

12
1-16-97 JSD

M97001946

DOE/LLW--97001946

Summary Report

Volume 4, Number 2 August 1996

Low-Level Radioactive Waste Management Activities in the States and Compacts

DISCLAIMER

This report was prepared as an account of work sponsored by an agency of the United States Government. Neither the United States Government nor any agency thereof, nor any of their employees, makes any warranty, express or implied, or assumes any legal liability or responsibility for the accuracy, completeness, or usefulness of any information, apparatus, product, or process disclosed, or represents that its use would not infringe privately owned rights. Reference herein to any specific commercial product, process, or service by trade name, trademark, manufacturer, or otherwise does not necessarily constitute or imply its endorsement, recommendation, or favoring by the United States Government or any agency thereof. The views and opinions of authors expressed herein do not necessarily state or reflect those of the United States Government or any agency thereof.

DISTRIBUTION OF THIS DOCUMENT IS UNLIMITED

MASTER

Low-Level Radioactive Waste Forum

Summary Report: Low-Level Radioactive Waste Management Activities in the States and Compacts *A supplement to LLW Notes*

Volume 4, Number 2 • August 1996

Editor, Cynthia Norris

Contributing Writers: LLW Forum Participants and Alternate Forum Participants

Project Manager and Layout: Jean Colsant

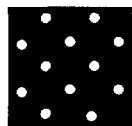
Design: M. A. Shaker

Summary Report: Low-Level Radioactive Waste Management Activities in the States and Compacts is a supplement to *LLW Notes* and is distributed periodically by Afton Associates, Inc. to state, compact and federal officials that receive *LLW Notes*.

Members of the public may apply to DOE's National Low-Level Waste Management Program at the Idaho National Engineering Laboratory (INEL) to be placed on a public information mailing list for copies of the *Summary Report*. Interested parties should contact Donna Lake, Senior Administrative Specialist, INEL, at (208)526-0234. Back issues of the *Summary Report* are available from the National Technical Information Service, U.S. Department of Commerce, 5285 Port Royal Road, Springfield, VA 22161, (703)487-8547.

Recipients may reproduce and distribute the *Summary Report* as they see fit, but sections in the *Summary Report* must be reproduced in entirety and with full attribution.

The Low-Level Radioactive Waste Forum (LLW Forum) is an association of state and compact representatives, appointed by governors and compact commissions, established to facilitate state and compact implementation of the Low-Level Radioactive Waste Policy Act of 1980 and the Low-Level Radioactive Waste Policy Amendments Act of 1985 and to promote the objectives of low-level radioactive waste regional compacts. The LLW Forum provides an opportunity for state and compact officials to share information with one another and to exchange views with officials of federal agencies and other interested parties.



LLW
FORUM

Low-Level Radioactive Waste Forum
c/o Afton Associates, Inc.
403 East Capitol Street
Washington, DC 20003

VOICE (202)547-2620
FAX (202)547-1668
INTERNET llwforum@aol.com

Key to Abbreviations

U.S. Department of Energy	DOE
naturally-occurring and accelerator-produced radioactive materials	NARM
naturally-occurring radioactive materials	NORM
U.S. Nuclear Regulatory Commission	NRC

DISCLAIMER

**Portions of this document may be illegible
in electronic image products. Images are
produced from the best available original
document.**

Table of Contents

Compacts and Their Host States	2
Appalachian Compact	2
Host State: Pennsylvania	2
Central Compact.....	3
Host State: Nebraska.....	3
Central Midwest Compact	4
Host State: Illinois	4
Midwest Compact.....	5
Host State: Ohio	5
Northeast Compact.....	6
Host State: New Jersey	6
Host State: Connecticut.....	7
Northwest Compact.....	8
Host State: Washington.....	8
Rocky Mountain Compact.....	9
Southeast Compact	10
Host State: North Carolina	10
Southwestern Compact	11
Host State: California.....	11
Texas Compact (pending).....	12
Host State: Texas.....	13
Unaffiliated States	14
Massachusetts.....	14
Michigan.....	15
New York	16
South Carolina.....	17
District of Columbia.....	18
New Hampshire	18
Puerto Rico	19
Rhode Island.....	19

Appalachian Compact



Governing Body Appalachian States Low-Level Radioactive Waste Commission

Member States Delaware, Maryland, Pennsylvania, West Virginia

Compact Established The compact was established February 19, 1986, and ratified by Congress on May 19, 1988. The commission's first organizational meeting was held April 30, 1990.

Current Waste Management As of July 1, 1995, waste may be shipped to the disposal facility in Barnwell, South Carolina. In addition, subject to the Northwest Compact rules of April 20, 1995, wastes meeting Envirocare of Utah's license conditions are being shipped for disposal at the Envirocare facility. Certain NARM wastes meeting the State of Washington's conditions are being shipped to the commercial disposal facility in Hanford, Washington.

Host State: Pennsylvania

Regulatory and Program Responsibility	Bureau of Radiation Protection, Department of Environmental Protection (DEP)
Siting Responsibility	Chem-Nuclear Systems, Inc.
Other Involvement	DEP Low-Level Waste Advisory Committee Environmental Quality Board
Disposal Technology	earth-mounded above-ground vault

Siting Pennsylvania has completed the final stage of a three-stage disqualification process. About 75 percent of Pennsylvania has been disqualified from further consideration. Pennsylvania is seeking one or more volunteer communities under its Community Partnering Plan approved in February 1996. During May 1996, Chem-Nuclear held nine open houses across the commonwealth to share information about the siting process and the Community Partnering Plan. The search for a volunteer community is expected to take about three years.

