, Art. III(i)(2)]

"Policy: Allow unrestricted export of waste until the regional disposal facility begins operation." (Regional Management Plan, Section 6, adopted July 21, 1988)

"Policy: Allow export of waste for treatment or storage after the regional disposal facility begins operation, subject to the approvals required in the Compact... The above policy does not waive any need to obtain specific approval from the Commission... The Commission intends to grant such approval subject to the requirement that exporters provide the Commission with the information needed to ensure that exported waste is returned for disposal..." (Regional Management Plan, Sec. 6)

"Policy: Prohibit access to the regional disposal facility for imported waste... Any exception... would be made on a case-by-case basis, and would require approval of voting members of the Commission from Illinois and that a law be enacted by the Illinois General Assembly." (Regional Management Plan, Sec. 6)

"Policy: Prohibit access to regional treatment or storage facilities for imported waste, except under an agreement or contract entered into by the Commission, consented to by the local governing body of jurisdiction,

and approved by the legislature of the affected host state. ...the Commission will not allow importation of low-level radioactive waste for treatment or storage without the express approval of the legislature of the affected host state, as provided in the Compact. Further, the Commission will not approve or recommend legislative approval of importation for storage or treatment unless a request is approved in advance by the local governing body with jurisdiction... (Regional Management Plan, Sec. 6)

Acceptance of New Compact Member States

"Eligible parties to this compact are the State of Illinois and Commonwealth of Kentucky." [Compact, Art. VII(a)]

## MIDWEST INTERSTATE LOW-LEVEL RADIOACTIVE WASTE MANAGEMENT COMPACT

### Importation and Exportation of Low-Level Waste

"Regional facility" is defined as "a facility which is located within the region and which is established by a party state pursuant to designation of that state as a host state by the Commission." [Compact, Art. II(n)]

The Commission may: "Enter into an agreement with any person, state, or group of states for the right to use regional facilities for waste generated outside of the region and for the right to use facilities outside the region waste generated within the region. The right of any person to use a regional facility for waste generated outside of the region requires an affirmative vote of a majority of the Commission, including the affirmative vote of the member of the host state in which any affected regional facility is located." [Compact, Art. III(h)(1)]

The Commission may: "Approve the disposal of waste generated within the region at a facility other than a regional facility." [Compact, Art. III(h)(2)]

"Unless otherwise authorized by the Commission pursuant to Article III(h) after January 1, 1986 it is a violation to this compact:

1. For any person to deposit at a regional facility waste not generated within the region;
2. For any regional facility to accept waste not generated within the region;
3. For any person to export from the region waste which is generated within the region; or
4. For any person to dispose of waste at a facility other than a regional facility." [Compact, Art. IX(b)]

### Acceptance of New Compact Member States

"Any state not eligible for membership in the compact may petition the Commission for eligibility. The Commission may establish appropriate eligibility requirements. These requirements may include but are not limited to, an eligibility fee or designation as a host state. A petitioning state becomes eligible for membership in the compact upon the approval of the Commission, including the affirmative vote of all host states." [Compact, Art. VIII(b)]

## NORTHEAST INTERSTATE LOW-LEVEL RADIOACTIVE WASTE MANAGEMENT COMPACT

### Importation and Exportation of Low-Level Waste

"Regional facility" is defined as "a facility (other than a facility for on-site treatment or storage by a generator)...which has been designated or accepted by the Commission." [Compact, Art.II(n)]

"...To the extent regional facilities are available, no waste generated within a party state shall be exported to facilities outside the region unless such exportation is approved by the Commission and the affected host state(s)." [Compact, Art.III(a)(1)]

"The Commission may enter into agreements with any person, state, regional body, or group of states for the importation of waste into the region and for the right of access to facilities outside the region for waste generated within the region. Such authorization to import requires a two-thirds majority vote of the Commission, including an affirmative vote of the representatives of the host state in which any affected regional facility is located..." [Compact, Art. IV(i)(11)]

"The commission may, upon petition, grant an individual generator or group of generators in the region the right to export wastes to a facility located outside the region..." [Compact, Art. IV(i)(12)]

### Acceptance of New Compact Member States

"Any state...may petition the Commission to be declared eligible. The Commission must establish such conditions as it deems necessary and appropriate to be met by a state requesting eligibility as a party state...Upon satisfactorily meeting these conditions and upon the affirmative vote of two-thirds of the Commission, including the affirmative vote of the representatives of the host states in which any affected regional facility is located, the petitioning state shall be eligible to become a party state to this compact and may become a party state in the same manner as those states declared eligible in Section (a) of this Article. [Compact, Article VII (e)]

## NORTHWEST INTERSTATE COMPACT ON LOW-LEVEL RADIOACTIVE WASTE MANAGEMENT

### Importation and Exportation of Low-Level Waste

"No facility located in any party state may accept low-level waste generated outside of the region comprised of the party states, except as provided in Article V." [Compact, Art. IV(2)]

"...Notwithstanding any provision of Article IV to the contrary, the committee may enter into arrangements with states, provinces, individual generators, or regional compact entities outside the region comprised of the party states for access to facilities on such terms and conditions as the committee may deem appropriate..." (Compact, Art. V)

"Any generator or broker shipping waste which was originally generated in the southeast/Rocky Mountain compact region for disposal at the (Northwest Regional) site must attach to the shipping manifest copy of the letter granting certification to export waste from the southeast/Rocky Mountain compact region." (Washington Annotated Code, Ch. 173-325-030 (7) and (8), respectively)

"Criteria for Judging the Acceptability of States' Applications to Enter into Contracts for Disposal with the Northwest Interstate Compact...1...at least one border contiguous with one or more party states, 2...not under normal circumstances generate (LLW) in excess of 1,000 cubic feet per year...3...not be member of a compact ratified by Congress as of April 23, 1987...(and have) no reasonable alternative options available..." (Northwest Compact Resolution Adopted April 23, 1987)

### Acceptance of New Compact Member States

The compact language names the States initially eligible to become members, but does not contain procedures for admitting other States. (Compact, Art. VI)

## ROCKY MOUNTAIN LOW-LEVEL RADIOACTIVE WASTE COMPACT

### Importation and Exportation of Low-Level Waste

"It shall be unlawful for any person to export low-level waste which was generated in the region outside the region unless authorized to do so by the board. [Compact, Art. VII(b)]

"Any person seeking the authority...to export waste which was generated within the region outside the region shall submit a written application for permission to export waste to the executive director..." (Compact Rules, Rule 6.1, December 4, 1987)

"It shall be unlawful for any person to manage any low-level waste within the region unless the waste was generated within the region or unless authorized to do so both by the board and the state in which said management takes place." [Compact, Art. VII(c)]

"Any person seeking authorization...to manage out-of-region waste at the facility located at Beatty, Nevada...shall submit a written Application to Import Waste to the executive director." (Compact Rules, Rule 7.1)  
"Any person seeking authorization...to manage out-of-region waste within the region at a facility other than the facility located at Beatty, Nevada, shall submit a written Application to Import Waste to the executive director...The application...shall be accompanied by an application fee..." (Compact Rules, Rule 7.6, December 4, 1987)

### Acceptance of New Compact Member States

"...Any other state may be made eligible by unanimous consent of the board" [Compact, Art VIII(a)]

## SOUTHEAST INTERSTATE LOW-LEVEL RADIOACTIVE WASTE MANAGEMENT COMPACT

### Importation and Exportation of Low-Level Waste

The Commission has the duty and power "notwithstanding any other provisions of this compact, to enter into agreements with any person, state, or similar regional body or group of states for the importation of waste into the region and for the right of access to facilities outside the region..." [Compact, Art. 4(E)9]

"Regional facility" is defined as "(1) a facility as defined in this Article which has been designated, authorized, accepted or approved by the Commission to receive waste or (2) the disposal facility at Barnwell, South Carolina..." [Compact, Art. 2(10)]

"As of January 1, 1986, the management of wastes at regional facilities (see definition, Art. 2(10) is restricted to wastes generated within the region and to wastes generated within non-party states when authorized by the Commission... After January 1, 1986, the Commission may prohibit the exportation of waste from the region for purposes of management." [Compact, Art. 4(L)]

"Nothing in this compact shall be construed to...(4) make unlawful the continued development and operation of any facility already licensed for development or operation on the date the compact becomes effective, except that such facility shall comply with Article 3, Article 4 and Article 5 and shall be subject to any action lawfully taken pursuant thereto." [Compact, Art. 6(A)]

The Commission voted to "ban the exportation of waste for disposal generated in the Southeast by party states which meets the licensing requirements in the Regional Facility or which could meet such requirements through processing by available methods, effective March 1, 1986." (Motion adopted, January 17, 1986) Implementing procedures for obtaining export certification were adopted by vote of the Commission on April 3, 1986.

