The Honorable Al Gore, Jr.
President of the Senate
Washington, D.C. 20510

Dear Mr. President:

Enclosed is the "1992 Annual Report on Low-Level Radioactive Waste Management Progress" submitted in response to section 7(b) of Public Law 99-240, the Low-Level Radioactive Waste Policy Amendments Act of 1985 (the Act). This is the seventh annual report that the Department of Energy has compiled regarding the progress of States and compact regions involved in providing management and disposal of their commercial low-level radioactive waste.

The Act sets a general framework by which States may establish low-level radioactive waste disposal capacity. It includes milestones, incentives, and penalties meant to encourage States' continuous progress in low-level radioactive waste disposal facility development. In 1992, the constitutionality of the Act was challenged before the United States Supreme Court. The Court found one provision of the Act, referred to as the "take-title" provision, unconstitutional.

In their efforts to provide disposal and comply with the Act, States have formed nine interstate compacts (42 States). Five States, though unaffiliated with a compact, also have plans to develop facilities. Five States, four of which generate minimal quantities of low-level radioactive waste annually, currently do not plan to construct disposal facilities.

Over the years, the Department has evaluated States' progress against the Act's milestones and, generally, reported States making progress toward the Act's final goal of providing disposal capacity. Most States met the Act's milestones for 1986, 1988, and 1990. The progress has slowed in recent years. Milestone compliance alone appears to have been insufficient to produce low-level radioactive waste disposal capacity. The Department's
evaluation of States' status in 1992 shows that the majority of States' progress has slowed due to political and legal challenges and public opposition.

The last milestone (January 1, 1992) required States to have filed with the Nuclear Regulatory Commission or an appropriate State entity a complete license application to operate a low-level radioactive waste disposal facility by that date. Three States (representing three compact regions) complied with the 1992 milestone. However, by the fall of 1992, events in all three of those States stymied additional progress.

On December 31, 1992, the Nation's three operating disposal facilities were scheduled to close to at least generators of out-of-region low-level radioactive waste. The Beatty, Nevada, low-level radioactive waste disposal facility closed, while the Richland, Washington, facility remains open to the Northwest compact region and, through contractual arrangements, to the Rocky Mountain compact region. In mid-1992, South Carolina passed legislation that allows qualified States outside the Southeast compact up to 18 months continued access to the disposal facility in Barnwell, South Carolina.

Despite the delays, the Department believes that it is not advisable to revise the fundamental framework embodied in the Act at this time. The Department maintains that States can establish new low-level radioactive waste disposal capability under the provisions of the Act. States retain the responsibility, adequate authority and flexibility, and the means to solve their low-level radioactive waste disposal problems. The Department continues to support them in their efforts.

Sincerely,

Hazel R. O'Leary

Enclosure
ADDRESS LIST

The Honorable Al Gore, Jr.
President of the Senate
Washington, D.C. 20510

The Honorable J. Bennett Johnston
Chairman
Committee on Energy
and Natural Resources
United States Senate
Washington, D.C. 20510

The Honorable Malcolm Wallop
Ranking Minority Member
Committee on Energy
and Natural Resources
United States Senate
Washington D.C. 20510

The Honorable Max Baucus
Chairman
Committee on Environment
and Public Works
United States Senate
Washington, D.C. 20510

The Honorable John H. Chafee
Ranking Minority Member
Committee on Environment
and Public Works
United States Senate
Washington, D.C. 20510

The Honorable Joseph R. Biden, Jr.
Chairman
Committee on the Judiciary
United States Senate
Washington, D.C. 20510

The Honorable Orrin G. Hatch
Ranking Minority Member
Committee on the Judiciary
United States Senate
Washington, D.C. 20510

The Honorable Thomas S. Foley
Speaker of the
House of Representatives
Washington, D.C. 20515

The Honorable John D. Dingell
Chairman
Committee on Energy and Commerce
U.S. House of Representatives
Washington, D.C. 20515

The Honorable Carlos J. Moorhead
Ranking Minority Member
Committee on Energy and Commerce
U.S. House of Representatives
Washington, D.C. 20515

The Honorable George Miller
Chairman
Committee on Natural Resources
U.S. House of Representatives
Washington, D.C. 20515

The Honorable Don Young
Ranking Minority Member
Committee on Natural Resources
U.S. House of Representatives
Washington, D.C. 20515

The Honorable Jack Brooks
Chairman
Committee on the Judiciary
U.S. House of Representatives
Washington, D.C. 20515

The Honorable Hamilton Fish, Jr.
Ranking Minority Member
Committee on the Judiciary
U.S. House of Representatives
Washington, D.C. 20515
Report to Congress in Response to Public Law 99-240


U.S. Department of Energy
Office of Environmental Restoration and Waste Management
Washington, D.C. 20585

November 1993
ABSTRACT

This report summarizes the progress States and compact regions made during 1992 in establishing new low-level radioactive waste disposal facilities. It also provides summary information on the volume of low-level radioactive waste received for disposal in 1992 by commercially operated low-level radioactive waste disposal facilities. This report is in response to section 7 (b) of the Low-Level Radioactive Waste Policy Act.
EXECUTIVE SUMMARY

As early as 1959, under an amendment to the Atomic Energy Act of 1954, States began assuming responsibility for some regulatory and licensing aspects associated with radioactive waste. With the passage of Public Law 96-573, the Low-Level Radioactive Waste Policy Act, States were assigned responsibility for the disposal of certain low-level radioactive waste generated within their borders (except for low-level radioactive waste which is the responsibility of the Federal government). This Act was amended by the Low-Level Radioactive Waste Policy Amendments Act of 1985, Public Law 99-240 to provide milestones, incentives, and penalties to promote the States' continuous progress toward new low-level radioactive waste facility development.

Under the revised Act, the three States (the sited States) with operating disposal facilities agreed to allow continued access to their facilities through December 31, 1992. The three facilities are: Beatty, Nevada; Barnwell, South Carolina; and Richland, Washington.

The majority of States (42) have formed nine interstate compact regions. Five States, unaffiliated with a compact, plan to construct disposal facilities. Five unaffiliated States that generate minimal amounts of low-level radioactive waste do not plan to construct a disposal facility. Figure S-1 illustrates the current configuration of compact regions and unaffiliated States; Figure S-2 shows the potential disposal site locations announced by early 1993.

This is the Department of Energy's (DOE) seventh annual report to Congress summarizing the progress of States and compact regions in developing new disposal sites and managing commercial low-level radioactive waste. In previous reports, DOE has reported that States, generally, were making progress when evaluated against the Act's milestones. Over the years, the sited States have monitored the progress of non-sited States and compact regions in developing low-level radioactive waste disposal facilities; for each of the milestones, the sited States made compliance determinations. Following milestones for which rebates of disposal surcharges were required by
Commercial Low-Level Waste Management System

- Active disposal site
- Designated compact host state or unaffiliated state planning to host a disposal site
- Approved compact
- Unaffiliated state not planning to host a disposal site
- Current host state (Washington has no plans to close its facility)

Figure S-1. Current configuration of unaffiliated States and compact regions.
a. Maine is studying six candidate sites; the Maine Yankee site in Wiscasset is one of the sites.

Figure S-2. Potential disposal site locations.
the Act, DOE also evaluated whether States and compact regions had met the milestone. The Secretary of Energy is the administrator of the escrow account in which surcharge funds are deposited.

Upon review of the status of the nonsited States in 1992, it appears that while the majority of States continued to comply with most of the milestones, compliance in itself was insufficient to culminate in the ultimate goal -- providing disposal capacity by January 1, 1993. Table 1 lists the host State projected plans as of March 1993.

The first milestone, January 1, 1986, required States not already members of a compact region to either ratify compact legislation, enact legislation or provide governor certification indicating the State’s intent to develop a low-level radioactive waste disposal facility. By January 1, 1988, the second milestone date, compact regions and unaffiliated States were to identify the host State for their disposal facility, develop a siting plan, and delegate authority to implement the plan. The third milestone was to have been met by January 1, 1990; States were to file a complete application license to operate a disposal facility, or file a governor’s certification indicating that the State would be capable of providing storage, disposal, or management of its low-level radioactive waste after December 31, 1992. All States planning disposal facilities have complied with these milestones.

The Act’s last milestone required the filing of a complete license application to operate a low-level radioactive waste disposal facility by January 1, 1992; the application could be filed either with the U.S. Nuclear Regulatory Commission or with the appropriate agency of the Agreement State. Only three compact regions, comprising 11 States, met this milestone: the Central (host State, Nebraska); Central Midwest (host State, Illinois); and Southwestern (host State, California) compact regions.

By early fall of 1992, it became clear that no State would have a new operating disposal facility by January 1, 1993. Illinois, Nebraska, and California, the three States closest to providing disposal capacity, each encountered situations that reversed or halted their progress. In 1992, States had to plan for the possibility that as of January 1, 1993, for the
majority of States, there would be no disposal access. Beatty continued with plans to close, as laid out in Nevada law, and ceased operation on December 31, 1992.

The Richland facility after December 31, 1992, was to operate only on a regional basis for the Northwest compact region, but an agreement signed by the Rocky Mountain Low-Level Radioactive Waste Board and the Northwest Low-Level Waste Compact Committee in September allowed waste generated in the Rocky Mountain compact region to continue to be accepted for disposal at Richland.

The State of South Carolina provided a temporary solution to States' disposal problems. Legislation enacted in South Carolina in the spring of 1992 allowed the regional facility at Barnwell to remain open to States within the Southeast compact region through December 31, 1995; and until June 30, 1994, to out-of-region States who met eligibility requirements and entered contracts with the Southeast Compact Commission. Out-of-region generators who ship to Barnwell during the 18-month extension of access must pay a significant surcharge, and access may be terminated by the Southeast Compact Commission without cause. Those States without access to Barnwell on December 31, 1992, because of previous findings of noncompliance with the 1985 Act's milestones, were not eligible to contract. The ineligible States are the District of Columbia, Michigan, New Hampshire, Puerto Rico, and Rhode Island.

Another issue facing States concerned the constitutionality of the Act. In March, the United States Supreme Court heard the case New York v. United States. The State of New York brought suit against the United States and claimed that the Act exceeded the limits imposed on Federal action by the Constitution, particularly the provision in the Act requiring States to take title to low-level radioactive waste in 1996 upon notification by the generator that the waste was available for shipment. The court found that the take-title provision was unconstitutional, but severable from the rest of the Act, leaving the remainder of the Act in force. Except for the take-title obligation, States' responsibility for the disposal of commercial low-level radioactive waste thus remains intact.
States' siting processes continued to be challenged. For example, in October 1992, the Illinois Siting Commission voted unanimously to reject the site near Martinsville, Illinois, that had been proposed by the Illinois Department of Nuclear Safety (IDNS) and supported by the local community. The Siting Commission, in a decision disputed by the City of Martinsville and the license applicant (Chem-Nuclear Systems, Inc.) determined that the site did not meet the technical requirements. However, IDNS, which is responsible for making technical licensing decisions, was not allowed to conclude its technical evaluation of the Martinsville site. In November 1992, the sited States notified the Central Midwest compact region that it was no longer in compliance with the January 1, 1992, milestone since the license application specifically referred to the Martinsville site.

Lawsuits and a temporary restraining order all but stopped the siting process in California. Now, before the California Department of Health Services (DHS) can issue a decision on the license application that has been under technical review for three years, the DHS has agreed to conduct a hearing in an adjudicatory format on health and safety issues related to the Ward Valley site. US Ecology, the site developer, has filed suit asking the court to require California to issue a decision on the license application without holding a hearing. The DHS previously held public hearings, as required by law, on the proposed site in June 1990 and July 1991. (In May 1993, a California appellate court ruled that the additional hearings were optional not mandatory; DHS could proceed with the licensing decision without additional hearings. The issue was brought before the California Supreme Court, but that court declined to review the lower court's decision. In September 1993, DHS announced its approval of the US Ecology license application. However, the Governor of California also announced in September that a public hearing will be held, at the request of Interior Secretary Bruce Babbitt, to assist Secretary Babbitt in making a decision regarding the transfer of the Ward Valley land from the Federal Government to the State of California. The hearing will be limited in scope, length and conduct.)

There are also challenges regarding the license application for the proposed site in Nebraska. A third round of technical review of the license application commenced in 1992. On January 22, 1993, the directors of the Nebraska Department of Environmental Quality and the Department of Health
announced their intent to deny the license application for the proposed facility, citing concerns about drainage at the site. US Ecology, the license applicant, disputes this concern. (US Ecology reconfigured the site, and in early October 1993, the Nebraska Department of Environmental Quality and Department of Health withdrew the notice of intent to deny the US Ecology license application.)

Events of 1992 clearly demonstrate that political and legal challenges late in the siting process cannot only bring apparently successful programs to a virtual halt, but force a State to begin its process all over again. Although 1992 was a year of major setbacks, States continued in the development of disposal capacity for commercial low-level radioactive waste. Unfortunately, that progress still has not produced any new disposal capacity within the United States. According to the projections provided to DOE in March 1993, only California and Nebraska anticipate having disposal capability before the Act’s final target date, January 1, 1996, the date for return of all surcharge rebates; and North Carolina’s plans are to provide disposal by January 1, 1996. Thus, approximately 50 percent of the Nation’s low-level radioactive waste is expected to require storage after mid-1994, much of it at the point of generation, which would raise numerous health, safety, financial, and legal issues.

The responsibility for the disposal of the commercial low-level radioactive waste generated within States’ borders remains the responsibility of the States. Apart from the milestones in the Act, the health and safety implications of the lack of disposal capacity continue to motivate States and compact regions toward the objectives of the law. The surviving provisions of the Act continue to provide sufficient means for the States to solve the low-level radioactive waste disposal dilemma, either individually or in cooperation with other States.

DOE holds to the view that States can establish new low-level radioactive waste disposal capacity under provisions of the Act. Although no new disposal capacity was established by the 1993 deadline, and it is apparent that no new disposal capacity will be available before 1994, DOE believes it is not necessary to revise the fundamental framework embodied in the Act for
disposal of low-level radioactive waste at this time. States retain the responsibility, adequate authority, and the means to solve their low-level radioactive waste disposal problems.
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1992 ANNUAL REPORT ON LOW-LEVEL RADIOACTIVE WASTE MANAGEMENT PROGRESS

1. INTRODUCTION

Many States became responsible for licensing and regulating low-level radioactive waste disposal facilities during the 1960's following a 1959 amendment to the Atomic Energy Act of 1954 that allowed transfer of responsibility for regulating radioactive materials from the U.S. Atomic Energy Commission to the States. During the 1960's, six low-level radioactive waste disposal facilities were developed by companies in the private sector, five of which were licensed by State agencies. Three of the sites closed in the 1970's, and it appeared likely that the private sector would not be able to develop new disposal facilities without the active involvement of the Federal government, in spite of improvements in regulatory control of low-level radioactive waste and lessons learned about techniques for safe disposal of such waste.

Several Congressional committees considered legislation that called for a Federally-oriented low-level radioactive waste disposal program. However, Congress later agreed to a suggestion by the governors of Nevada, South Carolina, and Washington (those States in which commercial low-level radioactive waste disposal facilities were located) that States and other interested parties be allowed to examine the problem of low-level radioactive waste disposal, and recommend an alternate solution.

The National Governors' Association, the National Conference of State Legislatures, and the State Planning Council urged Congress to enact legislation that assigned responsibility to each State for providing for the disposal of commercial low-level radioactive waste generated within its borders and that promoted regional approaches to providing disposal capacity. The resulting Low-Level Radioactive Waste Policy Act, Public Law 96-573, was responsive to those requests. The Act encouraged States to enter into interstate compacts for the disposal of low-level radioactive waste by offering such compact regions (once approved by Congress in subsequent legislation) the authority to limit the use of their sites after January 1, 1986, to low-level radioactive waste generated within their regions.
By the mid-1980's, it became evident that new disposal capacity would not be available by 1986. It was, therefore, necessary to extend the date for access to the three operating commercial disposal facilities. The three States with disposal sites agreed to extend the date for allowing access to their facilities through 1992, if the States without disposal facilities would adhere to specific milestones for development of their own disposal capacity. This compromise was embodied in Public Law 99-240, the Low-Level Radioactive Waste Policy Amendments Act of 1985, which amended the Act.

The revised Act provides a series of milestones, incentives, and penalties to encourage States and compact regions to become actively involved in developing new disposal capacity for low-level radioactive waste. These milestones led up to the Act's deadline of January 1, 1993. On that date, States and compact regions were to have disposal capability for their low-level radioactive waste; no State or compact region accomplished this.

The Act also provides that DOE will submit to Congress an annual report on the progress of low-level radioactive waste management in the United States. This is the seventh year that DOE has compiled this report in compliance with the Act. The report provides a review of significant developments in 1992 that affected States' progress in developing low-level radioactive waste disposal capabilities. The report addresses the requirements for the sited States to be in compliance with the January 1, 1992, milestone and each State's compliance status based on the sited States' determinations.

Under the Act, generators have been required to make surcharge payments for disposal of their low-level radioactive waste at the operating disposal facilities. These funds are held in an escrow account; the Act names the Secretary of Energy trustee for the account. States and compact regions meeting certain milestones in the Act will receive a rebate of a portion of the surcharge payments. The report references the two Federal Register Notices on the eligibility criteria and procedures for the 1993 surcharge rebates that were published in 1992. The Department anticipates making its final decision on this matter in the near future.
A summary of State and compact region low-level radioactive waste management activities and progress, and their plans for meeting the Act's 1996 final target date to provide for disposal of their low-level radioactive waste are also provided.

Four appendices are included. Appendix A provides detailed information on the volume of low-level radioactive waste received at the operating disposal facilities during 1992. Appendix B summarizes other developments and activities required by the Act (such as volume reduction achieved). Appendix C discusses the activities of the Low-Level Radioactive Waste Forum and Host State Technical Coordinating Committee, and describes the technical assistance DOE provides to States and compact regions in fulfilling its responsibilities under the Act. Appendix D lists points of contact in each State and compact region for obtaining additional information.

While this report is a summary of activities that occurred in 1992, significant events and activities that occurred during preparation of the report have also been included.
2. STATUS OF MILESTONE COMPLIANCE

Sections 5(d)(2)(C)(i) and (ii) provide the framework for the Act’s requirements and for a State’s failure to comply with those requirements.

"If, by January 1, 1993, 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—

"(i) 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, 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 percent of any amount collected by a State under paragraph (1) for low-level radioactive waste disposed of under this section during the period beginning January 1, 1990, and ending December 31, 1992, shall be repaid, with interest, to each generator from whom such surcharge was collected. Repayments made pursuant to this clause shall be made on a monthly basis, with the first such repayment beginning on February 1, 1993, in an amount equal to one thirty-sixth of the total amount required to be repaid pursuant to this clause, 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."

The Act established a series of milestones for States to meet as they pursue the development of low-level radioactive waste disposal capability. The milestone requirements of the Act do not apply to the 19 States that are
members of the three compact regions with operating low-level radioactive waste disposal sites (the Northwest, Rocky Mountain, and Southeast). The milestone requirements do apply to the other 33 States, and these States may submit documentation demonstrating their compliance with the milestones. (The District of Columbia and Puerto Rico are considered States under the Act's requirements.) Table 1 is an historical summary of milestone compliance determinations made by DOE and the sited States (Nevada, South Carolina, and Washington) since 1986. The table covers the milestones for July 1, 1986; January 1, 1988; January 1, 1990; and January 1, 1992.

In addition to these milestones, the Act established a January 1, 1993, deadline for providing for disposal. On this date, the three States with operating facilities may deny access to their disposal sites to generators in States outside their compact regions. Recognizing that some States and compact regions would not have operational facilities on that date, the Act also established a January 1, 1996, final target date by which States must provide low-level radioactive waste disposal capability. States that cannot provide for disposal by January 1, 1993, forfeit surcharge money, in 36 monthly installments, through January 1, 1996.

On December 31, 1992, the low-level radioactive waste disposal facility at Beatty, Nevada, ceased operations for all low-level radioactive waste disposal. The disposal facility at Richland, Washington, ceased disposal operations for all but regionally generated low-level radioactive waste. The disposal facility at Richland, Washington, ceased disposal operations for all but regionally generated low-level radioactive waste, and low-level radioactive waste generated within the Rocky Mountain compact region as specified under terms of a contract signed by the Northwest Compact Committee and the Rocky Mountain Compact Board in 1992.