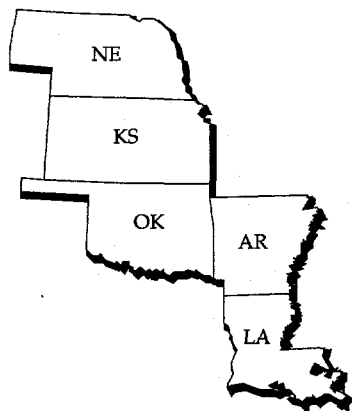
Licensing Chem-Nuclear will submit a license application to DEP. Pennsylvania will be applying for full Agreement State status with NRC.

Development Costs To date: \$35 million. Estimated total cost including construction: not available.

Disposal Facility Operational Projected by 2002.

Compacts and Their Host States (continued)

Central Compact



Governing Body Central Interstate Low-Level Radioactive Waste Commission

Member States Arkansas, Kansas, Louisiana, Nebraska, Oklahoma

Compact Established The compact was established May 12, 1983. The commission's organizational meeting was held June 29, 1983.

Current Waste Management As of July 1, 1995, waste may be shipped to the disposal facility in Barnwell, South Carolina. In addition, subject to the Northwest Compact rules of April 20, 1995, wastes meeting Envirocare of Utah's license conditions are being shipped for disposal at the Envirocare facility. Certain NARM wastes meeting the State of Washington's conditions

can be shipped to the commercial disposal facility in Hanford, Washington.

Siting Responsibility US Ecology, Inc.

Disposal Technology above-ground vault

Siting Property near Butte in Boyd County, Nebraska, was selected in December 1989.

Development Costs As of June 30, 1996: \$77.3 million. Projected total cost including construction: \$153.4 million.

Disposal Facility Operational The Butte facility is projected to be operational no later than autumn 1999.

Other Information The Central States Compact Commission has begun the process to amend its Compact Act. The commission has approved amendment language.

Host State: Nebraska

Regulatory and Program Responsibility Department of Environmental Quality
Department of Health

Licensing The Nebraska Low-Level Radioactive Waste Program is in the final phase of its technical review of US Ecology's license application. When complete, the state's evaluation documents will be made available to the public for review and comment. A public participation process has been established which maximizes public input in the form of two public hearing opportunities. US Ecology's license application was submitted in July 1990. In mid-July 1995, the state initiated its final review activities based upon US Ecology's confirmation that the state had received a complete package of US Ecology's final responses and application revisions.

Compacts and Their Host States (continued)

Central Midwest Compact



Governing Body Central Midwest Interstate Low-Level Radioactive Waste Commission

Member States Illinois, Kentucky

Compact Established The compact was established in September 1984, ratified by Congress effective January 1986, and most recently amended and ratified in October 1994.

Current Waste Management As of July 1, 1995, waste may be shipped to the disposal facility in Barnwell, South Carolina. In addition, subject to the Northwest Compact rules of April 20, 1995, wastes meeting Envirocare of Utah's license conditions are being shipped for disposal at the Envirocare facility. Certain NARM wastes meeting the State of Washington's conditions are being shipped to the commercial disposal facility in Hanford, Washington.

Host State: Illinois

Regulatory Responsibility Illinois Department of Nuclear Safety

Program and Siting Responsibility Low-Level Radioactive Waste Task Group—develop siting criteria
Illinois State Geological Survey and State Water Survey—statewide screening including evaluation of volunteer locations and identification of ten or more locations likely to meet the criteria
facility developer—evaluation of the locations, selection and characterization of site, preparation of license application, and facility development
Illinois Department of Nuclear Safety—licensing agency

Disposal Technology above-grade, earthen-covered concrete vault

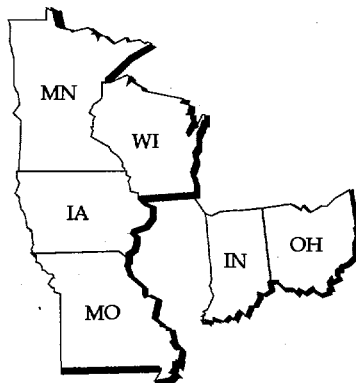
Siting The task group will develop siting criteria, and the Illinois Geological and Water Surveys will be responsible for screening the state and evaluating any volunteered sites in order to locate at least 10 areas of at least 640 acres each that appear likely to meet the criteria. The contractor will evaluate the areas identified by the Geological and Water Surveys, select three promising sites for further study, and present findings to the task group. Following the task group's approval of three sites, the contractor will select one final site for full characterization.

Licensing A license application is expected to be submitted by November 1999.

Development Costs To date: not available. Estimated total cost including construction: not available.

Disposal Facility Operational Projected by September 2003.

Midwest Compact



Governing Body Midwest Interstate Low-Level Radioactive Waste Compact Commission

Member States Indiana, Iowa, Minnesota, Missouri, Ohio, Wisconsin

Compact Established The compact was established in October 1983 and was given the consent of Congress in December 1985. Compact amendments were enacted by Ohio and Wisconsin in 1995 and by Indiana, Iowa, Minnesota, and Missouri in 1996. These amendments will now be submitted to Congress for consent.

Current Waste Management As of July 1, 1995, waste may be shipped to the disposal facility in Barnwell, South Carolina. In addition, subject to the Northwest Compact rules of April 20, 1995, wastes meeting Envirocare of Utah's license conditions may be shipped for disposal at the Envirocare facility. Certain NARM wastes meeting the State of Washington's conditions are being shipped to the commercial disposal facility in Hanford, Washington.

Host State: Ohio

Regulatory Responsibility	Ohio Department of Health
Program Responsibility	Ohio Low-Level Radioactive Waste Facility Development Authority (Authority)
Siting Responsibility	Ohio Low-Level Radioactive Waste Facility Development Authority
Other Involvement	Radiation Advisory Council, state agencies
Disposal Technology	above-grade, multiple-barrier facility with continuous monitoring and waste recoverability

Siting With the assistance of a contractor, the Authority will initiate a statewide screening process and eventually approve at least three sites for characterization by fall 1998. By early summer 2000, the Authority will select the disposal site to be submitted for licensing.