"...The Southeast Compact hereby authorizes access to the regional facility in Barnwell, South Carolina, for applicable low-level waste generated in nonparty states, in an amount equal to the difference between the amount of waste annually received at the regional facility from generators in party states and the total amount of waste which the facility is authorized by the host state to receive on an annual basis." (Southeast Compact Resolution, January 27, 1987. Original authorization adopted January 17, 1986.)

"It is the policy of the Southeast Compact Commission not to consider contractual agreements regarding disposal of waste from non-party states." (Southeast Compact Resolution, November 21, 1986)

### Acceptance of New Compact Member States

"Any State...may petition the Commission...to be declared eligible. The Commission may establish such conditions as it deems necessary and appropriate to be met by a state wishing to become eligible to become a party state to this compact...Upon satisfactorily meeting the conditions and upon the affirmative vote of two-thirds of the Commission, including the affirmative vote of both representatives of a host state in which any affected regional facility is located, the petitioning state shall be eligible to become a party state in the manner as those states declared eligible in Section (a) of this Article." [Compact, Art. 7(A)]

"Unless a potential party state volunteers to become the host state succeeding South Carolina, the Compact Commission will consider no applications for compact membership." (Southeast Compact Resolution, November 21, 1986)

## SOUTHWESTERN LOW-LEVEL RADIOACTIVE WASTE DISPOSAL COMPACT

### Importation and Exportation of Low-Level Waste

"Regional disposal facility" is defined as "a non-Federal low-level radioactive waste disposal facility established and operated under this compact." [Compact, Art. II(P)]

"Low-Level radioactive waste generated within the region shall be disposed of at regional disposal facilities..." [Compact, Art. 4(B)]

"The Commission may, upon petition, allow an individual generator, group of generators, or the host state of the compact, to export low-level radioactive waste to a ... disposal facility outside the region. The Commission may approve the petition only by a two-thirds vote of the Commission..." [Compact, Art. III(g)(20)]

"The Commission may enter into an agreement to import low-level radioactive waste only if both of the following requirements are met-- (a) the Commission approves the importation agreement by a two-thirds vote of the Commission. (b) The Commission and host state assess the affected regional disposal facilities' capability to handle imported low-level waste..." [Compact, Art. III(g)(19)]

### Acceptance of New Compact Member States

"The States of Arizona, North Dakota, South Dakota, and California are eligible to become parties to this compact. Any other state may be made eligible by a majority vote of the commission and ratification by the legislatures of all of the party states by statute, and upon compliance with those terms and conditions for eligibility which the host state may establish..." [Compact, Article VII(A)]

## MAINE

### Importation and Exportation of Low-Level Waste

"The purpose of this chapter is to establish the...Authority with the responsibility (to establish) a facility...with sufficient capacity to dispose of only the (low-level waste) generated within the State and for which this State is responsible." (Rev. Stat. Annotated, Title 38, Ch. 14-B, Sec. 1502)

"Unless otherwise authorized by the authority, when the low-level radioactive waste facility is in operation, in-state generators of low-level radioactive waste for which the State is responsible shall dispose of that waste at the disposal facility." (Sec. 1541 op. cit.)

### Compact Membership

"...The State is continuing to try to negotiate a compact or agreement for low-level radioactive waste disposal out of State."  
(Sec. 1502 op. cit.)

## MASSACHUSETTS

### Importation and Exportation of Low-Level Waste

"The (management) plan shall include...interim and emergency storage plans to go into effect whenever it appears that no facility is or will be available to accept low-level radioactive waste generated within the commonwealth. Such plans may include contractual agreements with facilities located outside the commonwealth..." [General Laws, Ch. 111H, Sec. 12(b)(10)]

### Compact Membership

"The...board...is hereby authorized and directed to represent the commonwealth in any and all negotiations with other states for the purpose of reaching an interstate compact agreement to provide for the establishment and operation of regional disposal facilities for low-level radioactive waste. ...(The) board may initiate negotiations with any state it deems appropriate to meet the needs of the commonwealth with respect to such facilities upon a majority vote of the board..." (General Laws, Ch. 549, Sec. 6)

## NEW YORK

### Importation and Exportation of Low-Level Waste

"'Permanent disposal facilities' shall mean (low-level waste) management facilities for permanent disposal of (low-level waste) generated within the state of New York other than such waste which is a federal responsibility..." (New York State LLRW Mgt. Act of 1986, Ch. 673)

"Nothing in this act shall be construed to preclude any person from establishing...any facilities for the temporary storage or permanent disposal of (low-level waste), whether generated within or outside of the State of New York, which are not authorized or required by the provisions of this act." (New York State LLRW Mgt. Act of 1986, Ch. 673)

### Compact Membership

None

## TEXAS

### Importation and Exportation of Low-Level Waste

"The authority shall develop and operate or contract for operation of one disposal site for the disposal of low-level waste in Texas." (LLRW Disp. Authority Act, 1981, as amended 1985 and 1987)

"(a) The agency by rule may prohibit a person who is licensed as a processor of radioactive waste under this Act from accepting for processing low-level radioactive waste generated outside this state. [Art. 3, Sec. 19(a), op. cit.]

"(b) A rule adopted under Subsection (a) of this section may not take effect sooner than 24 months before the opening date of a low-level radioactive waste disposal site authorized under the Texas Low-Level Radioactive Waste Disposal Authority Act (Article 4590f-1, Vernon's Texas Civil Statutes) and expires on the date that the disposal site opens." [Art. 3, Sec. 19(b), op. cit.]

### Compact Membership

"It is the intent of the Legislature that the Texas Low-Level Radioactive Waste Disposal Authority study the feasibility and desirability of entering into a compact with one or more other states or territories." (Art. 3, Sec. 5, op. cit.)

APPENDIX C

TABLES SHOWING LOW-LEVEL RADIOACTIVE WASTE RECEIVED BY THE  
COMMERCIAL DISPOSAL SITES DURING 1988

TABLES SHOWING LOW-LEVEL RADIOACTIVE WASTE RECEIVED BY THE  
COMMERCIAL DISPOSAL SITES DURING 1988

The data in this Appendix are from the Department of Energy's Low-Level Waste Allocation Monitoring System, which is a compilation of disposal data furnished by regulatory agencies of the sited States of Nevada, South Carolina and Washington. Therefore, the volume totals are consistent with the data furnished by the same entities in their monthly reports to the Department of Energy's surcharge escrow account. The volumes reported in these tables "see through" low-level waste shippers, brokers and processors, so that waste volumes are attributed to the State or Compact in which the waste was actually generated. Although the data is furnished by the State agencies, it is subject to ongoing verification by these agencies and may be adjusted slightly.