The Barnwell, South Carolina, facility, as a result of passage of a 1992 State law, continues to operate and will provide disposal through June 1994 for those out-of-region States that the Southeast Compact Commission determined to be eligible and who signed contracts with the Commission. Barnwell remains the operating disposal facility for the Southeast compact region through 1995.
2.1 1992 Milestone

Nonsited compact region member States and unaffiliated States were eligible to receive surcharge rebates from DOE following the 1986, 1988, and 1990 milestone dates. If States and compact regions failed to meet these milestones, they forfeited surcharge rebates and faced denial of access to the sited States' low-level radioactive waste disposal facilities. (See Table 1 on following page.)
Table 1. Milestone compliance determinations as of January 1993.\textsuperscript{a}

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\textsuperscript{a} In compliance  
\textsuperscript{b} Not in compliance  
\textsuperscript{c} Exempt  
\textsuperscript{d} Not evaluated by DOE (no surcharge funds to rebate)

a. The Low-Level Radioactive Waste Policy Act makes States and compact regions eligible to receive rebates of a portion of disposal surcharges, paid by their generators, and held in an account administered by DOE. The Department reviews milestone documentation to determine whether each State or compact region 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.


c. In July 1988, Arizona and California joined to form the Southwestern Compact.

d. The Western Compact was dissolved when the States of Arizona and California joined to form the Southwestern Compact in July 1988. South Dakota became a member of the Southwestern Compact in February 1989.

e. In January 1991, the Sited States determined that Massachusetts was out of compliance.

f. North Dakota became a member of the Southwestern Compact, effective July 1989.

g. In early 1991, Vermont submitted the necessary documentation to the Sited States and was subsequently found to be in compliance with the milestones.

h. DOE did not make compliance determinations for this milestone.
The 1992 milestone is not associated with a rebate payment; therefore, DOE did not make compliance determinations regarding this milestone. The sited States, however, did make compliance determinations since, under the Act, if States failed to meet the 1992 milestone, the sited States could impose a penalty surcharge for failure to comply with this milestone.

The January 1, 1992, milestone provision is found in section 5(e)(1)(D) of the Act. The provision requires that a complete license application to operate a low-level radioactive waste disposal facility be filed by that date with either the U.S. Nuclear Regulatory Commission (NRC) or the appropriate agency of the Agreement State. Section 5(e)(2)(D) states the penalty for failure to comply:

"If any nonsited compact region or non-member State fails to comply with paragraph (1)(D), any generator of low-level radioactive waste within such region or non-member State shall, for the period beginning January 1, 1992 and ending upon the filing of the application described in paragraph (1)(D), be charged 3 times the surcharge otherwise applicable under subsection (d)."

2.1.1 Sited States 1992 Milestone Determinations

The sited States determined that California (Southwestern compact region), Nebraska (Central compact region), and Illinois (Central Midwest compact region) filed complete license applications by the milestone date. The sited States notified these States, and their compact member States, that they were in compliance with the milestone.

In October 1992, the Illinois Low-Level Radioactive Waste Siting Commission voted to reject the proposed Martinsville, Illinois, site. (See Section 3.5, and Section 5.1.3 for further discussion.) Because the site was disqualified, the sited States determined that Illinois was no longer in compliance with the 1992 milestone. The sited States notified the governor of Illinois that Illinois waste generators would be assessed the $120 per cubic foot penalty surcharge for waste disposed at the sited States' facilities.
All other generators were assessed a penalty surcharge of $120 per cubic foot for all low-level radioactive waste disposed at the sited States' disposal facilities until those States submitted a complete license application or the sited State facility closed. (Generators from States within the Northwest compact region, Rocky Mountain compact region, and Southeastern compact region are not assessed penalty surcharges during this period since the milestones do not apply to these States.)

The sited States monitor States' progress in the development of permanent low-level radioactive waste disposal facilities. The sited States continue to interpret and exercise their authority under the Act to encourage compliance with the Act. The sited States base their compliance determinations on States' progress.
3. LOW-LEVEL RADIOACTIVE WASTE DISPOSAL FACILITIES: SIGNIFICANT DEVELOPMENTS IN 1992

Since States and compact regions began the process of developing disposal capabilities for commercial low-level radioactive waste, DOE has reported significant strides made by some of these States. The progress that States have experienced has been, at times, steady, and at times, slow. During 1992, a number of developments occurred that are significant to the progress made to date and the future progress of States.

3.1 Take-Title Provision in the Low-Level Radioactive Waste Policy Amendments Act of 1985 Struck Down As Unconstitutional

The constitutionality of the Act was tested in 1992 as the case New York v. United States was heard by the United States Supreme Court. The State of New York challenged the Act as exceeding the limits imposed on Federal action by the Constitution, particularly the Act's "take-title" provision.

The "take-title" provision at issue is under section 5(d)(2)(C)(ii) of the Act. This section states, in part,

"...If a State...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."

New York originally brought the case in 1990 against defendants James Watkins, as Secretary of Energy; Kenneth Carr, as Chair of the Nuclear Regulatory Commission; the Nuclear Regulatory Commission; Samuel Skinner, as Secretary of Transportation; and William Barr, as Acting U.S. Attorney General. The United States District Court for the Northern District of New
York dismissed the suit in 1990; on appeal, the United States Court of Appeals for the Second Circuit affirmed the lower court's ruling in 1991. The Supreme Court granted New York's petition to hear the case in March 1992.

The Supreme Court issued its decision on June 19, 1992. The Court found that the "take-title" provision exceeds the powers of Congress and is inconsistent with the Tenth Amendment of the Constitution. However, the Court found the "take-title" provision severable from the remainder of the Act, and while the "take-title" provision is unconstitutional, the remainder of the Act was upheld by the Court and is still in force. The Court's decision, therefore, had little effect on the siting processes being conducted in States and compact regions.

3.2 Rocky Mountain Compact Board and Northwest Compact Committee Enter Contract for Disposal

When the Rocky Mountain compact regional facility at Beatty, Nevada, closed on December 31, 1992, the State of Colorado was, according to the compact, to become the host State for the compact region. Over the years, however, the member States of the Rocky Mountain compact region generated a lower volume of low-level radioactive waste to be disposed than had been expected when the compact was adopted. Both Colorado officials and the Rocky Mountain Compact Board were concerned that the region did not generate enough commercial low-level radioactive waste to justify development of a new disposal facility.

In March 1990, the governor of Washington signed a bill authorizing the Washington representative of the Northwest compact region to approve access by the Rocky Mountain compact region States to the Richland disposal facility as of January 1, 1993. Negotiations between the two compact regions began in April 1990 and continued through much of 1992. By October 1992, all necessary parties had signed the agreement.

The contract will remain in effect until the facility at Richland is closed permanently, unless the contract is terminated earlier under conditions specified in the language of the contract. The contract limits the amount of waste for disposal from the Rocky Mountain compact region to 6,000 cubic feet.
per year, with a three percent annual increase beginning in 1994. The contract also allows for the disposal of 140,000 cubic feet of waste generated as a result of decommissioning the Fort St. Vrain nuclear power reactor in Colorado. Additionally, the Rocky Mountain Compact Board paid $2.5 million as an access fee to the State of Washington.

The signing of the contract signifies a commitment on the part of both compact regions to support the compacting process established by the Low-Level Radioactive Waste Policy Act. As former Washington Governor Booth Gardner stated in the early negotiation stages, the proposal evidenced "an effort to protect and nurture the compact process...."

3.3 Southeast Compact Commission Approves 18-Month Extension of Barnwell

As of January 1, 1992, the majority of the Nation was to be without access to low-level radioactive waste disposal facilities after December 31, 1992. By State law, on January 1, 1993, the Beatty, Nevada, and Barnwell, South Carolina, disposal facilities were scheduled to close; the Richland, Washington, facility would be open only on a regional basis. Only California anticipated having an operational disposal facility in 1993, and as the year progressed that schedule also changed.

States and compact regions were hopeful that the Barnwell facility would remain open beyond the December 31, 1992, date. Barnwell is the low-level radioactive waste disposal facility for the Southeast Compact region. A disposal facility in North Carolina is being planned to take the compact region's waste, but is not expected to be operational for two to three years.

During 1991, a committee of commissioners from the Southeast Compact Commission evaluated options for managing low-level radioactive waste during the period before the North Carolina facility becomes operational. The subgroup determined that keeping Barnwell operating during the interim period was the most environmentally sound option, and the least disruptive to the continuation of the site development process in North Carolina. In November 1991, the governor of South Carolina proposed that the Barnwell facility
remain open after January 1, 1993, possibly to out-of-region waste. After
debating the issue, a bill to that effect was submitted to the South Carolina

On June 4, 1992, the South Carolina General Assembly accepted, by voice
vote, an appropriations bill containing language to allow Barnwell to remain
open to regional low-level radioactive waste until December 31, 1995; the
facility would accept out-of-region waste for an 18-month period from
January 1, 1993, through June 30, 1994. The legislation allows Barnwell to
stay open subject to certain conditions, such as: Barnwell will close if a
North Carolina facility opens; out-of-region waste will be assessed a fee of
$160 per cubic foot; and the volume of waste that may be accepted is limited
to ten million cubic feet between January 1, 1986, and January 1, 1996.

North Carolina is also required to meet certain milestones. The State
must receive a complete license application by December 31, 1993, and issue a
license by March 15, 1995. If North Carolina misses either of these
milestones, the State's generators will be denied access to Barnwell and the
Barnwell facility will close one year after the missed date.

The bill also provides that North Carolina must, by December 31, 1993,
exclude from site selection any site that is within 10 miles of the South
Carolina border. North Carolina generators will be denied access to Barnwell
if this provision is not met.

The Southeast Compact Commission adopted an import policy in September
1992. Under this policy, out-of-region generators who are using the Barnwell
facility after 1992 will pay an access fee of $220 per cubic foot. The fee
does not include disposal charges imposed by the site operator (Chem-Nuclear
Systems, Inc.). Eligible States and compact regions could attain access to
the facility by signing contracts with the Commission.

Most States and compact regions eligible to contract with the Southeast
Compact Commission have done so. Under State law, the State of Maine, while
eligible according to Southeast Compact Commission criteria, must obtain voter
approval prior to signing the contract. Those States that did not have access
to Barnwell on December 31, 1992, because of previous findings of
noncompliance with the milestones in the Act, were not eligible to contract. These States are the District of Columbia, Michigan, New Hampshire, Puerto Rico, and Rhode Island.

However, the signing of a contract does not give carte blanche access to the Barnwell facility. States and compact regions must continue activities that evidence their efforts to provide management and disposal for their low-level radioactive waste. The terms of the import policy that the Southeast Compact Commission developed allow the Commission to terminate access to Barnwell upon the Commission's determination that "an overt action has been taken by a compact region, designated host State within the compact region, or unaffiliated State, which the Commission determines substantially impedes the State or region’s progress in fulfilling its responsibilities for providing, either by itself or in cooperation with other States, for the disposal of its low-level radioactive waste."

As early as February 1993, the Import Policy Committee of the Commission met to address the issue of whether to implement their authority to terminate access to Barnwell; the State in question was Nebraska. The Committee became concerned with Nebraska's progress after the State of Nebraska and Governor Benjamin Nelson filed a suit in January 1993 to obtain a permanent injunction that would prevent licensing or construction of a disposal facility in the State until community consent is demonstrated. Also in January 1993, the Nebraska Department of Environmental Quality and Department of Health announced its intent to deny the US Ecology license application for the proposed disposal facility in Boyd County, Nebraska. The Import Policy Committee heard testimony from representatives of the Central Compact Commission and the State of Nebraska concerning the Central compact region’s progress in providing management and disposal for its low-level radioactive waste. The Import Policy Committee will take the issue to the full Southeast Compact Commission for a determination. (On July 1, 1993, States in the Central compact region were denied access to the low-level radioactive waste disposal facility at Barnwell. In early October, the Nebraska Department of Environmental Quality and Department of Health withdrew the notice of intent to deny the U.S. Ecology license application. Access to Barnwell was reinstated for the Central compact region at the October meeting of the Southeast Compact Commission’s Import Policy Committee.)
3.4 California Licensing Decision

California is the host State for the Southwestern Low-Level Radioactive Waste Disposal Compact; member States are Arizona, North Dakota, and South Dakota. The regional facility is to be located in Ward Valley. As late as April 1991, California projected that its low-level radioactive waste disposal facility would be operational by 1992. By February 1992, official projections were pushed back to 1993 for an operational disposal facility. Lawsuits and a temporary restraining order have all but stopped the site development process in California.

The State met all the milestones of the Act either on or ahead of the milestone dates. The Act’s last milestone was January 1, 1992, and, by that date, a complete license application to construct and operate a low-level radioactive waste disposal facility was to be submitted and filed with the appropriate licensing agency. US Ecology, the developer/operator for the Ward Valley site, submitted the license application in 1989, and the California Department of Health Services (DHS) found the license application to be complete in December 1989.

DHS conducted an extensive review of the license application from 1990 through 1991, but has not yet issued a decision on the application. The decision to license the facility is pending certification of the environmental impact report, completion of the safety evaluation report, transfer of the land from the Federal Bureau of Land Management, and the outcome of a lawsuit that would stop a hearing in an adjudicatory format.

In July 1992, DHS requested that 1,000 acres of public land in Ward Valley be sold to the State of California. In January 1993, the Secretary of the Interior announced his intention to proceed with the land sale. Following that announcement, two lawsuits were filed. Issues in both suits involve the Endangered Species Act and the fact that the desert tortoise habitat is within the Ward Valley site; the desert tortoise is an endangered species. The plaintiffs claim that the Secretary of the Interior failed to designate critical habitat for the desert tortoise. The U.S. Fish and Wildlife Service completed a biological assessment in 1990 of the effect the proposed facility would have on the desert tortoise and found that the proposed project was not
likely to jeopardize the continued existence of the species, if certain measures were implemented. Primary measures that the Fish and Wildlife Service noted are raven control and construction of fences along both sides of the highway leading to the proposed facility. These measures have been incorporated into the environmental impact statement.

A third lawsuit alleges that the Department of the Interior violated the National Environmental Policy Act in regard to the supplemental environmental impact statement issued for the land transfer.

Federal agencies and their departmental heads are under a temporary restraining order that prevents sale of land in Ward Valley to the State of California for potential use as a low-level radioactive waste disposal site.

Public hearings regarding the Ward Valley site were held in June 1990 and July 1991. In 1992, the State of California agreed to hold a hearing in an adjudicatory-type format on health and safety issues regarding the proposed facility before a decision is issued on the license application. Plans for the hearing were suspended in September 1992 under court order. The California Court of Appeals issued its decision in May 1993 that no adjudicatory-type hearing is required. The Court ordered the California Department of Health Services to proceed to its licensing decision. (The California Supreme Court declined to review the appellate court's decision, thereby letting stand the lower court's ruling. In September 1993, DHS announced its approval of the U.S. Ecology license application. Concurrently, California Governor Pete Wilson announced that a public hearing will be held, at the written request of Interior Secretary Bruce Babbitt, to assist Secretary Babbitt in making a decision regarding the transfer of the Ward Valley land from the Federal Government to the State of California. The hearing will be limited in scope, length, and conduct.)

3.5 Illinois Siting Commission Rejects Martinsville Site

Illinois is the host State for the two-member Central Midwest Interstate Low-Level Radioactive Waste Compact Region. Kentucky is the other member State.
Since the Low-Level Radioactive Waste Policy Amendments Act of 1985, Illinois has been one of three States considered in the forefront of the States developing new low-level radioactive waste management and disposal capabilities (California and Nebraska were the other two).

The Illinois Department of Nuclear Safety (IDNS) is the Agreement State agency approved and qualified by the NRC to license and regulate a low-level radioactive waste disposal facility. IDNS began investigating the suitability of a low-level radioactive waste disposal site near Martinsville, Illinois, in 1988. In 1991, IDNS officially proposed the site to the Illinois Low-Level Radioactive Waste Disposal Siting Commission (the Siting Commission), a three-member commission appointed by the governor to review the safety and suitability of the proposed Martinsville site prior to licensing.

IDNS received the license application for the Martinsville site in May 1991 and December 1991 deemed the application complete, meeting the January 1, 1992, milestone in the Act. Under the new Illinois law, IDNS could not take any final action on a license application unless the Siting Commission approved the site.

Hearings before the Siting Commission began in June 1991. The Commission held 71 days of public hearings, with one day for deliberation and the decision. On October 9, 1992, the Siting Commission voted unanimously to reject the Martinsville site. In the order rejecting the site, the Siting Commission wrote,

"... the site with respect to a facility of the proposed design does not meet all of the criteria ... of the Management Act by a preponderance of the evidence."

The siting criteria in the Illinois Low-Level Radioactive Waste Management Act required protection of public health and safety, suitable hydrological and geological characteristics, minimization of groundwater releases, minimization of traffic disruptions, community consent, and location outside the 100-year flood plain. According to the Siting Commission, the
site met the criteria for community consent and transportation, but they concluded that the Martinsville site did not meet the criteria for health and safety, hydrology and geology, and groundwater.

The City of Martinsville, which had requested that the IDNS propose the site, filed two motions with the Siting Commission as follows: They objected to the Siting Commission's decision and requested that the Siting Commission accept additional evidence on the site's safety and suitability. The Siting Commission denied the motions. Illinois, which in April 1992 projected a facility operational date of 1993, is back to its original position in its siting process.

After the Siting Commission decision, the governor announced that the State would accept the decision without appeals. He directed IDNS to decommission the Martinsville site.

In December 1992, the legislature amended the Illinois Low-Level Radioactive Waste Management Act and disbanded the Siting Commission. In January 1993, the legislature approved a bill with a new siting process. The governor signed the bill in March 1993.

Illinois' new approach involves a task force, appointed by the governor, that will develop siting criteria and incorporate other issues of merit from the Siting Commission Report into a formal process. The task force will include the director of Nuclear Safety, director of Energy and Natural Resources, director of the Illinois Environmental Protection Agency, and four others.

3.6 License Application for Nebraska Facility

US Ecology, Inc., the developer/operator for the proposed Nebraska low-level radioactive waste disposal facility, recommended a 320-acre site located in Boyd County, Nebraska, in December 1989. US Ecology submitted the license application in July 1990. The Nebraska Department of Environmental Control (DEC) (the regulatory agency in the State) reviewed the application,
identified deficiencies, and reviewed it again after US Ecology resolved the deficiencies. In December 1991, DEC found the application to be administratively complete.

The application has undergone two rounds of technical review, and a third round of technical review began in 1992; a public review was also provided. On January 22, 1993, the directors of the Nebraska Department of Environmental Quality (DEQ) and Department of Health (DOH) announced their intent to deny the US Ecology license application for the proposed low-level radioactive waste disposal facility in Boyd County. Nebraska officials are concerned because the Boyd County site contains wetlands which do not meet the minimum site characteristics as required by Nebraska regulations.

Of the proposed 320-acre site, approximately 42.6 acres are wetlands. The license application acknowledges the presence of wetlands on the site but indicates no proposal to dispose of waste in the identified wetlands area.

On March 17, 1993, the DEQ and DOH conducted a public hearing on the intent to deny the license application. After testimony and written comments are received, Nebraska will issue a decision. (In August 1993, US Ecology submitted to DEQ and DOH a reconfigured site with boundaries that exclude the wetlands. In early October, DEQ and DOH withdrew the notice of intent to deny the US Ecology license.)

Nebraska officials said the licensing review process will continue until a decision is made. The direction the process will take in the future will be determined following a thorough review of the written comments and testimony.

3.7 Storage in Michigan

In 1987, the Midwest Interstate Low-Level Radioactive Waste Management Compact Region designated Michigan as the host State for the region's first low-level radioactive waste disposal facility. Michigan produced the largest volume of low-level radioactive waste among the compact region member States. The State enacted legislation that created the Michigan Low-Level Radioactive
Waste Authority, and enacted a regulatory framework that assigned the Department of Public Health the responsibility for licensing a disposal facility.

Up until mid-1990, the State was involved in an active siting process. The Authority identified three candidate areas in 1989. These three were later eliminated from consideration because they failed to meet the State's siting criteria. The Midwest Compact Commission concluded that the State's siting criteria were so restrictive that it would be impossible for the State to find a suitable site. The Commission placed several contingencies on the Michigan Authority's proposed 1991 budget, including the requirement that the Michigan legislature revise the statutory siting criteria.