Licensing Upon receipt of a license application, the Health Department will review the application and make a determination on compliance with all regulatory requirements. If requested by an affected party, a License Review Board will conduct an adjudicatory hearing following the department's determination. The Director of the department will issue a decision on the license application.

Development Costs To date: \$1,258,342. Also, \$707,208 expended on public information program. Estimated total cost including construction: not available.

Disposal Facility Operational Projected by mid-2005.

Compacts and Their Host States (continued)

Northeast Compact



Governing Body Northeast Interstate Low-Level Radioactive Waste Commission

Member States Connecticut, New Jersey

Compact Established Congress ratified the compact in 1985, and it was signed into law by the President in 1986. Shortly thereafter, two of the four original member states—Delaware and Maryland—joined the Appalachian Compact. In 1987, the remaining member states of Connecticut and New Jersey were designated as dual host states.

Current Waste Management As of July 1, 1995, waste may be shipped to the disposal facility in Barnwell, South Carolina. In addition, subject to the Northwest Compact rules of April 20, 1995, wastes meeting Envirocare of Utah's license conditions may be shipped for disposal at the Envirocare facility. Certain NARM wastes meeting the State of Washington's conditions may be shipped to the commercial disposal facility in Hanford, Washington.

Host State: New Jersey

Regulatory Responsibility NRC (New Jersey is not an Agreement State.)
New Jersey Department of Environmental Protection

Program Responsibility New Jersey Low-Level Radioactive Waste Disposal Facility
Siting Board (Siting Board)

Siting Responsibility New Jersey Low-Level Radioactive Waste Disposal Facility
Siting Board

Other Involvement New Jersey Radioactive Waste Advisory Committee (RWAC)

Disposal Technology State law precludes shallow land burial. The technology will depend on input from the volunteer community, site-specific requirements, and the ability of the technology to be licensed.

Siting The state's siting plan seeks a volunteer community to host a disposal facility and offers significant incentives.

Licensing New Jersey's current projected date of license submittal to NRC is 1999.

Development Costs To date: \$4.8 million through June 30, 1996. Estimated total cost including construction: \$100 million.

Disposal Facility Operational Projected by 2002.

Other Information In February 1995, the Siting Board approved a voluntary siting plan. Siting efforts are funded through generator assessments.

Host State: Connecticut

Regulatory Responsibility	NRC (Connecticut is not an Agreement State.) Connecticut Department of Environmental Protection
Program Responsibility	Connecticut Office of Policy and Management—coordination Connecticut Hazardous Waste Management Service—program
Siting Responsibility	Connecticut Hazardous Waste Management Service
Other Involvement	Connecticut Siting Council Connecticut Department of Public Works
Disposal Technology	The Board of Directors of the Connecticut Hazardous Waste Management Service will select the technology in consultation with the volunteer community. The board has decided not to consider shallow land burial.

Siting The state's siting plan seeks a volunteer community to host a disposal facility and offers significant incentives. The state is prepared to use a statewide screening process if the volunteer approach does not produce a site that protects public health and safety.

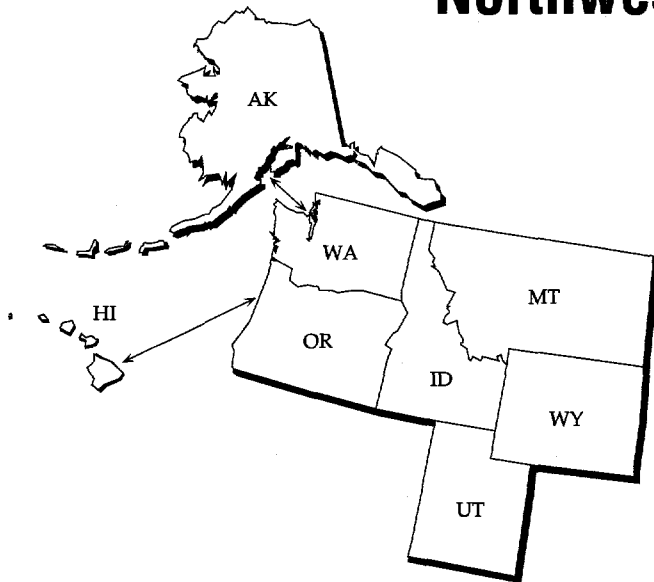
Licensing Connecticut's current projected date of license submittal to NRC is 1999.

Development Costs To date: \$12.7 million. Estimated total cost including construction: \$100 million.

Disposal Facility Operational Projected by 2002.

Other Information Effective April 2, 1993, the Connecticut General Assembly approved the 1993 Low-Level Radioactive Waste Management Plan. The plan's volunteer siting approach is being implemented. Siting efforts are funded through generator assessments.

Northwest Compact



Governing Body Northwest Interstate Compact Committee

Member States Alaska, Hawaii, Idaho, Montana, Oregon, Utah, Washington, Wyoming

Compact Established The compact was established in 1981 and ratified by Congress in December 1985.

Current Waste Management Waste is disposed of at the regional commercial disposal facility in Hanford, Washington. In addition, subject to the Northwest Compact rules of April 20, 1995, wastes meeting Envirocare of Utah's license conditions are being shipped for disposal at the Envirocare facility. Certain NARM wastes meeting the State of Washington's conditions are being shipped to the Hanford facility.

