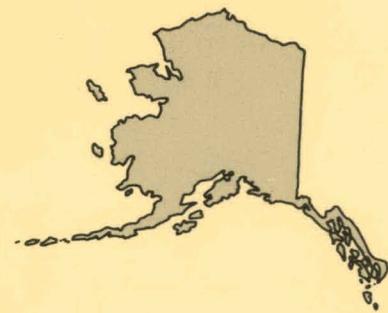


T46



MASTER

**Maine State Briefing Book
for
Low-Level Radioactive
Waste Management**

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.

DISCLAIMER

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

DOE/ID/01570--T46

MAINE STATE BRIEFING BOOK
ON
LOW-LEVEL RADIOACTIVE WASTE MANAGEMENT

NOTICE

PORTIONS OF THIS REPORT ARE ILLEGIBLE. It has been reproduced from the best available copy to permit the broadest possible availability.

MN ONLY

August 1981

DOE/ID/01570--T46

DE82 015276

Centaur Associates, Inc.
Washington, D.C. 20036

Prepared for EG&G Idaho, Inc.
Under Subcontract No. K-7666

This report was prepared as an account of work sponsored by the United States Government. Neither the United States nor the Department of Energy, nor any of their employees, nor any of their contractors, subcontractors, or 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.

DISCLAIMER

This book 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

[Signature]

ABSTRACT

The Maine State Briefing Book is one of a series of State briefing books on low-level radioactive waste management practices. It has been prepared to assist State and Federal agency officials in planning for safe low-level radioactive waste disposal. The report contains a profile of low-level radioactive waste generators in Maine. The profile is the result of a survey of radioactive material licensees in Maine. The briefing book also contains a comprehensive assessment of low-level radioactive waste management issues and concerns as defined by all major interested parties including industry, government, the media, and interest groups. The assessment was developed through personal communications with representatives of interested parties, and through a review of media sources. Lastly, the briefing book provides demographic and socioeconomic data and a discussion of relevant government agencies and activities, all of which may impact management practices in Maine.

CONTENTS

	<u>Page</u>
ABSTRACT.....	i
CONTENTS.....	ii
LIST OF FIGURES.....	v
LIST OF TABLES.....	vi
1. INTRODUCTION.....	1-1
2. OVERVIEW OF LOW-LEVEL RADIOACTIVE WASTE MANAGEMENT PRACTICES IN MAINE.....	2-1
2.1 Background.....	2-1
2.2 Generator Activities Related to Low-Level Radioactive Waste Management.....	2-3
2.2.1 In-house Activities.....	2-3
2.2.2 Concerns of the Generator Community.....	2-6
2.3 State Activities Related to Low-Level Radioactive Waste Management.....	2-7
2.4 Population and Economic Trends Potentially Affecting Low-Level Radioactive Waste Management.....	2-8
2.4.1 Medical Waste.....	2-9
2.4.2 Reactor Generated Waste.....	2-11
2.4.3 Research.....	2-11
3. DEMOGRAPHY.....	3-1
3.1 Location.....	3-1
3.2 Topography.....	3-1
3.3 Climate.....	3-4
3.3.1 Precipitation.....	3-4
3.3.2 Wind, Storms, and Other Weather.....	3-4
3.4 Population.....	3-6
3.4.1 Standard Metropolitan Statistical Areas.....	3-8
3.4.2 Major Cities.....	3-12
3.4.3 Population Projections.....	3-12

CONTENTS (continued)

	<u>Page</u>
3.5 Economy.....	3-12
3.5.1 Major Employment Sectors.....	3-12
3.5.2 Employment and Per Capita Income.....	3-13
3.5.3 Gross State Product.....	3-13
3.5.4 Agriculture.....	3-18
3.6 Schools, Hospitals, and Federal Laboratories and Military Installations.....	3-21
3.6.1 Schools.....	3-21
3.6.2 Hospitals.....	3-21
3.6.3 Federal Laboratories and Military Installations.....	3-21
3.7 Land Use.....	3-22
4. GOVERNMENT STRUCTURE.....	4-1
4.1 Major Political Parties.....	4-1
4.2 Congressional Delegation.....	4-1
4.3 State Government.....	4-4
4.3.1 Executive Department.....	4-4
4.3.2 Legislative Department.....	4-9
4.3.3 Judicial Department.....	4-12
4.4 State Laws.....	4-12
4.5 Federal Activities on Low-Level Radioactive Waste Management in Maine.....	4-14
5. INTEREST GROUPS CONCERNED WITH LOW-LEVEL RADIOACTIVE WASTE MANAGEMENT.....	5-1
5.1 National Groups.....	5-1
5.2 State and Local Groups.....	5-2
6. PRINTED MEDIA REVIEW OF LOW-LEVEL RADIOACTIVE WASTE MANAGEMENT ISSUES.....	6-1
7. PROFILE OF LOW-LEVEL RADIOACTIVE WASTE GENERATORS.....	7-1
7.1 Source of Shipped Waste.....	7-1
7.1.1 Type of Facility Shipping Waste.....	7-1
7.1.2 Source of Radioactivity in Shipped Waste.....	7-1

CONTENTS (continued)

	<u>Page</u>
7.2 Volume of Shipped Waste.....	7-1
7.3 Activity of Shipped Waste.....	7-6
7.4 Physical Characteristics of Shipped Waste.....	7-6
APPENDIX A RADIOACTIVE MATERIAL LICENSE HOLDERS IN MAINE	
APPENDIX B DEMOGRAPHY: SUPPORTING DOCUMENTATION	
APPENDIX C GOVERNMENT STRUCTURE: SUPPORTING DOCUMENTATION	
APPENDIX D STATE LEGISLATION AND LOCAL ORDINANCES	
APPENDIX E INTEREST GROUPS	
APPENDIX F REPRESENTATIVE NEWSPAPER ARTICLES ON RADIOACTIVE WASTE MANAGEMENT ISSUES	
APPENDIX G SURVEY METHODOLOGY	
APPENDIX H GLOSSARY	
APPENDIX I STATEMENT OF CONGRESSWOMAN OLYMPIA J. SNOWE ON LOW-LEVEL RADIOACTIVE WASTE	
APPENDIX J MEMORANDUM FROM THE MAINE STATE GEOLOGIST ON THE SUITABILITY OF MAINE FOR A LOW-LEVEL RADIOACTIVE WASTE DISPOSAL SITE	

LIST OF FIGURES

<u>Figure</u>		<u>Page</u>
3-1	Counties of the State of Maine.....	3-2
3-2	Major Topographical Features: Maine.....	3-3
3-3	Climatological Sections: Maine.....	3-5
3-4	Population Density by County: Maine (1980).....	3-7
3-5	Population Increase by County: Maine (1970-1980).....	3-9
3-6	Standard Metropolitan Statistical Areas and Major Towns: Maine.....	3-11
3-7	Employment by County: Maine (1977).....	3-16
3-8	Per Capita Income by County: Maine (1977).....	3-17
3-9	Percent of Gross Product by Industry for 1979: United States and Maine.....	3-20
3-10	Land Use: Maine.....	3-23
4-1	Congressional Districts: Maine.....	4-3
4-2	State Senate Districts: Maine.....	4-10
4-3	State House of Representatives Districts: Maine.....	4-11

LIST OF TABLES

<u>Table</u>		<u>Page</u>
1-1	Commercial Shallow Land Burial Sites.....	1-2
1-2	Volume of Waste Disposed: 1971-1981.....	1-4
1-3	Low-Level Radioactive Waste: Generation and Disposal.....	1-5
2-1	Use of Commercial Low-Level Waste Disposal Facilities.....	2-2
2-2	Disposal Method Used for Low-Level Radioactive Waste.....	2-4
2-3	Trends in Waste Generation and Disposal for Maine.....	2-13
3-1	Historical and Projected Population for Counties in the State of Maine.....	3-10
3-2	Major Employment Sectors in Maine by County.....	3-14
3-3	Employee Compensation and Estimated Gross State Product by Industry for Maine.....	3-19
4-1	Maine Members of the United States Congress.....	4-2
4-2	Summary of Legislation Relating to Radioactive Waste Introduced in the 97th Congress.....	4-5
7-1	Response to Survey by Type of Facility.....	7-2
7-2	Type of Facility Shipping Waste.....	7-3
7-3	Source of Radioactivity Resulting in Shipped Waste.....	7-4
7-4	Volume of Shipped Waste.....	7-5
7-5	Projected Volume of Shipped Waste.....	7-7
7-6	Activity of Shipped Waste.....	7-8
7-7	Radioisotopes in Shipped Waste.....	7-9
7-8	Onsite Processing of Shipped Waste.....	7-10
7-9	Type of Shipping Container Used.....	7-11
7-10	Physical Form of Shipped Waste.....	7-12
7-11	Nonradiological Hazard Characteristics of Shipped Waste.....	7-13

1. INTRODUCTION⁽¹⁾

The Maine State Briefing Book on Low-Level Radioactive Waste Management is one of a series of State briefing books being prepared to assist State and Federal Agency officials in planning for safe low-level radioactive waste disposal. The Maine Briefing Book provides State officials with basic information related to low-level radioactive waste management practices in the State. A comprehensive assessment of management issues and concerns as defined by all major interested parties--including industry, government, the media, and interest groups--and a profile of generators who ship low-level radioactive waste are the primary focuses of the briefing book. The briefing book also includes demographic and socioeconomic data and a discussion of relevant government agencies and their activities as they relate to the processing, handling, and disposal of low-level radioactive waste.

Commercial burial capacity for low-level radioactive waste has significantly declined in recent years. Of six commercial low-level radioactive waste disposal sites that have operated within the United States, only three are currently accepting additional waste, and steps are being taken to limit the types and volumes of waste these sites accept. Table 1-1 illustrates this situation. Projections of total national low-level radioactive waste generation and the capacity of existing commercial disposal facilities indicate that if no change in present practices or trends occurs, the current disposal sites will probably be filled by the mid-1990s. However, recent limitations of yearly burial quantities and waste types to be accepted by disposal sites located in the States of South Carolina and Washington will reduce the availability of burial space. South Carolina, which accounted for approximately 80 percent of the waste disposed of in 1979, is limiting the acceptance of waste to 50 percent of the 1979 volume or 2,832 cubic meters monthly by October 1981. The State of Washington has passed legislation, effective July 1981, restricting out-of-State low-level radioactive waste to that which is medically related. (However this legislation is the subject of litigation and may not be upheld in the courts.) Nonetheless, it is quite probable that by the mid-1980s there

TABLE 1-1. COMMERCIAL SHALLOW LAND BURIAL SITES^(2,3)

<u>Location</u>	<u>Year First Licensed</u>	<u>Site Operator</u>	<u>Licensing Authority</u>	<u>Current Operation</u>
Barnwell, SC	1971	Chem-Nuclear Systems, Inc.	State and NRC	Significantly reduced volume accepted since 1979
Beatty, NV	1962	Nuclear Engineering Company	State	Open
Richland, WA	1965	Nuclear Engineering Company	State and NRC ^a	Only accepting medically related waste from out-of-State after June 1981.
Maxey Flats, KY	1962	Nuclear Engineering Company	State	Closed 1977
Sheffield, IL	1967	Nuclear Engineering Company	NRC	Closed 1978
West Valley, NY	1963	Nuclear Fuel Services	State and NRC	Closed 1975

a. State maintains license for by-product materials and Nuclear Regulatory Commission (NRC) licenses for special nuclear materials. At time of report writing, Nuclear Regulatory Commission license was being contested by the site operator. Negotiations are currently underway to resolve the conflict between the Nuclear Regulatory Commission, the State and the site operator.

will be more waste volume generated per year than can be buried. Table 1-2 illustrates the amount of low-level radioactive waste buried at each site since 1971.

The use of low-level radioactive materials and of processes and equipment that generate low-level radioactive waste have become commonplace in utilities, industry, hospitals and research institutions. The uses of low-level radioactive material are illustrated in Table 1-3, which highlights the sources of radioactive material and the resulting low-level waste. The U.S. Department of Energy has been given the responsibility for coordinating the development of a national low-level radioactive waste management program, including assessments of specific State and industry situations. These assessments will help form the basis for the Department of Energy's technical and resource assistance to States to help them resolve low-level radioactive waste disposal issues. State briefing books on low-level radioactive waste management practices are also being prepared as part of the process leading to a national low-level waste management plan.

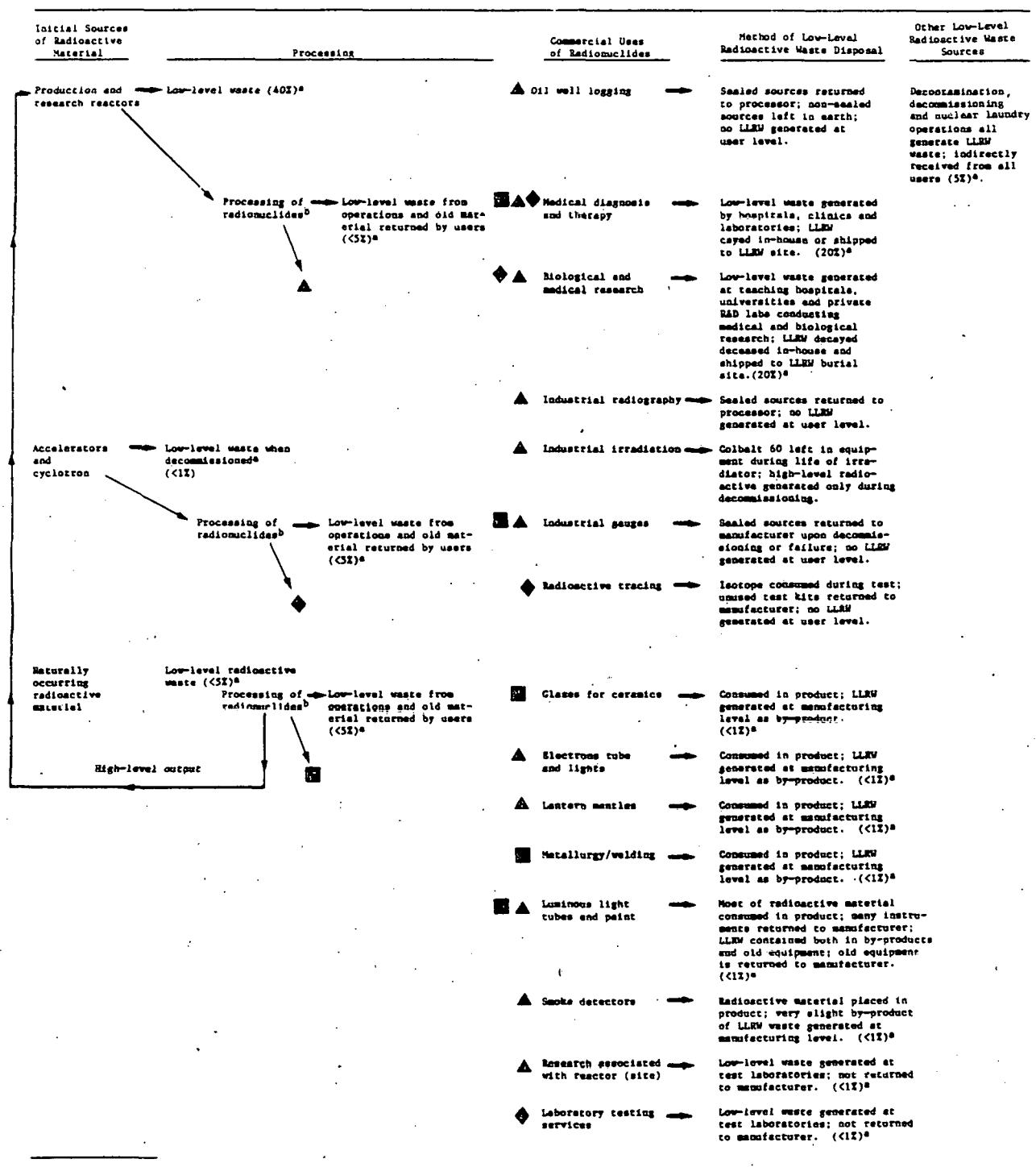
Section 2 of this briefing book reviews both low-level radioactive waste management in Maine and trends potentially affecting its management. The demographic characteristics of the State are briefly described in Section 3. An overview of the State's governmental structure, particularly as it pertains to the low-level waste management issues, is covered in Section 4. Sections 5 and 6 cover the concerns of national and State interest groups and the media coverage given to low-level radioactive waste issues in the State. The survey methodology and the State profile of shipped low-level waste, developed from responses to the survey, are discussed in Section 7. Appendices to this briefing book include State laws concerning low-level radioactive waste management, some representative media coverage on the issues, a current list of radioactive material licensees in the State, and a glossary of terms.

TABLE 1-2. VOLUME OF WASTE DISPOSED: 1971-1981(4,5,6,7,8)
(cubic meters)

Year	Disposal Site						National Annual Total
	Kentucky	Nevada	South Carolina	Illinois	New York	Washington	
1971	13,171	3,584	1,171	4,430	6,362	584	29,302
1972	15,577	4,301	3,757	5,956	7,054	654	37,299
1973	10,072	4,076	15,839	8,524	7,497	1,033	47,041
1974	8,897	4,103	18,244	12,373	8,574	1,411	53,602
1975	17,109	4,943	18,072	14,116	1,889	1,500	57,629
1976	13,783	3,864	40,227	13,480	-- ^a	2,867	74,221
1977	428	4,742	46,563	17,643	--	2,718	72,089
1978	-- ^a	8,827	61,566	102	--	7,422	77,917
1979	--	6,491	63,443	-- ^a	--	9,980	79,914
1980	--	12,732	54,725	--	--	24,824	92,281
1981 (estimated)	--	6,000	40,040	--	--	10,000	56,040

a. Suspended operations

TABLE 1-3. LOW-LEVEL RADIOACTIVE WASTE: GENERATION AND DISPOSAL (9.10)



a. Estimated volume of total commercial low-level radioactive waste generated at that point.

b. Radium; cobalt 60, uranium and accelerator produced radionuclides are imported directly by manufacturers at the processor level.

▲ Reactor generated material

◆◆ Accelerator generated isotope

■■ Natural occurring radioactive materials (radium)

LLRW = Low-level radioactive waste

REFERENCES

Text

1. Kitty Dragonette, private communication, Low-Level Waste Licensing Branch, Nuclear Regulatory Commission, Washington, D.C., March 3 and May 5, 1981.

Tables

2. William F. Holcomb, "Inventory (1962-1978) and Projections of Shallow Land Burial of Radioactive Wastes at Commercial Sites: An Update," Nuclear Safety, 21, 3, May-June, 1980.
3. (See Reference 1.)
4. Staff member, private communication, Radiological Control Section, Department of Social and Health Services, Olympia, Washington, May 4, 1981.
5. Virgil Audry, private communication, Bureau of Radiological Health, South Carolina Department of Health and Environment, Columbia, South Carolina, May 5, 1981.
6. Stan Martin, private communication, Radiological Health Program, Health Division, Carson City, Nevada, May 4, 1981.
7. (See Reference 2.)
8. B.D. Guilbeault, The 1979 State-by-State Assessment of Low-Level Radioactive Wastes Shipped to Commercial Burial Grounds, prepared for EG&G Idaho, Inc. under Subcontract K-5108, Task 23, November 1980.
9. Centaur Associates, Inc., An Economic Study of the Radionuclides Industry, prepared for the Nuclear Regulatory Commission under Contract NRC-07-78-431, February 15, 1980, pp. 7-28.
10. National Low-Level Waste Management Program, Managing Low-Level Radioactive Wastes, LLWMP-1, August 1980, pp. 5-9.