In June 1990, the three sited States (Nevada, South Carolina, and Washington) warned Michigan that access to disposal facilities would be denied if Michigan failed to revise its siting criteria or identify candidate sites by November 1990. The sited States denied access on November 10, 1990.

In 1991, the Midwest Compact Commission determined that Michigan had failed to discharge its host State obligations. On July 24, 1991, the Midwest Compact Commission voted to revoke Michigan's membership in the compact and to suspend and terminate any privileges of the State.

Michigan generators have been storing their waste on site since November 1990. The situation has not yet resulted in any direct health and safety or environmental problems. According to a storage survey completed in 1992, Michigan generators are storing approximately 50,000 cubic feet of waste at some 52 sites around the State. Generators indicate that they have sufficient capacity to store through 1995. Some generators have curtailed research activities because they have to store their low-level radioactive waste.

The NRC has assessed the storage situation in Michigan, and, according to a July 1992 issue paper (SECY-92-245), concluded that licensees in Michigan appear to have sufficient storage capacity and management programs in place for the next three to five years.
3.8 DOE Continues to Assess Issues Associated with Commercial Mixed Waste

States continue to be concerned with issues associated with the disposal of commercial low-level radioactive mixed waste. When States submitted their governors' certifications in response to the January 1, 1990, milestone in the Act, no State had plans to dispose of commercial mixed waste generated within its jurisdiction. The plans the majority of States listed included generator storage, waste minimization, and volume reduction.

Mixed waste is low-level radioactive waste that contains both a hazardous waste component and source, special nuclear, or byproduct material. The hazardous waste component is subject to regulation under the Resource Conservation and Recovery Act (RCRA); the Atomic Energy Act (AEA) regulates the source, special nuclear, or byproduct material. Because of this, mixed waste is regulated separately and concurrently under RCRA and the AEA.

Mixed waste is generated by nuclear powerplants, fuel fabrication facilities, research reactors, factories using radioactive material, manufacturers of radioactive instruments and radio-pharmaceuticals, hospitals and other medical facilities, private and university laboratories, and decontamination and decommissioning projects for these facilities.

Host States and compact regions have requested that DOE investigate the feasibility of DOE accepting a role in the management of commercially generated mixed low-level radioactive waste. DOE generates approximately ten times the amount of mixed waste as the States. DOE has expressed its willingness to explore the issue and to cooperate with the States, where possible, in resolving issues related to mixed waste disposal.

Some of the key areas of discussion in 1992 focused on national studies on disposal options, equity for States hosting DOE facilities, compatibility of DOE and commercial mixed waste streams, and private sector participation in DOE's management of mixed waste. Discussions have been conducted with the State of Washington regarding acceptance of mixed waste at the Richland facility on a regional basis.
Also during 1992, several studies were completed to determine the feasibility of DOE accepting commercial mixed waste generated in the States. The studies examined such issues as whether DOE has the authority to assume responsibility for commercial mixed waste, the regulatory and liability issues associated with DOE’s acceptance of commercial mixed waste, an assessment of the capabilities and compatibility of existing or planned commercial treatment or storage facilities, an analysis of the costs of commercial mixed waste disposal, and an analysis of commercial mixed waste streams compatibility with the DOE mixed waste streams.
4. 1993 SURCHARGE REBATES

The Act provides that States and compact regions that meet certain milestones will receive a rebate of a portion of surcharge payments made by generators within those States for disposal of low-level radioactive waste at the operating disposal facilities. The surcharge funds are held in an interest bearing account and are disbursed to eligible parties after each milestone. The Act named the Secretary of Energy as the trustee for the surcharge escrow account. As part of its responsibilities, DOE evaluates the status and progress of each State and compact region to determine the proper disbursement of surcharge funds following each milestone, and the January 1, 1993, final deadline.

By January 1, 1993, States were required by the Act to provide for disposal of all applicable low-level radioactive waste generated within their borders in order to receive a rebate of surcharge funds. States that could not provide for disposal of their waste may become eligible to receive surcharge funds by accepting title, possession, and liability for the waste. States that fail to take either of these actions would forfeit surcharge rebate funds to the low-level radioactive waste generators within the State that paid the funds.

Where generators are determined to be eligible, surcharges with interest are to be paid to waste generators in 36 monthly payments. At any time between January 1993 and January 1996 that a State becomes able to provide for disposal of all of its low-level radioactive waste, monthly surcharge payments to the generators would be discontinued, and the balance of the funds attributable to generators in that State would be issued to the State in one lump sum.

During 1992 and into 1993, DOE continued to analyze the issues involved.
5. STATE AND COMPACT REGION PROGRESS IN 1992

5.1 Compact Regions Without Currently Operating Disposal Sites and Their Host States

Forty-two States make up the nine interstate compact regions that were established in response to the Low-Level Radioactive Waste Policy Act and the Low-Level Radioactive Waste Policy Amendments Act of 1985. Six of these compact regions, which comprise 28 States without a currently operating disposal facility, have committed significant resources toward siting and are developing facilities to dispose of low-level radioactive waste generated within their respective borders and have selected host States in which low-level radioactive waste disposal facilities will be developed. The compact regions, host States, and sections of the report in which they are covered are:

- 5.1.1—Appalachian Compact Region (Pennsylvania)
- 5.1.2—Central Compact Region (Nebraska)
- 5.1.3—Central Midwest Compact Region (Illinois)
- 5.1.4—Midwest Compact Region (Ohio)
- 5.1.5—Northeast Compact Region (Connecticut and New Jersey)
- 5.1.6—Southwestern Compact Region (California).

5.1.1 Appalachian States Low-Level Radioactive Waste Compact Region

Host State: Pennsylvania

Other Member States: Delaware, Maryland, and West Virginia

Background. Congress ratified the Appalachian States Low-Level Radioactive Waste Compact in 1988. The Appalachian Compact names Pennsylvania the initial host State, and stipulates that, if any other party State generates 25 percent of the waste volume or activity that Pennsylvania generates over a three-year period, the Appalachian Compact Commission will immediately designate that State to host the regional facility for 30 years.
The Appalachian Compact Commission convened for the first time in 1990. The Commission has no direct role in the siting process. The Department of Environmental Regulations (DER) is the agency responsible for implementing the requirements of the Low-Level Radioactive Waste Policy Amendments Act of 1985 and for the development, operation, maintenance, and eventual closure of the compact region's low-level radioactive waste disposal facility. The DER is also the NRC Agreement State agency responsible for licensing the facility.

Chem-Nuclear Systems, Inc. (Chem-Nuclear) is the developer/operator for the compact region's facility in Pennsylvania. Chem-Nuclear submitted a proposed siting plan to the DER in 1990; the plan was revised and, in August 1991, the DER approved the plan.

**Status.** Site screening activities are underway in Pennsylvania. Pennsylvania law specifies disqualifying criteria and evaluation requirements that must be met in the selection of a site. Chem-Nuclear is using a three-stage site screening process in which disqualifying criteria are applied at each stage.

Chem-Nuclear completed stage one in November 1991. In stage one, Statewide disqualifying criteria were applied and resulted in the disqualification of approximately 23 percent of the Commonwealth from further consideration as potential sites for the low-level radioactive waste disposal facility. Chem-Nuclear completed stage two in February 1993. Stage two applied regional disqualifying criteria; the results of the stage two analysis eliminated approximately 46 percent of the Commonwealth from further consideration. In the third stage, local disqualifying criteria will be applied. The stage three analysis is expected to be completed in late 1993. After stage three, Chem-Nuclear will evaluate the remaining nondisqualified areas of the Commonwealth and select three potentially suitable sites.

The Appalachian Compact Commission has a contract with the Southeast Interstate Low-Level Radioactive Waste Compact Commission so that generators in the compact region may have continued access to the disposal facility at Barnwell, South Carolina, through June 1994.
5.1.2 Central Interstate Low-Level Radioactive Waste Compact Region

Host State: Nebraska

Other Member States: Arkansas, Kansas, Louisiana, and Oklahoma

Background. Congress ratified the Central Interstate Low-Level Radioactive Waste Compact in December 1985. Under the compact, Nebraska will host the compact region's first low-level radioactive waste disposal facility for 30 years, or until five million cubic feet of low-level radioactive waste are disposed at the facility, whichever comes first. The Compact Commission selected US Ecology, Inc., to develop, site, construct, and operate the regional low-level radioactive waste disposal facility. The Nebraska Department of Environmental Quality (DEQ), in conjunction with the Nebraska Department of Health (DOH), is responsible for carrying out the regulatory functions of the State Low-Level Radioactive Waste Program.

US Ecology proposed that the facility be sited on a 320-acre parcel of land located in Boyd County, near Butte, Nebraska. In 1990, US Ecology submitted a license application which was deemed administratively complete in December 1991 by the DEQ and other State agencies.

Status. In early 1992, the complete license application was made available for public review and comment on the technical merits of the proposal. The public comment period closed August 4, 1992. A second-round technical review was completed May 22, 1992; comments were submitted to US Ecology for their response. The State Low-Level Radioactive Waste Program is in the third round of its technical review of the application.

In December 1992, the Boyd County Local Monitoring Committee sponsored a public opinion poll of county residents to determine the level of support or opposition to siting the disposal facility in Boyd County. Residents were asked to vote either yes or no as to whether they consented to the construction of a low-level radioactive waste facility in Boyd County. The Board of Trustees of the Village of Butte (Butte is the incorporated community nearest to the proposed site) is on record in support of the site.
Approximately 58 percent of the registered Boyd County voters participated in the poll, but the turnout in the Butte precinct was only 27 percent. More than 90 percent of the respondents who voted opposed construction of the facility.

Nebraska's governor stated that the December poll showed that community consent for the facility did not exist and that he would seek a court ruling on whether that vote allows Nebraska to stop the siting process. In December 1992, the governor wrote to the Compact Commission and requested that Boyd County be withdrawn from consideration as the final site for the disposal facility. On January 12, 1993, the State of Nebraska filed a lawsuit against the Compact Commission seeking the removal of the Butte site from consideration as the designated site for the disposal facility. Compact Commission officials had stated before the governor's actions that support for the project was evident within the local community of Butte and that licensing efforts would continue.

On January 22, 1993, the DEQ and the DOH jointly issued a news release announcing their intent to deny US Ecology's license application for the proposed low-level radioactive waste disposal facility in Boyd County. The announcement expressed concerns about wetlands and site drainage as meeting the minimum site characteristics in Nebraska's regulations. According to DEQ and DOH regulations, the site must not contain wetlands, must be generally drained, and must be free of areas of flooding or frequent ponding. The US Ecology license application states that there are wetlands on the site, but not within the disposal area. A public hearing was held on March 17, 1993. DEQ and DOH directors are reviewing all relevant data, and will issue a response to significant comments raised, and then issue a decision. The technical review of the license application will continue until a formal license decision is made. (In August 1993, US Ecology submitted to DEQ and DOH a reconfigured site with boundaries that exclude the wetlands. In early October, DEQ and DOH withdrew the notice of intent to deny the US Ecology license application.)
The Central Compact Commission has a contract in place with the Southeast Interstate Low-Level Radioactive Waste Compact Commission so that generators in the compact region member States may have continued access to the disposal facility at Barnwell, South Carolina, through June 1994.

5.1.3 Central Midwest Interstate Low-Level Radioactive Waste Compact Region

Host State: Illinois

Other Member State: Kentucky

Background. Congress consented to the Central Midwest Interstate Low-Level Radioactive Waste Compact in December 1985. The compact stipulates that any member State that produces less than 10 percent of the region’s waste may not be selected to host a facility; this excluded the State of Kentucky. The Compact Commission designated Illinois as the host State in July 1987.

The Illinois Department of Nuclear Safety (IDNS) is the regulator for the compact region’s low-level radioactive waste disposal facility. In 1987, IDNS began investigating the suitability of sites for the disposal facility; one of those sites was located in Martinsville, Illinois.

In 1990, the Illinois legislature passed a law that created the Illinois Low-Level Radioactive Waste Disposal Siting Commission. Under the revised law, the Siting Commission would have the authority to evaluate the safety and suitability of any site proposed by the director of IDNS. It is not clear, however, how the Siting Commission’s role in evaluating the safety of the Martinsville site meshed with IDNS’s regulatory role since IDNS, rather than the Siting Commission, was delegated the authority to make decisions regarding health and safety under NRC’s agreement with Illinois.

Under this law, IDNS could not issue a facility license until the Siting Commission determined that the proposed site met all of the State’s criteria for a facility of the planned design. Members of the Low-Level Radioactive Waste Disposal Siting Commission were appointed in 1990. On January 10, 1991, IDNS officially proposed the Martinsville site as the location of the disposal facility to the Siting Commission. The proposal came after the Martinsville
City Council adopted a resolution requesting that IDNS propose the Martinsville site to the Siting Commission. In June 1991, adjudicatory hearings began on the suitability of the Martinsville site.

Chem-Nuclear Systems, Inc., (Chem-Nuclear) is the facility developer/operator. In May 1991, Chem-Nuclear submitted a license application to IDNS. IDNS notified Chem-Nuclear and the sited States in December 1991 that the application was complete for purposes of review. Illinois, at that time, was found by the sited States to be in compliance with the last milestone of the Low-Level Radioactive Waste Policy Amendments Act of 1985, that is, to have a complete license application by January 1, 1992.

Status. The decision-making process used by the Siting Commission lasted 20 months. During that time, the Siting Commission conducted 71 days of public hearings, with one day for deliberation and the decision. Closing arguments were presented March 27–29, 1992. On October 9, 1992, the Siting Commission voted unanimously to reject the Martinsville site as being unsuitable for the construction of the low-level radioactive waste disposal facility. In the Siting Commission's order rejecting the site, the Commission wrote that it determined, with respect to a facility of the proposed design, that the site did not meet all of the criteria set forth in the Illinois Low-Level Radioactive Waste Management Act by a preponderance of the evidence. Following the Siting Commission's vote, the Illinois governor announced that the State will accept the decision without appeal and will decommission the Martinsville site.

With the disqualification of the Martinsville site, in October 1992, two of the sited States (Nevada and Washington) notified the governors of the Central Midwest Interstate Compact member States that the Illinois license application (which was specific to the Martinsville site) was now invalid; Illinois was out of compliance with the 1992 milestone of the Act.

In December 1992, the Illinois General Assembly passed a bill that amended the Illinois Low-Level Radioactive Waste Management Act and disbanded the Siting Commission. The bill deleted many of the provisions pertaining to the siting process, including the provisions for the Siting Commission. In
January 1993, the General Assembly passed a second bill amending the Illinois Low-Level Radioactive Waste Management Act. This bill created a new siting process, which includes a task group whose purpose is to develop proposed site-selection criteria for the compact region's disposal facility. The governor signed both bills.

Although no disposal facility is yet available in the Central Midwest compact region, low-level radioactive waste generators have not been forced to store their waste on site. The Central Midwest Compact Commission has a contract in place with the Southeast Interstate Low-Level Radioactive Waste Compact Commission so that generators in the compact region member States may have continued access to the disposal facility at Barnwell, South Carolina, through June 1994.

5.1.4 Midwest Interstate Low-Level Radioactive Waste Management Compact Region

Host State: Ohio

Other Member States: Indiana, Iowa, Minnesota, Missouri, and Wisconsin

Background. Congress consented to the Midwest Interstate Low-Level Radioactive Waste Management Compact in December 1985. The Midwest Compact Commission selected Michigan as the host State on June 30, 1987. The Commission based the selection of Michigan primarily on projected State waste volume and radioactivity, and also considered some transportation factors related to highway distances and safety. Ohio was designated first alternate host State, and Minnesota was designated the second alternate.

Michigan initiated a siting process, but the very restrictive siting criteria adopted by the legislature eliminated most of the State from siting consideration. In 1989, the Michigan Low-Level Radioactive Waste Authority identified three candidate areas, but later eliminated all three from consideration because they failed to meet State siting criteria.
The Midwest Compact Commission concluded that it would be virtually impossible to find a site that met the criteria. The Commission conditioned future Commission funding of the siting program on changes in the siting criteria. During this same period, Michigan's governor stated that Michigan would not develop a disposal facility.

Although the Michigan commissioner objected, the Compact Commission determined that Michigan failed to discharge its host State obligations. On July 24, 1991, the Commission revoked Michigan's membership in the Midwest Compact and suspended and terminated any privileges of the State, including, but not limited to, participation in proceedings of the Midwest Interstate Compact Commission. Ohio automatically became the host State; Minnesota automatically became the first alternate host State.

Status. Siting activities cannot begin in Ohio until the Ohio General Assembly enacts enabling legislation. The Compact Commission also has agreed to consider amendments to the Midwest Compact addressing Ohio concerns that require legislative enactment. Additionally, public hearings began in January 1993 to hear public sentiment about the siting process.

At the urging of Ohio's legislative leadership, Ohio's governor appointed a Blue Ribbon Commission in November 1992 to advise the State on how best to move forward in securing a site for the low-level radioactive waste disposal facility in Ohio. This Blue Ribbon Commission will provide recommendations on siting criteria. Ohio law also provides for a Low-Level Radioactive Waste Advisory Committee. This Committee will supply recommendations on areas such as licensing, operation and closure, and community benefits.

A one-year public education project is being conducted by Ohio State University. This is a four-phase project, with the first phase being the development of informational materials. The funds for the education project, as well as funds for the Blue Ribbon Commission, are derived from export fees paid to the Commission by generators.
The Midwest Compact Commission has a contract in place with the Southeast Interstate Low-Level Radioactive Waste Compact Commission so that generators in the compact region member States may have continued access to the disposal facility at Barnwell, South Carolina, through June 1994.

5.1.5 Northeast Interstate Low-Level Radioactive Waste Management Compact Region

Host States: Connecticut and New Jersey

Other Member States: None

Background. Congress consented to the Northeast Interstate Low-Level Radioactive Waste Management Compact in December 1985. In addition to Connecticut and New Jersey, the original member States included Delaware and Maryland, who withdrew in 1986 and joined the Appalachian States Low-Level Radioactive Waste Compact Region. In 1987, the Northeast Compact Commission designated both member States as host States for the regional low-level radioactive waste disposal facilities. Each State established a program to develop disposal capacity.

Status (Connecticut). The Connecticut Hazardous Waste Management Service is responsible for selecting a site, technology, and developer for the State’s low-level radioactive waste disposal facility, and for serving as the custodial agency. In 1991, the Board of Directors of the Management Service announced three candidate sites, all within two miles of each other. After strong public reaction from local citizens to the announcement, the legislature terminated the site selection process.

In April 1992, the Connecticut General Assembly passed legislation directing the Management Service to terminate siting activities under the 1990 plan; commence bidding on a new site-selection contractor; revise its management plan, including developing a new site-selection plan for a permanent low-level radioactive waste disposal facility; and develop a plan for a temporary storage facility. The Connecticut governor signed the bill on May 5, 1992.
Aided by Statewide public scoping sessions, the Management Service developed a plan for a volunteer approach to siting. In November 1992, the Management Service distributed the draft volunteer plan for public comment. The Management Service conducted public workshops and public hearings on the plan. The Management Service Board of Directors approved the plan, and on February 1, 1993, submitted the volunteer plan to the Connecticut General Assembly for approval, as required by law. Only municipalities may volunteer to host a facility, and only through a municipal referendum on a site and on a negotiated facility development agreement. If the volunteer plan does not produce a suitable site, the Management Service will develop a plan for a Statewide, step-wise, site-screening approach. This approach will be submitted to the General Assembly for approval.

During 1992, the Connecticut Department of Environmental Protection surveyed low-level radioactive waste generators regarding the need for a centralized storage facility. The generators indicated that, at present, there was no need for a centralized storage facility. Based on those surveys, the Management Service determined that there was no present need for a centralized low-level radioactive waste storage facility in the State. The Management Service issued a draft plan with that recommendation, stating that it would review the need within three years. These plans were delivered to the General Assembly on February 1, 1993, for approval.

Status (New Jersey). The New Jersey Low-Level Radioactive Waste Disposal Facility Siting Board is the agency responsible for siting a low-level radioactive waste disposal facility in New Jersey. In 1990, the Board adopted final siting criteria and the methodology for applying those criteria and, in November 1991, issued a request for proposals to perform site characterization.