Host State: Washington

Regulatory Responsibility Department of Health

Program Responsibility Department of Ecology

Disposal Technology shallow land burial

Siting The regional low-level radioactive waste disposal facility is located on the U.S. DOE Hanford reservation on 100 acres of land subleased by US Ecology from the State of Washington.

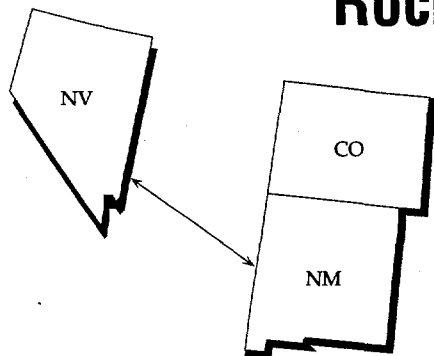
Licensing The site operator's current materials license was issued by the Washington State Department of Health on May 29, 1992. The license next comes up for renewal on May 31, 1997.

Development Costs Not applicable.

Disposal Facility Operational The compact's regional disposal facility has been in operation since July 1965.

Other Information The compact's low-level radioactive waste disposal site is not permitted for mixed waste. The compact is working with other states and compacts to encourage DOE to provide for management of the compact's mixed waste.

Rocky Mountain Compact



Governing Body Rocky Mountain Low-Level Radioactive Waste Board

Member States Colorado, Nevada, New Mexico

Compact Established The compact was established in 1983 and ratified by Congress in December 1985.

Current Waste Management The Rocky Mountain Board has a contract with the Northwest Interstate Compact Committee and the State of Washington for disposal at the Northwest Compact's regional commercial disposal facility in Hanford, Washington. In addition, subject to the Northwest Compact rules of April 20, 1995, wastes meeting Envirocare of Utah's license conditions are being shipped for disposal at the Envirocare facility. Certain NARM wastes meeting the State of Washington's conditions are being shipped to the Hanford facility.

Other Information Export authorization is required for all waste generated within the compact region that is sent outside of the region. Import authorization is required to bring out-of-compact waste into the region for management. No facilities within the compact region are currently authorized to receive out-of-compact waste. The compact has jurisdiction (including import and export authority) over NORM/NARM.

Host State: None

Southeast Compact



Governing Body Southeast Compact Commission for Low-Level Radioactive Waste Management

Member States Alabama, Florida, Georgia, Mississippi, North Carolina, Tennessee, and Virginia

Compact Established The Southeast Compact was established in 1983 and ratified by Congress in 1985. The compact law was amended in 1989.

Current Waste Management As of July 1, 1995, waste from all member states except North Carolina may be shipped to the disposal facility in Barnwell, South Carolina. In addition, subject to the Northwest Compact rules of April 20, 1995, wastes meeting Envirocare of Utah's license conditions are being shipped for disposal at the Envirocare facility. Certain

NARM wastes meeting the State of Washington's conditions are being shipped to the commercial disposal facility in Hanford, Washington.

Since July 1995, waste in North Carolina is being stored at the sites of generation.

Host State: North Carolina

Regulatory Responsibility Division of Radiation Protection (DRP), North Carolina Department of Environment, Health and Natural Resources

Program and Siting Responsibility North Carolina Low-Level Radioactive Waste Management Authority (Authority)

Other Involvement Chem-Nuclear Systems, Inc.—future facility operation

Disposal Technology integrated vault

Siting In December 1993, the Authority selected a site in Wake County as its preferred site.

Licensing A license application was submitted by Chem-Nuclear to DRP in December 1993. It is expected that DRP will not issue the license before February 2000.

Development Costs To date: \$90 million. Estimated total cost excluding construction: \$117 million. Estimated total cost including construction: \$180 million.

Disposal Facility Operational Projected by August 2001.

Other Information The Governor of North Carolina has stated that the ban on North Carolina waste at the Barnwell facility is unconstitutional and may be challenged in court.

Compacts and Their Host States (continued)

Southwestern Compact

Governing Body Southwestern Low-Level Radioactive Waste Commission

Member States Arizona, California, North Dakota, South Dakota

Compact Established The compact was established in July 1988 and ratified by Congress in November 1988. North Dakota and South Dakota joined the compact in 1989.

Current Waste Management As of July 1, 1995, waste may be shipped to the disposal facility in Barnwell, South Carolina. In addition, subject to the Northwest Compact rules of April 20, 1995, wastes meeting Envirocare of Utah's license conditions are being shipped for disposal at the Envirocare facility. Certain NARM wastes meeting the State of Washington's conditions are being shipped to the commercial disposal facility in Hanford, Washington.

Host State: California

Regulatory and Program Responsibility	Department of Health Services (DHS)
Siting Responsibility	US Ecology, Inc.
Other Involvement	U.S. Department of the Interior
Disposal Technology	enhanced shallow land burial

Siting The property designated as the preferred site by the state is currently owned by the federal government. The U.S. Department of the Interior announced in February 1996 that it would prepare a second Supplemental Environmental Impact Statement (SEIS) before deciding on whether and under what conditions to transfer the property to the state. California considers the SEIS to be without legal or technical basis, and is not participating in its preparation.