TABLE C-1. POWER REACTOR ALLOCATION PROFILE THROUGH DECEMBER 31, 1988<sup>a</sup>

Reactor	Unit	1986-1989 <sup>b</sup> Allocation	Unusual <sup>c</sup> Volume	Allocation Transferred	Total Auth Allocation	Volume Rec at Disposal	Allocation % used	Allocation Remaining	1990 - 1992 Anticipated Allocation
Arkansas	1,2	83,616	0	0	83,616	31,598	38%	52,018	49,320
Beaver Valley	1,2	54,002	0	0	54,002	14,071	26%	39,931	49,320
Big Rock Point	1	93,648	0	0	93,648	5,442	6%	88,206	55,188
Braidwood	1,2	17,420	0	0	17,420	2,424	14%	14,996	49,320
Browns Ferry	1,2,3	331,200	0	0	331,200	125,217	38%	205,983	225,828
Brunswick	1,2	220,800	0	0	220,800	88,851	40%	131,949	150,552
Byron	1,2	56,615	0	0	56,615	29,376	52%	27,239	49,320
Callaway	1,2	41,808	0	0	41,808	15,109	36%	26,699	24,660
Calvert Cliffs	1,2	83,616	0	0	83,616	19,002	23%	64,614	49,320
Catawba	1,2	75,998	0	0	75,998	25,589	34%	50,409	67,248
Clinton	1	35,118	0	0	35,118	12,254	35%	22,864	55,188
Cook	1,2	83,616	46,538	0	130,154	43,717	34%	86,437	49,320
Cooper		93,648	0	0	93,648	39,595	42%	54,053	55,188
Crystal River	3	49,296	0	0	49,296	31,286	63%	18,010	33,624
Davis-Besse	1	41,808	0	0	41,808	14,041	34%	27,767	24,660
Diablo Canyon	1,2	74,035	0	0	74,035	16,530	22%	57,505	49,320
Dresden	1,2,3	280,944	17,250	0	298,194	186,394	63%	111,800	165,564
Duane Arnold		93,648	0	0	93,648	32,420	35%	61,228	55,188
Farley	1,2	98,592	0	0	98,592	44,988	46%	53,604	67,248
Fermi	2	76,089	0	0	76,089	22,350	29%	53,739	55,188
FitzPatrick		93,648	0	0	93,648	47,963	51%	45,685	55,188
Fort Calhoun	1	41,808	0	0	41,808	10,643	25%	31,165	24,660
GINNA		41,808	0	0	41,808	15,437	37%	26,372	24,660
Grand Gulf	1	110,400	0	0	110,400	48,927	44%	61,473	75,276
Haddam Neck		41,808	0	0	41,808	30,322	73%	11,486	24,660
Harris	1	21,567	0	0	21,567	7,603	35%	13,964	33,624
Hatch	1,2	220,800	0	0	220,800	106,123	48%	114,677	150,552
Humboldt Bay	3	93,648	0	0	93,648	22,712	24%	70,936	55,188
Hope Creek	1	52,677	0	0	52,677	20,769	39%	31,909	55,188
Indian Point	1,2	83,616	0	0	83,616	36,607	44%	47,009	49,320
Indian Point	3	41,808	0	0	41,808	7,753	19%	34,055	24,660
Kewaunee		41,808	0	0	41,808	9,314	22%	32,494	24,660
LaCrosse		93,648	0	0	93,648	1,921	2%	91,727	55,188
LaSalle	1,2	187,296	0	0	187,296	70,086	37%	117,210	110,376
Limeric		74,138	0	0	74,138	51,289	69%	22,849	55,188
Maine Yankee		41,808	0	0	41,808	14,798	35%	27,010	24,660
McGuire	1,2	98,592	0	0	98,592	70,564	72%	28,028	67,248
Millstone	1,2,3	164,199	0	0	164,199	67,632	41%	96,567	104,508
Monticello		93,648	0	0	93,648	23,319	25%	70,329	55,188
Nine Mile Point	1,2	122,913	0	0	122,913	57,058	46%	65,855	110,376

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TABLE C-1. (Continued)

Reactor	Unit	1986-1989 <sup>b</sup> Allocation	Unusual <sup>c</sup> Volume	Allocation Transferred	Total Auth Allocation	Volume Rec at Disposal	Allocation % used	Allocation Remaining	1990 - 1992 Anticipated Allocation
North Anna	1,2	98,592	0	0	98,592	43,594	44%	54,998	67,248
Oconee	1,2,3	147,888	0	0	147,888	82,976	56%	64,912	100,872
Oyster Creek		93,648	0	0	93,648	37,913	40%	55,735	55,188
Palisades		41,808	0	0	41,808	21,135	51%	20,673	24,660
Palo Verde	1,2,3	70,551	27,970	0	98,521	48,874	50%	49,647	73,980
Pathfinder		93,648	0	0	93,648	0	%	93,648	55,188
Peach Bottom	2,3	187,296	24,075	0	211,371	136,772	65%	74,599	110,376
Perry	1	44,873	0	0	44,873	21,256	47%	23,617	55,188
Pilgrim	1	93,648	0	0	93,648	46,793	50%	46,855	55,188
Point Beach	1,2	83,616	0	0	83,616	14,479	17%	69,138	49,320
Prairie Island	1,2	83,616	0	0	83,616	11,524	14%	72,092	49,320
Quad-Cities	1,2	187,296	0	0	187,296	89,146	48%	98,150	110,376
Rancho Seco		41,808	0	0	41,808	23,300	56%	18,509	24,660
River Bend	1	68,285	0	0	68,285	41,525	61%	26,760	55,188
Robinson	2	49,296	0	0	49,296	22,493	46%	26,803	33,624
Salem	1,2	83,616	0	0	83,616	43,606	52%	40,010	49,320
San Onofre	1,2,3	125,424	0	0	125,424	39,148	31%	86,276	73,980
Saxton		41,808	0	0	41,808	2,257	5%	39,551	24,660
Sequoyah	1,2	98,592	0	0	98,592	50,825	52%	47,767	67,248
South Texas	1	6,097	0	0	6,097	0	%	6,097	24,660
St. Lucie	1,2	98,592	0	0	98,592	44,934	46%	53,659	67,248
Summer		49,296	0	0	49,296	23,039	47%	26,257	33,624
Surry	1,2	98,592	0	0	98,592	55,632	56%	42,960	67,248
Susquehanna	1,2	187,296	0	0	187,296	111,013	59%	76,284	110,376
Three Mile Island	1,2	83,616	46,000	0	129,616	78,274	60%	1,342	49,320
Trojan		49,296	0	0	49,296	24,662	50%	24,634	33,624
Turkey Point	3,4	98,592	0	0	98,592	26,247	27%	72,345	67,248
Vermont Yankee		93,648	0	0	93,648	26,200	28%	67,448	55,188
Vogtle	1	19,513	0	0	19,513	1,332	7%	18,181	33,624
Waterford	3	37,453	0	0	37,453	26,602	71%	10,851	24,660
WNP	2	110,400	0	0	110,400	42,082	38%	68,318	75,276
Wolf Creek	1	34,840	0	0	34,840	15,063	43%	19,777	24,660
Yankee Rowe	1	41,808	0	0	41,808	15,227	36%	26,581	24,660
Zion	1,2	83,616	0	0	83,616	33,290	40%	50,326	49,320
TOTALS		6,575,119	161,833	0	6,736,952	2,822,307	--	3,914,645	4,437,252

a. See Section 5 for further explanations of tabular material.

b. Includes 13,205 cu. ft. authorized effective, Jan 1, 1989.

c. To date, no allocation transfers have been reported

TABLE C-2. BREAKDOWN OF NATION'S WASTE BY COMPACTS AND NONMEMBER STATES

<u>State/Compact</u>	<u>Total (cu ft)</u>	<u>Volume to Beatty (cu ft)</u>	<u>Volume to Richland (cu ft)</u>	<u>Volume to Barnwell (cu ft)</u>
Appalachian	182,600	6,288	42,629	133,683
Central	71,718	13,288	16,630	41,800
Central Midwest	114,655	14,956	25,892	73,807
Midwest	96,758	4,161	35,293	57,309
Northeast	88,209	1,896	29,704	56,609
Northwest	128,377	31	128,346	0
Rocky Mountain	3,076	2,911	165	0
Southeast	479,114	865	9,511	468,738
Southwestern	111,530	33,034	77,526	972
District of Columbia	909	118	445	346
Maine	6,330	8	3	6,319
Massachusetts	50,614	11,263	6,784	32,567
New Hampshire	486	0	486	0
New York	73,020	1,265	23,198	48,557
North Dakota	0	0	0	0
Puerto Rico	0	0	0	0
Rhode Island	1,108	15	558	535
South Dakota	<1	<1	0	0
Texas	12,376	2,445	6,252	3,679
Vermont	7,247	150	255	6,842
<b>Total</b>	<b>1,428,127</b>	<b>92,694</b>	<b>403,675</b>	<b>931,758</b>

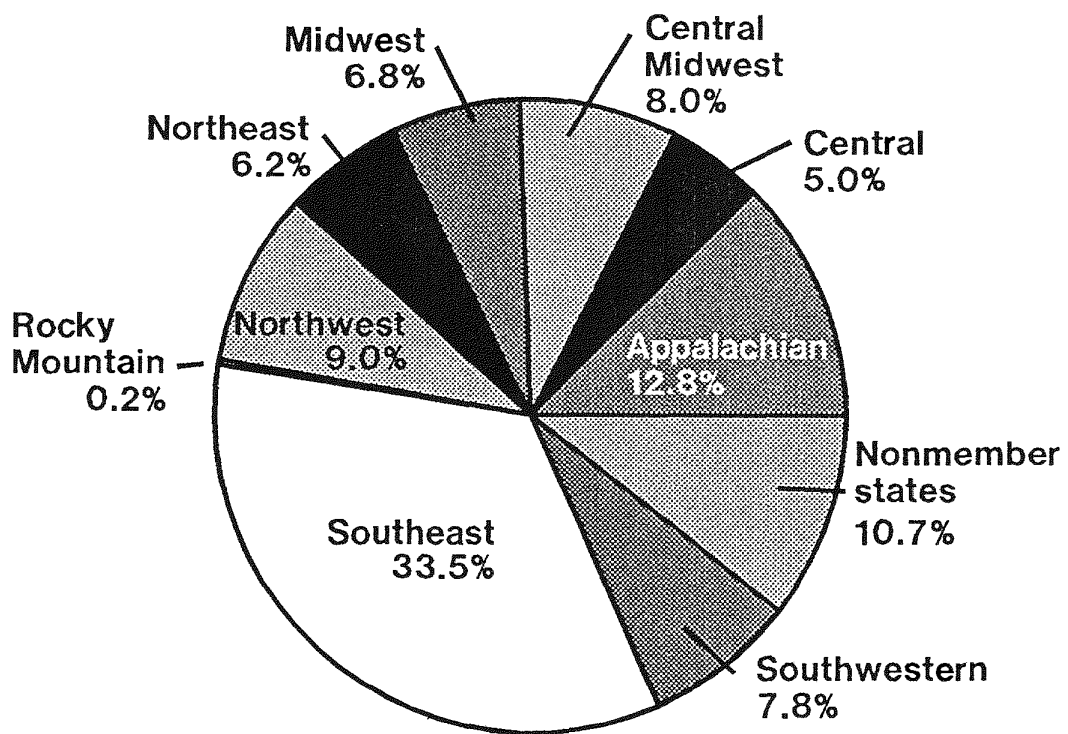


Figure C-1. Breakdown of nation's waste by compacts and nonmember states.