Also in 1991, the Board decided to incorporate a volunteer process into the State’s siting approach by which municipalities and other governmental agencies could volunteer sites for consideration. By 1992, the Board had begun a reexamination of the entire siting process, establishing a subcommittee to study the feasibility of pursuing a volunteer siting process.
In December 1992, acting on the recommendation of the subcommittee, the Board unanimously adopted the approach of seeking a volunteer community as an alternate site identification method. The Board suspended the previous Statewide screening process. The siting criteria remain in effect and must be complied with by the volunteered site.

The Advisory Committee, charged with recommending the process that the volunteer approach should follow, set up a series of meetings with groups with a stake in disposal issues in New Jersey. The purpose of the meetings was to solicit the views of these groups on elements to include in the volunteer siting process. These groups include environmental, emergency response, scientific, low-level radioactive waste generators, business and industry, civic, and local government.

Status (Northeast Compact Commission). During 1992, the Northeast Interstate Compact Commission focused on the issue of on-site storage and access to treatment and processing for generators in both Connecticut and New Jersey. By the end of the year, the Compact Commission had entered into a contractual agreement with the Southeast Compact Commission so that generators in the compact member States had continued access to the disposal facility at Barnwell, South Carolina, through June 1994.

5.1.6 Southwestern Low-Level Radioactive Waste Disposal Compact Region

Host State: California

Other Member States: Arizona, North Dakota, and South Dakota

Background. The Southwestern Low-Level Radioactive Waste Disposal Compact was established in July 1988 between Arizona and California. Congress ratified the compact in November 1988. North Dakota and South Dakota joined the compact region in July 1989 and February 1989, respectively. The compact Commission was established in the fall of 1990.

California enacted legislation in 1983 authorizing site selection and development activities. The legislation assigned management responsibility for the site to the Department of Health Services (DHS). In 1985, US Ecology,
Inc., accepted license designee status. US Ecology's responsibilities include site selection, disposal facility design, and preparation of the license application. Upon receipt of the license, US Ecology will then construct and operate the disposal facility. In 1987, US Ecology identified two potential sites located in the southeastern part of California; these were the Ward Valley and Silurian Valley sites. US Ecology designated Ward Valley as the preferred site in 1988.

US Ecology completed the site characterization and, in late 1989, submitted to DHS the license application to construct and operate a low-level radioactive waste disposal facility in Ward Valley. DHS determined the application to be administratively complete, and began a review of the license application which continued through 1992. DHS held public hearings in June 1990 and July 1991 on the environmental impact document and the draft license.

Status. One of the key issues facing DHS in 1992 concerned the holding of modified adjudicatory-type hearings on health and safety issues associated with licensing the Ward Valley facility. Opponents of the site have supported the adjudicatory hearings, as have members of the California Senate Rules Committee. The Senate Rules Committee went as far as holding confirmation approval in abeyance for the Secretary of Health and Welfare and the Director of DHS. After DHS reluctantly agreed to the hearings, the Senate Rules Committee approved the confirmations.

In July 1992, US Ecology filed a lawsuit asking that the court require California to issue a decision on the license application without holding adjudicatory hearings. Adjudicatory hearings on the license are not required in California. State law does require an administrative hearing, upon request of a person whose interest may be affected by the proceedings. These hearings were held in June 1990 and July 1991. US Ecology, joined by the American College of Nuclear Physicians and the Society of Nuclear Medicine, filed the suit against California's Health and Welfare Agency, the Secretary of the Health and Welfare Agency, DHS, and the Director of DHS. In September, the court allowed the Senate Rules Committee to intervene in the case.
By the end of 1992, no decision had been rendered by the court. However, the California Court of Appeals issued its decision in May 1993 that no adjudicatory-type hearing is required. The Court ordered the California Department of Health Services to proceed to its licensing decision. (See Section 3.4, California Licensing Decision.) The licensing decision also was pending certification of the environmental impact report and completion of the safety evaluation report. (The California Supreme Court declined to review the appellate court's decision, thereby letting stand the lower court's ruling. In September 1993, DHS announced its approval of the US Ecology license application.)

Additionally, the issue of the transfer of the Ward Valley site from the United States Bureau of Land Management (BLM) to the State of California remained to be resolved. The BLM has control of the Ward Valley site. The California State Lands Commission, on behalf of DHS, applied to the BLM for transfer of the Ward Valley land in 1987; that application was renewed in 1990. However, the State Lands Commission later wrote to BLM requesting that the processing on the 1990 application be suspended. The BLM then rejected the application in August 1992. Some State Lands Commission members expressed concern over use of the land for a disposal facility.

In July 1992, DHS wrote the BLM and requested that they initiate a direct sale of the land to the State of California. On January 7, 1993, the United States Secretary of the Interior, Manuel Lujan, announced his intention to proceed with the direct sale to the State of California of 1,000 acres of public land. However, on January 8, 1993, the United States District Court for the Northern District of California issued a temporary restraining order preventing the BLM from selling the Ward Valley land for use as a low-level radioactive waste disposal site. By February 1993, the new Secretary of the Interior, Bruce Babbitt, had rescinded the former Secretary's record of decision to transfer the Ward Valley site to California. Opponents to the sale of land contend that Federal agencies have not complied with the Endangered Species Act by designating critical habitat for the desert tortoise. (In September 1993, California Governor Pete Wilson announced a public hearing will be held, at the written request of Interior Secretary
Bruce Babbitt, to assist Secretary Babbitt in making a decision regarding the transfer of the Ward Valley land from the Federal Government to the State of California. The hearing will be limited in scope, length, and conduct.

The Southwestern Compact Commission has entered into a contract with the Southeast Compact Commission to allow low-level radioactive waste generators in the Southwestern Compact region continued access to disposal at Barnwell, South Carolina, through June 1994.

5.2 Unaffiliated States Planning to Construct Low-Level Radioactive Waste Disposal Facilities

Five States, though unaffiliated with a compact region, plan to construct low-level radioactive waste disposal facilities within their States. States that are not members of compacts cannot take advantage of the provision in the Low-Level Radioactive Waste Policy Amendments Act of 1985 to restrict the use of a compact region’s facility to member States. This section discusses the progress these unaffiliated States made during 1992 toward providing disposal for their low-level radioactive waste. The States are:

- 5.2.1—Maine
- 5.2.2—Massachusetts
- 5.2.3—New York
- 5.2.4—Texas
- 5.2.5—Vermont.

5.2.1 Maine

Background. The Maine Low-Level Radioactive Waste Authority (the Authority) is the agency that the Maine legislature created to plan, site, build, and operate the in-State low-level radioactive waste disposal facility. The Authority began the process to site a low-level radioactive waste disposal facility in February 1989.
The Authority, which has no power of eminent domain, is conducting a Statewide screening process in conjunction with a volunteer siting program in which owners of large parcels of land can offer to sell their land to the Authority.

In November 1990, the Authority announced 12 candidate regions that would undergo technical screening. In December 1991, 29 possible candidate sites were identified from those 12 candidate regions; these sites were named based on studies conducted in the candidate regions. Landowners have also volunteered properties. A parcel of land at the Maine Yankee site in Wiscasset is one of the volunteered sites.

Status. During 1992, the Authority proceeded to evaluate the 29 candidate sites against a series of preference factors. In February 1993, through the evaluation process, the list of candidate sites was narrowed to six. The Maine Yankee site in Wiscasset is one of the six. The Authority is now developing procedures for site characterization. At the time of this writing, a bill is before the Maine Legislature, which, if passed, will direct the Authority to site at Maine Yankee.

The Authority was notified by the U.S. Nuclear Regulatory Commission (NRC) in April 1992 that they had granted Maine’s request for partial Agreement State status. The agreement with the NRC permits Maine to assume the regulatory duties over licensees of subcritical quantities, source, byproduct, and special nuclear material. The agreement does not include the regulation of uranium mill tailings or the regulation of low-level radioactive waste facilities. The Maine Department of Human Services, Radiation Control Program, will be the regulatory agency. The Maine Low-Level Radioactive Waste Authority will complete the licensing application and will be responsible for operating the facility.

While work toward siting continues in Maine, the State’s preferred waste management option is to negotiate an arrangement, on a long-term basis, whereby they would contract or compact with another State or compact region to dispose of Maine’s low-level radioactive waste. In 1990, State officials began discussions with officials in Texas regarding a possible compact or contract. A draft agreement was drawn up. Those discussions were suspended
by Texas in October 1992. Texas Governor Ann Richards directed Texas to suspend any discussions with other States aimed at forming a compact for low-level radioactive waste to be disposed at the proposed Texas facility (see Section 5.2.4, Texas).

With the decision by the Southeast Interstate Low-Level Radioactive Waste Compact Commission to allow the Barnwell disposal facility to remain open to out-of-region waste through June 1994, most States were able to provide their low-level radioactive waste generators with the option to dispose rather than store on site. The Southeast Compact Commission required that certain eligibility criteria be met and that the State or compact region sign contracts with the Southeast Compact Commission. According to Maine State law, Maine cannot sign the contract without the approval of voters in a Statewide referendum.

As of January 1, 1993, low-level radioactive waste generators in Maine began storing their waste on site. The governor of Maine has written the Southeast Compact Commission requesting that Maine be exempt from the requirement to sign the contract and instead deal directly with Maine's generators. (In April 1993, the Southeast Compact Commissioners denied the request from the Maine governor.)

In the spring of 1993, the Texas legislature passed legislation to establish the Texas Low-Level Radioactive Waste Disposal Compact with Maine, Vermont, and Texas as the initial party States. Maine and Vermont, as well as the Congress, must pass legislation ratifying the compact.

5.2.2 Massachusetts

Background. A 1987 State law created the Massachusetts Low-Level Radioactive Waste Management Board. The governor appointed Board members approximately one year later.

The Board is the lead agency responsible for low-level radioactive waste management in the Commonwealth. Under Massachusetts law, before a low-level radioactive waste disposal site can be selected, the Board must develop a comprehensive low-level radioactive waste management plan, criteria for
selecting the disposal site operator, and a program for low-level radioactive waste volume reduction and source minimization by Commonwealth generators. The Department of Environmental Protection is responsible for development of site-selection criteria. In the spring of 1990, the Board completed the criteria for selecting the site operator.

Status. In July 1992, the governor submitted the Commonwealth’s application to the NRC for Agreement State status.

The Board completed the draft Low-Level Waste Management Plan document and, in January 1993, distributed the document for public review and comment. The Board also completed and distributed the draft operator selection criteria regulations for public review and comment; draft regulations regarding siting criteria and licensing, prepared by the Department of Public Health and Department of Environmental Protection, were also distributed for review. Massachusetts law requires that public hearings be held on the draft documents; public comment and review of those comments are required before the management plan and regulations can be adopted. Massachusetts law requires a 120-day public comment period which began in February 1993. The Board will vote on whether or not to site after review of the public comments.

Massachusetts has a contract in place with the Southeast Compact Commission so that generators in the Commonwealth may continue with access to the disposal facility at Barnwell, South Carolina, through June 1994.

5.2.3 New York

Background. In 1986, the New York State legislature passed the Low-Level Radioactive Waste Management Act, and established the Low-Level Radioactive Waste Siting Commission. The Siting Commission is responsible for evaluating and selecting a disposal method and site for the disposal facility.

In September 1989, the Siting Commission announced five potential sites. Pre-characterization studies began on the sites, but local opposition impeded progress in the two counties where the sites were located. On several occasions, the opposition became violent. Because of the stiff opposition,
Governor Mario Cuomo suspended onsite activities in order to reevaluate the siting process. To date, no on-site evaluations have been performed at any of the potential sites.

In 1990, the legislature amended the law to provide for more public participation, independent scientific technical review of work, and refocusing of the process on disposal method selection.

In February 1990, the State of New York formally challenged the constitutionality of the Low-Level Radioactive Waste Policy Amendments Act of 1985 (the Act). New York, joined by Allegany and Cortland Counties, filed suit against the Federal government, claiming that the imposition of responsibility for low-level radioactive waste disposal on States, and in particular the "take-title" provision of the Act, is unconstitutional. After having the case dismissed in the lower courts, New York petitioned the United States Supreme Court to hear the case. The Supreme Court heard the case in March 1992. On June 19, 1992, the Court issued its decision, finding the "take-title" provision unconstitutional but severable from the Act; the Act was otherwise left intact.

Citizens in the Town of Ashford, where the West Valley Nuclear Service Center is located, voiced an interest in having the State's low-level radioactive waste disposal facility sited at West Valley. In 1990, the town Board passed a resolution to lift the State ban on low-level radioactive waste disposal in the town and to make the Ashford site available for site characterization studies.

Status. Two bills that would authorize consideration of a low-level radioactive waste disposal facility at West Valley remained before the State legislature in 1992. No action was taken on the legislative proposals.

Before any additional site characterization is conducted, New York's law requires that the Siting Commission select a preferred disposal method. During 1992, the Siting Commission continued to work on the selection of a preferred disposal method; the Commission also created a public participation program.
The New York Department of Environmental Conservation published draft regulations for the design, construction, operation, and closure of a low-level radioactive waste disposal facility and the generic environmental impact statement. Public hearings were held in February and March 1992; substantial revisions were then made to the draft regulations. Additional hearings were held in September 1992.

The New York legislature mandated that a study be conducted on the storage of low-level radioactive waste. This study was initiated during 1992. The study will evaluate the capacity of the State’s generators to store waste on site for a minimum of 10 years. The study will also address the economic viability of establishing a separate, centralized facility for Class A low-level radioactive waste generated by medical and academic institutions.

Regulatory and technical issues associated with on-site and centralized storage were also evaluated during 1992, leading to a conclusion that no absolute constraints exist to extended storage of low-level radioactive waste.

New York has a contract in place with the Southeast Compact Commission to ensure New York low-level radioactive waste generators continued access to the Barnwell, South Carolina, disposal facility through June 1994.

5.2.4 Texas

Background. The Texas legislature established the Texas Low-Level Radioactive Waste Disposal Authority (the Authority) in June 1981. The Authority is responsible for developing a disposal facility for low-level radioactive waste generated within the State. The Authority is to give preference to the location of a disposal facility on State-owned land.

Until 1991, the Authority had been characterizing the Fort Hancock site in Hudspeth County. Legal challenges to that site had been ongoing since 1987, when the neighboring county of El Paso obtained a temporary restraining order against the Authority in order to delay the selection of a final site; later the district court also issued a temporary injunction. On appeal, the
restraining order and injunction were dissolved because the Authority had not named a preferred site, and the court found the action by El Paso County to be premature.

The Authority named the Fort Hancock site the preferred site in November 1989, and El Paso county reinstated the lawsuit. In 1991, the court ruled against the Authority and issued an injunction that barred the Authority from further siting activity at the Fort Hancock site; the court also ordered the Authority to restore the site to its pre-study condition. The Authority appealed the decision. In March 1991, Governor Ann Richards asked that the Authority abandon the Fort Hancock site and seek an alternate site in Hudspeth County.

Then, in May 1991, the Texas legislature passed a law that directed the Authority to locate and characterize a site in a 400-square-mile area in eastern Hudspeth County, about 40 miles east of the Fort Hancock site. The most preferable tracts of State-owned land are located in Hudspeth County. After the legislature’s action, the Authority’s appeal was dismissed.

The Authority identified a proposed disposal area in August 1991. The site is located on the Fasken Ranch, a 16,000-acre parcel owned by a private corporation that was willing to sell the land. Initial site characterization began in November 1991.

Status. On March 1, 1992, the Authority filed the license application to operate the disposal facility. The Authority submitted the application to the Texas Water Commission, the licensing agency for the low-level radioactive waste disposal facility. On April 15, 1992, the Water Commission announced that the application was administratively complete.

On May 28, 1992, the Board of Directors of the Authority designated a site on the Fasken Ranch as the location of the low-level radioactive waste disposal facility. The Authority purchased the 16,000-acre ranch on June 1, 1992. The Authority is now focusing on characterization of the proposed site.
The Texas legislature also passed a law in 1991 that provides the conditions under which the State can join a compact for the disposal of low-level radioactive waste. Representatives from the District of Columbia, Maine, and Vermont have contacted the Texas Governor’s office and the Authority concerning the possibility of entering a compact with Texas.

Maine, Vermont, and Texas drew up a draft agreement in 1992. Under the terms of the draft compact, Maine and Vermont would offer Texas $20-30 million in consideration for joining the compact. Texas would guarantee to accept those States’ waste for the duration of the compact.

In October, the governor suspended negotiations aimed at forming a compact, indefinitely. The governor’s action was based on a written opinion from the Texas Attorney General that Texas could exclude out-of-State waste without joining a compact.

In the spring of 1993, the Texas legislature passed legislation to establish the Texas Low-Level Radioactive Waste Disposal Compact with Maine, Vermont, and Texas as the initial party States. Maine and Vermont, as well as the Congress, must pass legislation ratifying the compact.

Texas has a contract in place with the Southeast Compact Commission for Texas low-level radioactive waste generators continued access to the Barnwell, South Carolina, disposal facility through June 1994.

5.2.5 Vermont

Background. Vermont enacted legislation in 1990 that created the Vermont Low-Level Radioactive Waste Authority (the Authority). The legislation provides for developing a possible in-State low-level radioactive waste facility, and covers all major aspects of site selection, facility construction, operation, and closure. As an initial task, the legislation directs the Authority to characterize a site at the Vermont Yankee Nuclear Power Station in the Town of Vernon, and to screen the site to identify at least three potential alternative sites; one of the three alternative sites
must also be in Vernon. If the Vermont Yankee site is determined not to be as suitable as the "best" alternative sites, the Authority must petition the legislature to characterize the best alternative.

Vermont's legislation directs the Secretary of the Agency of Natural Resources to pursue opportunities to join an interstate compact. The Agency of Natural Resources is also responsible for issuing regulations governing screening, design standards, and public comment. The Agency adopted site-screening procedures and siting criteria in 1991. The State is not an Agreement State; therefore, its role in regulating with regard to radioactive materials is limited to activities that take place prior to submitting a license application, and activities that do not involve direct regulation of radioactive materials.

Characterization of the Vermont Yankee site began in late 1990. On September 19, 1991, the Authority voted to discontinue work at the site because numerous unfavorable conditions, most involving groundwater, were identified.

Status. The Authority began screening the Town of Vernon in December 1992. The screening is designed to be an interaction process involving the Authority, its contractor, and the town. The screening is expected to be completed in the summer of 1993. The Authority has initiated a search for volunteer sites throughout the State. Among other benefits, the Authority will provide up to $20,000 for towns to conduct studies on the potential socioeconomic effects of hosting a disposal facility.

In February 1992, the Authority announced the benefits package for the host community. Included in the proposed package are an initial payment of $250,000 to the community when the facility receives an operating license and subsequent payments of $200,000 annually during the anticipated 15-year operating life of the facility.
Vermont is involved in discussions with Texas and Maine regarding the formation of a compact that would provide for low-level radioactive waste disposal at the Texas facility. Those discussions were suspended by the Texas governor in October 1992. In the spring of 1993, the Texas legislature passed legislation to establish the Texas Low-Level Radioactive Waste Disposal Compact with Maine, Vermont, and Texas as the initial party States. Maine and Vermont, as well as the Congress, must pass legislation ratifying the compact.

Vermont has a contract in place with the Southeast Compact Commission for Vermont low-level radioactive waste generators' continued access to the Barnwell, South Carolina, disposal facility through June 1994.

5.3 Unaffiliated States Not Planning to Construct Low-Level Radioactive Waste Disposal Facilities

Five unaffiliated States have no plans to develop low-level radioactive waste disposal facilities. These States do seek to enter contracts or compacts with States or compact regions that will have operating disposal facilities after January 1, 1993. (The District of Columbia and Puerto Rico are considered States under the Low-Level Radioactive Waste Policy Amendments Act of 1985.) The five States are:

- 5.3.1—District of Columbia
- 5.3.2—Michigan
- 5.3.3—New Hampshire
- 5.3.4—Puerto Rico
- 5.3.5—Rhode Island.