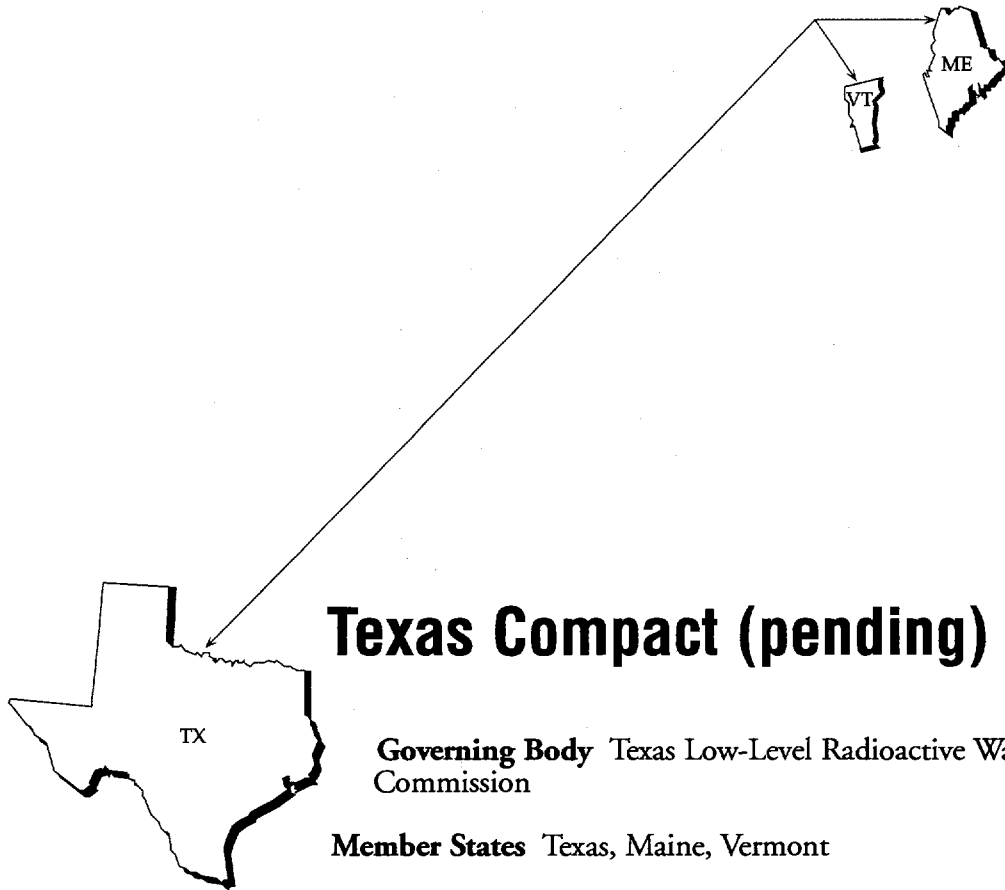
Licensing A license was issued by DHS on September 16, 1993, conditioned on DHS ownership of the land. On June 1, 1994, the Superior Court of the State of California ordered DHS to "reconsider its approval of the license." The Court of Appeal of the State of California, Second District, overturned the lower court decision and reinstated the license. On January 18, 1996, the Supreme Court of California denied the plaintiffs' petition to review the appellate court's decision. There are no further avenues for appeal available in the state court system.

Development Costs As of July 1, 1996: (reported by US Ecology) \$65 million. Estimated total development cost including construction: \$105 million.

Disposal Facility Operational Projected by early to mid-1998, contingent upon land transfer.

Other Information At the request of the U.S. Interior Secretary, a National Academy of Sciences committee reviewed seven technical issues related to the site and found no obstacles to proceeding with development. Based on this analysis, in May 1995 the Department of the Interior indicated willingness to transfer land for the facility to the state, subject to certain "enforceable commitments." In February 1996, the Department of the Interior changed its position. (See "Siting.") Members of the U.S. Congress are seeking to legislatively transfer the land.

Compacts and Their Host States (continued)



Texas Compact (pending)

Governing Body Texas Low-Level Radioactive Waste Disposal Compact Commission

Member States Texas, Maine, Vermont

Compact Established In June 1993, the Governor of Texas signed into law legislation establishing a low-level radioactive waste compact with Maine and Vermont. Maine completed its approval process with the passage of a referendum on November 2, 1993. Vermont adopted the compact on April 25, 1994. The compact was submitted to the U.S. Congress for consent in the summer of 1994, but action was not taken. The compact was resubmitted in 1995 and brought up for a vote on the suspension calendar of the U.S. House of Representatives. On September 19, 1995, the House voted against the motion to suspend debate on the legislation and enact the bill. The bill is expected to be brought to the floor for another vote, however, and congressional consent is expected in 1996.

Current Waste Management As of July 1, 1995, waste may be shipped to the disposal facility in Barnwell, South Carolina. In addition, subject to the Northwest Compact rules of April 20, 1995, wastes meeting Envirocare of Utah's license conditions are being shipped for disposal at the Envirocare facility. Certain NARM wastes meeting the State of Washington's conditions are being shipped to the commercial disposal facility in Hanford, Washington.

Host State: Texas

Regulatory Responsibility	Texas Natural Resource Conservation Commission (TNRCC)
Program Responsibility	Texas Low-Level Radioactive Waste Disposal Authority (Authority)
Siting Responsibility	Texas Low-Level Radioactive Waste Disposal Authority
Other Involvement	Texas Department of Health
Disposal Technology	below-ground concrete canisters

Siting The Authority began statewide site screening activities under newly enacted state law in 1983. Initial efforts identified several desirable sites in south Texas. In 1985, the Texas Legislature instructed the Authority to give preference in its site search to state-owned land. In 1987, the Authority identified several possible sites in Hudspeth County, Texas, including a site at Fort Hancock. El Paso County and others filed a lawsuit to enjoin the Authority from selecting the Fort Hancock site, and the site was abandoned in early 1991. In May 1991, the Texas Legislature amended the Authority's statute, to require the selection of a site in a 400-square mile area near Sierra Blanca in Hudspeth County. In February 1992, the Authority selected a site on the Faskin Ranch for the state's proposed low-level waste disposal facility. The ranch was purchased and site characterization began. Site characterization concluded in November 1993.

Licensing The initial installment of the license application was submitted to the TNRCC in March 1992. TNRCC's licensing review is complete. Administrative hearings on the application begin in August 1996.