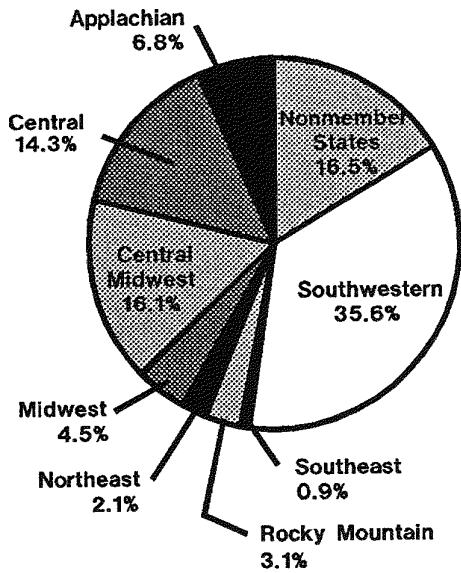
TABLE C-3. SUMMARY OF COMPACT REGIONS' LOW-LEVEL WASTE RECEIVED BY THE COMMERCIAL DISPOSAL SITES IN 1988 a/

<u>Compact Status</u>	<u>No. of States</u>	<u>Total (cu ft)</u>	<u>Percent of National Total</u>
Appalachian	4	182,600	12.8
Central	5	71,718	5.0
Central Midwest	2	114,655	8.0
Midwest	7	96,758	6.8
Northeast	2	88,209	6.2
Northwest	7	128,377	9.0
Rocky Mountain	4	3,076	0.2
Southeast	8	479,114	33.5
Southwestern	<u>2</u>	<u>111,530</u>	<u>7.8</u>
Total	41	1,276,037 <u>b/</u>	89.3

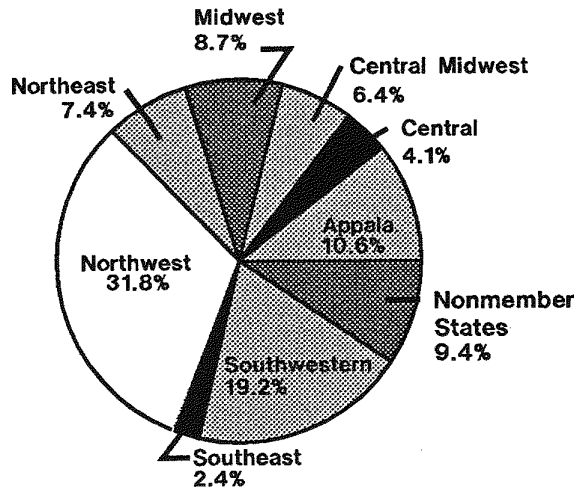
a/ Data obtained from the Department of Energy Low-Level Waste Allocation Monitoring System, reported by the States of Nevada, South Carolina, and Washington as of February 6, 1989. State/regional waste volume totals are subject to ongoing verification and may be adjusted slightly.

b/ Represents 89.3% of the 1988 national total of 1,428,127 cubic feet.

**Volume Percentage of Beatty Waste**



**Volume Percentage of Richland Waste**



**Volume Percentage of Barnwell Waste**

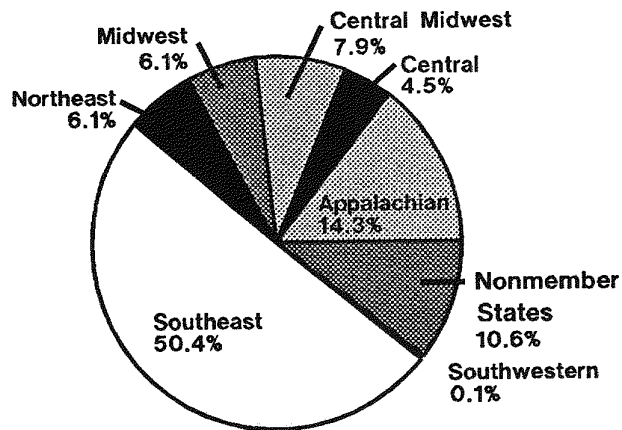
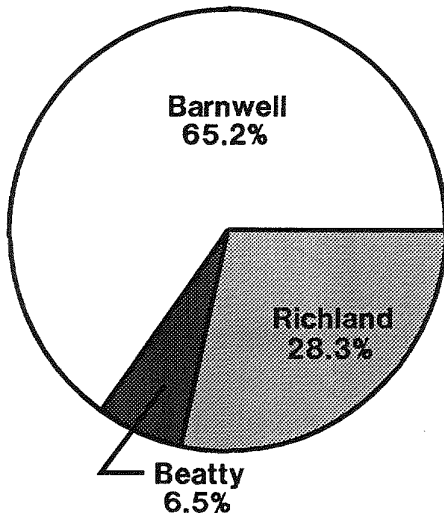


Figure C-2. Breakdown of disposal facility waste by compacts and nonmember States.

TABLE C-4. BREAKDOWN OF NATION'S WASTE BY DISPOSAL FACILITY

<u>Disposal Site</u>	<u>Nonutility (cu ft)</u>	<u>Utility (cu ft)</u>	<u>Total (cu ft)</u>
Barnwell, SC	334,258	597,500	931,758
Beatty, NV	59,148	33,546	92,694
Richland, WA	<u>224,291</u>	<u>179,384</u>	<u>403,675</u>
Total	617,697	810,430	1,428,127

Volume Percentage by Disposal Facility



Volume Percentage by Source

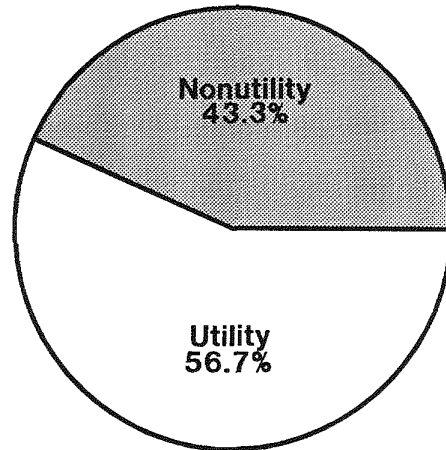


Figure C-3. Breakdown of nation's waste by disposal facility and source.

TABLE C-5. APPALACHIAN COMPACT REGION'S LOW-LEVEL WASTE RECEIVED BY THE COMMERCIAL DISPOSAL SITES IN 1988 a/

State	Source		Total (cu ft)
	Nonutility (cu ft)	Utility (cu ft)	
Delaware	1,420	0	1,420
Maryland	28,782	1,894	30,676
Pennsylvania	19,989	130,367	150,356
West Virginia	148	0	148
Total	50,339	132,261	182,600 <u>b/</u>

a/ Data obtained from the Department of Energy Low-Level Waste Allocation Monitoring System, reported by the States of Nevada, South Carolina, and Washington as of February 6, 1989. State/regional waste volume totals are subject to ongoing verification and may be adjusted slightly.

b/ Represents 12.8% of the 1988 national total of 1,428,127 cubic feet.