2. OVERVIEW OF LOW-LEVEL RADIOACTIVE WASTE MANAGEMENT PRACTICES IN MAINE

Low-level radioactive waste management has recently become a subject of increasing concern for State and Federal governments, waste generators, and in some cases, the media and interest groups. This section provides an overview of low-level radioactive waste management practices in Maine. It is divided into four parts: (a) background material, including a summary profile of radioactive material licensees in the State; (b) low-level radioactive waste generator activities and concerns; (c) State activities with regard to low-level radioactive waste management; and (d) trends in low-level radioactive waste generation.

2.1 Background

As of 1979, Maine ranked 26th among the States in the volume of low-level radioactive waste generated (21st in the waste's radioactivity levels).⁽¹⁾ Medical and educational institutions, research laboratories, industry, and a commercial nuclear power plant generate low-level waste and ship some of it to commercial disposal sites. In addition, the Portsmouth-Kittery Naval Shipyard generates low-level waste.

Maine is a non-agreement State in which all radioactive material licenses are administered by the Federal government through the Nuclear Regulatory Commission. There are 67 facilities in the State which hold Nuclear Regulatory Commission licenses. In order to develop a profile of these licensees, a survey was conducted as part of this project (see Section 7). This survey focused primarily on licensees who ship low-level radioactive waste to commercial disposal sites. Of the facilities which responded, twelve indicated that they ship waste to commercial sites. Table 2-1 presents a breakdown of licensees by type of facility, response to the questionnaire, and whether they ship to commercial disposal facilities. There are 29 medical licenses, 24 industrial licenses, six educational, seven governmental and, as noted above, one commercial power reactor license.

TABLE 2-1. USE OF COMMERCIAL LOW-LEVEL WASTE DISPOSAL FACILITIES

<u>Facility</u>	<u>Number of Licensees</u>	<u>Respondents</u>		<u>Shippers</u>	
		<u>Number</u>	<u>Percent of Licensees</u>	<u>Number</u>	<u>Percent of Respondents</u>
Medical	29	23	79.3	4	17.4
Educational	6	5	83.3	3	60.0
Industrial	24	18	75.0	3	16.7
Commercial Power Reactor	1	1	100.0	1	100.0
Governmental	7	5	71.4	1	20.0
Total	67	52	77.6	12	23.1

The Maine Yankee nuclear power plant is the major single generator of low-level waste in the State of Maine. In 1980, Maine Yankee generated 260 cubic meters (4138 curies) of low-level waste which amounts to 91.8 percent of the volume and 99.9 percent of the radioactivity of the total amount of low-level waste generated in Maine.(2) In September of 1980, a referendum was held on whether to halt the operation of Maine Yankee. While this referendum was defeated by a 3 to 2 margin, Central Maine Power, the principal owner of Maine Yankee, has indicated that the results show that there is insufficient public support for them to build additional nuclear power plants in Maine. Another similar referendum may well be held in September 1982.

A summary of the low-level waste disposal methods used by all Maine respondents is shown in Table 2-2. Twelve respondents indicated that they generate no low-level waste. Among those that generate waste, 17 return it to the vendor, 12 ship to a commercial disposal site, seven combine it with common refuse and 13 release it into the sewers (the latter after being allowed to decay to background levels).

2.2 Generator Activities Related to Low-Level Radioactive Waste Management

The major issue now facing low-level radioactive waste generators in Maine is the continued availability of safe and economical waste disposal methods. As discussed in Section 1, the three operating disposal sites are restricting the amount and type of low-level waste they accept. As the process to find a long-term solution to waste disposal gets underway, low-level radioactive waste generators in Maine are themselves taking actions in response to the existing situation. These actions relate first to their own facilities and second to the broader issues of low-level radioactive waste management.

2.2.1 In-house Activities

Due to the rapidly increasing cost of low-level radioactive waste disposal and their occasional inability to dispose of the waste at all, Maine generators of low-level radioactive waste are examining their

TABLE 2-2. DISPOSAL METHOD USED FOR LOW-LEVEL RADIOACTIVE WASTE

Type of Facility	No. of Respondents	Ship to Commercial Low-Level Waste Disposal Site		Release to Sewer		Combine with Refuse		Bury On-site		Vent to Atmosphere		Return to Vendor		Distribute in Product Form		No Waste Generated	
		No.	Percent of All Respondents	No.	Percent of All Respondents	No.	Percent of All Respondents	No.	Percent of All Respondents	No.	Percent of All Respondents	No.	Percent of All Respondents	No.	Percent of All Respondents	No.	Percent of All Respondents
Medical	23	4	17.4	10	43.5	6	26.1	1	4.3	3	13.0	2	8.7	1	4.3	6	26.1
Educational	5	3	60.0	1	20.0	1	20.0	0	0.0	0	0.0	1	20.0	0	0.0	2	40.0
Industrial	18	3	16.7	1	5.6	0	0.0	0	0.0	0	0.0	12	66.7	0	0.0	2	11.1
Commercial Power Reactor	1	1	100.0	1	100.0	0	0.0	0	0.0	1	100.0	0	0.0	0	0.0	0	0.0
Governmental	5	1	20.0	0	0.0	0	0.0	0	0.0	0	0.0	2	40.0	0	0.0	2	40.0
Total	52	12	23.1	13	25.0	7	13.5	1	1.9	4	7.7	17	32.7	1	1.9	12	23.1

a. The total exceeds the total number of respondents due to use of more than one disposal method at some facilities.

operating procedures to identify ways to produce less waste and to reduce the volume of waste already generated. Minimization of waste generated requires careful planning of radioactive material use and more rigorous waste-sorting procedures to ensure that only radioactive waste is treated as such. Some wastes which were previously shipped are now being allowed to decay to background levels and then disposed of using conventional methods. Volume reduction is being achieved by the use of compaction and/or incineration.

At Maine Yankee, for example, steps have been taken to increase the use of compaction and to restrict what is taken to the contaminated part of the plant. Installation of an incinerator is being considered, with major factors being the disposal of the more highly radioactive ash and the high up-front costs involved.⁽³⁾ The Jackson Laboratory in Bar Harbor has just begun operation of an incinerator for its pathological and low-level wastes, and arrangements are being considered whereby other nearby generators could use this facility. This incinerator will reduce the laboratory's disposal volume by 80 percent.⁽⁴⁾

A number of generators are also considering or implementing additional interim or long-term storage facilities for low-level waste. Maine Yankee presently has very limited onsite storage, but is building a facility to provide six months' capacity for dry wastes, and plans to build a facility to hold six months' worth of shielded casks.⁽⁵⁾ For many facilities, however, shipping appears to pose the least risk in terms of public and community relations. On the other hand, at least one hospital surveyed had decided to avoid the use of certain therapies (patients are referred to other hospitals) so that they will not have to ship wastes. Non-radioactive (chemical) alternatives to the radioactive materials used in hospitals and laboratories have also been proposed.

At this point it should be noted that recent changes in regulations enforced by some of the existing disposal sites may have acted to increase the volume of low-level wastes. In particular, the puncture test used at the Hanford site means that all liquids must be poured into an absorbent material before they will be accepted. Other safety-oriented packaging regulations may have a similar effect.

2.2.2 Concerns of the Generator Community

Maine generators contacted during this study evinced concern over the following issues:

- public perceptions of low-level waste, and confusion of low-level with high-level and other hazardous waste (especially in light of the referendum on Maine Yankee and strongly-held pro-environment attitudes);
- transportation of low-level waste in or through communities (local initiatives to prohibit the storage, disposal, or transportation of radioactive and hazardous waste);
- classification of waste by level of radioactivity and source (separating institutional and industrial waste from power plant waste, and further differentiating between, for example, spent resins and contaminated trash); and
- a long-term solution to low-level radioactive waste disposal (a regional or State facility).

The referendum on Maine Yankee described above included the issue of radioactive waste. Also, Maine Yankee is currently seeking to expand its onsite spent-fuel storage capacity and this proposal has met with some opposition, from Governor Brennan, among others. Since the public has tended to confuse low-level with high-level waste, the disposal of Maine low-level waste has the potential to become the subject of some controversy. A number of Maine communities have enacted or are considering ordinances which would regulate or ban the storage, disposal and/or transportation of radioactive waste. The City of Biddeford, for example, has an ordinance which requires local industries to inventory their waste and obtain annual permits to dispose of hazardous waste (including liquid and gaseous low-level waste). Among others, the town of Pittston has enacted and the Town of Farmington is considering ordinances which would prohibit the storage or disposal of any radioactive waste. Examples of these ordinances can be found in

Appendix D. The Maine Attorney General has noted that certain local prohibitions against out-of-town waste have been upheld in the courts (see also Appendix D).⁽⁶⁾ However, local regulation of radioactive material is not likely to be upheld.

2.3 State Activities Related to Low-Level Radioactive Waste Management

The Maine Legislature in June 1979 passed an Act (H.P. 799, Appendix D) which required a study to determine the status of radioactive waste in Maine. This study and the legislative subcommittee on radioactive waste, under whose aegis the study was prepared, are the focus of State activities related to low-level radioactive waste to date.⁽⁷⁾ The study is entitled "Report of the Radioactive Waste Subcommittee of the Energy and Natural Resources Committee." With regard to low-level waste, the report recommends that "the Governor enter into discussions with other New England States about the possibility of dealing with low-level radioactive waste on a regional basis. These discussions should: (a) succinctly define low-level radioactive waste; (b) examine alternatives other than land disposal; (c) include some legislative representation and meaningful public participation in each State early in the process; and (d) consider with care Maine's commitment to enter regional compacts with States that generate far more radioactive wastes."⁽⁸⁾

Members of the subcommittee and other State officials participated in the November 1980 regional conference on the Nuclear Regulatory Commission's proposed Low-Level Waste Management Licensing Rule (10 CFR 61). They have also been involved in regional discussions on low-level radioactive waste management, and attended a conference in March 1981 sponsored by the Joint Legislative Committee on Radioactive Waste Policy of the State of New Hampshire. Other States represented at the conference included Connecticut, Massachusetts, New Hampshire, Pennsylvania, Rhode Island and Vermont. (Representatives from New Jersey and New York were invited but did not attend.) Additional regional meetings are expected to follow this meeting. In addition, a

task force drawn from the executive and legislative branches of government is expected to be established in States where they do not already exist.

Pursuant to this conference and the subcommittee report, the Maine Legislature has passed a bill (Public Law 1981, Chapter 439) which provides that:

- each low-level waste licensee shall annually report the volume and radioactivity of waste generated and shipped, respectively;
- the State Geologist shall report to the Governor and Legislature on the suitability of areas of Maine for low-level waste disposal; (9)
- a Low-Level Waste Siting Commission should be established to negotiate on behalf of the State with respect to the siting, licensing, operation, and use of low-level waste disposal facilities within and outside the State, and that;
- a low-level waste siting fund should be established, and a service fee of one dollar per cubic foot of low-level waste shipped be credited to this fund. (10)

(A copy of this bill is provided in Appendix D).

In addition to the subcommittee, the Governor's Nuclear Safety Advisory Commission might at some point become involved in low-level waste issues. However, to date, the commission has focused on high-level waste issues such as Maine Yankee's spent fuel storage capacity expansion.

2.4 Population and Economic Trends Potentially Affecting Low-Level Radioactive Waste Generation and Management

The current uses of radioactive material are extensive. Radioactive material is used directly in products and indirectly in the manu-

facturing process in virtually every sector of the national economy. The main generators of radioactive waste nationally are nuclear medicine, biomedical research, and commercial power reactors. Combined, these three sectors generate an estimated 90 percent of the nation's commercially buried waste.⁽¹¹⁾ Preliminary estimates for the State of Maine indicate that 88 percent (by volume) of shipped waste results from the reactor and 12 percent from medicine and research.⁽¹²⁾ The following analysis of trends will primarily focus on these three types of waste generators.

2.4.1 Medical Waste

The volume of medical waste, consisting primarily of scintillation liquids and solid laboratory trash, has greatly increased during the past ten years. Several factors come into play when projecting trends in future waste volumes from medical procedures. These factors are: population size and age profile, number of tests per patient, and the volume of waste per test.

Radiopharmaceuticals are utilized in the diagnosis of a wide range of medical disorders. General demand for nuclear medical procedures is closely correlated with demand for medical services, which, in turn, is highly affected by population size and age profile. Future demand for medical services, including nuclear diagnosis and therapy, is a function of population size. Population growth projections for the State of Maine indicate a growth of 1.33 percent annually from 1980 to 1990, greatly above the national average of 0.9 percent. This will result in an increase of 149,330 persons by 1990 (see Section 3.4), which can be expected to translate directly into an equivalent increase in demand for nuclear medical services.

In addition, Maine's population, like that of the rest of the nation, is taking on a more mature age profile. A resulting increase in demand for nuclear medical procedures can be anticipated over the next two decades. Maine currently has a population slightly older than the national average.

Nationally, the per capita number of applications of nuclear medicine has greatly increased during the past decade, due to new and improved applications, particularly diagnostic use of radioisotopes. Nuclear medicine developments in in vivo diagnostic techniques have been dominated by the increased use of Technetium-99 and of scintillation cameras, among radiopharmaceuticals and equipment respectively. The development and growth of radioimmunoassay and the equipment used with it are the most outstanding trends for in vitro diagnosis. Developments in therapeutic applications have been relatively minor.(13)

The value of sales of medical procedures including both diagnosis and therapy applications increased from \$920 to \$2,440 million between 1967 and 1978.(14) Capital expenditures by medical operations for radiopharmaceutical equipment increased from \$60 million to \$160 million between 1967 and 1978.(15) Most of this growth resulted from increased use of diagnostic radiopharmaceuticals rather than therapy applications. Sales of radiopharmaceuticals increased from \$9.8 million to \$111.5 million between 1967 and 1976.(16) The number of in vivo diagnostic procedures increased from 1.2 million to 7.6 million annually.(17)

The last relevant trend is the decrease in the level of waste shipped per test. Two main factors have contributed in the past to reducing the volume of waste shipped to burial sites per application of nuclear medicine. First, there has been a shift toward using isotopes with shorter half-lives. This is due to the commercial development of new isotopes and more sensitive laboratory equipment which facilitate temporary onsite storage of waste and its disposal after decay as non-radioactive waste. Second, there has been an increase in the use of volume reduction techniques. These techniques take the form of both improved procedures, e.g., a more aggressive waste-sorting policy, and technological innovations, e.g., mini-scintillation vials. Volume reduction techniques are a response to rising disposal costs, increased difficulty in disposing of waste, and problems created by waste disposal, and have resulted in all Maine hospitals but one using alternative disposal methods. Plans currently exist at this hospital, the State's largest user of nuclear medicines, to decay waste onsite. This will result in the elimination of all shipments of low-level radioactive waste within several years.

2.4.2 Reactor-Generated Waste

The Maine Yankee facility is in a relatively early stage of its operating cycle and is expected to continue operation until the year 2008. (Commercial power reactors are licensed for a forty-year period which begins with the issuance of the construction permit.) Maine Yankee is currently producing approximately 275 cubic meters of low-level radioactive waste annually. Approximately 60 percent of the waste is compressed waste and 40 percent is evaporated liquids, resins, sludges or filters. Volume reduction techniques such as compaction and evaporation are currently used onsite. Incineration, for example, would reduce solid waste shipped by approximately 80 percent or total volume by 50 percent. An onsite incinerator is under consideration and may be installed at a future date.

In approximately the year 2008, the decommissioning of the Maine Yankee reactor will presumably be necessary. If decommissioning is not accomplished by encapsulation, a large volume of low-level radioactive waste (on the order of 15,000 cubic meters) can be anticipated.

2.4.3 Research

Radioactive materials are used for research at two universities and three private laboratories in Maine. Research-related waste in Maine consists primarily of scintillation liquids, laboratory trash, and contaminated animal carcasses.

Nationally, the use of radioisotopes has increased greatly during the past decade, and continued growth is expected. The number of individuals directly associated with research using radioisotopes increased from 44,547 to 68,262 between 1969 and 1979 or by over 5 percent annually.(18) Approximately 85 percent of this activity was related to biomedical research.

In Maine the increase in the use of radioisotopes reflects the national trend. This increase is due to both increased use of traditional isotopes and use of previously unutilized isotopes. There

is every indication that this trend will continue and the associated low-level waste generated can be expected to increase.

The volume of waste generated by the increased use of radioisotopes for research is expected to parallel isotope use in research. The major waste generators are aware of waste disposal problems and have been implementing volume reduction procedures such as compaction, disposal after decay, and incineration. However, most waste remaining does not lend itself to easy volume reduction and the net volume of waste shipped is expected to remain constant or increase slightly.

Additional industrial applications of radioactive material in Maine include industrial control measurement devices, measurement gauges, and industrial radiography. However, these applications generate extremely small volumes of radioactive waste; no major changes in their level of use are anticipated.

In summary, the uses of radioactive material in Maine are expected to increase during the next ten years and the volume of waste generated at the user level and shipped to disposal sites is expected to increase proportionally. Volume reduction is being implemented by many generators but total waste volumes can be expected to increase. (However, an incinerator at Maine Yankee would result in a decrease in total waste shipped from the State.) Table 2-3 summarizes the anticipated changes in the use of radioactive material, the trends in the volume of waste shipped relative to the level of waste generated, and the net level of waste shipped.

TABLE 2-3. TRENDS IN WASTE GENERATION AND DISPOSAL FOR MAINE

<u>Generators of Low-Level Radioactive Waste</u>	<u>Material Use</u>	<u>Waste Management</u>	<u>Waste Shipped</u>
Medical Diagnosis and Therapy	Increase due to popu- lation increase, older age profile and new applications	Further reductions in volume of low-level waste shipped per test due to onsite decay	Elimination of shipped waste
Nuclear Reactors	No change	Possible volume reduction if incinerator installed	Possible reduc- tion in volume shipped
Research	Increase in bio- medical applications at universities and private research labs	No volume reduction planned	Increase in volume shipped
Industrial Applications and Commercial Testing Labs	Increase in volume	Volume increase	Volume increase

REFERENCES

1. B.D. Guilbeault, The 1979 State-by-State Assessment of Low-Level Radioactive Wastes Shipped to Commercial Burial Grounds, prepared for EG&G Idaho, Inc. under Subcontract K-5108, Task 23, November, 1980.
2. Maine Yankee, Yearly Radioactive Waste History.
3. Charles Frizzle, personal communication, Central Maine Power Company, April 22, 1981.
4. Wes Beamer, personal communication, The Jackson Laboratory, April 24, 1981. (See Reference 3.)
5. "Report of the Radioactive Waste Subcommittee of the Energy and Natural Resources Committee, Pursuant to Public Law 1979, Chapter 519"
6. James E. Tierney, Attorney General, letter to the Honorable Judy C. Hany, January 20, 1981.
7. The current members of the subcommittee are Senator Donald O'Leary (D-Mexico), Representative Bernard Austin (R-Bingham), Representative Sherry Huber (R-Falmouth), Representative Laurence Kiesman (R-Fryeburg), Representative John Michael (D-Auburn), and Representative Michael Michaud (D-Millinocket). Legislative Assistant John Bailey was a principal author of the report.
8. "Report of the Radioactive Waste Subcommittee of the Energy and Natural Resources Committee," Legislature of the State of Maine, January 1, 1981.
9. A preliminary assessment by the State Geologist indicated that the central and coastal areas of Maine are potentially suitable environments for low-level radioactive waste management, but recommended additional study. See Walter A. Anderson, State Geologist, memorandum to John Bailey (Appendix J).
10. Maine, An Act Assuring Legislative Participation in Nuclear Waste Repository Research and Development Activity Within the State (1981), H.P. 1322.
11. (See Reference 1, pp. 1-2.).
12. (See Reference 1, pp. 41-42.)