Development Costs To date: \$39 million. Estimated total cost including construction: \$90 million.

Disposal Facility Operational Projected by early to mid-1998 contingent upon the outcome of administrative review and litigation.



Massachusetts

Primary Regulatory Responsibility

Department of Public Health

Secondary Regulatory Responsibility

Department of Environmental Protection
Low-Level Radioactive Waste Management Board
(Management Board)

Program and Siting Responsibility

Low-Level Radioactive Waste Management Board

Disposal Technology

Shallow land burial is prohibited in Massachusetts; the chosen technology must allow monitoring and package retrieval. After a site is selected, the disposal technology will be chosen by the sited community from methods certified by the Management Board.

Current Waste Management As of July 1, 1995, waste may be shipped to the disposal facility in Barnwell, South Carolina. In addition, subject to the Northwest Compact rules of April 20, 1995, wastes meeting Envirocare of Utah's license conditions are being shipped for disposal at the Envirocare facility. Certain NARM wastes meeting the State of Washington's conditions are being shipped to the commercial disposal facility in Hanford, Washington.

Siting The Management Board continues to work on its two-track effort to discuss out-of-state disposal solutions with other states and compacts while also pursuing an in-state disposal facility siting process. In addition to using the three-stage technical site screening process required by state law, the Management Board developed draft policies and regulations for a program to encourage volunteered sites. Issued for public review and comment in April 1995 were a *Draft Volunteer Sites Program Plan*, draft regulations to implement the plan and to provide for local technical assistance and planning funds, and a *Draft Siting Plan*. Public comments were received through July 1995 following six public hearings and briefing sessions. The Management Board is evaluating these comments and will finalize the documents in 1997.

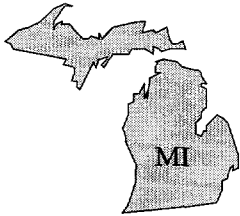
In April 1995, the Management Board contracted with Foster Wheeler Environmental Corp. for technical services to support its first stage of technical screening, called Statewide Mapping and Screening. A *Draft Statewide Mapping and Screening Protocol and Procedures* was issued in January 1996 for public review and comment, and was finalized in June 1996. As a result of the re-opening of the Barnwell disposal site and the expanded availability of the Envirocare facility, the Management Board voted in March 1996 to cease its statewide screening activities but to continue various site-planning efforts as it monitors changes in the national low-level radioactive waste management situation. The Management Board is continuing such siting-related endeavors as finalizing its *Siting Plan*, completing its Volunteer Sites Program, conducting a source term analysis, and reviewing and establishing policies on "conditional" and "preference" siting criteria.

Licensing A projected date is not available.

Development Costs To date: not provided. Estimated total costs of preoperation and initial construction for a hypothetical above-ground vault facility without a cover have been developed based on four potential facility capacities: 35,000 cubic feet per year—\$47.5 million; 50,000 cubic feet per year—\$48.7 million; 80,000 cubic feet per year—\$49.8 million; 467,000 cubic feet per year—\$65.7 million.

Disposal Facility Operational A projected date is not available.

Michigan



Regulatory Responsibility Michigan Department of Environmental Quality
U.S. Nuclear Regulatory Commission
(Michigan is not an Agreement State.)

Program and Siting Responsibility Michigan Low-Level Radioactive Waste Authority
(Authority)

Disposal Technology State law limits disposal technology to above- or below-ground vaults or above- or below-ground modular canisters. No final determination has been made on facility design.

Current Waste Management As of July 1, 1995, waste may be shipped to the disposal facility in Barnwell, South Carolina. In addition, subject to the Northwest Compact rules of April 20, 1995, wastes meeting Envirocare of Utah's license conditions may be shipped for disposal at the Envirocare facility. Certain NARM wastes meeting the State of Washington's conditions may be shipped to the commercial disposal facility in Hanford, Washington.

Siting As required by amendments to state law, a policy advisory board issued a series of recommendations in September 1995. The board's report included specific recommendations regarding the conduct of a volunteer host community process, revisions to state siting criteria, and consideration of compact options. The Authority is now pursuing amendments to state law that would conform state law to the recommended volunteer process.

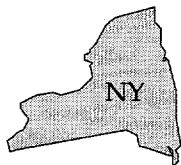
Licensing A projected date for submittal of a license application is not available.

Development Costs To date: \$12 million. Estimated total cost including construction: not available.

Disposal Facility Operational A projected date is not available.

Unaffiliated States (continued)

New York



Regulatory Responsibility Department of Environmental Conservation (DEC)

Program Responsibility New York State Energy Research and Development Authority (NYSERDA)

Siting Responsibility in transition (see siting below)

Other Involvement Department of Health (DOH)
New York City Department of Health
Department of Labor (DOL)
New York State Citizens Advisory Committee on Permanent Disposal Facility Siting and Disposal Method Selection

Current Waste Management As of July 1, 1995, waste may be shipped to the disposal facility in Barnwell, South Carolina. In addition, subject to the Northwest Compact rules of April 20, 1995, wastes meeting Envirocare of Utah's license conditions are being shipped for disposal at the Envirocare facility. Certain NARM wastes meeting the State of Washington's conditions are being shipped to the commercial disposal facility in Hanford, Washington.

Disposal Technology State law bars shallow land burial; above-grade vaults identified as tentative preferred technology.

Siting New York's siting program is in transition. The State Budget for FY 1995-96 phased out the activities of the Low-Level Radioactive Waste Siting Commission, which was established in 1987 to select a site and disposal method. The state, under Governor George Pataki, is reevaluating its approach to low-level radioactive waste management. Several relevant proposals have been put before the state legislature, including one that would provide for a volunteer siting process. No new schedule has been developed. Regulations governing site and disposal method selection were adopted by DEC in 1987.