This section discusses activities of these unaffiliated States during 1992 regarding low-level radioactive waste management.
5.3.1 District of Columbia

**Background.** The District of Columbia is considered a State under the Act and is required to meet the milestones established by the Act. The District entered a contract in 1987 with the Rocky Mountain Compact Board for disposal of low-level radioactive waste at the Board’s regional facility in Nevada. The initial contract was to be effective through 1989.

In December 1989, the contract with the Rocky Mountain Compact Board was amended to allow the District to dispose of up to 6,000 cubic feet of low-level radioactive waste through the end of 1992.

**Status.** The contract with the Compact Board expired at the end of 1992. During the year, the District was involved in discussions with the State of Texas regarding a possible compact. Dialogue with Texas continues in anticipation of joining the State in a compact.

The District was not one of the States eligible to enter contract arrangements with the Southeast Compact Commission for disposal access to the Barnwell facility. The Southeast Compact Commission determined that five States were ineligible to enter the contracts because these States did not have access to Barnwell on December 31, 1992, due to previous findings of noncompliance with the milestones in the 1985 Act.

Without access to disposal, the District’s low-level radioactive waste generators are using one of four options: on-site storage, separation of decayables from nondecayables, compaction by a broker and storage by a broker, or use of radionuclides with shorter half-lives, where possible. (At the October 1993 meeting of the Southeast Compact Commission Import Policy Committee, access to the Barnwell disposal facility was reinstated for the District of Columbia through June 1994.)
5.3.2 Michigan

Background. From December 1985 until July 24, 1991, Michigan was one of the member States of the Midwest Interstate Low-Level Radioactive Waste Compact Region; and host State for the compact region since June 30, 1987. The Midwest Compact Commission considered several factors when selecting the host State, including the projected State waste volume and radioactivity of low-level radioactive waste projected for each State, and transportation factors related to waste shipments, highway distances, and safety.

The Michigan Low-Level Radioactive Waste Authority identified three candidate areas in 1989. The three areas were later eliminated from consideration because they failed to meet State siting criteria which are very restrictive.

Opposition to siting a disposal facility in the State was strong. The Compact Commission had evidence of negative statements by Michigan's then governor regarding acceptance for disposal of out-of-State low-level radioactive waste. The Governor had issued a press release stating that Michigan would not site a disposal facility. The Compact Commission also had affidavits from the governors of Ohio and Wisconsin that the Michigan governor made statements regarding Michigan not siting a disposal facility for low-level radioactive waste.

The Compact Commission, over the objection of the Michigan commissioner, determined that Michigan failed to discharge its host State obligations. On July 24, 1991, the Commission revoked Michigan's membership in the compact region and suspended and terminated any privileges of the State, including, but not limited to, participation in proceedings of the Midwest Interstate Compact Commission.
Status. Since expulsion from the Midwest compact region, Michigan has curtailed its siting process.

In November 1990, the sited States notified the State of Michigan that it was denied access to the disposal facilities at Barnwell, South Carolina; Beatty, Nevada; and Richland, Washington. The sited States found Michigan out of compliance with the Low-Level Radioactive Waste Policy Amendments Act of 1985. Low-level radioactive waste generators in Michigan have been storing their waste since November 1990.

The Michigan Low-Level Radioactive Waste Authority is seeking legislative changes that would authorize the formation of a policy advisory committee. The committee would make recommendations to the governor and the Authority on the future direction the State should take in its low-level radioactive waste management efforts.

5.3.3 New Hampshire

Background. New Hampshire contracted with the Rocky Mountain Low-Level Radioactive Waste Compact Board in 1989 for disposal (at the Beatty facility in Nevada) of up to 2,000 cubic feet of New Hampshire’s low-level radioactive waste through the end of 1992. The contract specifies only nonreactor low-level radioactive waste.

Status. The contract with the Compact Board expired at the end of 1992. New Hampshire was one of five States that the Southeast Compact Commission determined to be ineligible to enter contract arrangements with the Commission for disposal access to the Barnwell facility. Ineligible States are those that did not have access to Barnwell on December 31, 1992, due to previous findings of noncompliance with the milestones in the 1985 Act. New Hampshire low-level radioactive waste generators are storing their waste.

New Hampshire has no plans to establish a disposal facility.
5.3.4 Puerto Rico

Background. The Commonwealth of Puerto Rico is considered a State under the Act and was required to meet the milestones established by the Act. Because Puerto Rico did not meet the milestones, it has been denied access to the low-level radioactive waste disposal facilities in Nevada, South Carolina, and Washington since 1987.

Status. Puerto Rico continues to generate a small annual volume of low-level radioactive waste; this waste is generated primarily by medical and research facilities.

The Southeast Compact Commission determined Puerto Rico to be ineligible to enter contract arrangements with the Commission for disposal access to the Barnwell facility. Puerto Rico was ineligible because it did not have access to Barnwell on December 31, 1992, due to previous findings of noncompliance with the milestones in the 1985 Act. Puerto Rico’s low-level radioactive waste generators continue to store their waste.

Puerto Rico’s plans for disposal are unknown.

5.3.5 Rhode Island

Background. Rhode Island entered a contract in 1987 with the Rocky Mountain Low-Level Radioactive Waste Compact Board for disposal of low-level radioactive waste at the Board’s regional facility in Nevada. The initial contract was to be effective through 1989. The contract was amended to be effective through December 31, 1992.

Status. Rhode Island’s contract with the Rocky Mountain Compact Board expired on December 31, 1992. Rhode Island generates small quantities of low-level radioactive waste and has no plans to construct a low-level radioactive waste disposal facility at this time. The State’s Radiation Advisory Commission has been reviewing this issue and policy.
Rhode Island was one of five States that the Southeast Compact Commission determined to be ineligible to enter contract arrangements with the Commission for disposal access to the Barnwell facility. Ineligible States are those that did not have access to Barnwell on December 31, 1992, due to previous findings of noncompliance with the milestones in the 1985 Act. Rhode Island low-level radioactive waste generators are storing their waste.

5.4 Compact Regions with Currently Operating Disposal Sites

Three compact regions, made up of 19 States, had operating low-level radioactive waste disposal facilities through 1992. These facilities are in Richland, Washington; Beatty, Nevada; and Barnwell, South Carolina. The Beatty disposal facility ceased operations on December 31, 1992. The Barnwell facility was also scheduled to close, but legislation passed in South Carolina in June 1992 allowed the facility to remain open until January 1, 1996, on a regional basis, and to remain open to out-of-region low-level radioactive waste through June 1994. The Richland facility will continue operations after December 31, 1992, but will serve only as the regional disposal facility for the Northwest compact region and, through contract, the Rocky Mountain compact region. These compact regions and host States are:

- 5.4.1—Northwest Compact Region (Washington)
- 5.4.2—Rocky Mountain Compact Region (Nevada)
- 5.4.3—Southeast Compact Region (South Carolina).

5.4.1 Northwest Interstate Compact on Low-Level Radioactive Waste Management

Host State: Washington

Other Member States: Alaska, Hawaii, Idaho, Montana, Oregon, Utah, and Wyoming
Background. Congress consented to the Northwest compact in December 1985. Washington is the host State for the compact region. The State has had an operating low-level radioactive waste disposal facility since 1965 at Richland, Washington; this facility became the regional facility.

Under the Northwest compact, the Northwest Low-Level Radioactive Waste Compact Committee can approve arrangements to accept waste from outside the compact region only with the affirmative vote of the committee member from the State of Washington. The Washington committee member, under Washington law, may approve access arrangements only for members of the Rocky Mountain compact region or for States that generate fewer than 1,000 cubic feet of waste a year and are contiguous with a State that is a member of the Northwest compact region.

The Northwest Compact Committee and the Rocky Mountain Low-Level Radioactive Waste Compact Board began negotiations in 1990 regarding a contract for disposal of the Rocky Mountain Compact region's low-level radioactive waste at the Richland facility.

Status. On June 15, 1992, the State of Wyoming became a member of the Northwest compact region. Wyoming was eligible for membership in the compact region when the Northwest compact was originally adopted; however, the State chose to join the Rocky Mountain compact region. The governor of Wyoming signed a bill in March 1992 allowing the State to change compact region affiliation.

In the fall of 1992, the Northwest Low-Level Radioactive Waste Compact Committee and Rocky Mountain Compact Board signed the agreement allowing the Richland disposal facility to accept for disposal low-level radioactive waste generated in the Rocky Mountain compact region (Colorado, New Mexico, and Nevada). The contract limits the amount of Rocky Mountain compact region waste to be disposed to 6,000 cubic feet per year, plus a three percent annual increase beginning in 1994; the contract also includes 140,000 cubic feet of decommissioning waste from the Fort St. Vrain nuclear powerplant in Colorado. (The contract will remain in effect until the facility at Richland is closed permanently, unless the contract is terminated earlier under conditions specified in the language of the contract.)
As of January 1, 1993, the State of Washington accepted only that waste for disposal at the Richland facility that was generated in the Northwest compact region and Rocky Mountain compact region States. January 1, 1993, is the date on which the Low-Level Radioactive Waste Policy Amendments Act of 1985 allows the three operating facilities (Richland, Washington; Barnwell, South Carolina; and Beatty, Nevada) to cease accepting out-of-region waste.

The State of Washington, along with the other two sited States (Nevada and South Carolina), notified States and compact regions of its January 1, 1992, milestone compliance determinations. Only member States of the Central, Central Midwest, and Southwestern compact regions were determined to be in compliance with the 1992 milestone. All other compact regions and go-it-alone States were notified that they would be assessed the penalty surcharge prescribed under the Low-Level Radioactive Waste Policy Amendments Act of 1985 for disposal at Washington's Richland facility during 1992.

5.4.2 Rocky Mountain Low-Level Radioactive Waste Compact Region

Current Host State: None

Designated Host State: None

Other Member States: Colorado, Nevada, New Mexico

Background. Congress consented to the Rocky Mountain compact in January 1986. At that time, the State of Nevada, one of the member States of the compact region, already had one of the Nation's three operating low-level radioactive waste disposal facilities--the Beatty facility. Nevada, therefore, became the host State for the compact region. However, the language of the compact specified that a State that the Rocky Mountain Compact Board expected to generate 20 percent or more of the region's low-level radioactive waste had an obligation to become the next host State. Colorado was designated, under this criterion, to replace Nevada as the host State beginning January 1, 1993.
The Rocky Mountain Low-Level Radioactive Waste Compact Board and the Northwest Low-Level Radioactive Waste Compact Committee began negotiations in 1990 regarding a contract under which the Northwest compact regional disposal facility at Richland, Washington, would accept low-level radioactive waste from the Rocky Mountain compact region.

Status. The State of Nevada, along with the other two sited States (South Carolina and Washington), notified States and compact regions of its January 1, 1992, milestone compliance determinations. Only member States in the Central, Central Midwest, and Southwestern compact regions were determined to be in compliance with the 1992 milestone. All other compact regions and go-it-alone States were notified that they would be assessed the penalty surcharge prescribed under the Low-Level Radioactive Waste Policy Amendments Act of 1985 for disposal at Nevada’s Beatty facility during 1992.

At one time, the State of Wyoming was a member of the Rocky Mountain compact. However, the governor of Wyoming signed a bill in March 1992 allowing the State to change compact region affiliation from the Rocky Mountain compact region to the Northwest compact region. Wyoming was eligible for membership in the Northwest compact region when the compact was originally adopted; however, the State chose to join the Rocky Mountain compact region. The Rocky Mountain Compact Board adopted a motion by the State of Wyoming to exclude the State from the Rocky Mountain compact region; the exclusion was effective immediately, and on June 15, 1992, Wyoming became a member of the Northwest compact region.

In the fall of 1992, the Rocky Mountain Compact Board and Northwest Low-Level Radioactive Waste Compact Committee signed an agreement allowing the Richland disposal facility to accept low-level radioactive waste generated in the Rocky Mountain compact region (Colorado, New Mexico, and Nevada). The contract limits the amount to 6,000 cubic feet per year of Rocky Mountain compact region waste to be disposed, plus a three percent annual increase beginning in 1994; the contract also includes 140,000 cubic feet of decommissioning waste from the Fort St. Vrain nuclear powerplant in Colorado. (The contract will remain in effect until the facility at Richland is closed permanently, unless the contract is terminated earlier under conditions specified in the language of the contract.)
With the contract signed, the Compact Board voted unanimously to remove Colorado as the designated host State for the compact region.

In December 1992, the Beatty disposal facility was closed. Rocky Mountain Compact region low-level radioactive waste is now being disposed at the Richland facility in Washington.

5.4.3 Southeast Interstate Low-Level Radioactive Waste Management Compact Region

Current Host State: South Carolina

Designated Host State: North Carolina

Other Member States: Alabama, Florida, Georgia, Mississippi, Tennessee, and Virginia

Background. Congress consented to the Southeast Interstate Low-Level Radioactive Waste Management Compact in January 1986. At that time, the State of South Carolina already had one of the Nation's three operating low-level radioactive waste disposal facilities--the Barnwell facility. Under the terms of the Southeast Compact Commission, South Carolina is the first host State for the compact region. Under the language of the compact, and South Carolina law, Barnwell was to close on December 31, 1992, and to be replaced by a new disposal facility. In September 1986, the Southeast Compact Commission designated North Carolina to host the compact region's second disposal facility following closure of the Barnwell facility. The North Carolina facility is scheduled to remain operational for 20 years or disposal of 32 million cubic feet of low-level radioactive waste, whichever comes first.

The North Carolina Low-Level Radioactive Waste Management Authority (the Authority) was established in 1987. The Authority is charged with siting, building, leasing or operating, and closing the North Carolina disposal facility. Chem-Nuclear Systems, Inc., is the developer/operator for the facility.
The Authority implemented a phased screening process in order to select a preferred site for the disposal facility. The Authority also encouraged volunteer host sites within any areas of the State not specifically excluded by State or Federal regulations; no suitable sites have been volunteered.

In 1990, the Authority identified two potential sites for detailed characterization; one site straddles the Wake County and Chatham County line, and the other site is located in Richmond County. Preliminary survey activities were conducted at both sites in 1991.

Status. The State of South Carolina, along with the other two sited States (Nevada and Washington), notified States and compact regions of its January 1, 1992, milestone compliance determinations. Only member States in the Central, Central Midwest, and Southwestern compact regions were determined to be in compliance with the 1992 milestone. All other compact regions and go-it-alone States were notified that they would be assessed a $120 penalty surcharge for disposal at each sited State's disposal facility during 1992.

On June 4, 1992, the South Carolina General Assembly approved keeping the Barnwell disposal facility open on a regional basis until January 1, 1996, and open from January 1, 1993, through June 30, 1994, to out-of-region low-level radioactive waste (for a more detailed discussion, see Section 3.3). The importation of waste into the Southeast compact region after December 31, 1992, requires approval of two-thirds of the Southeast Compact Commission, including both of the South Carolina commissioners.

On September 8, 1992, the Southeast Compact Commission adopted an import policy for waste to be accepted at Barnwell. On November 13, 1992, the Commission approved changes to the policy. Under the policy, all States and compact regions with access to Barnwell on December 31, 1992, may contract with the Southeast Compact Commission for continued access through June 30, 1994. Most States have access to disposal at Barnwell; the District of Columbia, Michigan, New Hampshire, Puerto Rico, and Rhode Island do not have access. A surcharge fee of $220 per cubic foot became effective January 1, 1993, for waste that originates outside the compact region. The contract can be terminated at any time by the Southeast Compact Commission, without cause.
(At the October 1993 meeting of the Southeast Compact Commission Import Policy Committee, access to the Barnwell disposal facility was reinstated for the District of Columbia through June 1994.)

As of January 1, 1993, the facility at Barnwell, South Carolina, is one of only two active disposal facilities in the United States. No facility is yet available in North Carolina. As in other States and compact regions, North Carolina has had to revise its schedule for an operational facility.

The Richmond County and Wake/Chatham County sites are both being characterized. (The Richmond County site, however, is within 10 miles of the South Carolina border. Under a South Carolina good neighbor policy, North Carolina must exclude, from final site selection, any site within 10 miles of the South Carolina border.) The characterization process is expected to be completed in mid-1993, with a preferred site to be selected by the Authority by the end of 1993.

The North Carolina Authority needs approximately $30 million in additional funding in order to complete facility development activities through the licensing phase. The Southeast Compact Commission is assessing a fee to southeastern generators for waste disposed at Barnwell in order to provide the additional funding needed through licensing.
6. MEETING THE 1993 DEADLINE AND 1996 TARGET DATE

Each year, the Department of Energy requests those States planning new low-level radioactive waste disposal sites to informally update their facility development reference schedules for use in the annual report to Congress. With only a few exceptions, States have been able to provide the information requested.

Table 2 on the following page provides the host State reference schedules as of March 1993.
Table 2. Host State projected plans as of March 1993.

<table>
<thead>
<tr>
<th>Host State (Compact)</th>
<th>Site selection</th>
<th>License submission</th>
<th>License review</th>
<th>Facility operational</th>
</tr>
</thead>
<tbody>
<tr>
<td>Connecticut (Northeast)</td>
<td>Schedule being revised</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Illinois (Central Midwest)</td>
<td>Schedule being revised</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Ohio (Midwest)</td>
<td>Activities not yet initiated</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>New Jersey (Northeast)</td>
<td>Schedule being revised</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>New York</td>
<td>Schedules not available</td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

a. See Section 2 for descriptions of the January 1, 1992, milestone requirements.
b. See Section 2 for explanations of the January 1, 1993, and January 1, 1996, deadline requirements.
c. July 24, 1991, the Midwest Interstate Compact Commission revoked Michigan's membership in the Compact; Ohio automatically became host State after being the first alternate.
7. CONCLUSION

Events of 1992 clearly demonstrate that political and legal challenges late in the siting process cannot only bring apparently successful programs to a virtual halt, but force a State to begin its process all over again.

Most States met the first three of the four milestones in the Act that were to lead to the January 1, 1993, deadline. However, only three States met the January 1, 1992, milestone which required that a complete license application be filed to operate a low-level radioactive waste disposal facility. The Central, Central Midwest, and Southwestern compact regions met this milestone; host States for these compact regions are, respectively, Nebraska, Illinois, and California.

As became evident in 1992, technical fulfillment of the milestones may not be a good indication of the progress of a State or compact region in meeting the goal of providing indigenous disposal capacity. Rather than lead a State to providing disposal capacity, meeting the milestones has turned out to be an administrative exercise; the final accomplishment has yet to be seen.

While Nebraska, Illinois, and California have heretofore been in the forefront of States developing new disposal capacity, events in 1992 and early 1993 have now slowed progress in those States. In California, the Department of Health Services agreed to have a hearing in an adjudicatory-type format regarding health and safety issues at the Ward Valley proposed facility before issuing a decision on the license application. Plans for the hearing were suspended in September under court order. (In May 1993, the California Court of appeals did issue its decision that no adjudicatory-type hearing is required. The Court ordered the California Department of Health Services to proceed to its licensing decision.) In Illinois, a decision by the Illinois Siting Commission rejecting the proposed Martinsville site caused the State to practically begin its siting process anew. The action by the Illinois Siting Commission then led Illinois to be found no longer in compliance with the 1992 milestone because the license application was specific to the rejected site. Delays were also caused in Nebraska after officials announced their intent to deny the license application for that State's proposed facility, and issues were raised involving community consent.
Although 1992 was a year of major setbacks, States continued to make progress in the development of disposal capacity for commercial low-level radioactive waste. Unfortunately, that progress still has not produced any new disposal capacity within the United States. Actions taken in California, Illinois, and Nebraska could prove to be a prelude to possible reactions nationwide once other States reach similar levels in their siting processes.

In spite of the many challenges the States must address, the Federal framework under which they continue to work remains basically sound. The Act was the focus of a constitutional challenge brought by the State of New York in New York v. United States. In June 1992, the United States Supreme Court found that the "take-title" provision was unconstitutional, but also found that provision severable from the rest of the Act, which the Court upheld. Except for the "take-title" obligation, the States' responsibility for the disposal of commercial low-level radioactive waste under the Act thus remains intact.

Besides opposition and, in some States, turmoil, the year 1992 reflected examples of negotiation and compromise. For two of the operating disposal facilities, the era did end in 1992. On December 31, 1992, the Rocky Mountain compact region disposal facility at Beatty, Nevada, ceased operations. The Northwest compact region disposal facility at Richland, Washington, continued to operate, but accepted only the region's low-level radioactive waste and the low-level radioactive waste generated in the Rocky Mountain compact region for disposal, pursuant to terms of a contract between the two compact regions. After approximately two years of negotiations, the contract was signed by the necessary parties by the end of October 1992.