REFERENCES (continued)

13. Arthur Young and Company, Determination of the Economic Parameters of the Radionuclide and Radionuclide Devices Industry with Special Reference to the Nuclear Medical Market, prepared for the Nuclear Regulatory Commission under Contract NRC-12-77-193, June 2, 1978 pp. 1-3.
14. Centaur Associates, Inc., An Economic Study of the Radionuclides Industry, prepared for the Nuclear Regulatory Commission under Contract NRC-07-78-431, February 15, 1980 pp. 124-127.
15. (See Reference 14.)
16. (See Reference 13, Table IV-1.)
17. (See Reference 13, Table H-1.)
18. (See Reference 14.)

3. DEMOGRAPHY

This section describes Maine in terms of its population, economy, agriculture, schools, hospitals, and Federal laboratories and military installations. It also provides background information on land use and some of the State's natural features. Supporting documentation is provided in Appendix B.

3.1 Location

Maine lies in the northeast corner of the United States. It is the largest of the New England States, covering 33,215 square miles or half the total area of New England. New Hampshire borders Maine on the west, Quebec borders it on the northwest, and New Brunswick borders it on the north and east. The Atlantic Ocean provides Maine's southern boundary. As shown in Figure 3-1, the State is divided into 16 counties, ranging in size from 257 to 6,821 square miles.

3.2 Topography(1)

Maine's terrain varies from a generally ragged coastline to valleys and rugged mountains, as shown in Figure 3-2. The southeastern half of the State has elevations of less than 500 feet above sea level, while the northwestern half has elevations of from 1,000 to 1,500 feet above sea level. In the western and central sections numerous mountains rise to heights of 3,000 to 5,000 feet. Mt. Katahdin, the highest point in the State, is 5,268 feet above sea level.

Glaciers were responsible for the formation of Maine's topography, resulting in long glacial ridges and 1,600 lakes in the interior of the State. The total water area of Maine exceeds 2,200 square miles.

The coastline is extremely irregular. The straightline distance from Eastport, the most northeasterly city on Maine's coast, and Kittery, the most southeasterly city, is 240 miles; the total coastline is 10 times that distance.

Rivers flow southward from Maine's interior to the Atlantic. The principal rivers, the Saco, Androscoggin, Kennebec, and Penobscot, run through forested terrain.

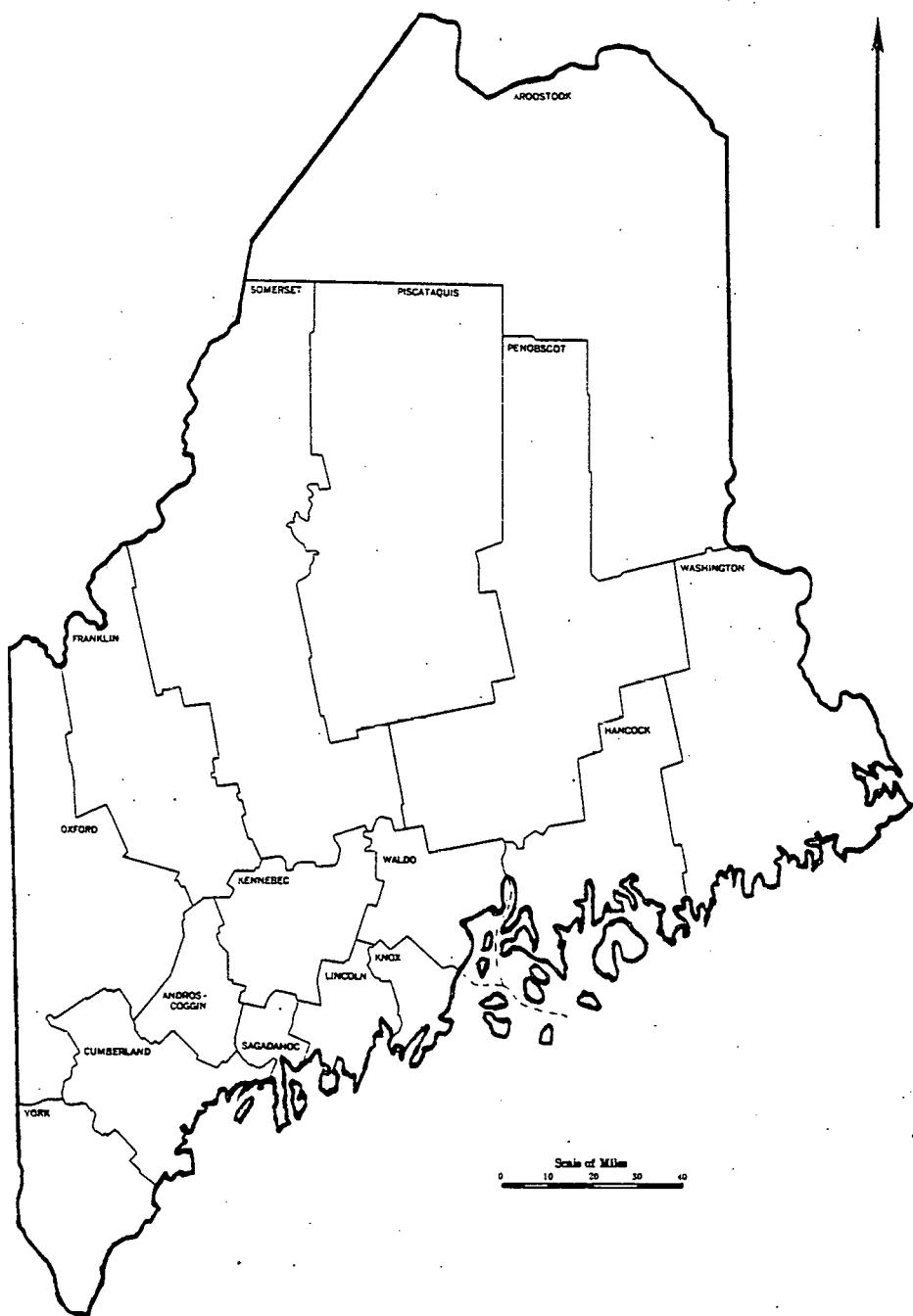


FIGURE 3-1. COUNTIES OF THE STATE OF MAINE

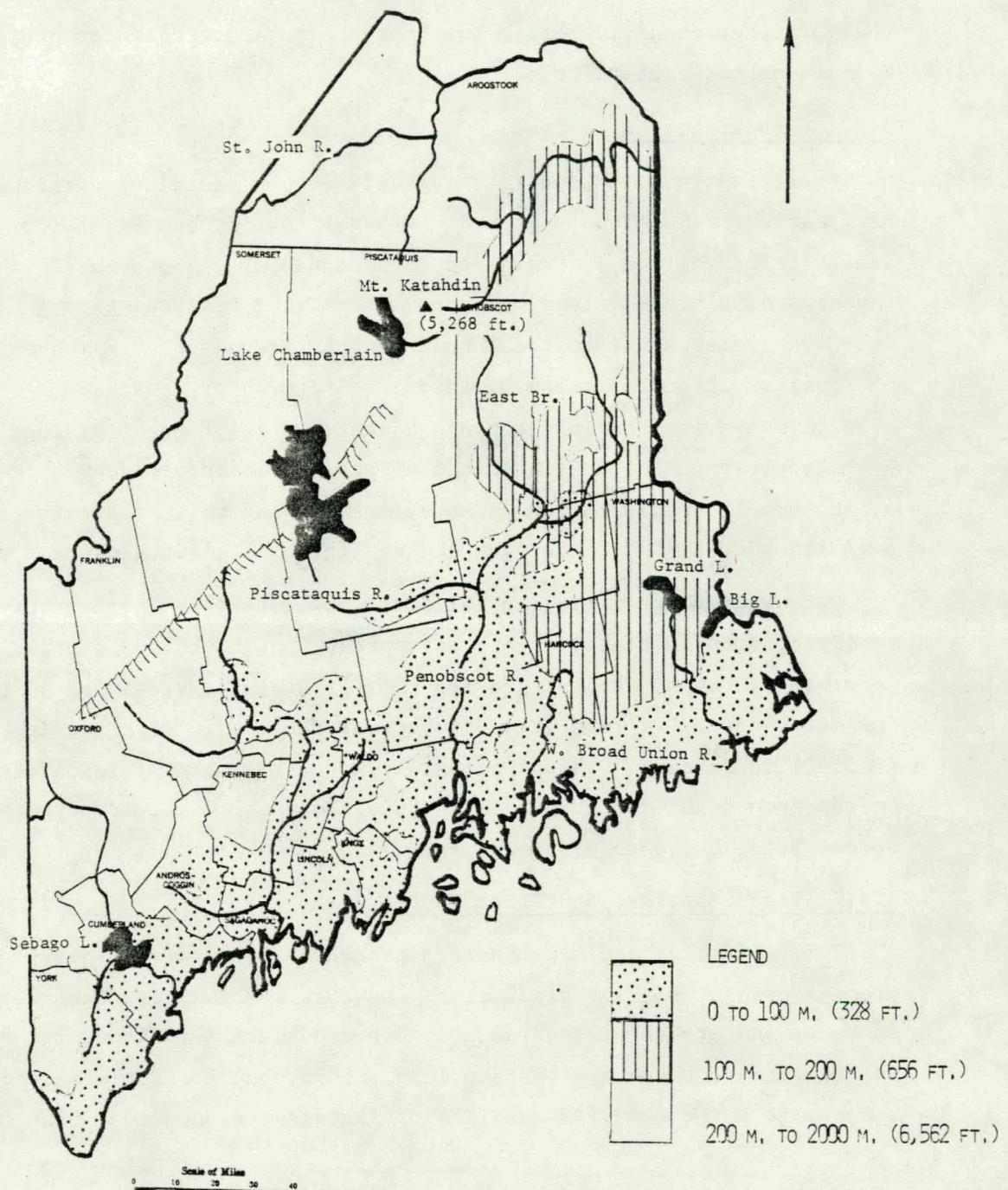


FIGURE 3-2. MAJOR TOPOGRAPHICAL FEATURES: MAINE⁽³⁸⁾

3.3 Climate⁽¹⁾

Regional climatic influences in Maine are modified by elevation, distance from the ocean, and type of terrain. As shown in Figure 3-3, these influences divide Maine into three natural sectors for purposes of climatological comparison.

3.3.1 Precipitation

Precipitation in Maine is relatively evenly distributed throughout the year and consistently exceeds evaporation. In the Coastal Division winter precipitation is increased by northeasters, and summer thunderstorms are modified by ocean air. Thus, November through February averages exceed the annual monthly average of 3.7 inches along the coast. In the Northern Division, the period of greatest precipitation is from July through November. All three Divisions average between 38 and 44.5 inches of precipitation per year. Frequency of measurable precipitation is about one day in two in the extreme northern part of the State, and one day in three elsewhere.

Most winter precipitation falls as snow, with the Northern Division receiving from 90 to 110 inches on average, the Southern Interior receiving 60 to 90 inches, and the Coastal Division receiving 50 to 80 inches. Snow falls from late October through April, with heaviest snowfall in January. Snow that falls in the Northern Division may stay on the ground through the winter, while along the Coast it often melts before being replaced with more snow.⁽²⁾

3.3.2 Winds, Storms, and Other Weather

Coastal storms and northeasters generate strong winds, heavy precipitation, and high tides along the coast. Storm systems are common in Maine and are the principal moisture producers throughout the year. In the summer, these systems are less active, but local thunderstorms compensate for the difference. Major flooding is uncommon. The coastal

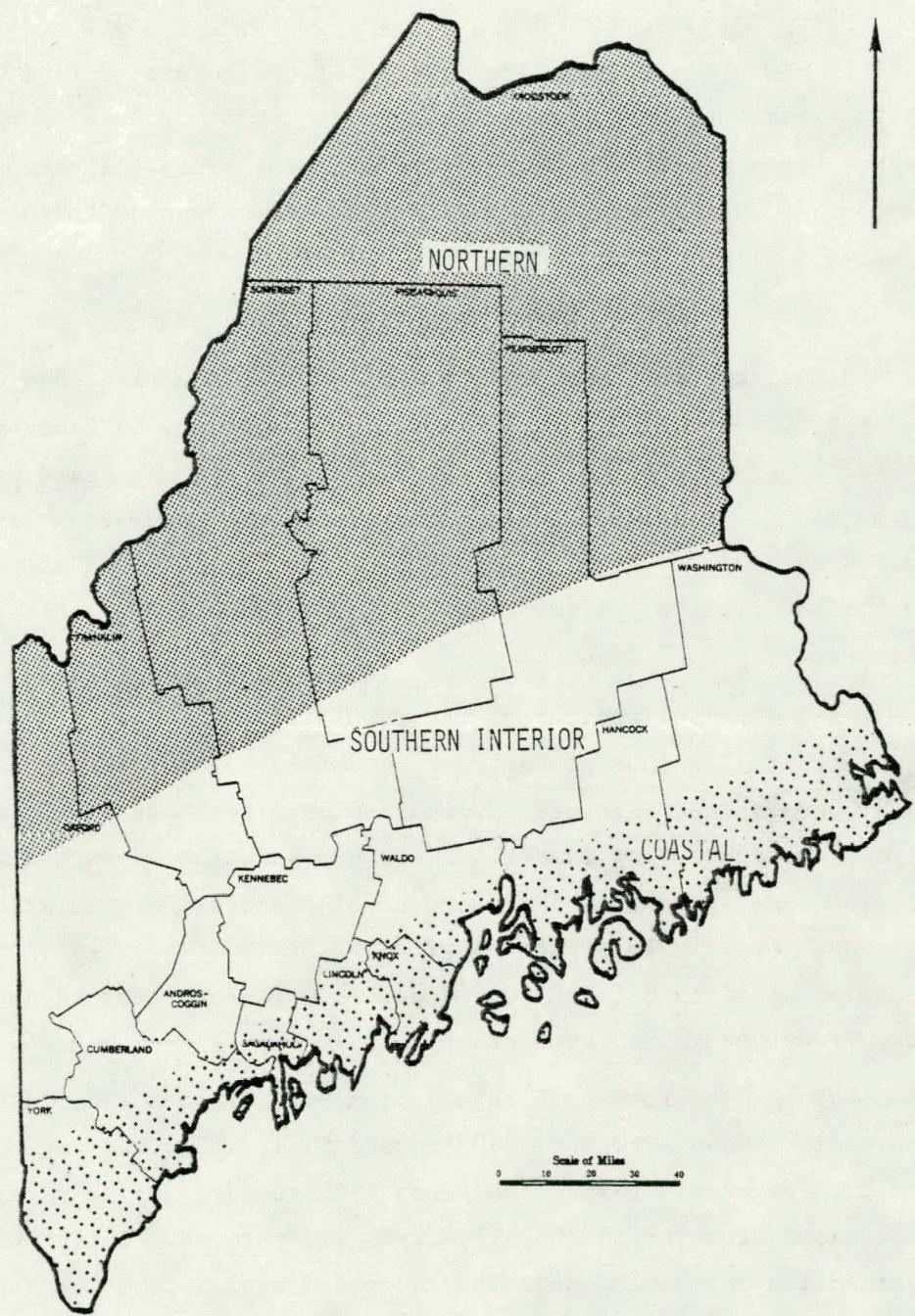


FIGURE 3-3. CLIMATOLOGICAL SECTIONS: MAINE (39)

areas are usually free of ice when the melting snow from the colder interior swells the rivers in the spring.

Heavy fog is common along Maine's coast; it occurs an average of one day in six along the eastern portion of the coast. Inland locations also experience heavy fog. The average number of days of heavy fog varies from 25 to 60 days per year over the State. In the period 1956-1975, 61 tornadoes were recorded, an average of three per year.⁽³⁾

3.4 Population(4,5,6)

Maine, the 38th most populous State in the nation, had a population of 1,123,670 in 1980. Maine's population density in 1980 was 36.3 persons per square mile, the lowest density for any State east of the Mississippi. In 1970, 50.8 percent of Maine's population lived in urban areas as compared to 51.3 percent in 1960 (a breakdown of population by urban and rural areas for 1980 was not available when this report was prepared).

As Figure 3-4 indicates, the population of Maine is heavily concentrated in four southwestern counties: York, Cumberland, Androscoggin and Kennebec. All these counties have populations in excess of 99,000 and Cumberland has a population in excess of 200,000. These counties contain 50.2 percent of the State's population but account for only 10.4 percent of total State area. Two other counties have populations between 90,000 and 99,000, Penobscot in central Maine and Aroostook in northern Maine.