Licensing NYSERDA is responsible for obtaining a DEC permit to construct and operate a land disposal facility and a DOL radioactive materials license, once a site and a disposal method are selected.

Development Costs Through September 30, 1995, \$65.9 million has been collected through annual assessments on operating nuclear power plants (does not include surcharge rebates); \$55.2 million has been spent on siting, regulation development, public participation and related activities. Estimated total cost including construction: not available at this time.

Disposal Facility Operational The DEC issued financial assurance regulations in September 1991 and regulations for design, construction, operation, closure, post-closure and institutional control in March 1993. NYSERDA is responsible for construction and operation.

Unaffiliated States (continued)

South Carolina



Regulatory Responsibility Division of Radioactive Waste Management, Bureau of Solid and Hazardous Waste, South Carolina Department of Health and Environmental Control

Program Responsibility Division of Radioactive Waste Management, Bureau of Solid and Hazardous Waste, South Carolina Department of Health and Environmental Control—for Barnwell site

Other Involvement Chem-Nuclear Systems, Inc.—facility operation

Current Waste Management Waste is disposed of at the disposal facility in Barnwell, South Carolina. In addition, subject to the Northwest Compact rules of April 20, 1995, limited mixed wastes meeting Envirocare of Utah's license conditions are being shipped for disposal at the Envirocare facility. Certain NARM (radium) wastes meeting the State of Washington's conditions are being shipped to the commercial disposal facility in Hanford, Washington.

Disposal Technology below-grade vaults

Licensing A license authorizing possession and storage of waste at the Barnwell facility was first issued on November 6, 1969. On April 13, 1971, the license was amended to authorize disposal. The license has been renewed for a five-year period ending July 31, 2000.

Disposal Facility Operational The Barnwell facility has been in operation since 1969. (See above.)

Other Information The Appropriations Act for FY 1995-96, which became effective June 29, 1995, required the Governor to appoint a Low-Level Radioactive Waste Compact Negotiating Committee. The committee is directed to negotiate with representatives of other states to establish a new low-level radioactive waste management compact, subject to conditions set forth in the statute. New regulations affecting the Barnwell disposal technology became effective January 1, 1996.

Unaffiliated States (continued)

◆DC

District of Columbia

Regulatory Responsibility Department of Consumer and Regulatory Affairs (DCRA)

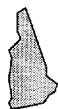
Program Responsibility Department of Consumer and Regulatory Affairs
Service Facility Regulation Administration

Current Waste Management As of July 1, 1995, waste may be shipped to the disposal facility in Barnwell, South Carolina. In addition, subject to the Northwest Compact rules of April 20, 1995, wastes meeting Envirocare of Utah's license conditions may be shipped for disposal at the Envirocare facility.

Siting Because of the dense population and geographic size of the District of Columbia, and because of the relatively low volume of low-level radioactive waste generated within the district, DCRA is not planning to site a facility.

Other Information The District of Columbia is continuing efforts either to join a compact or to contract with one.

NH



New Hampshire

Current Waste Management As of July 1, 1995, waste may be shipped to the disposal facility in Barnwell, South Carolina. In addition, subject to the Northwest Compact rules of April 20, 1995, wastes meeting Envirocare of Utah's license conditions are being shipped for disposal at the Envirocare facility.

Siting New Hampshire has no plans to site a disposal facility due to the small amounts of low-level radioactive waste generated.

Other Information The Governor's Ad Hoc Committee, with the assistance of the State Radiation Advisory Committee, continues to welcome an opportunity to discuss contracts or compacts with any interested state.

Puerto Rico

PR

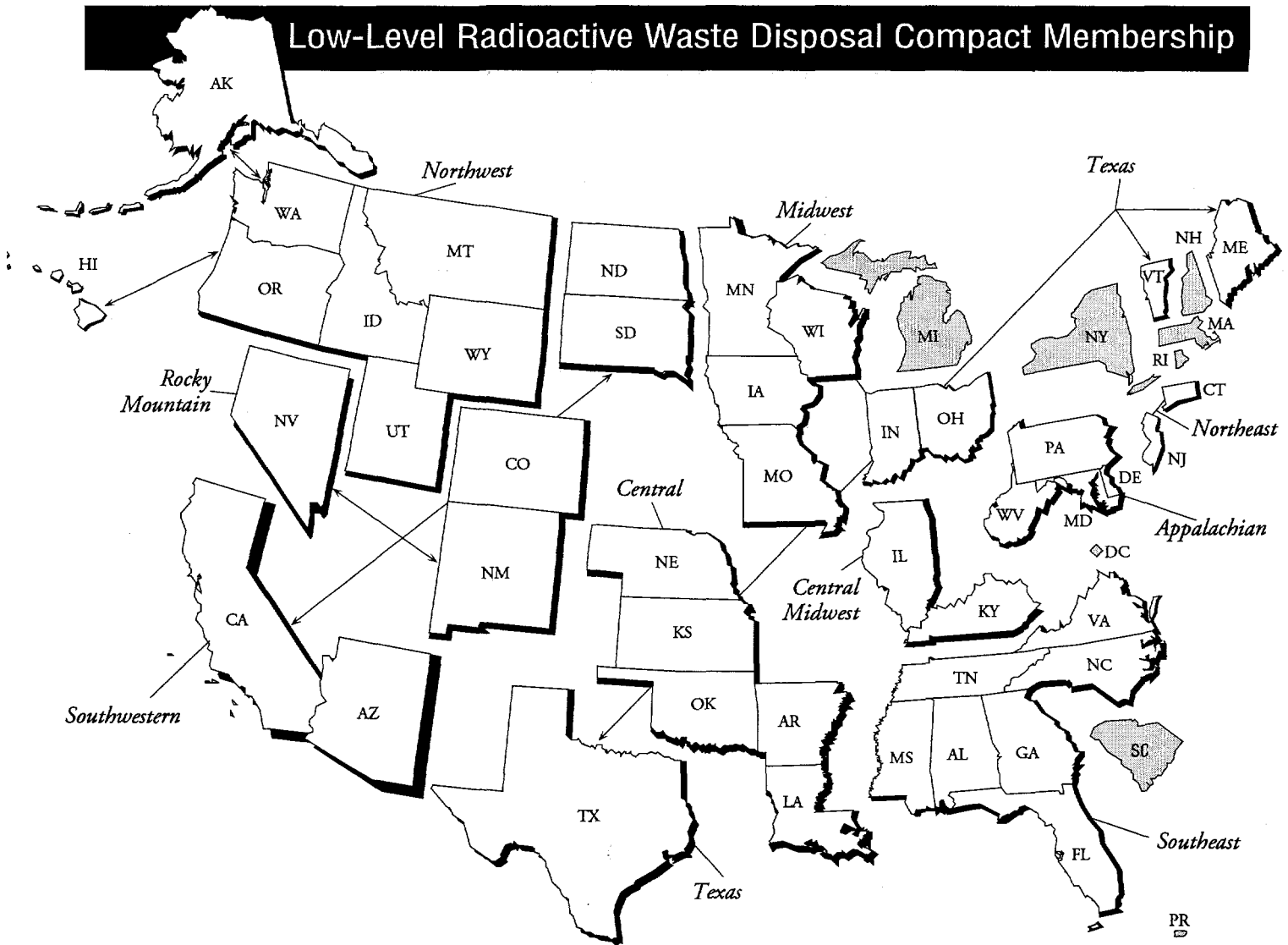
Puerto Rico is not planning to site a disposal facility. Further information is unavailable at this time.