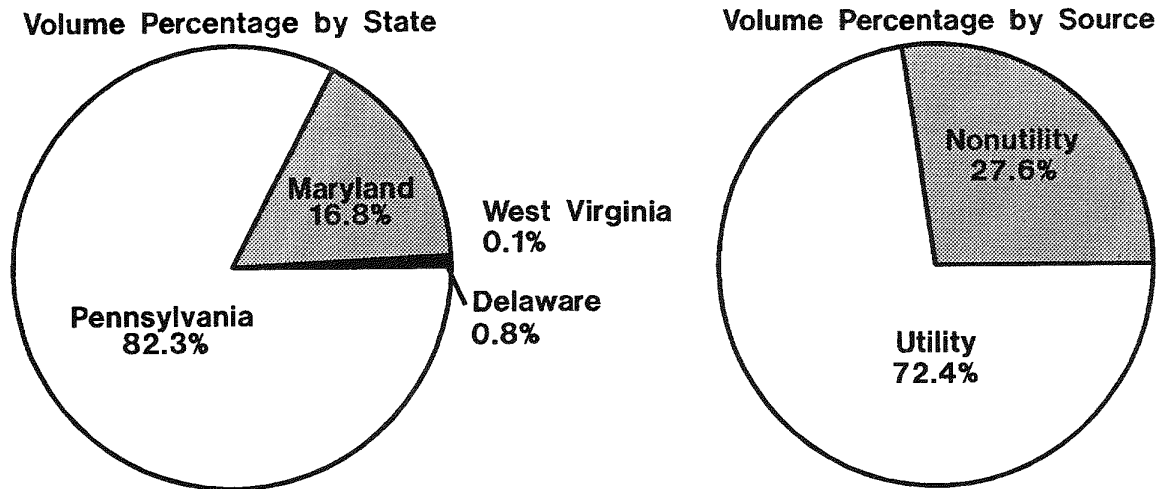


Figure C-4. Appalachian Compact Region's low-level waste received by the commercial disposal sites in 1988.

TABLE C-6. CENTRAL COMPACT REGION'S LOW-LEVEL WASTE RECEIVED BY THE COMMERCIAL DISPOSAL SITES IN 1988 <sup>a/</sup>

State	Source		Total (cu ft)
	Nonutility (cu ft)	Utility (cu ft)	
Arkansas	69	6,965	7,034
Kansas	554	4,461	5,015
Louisiana	475	17,906	18,381
Nebraska	183	12,639	12,822
Oklahoma	<u>28,466</u>	<u>0</u>	<u>28,466</u>
Total	29,747	41,971	71,718 <sup>b/</sup>

<sup>a/</sup> Data obtained from the Department of Energy Low-Level Waste Allocation Monitoring System, reported by the States of Nevada, South Carolina, and Washington as of February 6, 1989. State/regional waste volume totals are subject to ongoing verification and may be adjusted slightly.

<sup>b/</sup> Represents 5.0% of the 1988 national total of 1,428,127 cubic feet.

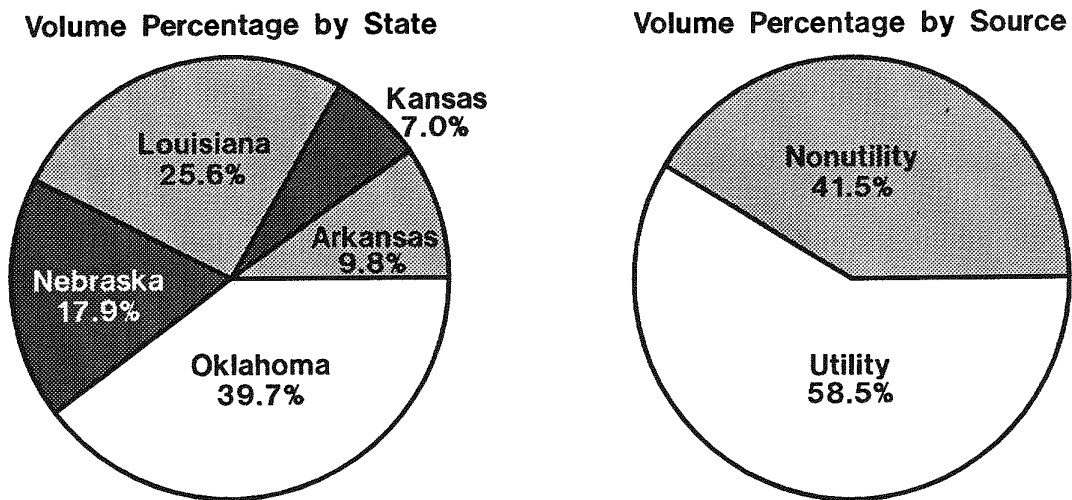


Figure C-5. Central Compact Region's low-level waste received by the commercial disposal sites in 1988.

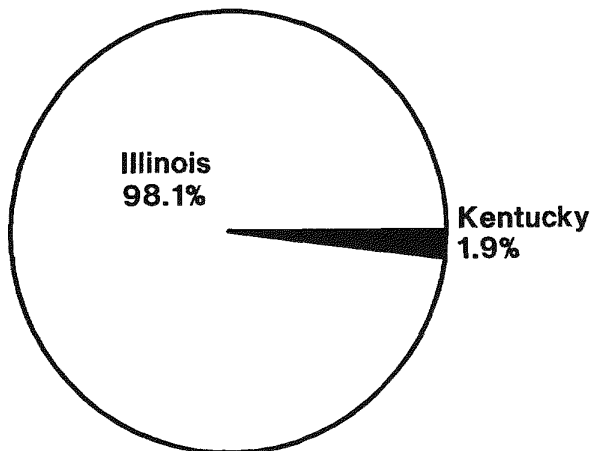
TABLE C-7. CENTRAL MIDWEST COMPACT REGION'S LOW-LEVEL WASTE RECEIVED BY THE COMMERCIAL DISPOSAL SITES IN 1988 a/

State	Source		Total (cu ft)
	Nonutility (cu ft)	Utility (cu ft)	
Illinois	12,594	99,939	112,533
Kentucky	<u>2,122</u>	<u>0</u>	<u>2,122</u>
Total	14,716	99,939	114,655 <u>b/</u>

a/ Data obtained from the Department of Energy Low-Level Waste Allocation Monitoring System, reported by the States of Nevada, South Carolina, and Washington as of February 6, 1989. State/regional waste volume totals are subject to ongoing verification and may be adjusted slightly.

b/ Represents 8.0% of the 1988 national total of 1,428,127 cubic feet.

Volume Percentage by State



Volume Percentage by Source

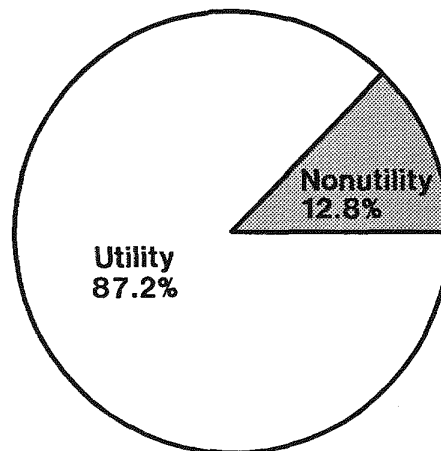


Figure C-6. Central Midwest Compact Region's low-level waste received by the commercial disposal sites in 1988.

TABLE C-8. MIDWEST COMPACT REGION'S LOW-LEVEL WASTE RECEIVED BY THE COMMERCIAL DISPOSAL SITES IN 1988 a/

State	Source		Total (cu ft)
	Nonutility (cu ft)	Utility (cu ft)	
Indiana	1,890	0	1,890
Iowa	1,202	6,004	7,206
Michigan	3,413	23,670	27,083
Minnesota	8,249	7,231	15,480
Missouri	8,538	3,373	11,911
Ohio	7,379	15,175	22,554
Wisconsin	711	9,923	10,634
Total	31,382	65,376	96,758 b/

a/ Data obtained from the Department of Energy Low-Level Waste Allocation Monitoring System, reported by the States of Nevada, South Carolina, and Washington as of February 6, 1989. State/regional waste volume totals are subject to ongoing verification and may be adjusted slightly.

b/ Represents 6.8% of the 1988 national total of 1,428,127 cubic feet.