Maine's population increased from 969,265 to 1,123,670 or 15.9 percent between 1960 and 1980, considerably below the national increase of 23.6 percent. During the years 1960 to 1970, Maine's population increased from 969,265 to 993,722 or 2.5 percent. During the same period the national population increased over 5 times as rapidly or by 13.4 percent. However, between 1970 and 1980 Maine's population

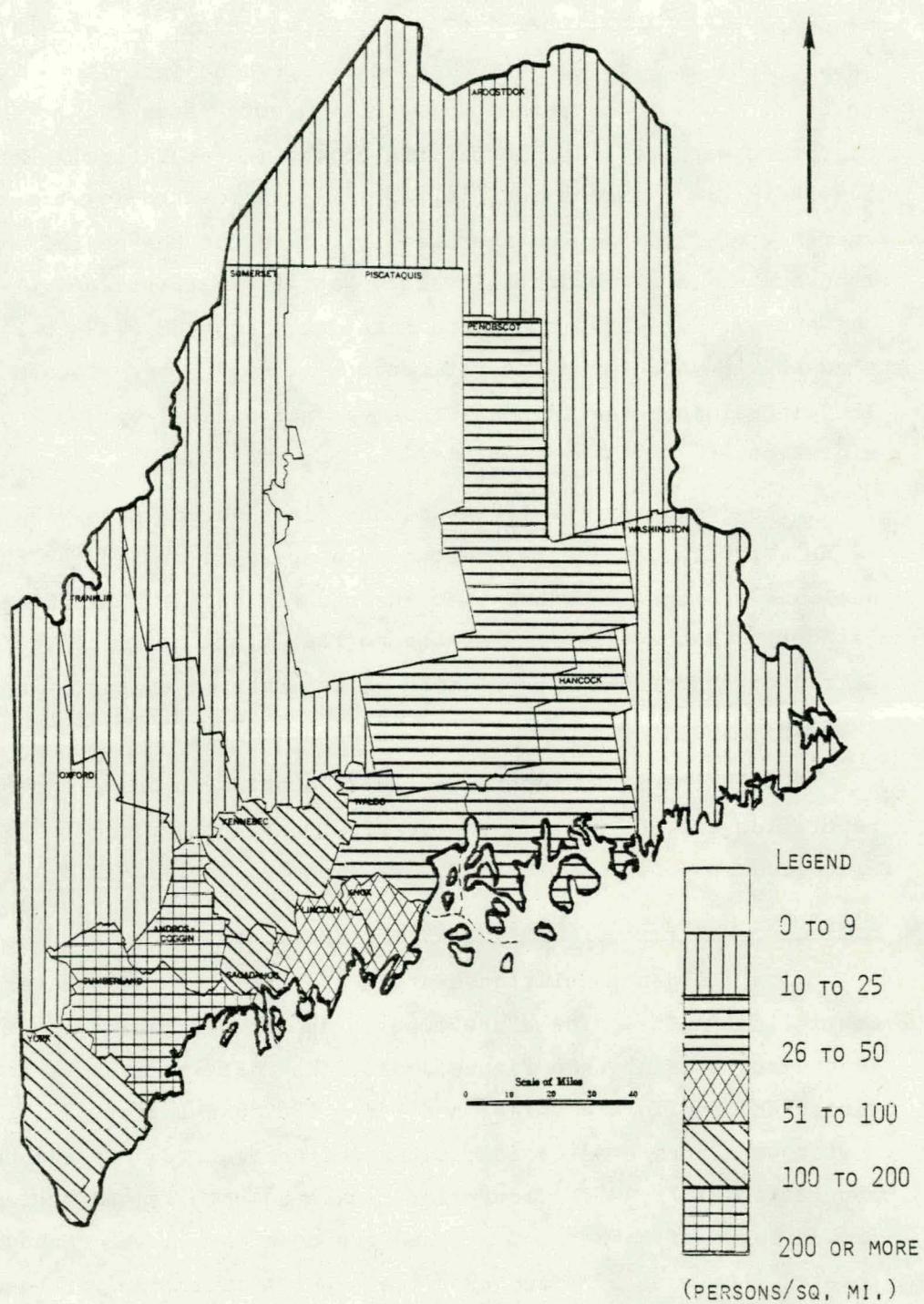


FIGURE 3-4. POPULATION DENSITY BY COUNTY: MAINE (1980) (40)

increased more rapidly than the nation's as a whole. During this period Maine's population increased from 993,722 to 1,123,670 or 13.1 percent as compared to a national increase of 9 percent⁽⁷⁾. Maine's annual growth rate declined from a high of 1.6 percent in 1971 to 0.5 percent in 1979. During the period 1970 to 1980 both natural increase and migration were responsible for the growth in population. There were 174,280^(8,9,10) births and 116,735^(11,12,13) deaths for a net increase of 57,545. The average birth rate for the period was 15.0 per thousand⁽¹⁴⁾ and the mortality rate was 10.0 per thousand.⁽¹⁵⁾ Between 1970 and 1980 the birth rate declined from 17.9 to 14.3 per thousand⁽¹⁶⁾ and the death rate from 11.1 to 9.7 per thousand.⁽¹⁷⁾ The natural increase in population was accompanied by a 5.2 percent net migration.⁽¹⁸⁾

The decade of the 1970s was the first decade since the 1840s that Maine's population increased at a rate equal to or greater than the national average. Northern New England (Maine, New Hampshire and Vermont) was the only area of the northeast and north central United States to experience a population growth rate in excess of the national average.

As illustrated by Figure 3-5, six counties in Maine experienced population growth rates in excess of 20 percent during the 1970s. Historical population by county are shown in Table 3-1.

3.4.1 Standard Metropolitan Statistical Areas⁽¹⁹⁾

Maine's major population centers are its two Standard Metropolitan Statistical Areas. These are located in three adjacent counties in southwestern Maine (see Figure 3-6). The Portland area is located in Cumberland and York counties and had a 1980 population of 183,457. The Lewiston-Auburn area is located in Androscoggin County and had a 1980 population of 72,445. Population growth in both lagged behind the growth rates of both the State and the counties in which they are located. Between 1970 and 1980 the population of the Portland Standard Metropolitan Statistical Area increased 7.9 percent and the population of the Lewiston-Auburn area declined by less than one percent.

TABLE 3-1. HISTORICAL POPULATION
FOR COUNTIES IN THE STATE OF MAINE (1960-1980) (47)

<u>County</u>	<u>Population</u>		
	<u>1960</u>	<u>1970</u>	<u>1980</u>
Androscoggin	86,312	91,279	99,708
Aroostook	106,064	94,078	91,243
Cumberland	182,751	192,528	215,566
Franklin	20,069	22,444	27,003
Hancock	32,293	34,590	41,735
Kennebec	89,150	95,306	109,721
Knox	28,575	29,013	32,952
Lincoln	18,497	20,537	25,600
Oxford	44,345	43,457	48,949
Penobscot	126,346	125,393	137,018
Piscataquis	17,379	16,285	17,612
Sagadahoc	22,793	23,452	28,763
Somerset	39,749	40,597	44,989
Waldo	22,632	23,328	28,418
Washington	32,908	29,859	34,921
York	99,402	111,576	139,472
Total State	969,265	993,722	1,123,670

3.4.2 Major Cities

Figure 3-6 maps the major cities and town of Maine. In 1980 Maine had 21 cities with populations of 10,000 or more.

3.4.3 Population Projections (20,21)

The U.S. Bureau of the Census projects that Maine's population will increase 13.3 percent between 1980 and 1990 to 1,273,000. This is virtually the same rate of increase experienced between 1970 and 1980. The projected national increase for the 1980s is 9.6 percent. Maine State Planning Office projections for the period 1980 to 1984 indicate that the pattern of population increase will be similar to that experienced during the 1970s. Seven of the eight counties that experienced the highest growth rates in the 1970s are projected to have the highest growth rates in the first half of the 1980s. These counties are Lincoln, Waldo, Hancock, York, Sagadahoc, Washington and Franklin. These counties are projected to experience population increases of between 6 and 9 percent from 1980 to 1984. Knox County which did not have a high growth rate during the 1970's is expected to have a population increase of over 6 percent between 1980 and 1984. Most population growth is expected in southern and coastal counties of the state.

The Lewiston-Auburn Standard Metropolitan Statistical Area is projected to experience a slight decline in population of less than one percent. The Portland area is projected to experience an increase in population of 1.8 percent.

3.5 Economy (22)

3.5.1 Major Employment Sectors

Maine is among the nation's leading producers of wood and pulp and the third largest producer of beryllium concentrate. Tourism and fishing are also extremely important during the summer months. Food processing, apparel and textiles, paper products and printing, footwear, and leather and electronic equipment, account for virtually all manufacturing in the State.

Manufacturing is the largest business sector and provided employment for 100,952 individuals or 36 percent of the total number of employees in 1977. The other major employment sectors are retail trade and services which combined employ 118,215 individuals or 42 percent of the State's labor force. Table 3-2 provides an inventory on a county-by-county basis of the major employment sectors for each county in Maine.

Economic activity is concentrated along the coast and major rivers. Major economic centers are Portland, Lewiston and Bangor. Figure 3-7 maps the total number of employees per county in 1977 and provides an indication of relative levels of economic activity.

3.5.2 Employment and Per Capita Income⁽²³⁾

Maine had 473,000 individuals in its 1978 civilian labor force, of which 281,000 were male and 192,000 were female. This yields a labor participation rate of 62 percent compared to a national average of 63.2 percent. The female participation rate is 47.7 and is below the national average of 50 percent. Male participation is 74.3 percent and is also below the national average of 77.9 percent.

In 1977 per capita income in Maine was \$6,333 or 81 percent of the national average of \$7,810. Only two states had a lower per capita income and all counties in Maine are below the national average. In 1975 there were 126,000 persons or 26,000 families living below the poverty level. This represents 12 percent of the State population and is slightly above the national average of 11.4 percent.

Figure 3-8 presents per capita income by county. Per capita income is higher in the southern coastal counties and in those along the Penobscot River. Per capita income is less in the northern and western counties. Per capita income growth was 81.6 percent between 1969 and 1977 and was below the national average.

3.5.3 Gross State Product^(24,25)

Maine's gross state product by industry was estimated by applying the gross-national-product-to-compensation ratio for each major economic sector to state compensation data for each of those sectors. Because of the variability of the product to compensation ratio

TABLE 3-2. MAJOR EMPLOYMENT SECTORS
IN MAINE BY COUNTY⁽⁴⁸⁾

<u>Counties</u>	<u>Major Economic Sector</u>
Androscoggin	Manufacturing: Textiles, Rubber and Plastic Products, Leather Footware; Retail Trade.
Aroostook	Manufacturing: Frozen Fruits and Vegetables, Lumber and Wood Products, Leather Footware; Retail Trade.
Cumberland	Manufacturing: Paper and Paper Products, Printing, Leather Footware, Electronic Components; Retail Trade; Finance and Insurance.
Franklin	Manufacturing: Lumber and Wood Products, Paper, Leather Footware; Health Care.
Hancock	Manufacturing: Lumber and Wood Products, Paper; Retail Trade.
Kennebec	Manufacturing: Paper Products, Textiles and Apparel; Retail Trade; Health Services.
Knox	Manufacturing: Fish Processing; Retail Trade; Services.
Lincoln	Manufacturing: Electrical and Electronic Equipment; Retail Trade.

TABLE 3-2. MAJOR EMPLOYMENT SECTORS
IN MAINE BY COUNTY (continued)

<u>Counties</u>	<u>Major Economic Sector</u>
Oxford	Manufacturing: Logging, Lumber and Wood Products, Paper, Leather Footware, Toys and Sporting Goods; Retail Trade.
Penobscot	Manufacturing: Textiles, Lumber and Wood Products, Paper, Leather Footwear; Retail Trade; Services.
Piscataquis	Manufacturing: Textiles, Wood Products; Retail Trade.
Sagadahoc	Manufacturing: Ship and Boat Building; Retail Trade.
Somerset	Manufacturing: Lumber and Wood Products, Leather Products; Retail Trade; Health Services.
Waldo	Manufacturing: Leather Footware, Food Packaging and Processing; Retail Trade; Services.
Washington	Manufacturing: Paper, Food Processing, Wood and Lumber.
York	Manufacturing: Textile Products, Leather and Plastic Footware, Ordnance and Arms, Electronic Components; Retail Trade; Services.

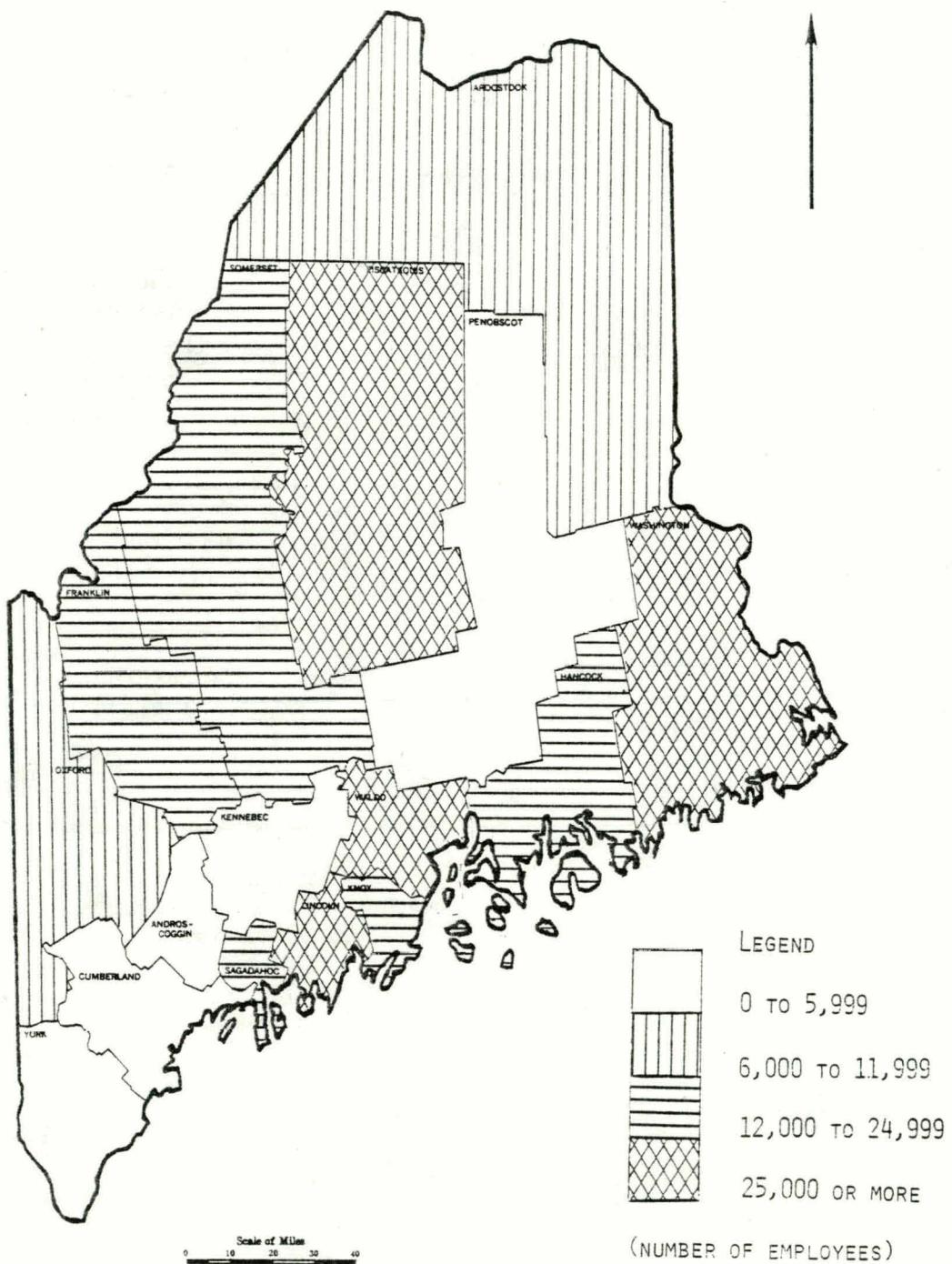


FIGURE 3-7. EMPLOYMENT BY COUNTY: MAINE (1977) (43)

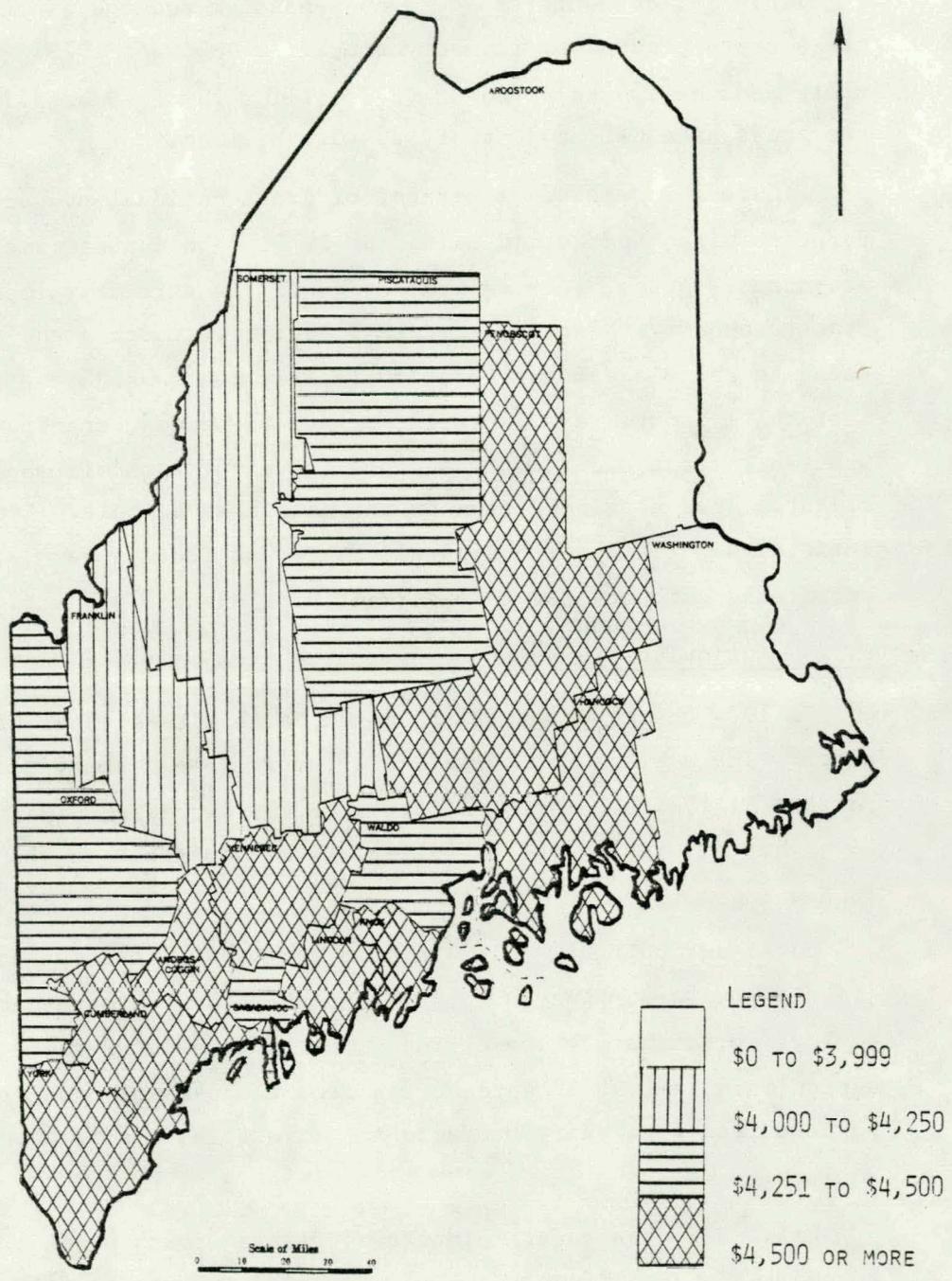


FIGURE 3-8. PER CAPITA INCOME BY COUNTY: MAINE (1977) (44)

among different business sectors and from one year to the next, projections were made by industry for the years 1977, 1978 and 1979.

Table 3-3 presents employee compensation and the estimated Maine gross state product by industry for 1977, 1978 and 1979. Maine's gross state product is projected at \$8.8 billion for 1979 or 0.36 percent of the gross national product of \$2,413.9 billion.

Figure 3-9 represents percent of gross national product by industry for the United States and Maine for 1979. The manufacture of non-durable goods, such as leather goods, is extremely important to the State's economy. Farming, retail trade, construction and services are found in Maine's economy to approximately the same degree as the national economy. Manufacturing of durable goods, transportation, wholesale trade and finance sectors are major economic sectors but slightly less prominent than in the nation as a whole. Economic activity associated with Federal, State and local government is a major sector and accounts for 14.5 percent of the state product.