The Southeast compact region's disposal facility at Barnwell, South Carolina, remains open and provides disposal access to some out-of-region waste (for a significant surcharge) on a contract basis with the Southeast Compact Commission, through June 1994; Barnwell is to remain open as the Southeast compact regional facility through December 1995. Since access to Barnwell will cease for States outside the compact region in mid-1994, approximately 50 percent of the Nation's low-level radioactive waste is expected to require storage, much of it at the point of generation, which would raise numerous health, safety, financial, and legal issues.
States, then, remain responsible for the disposal of the commercial low-level radioactive waste generated within their borders, and the surviving provisions of the Act continue to provide sufficient means for the States to solve the low-level radioactive waste dilemma, either by themselves or in cooperation, as the Northwest and Rocky Mountain compact regions have shown. The question remains, however, as to whether the strategies being implemented by the States to establish new disposal capacity will be successful. Given the events of 1992, the States should continue to evaluate, as necessary, their approaches to establishing new low-level radioactive waste disposal capacity to respond to rapidly changing circumstances.

DOE believes that States can establish new low-level radioactive waste disposal capacity under the Act and that the legal framework in place is sufficient to do so. Although no new disposal capacity was established by the 1993 deadline, and it is apparent that no new disposal capacity will be available before 1994, DOE believes that it is not necessary to revise the fundamental framework for disposal of low-level radioactive waste at this time. States retain the responsibility, the authority, and the means to solve the low-level radioactive waste disposal problem.
APPENDIX A

LOW-LEVEL RADIOACTIVE WASTE RECEIVED BY COMMERCIAL DISPOSAL FACILITIES IN 1992
APPENDIX A

LOW-LEVEL RADIOACTIVE WASTE RECEIVED BY COMMERCIAL DISPOSAL FACILITIES IN 1992

The data in the figures and tables in this Appendix are from the Department of Energy’s Low-Level Radioactive 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 radioactive waste shippers, brokers, and processors, so that the waste volumes are attributed to the State or compact region in which the waste was actually generated. Although the data are furnished by the State agencies, they are subject to ongoing verification by these agencies and may be adjusted slightly after the time it is compiled in this report.

Disposal Volumes and Activity Level of Low-Level Radioactive Waste Received by Commercial Disposal Facilities

In 1992, the three operating disposal sites at Beatty, Nevada; Barnwell, South Carolina; and Richland, Washington, received 1,742,321 cubic feet of low-level radioactive waste, with a radioactivity level of 1,000,103 curies, according to information reported by regulatory agencies of the three sited States (Figure A-1).

Disposal Capacity Limitations

The Low-Level Radioactive Waste Policy Amendments Act of 1985 (the Act) allows each of the three currently operating disposal sites to limit the volume of low-level radioactive waste they accept 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 both of the other two sites also reach their ceilings. The combined total of these amounts during the seven-year interim access period from 1986 to 1992 is 19.6 million cubic feet. These ceilings are as follows:

A-3
### Figure A-1. Volume of waste and activity received by operating disposal facilities (1986 through 1992).

<table>
<thead>
<tr>
<th></th>
<th></th>
<th></th>
<th></th>
<th></th>
<th></th>
<th></th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td>Barnwell, SC</td>
<td>1,045,808</td>
<td>955,223</td>
<td>931,758</td>
<td>1,103,151</td>
<td>788,537</td>
<td>789,681</td>
<td>829,608</td>
</tr>
<tr>
<td>Beatty, NV</td>
<td>94,222</td>
<td>331,222</td>
<td>92,694</td>
<td>114,420</td>
<td>59,479</td>
<td>160,269</td>
<td>514,725</td>
</tr>
<tr>
<td>Richland, WA</td>
<td>665,023</td>
<td>555,192</td>
<td>403,398</td>
<td>408,291</td>
<td>295,299</td>
<td>419,212</td>
<td>397,988</td>
</tr>
<tr>
<td><strong>Total (ft³)</strong></td>
<td><strong>1,805,053</strong></td>
<td><strong>1,841,637</strong></td>
<td><strong>1,427,850</strong></td>
<td><strong>1,625,862</strong></td>
<td><strong>1,143,315</strong></td>
<td><strong>1,369,162</strong></td>
<td><strong>1,742,321</strong></td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Disposal Site</th>
<th>1986 (Ci)</th>
<th>1987 (Ci)</th>
<th>1988 (Ci)</th>
<th>1989 (Ci)</th>
<th>1990 (Ci)</th>
<th>1991 (Ci)</th>
<th>1992 (Ci)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Barnwell, SC</td>
<td>116,108</td>
<td>210,965</td>
<td>218,902</td>
<td>725,164</td>
<td>443,594</td>
<td>611,348</td>
<td>815,374</td>
</tr>
<tr>
<td>Beatty, NV</td>
<td>672</td>
<td>11,101</td>
<td>8,691</td>
<td>42,678</td>
<td>11,323</td>
<td>29,679</td>
<td>90,206</td>
</tr>
<tr>
<td>Richland, WA</td>
<td>116,960</td>
<td>47,484</td>
<td>32,068</td>
<td>99,026</td>
<td>92,985</td>
<td>158,784</td>
<td>93,923</td>
</tr>
<tr>
<td><strong>Total (Ci)</strong></td>
<td><strong>233,740</strong></td>
<td><strong>269,550</strong></td>
<td><strong>259,661</strong></td>
<td><strong>866,868</strong></td>
<td><strong>547,902</strong></td>
<td><strong>799,811</strong></td>
<td><strong>1,000,103</strong></td>
</tr>
</tbody>
</table>

*Note: Volume and activity totals are subject to ongoing verification and may be adjusted slightly.*
<table>
<thead>
<tr>
<th>Site</th>
<th>Annual Ceiling (million ft³)</th>
<th>Seven-Year Ceiling (million ft³)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Beatty, NV</td>
<td>0.2</td>
<td>1.4</td>
</tr>
<tr>
<td>Barnwell, SC</td>
<td>1.2</td>
<td>8.4</td>
</tr>
<tr>
<td>Richland, WA</td>
<td>1.4</td>
<td>9.8</td>
</tr>
<tr>
<td>Total</td>
<td>2.8</td>
<td>19.6</td>
</tr>
</tbody>
</table>

Figure A-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 two years preceding 1986. However, the volume of low-level radioactive waste actually received at the operating sites from 1986 through 1992 has been significantly below the total annual ceiling. This fact has eased concerns that access to current disposal capacity might be disrupted if the sites reached their annual disposal ceilings. As indicated in Figure A-2, only 56 percent of the seven-year disposal ceiling has been used during the seven years of the access period.

**Unusual Volume Allocations**

The Act limited the volume of waste from nuclear power reactor could ship for disposal between January 1, 1986, and December 31, 1992. Each power reactor was assigned a "regular allocation" of disposal capacity in accordance with a formula provided in the Act. Because utility organizations believed that the regular allocation might not be adequate in some circumstances, provisions were added to allow reactors to receive additional allocations of disposal capacity in certain circumstances.

Section 5(c)(5) of the Act assigned DOE the responsibility for allocating up to 800,000 cubic feet of low-level radioactive waste disposal capacity at the three operating disposal facilities. This capacity, which is part of the total 11.9 million cubic feet commercial reactor allocation, is to be used for the disposal of low-level radioactive waste generated at nuclear power reactors as a result of unusual or unexpected operating, maintenance, repair of safety-related activities.
Figure A-2. Use of disposal ceiling volumes at the three operating disposal facilities.
Figure A-3. Seven-year cumulative use of utility allocation volumes.
During 1992, commercial power reactors disposed of 598,678 cubic feet of low-level radioactive waste at the three disposal sites. Figure A-3 shows that the total volume of reactor waste received at the three operating sites from 1986 through 1992 (5,538,872) represents only 49.8 percent of the total regular allocations issued through 1992.

As of December 31, 1992, DOE had granted six requests for unusual volume allocation, totaling 190,283 cubic feet; two of the six requests were returned to the requestor for additional information and no requests were denied (Table A-1). A balance of 609,717 cubic feet of the original 800,000 cubic feet of unusual volume allocation remains undistributed. No petitions for unusual volume allocations were submitted to the Department of Energy in 1992.

The regular reactor allocations and unusual volume allocations have been tracked as part of the National Low-Level Waste Management Program's Information Systems under the title of Allocation Monitoring System. Data for regular commercial reactor allocation have been updated monthly from reports provided to the National Low-Level Waste Management Program from sited State regulators. Unusual volume allocations were updated at the time an award was granted by DOE.

The nuclear powerplants have shipped far less low-level radioactive waste volume for disposal than had been anticipated during deliberations on the Act in 1985. The data show that even those few reactors that received unusual volume allocations could have disposed of the waste generated by the unusual activities using only their regular allocations. Because nuclear reactors were able to achieve substantial reductions in the volume of low-level radioactive waste generated, issuance of unusual volume allocations by DOE never became a significant element of the interim access period. The volume allocated to each commercial power reactor, its volume delivered for disposal, and its remaining allocation are illustrated in Table A-2.

The interim access period expired December 31, 1992.
<table>
<thead>
<tr>
<th>Utility</th>
<th>Reactor Unit</th>
<th>Volume Allocated (ft³)</th>
</tr>
</thead>
<tbody>
<tr>
<td>American Electric Power Company</td>
<td>Donald C. Cook, Unit 2</td>
<td>46,538</td>
</tr>
<tr>
<td>Arizona Nuclear Power Project</td>
<td>Palo Verde, Units 1, 2, and 3</td>
<td>27,970</td>
</tr>
<tr>
<td>Commonwealth Edison</td>
<td>Dresden, Unit 3</td>
<td>17,250</td>
</tr>
<tr>
<td>General Public Utilities Nuclear</td>
<td>Three Mile Island, Unit 2</td>
<td>46,000</td>
</tr>
<tr>
<td>New York Power Authority</td>
<td>James A. FitzPatrick Nuclear Power Plant</td>
<td>28,450</td>
</tr>
<tr>
<td>Philadelphia Electric Co.</td>
<td>Peach Bottom, Unit 3</td>
<td>24,075</td>
</tr>
<tr>
<td>Total</td>
<td></td>
<td>190,283</td>
</tr>
</tbody>
</table>
Table A-2. Power reactor allocation profile.

January 1, 1986 through December 31, 1992
By the Department of Energy’s National Low-Level Waste Management Program

<table>
<thead>
<tr>
<th>REACTOR</th>
<th>Unit</th>
<th>1986-1992 Allocation</th>
<th>Unusual Volume transferred</th>
<th>Total auth Allocation</th>
<th>Volume rec at Disposal</th>
<th>Allocation % used</th>
<th>Allocation Remaining</th>
</tr>
</thead>
<tbody>
<tr>
<td>Arkansas</td>
<td>1,2</td>
<td>132,936</td>
<td>0</td>
<td>132,936</td>
<td>66,363</td>
<td>50%</td>
<td>66,573</td>
</tr>
<tr>
<td>Beaver Valley</td>
<td>1,2</td>
<td>103,322</td>
<td>0</td>
<td>103,322</td>
<td>41,174</td>
<td>40%</td>
<td>62,148</td>
</tr>
<tr>
<td>Big Rock Point</td>
<td>1</td>
<td>148,836</td>
<td>0</td>
<td>148,836</td>
<td>11,719</td>
<td>8%</td>
<td>137,117</td>
</tr>
<tr>
<td>Braidwood</td>
<td>1,2</td>
<td>66,740</td>
<td>0</td>
<td>66,740</td>
<td>25,178</td>
<td>38%</td>
<td>41,562</td>
</tr>
<tr>
<td>Browns Ferry</td>
<td>1,2,3</td>
<td>557,028</td>
<td>0</td>
<td>557,028</td>
<td>172,902</td>
<td>31%</td>
<td>384,126</td>
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<td>19,012</td>
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Table A-2.  (continued).

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<th>Location</th>
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<th>Volume 3</th>
<th>Volume 4</th>
<th>Volume 5</th>
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Note:
(1) 24,300 cf transferred from Saxton to Three Mile Island 2, June 6, 1988.
15,600 cf transferred from Oyster Creek unit 2, to Three Mile Island 2, June 29, 1989.

Allocations and volumes are expressed in cubic feet.

Allocations do not exist for the following Power Reactor;
  a) Ft. St. Vrain (11,930 cf disposed)
Tables and Figures Summarizing Compact Regions' and Nonmember States' Low-Level Radioactive Waste Received by the Commercial Disposal Sites
Table A-3. Breakdown of Nation’s Waste by Compacts and Nonmember States.$^a$

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<th>State/Compact</th>
<th>Total (ft$^3$)</th>
<th>Volume to Beatty (ft$^3$)</th>
<th>Volume to Richland (ft$^3$)</th>
<th>Volume to Barnwell (ft$^3$)</th>
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<td>36,950</td>
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<td>234,982</td>
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</tbody>
</table>

a. Data obtained from the Department of Energy Low-Level Radioactive Waste Allocation Monitoring System, reported by the States of Nevada, South Carolina, and Washington as of March 30, 1993. State/regional waste volume totals are subject to ongoing verification and may be adjusted slightly.

Figure A-4. Breakdown of Nation’s waste by compacts and nonmember States.
Table A-4. Summary of Compact Regions’ Low-Level Radioactive Waste Received by the Commercial Disposal Sites in 1992.a

<table>
<thead>
<tr>
<th>Compact</th>
<th>Number of States</th>
<th>Total (ft³)</th>
<th>Percent of National Total (Including non-member States)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Appalachian</td>
<td>4</td>
<td>111,790</td>
<td>6.4</td>
</tr>
<tr>
<td>Central</td>
<td>5</td>
<td>80,115</td>
<td>4.6</td>
</tr>
<tr>
<td>Central Midwest</td>
<td>2</td>
<td>286,687</td>
<td>16.5</td>
</tr>
<tr>
<td>Midwest</td>
<td>6</td>
<td>88,880</td>
<td>5.1</td>
</tr>
<tr>
<td>Northeast</td>
<td>2</td>
<td>90,907</td>
<td>5.2</td>
</tr>
<tr>
<td>Northwest</td>
<td>8</td>
<td>235,621</td>
<td>13.5</td>
</tr>
<tr>
<td>Rocky Mountain</td>
<td>3</td>
<td>37,480</td>
<td>2.1</td>
</tr>
<tr>
<td>Southeast</td>
<td>8</td>
<td>369,495</td>
<td>21.2</td>
</tr>
<tr>
<td>Southwestern</td>
<td>4</td>
<td>133,503</td>
<td>7.7</td>
</tr>
<tr>
<td>Total</td>
<td>42</td>
<td>1,434,478b</td>
<td>82.3</td>
</tr>
</tbody>
</table>

a. Data obtained from the Department of Energy Low-Level Radioactive Waste Allocation Monitoring System, reported by the States of Nevada, South Carolina, and Washington as of March 30, 1993. State/regional waste volume totals are subject to ongoing verification and may be adjusted slightly.

b. Represents 82.3 percent of the 1992 national total of 1,742,321 cubic feet.
Volume Percentage of Beatty Waste

- Northwest: <0.1%
- Rocky Mountain: 7.3%
- Southeast: <0.1%
- Southwestern: 14.3%
- Central Midwest: 35.1%
- Central: 1.5%
- Appalachian: 7.2%
- Nonmember States: 27.0%

Volume Percentage of Richland Waste

- Northwest: 59.0%
- Rocky Mountain: <0.1%
- Northeast: 2.2%
- Central Midwest: 6.0%
- Central: 3.8%
- Appalachian: 4.7%
- Nonmember States: 3.2%
- Southwestern: 13.0%

Volume Percentage of Barnwell Waste

- Rocky Mountain: <0.1%
- Northwest: 8.0%
- Northeast: 0.1%
- Midwest: 4.5%
- Central Midwest: 9.9%
- Central: 6.9%
- Appalachian: 6.8%
- Southwestern: 1.0%
- Nonmember States: 18.7%

Figure A-5. Breakdown of disposal facility waste by compacts and nonmember States.
<table>
<thead>
<tr>
<th>Disposal Site</th>
<th>Nonutility (ft³)</th>
<th>Utility (ft³)</th>
<th>Total (ft³)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Barnwell, SC</td>
<td>423,312</td>
<td>406,296</td>
<td>829,608</td>
</tr>
<tr>
<td>Beatty, NV</td>
<td>415,830</td>
<td>98,895</td>
<td>514,725</td>
</tr>
<tr>
<td>Richland, WA</td>
<td>304,499</td>
<td>93,489</td>
<td>397,988</td>
</tr>
<tr>
<td>Total</td>
<td>1,143,641</td>
<td>598,680</td>
<td>1,742,321</td>
</tr>
</tbody>
</table>

a. Data obtained from the Department of Energy Low-Level Radioactive Waste Allocation Monitoring System, reported by the States of Nevada, South Carolina, and Washington as of March 30, 1993. State/regional waste volume totals are subject to ongoing verification and may be adjusted slightly.

Figure A-6. Breakdown of Nation's waste by disposal facility and source.
Table A-6. Appalachian Compact Region's Low-Level Radioactive Waste Received by the Commercial Disposal Sites in 1992.\(^a\)

<table>
<thead>
<tr>
<th>State</th>
<th>Nonutility (ft(^3))</th>
<th>Utility (ft(^3))</th>
<th>Total (ft(^3))</th>
</tr>
</thead>
<tbody>
<tr>
<td>Delaware</td>
<td>986</td>
<td>0</td>
<td>986</td>
</tr>
<tr>
<td>Maryland</td>
<td>11,467</td>
<td>6,199</td>
<td>17,666</td>
</tr>
<tr>
<td>Pennsylvania</td>
<td>16,899</td>
<td>76,047</td>
<td>92,946</td>
</tr>
<tr>
<td>West Virginia</td>
<td>192</td>
<td>0</td>
<td>192</td>
</tr>
<tr>
<td>Total</td>
<td>29,544</td>
<td>82,246</td>
<td>111,790(^b)</td>
</tr>
</tbody>
</table>

\(^a\) Data obtained from the Department of Energy Low-Level Radioactive Waste Allocation Monitoring System, reported by the States of Nevada, South Carolina, and Washington as of March 30, 1993. State/regional waste volume totals are subject to ongoing verification and may be adjusted slightly.

\(^b\) Represents 6.4 percent of the 1992 national total of 1,742,321 feet.

Volume Percentage by State

- Delaware: 0.9%
- Maryland: 15.8%
- West Virginia: 0.2%
- Pennsylvania: 83.1%

Volume Percentage by Source

- Nonutility: 33.4%
- Utility: 76.6%

Figure A-7. Appalachian Compact Region's low-level radioactive waste received by the commercial disposal sites in 1992.
Table A-7. Central Compact Region’s Low-Level Radioactive Waste Received by the Commercial Disposal Sites in 1992.\textsuperscript{a}

<table>
<thead>
<tr>
<th>State</th>
<th>Nonutility (ft\textsuperscript{3})</th>
<th>Utility (ft\textsuperscript{3})</th>
<th>Total (ft\textsuperscript{3})</th>
</tr>
</thead>
<tbody>
<tr>
<td>Arkansas</td>
<td>297</td>
<td>6,199</td>
<td>6,496</td>
</tr>
<tr>
<td>Kansas</td>
<td>6,208</td>
<td>1,988</td>
<td>8,196</td>
</tr>
<tr>
<td>Louisiana</td>
<td>1,555</td>
<td>23,190</td>
<td>24,745</td>
</tr>
<tr>
<td>Nebraska</td>
<td>288</td>
<td>12,328</td>
<td>12,616</td>
</tr>
<tr>
<td>Oklahoma</td>
<td>28,062</td>
<td>0</td>
<td>28,062</td>
</tr>
<tr>
<td>Total</td>
<td>36,410</td>
<td>43,705</td>
<td>80,115</td>
</tr>
</tbody>
</table>

\textsuperscript{a} Data obtained from the Department of Energy Low-Level Radioactive Waste Allocation Monitoring System, reported by the States of Nevada, South Carolina, and Washington as of March 30, 1993. State/regional waste volume totals are subject to ongoing verification and may be adjusted slightly.