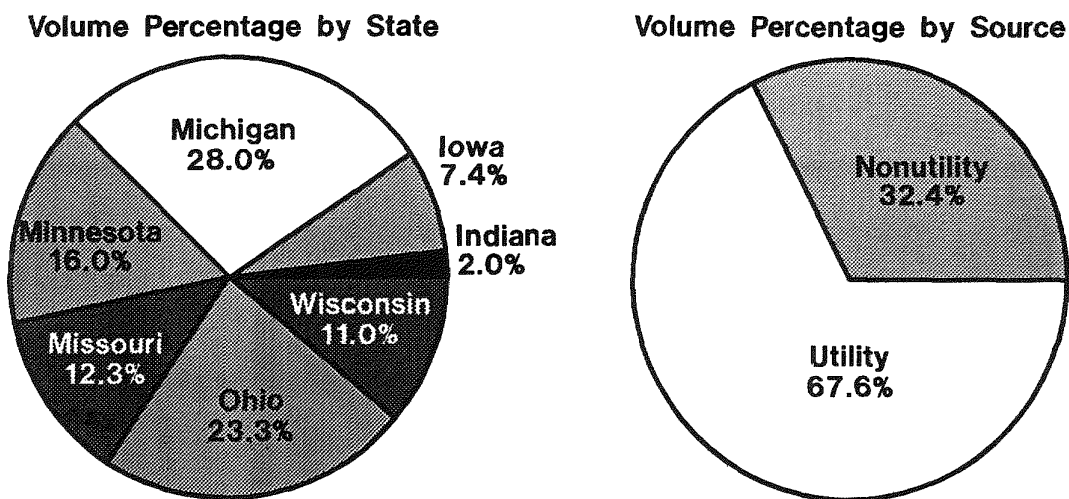


Figure C-7. Midwest Compact Region's low-level waste received by the commercial disposal sites in 1988.

TABLE C-9. NORTHEAST COMPACT REGION'S LOW-LEVEL WASTE RECEIVED BY THE COMMERCIAL DISPOSAL SITES IN 1988 a/

State	Source		Total (cu ft)
	Nonutility (cu ft)	Utility (cu ft)	
Connecticut	16,387	25,421	41,808
New Jersey	19,259	27,142	46,401
Total	35,646	52,563	88,209 b/

a/ Data obtained from the Department of Energy Low-Level Waste Allocation Monitoring System, reported by the States of Nevada, South Carolina, and Washington as of February 6, 1989. State/regional waste volume totals are subject to ongoing verification and may be adjusted slightly.

b/ Represents 6.2% of the 1988 national total of 1,428,127 cubic feet.

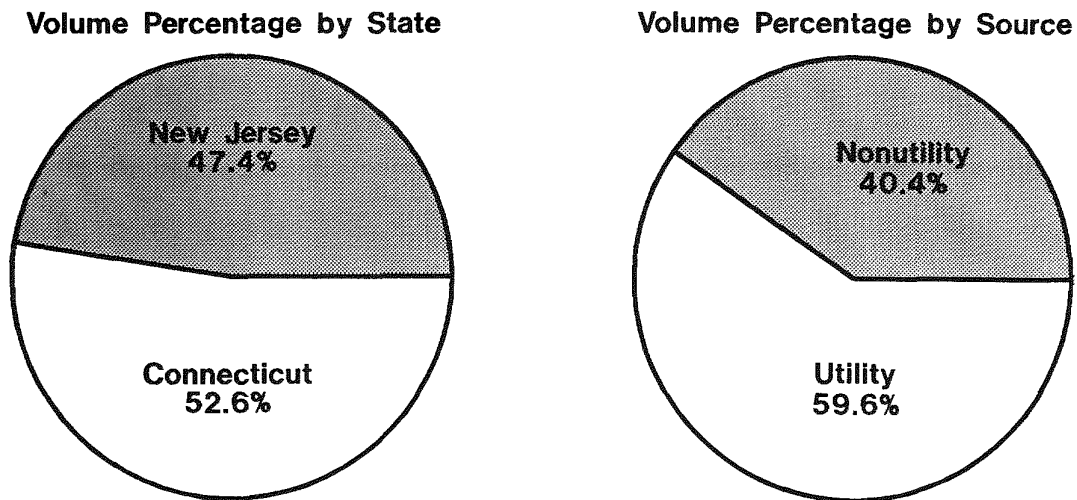


Figure C-8. Northeast Compact Region's low-level waste received by the commercial disposal sites in 1988.

TABLE C-10. NORTHWEST COMPACT REGION'S LOW-LEVEL WASTE RECEIVED BY THE COMMERCIAL DISPOSAL SITES IN 1988 <sup>a/</sup>

State	Source		Total (cu ft)
	Nonutility (cu ft)	Utility (cu ft)	
Alaska	4	0	4
Hawaii	3,943	0	3,943
Idaho	51	0	51
Montana	14	0	14
Oregon	79,630	4,167	83,797
Utah	4,672	0	4,672
Washington	<u>19,281</u>	<u>16,615</u>	<u>35,896</u>
Total	107,595	20,782	128,377 <sup>b/</sup>

a/ Data obtained from the Department of Energy Low-Level Waste Allocation Monitoring System, reported by the States of Nevada, South Carolina, and Washington as of February 6, 1989. State/regional waste volume totals are subject to ongoing verification and may be adjusted slightly.

b/ Represents 9.0% of the 1988 national total of 1,428,127 cubic feet.

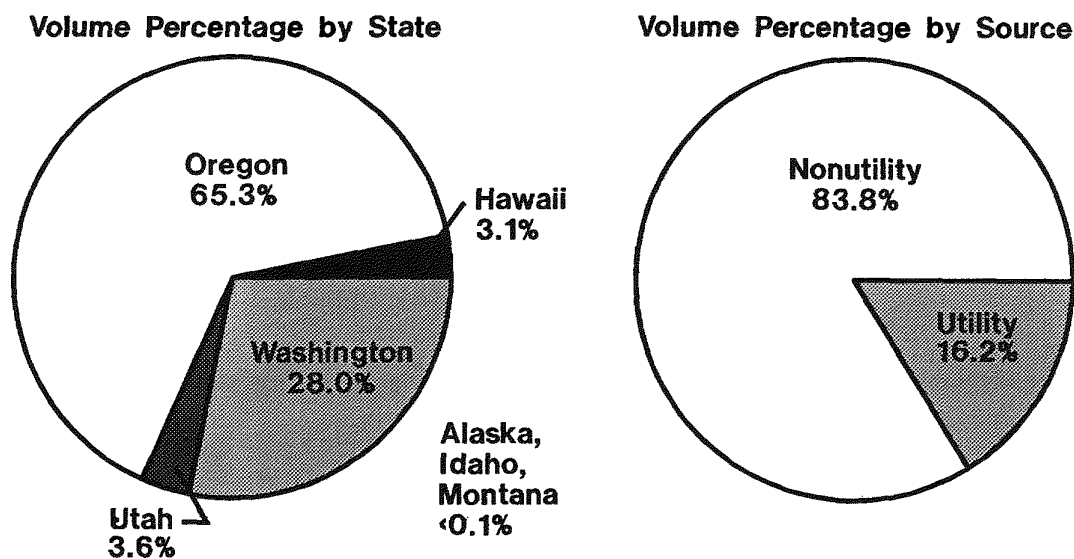


Figure C-9. Northwest Compact Region's low-level waste received by the commercial disposal sites in 1988.

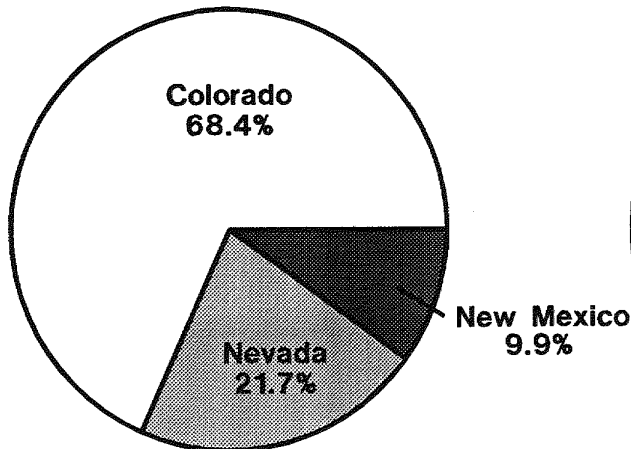
TABLE C-11. ROCKY MOUNTAIN COMPACT REGION'S LOW-LEVEL WASTE RECEIVED BY THE COMMERCIAL DISPOSAL SITES IN 1988 <sup>a/</sup>

State	Source		Total (cu ft)
	Nonutility (cu ft)	Utility (cu ft)	
Colorado	2,104	0	2,104
Nevada	668	0	668
New Mexico	304	0	304
Wyoming	0	0	0
Total	3,076	0	3,076 <sup>b/</sup>

a/ Data obtained from the Department of Energy Low-Level Waste Allocation Monitoring System, reported by the States of Nevada, South Carolina, and Washington as of February 6, 1989. State/regional waste volume totals are subject to ongoing verification and may be adjusted slightly.

b/ Represents 0.2% of the 1988 national total of 1,428,127 cubic feet.