3.5.4 Agriculture(26,27)

In 1974 there were 8,177 farms in Maine with a total of 1.61 million acres. The average farm size was 197 acres, well below the average size for the nation. The average farm size has decreased significantly since 1974 when it was 237 acres, but is still comparable to the other States in New England.

Total agricultural sales in 1978 were \$399.7 million and averaged \$48,884 per farm. Agriculture, although second to manufacturing, employs approximately one-third of the State's labor force. Of total agricultural sales, 27 percent was from the sale of cash crops, 18 percent from farm dairy products and livestock, and 51 percent from poultry.

Maine also has several important fishing ports which land lobster, groundfish and non-food fish. In 1979 \$80 million in fish was landed in Maine ports.(28)

TABLE 3-3. EMPLOYEE COMPENSATION AND ESTIMATED
GROSS STATE PRODUCT BY INDUSTRY FOR MAINE⁽⁴⁹⁾
(Millions of Dollars)

Industry	1977		1978		1979	
	Compensation	GSP	Compensation	GSP	Compensation	GSP
Farms	128	286	122	249	127	267
Agricultural Services	57	89	64	89	71	96
Mining	3	8	3	7	3	8
Construction	300	377	314	492	340	423
Non-Durable Goods	806	1,357	891	1,472	988	1,615
Durable Goods	440	620	530	751	627	866
Transportation and Public Utilities	290	557	321	613	364	672
Wholesale Trade	248	432	271	452	302	518
Retail Trade	508	823	572	840	622	937
Finance, Insurance and Real Estate	192	804	214	873	240	975
Services	749	900	849	1,008	958	1,142
Government and Government Enterprises	892	1,053	976	1,154	1,077	1,284
Total	4,613	7,306	5,127	8,000	5,719	8,803

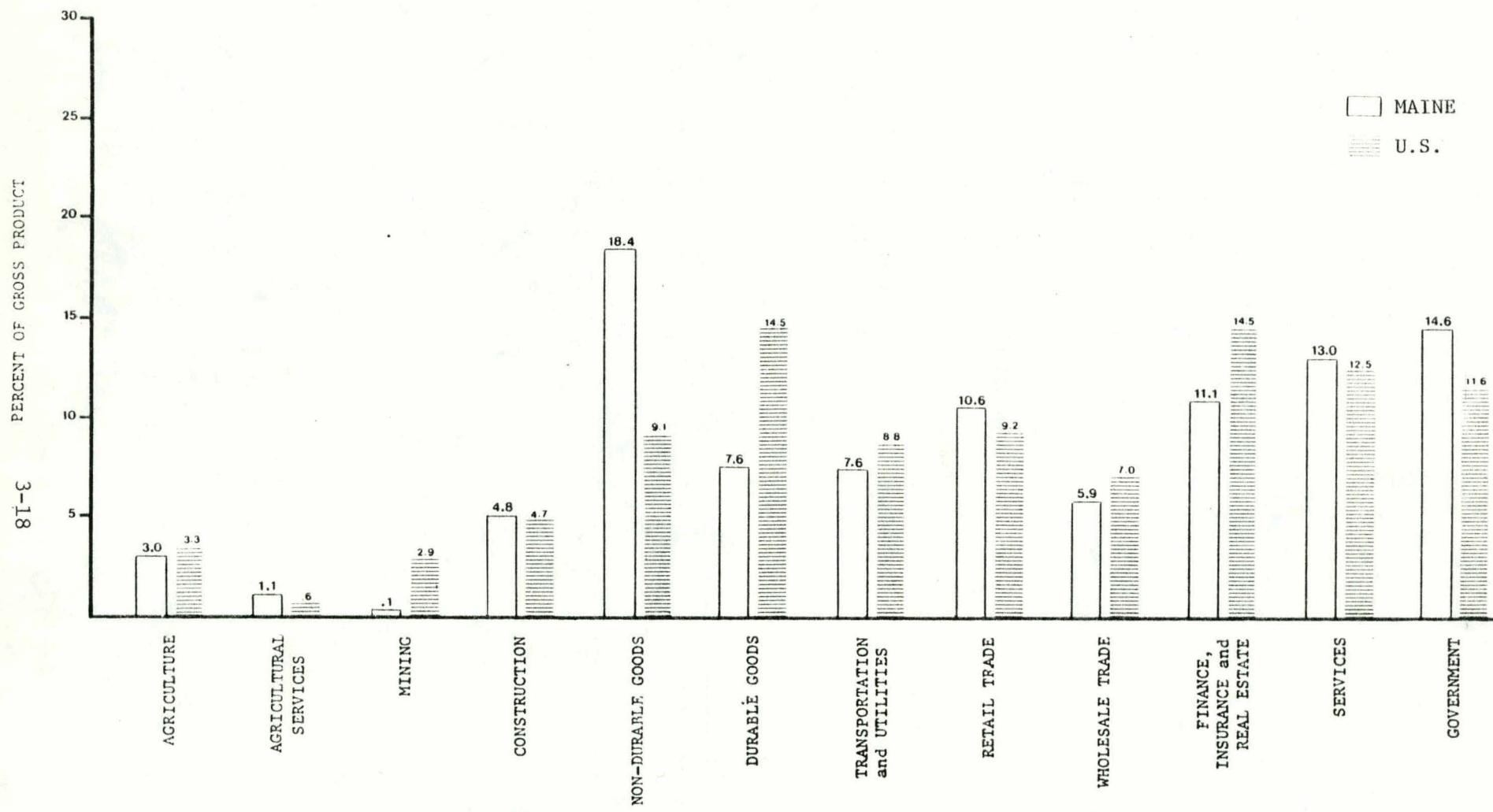


FIGURE 3-9. PERCENT OF GROSS PRODUCT BY INDUSTRY FOR 1979: UNITED STATES AND MAINE (45)

3.6 Schools, Hospitals, and Federal Laboratories and Military Installations

Maine's schools, hospitals, and Federal laboratories and military installations are potential low-level radioactive waste generators. This section identifies the number of Nuclear Regulatory Commission licensees among those institutions and provides background information.

3.6.1 Schools

Four colleges and one university have Nuclear Regulatory Commission licenses to use radioactive material. They are located in Androscoggin, Cumberland, Hancock, Kennebec, and Penobscot counties.⁽²⁹⁾

In the fall of 1980, there were 240,112 students enrolled in public and private elementary and secondary schools in Maine⁽³⁰⁾ (see Table B-1 in Appendix B for enrollments by county and by type of student). In addition, there were 47,748 students enrolled in public and private schools of higher education⁽³¹⁾ (see Table B-1 for enrollments by county), for a total of 287,860 students of all types enrolled throughout the State.

3.6.2 Hospitals⁽³²⁾

Twenty of the fifty-three hospitals have Nuclear Regulatory Commission licenses to use radioactive material. Three each are located in Cumberland, Kennebec, and Penobscot counties, two each in Androscoggin, Aroostook, and Oxford counties, and one each in Franklin, Hancock, Knox, Sagadahoc, and Somerset counties.

Fifty-three hospitals provide health care services in Maine. (See Table B-2 in Appendix B for a list of hospital services and number of beds by county.)

3.6.3 Federal Laboratories and Military Installations⁽³³⁾

There is one Federal laboratory in Maine, the New England Plant, Soil, and Water Laboratory, operated by the U.S. Department of Agriculture. It does not have a license to use radioactive material. Table B-3 provides details on this laboratory.

Four major military installations are located in Maine. These are the Brunswick Naval Air Station in Brunswick, Loring Air Force Base in Limestone, and Coast Guard bases in South Portland and Southwest Harbor.

3.7 Land Use (34,35,36)

As is shown in Figure 3-10, much of the land in Maine is devoted to forests, agriculture, and recreational areas. Forests cover 17 million acres, about 90 percent of the total land area. Most of the forested land is privately owned as tree farms and contains second-growth trees, primarily white pine. Other types of farms are located throughout the State, and produce poultry and dairy products, cattle, hogs, fruits, and vegetables. (See Section 3.5.4. for a discussion of Maine's agriculture.)

Maine has one National Park, 25 State Parks, and one County Park. The two largest, the Allagash Wilderness Waterway and Baxter State Park, are located in the north central part of Maine; each contains approximately 200,000 acres. Acadia National Park, covering over 30,000 acres, lies on the Maine coast at Bar Harbor and on Isle au Haut. Seven National Wildlife Refuges occupying over 29,000 acres are also found in Maine.

There are three Indian reservations in Maine. The Penobscot Reservation in Penobscot County occupies 4,446 acres. In Washington County, the Pleasant Point and Indian Township Reservations are home to approximately 652 Indians of the Passamaquoddy Tribe and cover 23,100 acres.⁽³⁷⁾ Following a recent court settlement on Indian land claims, Maine Indians have purchased approximately 300,000 acres of land. However, this land is not part of any reservation.

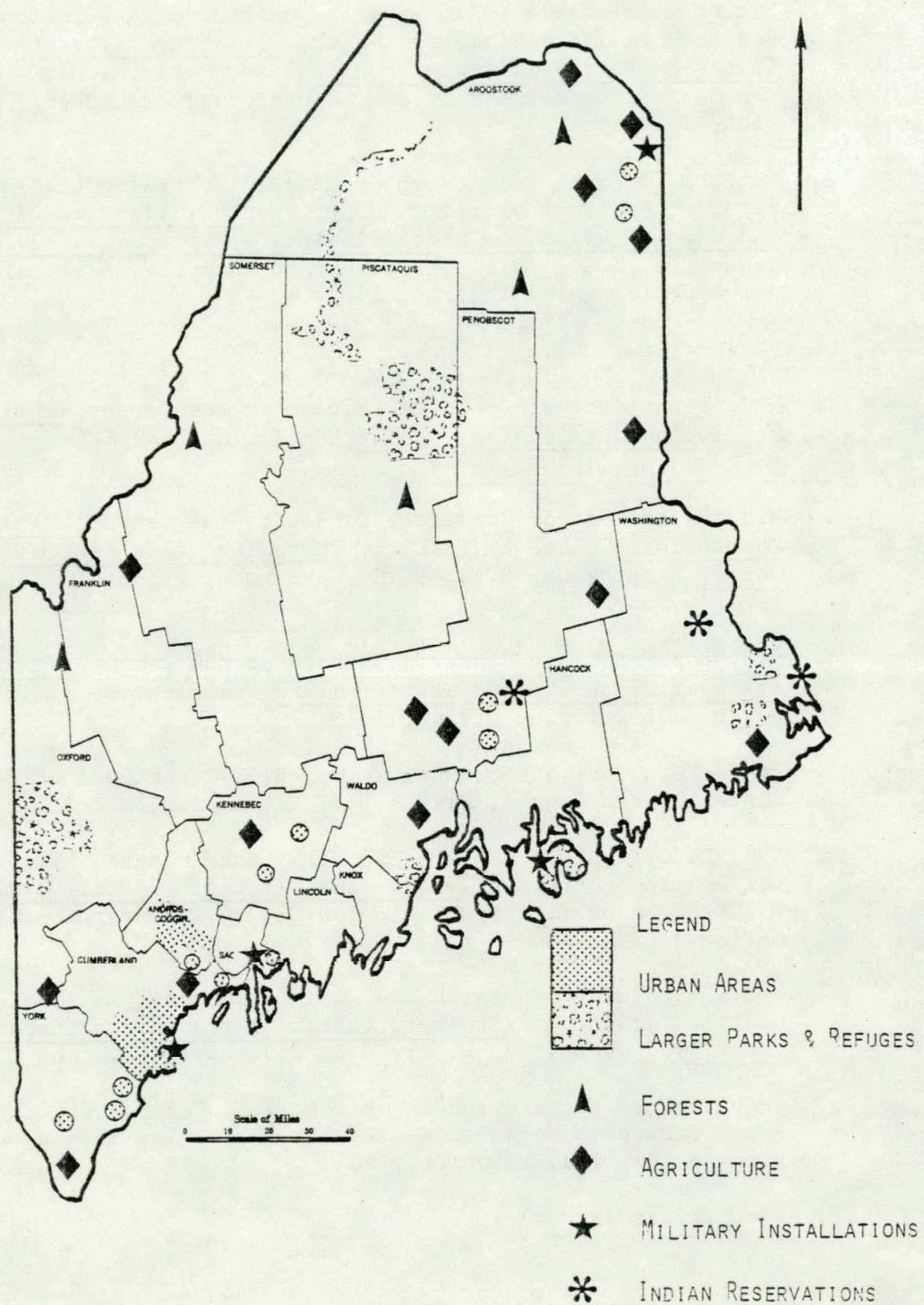


FIGURE 3-10. LAND USE: MAINE (46)

REFERENCES

Text

1. National Oceanic and Atmospheric Administration, Environmental Data Service, National Climatic Center, Climatography of the United States Number 60, Climate of Maine, Asheville, N.C.: U.S. Department of Commerce, National Oceanic and Atmospheric Administration, January 1977.
2. National Oceanic and Atmospheric Administration, Environmental Data Service, National Climatic Center, Monthly Averages of Temperature and Precipitation for State Climatic Divisions 1941-1970, Asheville, N.C.: U.S. Department of Commerce, National Oceanic and Atmospheric Administration, 1973.
3. (See Reference 1.)
4. U.S. Department of Commerce, Bureau of the Census, 1980 Census of Population and Housing: Maine, Preliminary Reports, PHC80-P-21, January 1981.
5. U.S. Department of Commerce, Bureau of the Census, 1970 Census of Population, Volume 1, Part 21, Characteristics of the Population: Maine, Washington, D.C.: U.S. Government Printing Office, 1973.
6. U.S. Department of Commerce, Bureau of the Census, Statistical Abstract of the United States: 1979, Washington, D.C.: U.S. Government Printing Office, 1979.
7. Linda Kehn, private communication, U.S. Department of Commerce, Bureau of the Census, Division of Population, March 3, 1981.
8. U.S. Department of Health, Education and Welfare, National Center for Health Statistics, Vital Statistics of the United States, Volume 1, Natality, Washington, D.C.: U.S. Government Printing Office, 1972-1978.
9. U.S. Department of Health and Human Resources, National Center for Health Statistics, Vital Statistics of the United States, Volume 1, Natality, Washington, D.C.: U.S. Government Printing Office, 1979.
10. Judy Thorne, private communication, U.S. Department of Health and Human Services, National Center for Health Statistics, Division of Vital Statistics, March 20, 1981.
11. (See Reference 10.)

REFERENCES (continued)

12. U.S. Department of Health, Education and Welfare, Vital Statistics of the United States, Volume 2, Mortality, Washington, D.C.: U.S. Government Printing Office, 1972-1978.
13. U.S. Department of Health and Human Services, Vital Statistics of the United States, Volume 2, Mortality, Washington, D.C.: U.S. Government Printing Office, 1979.
14. (See References 8,9,10.)
15. (See References 11,12,13.)
16. (See References 8,9,10.)
17. (See References 11,12,13.)
18. U.S. Department of Commerce, Bureau of the Census, Annual Estimates of the Population of States: July 1, 1970 to 1979, with Components of Changes, 1970 to 1979, Current Population Reports, Population Estimates and Projections, Series P-25, No. 876, February 1980.
19. A Standard Metropolitan Statistical Area is an area designated by the Office of Management and Budget, consisting of a county or group of counties containing at least one city (or "twin cities") of 50,000 or more population plus any adjacent counties which are metropolitan in character and economically and socially integrated with the central county or counties.
20. U.S. Department of Commerce, Bureau of the Census, Illustrative Projections of State Population: 1975 to 2000 (Advance Report), Current Population Reports, Population Estimates and Projections, Series P. 25, No. 735, October 1978.
21. State of Maine, Planning Office, Municipal Population Projections, 1970-1984, February 1980.
22. U.S. Department of Commerce, Bureau of the Census, County Business Patterns, 1977, Maine, CBP-77-20, April 1979.
23. (See Reference 6.)
24. U.S. Department of Commerce, Bureau of Economic Analysis, Regional Economic Information System Computer Output, "Major Sources of Personal Income in the United States, Table A-2," Washington, D.C.: Department of Commerce, April 1981.
25. U.S. Department of Commerce, Bureau of Economic Analysis, National Income Accounts by Industry Computer Output, "Gross National Product by Industry, Table 6-1" Washington, D.C.: Department of Commerce.

REFERENCES (continued)

26. U.S. Department of Commerce, Bureau of the Census, 1978 Census of Agriculture Preliminary Report, Maine, AC78-P-23-00, May 1980, pp. 1-8.
27. U.S. Department of Commerce, Bureau of the Census, 1976 Census of Agriculture, 1978.
28. U.S. Department of Commerce, National Marine Fishery Service, Fisheries of the U.S., 1979.
29. Androscoggin: Bates College; Cumberland: Bowdoin College; Hancock: Maine Maritime Academy; Kennebec: Colby College; Penobscot: University of Maine at Orono.
30. Maine Department of Educational and Cultural Services, "Fall Enrollment 1980-1981, ED 517", computer printout, Augusta: Maine Department of Education and Cultural Services, February 1981.
31. Maine Department of Educational and Cultural Services, Maine Post-Secondary Schools 1980-81, Augusta: Maine Department of Education and Cultural Services, undated.
32. American Hospital Association, Guide to the Health Care Field, Chicago: American Hospital Association, 1980.
33. U.S. Congress, House, Committee on Appropriations, Subcommittee on Agriculture and Related Agencies, Investigative Report on "Utilization of Federal Laboratories, 95th Cong., 2nd sess., Washington, D.C.: U.S. Government Printing Office, 1978.
34. State of Maine, Department of Transportation, "Official Transportation Map, 1979-1980", Augusta, 1979.
35. U.S. Department of Commerce, Federal and State Indian Reservations and Indian Trust Areas, Washington, D.C.: U.S. Government Printing Office, 1974.
36. The World Book Encyclopedia, Volume 13, Chicago: World Book-Childcraft International, Inc., 1979.
37. 1980 Commercial Atlas and Marketing Guide, Chicago: Rand McNally and Co., 1980.

Figures

38. Hammond Ambassador World Atlas, Maplewood, N.J.: 1977.
39. (See Reference 1.)

REFERENCES (continued)

40. (See Reference 4.)
41. (See Reference 4.)
42. (See Reference 4.)
43. (See Reference 22.)
44. (See Reference 22.)
45. (See References 24 and 25.)
46. (See References 34 and 35.)

Tables

47. (See References 4, 5, and 20.)
48. (See Reference 22.)
49. (See References 24 and 25.)

4. GOVERNMENT STRUCTURE

This section presents an overview of Maine State government and identifies the government institutions and agencies with statutory authority or informal responsibilities affecting the generation, handling, and disposal of radioactive waste within the State. Federal initiatives are also discussed.

4.1 Major Political Parties⁽¹⁾

Democrats hold 16 seats and Republicans 17 seats in the Maine State Senate. In the lower legislative body, Democrats hold 84 and Republicans 67 seats. All the elective State officers in the executive branch of State government are Democrats. One of Maine's senators belongs to the Democratic Party; one senator and two representatives belong to the Republican Party.