\textsuperscript{b} Represents 4.6 percent of the 1992 national total of 1,742,321 cubic feet.

Volume Percentage by State

- Nebraska 15.7%
- Louisiana 30.9%
- Oklahoma 35.0%
- Arkansas 8.1%

Volume Percentage by Source

- Nonutility 45.4%
- Utility 54.6%

Figure A-8. Central Compact Region’s low-level radioactive waste received by the commercial disposal sites in 1992.
Table A-8. Central Midwest Compact Region's Low-Level Radioactive Waste Received by the Commercial Disposal Sites in 1992.\(^a\)

<table>
<thead>
<tr>
<th>State</th>
<th>Nonutility (ft(^3))</th>
<th>Utility (ft(^3))</th>
<th>Total (ft(^3))</th>
</tr>
</thead>
<tbody>
<tr>
<td>Illinois</td>
<td>187,016</td>
<td>97,476</td>
<td>284,492</td>
</tr>
<tr>
<td>Kentucky</td>
<td>2,195</td>
<td>0</td>
<td>2,195</td>
</tr>
<tr>
<td>Total</td>
<td>189,211</td>
<td>97,476</td>
<td>286,687(^b)</td>
</tr>
</tbody>
</table>

\(^a\) Data obtained from the Department of Energy Low-Level Radioactive Waste Allocation Monitoring System, reported by the States of Nevada, South Carolina, and Washington as of March 30, 1993. State/regional waste volume totals are subject to ongoing verification and may be adjusted slightly.

\(^b\) Represents 16.5 percent of the 1992 national total of 1,742,321 cubic feet.

---

**Volume Percentage by State**

- **Kentucky**: 0.8%
- **Illinois**: 99.2%

**Volume Percentage by Source**

- **Nonutility**: 65.9%
- **Utility**: 34.1%

Figure A-9. Central Midwest Compact Region's low-level radioactive waste received by the commercial disposal sites in 1992.
Table A-9. Midwest Compact Region's Low-Level Radioactive Waste Received by the Commercial Disposal Sites in 1992.\textsuperscript{a}

<table>
<thead>
<tr>
<th>State</th>
<th>Nonutility (ft\textsuperscript{3})</th>
<th>Utility (ft\textsuperscript{3})</th>
<th>Total (ft\textsuperscript{3})</th>
</tr>
</thead>
<tbody>
<tr>
<td>Indiana</td>
<td>2,715</td>
<td>0</td>
<td>2,715</td>
</tr>
<tr>
<td>Iowa</td>
<td>1,106</td>
<td>4,342</td>
<td>5,448</td>
</tr>
<tr>
<td>Minnesota</td>
<td>36,830</td>
<td>3,537</td>
<td>40,367</td>
</tr>
<tr>
<td>Missouri</td>
<td>8,169</td>
<td>3,114</td>
<td>11,283</td>
</tr>
<tr>
<td>Ohio</td>
<td>12,276</td>
<td>9,913</td>
<td>22,189</td>
</tr>
<tr>
<td>Wisconsin</td>
<td>446</td>
<td>6,432</td>
<td>6,878</td>
</tr>
<tr>
<td>Total</td>
<td>61,542</td>
<td>27,338</td>
<td>88,880\textsuperscript{b}</td>
</tr>
</tbody>
</table>

\begin{itemize}
\item[a. Data obtained from the Department of Energy Low-Level Radioactive Waste Allocation Monitoring System, reported by the States of Nevada, South Carolina, and Washington as of March 30, 1993. State/regional waste volume totals are subject to ongoing verification and may be adjusted slightly.]
\item[b. Represents 5.1 percent of the 1992 national total of 1,742,321 cubic feet.]
\end{itemize}

Figure A-10. Midwest Compact Region's low-level radioactive waste received by the commercial disposal sites in 1992.
Table A-10. Northeast Compact Region's Low-Level Radioactive Waste Received by the Commercial Disposal Sites in 1992.\(^a\)

<table>
<thead>
<tr>
<th>State</th>
<th>Nonutility (ft(^3))</th>
<th>Utility (ft(^3))</th>
<th>Total (ft(^3))</th>
</tr>
</thead>
<tbody>
<tr>
<td>Connecticut</td>
<td>10,029</td>
<td>42,967</td>
<td>52,996</td>
</tr>
<tr>
<td>New Jersey</td>
<td>15,095</td>
<td>22,816</td>
<td>37,911</td>
</tr>
<tr>
<td>Total</td>
<td>25,124</td>
<td>65,783</td>
<td>90,907(^b)</td>
</tr>
</tbody>
</table>

a. Data obtained from the Department of Energy Low-Level Radioactive Waste Allocation Monitoring System, reported by the States of Nevada, South Carolina, and Washington as of March 30, 1993. State/regional waste volume totals are subject to ongoing verification and may be adjusted slightly.

b. Represents 5.2 percent of the 1992 national total of 1,742,321 cubic feet.

Figure A-11. Northeast Compact Region's low-level radioactive waste received by the commercial disposal sites in 1992.
Table A-11. Northwest Compact Region’s Low-Level Radioactive Waste Received by the Commercial Disposal Sites in 1992.a

<table>
<thead>
<tr>
<th>State</th>
<th>Nonutility (ft³)</th>
<th>Utility (ft³)</th>
<th>Total (ft³)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Alaska</td>
<td>143</td>
<td>0</td>
<td>143</td>
</tr>
<tr>
<td>Hawaii</td>
<td>2,932</td>
<td>0</td>
<td>2,932</td>
</tr>
<tr>
<td>Idaho</td>
<td>51</td>
<td>0</td>
<td>51</td>
</tr>
<tr>
<td>Montana</td>
<td>140</td>
<td>0</td>
<td>140</td>
</tr>
<tr>
<td>Oregon</td>
<td>142,618</td>
<td>5,064</td>
<td>147,682</td>
</tr>
<tr>
<td>Utah</td>
<td>5,380</td>
<td>0</td>
<td>5,380</td>
</tr>
<tr>
<td>Washington</td>
<td>62,453</td>
<td>16,837</td>
<td>79,290</td>
</tr>
<tr>
<td>Wyoming</td>
<td>3</td>
<td>0</td>
<td>3</td>
</tr>
<tr>
<td>Total</td>
<td>213,720</td>
<td>21,901</td>
<td>235,621b</td>
</tr>
</tbody>
</table>

a. Data obtained from the Department of Energy Low-Level Radioactive Waste Allocation Monitoring System, reported by the States of Nevada, South Carolina, and Washington as of March 30, 1993. State/regional waste volume totals are subject to ongoing verification and may be adjusted slightly.

b. Represents 13.5 percent of the 1992 national total of 1,742,321 cubic feet.

Figure A-12. Northwest Compact Region’s low-level radioactive waste received by the commercial disposal sites in 1992.
Table A-12. Rocky Mountain Compact Region's Low-Level Radioactive Waste Received by the Commercial Disposal Sites in 1992.\textsuperscript{a}

<table>
<thead>
<tr>
<th>State</th>
<th>Nonutility ((\text{ft}^3))</th>
<th>Utility ((\text{ft}^3))</th>
<th>Total ((\text{ft}^3))</th>
</tr>
</thead>
<tbody>
<tr>
<td>Colorado</td>
<td>24,354</td>
<td>9,508</td>
<td>33,862</td>
</tr>
<tr>
<td>Nevada</td>
<td>116</td>
<td>0</td>
<td>116</td>
</tr>
<tr>
<td>New Mexico</td>
<td>3,502</td>
<td>0</td>
<td>3,502</td>
</tr>
<tr>
<td>Total</td>
<td>27,972</td>
<td>9,508</td>
<td>37,480\textsuperscript{b}</td>
</tr>
</tbody>
</table>

\textsuperscript{a} Data obtained from the Department of Energy Low-Level Radioactive Waste Allocation Monitoring System, reported by the States of Nevada, South Carolina, and Washington as of March 30, 1993. State/regional waste volume totals are subject to ongoing verification and may be adjusted slightly.

\textsuperscript{b} Represents 2.2 percent of the 1992 national total of 1,742,321 cubic feet.

---

**Figure A-13.** Rocky Mountain Compact Region's low-level radioactive waste received by the commercial disposal sites in 1992.
Table A-13. Southeast Compact Region's Low-Level Radioactive Waste Received by the Commercial Disposal Sites in 1992.\textsuperscript{a}

<table>
<thead>
<tr>
<th>State</th>
<th>Source</th>
<th>Nonutility (ft\textsuperscript{3})</th>
<th>Utility (ft\textsuperscript{3})</th>
<th>Total (ft\textsuperscript{3})</th>
</tr>
</thead>
<tbody>
<tr>
<td>Alabama</td>
<td></td>
<td>903</td>
<td>19,448</td>
<td>20,351</td>
</tr>
<tr>
<td>Florida</td>
<td></td>
<td>591</td>
<td>22,888</td>
<td>23,479</td>
</tr>
<tr>
<td>Georgia</td>
<td></td>
<td>9,853</td>
<td>19,491</td>
<td>29,344</td>
</tr>
<tr>
<td>Mississippi</td>
<td></td>
<td>869</td>
<td>11,660</td>
<td>12,529</td>
</tr>
<tr>
<td>North Carolina</td>
<td></td>
<td>38,503</td>
<td>23,182</td>
<td>61,685</td>
</tr>
<tr>
<td>South Carolina</td>
<td></td>
<td>22,973</td>
<td>22,749</td>
<td>45,722</td>
</tr>
<tr>
<td>Tennessee</td>
<td></td>
<td>79,261</td>
<td>4,474</td>
<td>83,735</td>
</tr>
<tr>
<td>Virginia</td>
<td></td>
<td>77,633</td>
<td>15,017</td>
<td>92,650</td>
</tr>
<tr>
<td>Total</td>
<td></td>
<td>230,586</td>
<td>138,909</td>
<td>369,495\textsuperscript{b}</td>
</tr>
</tbody>
</table>

\textsuperscript{a} Data obtained from the Department of Energy Low-Level Radioactive Waste Allocation Monitoring System, reported by the States of Nevada, South Carolina, and Washington as of March 30, 1993. State/regional waste volume totals are subject to ongoing verification and may be adjusted slightly.

\textsuperscript{b} Represents 21.2 percent of the 1992 national total of 1,742,321 cubic feet.

Figure A-14. Southeast Compact Region's low-level radioactive waste received by the commercial disposal sites in 1992.
Table A-14. Southwestern Compact Region's Low-Level Radioactive Waste Received by the Commercial Disposal Sites in 1992.\(^a\)

<table>
<thead>
<tr>
<th>State</th>
<th>Nonutility (ft(^3))</th>
<th>Utility (ft(^3))</th>
<th>Total (ft(^3))</th>
</tr>
</thead>
<tbody>
<tr>
<td>Arizona</td>
<td>2,189</td>
<td>16,812</td>
<td>19,001</td>
</tr>
<tr>
<td>California</td>
<td>88,787</td>
<td>23,904</td>
<td>112,691</td>
</tr>
<tr>
<td>North Dakota</td>
<td>99</td>
<td>0</td>
<td>99</td>
</tr>
<tr>
<td>South Dakota</td>
<td>1,712</td>
<td>0</td>
<td>1,712</td>
</tr>
<tr>
<td><strong>Total</strong></td>
<td><strong>92,787</strong></td>
<td><strong>40,716</strong></td>
<td><strong>133,503(^b)</strong></td>
</tr>
</tbody>
</table>

\(^a\) Data obtained from the Department of Energy Low-Level Radioactive Waste Allocation Monitoring System, reported by the States of Nevada, South Carolina, and Washington as of March 30, 1993. State/regional waste volume totals are subject to ongoing verification and may be adjusted slightly.

\(^b\) Represents 7.7 percent of the 1992 national total of 1,742,321 cubic feet.

Volume Percentage by State

<table>
<thead>
<tr>
<th>State</th>
<th>Percentage</th>
</tr>
</thead>
<tbody>
<tr>
<td>California</td>
<td>84.4%</td>
</tr>
<tr>
<td>Arizona</td>
<td>14.2%</td>
</tr>
<tr>
<td>South Dakota</td>
<td>0.1%</td>
</tr>
<tr>
<td>North Dakota</td>
<td>0.1%</td>
</tr>
</tbody>
</table>

Volume Percentage by Source

<table>
<thead>
<tr>
<th>Source</th>
<th>Percentage</th>
</tr>
</thead>
<tbody>
<tr>
<td>Nonutility</td>
<td>30.4%</td>
</tr>
<tr>
<td>Utility</td>
<td>69.6%</td>
</tr>
</tbody>
</table>

Figure A-15. Southwestern Compact Region's low-level radioactive waste received by the commercial disposal sites in 1992.
Table A-15. Summary of Nonmember States' Low-Level Radioactive Waste Received by the Commercial Disposal Sites in 1992.*

<table>
<thead>
<tr>
<th>State</th>
<th>Source</th>
<th>Nonutility (ft³)</th>
<th>Utility (ft³)</th>
<th>Total (ft³)</th>
<th>Percent of National totals</th>
</tr>
</thead>
<tbody>
<tr>
<td>District of Columbia</td>
<td></td>
<td>1,598</td>
<td>0</td>
<td>1,598</td>
<td>&lt;.1</td>
</tr>
<tr>
<td>Maine</td>
<td></td>
<td>2,322</td>
<td>6,459</td>
<td>8,781</td>
<td>.5</td>
</tr>
<tr>
<td>Massachusetts</td>
<td></td>
<td>43,511</td>
<td>13,196</td>
<td>56,707</td>
<td>3.2</td>
</tr>
<tr>
<td>Michigan</td>
<td></td>
<td>0</td>
<td>0</td>
<td>0</td>
<td>0</td>
</tr>
<tr>
<td>New Hampshire</td>
<td></td>
<td>56</td>
<td>0</td>
<td>56</td>
<td>&lt;.1</td>
</tr>
<tr>
<td>New York</td>
<td></td>
<td>33,690</td>
<td>37,449</td>
<td>71,139</td>
<td>4.0</td>
</tr>
<tr>
<td>Puerto Rico</td>
<td></td>
<td>0</td>
<td>0</td>
<td>0</td>
<td>0</td>
</tr>
<tr>
<td>Rhode Island</td>
<td></td>
<td>374</td>
<td>0</td>
<td>374</td>
<td>&lt;.1</td>
</tr>
<tr>
<td>Texas</td>
<td></td>
<td>154,865</td>
<td>8,233</td>
<td>163,098</td>
<td>9.3</td>
</tr>
<tr>
<td>Vermont</td>
<td></td>
<td>329</td>
<td>5,761</td>
<td>6,090</td>
<td>.3</td>
</tr>
<tr>
<td>Total</td>
<td></td>
<td>236,745</td>
<td>71,098</td>
<td>307,843°</td>
<td>17.6</td>
</tr>
</tbody>
</table>

a. Data obtained from the Department of Energy Low-Level Radioactive Waste Allocation Monitoring System, reported by the States of Nevada, South Carolina, and Washington as of March 30, 1993. State/regional waste volume totals are subject to ongoing verification and may be adjusted slightly.

b. Represents 17.6 percent of the 1992 national total of 1,742,321 cubic feet.
APPENDIX B

OTHER DEVELOPMENTS AND ACTIVITIES RELATED TO LOW-LEVEL RADIOACTIVE WASTE MANAGEMENT
APPENDIX B
Other Developments and Activities Related to Low-Level Radioactive Waste Management

Section 7(b) of the Low-Level Radioactive Waste Policy Amendments Act of 1985 (the Act) 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 on 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 wastes subjected to volume reduction, the average volume of such wastes 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."

The 1992 report satisfies those requirements. The previous sections of the report summarize the progress within each State and compact region toward siting and licensing new facilities; a summary is also given of the volumes of low-level radioactive waste shipped for disposal from each State or compact region. This section of the report provides an overview of other developments and activities that made an impact on low-level radioactive waste management and disposal during 1992.

Low-Level Radioactive Waste Volume Reduction. The Act permits currently operating disposal facilities to assess surcharges on waste generated in non-sited compact regions and States, and to limit the volume of low-level radioactive waste it accepts to specific ceiling amounts. The facilities may limit the combined volume of low-level radioactive waste they accept from commercial nuclear power reactors to 11.9 million cubic feet and limit the
volumes of low-level radioactive waste received from each commercial power reactor.

Since DOE began providing this report to Congress, the volumes of low-level radioactive waste disposed of has decreased. However, in 1992, volumes shipped for disposal significantly increased over the volumes shipped for disposal in 1991. This may be attributed to the fact that the majority of States and compact regions did not have disposal capacity available within their States or compact regions and generators were faced with the prospect of losing access to the country's three operating facilities. Generators, then, shipped all low-level radioactive waste that could be shipped for disposal by the end of 1992.

States did continue to use volume reduction processes, which include compaction, evaporation, incineration, demineralization, filtration, and shredding. These processes can be applied at the place of generation to reduce the volume of waste requiring shipment off site, or some of the processes can be applied off site by large-scale processing services. While volume reduction techniques can significantly decrease the volume of low-level radioactive waste requiring storage or disposal and improve the form of the waste for disposal, these techniques have little or no effect on the amount of radioactivity in the waste once it has been generated.

A variety of technologies and equipment are available to waste generators to perform on-site volume reduction of low-level radioactive waste. These systems give generators greater control of their waste, simplifying tracking and reducing transportation costs. Alternatively, waste generators can use offsite commercial processing services to perform volume reduction. For many generators, the additional costs for shipping waste to the offsite processors may be offset by greater volume reduction ratios provided by the large-scale systems. Nearly all utilities that operate power reactors rely to some degree on offsite processing. In many cases, generators use on-site volume reduction techniques in combination with offsite processing services.

Scientific Ecology Group, Inc. (SEG) of Oak Ridge, Tennessee, one of the Nation's largest commercial processors of low-level radioactive waste, received 2,167,192 cubic feet of low-level radioactive waste in 1992. Still
left to process is 41,176 cubic feet, which is awaiting metal melt sorting, decontamination, resin drying, overfilling, solidification, incineration, and compaction. SEG reduced 1,196,290 cubic feet to 165,956 cubic feet in 1992. Most of the waste volume was reduced through supercompaction (676,164 cubic feet reduced to 137,912 cubic feet). The licensed incinerator at SEG was also used for volume reduction (459,444 cubic feet of volume reduced to 8,255 cubic feet). Approximately 929,725 cubic feet of low-level radioactive waste was claimed for metal melt or decontamination, or was used as overfill.

One of the Nation's largest low-level radioactive waste recycling facilities, Quadrex Recycle Center (Quadrex), is also located in Oak Ridge, Tennessee. In 1992, Quadrex received nearly one-half million cubic feet of material for decontamination and/or processing. Of that amount, Quadrex received 166,761 cubic feet of material for decontamination, and shipped 93,625 cubic feet for disposal as low-level radioactive waste. Quadrex receives about 90% of its waste from utilities.

ADCO, located in a suburb of Chicago, has a clientele mainly of smaller waste generators, such as universities, research, and medical facilities. In 1992, ADCO and its PWN Environmental, Inc., branch received 40,702.01 cubic feet of material and, after treatment, shipped approximately 20,165.09 cubic feet of low-level radioactive waste for disposal.

The information reported above for SEG, Quadrex, and ADCO was provided to the Department in phone interviews with company officials.

Relationship of Disposal Costs and Generation of Low-Level Radioactive Waste. Only three compact regions were determined by the sited States to have met the January 1, 1992, milestone to submit a complete disposal license application to the licensing agency. The three compact regions and their host States are: the Central compact region, with Nebraska as host State; the Central Midwest compact region, with Illinois as host State; and the Southwestern compact region, with California as host State. Because the majority of States and compact regions were not expected to meet the 1992 milestone, low-level radioactive waste generators in those States anticipated having to pay the triple surcharges imposed by the sited States. Therefore,
all low-level radioactive waste that could be shipped prior to 1992 was shipped for disposal in 1991.

As of January 1, 1992, tripie surcharge costs of $120 per cubic foot became effective through December 31, 1992.

Because of smaller and less variable volumes, disposal costs and fees at the new facilities are likely to be more closely associated with activity levels of the waste than now is the practice. However, the pricing systems are not likely to deter generation of more highly radioactive waste because of its association with necessary decommissioning and maintenance activities.