Volume Percentage by State



Volume Percentage by Source

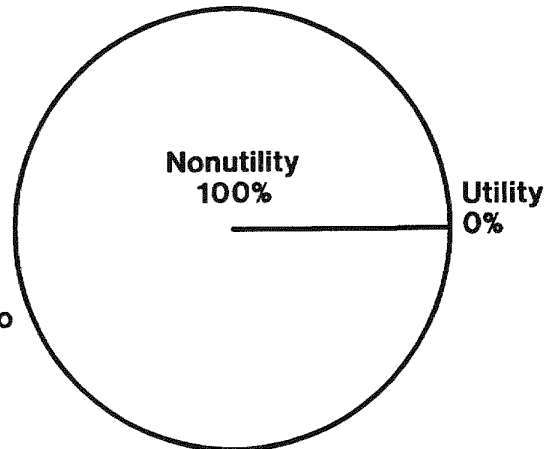


Figure C-10. Rocky Mountain Compact Region's low-level waste received by the commercial disposal sites in 1988.

TABLE C-12. SOUTHEAST COMPACT REGION'S LOW-LEVEL WASTE RECEIVED BY THE COMMERCIAL DISPOSAL SITES IN 1988 a/

State	Source		Total (cu ft)
	Nonutility (cu ft)	Utility (cu ft)	
Alabama	5,807	45,141	50,948
Florida	1,983	28,761	30,744
Georgia	7,174	31,766	38,940
Mississippi	553	17,620	18,173
North Carolina	14,593	47,850	62,443
South Carolina	51,458	43,536	94,994
Tennessee	96,816	21,919	118,735
Virginia	<u>41,751</u>	<u>22,386</u>	<u>64,137</u>
Total	220,135	258,979	479,114 b/

a/ Data obtained from the Department of Energy Low-Level Waste Allocation Monitoring System, reported by the States of Nevada, South Carolina, and Washington as of February 6, 1989. State/regional waste volume totals are subject to ongoing verification and may be adjusted slightly.

b/ Represents 33.5% of the 1988 national total of 1,428,127 cubic feet.

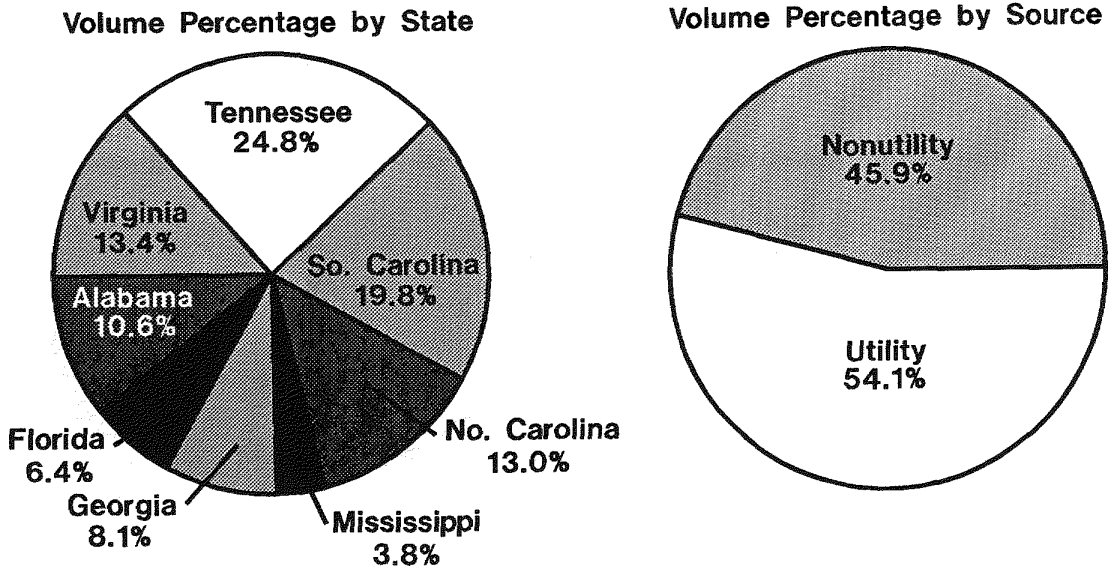


Figure C-11. Southeast Compact Region's low-level waste received by the commercial disposal sites in 1988.

TABLE C-13. SOUTHWESTERN COMPACT REGION'S LOW-LEVEL WASTE RECEIVED BY THE COMMERCIAL DISPOSAL SITES IN 1988 <sup>a/</sup>

State	Source		Total (cu ft)
	Nonutility (cu ft)	Utility (cu ft)	
Arizona	1,412	26,933	28,345
California	<u>51,088</u>	<u>32,097</u>	<u>83,185</u>
Total	52,500	59,030	111,530 <sup>b/</sup>

<sup>a/</sup> Data obtained from the Department of Energy Low-Level Waste Allocation Monitoring System, reported by the States of Nevada, South Carolina, and Washington as of February 6, 1989. State/regional waste volume totals are subject to ongoing verification and may be adjusted slightly.

<sup>b/</sup> Represents 7.8% of the 1988 national total of 1,428,127 cubic feet.

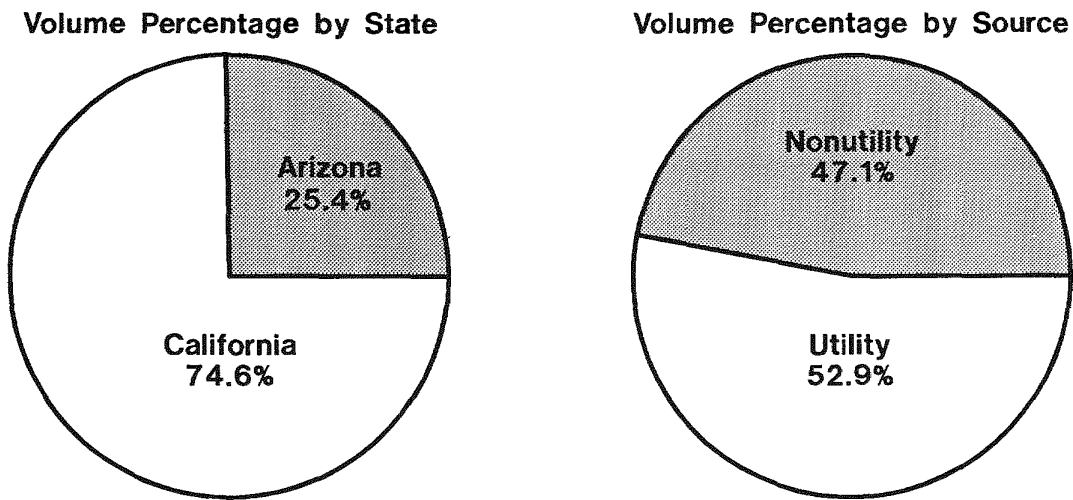


Figure C-12. Southwestern Compact Region's low-level waste received by the commercial disposal sites in 1988.

TABLE C-14. SUMMARY OF NONMEMBER STATES' LOW-LEVEL WASTE RECEIVED BY THE COMMERCIAL DISPOSAL SITES IN 1988 a/

State	Source		Total (cu ft)	Percent of National Total
	Nonutility (cu ft)	Utility (cu ft)		
District of Columbia	909	0	909	<0.1
Maine	1,098	5,232	6,330	0.4
Massachusetts	37,802	12,812	50,614	3.5
New Hampshire	169	317	486	<0.1
New York	18,688	54,332	73,020	5.1
North Dakota	0	0	0	0
Puerto Rico	0	0	0	0
Rhode Island	1,108	0	1,108	<0.1
South Dakota	0	0	0	0
Texas	12,376	0	12,376	0.9
Vermont	<u>409</u>	<u>6,838</u>	<u>7,247</u>	<u>0.5</u>
Total	72,559	79,531	152,090 b/	10.6

a/ Data obtained from the Department of Energy Low-Level Waste Allocation Monitoring System, reported by the States of Nevada, South Carolina, and Washington as of February 6, 1989. State/regional waste volume totals are subject to ongoing verification and may be adjusted slightly.

b/ Represents 10.6% of the 1988 national total of 1,428,127 cubic feet.

APPENDIX D

DEPARTMENT OF ENERGY ACTIVITIES

UNDER THE LOW-LEVEL RADIOACTIVE WASTE POLICY AMENDMENTS ACT OF 1985

DEPARTMENT OF ENERGY ACTIVITIES  
UNDER THE LOW-LEVEL RADIOACTIVE WASTE POLICY AMENDMENTS ACT OF 1985

Public Law 99-240, the Low-Level Radioactive Waste Policy Amendments Act of 1985, assigns the Department of Energy responsibility for providing assistance to States and compacts in fulfilling their responsibilities under the Act. The Act also assigns the Department responsibility for administering an escrow account for a portion of disposal surcharges paid by low-level waste generators located outside the sited compact regions. In response to the Act, the Department also prepares this annual report to Congress on low-level radioactive waste management progress, and another report to Congress on expenditures by States and compacts of surcharge rebate funds.