4.2 Congressional Delegation⁽²⁾

Maine's two United States senators are William S. Cohen and George Mitchell. Senator Cohen serves on the Indian Affairs, Governmental Affairs and Armed Services Committees, and on the Special Committee on Aging. Senator Mitchell serves on the Environmental, Public Works, Finance and Veterans Affairs Committees. The senators' committee assignments are presented in more detail in Table 4-1.

Senators Cohen and Mitchell have both indicated their concern with low-level radioactive waste management issues, and both supported the Low-Level Waste Policy Act. At the same time, Senator Cohen's office noted Maine's concern with the high-level waste disposal problem in light of Maine Yankee's current storage problems. Senator Cohen supports Federal initiatives in this area.⁽³⁾

Figure 4-1 shows the two Congressional districts in Maine. Maine's United States representatives are David F. Emery and Olympia J. Snowe. Their committee assignments, party affiliation, and tenure are summarized in Table 4-1. Congressman Emery serves on the Merchant Marine and Fisheries and Armed Services Committees. Congresswoman Snowe

TABLE 4-1. MAINE MEMBERS OF THE UNITED STATES CONGRESS(10)

<u>State Delegate</u>	<u>District</u>	<u>Party Affiliation</u>	<u>Beginning of Present Service</u>	<u>Committee Assignments</u>
<u>Senate:</u>				
George J. Mitchell	Statewide	Democrat	1980	<p>Environment and Public Works Committee</p> <ul style="list-style-type: none"> - Environmental Pollution - Regional and Community Development - Nuclear Regulation
William S. Cohen	Statewide	Republican	1979	<p>Finance Committee</p> <ul style="list-style-type: none"> - Savings, Pensions and Investment Policy - Economic Growth, Employment and Revenue Sharing - Energy and Agricultural Taxation <p>Veterans' Affairs Committee</p> <p>Indian Affairs Committee</p> <p>Governmental Affairs Committee</p> <ul style="list-style-type: none"> - Investigations - Energy, Nuclear Proliferation and Government - Oversight of Government Management Process <p>Armed Services Committee</p> <ul style="list-style-type: none"> - Sea Power and Force Projection - Strategic and Theater Nuclear Forces - Manpower and Personnel <p>Special Committee on Aging</p>
<u>House of Representatives:</u>				
David F. Emery	First	Republican	1975	<p>Armed Services Committee</p> <ul style="list-style-type: none"> - Seapower and Strategic and Critical Materials - Research and Development <p>Merchant Marine and Fisheries Committee</p> <ul style="list-style-type: none"> - Oceanography - Fisheries and Wildlife Conservation and the Environment
Olympia J. Snowe	Second	Republican	1979	<p>Foreign Affairs Committee</p> <ul style="list-style-type: none"> - Europe and Middle East - Africa <p>Small Business Committee</p> <ul style="list-style-type: none"> - Tax, Access to Equity Capital and Business Opportunity <p>Special Committee on Aging</p>

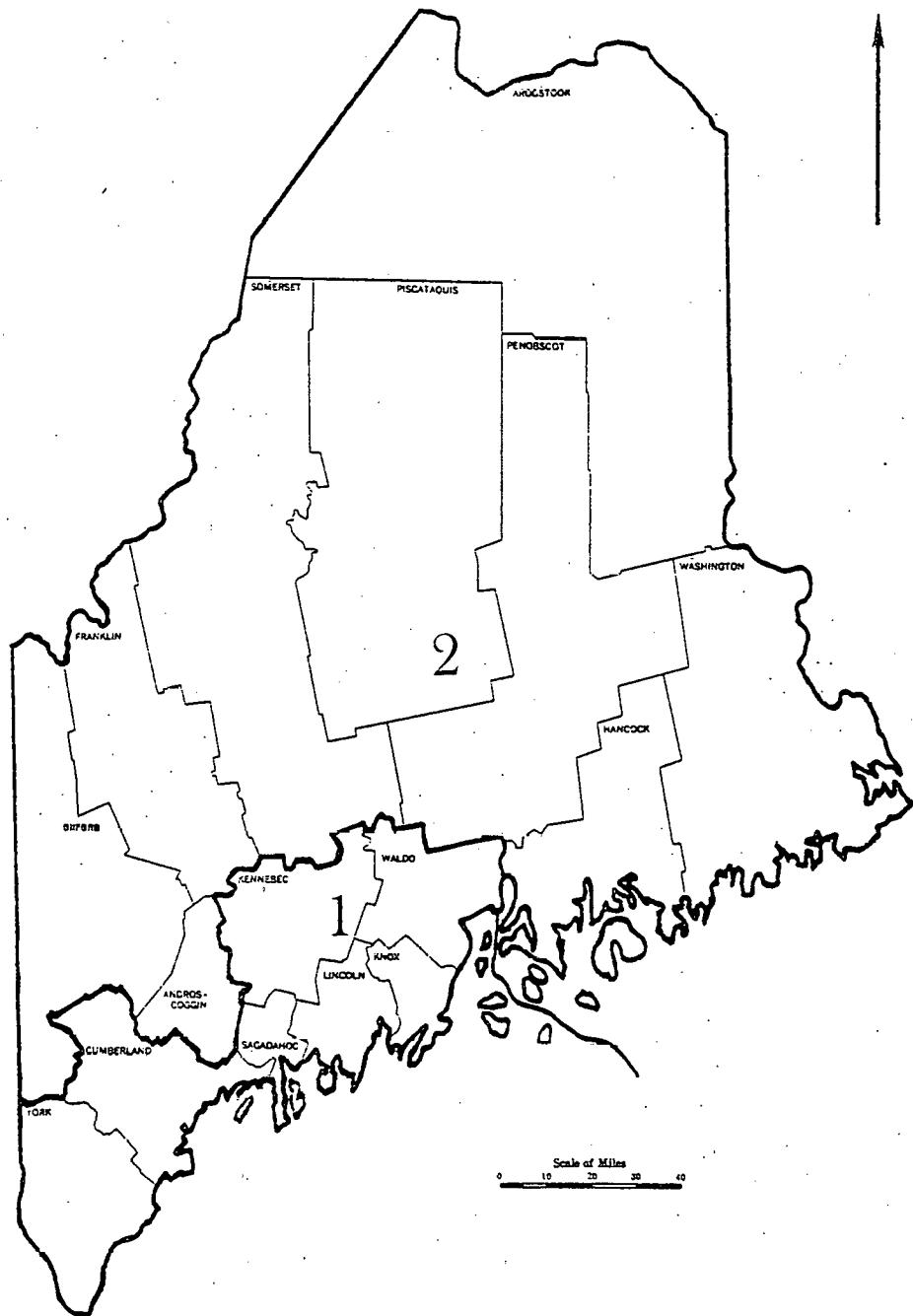


FIGURE 4-1. CONGRESSIONAL DISTRICTS: MAINE⁽⁷⁾

serves on the Foreign Affairs and Small Business Committees, and on the Select Committee on Aging. Congresswoman Snowe supports a national policy for the disposal of commercial low-level waste, and regional compacts for this purpose. She is in favor of the consolidation of Federal regulatory authority in the area of radiation safety and has proposed an assessment of the current status of research on the health effects of low-level radiation. A complete statement of her views on low-level waste issues can be found in Appendix I. Congressman Emery's office indicated that he supports the regional siting efforts so long as strict safeguards are maintained, but that the Congressman believes that high-level waste poses a more immediate problem in Maine.⁽⁴⁾

Congressional interest in radioactive waste issues has continued in the 97th Congress with ten House bills and two Senate bills pending at the committee level. Table 4-2 summarizes the objectives and status of this legislation and includes a summary of the Maine delegation's potential ties to the legislation. No Maine member of Congress has introduced or co-sponsored legislation relating to radioactive waste disposal. However, Representatives Emery and Snowe currently serve on the committees and subcommittees reviewing three of the House bills, and Senator Cohen serves on the committee reviewing the Nuclear Waste Management Reorganization Act of 1981.

4.3 State Government

4.3.1 Executive Department

The executive department, headed by the Governor, is supported by the State departments and numerous related agencies, boards and commissions. The current Governor of Maine is Joseph E. Brennan, who was elected in November 1978 and whose term expires in January 1983.

The Governor's Nuclear Safety Advisory Commission (Gordon Weill, Chairman) has been largely concerned with nuclear power and high-level nuclear waste issues. However, it may in the near future become involved in low-level radioactive waste management issues. Also, Kirk Studstrup of the Office of the Governor has participated in discussions with regard to the establishment of a State or New England low-level radioactive waste disposal site.

TABLE 4-2. SUMMARY OF LEGISLATION RELATING TO RADIOACTIVE WASTE INTRODUCED IN THE 97TH CONGRESS⁽¹¹⁾

Bill Number	Title of Legislation	Description of Legislation	Sponsoring Member	Committee Jurisdiction	Maine Members Serving on Committee	Legislative Status
HR 29	A Bill to Require a Study of the Effects of Past Ocean Dumping of Radioactive Waste	Requires the Dept. of Commerce to conduct a study on the effects of radioactive waste disposal in ocean waters from 1946-1970 on marine and human life. Requires that the sites be located and surveyed.	Anderson (CA)	1) Merchant Marine and Fisheries Subcommittee on Oceanography 2) Science and Technology Subcommittee on Agricultural Research and Environment	David Emery None	Referred to committees- no action. Received favorable comment from Dept of Commerce.
HR 751	Nuclear Energy Reappraisal Act of 1981	Requires the blocking of new licenses and the termination of renewal licenses for nuclear power plants pending a 5-year study to OTA. Study is to include safety and environmental hazards and waste disposal problems.	Fish (NY)	1) Foreign Affairs Subcommittee on International Security and Subcommittee on International Economic Policy and Trade 2) Interior and Insular Affairs Subcommittee on Energy and Environment 3) Energy and Commerce Subcommittee on Energy Conservation and Power	Olympia Snowe None None	Referred to committees- no action.
HR 1106	Radioactive Waste Management Act of 1981	Requires the Secretary of Energy to notify any State of any investigation to construct a radioactive waste storage site and allow the State to prevent siting by a State referendum or petition by the State Legislature.	Hinson (MS)	1) Energy and Commerce Subcommittee on Energy Conservation and Power 2) Interior and Insular Affairs Subcommittee on Energy and Environment	None None	Referred to committees- no action.
HR 1412	New Jersey Radium Pollution Control Act of 1981	Authorizes DOE to determine sites in NJ where radium pollution has occurred. Remedial action is to be undertaken to limit health hazards of identified sites.	Minish (NJ)	1) Interior and Insular Affairs Subcommittee on Energy and Environment	None	Referred to committees- no action.

TABLE 4-2. SUMMARY OF LEGISLATION RELATING TO RADIOACTIVE WASTE INTRODUCED IN THE 97TH CONGRESS (continued)

Bill Number	Title of Legislation	Description of Legislation	Sponsoring Member	Committee Jurisdiction	Maine Members Serving on Committee	Legislative Status
HR 1720	A Bill to Require a Task Force to Identify Ocean Sites and Nature of Radioactive Waste Dumped in the Ocean	Establishes an Interagency Task Force to prepare an inventory of ocean sites at which radioactive waste has been dumped, assess adverse effects, and develop a plan for monitoring such sites.	Hughes (NJ)	1) Merchant Marine and Fisheries Subcommittee on Oceanography 2) Science and Technology Subcommittee on Natural Resources and Subcommittee on Energy Research and Production	David Emery None	Referred to committees- no action. Received comment from GAO and NRC.
HR 1993	Radioactive Waste Research, Development and Policy Act	Provides for the development of a plan for disposal of radioactive waste. Requires construction of a demonstration dry storage facility, establishment of Federal waste policy, and development of a disposal siting study.	Lundine (NY)	1) Energy and Commerce Subcommittee on Energy Conservation and Power and Subcommittee on Energy Research and Production 2) Interior and Insular Affairs Subcommittee on Energy and Environment	None None	Referred to committees- no action.
HR 1909	Nuclear Waste Research, Development and Demonstration Act of 1981	Accelerates DOE research, development, and technology demonstration of radioactive waste disposal. Includes the establishment of a high-level demonstration storage site.	Coldwater (CA)	1) Science and Technology Subcommittee on Energy Research and Production	None	Hearing held by full committee Feb. 26, 1981.
HR 2800	Nuclear Reactor Moratorium and Nuclear Waste Prohibition Act	Prohibits NRC from issuing new or renewal licenses for power reactors until an OTA study is completed. Prohibits any nuclear disposal site near densely populated areas.	Oaker (OH)	1) Energy and Commerce Subcommittee on Energy Conservation and Power 2) Interior and Insular Affairs Subcommittee on Energy and Environment	None None	Referred to committees- no action.

TABLE 4-2. SUMMARY OF LEGISLATION RELATING TO RADIOACTIVE
WASTE INTRODUCED IN THE 97TH CONGRESS (continued)

Bill Number	Title of Legislation	Description of Legislation	Sponsoring Member	Committee Jurisdiction	Maine Members Serving on Committee	Legislative Status
HR 2840	Nuclear Waste Policy Act	Establishes a program of Federal storage of fuel from power plants including a Federal interim storage and disposal facility	Huckaby (LA)	1) Interior and Insular Affairs Subcommittee on Energy and Environment 2) Energy and Commerce Subcommittee on Energy Conservation and Power	None	Referred to committee-no action.
HR 2881	Nuclear Waste Management Policy Act	Establishes permanent repositories for trans-uranic and high-level waste and fuel.	Derrick (SC)	1) Energy and Commerce Subcommittee on Energy Conservation and Power 2) Interior and Insular Affairs Subcommittee on Energy and Environment 3) Science and Technology Subcommittee on Natural Resources, Agricultural Research and Environment	None	Referred to committee-no action.
Senate 95	Nuclear Waste Management Reorganization Act of 1981	Reorganizes Federal gov. to strengthen programs and policy with respect to Nuclear Waste Management Planning Council.	Percy (IL)	Government Affairs Subcommittee on Energy, Nuclear Proliferation and Government Processes	William Cohen	Referred to committee-no action.
Senate 637	Nuclear Waste Policy Act	Establishes a program for Federal storage of spent nuclear fuel and develops a program to address nuclear waste disposal issues.	Johnson (LA)	Energy and Natural Resources Committee	None	Referred to committee-no action.

The Secretary of State, Treasurer of State, Attorney General and State Auditor are elected biennially by joint ballot of both Houses of the Legislature. With the exception of the State Auditor, they are elected for two-year terms. The State Auditor is elected for a four-year term.

Secretary of State. The Secretary of State serves as executive head of the Department of the Secretary of State. He or she is responsible for a variety of State governmental activities, and as the general recording officer of the State distributes information and instructions, ballots and blanks for election returns; files articles of incorporation; registers lobbyists; registers motor vehicles and issues operators' licenses; and performs a number of other, related functions. The current Secretary of State is Rodney S. Quinn. His term expires in December 1982.

Treasurer of State. The Treasurer of State is authorized to receive, manage, and keep records of all income accruing to the State and to sell bonds of the State. Samuel Shapiro currently serves as State Treasurer.

Attorney General. The responsibility of the Attorney General and his or her office is to serve as the State's chief law officer and legal representative of the State. In this capacity, the Attorney General appears for the State in actions in which the State is a party or in which the State has an interest; controls and directs the prosecution of major crimes; provides legal services to State officials in matters relating to their official duties; administers and enforces State antitrust laws; and performs other, related functions. The Attorney General is also an ex-officio member of many State agencies. The current Attorney General is James E. Tierney.

State Auditor. The Department of Audit was established to provide post audits of all accounts and other financial records of State government, and to report on this audit as required by the Legislature. The Department is authorized to serve as a staff agency to the Legislature or the Governor in investigating State finances and to review and study the expenditures of State departments, boards and agencies. George J. Rainville currently serves as State Auditor. His term expires in December, 1984.

State Departments. There are 14 State departments in Maine. These are listed in Appendix C. In addition, there are numerous unaffiliated agencies, boards and commissions. Several of the State agencies have direct or potential responsibilities with regard to low-level radioactive waste management. These include:

Department of Human Services, Division of Health Engineering (Donald Hoxie, Director). As Maine is a non-agreement State, the Nuclear Regulatory Commission is responsible for licensing users of most radioactive materials. However, the division conducts a limited number of inspections and responds to accidents and spills which involve these materials. All radioactive materials used in nuclear medicine and industry are registered with the department.

Department of Environmental Protection. At the present time this department has no official role with regard to low-level radioactive waste management in Maine. However, because of its role in the regulation of hazardous waste, any Maine initiatives in the regulation of low-level radioactive waste storage and disposal would likely be accomplished through this department. John Brochu, a member of the department's Hazardous Materials division, was one of Maine's representatives at the November 1980 New England hearings on the Nuclear Regulatory Commission's proposed Low Level Waste Management Licensing Rule.

Other State agencies with a potential interest in low-level radioactive waste include the Hazardous Materials Task Force and the Department of Transportation.

4.3.2 Legislative Department

Legislative power in Maine is vested in the Senate and House of Representatives. The Senate consists of 33 members, of whom 16 are Democrats and 17 are Republicans; and the House of Representatives consists of 151 members, of whom 84 are Democrats and 67 are Republicans. Each Senator and Representative is elected from a single-member district. The districts are shown in Figures 4-2 and 4-3 Appendix C contains a list of the current members of the Maine Legislature.