Rhode Island

RI

- Regulatory Responsibility** Rhode Island Department of Health
- Program Responsibility** Rhode Island Atomic Energy Commission
- Siting Responsibility** none
- Other Involvement** Rhode Island Radiation Advisory Commission
- Current Waste Management** As of July 1, 1995, waste may be shipped to the disposal facility in Barnwell, South Carolina. In addition, subject to the Northwest Compact rules of April 20, 1995, wastes meeting Envirocare of Utah's license conditions are being shipped for disposal at the Envirocare facility. Certain NARM wastes meeting the State of Washington's conditions are being shipped to the commercial disposal facility in Hanford, Washington.
- Siting** The state is not planning at this time to site a facility.
- Other Information** The Rhode Island Atomic Energy Commission has assumed responsibility for low-level radioactive waste management and compact participation from the Department of Environmental Management effective January 1996.

Low-Level Radioactive Waste Disposal Compact Membership



Appalachian Compact

Delaware
Maryland
Pennsylvania *
West Virginia

Central Compact

Arkansas
Kansas
Louisiana
Nebraska *
Oklahoma

Central Midwest Compact

Illinois *
Kentucky

Midwest Compact

Indiana
Iowa
Minnesota
Missouri
Ohio *
Wisconsin

Northwest Compact

Alaska
Hawaii
Idaho
Montana
Oregon
Utah
Washington * •
Wyoming

Rocky Mountain Compact

Colorado
Nevada
New Mexico

Northwest accepts Rocky Mountain waste as agreed between compacts.

Northeast Compact

Connecticut *
New Jersey *

Southeast Compact

Alabama
Florida
Georgia
Mississippi
North Carolina *
Tennessee
Virginia

Southwestern Compact

Arizona
California *
North Dakota
South Dakota

Texas Compact

Maine
Texas *
Vermont

The compact has been passed by all three states and awaits consent by the U.S. Congress.

Unaffiliated States

District of Columbia
Massachusetts
Michigan
New Hampshire
New York
Puerto Rico
Rhode Island
South Carolina •

The Low-Level Radioactive Waste Forum includes a representative from each regional compact, each designated future host state of a compact *, each state with a currently operating facility •, and each unaffiliated state.

Commercial Low-Level Radioactive Waste Disposal Capacity Development Chart

Compacts/States	Siting	License*	Facility Open*
Appalachian <i>host</i> Pennsylvania	siting process under way	application 2000	2002
Central <i>host</i> Nebraska	site selected	application submitted	autumn 1999
Central Midwest <i>host</i> Illinois	siting process under way	application Nov. 1999	Sept. 2003
Midwest <i>host</i> Ohio	siting process under development	application late 2000	mid-2005
Northeast <i>host</i> New Jersey	siting process under way	application 1999	2002
<i>host</i> Connecticut	siting process under way	application 1999	2002
Northwest <i>host</i> Washington	<i>facility operational since July 1965, license reissued May 1992</i>		
Rocky Mountain <i>host</i> none	<i>contract with the Northwest and Washington for disposal at Washington facility</i>		
Southeast <i>host</i> North Carolina	site selected	application submitted	Aug. 2001
Southwestern <i>host</i> California	site selected	issued Sept. 1993, currently being litigated	mid-1998
Texas <i>host</i> Texas	site selected	application submitted	mid-1998
Massachusetts	siting process ongoing; some aspects under review		
Michigan	siting process under development		
New York	siting process under development		
South Carolina	<i>disposal authorized at facility since April 1971, license renewed through July 2000</i>		
District of Columbia	not siting a facility		
New Hampshire	not siting a facility		
Puerto Rico	not siting a facility		
Rhode Island	not siting a facility		

* All future dates are estimated and subject to change.

Graphic by Afton Associates for the LLW Forum. August 1996.