**Inter-regional Shipments of Low-Level Radioactive Waste for Processing.**
The economic and policy incentives provided by the Act have resulted in significantly higher disposal costs, which in turn has given impetus to the commercial low-level radioactive waste processing industry since 1985. This momentum carried into the 1990's, with generators anticipating disruption in access to disposal capacity for some period of time after 1992, and the prospect of further significant disposal cost increases once the new facilities begin operating. In addition to these market forces, some States and compact regions plan to further encourage or require waste minimization and volume reduction practices.

State and compact region officials appear to be moving toward a system wherein low-level radioactive waste leaving a State or compact region for processing must be returned to the State or compact region for disposal. This will require waste shippers, brokers, and processors to maintain extremely accurate methods for tracking waste, especially where waste is in the form of a processing residue, such as ash from incineration.

Should compact regions restrict the movement of low-level radioactive waste out of their respective regions to centralized processing facilities in other regions, it might reduce or eliminate the use of these efficient large-scale waste processing systems.
APPENDIX C

DEPARTMENT OF ENERGY ASSISTANCE TO STATES AND COMPACT REGIONS UNDER THE LOW-LEVEL RADIOACTIVE WASTE POLICY AMENDMENTS ACT OF 1985
APPENDIX C

Department of Energy Assistance to States and Compact Regions
Under the Low-Level Radioactive Waste Policy
Amendments Act of 1985

Under the Low-Level Radioactive Waste Policy Amendments Act of 1985, Public Law 99-240 (the Act), the Department of Energy (DOE) is required to provide technical and financial assistance to compact regions, host States, and nonmember States; the Act directs that DOE provide continuing technical assistance, but financial assistance is to cease at the end of fiscal year 1993. The assistance, both technical and financial, must aid the States and compact regions in fulfilling their responsibilities under the Act.

Types of technical assistance include: technical guidelines for site selection; alternative technologies for low-level radioactive waste disposal; volume reduction options; management techniques to reduce low-level radioactive waste generation; transportation practices for shipment of low-level radioactive wastes; health and safety considerations in the storage, shipment, and disposal of low-level radioactive wastes; mixed waste management options; and establishment of a computerized database to monitor the management of low-level radioactive wastes.

Technical Coordination

DOE's technical coordination provides opportunities for States, compact regions, Federal agencies, low-level radioactive waste generators, and other interested organizations and parties to exchange information related to implementation of the Act. Key technical issues and problems in low-level radioactive waste disposal facility development, as well as institutional and policy issues related to low-level radioactive waste management, have been addressed and resolved.

laboratories, Federal agencies, industry, States, compact regions, universities, and foreign countries. The purpose of the conference is to provide a forum in which activities, concerns, and issues related to low-level radioactive waste management areas can be identified and discussed. Topics included disposal facility design, waste characterization, public acceptance considerations, storage, site characterization, performance assessment, licensing, emerging technologies, waste minimization, mixed waste, tracking and transportation, and regulatory changes.

**Low-Level Radioactive Waste Forum (the Forum).** The Forum, an association of State and compact region representatives, was established to facilitate implementation of the Low-Level Radioactive Waste Policy Amendments Act of 1985 and to promote the objectives of low-level radioactive waste regional compacts. Since 1986, DOE has provided direct funding support for the Forum because the group’s activities were determined to be important in establishing an effective national low-level radioactive waste management system. In 1990, the Forum established itself as an independent association funded through a grant awarded by DOE that year; DOE has approved the continuation of the grant each year since the initial award. The grant, under agreement with the Forum, is administered by the State of Washington. DOE approved the grant award to the Forum in December 1992 for a third budget period, January 1, 1993, through December 31, 1993.

Some of the topics the Forum addressed in 1992 include the constitutionality of the Act; disposal options after January 1, 1993; storage; radioactive waste and materials (when does a material become waste); mixed waste; and uniform data reporting and manifesting.

**Host State Technical Coordinating Committee (TCC).** The TCC was formed in 1985. It was an ad hoc DOE-sponsored group of State officials whose purpose was to examine alternative waste disposal methods. The TCC’s role expanded as other technical issues related to development and licensing of low-level radioactive waste disposal facilities began to emerge. Today, the group is composed of participants from each State implementing a disposal facility siting plan. Meetings of the group are arranged by a contractor for DOE.
During 1992, the TCC addressed a number of issues, including waste form, onsite storage, storage and treatment of biological waste, site screening using a Geographic Information System, and a computer code to predict concentrations of iodine-129 and technetium-99 in reactor low-level radioactive waste.

Technical Assistance Projects

Program Liaison. The National Low-Level Waste Management Program technical staff maintains close contact with State officials, compact region officials, Federal agencies, national and State legislators, and nuclear industry representatives. In the liaison role, program staff responds to inquiries or requests for information concerning low-level radioactive waste management activities from State and compact region representatives, other agencies, and the public. The staff provides comments on State and regional documents and activities, attends State agency and compact commission meetings, and participates in Federal interagency meetings.

State-Specific Requests. DOE provided specific technical assistance to several States and compact regions at their request during 1992, including:

- Assistance to New Jersey by initiating a study and providing a report that evaluates the technical feasibility of implementing various waste treatment techniques, waste forms, containers and packaging methods for long-term storage, and ultimate disposal of radioactive biological materials

- Assistance to Ohio by preparing a report that compares the public participation programs of various States

- Assistance to Texas for a panel to review research on groundwater flow in the unsaturated zone

- Assistance to Vermont for a "pre-screening conference" that explored legal, procedural, public acceptance, and technical issues associated with the "top-down" screening process.
Performance Assessment. Disposal facility performance assessment assistance is provided to State officials through the Idaho National Engineering Laboratory in Idaho Falls, Idaho. A Performance Assessment Center was established at the INEL to provide technical support to those State or Federal government agencies required to conduct or review performance assessment calculations to demonstrate that a low-level radioactive waste disposal facility meets regulatory requirements.

During 1992, presentations were made to several States to discuss specific performance assessment requirements and to develop and offer assistance with specific performance assessment needs. Workshops were conducted that reviewed the limitations and capabilities of various computer codes useful for performance assessments. Additional training focused on needs and quality of information required for disposal system analysis. The workshops were conducted in various States.

Workshops. The following workshops were conducted during 1992:

- **Communications Working Session.** Two working sessions were held to provide the means for State and compact region information specialists to informally exchange information on methods for communicating with the public and managing their public participation programs. The sessions were held in Maine and North Carolina.

- **Public Meeting Skills Training.** One workshop was presented to provide skills on how to conduct effective public meetings. This workshop was held in Georgia.

- **Site Characterization.** A site characterization and licensing roundtable was held in which representatives of States characterizing sites discussed practical problems, such as security, land access, inclement weather, and property damages. The roundtable was held in Austin, Texas.
• **Licensing Preparation.** One workshop was held to assist States in developing a safety analysis report, which is one part of a license application. The workshop was held in North Carolina.

• **Contracts Management.** Two workshops were provided to present a basic understanding of the contracting process. One workshop was conducted in New York, and one in North Carolina.

• **Packaging.** This workshop was presented to the Maine Citizens’ Advisory Group and focused on the various types of packaging used for transportation of low-level radioactive waste.

• **Radiation and Low-Level Radioactive Waste Management Fundamentals.** Eleven workshops presented the fundamentals of radiation and low-level radioactive waste management techniques. The workshops were conducted in Idaho (five), Maine, New Jersey, Pennsylvania, Texas (two), and Vermont.

• **Providing Testimony.** One workshop was conducted in which participants received experience being examined and cross examined as expert witnesses. The workshop was presented in California.

• **Media Relations.** One workshop was held providing comprehensive training to States and compact regions staff who will be working with the public and the media. Information was presented to help prepare for interaction with television, radio, and print reporters. The workshop was conducted in New York.

• **Project Management.** Three workshops provided basic project management skills, which State and compact officials can use in developing low-level radioactive waste disposal facilities. The workshops were conducted in New York (two) and Connecticut.

• **Temporary Storage.** Four workshops were conducted to assist host States requiring temporary storage. The workshops were conducted in Connecticut, Massachusetts, New Jersey, and Ohio.
- **Volunteerism.** One workshop was conducted to provide States with approaches to volunteerism and how volunteerism can be used to site a disposal facility. The workshop was held in Connecticut.

- **Risk.** One workshop was conducted that trains participants in communicating risks to the concerned party. The workshop was held in Ohio.

- **Socioeconomic Impact Assessment.** One workshop was held to familiarize participants with the meaning of socioeconomic impacts and the requirements for a socioeconomic impact assessment. The workshop was held in Maine.

**Technical Reports Completed in 1992**

The *Site Characterization Handbook for Low-Level Radioactive Waste Disposal Facilities* handbook discusses the management and technical elements to be considered in the development of a comprehensive low-level radioactive waste disposal facility site characterization program. The handbook addresses the objectives of a site characterization program, management planning, technical strategies, and data required to support the license application.

*Radionuclide Reports Series, Volumes 1-4* provides a chemical and radiological overview of radionuclides commonly found in commercial low-level radioactive waste disposal sites. Four reports, an Introduction, Carbon-14, Technetium-99, and Iodine-129, were completed in February 1992.

The *Considerations for Closure of LLW Engineered Disposal Facilities Report* provides information to the host States on considerations related to safe stabilization and closure of low-level radioactive waste disposal facilities. The report was completed in January 1992.

*The Performance Assessment Handbook.* This handbook is a performance assessment reference to be used in support of siting, developing, and operating a low-level radioactive waste disposal facility. The handbook was completed in February 1992.
A number of documents pertaining to storage were produced and distributed: Low-Level Radioactive Waste Temporary Storage Issues, April 1992; Annotated List of Regulations and Guidance Applicable to Temporary Storage of Commercial Low-Level Radioactive Waste, April 1992; and Treatment Methods and Waste Forms for Long-Term Storage and Ultimate Disposal of Radioactive Biological Materials, September 1992.

Guidelines for Mixed Waste Minimization serves as a guide for minimization techniques and source term minimization, and also outlines regulations that govern the storage, treatment, and disposal of mixed waste. The document was distributed in February 1992.

Considerations in Preparing and Reviewing Socioeconomic Impact Assessments for Low-Level Radioactive Waste Disposal Facilities discusses issues that arise when a socioeconomic impact assessment is undertaken, potential impacts that should be considered in a socioeconomic impact assessment, and possible research methods. The report was distributed in August 1992.

Commercial LLRW Transportation Liability and Risk addresses the potential liabilities and potential radiological risks associated with low-level radioactive waste transportation. The report was distributed in August 1992.

Technical Bulletins. As part of the effort to meet the information needs of the low-level radioactive waste management community, the National Low-Level Waste Management Program produces a series of technical bulletins. The purpose of the bulletins is to give State officials, compact region officials, and other interested parties information related to the development of low-level radioactive waste disposal facilities. Published on an as-needed basis, the bulletins are used to disseminate information that is of immediate concern to State and compact region officials, or that is not suited to more formal reports.
The following technical bulletins were published in 1992:

- **Managing Commercial Low-Level Radioactive Waste Beyond 1992: Transportation Planning for a LLW Disposal Facility.** This technical bulletin discusses some of the issues that should be addressed when planning a low-level radioactive waste disposal facility, including safety, legislation and regulations, low-level radioactive waste and nonlow-level radioactive waste traffic, construction traffic, economics, and public involvement.

- **Commercial Low-Level Radioactive Waste Transportation Safety History.** This technical bulletin discusses the accident data that have been compiled since 1971 on transportation accidents involving commercial low-level radioactive waste. In the past 20 years, only four transportation accidents have involved the release of commercial low-level radioactive waste. This bulletin provides a description of those four releases and the actions taken.

- **Impact of Revised 10 CFR 20 on Existing Performance Assessment Computer Codes Used For LLW Disposal Facilities.** This technical bulletin discusses the study that was conducted to determine what impact the revisions to 10 CFR 20 will have on radiological assessment computer codes.

**Low-Level Radioactive Waste Disposal Data**

Assistance in data management furnishes tools for determining low-level radioactive waste disposal volumes and waste characteristics for past and current years. Several options are available to the end users of this service, ranging from published reports to directly accessing the information through personal computers in the users' offices. Communications software and user assistance are available by phone.

**State-By-State Report.** The State-by-State Assessment of Low-Level Radioactive Wastes Received at Commercial Disposal Sites is an annual report.
of waste disposed, by State, at the commercial disposal facilities. The report contains volume and activity totals by waste class within generator categories for each State. If the State is in a compact region, the State data are additionally organized by compact regions.

**Low-Level Radioactive Waste Bibliographic System.** The Low-Level Radioactive Waste Bibliographic System (formerly the Records Inventory Management System) is a library of abstracts that relate to the disposal of low-level radioactive waste. The system was developed to provide a centralized source of information on low-level radioactive waste to assist State and compact region officials in developing low-level radioactive waste disposal facilities. Information can be retrieved from the library through the hard copy report, the Low-Level Radioactive Waste Bibliographic Index, or through a specialized search. The hard copy report, which is updated semi-annually, is limited to abstracts of State and compact region documents, National Low-Level Waste Management Program documents, and other documents that are of immediate value. The computer library contains the abstracts listed in the hard copy report and many other documents related to low-level radioactive waste. Specialized searches and reports can be generated using the entire library data base.

**Integrated Data Base.** The Low-Level Radioactive Waste Chapter of The Integrated Data Base for 1992 Spent Fuel and Radioactive Waste Inventories, Projections, and Characteristics provides summary information for low-level radioactive waste, both commercial and governmental. Although the report is published by Oak Ridge National Laboratory, this chapter is the responsibility of the EG&G Idaho National Low-Level Waste Management Program, and the chapter is revised annually. The baseline information in this report can be used for planning purposes and to support program decisions.

**Manifest Information System.** The Manifest Information System provides a data base for information obtained from low-level radioactive waste shipping manifests and covers shipments received at the three active commercial disposal sites in the United States: Barnwell, South Carolina; Beatty, Nevada; and Richland, Washington. The data are obtained on a monthly basis from Chem-Nuclear Systems, Inc., which operates the Barnwell facility, and US Ecology, Inc., which operates the facilities at Beatty and Richland.
Customized reports and predefined reports are available through the system using personal computers with Program-supplied software, or in hard copy. The Manifest Information System contains shipment data starting with January 1986 through the current month. Data are available within 45 days following the last day of the reporting month.
APPENDIX D

STATE AND COMPACT REGION ADDRESSES
APPENDIX D

State and Compact Region Addresses

Many State agencies are involved in low-level radioactive waste management activities. The following are addresses of organizations that may be able to provide additional information on activities within their States or compact regions.

Appalachian States Low-Level Radioactive Waste Compact Region

Appalachian States Low-Level Radioactive Waste Commission
207 State Street
Harrisburg, Pennsylvania 17101-1103
(717)234-6295

Division of Nuclear Safety
Bureau of Radiation Protection
Department of Environmental Resources
Commonwealth of Pennsylvania
P.O. Box 2063
Harrisburg, Pennsylvania 17120
(717)787-2163

Central Interstate Low-Level Radioactive Waste Compact Region

Central Interstate Low-Level Radioactive Waste Compact Commission
State of Arkansas
4815 West Markham, Slot 30
Little Rock, AR 72205-3867
(501)661-2301

Department of Environmental Control
State of Nebraska
301 Centennial Mall South
Lincoln, Nebraska 68509-8922
(402)471-3380

Central Midwest Interstate Low-Level Radioactive Waste Compact Region

Illinois Department of Nuclear Safety
1035 Outer Park Drive
Springfield, Illinois 62704
(217)785-9868
Midwest Interstate Low-Level Radioactive Waste Management Compact Region

Midwest Interstate Low-Level Radioactive Waste
Compact Commission
336 North Robert
Room 1303
St. Paul, Minnesota 55101-1507
(612)293-0126

Division of Environmental Health
State of Ohio
246 North High Street, 7th Floor
Columbus, OH 43266
(614)644-6811

Northeast Interstate Low-Level Radioactive Waste Management Compact Region

Northeast Interstate Low-Level Radioactive Waste
Compact Commission
703 Hebron Avenue
Glastonbury, CT 06033
(203)633-2060

Connecticut Department of Environmental Protection
Division of Radiation and Noise Control
State of Connecticut
165 Capitol Avenue
Hartford, Connecticut 06106
(203)566-5134

New Jersey Low-Level Radioactive Waste Disposal
Facility Siting Board
State of New Jersey
44 South Clinton Avenue
Station Plaza III, 4th Floor
CN-410
Trenton, New Jersey 08625-0410
(609)777-4247

New Jersey Department of Environmental Protection & Energy
Radiation Protection Programs
State of New Jersey
CN-415
Trenton, New Jersey 08625-0415
(609) 987-6389

Connecticut Hazardous Waste Management Service
State of Connecticut
Suite 360
900 Asylum Avenue
Hartford, Connecticut 06105
(203) 244-2007
Northwest Interstate Compact Region on Low-Level Radioactive Waste Management
Northwest Interstate Compact on Low-Level
Radioactive Waste Management
Department of Ecology
State of Washington
P.O. Box 47600
Olympia, Washington 98504-7600
(206) 459-6244

Rocky Mountain Low-Level Radioactive Waste Compact Region
Rocky Mountain Low-Level Radioactive Waste
Compact Board
1675 Broadway, Suite 1400
Denver, Colorado 80202
(303) 825-1912

Department of Human Resources
State of Nevada
505 East King Street, Suite 600
Carson City, Nevada 89710
(702) 687-4400

Southeast Interstate Low-Level Radioactive Waste Management Compact Region
Southeast Compact Commission for Low-Level
Radioactive Waste Management
21 Glenwood Avenue, Suite 207
Raleigh, North Carolina 27603
(919) 821-0500

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

Bureau of Radiation Health
Department of Health and Environmental Control
State of South Carolina
2600 Bull Street
Columbia, South Carolina 29201
(803) 734-4700

Southwestern Low-Level Radioactive Waste Disposal Compact Region
Southwestern Low-Level Radioactive
Waste Disposal Compact Commission
601 North 7th Street, P.O. Box 942732
Sacramento, California 94234-7320
(916) 445-0498
District of Columbia

Service Facility Regulation Administration
Department of Consumer and Regulatory Affairs
District of Columbia
614 H Street, N.W., #1014
Washington, DC 20001
(202)727-7190

Maine

Low-Level Radioactive Waste Authority
State of Maine
99 Western Avenue, Suite 101
Augusta, Maine 04330
(207)626-3249

Massachusetts

Low-Level Radioactive Waste Management Board
Commonwealth of Massachusetts
100 Cambridge Street, Room 903
Boston, Massachusetts 02202
(617)727-6018

Michigan

Low-Level Radioactive Waste Authority
Department of Commerce
State of Michigan
P.O. Box 30004
Lansing, MI 48909-7526
(517)335-6847

New Hampshire

Office of the Governor
State of New Hampshire
State House
Concord, New Hampshire 03301
(603)271-2121

Department of Environmental Services
State of New Hampshire
6 Hazen Drive
Concord, New Hampshire 03301
(603)271-3503

New York

New York State Energy Office
Two Rockefeller Plaza
Albany, New York 12223
(518)473-4377
New York State Low-Level Radioactive Waste Siting Commission
Two 3rd Street
Troy, New York 12180
(518)271-1585

New York State Energy Research and Development Authority
Two Rockefeller Plaza
Albany, New York 12223
(518)465-6251

Puerto Rico
Environmental Quality Board
Commonwealth of Puerto Rico
P.O. Box 11488
San Turce, Puerto Rico 00910
(809)767-8181

Rhode Island
Office of Environmental Coordination
Department of Environmental Management
State of Rhode Island
83 Park Street
Providence, Rhode Island 02903
(401)277-3434

Texas
Texas Low-Level Radioactive Waste Disposal Authority
7701 North Lamar Boulevard, #300
Austin, Texas 78752
(512)451-5292

Vermont
Low-Level Radioactive Waste Authority
State of Vermont
The Vermont Building, Suite 2
Putney Road Box 8234
Brattleboro, Vermont 05304-08234
(802) 257-7757

Low-Level Radioactive Waste Authority
State of Vermont
21 East State Street, Suite 101
Montpelier, Vermont 05602
(802) 229-2241
Agency of Natural Resources
State of Vermont
103 South Main
Waterbury, Vermont 05671-0301
(802)244-73472