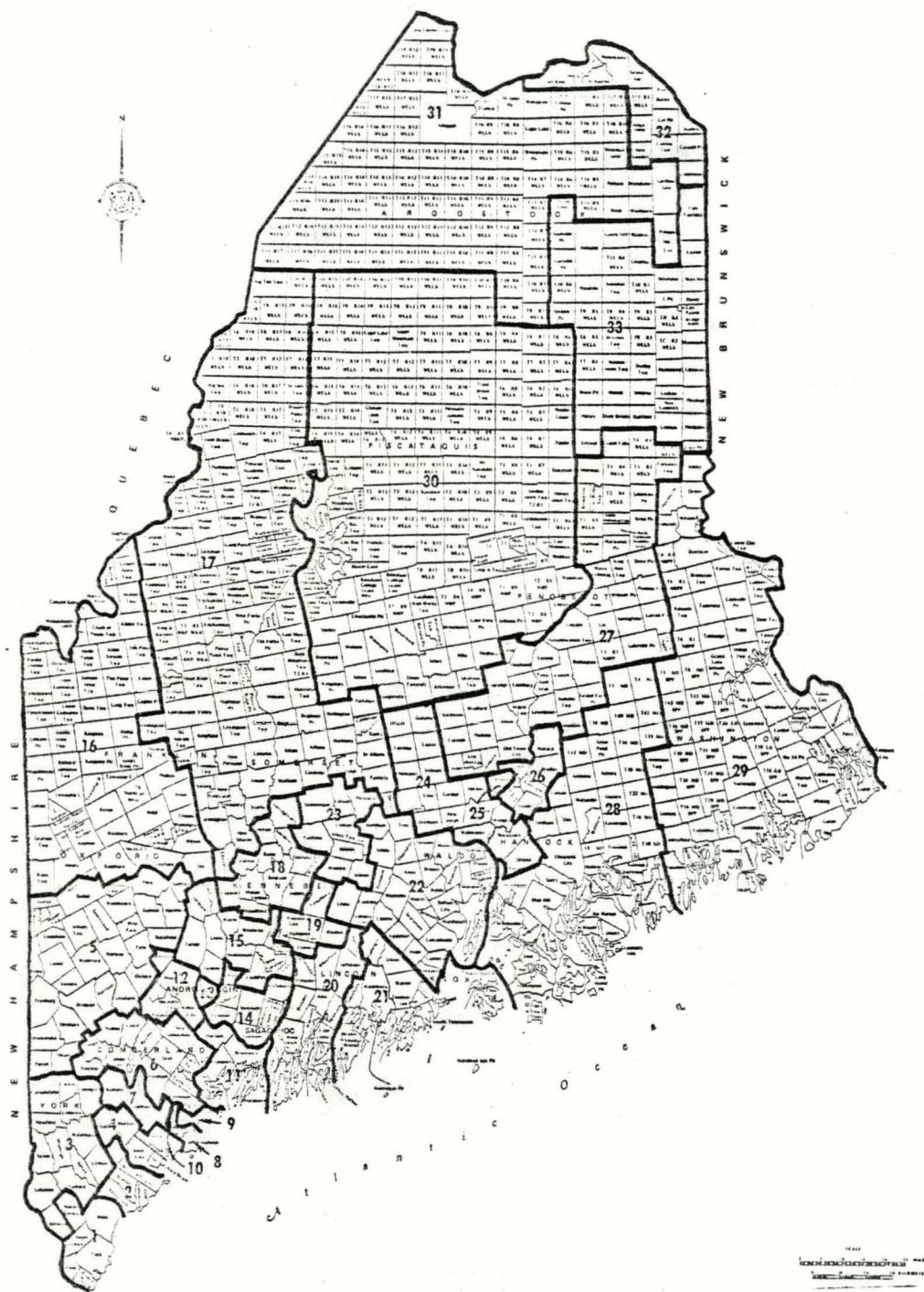


FIGURE 4-2. STATE SENATE DISTRICTS: MAINE (8)

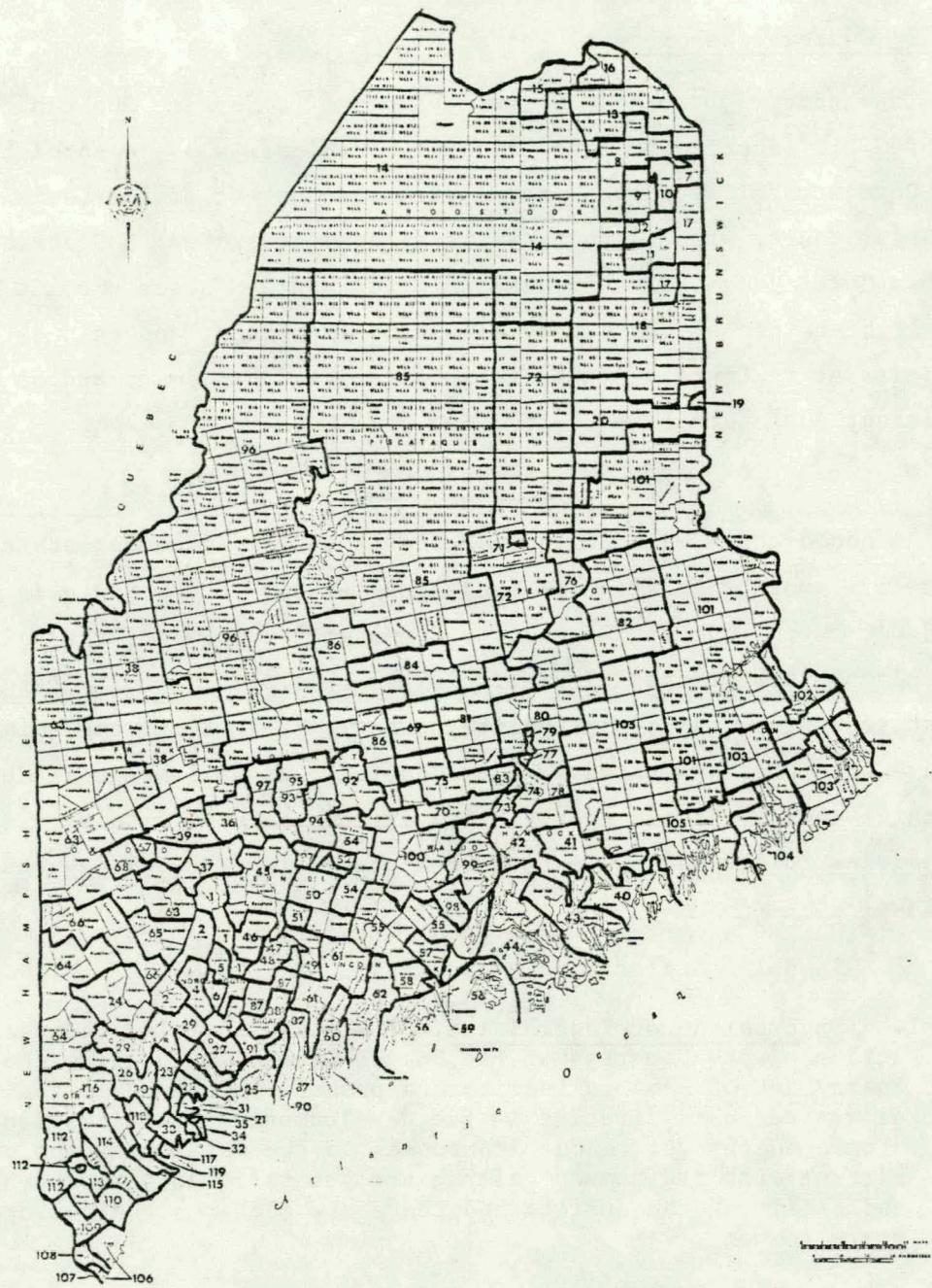


FIGURE 4-3. STATE HOUSE OF REPRESENTATIVES DISTRICTS: MAINE (9)

As described in Section 2.3, the Radioactive Waste Subcommittee of the Energy and Natural Resources Committee has been the focal point of Maine State activities with regard to low-level waste.

4.3.3 Judicial Department

The judicial branch in Maine consists of a Supreme Judicial Court, with a Chief Justice and six Associate Justices, who are appointed by the Governor for seven-year terms with the consent of the Legislature; a Superior Court, with 14 justices, similarly appointed; a District Court, with a Chief Judge, five judges-at-large, and 14 judges who sit within the 13 districts of the court, similarly appointed; and an Administrative Court, with an Administrative Court Judge and an Assistant Administrative Court Judge.

4.4 State Laws⁽⁵⁾

As noted above, the State of Maine is not an agreement state. Therefore, most regulation of nuclear materials in the State is carried out by the Nuclear Regulatory Commission. However, the Maine Legislature has enacted a number of laws regulating atomic energy as an exercise of its traditional police powers. Title 10 of the Maine Revised Statutes Annotated (MRSA), Chapter 3 establishes policies for peaceful uses of atomic energy. Its express intent is to regulate these activities to the maximum extent consistent with Federal law, as follows:

10 MRSA ¶51. Declaration of policy.

1. Endorsement of Federal Act. The State of Maine endorses the action of the Congress of the United States in enacting the Atomic Energy Act of 1954 to institute a program to encourage the widespread participation in the development and utilization of atomic energy for peaceful purposes to the maximum extent consistent with the common defense and security and with the health and safety of the public; and therefore declares the policy of the state to be:

A. Cooperation. To cooperate actively in the program thus instituted; and

B. Regulation. To the extent that the regulation of special nuclear materials, source materials and by-product materials, of production facilities and utilization facilities, and of other forms of radiation, and of persons operating such facilities may be within the jurisdiction of the State, to provide for the exercise of the State's regulatory authority so as to conform, as nearly as may be, to the Atomic Energy Act of 1954 and regulations issued thereunder, to the end that there may, in effect, be a single harmonious system of regulation within the State.

Five sections of State laws deal specifically with radioactive wastes. 1 MRSA ¶15-A states:

Notwithstanding any other provision of this chapter, this State does not consent to the acquisition by the United States Government, by purchase, condemnation, lease, easement or by any other means, of any land, building or other structure, above or below ground, in or under the waters of the State, for use in storing, depositing or treating radioactive waste materials, except by prior affirmative vote of the Legislature.

10 MRSA ¶253 requires an affirmative finding by the Public Utilities Commission that the United States Government has identified and approved a demonstrable technology for disposal of high-level radioactive waste prior to licensing new nuclear power plants.(6)

10 MRSA ¶254(1) requires that the State Public Utilities Commission determine case-by-case that a facility for high-level nuclear waste disposal is in actual operation, or will be in operation, at the time the nuclear power plant being certified requires the means for such disposal. Upon petition, 10 MRSA ¶255 requires the State Public Utilities Commission to conduct public hearings and make specific findings as to the existence of an identified and approved demonstrable technology for high-level nuclear waste disposal. Finally, 38 MRSA ¶361-D directs the State Board of Environmental Protection to investigate at public hearing any proposal to construct or operate a temporary or permanent radioactive waste depository, in order to determine whether the project will require a waste water discharge license or, an air emission license or be subject to any of the other existing environmental laws administered by that Board.

The State has also enacted laws relating to utility rate-making, an area expressly delegated to the States by Federal law. An example of this regulation is 35 MRSA §13-A, which requires that any new electrical generating facility obtain a Certificate of Public Convenience and Necessity from the State, based upon a demonstration of the need for the power to be generated and the cost-effectiveness of the means chosen to generate that power. It is conceivable that the Public Utilities Commission could deny this certificate because of anticipated costs of facility decommissioning or nuclear waste disposal.

4.5 Federal Activities on Low-Level Radioactive Waste Management in Maine

The Federal government is considering Maine as a possible site for the permanent storage of high-level radioactive wastes. Maine is one of 16 States under consideration in the hard rock program and will be studied as to its capacity to store nuclear wastes in granite formations. This proposal has generated significant opposition from State officials and the general public.

REFERENCES

Text

1. Joint Committee on Printing, Congressional Directory 1981, 97th Congress, Washington, D.C.: U.S. Government Printing Office, 1981.
2. (See Reference 1.)
3. Thomas Heyerdahl, private communication, Senator Cohen's office, March 21, 1981.
4. Daniel Smith, private communication, Representative Emery's office, March 21, 1981.
5. "Report of the Radioactive Waste Subcommittee of the Energy and Natural Resources Committee, Pursuant to Public Law 1979, Chapter 519," January 1, 1981.
6. The Federal Atomic Energy Act preempts certain State authority in areas related to atomic energy. Exactly how much State authority this Act preempts is a subject of much debate. There are two suits pending in the U.S. Ninth Circuit Court of Appeals (Pacific Legal Foundation vs. State Energy Resources Conservation and Development Commission and National Resources Defense Council) testing how wide a preemptive swath is cut by the Atomic Energy Act. Because these suits would affect several of Maine's environmental and public utilities statutes, the State of Maine has filed amicus curiae briefs in both suits.

Figures

7. (See Reference 1.)
8. State of Maine, Department of Transportation, Bureau of Planning, "Minor Civil Divisions, State Senate," map, 1978.
9. (See Reference 8, "Minor Civil Divisions, House of Representatives.")

Tables

10. (See Reference 1.)
11. House Legislative Office, computer printout, "Pending Legislation Relating to Radioactive Waste," Washington, D.C.: U.S. Capitol, May 8, 1981.

5. INTEREST GROUPS CONCERNED WITH LOW-LEVEL RADIOACTIVE WASTE MANAGEMENT IN MAINE

A number of national, State, and local interest groups are concerned about the management of low-level radioactive waste. This section identifies some of these energy and environmental organizations and their particular areas of concern.

5.1 National Groups

National groups were contacted for two reasons; first, to assist in the development of a list of Maine interest groups, and second, to assess some of the national concerns surrounding low-level radioactive waste management. Groups were identified through the use of the Encyclopedia of Associations⁽¹⁾ and through the Library of Congress' National Referral Service. The national groups contacted made referrals to other national as well as State and local groups with a potential interest in the low-level radioactive waste issue. Ultimately, 22 national groups were contacted (see Appendix E for a listing).

Most of the groups contacted were concerned with the issue of radioactive waste, particularly high-level waste. However, few had an official position on low-level radioactive waste management. Only two groups, the League of Women Voters of the United States and the American Public Health Association, supplied position papers. These papers are discussed below:

League of Women Voters of the United States.⁽²⁾ The League of Women Voters paper states its position on nuclear issues and is designed to supply guidance to State and local Leagues. The paper makes no specific mention of low-level radioactive waste management, although the management of high-level waste is discussed at some length. In a related activity, the League Education Fund recently published a booklet entitled "A Nuclear Waste Primer" which offers the lay person an introduction to the issues of nuclear waste.⁽³⁾ It provides information on the issues and highlights key points of view, but does not advocate any one choice for managing nuclear waste. Low-level radioactive waste, its transportation and other management issues, are addressed in the primer as part of the nuclear waste question.

American Public Health Association. (4) The American Public Health Association supplied a 1978 position paper entitled "The Public Health Impact of Energy Policy" which represents the current consensus of the Association's membership. The paper makes no mention of low-level radioactive waste management, but states that "waste disposal activities should either be operated by or very closely supervised by the Federal government."

A regional group of some importance in the low-level waste area is the New England Rad Waste Group (NELRAD). (5) Organized in late 1980, this group is a consortium of New England radioactive waste generators. Its purpose is to serve as a resource to State policy-makers as the issues of low-level radioactive waste disposal in New England are addressed. Initially, with the exception of Northeast Utilities, membership was exclusively from Massachusetts, with ties to other generators in the region, particularly to utilities. In the spring of 1981, attention focused on developing articles of association for the group. Once those are finalized, attention will turn to increasing membership. NELRAD was an observer at the initial meeting of the New England States concerning development of a regional compact.

5.2 State and Local Groups

The list of State and local groups identified as potentially having an interest in low-level radioactive waste management issues is included in Appendix E. The following discussion identifies the background, concerns, and activities of some of these organizations.

Interest groups in Maine can generally be categorized as belonging to one of three types. These are: local branches of national interest groups, other statewide interest groups, and pro- or anti-nuclear groups which were organized specifically to support or oppose the referendum on Maine Yankee. Branches of national groups include Friends of the Earth, the League of Women Voters, the Sierra Club, and the Maine Public Interest Research Group. With the exception of the League of Women Voters, these groups supported the referendum to shut down Maine Yankee. There is reported to be disagreement among these groups about low-level radioactive waste issues, in particular about disposal options. Some favor the establishment of a safe, well-operated site, while others are opposed altogether to the disposal of radioactive waste in Maine.

Statewide interest groups with an expressed interest in radioactive waste management include the Maine Municipal Association, the Maine Audubon Society, and the Natural Resources Council of Maine. The Maine Municipal Association provides information on (but does not endorse) municipal ordinances regulating the transportation and disposal of radioactive waste (see Section 2.2.2).

The Natural Resources Council of Maine has 2,500 members and over 80 affiliated environmental organizations, making it one of the largest such organizations in Maine⁽⁶⁾. The Council has passed a resolution in support of the principle that those who generate radioactive waste should assume responsibility for the management of these wastes (see Appendix E), in which it is stated that "Maine should make a choice: either accept responsibility for both short- and long-term storage within the State of nuclear wastes, or cease generating electricity at nuclear plants in this State."

As noted above, the referendum on Maine Yankee gave rise to a number of pro- and anti-nuclear organizations. Only a few groups supported Maine Yankee. The most important of these was the Committee to Save Maine Yankee. This committee was largely funded by utilities and other industries, and does not seem to have survived its victory. Major anti-nuclear groups included:

- The Maine Nuclear Referendum Committee which originated the referendum. Founded by Raymond Shadis of Wiscasset and others; now headed by Alan Philbrook of Pittston;
- Safe Power for Maine, headed by (ex-Congressman) Stanley Tupper of Boothbay Harbor;
- The Congress for Safe Energy, John Rensenbrink of Bowdoin; and
- The Safe Energy Congress and Safe Energy Political Action Committee.

As with the other groups, some of these people now support a State or regional disposal site, particularly for medical wastes, and stressed the need to keep the cost of disposal low to reduce the incentive to dump illegally.⁽⁷⁾ Others supported widespread use of non-radioactive alternatives (e.g., in biomedical uses).⁽⁸⁾ Finally, some were vehemently opposed to the existence of any radioactive waste site, either in Maine or elsewhere in New England.⁽⁹⁾

REFERENCES

1. Encyclopedia of Associations: National Organizations of the U.S., Volume I, Detroit: Gale Research, 1979.
2. League of Women Voters of the United States, "Guidance on Nuclear Issues Under Positions of the League of Women Voters of the United States," memorandum, April 1, 1980.
3. League of Women Voters Education Fund, "A Nuclear Waste Primer," Pub. # 391, 1980.
4. American Public Health Association, "The Public Health Impact of Energy Policy," Washington, D.C., 1978.
5. Membership in NELRAD includes Boston Edison, Harvard University, Massachusetts Institute of Technology, New England Nuclear, Northeast Utilities, Yankee Atomic, University of Lowell, Technical Operations, Clinical Assay, Inc., Cambridge Nuclear, Interex Corporation, and Nuclear Metals, Inc.
6. Mark Ishkanian, private communication, National Resources Council of Maine, April 23, 1981.
7. Stanley Tupper, private communication, April 21, 1981.
8. Leslie Van Cott, private communication, Greater Portland Nuclear Referendum Committee, April 21, 1981.
9. Alan Philbrook, private communication, Maine Nuclear Referendum Committee, April 22, 1981.

6. PRINTED MEDIA REVIEW OF LOW-LEVEL RADIOACTIVE WASTE MANAGEMENT ISSUES

The purpose of the printed media review was to identify the types of issues related to low-level radioactive waste management discussed in general circulation newspapers. Newspaper articles were collected from the clipping files of the Nuclear Regulatory Commission. This file covered relevant articles from newspapers throughout the State.(1) The time period covered by the search was approximately the six-month period from late September 1980 through early March 1981.

During that period, most coverage of low-level radioactive waste issues in the Maine press was within the context of the Maine Yankee referendum. The exceptions were articles and editorials on the proposed State or New England low-level waste disposal site. In addition, the ban on radioactive waste disposal in Maine proposed by the Maine Nuclear Referendum Committee received some coverage.

A number of articles on the issues raised by the referendum cited low-level waste generation as one potential problem posed by the plant. The greater part of all other coverage of nuclear-related issues had to do with the referendum. This included more or less objective discussions of the issues, editorials and letters for and against the referendum, and post-mortems on what the outcome of the referendum means. Examples can be found in Appendix F.

Other press coverage of Maine Yankee included:

- Problems with procedures for evacuating the vicinity of Maine Yankee in case of a nuclear accident;
- The proposed plan to store more spent fuel at the Maine Yankee plant; and
- Procedures for monitoring the radiation produced by Maine Yankee.