The Department's Nuclear Energy Low-Level Radioactive Waste Management Program maintains contact with State and compact officials to identify and address general and specific assistance needs. Assistance provided to States and compacts during 1988 included:

- o Written reports including the Site Selection Handbook, the Site Characterization Handbook, the LLW Volume Reduction and Stabilization Technology Resource Manual, and the State-by-State Assessment of Low-Level Radioactive Waste Received at Commercial Disposal Sites
- o Workshops on project management, site selection, quality assurance, and media relations
- o Development of prototype disposal site license applications, and submission of them to the Nuclear Regulatory Commission for review
- o Data management services including provision of on-line access to waste disposal information, data base analyses and a model for estimating disposal costs
- o Responses to specific State and compact requests for technical assistance

In addition to these activities, the Department sponsors two State/compact coordination groups, the "Low-Level Waste Forum" and the "Host State Technical Coordinating Committee."

As early as 1982, representatives of the States and proposed compacts began organizing ad hoc meetings on their own initiative to discuss and attempt to resolve issues of mutual concern. As the need for more regular meetings became apparent, the National Governors' Association undertook to organize meeting logistics and to mediate issues. More frequent meetings

of the group were held during 1984 and 1985 to negotiate legislative provisions that later became the Low-Level Radioactive Waste Policy Amendments Act of 1985. After the Act became law, the Governors' Association discontinued its support of the group. The Department of Energy decided the group's activities were important to establishing an effective national low-level waste management system, and began providing interim support to continue coordination of activities among the States and compacts until these entities could make arrangement for supporting the group themselves. The group adopted the name, Low-Level Waste Forum.

The Host State Technical Coordinating Committee evolved from a Department of Energy-sponsored ad hoc group of State officials formed in 1985 to examine alternative waste disposal methods. As more technical issues began to emerge, the Committee's role expanded. The Committee now is composed of participants from each of the Compact host States and each unaffiliated State implementing a disposal facility siting plan. The Department of Energy sponsors meetings of the Committee.

The Department anticipates that its support for these coordinating groups will continue while the States and compacts develop mechanisms for funding the groups or establish other organizations to fulfill these functions. As the responsibilities of the Department for providing assistance to States and compacts decreases in the 1990's, programmatic activities are expected to be reduced. Because the Act assigns responsibility for disposal of low-level waste to the States, the Department has notified States and compacts that it will provide them assistance in forming their own association, which would operate independently of the Federal Government and could continue after the Federal role diminishes.

Section 5(d)(2)(A) of the Act requires the Department to administer an escrow account in which are deposited a portion of disposal surcharges paid by generators in non-sited States and compact regions. The Department issues surcharge rebates to States and compacts that comply with milestones in the Act. The expenditures of rebated surcharge funds is the subject of the rebate expenditure report required by Section 5(d)(2)(E).

APPENDIX E

TOPICS ADDRESSED BY THE 1988 ANNUAL REPORT TO CONGRESS  
PURSUANT TO SECTION 7(b) OF PUBLIC LAW 99-240

TOPICS ADDRESSED BY THE 1988 ANNUAL REPORT TO CONGRESS  
PURSUANT TO SECTION 7(b) OF PUBLIC LAW 99-240

Section 7(b) of the Low-Level Radioactive Waste Policy Amendments Act of 1985 requires the Department of Energy to submit to Congress on an annual basis a report which,

"(1) summarizes the progress of low-level waste disposal siting and licensing activities within each compact region, (2) reviews the available volume reduction technologies, their applications, effectiveness, and costs of a per unit volume basis, (3) reviews interim storage facility requirements, costs, and usage, (4) summarizes transportation requirements for such wastes on an inter- and intra-regional basis, (5) summarizes the data on the total amount of low-level waste shipped for disposal on a yearly basis, the proportion of such waste subjected to volume reduction, the average volume reduction attained, and the proportion of wastes stored on an interim basis, and (6) projects the interim storage and final disposal volume requirements anticipated for the following year, on a regional basis."

This 1988 report summarizes activities within each compact region for siting and licensing new facilities, and also summarizes the volumes of low-level waste shipped for disposal from each State or compact region. The following summarizes developments and activities in other areas:

#### Volume Reduction

The Department of Energy completed a Volume Reduction and Stabilization Manual in December 1988. The manual summarizes information about currently used technologies, providing volume reduction ratios for specific technologies, where applicable. The manual is intended for use by low-level waste managers for evaluating volume reduction and stabilization practices on a system-wide basis. It is in loose-leaf format and will be updated on a continuing basis. Relatedly, the Electric Power Research Institute updated its "Identification of RadWaste Sources" (EPRI NP-5526, February 1988), the report used by Congress to determine utility allocation levels for the interim access period specified in P.L. 99-240. The updated report concludes that most reactors "have significantly reduced the volume of dry active waste shipped for disposal through source minimization and increased packaging efficiencies." This conclusion is supported by statistics reflecting the volume of low-level waste shipped for disposal in the past several years.

#### Interim Storage

At the time the Act was passed there was concern that the disposal site capacity limits and utility allocations specified in the Act would result

in significant storage of low-level waste by waste generators, pending availability of new regional disposal sites. Summary data included in this 1988 report (see Section 5) indicate that this is not likely to be a problem. Three years through the 7-year period of access to the three operating disposal sites, the sites have used only 26 percent of the combined site capacity limits authorized in the Act. Commercial power reactors have used 43.0 percent of their total available allocations for the period 1986 through 1989.

However, there may be significant storage of low-level waste after the access period ends on January 1, 1993, because a number of States and compacts do not plan to begin operation of their disposal sites immediately after that date. Governors' Certifications submitted to the Nuclear Regulatory Commission in response to the January 1, 1990, milestone (see Section 2.3.1) are expected to detail the plans of States and compacts for managing low-level waste after 1992. The contents of these plans will be summarized and reported in subsequent annual reports to Congress.

#### Transportation Requirements

Transportation of commercially-generated radioactive materials, a small portion of which is low-level waste, is an activity performed almost entirely by the private sector in accordance with Federal and State regulations. Intra-regional transportation resources and shipment patterns are not likely to change until each of the compact regions has established or has otherwise obtained stable access to disposal capacity. Inter-regional transportation requirements depend to a large extent on the import and export authorities of the various compacts, and how the compacts choose to exercise those authorities (see Section 4). During 1989, the Department plans to obtain, through its Low-Level Waste Forum support contractor, information regarding shipments of waste by low-level waste brokers and processors. Once the system of regional disposal and processing facilities becomes more stable, the Department will be able to analyze transportation patterns in more detail.

#### Disposal, Volume Reduction and Storage Data

The Department of Energy collects from regulatory agencies in the three sited States on a monthly basis data on low-level waste volumes disposed at the currently operating disposal sites. Since January 1986, this aggregate data has been available to States and compacts on-line or by special request through the Department's National Low-Level Waste Information System. The system is capable of reporting volumes of low-level waste disposed by disposal site, by month, by State, and by utility versus non-utility generators; or any combination of these. Data in this system "sees through" low-level waste brokers and processors so that even low-level waste that is consolidated with other shipments or volume-reduced through processing at a facility in another State, is properly attributed back to the State in which the waste was originally generated. Summary information on waste shipped for disposal during 1988 is included in this annual report (see Appendix C).

Substantial reductions in the volume of low-level waste shipped for disposal since 1985 suggest that most low-level waste is being volume reduced mechanically or through incineration prior to disposal. In 1988, one supercompaction facility in Oak Ridge, Tennessee, reduced approximately 810,000 cubic feet of waste to about 180,000 cubic feet for disposal at the commercially-operated disposal sites. Facilities such as this one can efficiently process volumes of waste far in excess of the volume generated in a typical compact region and may provide additional incentives for inter-regional cooperation in the configuration and use of waste management systems that span regional borders.

### Volume Projections

Each of the compact regions and some of the non-compact-member States have independently completed regional management plans and generator surveys that have tried to project future waste volumes. However, reliable waste volume projections are very difficult to obtain, given the complex nature of current disposal economics. As waste generators further reduce the volumes of waste they generate, each successive reduction becomes increasingly expensive. Waste generators evaluate their level of effort in reducing volume against escalating disposal costs and surcharges. Therefore, predictions of future waste volumes should be considered highly speculative until new disposal facilities become available in the mid-1990's.