Several other topics related to radioactive material have received newspaper coverage. These are linked either directly or by implication to low-level radioactive waste issues and indicate the broader context in which the subject is presented and discussed in newspapers. Examples of articles on ancillary topics are also included in Appendix F.

REFERENCES

1. Newspapers reviewed included:

The Topsham Maine Times;

The Bangor News;

The Portland Press-Herald;

The Lewiston Sun;

The Lewiston Journal;

The Brunswick Times Record;

The Waterville Sentinel;

The Kennebec Journal;

The Portland Express; and

The Portland Maine Sunday Telegram.

7. PROFILE OF LOW-LEVEL RADIOACTIVE WASTE GENERATORS

In order to develop a profile of low-level radioactive waste generators in Maine, a survey was conducted of facilities having a license to use radioactive material. The results of that survey are the subject of this section. Surveys were sent to 67 facilities identified as license holders by the Nuclear Regulatory Commission. Responses were received from 52 of these facilities (78 percent). A list of all licensed facilities is included in Appendix A. Table 7-1 shows the percent of license holders who responded to the survey by type of facility. Data on the disposal methods used by all respondents can be found in Table 2-2. The discussion and tables below deal with respondents who ship low-level radioactive waste.

7.1 Source of Shipped Waste

7.1.1 Type of Facility Shipping Waste

Twelve facilities in their response to the survey said that they dispose of low-level radioactive waste by shipping it to commercial disposal sites. Table 7-2 shows the number of shippers by type of facility. Three of these facilities had not shipped waste at the time of the survey but indicated that they plan to do so. (Such facilities are considered shippers in the profile of waste generators.)

7.1.2 Source of Radioactivity in Shipped Waste

The source of radioactivity in shipped waste is shown in Table 7-3. Since one facility receives radioactive material from two sources, the number of respondents for all sources is greater than the total number of shippers.

7.2 Volume of Shipped Waste

Table 7-4 presents the volumes of waste shipped in 1978, 1979, and 1980. The figures for 1978 and 1979 slightly underestimate actual shipments in those years, since these data were obtained only from facilities who currently ship waste. Some Maine facilities who shipped in 1978 and 1979 have since changed to other methods of disposal. (This is also true of the data in Table 7-6.)

TABLE 7-1. RESPONSE TO SURVEY BY TYPE OF FACILITY

<u>Type of Facility</u>	<u>No. of Licensees</u>	<u>Respondents</u>		<u>Percent of Facility Type</u>
		<u>No.</u>	<u>Percent</u>	
Medical	29	23		79.3
Educational	6	5		83.3
Industrial	24	18		75.0
Commercial				
Power Reactor	1	1		100.0
Governmental	7	5		71.4
Total	67	52		77.6

TABLE 7-2. TYPE OF FACILITY SHIPPING WASTE

<u>Type of Facility</u>	<u>Shippers</u>		<u>Percent of All Shippers</u>
	<u>No.</u>	<u>Percent</u>	
Medical			
Hospital	1	25.0	
Other (Research)	3	75.0	
Total	4	100.0	33.3
Educational			
University	3	100.0	25.0
Industrial			
Product Use	1	33.3	
Other (Research and Development)	2	66.7	
Total	3	100.0	25.0
Commercial Power Reactor	1	100.0	8.3
Governmental			
Military	1	100.0	8.3
Total	12	100.0	100.0

TABLE 7-3. SOURCE OF RADIOACTIVITY RESULTING IN SHIPPED WASTE

Type of Facility	Nuclear Reactor			Sealed Source		Unsealed Radioactive Material	
	No. of Respon- dents	No. of Shippers	Percent of All Respon- dents	No. of Shippers	Percent of All Respon- dents	No. of Shippers	Percent of All Respon- dents
Medical	4	0	0.0	0	0.0	4	100.0
Educational	3	0	0.0	1	33.3	3	100.0
Industrial	3	1	33.3	0	0.0	2	66.7
Commercial Power Reactor	1	1	100.0	0	0.0	0	0.0
Governmental	1	1	100.0	0	0.0	0	0.0
Total^a	12	3	25.0	1	8.3	9	75.0

a. Some facilities receive radioactive materials from more than one source; thus the columns indicating the number of respondents add to more than the total number of respondents.

TABLE 7-4. VOLUME OF SHIPPED WASTE
(1978, 1979, 1980)

<u>Type of Facility</u>	<u>No. of Respondents</u>	<u>Volume Shipped</u>					
		<u>1978</u>		<u>1979</u>		<u>1980</u>	
		<u>Cubic Meters</u>	<u>Percent of Total</u>	<u>Cubic Meters</u>	<u>Percent of Total</u>	<u>Cubic Meters</u>	<u>Percent of Total</u>
Medical	4	13.5	1.8	14.6	2.8	8.3	2.4
Educational	3	0	0.0	4.5	0.9	0.4	0.1
Industrial	3	18.7	2.4	47.0	9.1	15.0	4.4
Commercial Power Reactor	1	562.8	73.6	362.9	70.6	260.6	76.4
Governmental	1	170.0	22.2	85.0	16.5	56.6	16.6
Total	12	764.9	100.0	513.9	100.0	340.9	100.0

The volumes of waste projected to be shipped in 1980, 1985, and 1990 by facilities which now ship are shown in Table 7-5. As noted above, three facilities which have not shipped previously indicated that they planned to do so during these years. On the other hand, two of the facilities which currently ship indicated that they plan to halt all shipments by 1985. In neither case will this significantly affect the volume of shipped waste, approximately 90 percent of which comes and will come from two sources--the commercial power reactor and the Portsmouth-Kittery military shipyard.

7.3 Activity of Shipped Waste

The activity of waste shipped in 1978, 1979, and 1980 is shown in Table 7-6. The commercial power reactor accounted for over 99 percent of the activity of shipped waste in each of those years. The radioisotopes shipped in these years are shown in Table 7-7.

7.4 Physical Characteristics of Shipped Waste

Some form of onsite processing is used by 11 of the 12 shippers in Maine. The methods used are shown in Table 7-8. Absorbtion, which nine shippers use, is the most common method.

The type of shipping containers used to package low-level radioactive waste is shown in Table 7-9. Most facilities (11) indicated that they use 55-gallon drums to ship some or all of their waste.

Table 7-10 shows the physical form of shipped waste. Dry, solid waste is the form most frequently shipped.

Some shipped waste poses nonradiological hazards. As shown in Table 7-11, nine shippers indicated that their waste is combustible and six that it is chemically toxic.

TABLE 7-5. PROJECTED VOLUME OF SHIPPED WASTE
(1981, 1985, 1990)

<u>Type of Facility</u>	<u>No. of Respondents</u>	<u>Projected Volume Shipped</u>					
		<u>1981</u>		<u>1985</u>		<u>1990</u>	
		<u>Cubic Meters</u>	<u>Percent of Total</u>	<u>Cubic Meters</u>	<u>Percent of Total</u>	<u>Cubic Meters</u>	<u>Percent of Total</u>
Medical	4	13.4	3.6	4.8	1.3	7.7	1.9
Educational	3	6.3	1.7	2.0	0.5	2.0	0.5
Industrial	3	13.0	3.5	35.8	9.4	49.9	12.5
Commercial							
Power Reactor	1	283.2	76.0	283.2	74.1	283.2	70.9
Governmental							
Local							
Total	1	56.6	15.2	56.6	14.8	56.6	14.2
 Total		12	372.5	100.0	382.4	100.0	394.5
							100.0

TABLE 7-6. ACTIVITY OF SHIPPED WASTE
(1978, 1979, 1980)

Type of Facility	No. of Respondents	Activity Shipped					
		1978		1979		1980	
		Curies	Percent of Total	Curies	Percent of Total	Curies	Percent of Total
Medical	4	0.024	<0.1	0.192	<0.1	0.221	<0.1
Educational	3	0	0.0	0.015	<0.1	<0.001	<0.1
Industrial	3	1.522	<0.1	2.282	<0.1	0.609	<0.1
Commercial Power Reactor	1	4136.0	99.9	2772.0	99.9	4138.0	99.9
Governmental	1	2.0	<0.1	3.0	0.1	2.0	<0.1
Total	12	4139.7	100.0	2774.5	100.0	4140.8	100.0

7-9

TABLE 7-7. RADIOISOTOPES IN SHIPPED WASTES
(1978, 1979, 1980)

Isotope	Activity (curies)												Commercial			Governmental			
	Total			Medical			Educational			Industrial			Power Reactor	1978	1979	1980	1978	1979	1980
	1978	1979	1980	1978	1979	1980	1978	1979	1980	1978	1979	1980		1978	1979	1980			
¹⁴ C	0.149	0.139	0.203	0.142	0.121	0.200	0.000	0.006	<0.001	0.007	0.012	0.002	(a)	(a)	(a)	0.000	0.000	0.000	
³ H	0.772	0.780	0.212	0.010	0.013	0.006	0.000	0.002	0.000	0.762	0.766	0.206	--	--	--	0.000	0.000	0.000	
¹²⁵ I	0.801	1.556	0.410	0.051	0.056	0.009	0.000	0.000	0.000	0.750	1.50	0.40	--	--	--	0.000	0.000	0.000	
⁶⁰ Co	2.000	3.000	2.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	--	--	--	2.000	3.000	3.000	
⁵⁹ Fe	0.000	<0.001	<0.001	0.000	0.000	<0.001	0.000	<0.001	0.000	0.000	0.000	0.000	--	--	--	0.000	0.000	0.000	
¹³⁷ Cs	0.000	0.007	0.000	0.000	0.000	0.000	0.007	0.000	0.000	0.000	0.000	0.000	--	--	--	0.000	0.000	0.000	
³² P	0.001	0.000	<0.001	<0.001	0.000	<0.001	0.000	0.000	0.000	<0.001	0.000	0.000	--	--	--	0.000	0.000	0.000	
³⁵ S	<0.001	<0.001	<0.001	<0.001	0.001	<0.001	0.000	0.000	0.000	0.000	<0.001	0.000	--	--	--	0.000	0.000	0.000	
⁵¹ Cr	<0.001	<0.001	0.004	<0.001	<0.001	0.004	0.000	0.000	0.000	0.000	0.000	0.000	--	--	--	0.000	0.000	0.000	
³⁶ Cr	<0.001	<0.001	<0.001	0.000	0.000	0.000	0.000	0.000	0.000	<0.001	<0.001	<0.001	--	--	--	0.000	0.000	0.000	
⁷⁵ Se	0.000	0.000	<0.001	0.000	0.000	<0.001	0.000	0.000	0.000	0.000	0.000	0.000	--	--	--	0.000	0.000	0.000	
⁴⁵ Ca	0.001	0.001	<0.001	0.000	0.000	<0.001	0.000	0.000	0.000	0.001	0.001	0.000	--	--	--	0.000	0.000	0.000	
¹⁰⁹ Cd	0.000	<0.001	0.000	0.000	<0.001	0.000	0.000	0.000	0.000	0.000	0.000	0.000	--	--	--	0.000	0.000	0.000	
²² Na	0.001	0.002	<0.001	0.000	0.000	0.000	0.000	0.000	0.000	0.001	0.002	<0.001	--	--	--	0.000	0.000	0.000	
²⁰³ Tl	0.000	<0.001	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	<0.001	--	--	--	0.000	0.000	0.000	
Mixtures	4136.	2772.	4138.	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	4136.	2772.	4138.	0.000	0.000	0.000	

a. A breakdown by isotope of low-level wastes shipped by Maine Yankee was not available.

TABLE 7-8. ONSITE PROCESSING OF SHIPPED WASTE

Type of Facility	None			Mechanical Compaction		Solidification/Evaporation		Absorption	
	No. of Respondents	No. of Shippers	Percent of Total Respondents	No. of Shippers	Percent of Total Respondents	No. of Shippers	Percent of Total Respondents	No. of Shippers	Percent of Total Respondents
Medical	4	1	25.0	0	0.0	1	25.0	2	50.0
Educational	3	0	0.0	0	0.0	0	0.0	3	100.0
Industrial	3	0	0.0	1	33.3	0	0.0	3	100.0
Commercial Power Reactor	1	0	0.0	1	100.0	1	100.0	0	0.0
Governmental	1	0	0.0	1	100.0	1	100.0	1	100.0
Total^a	12	1	8.3	3	25.0	3	25.0	9	75.0

a. Some facilities use more than one type of onsite processing; thus the columns indicating the number of respondents add to more than the total number of respondents.

TABLE 7-9. TYPE OF SHIPPING CONTAINER USED

Type of Facility	55-gal. Drums			30-gal. Drums			Shielded Casks		Wooden Boxes	
	No. of Respondents	No. of Shippers	Percent of Total Respondents	No. of Shippers	Percent of Total Respondents	No. of Shippers	Percent of Total Respondents	No. of Shippers	Percent of Total Respondents	
Medical	4	3	75.0	3	75.0	0	0.0	0	0.0	
Educational	3	3	100.0	0	0.0	0	0.0	0	0.0	
Industrial	3	3	100.0	1	33.3	0	0.0	0	0.0	
Commercial Power Reactor	1	1	100.0	0	0.0	1	100.0	1	100.0	
Governmental	1	1	100.0	0	0.0	1	100.0	1	100.0	
Total ^a	12	11	91.7	4	33.3	2	16.7	2	16.7	

a. Some facilities use more than one type of shipping container; thus the column indicating number of respondents add to more than the total number of respondents.

TABLE 7-10. PHYSICAL FORM OF SHIPPED WASTE

Type of Facility	Dry		Solidified or Absorbed Liquids, Sludges, and Resins		Biological Waste		Sealed Sources		Other		
	No. of Respondents	No. of Shippers	Percent of Total Respondents	No. of Shippers	Percent of Total Respondents	No. of Shippers	Percent of Total Respondents	No. of Shippers	Percent of Total Respondents	No. of Shippers	Percent of Total Respondents
Medical	4	2	50.0	4	100.0	1	25.0	0	0.0	0	0.0
Educational	3	2	66.7	3	100.0	2	66.7	1	33.3	0	0.0
Industrial	3	3	100.0	3	100.0	1	33.3	0	0.0	0	0.0
Commercial Power Reactor	1	1	100.0	1	100.0	0	0.0	0	0.0	1	100.0
Governmental	1	1	100.0	1	100.0	0	0.0	0	0.0	0	0.0
Total ^a	12	9	75.0	12	100.0	4	33.3	1	8.3	1	8.3

a. Waste at some facilities takes more than one form; thus the columns indicating the number of respondents add to more than the total number of respondents.

TABLE 7-11. NONRADIOLOGICAL HAZARD CHARACTERISTICS OF SHIPPED WASTE

7-13

Type of Facility	No. of Respon- dents	Type of Potential Hazard			
		Chemically Toxic		Combustible	
		No. of Shippers	Percent of All Shippers	No. of Shippers	Percent of All Shippers
Medical	4	2	50.0	3	75.0
Educational	3	2	66.7	2	66.7
Industrial	3	3	100.0	2	66.7
Commercial Power Reactor	1	0	0.0	1	100.0
Governmental	1	0	0.0	1	100.0
Total	12	6	50.0	9	75.0

APPENDIX A
RADIOACTIVE MATERIAL LICENSE HOLDERS IN MAINE

RADIOACTIVE MATERIAL LICENSE HOLDERS IN MAINE

<u>Nuclear Regulatory Commission Licensees</u>	<u>Type of Facility</u>
American Red Cross Massachusetts Red Cross Blood Program Maine Regional Location 524 Forest Avenue Portland, ME 04103	Medical
Arthur R. Gould Memorial Hospital Academy Street Presque Isle, ME 04769	Medical
*Atlantic Antibodies P.O. Box 103 10 Nonesuch Road Scarborough, ME 04074	Industrial
*Bates College Physics Department Lewiston, ME 04240	Educational
*Bates College Department of Chemistry Lewiston, ME 04240	Educational
*Bath Iron Works Corporation 700 Washington Street Bath, ME 04530	Industrial
Bath Memorial Hospital 23 Winship Street Bath, ME 04530	Medical
*Bigelow Laboratory for Ocean Science Box 117 McKown Point Wt. Boothbay Harbor, ME 04575	Medical

<u>Nuclear Regulatory Commission Licensees</u>	<u>Type of Facility</u>
*Boise Cascade Rumford, ME 04276	Industrial
*Bowdoin College Department of Biology Brunswick, ME 04011	Educational
*CY/RO Industries P.O. Box 591 Sanford, ME 04073	Industrial
*Camden Community Hospital and Health Care Center Nuclear Medicine Department 108 Elm Street Camden, ME 04843	Medical
*Central Maine Medical Center Radiology Department 300 Main Street Lewiston, ME 04250	Medical
*Colby College Department of Chemistry Waterville, ME 04901	Educational
*Department of the Air Force DET 20, HQ SA-ALC/SFQLB P.O. Box 408 Searsport, ME 04974	Governmental
*Department of the Navy Portsmouth Naval Shipyard Portsmouth, NH	Governmental
Diamond International Corporation Penobscot Division Old Town, ME 04468	Industrial

<u>Nuclear Regulatory Commission Licensees</u>	<u>Type of Facility</u>
*Eastern Maine Medical Center Department of Nuclear Medicine 489 State Street Bangor, ME 04401	Medical
*FMC Corporation Biomedical Building 5 Maple Street Rockland, ME 04841	Medical
*Forster Manufacturing Company Depot Street Wilton, ME 04294	Industrial
Foundation for Blood Research P.O. Box 426 Scarborough, ME 04074	Medical
*Franklin Memorial Hospital Farmington, ME 04938	Medical
Fraser Paper Limited Bridge Street Madawaska, ME 04756	Industrial
*General Electric Company 148 Pickett Street South Portland, ME 04106	Industrial
Georgia Pacific Corporation Woodland Division Mill Street Woodland, ME 04694	Industrial
*Great Northern Paper Company Millinocket, ME 04462	Industrial
International Paper Company Androscoggin Mill Jay, ME 04239	Industrial

<u>Nuclear Regulatory Commission Licensees</u>	<u>Type of Facility</u>
*Kennebec Valley Medical Center Augusta Division 6 East Chestnut Street Augusta, ME 04330	Medical
*Keyes Fibre Company Upper College Avenue Waterville, ME 04901	Industrial
*Lincoln Pulp & Paper Company, Inc. Katahdin Avenue Lincoln, ME 04457	Industrial
*Maine Department of Health and Welfare Public Health Laboratory State House Augusta, ME 04330	Governmental
*Maine Department of Transportation Materials and Research Division Box 1208, Hogan Road Bangor, ME 04402	Governmental
*Maine Bureau of Civil Emergency Preparedness State House-State Office Building Augusta, ME 04333	Governmental
Maine Maritime Academy Castine, ME 04421	Educational
*Maine Medical Center Portland, ME 04002	Medical
Maine Yankee Atomic Power Company Chemistry and Health Physics 9 Green Street Augusta, ME 04330	Industrial

<u>Nuclear Regulatory Commission Licensees</u>	<u>Type of Facility</u>
*Maine Yankee Wiscaseet, ME	Commercial Power Reactor
*Martin Marietta Cement Eastern Division P.O. Box 189 Thomaston, ME 04861	Industrial
*Mercy Hospital 144 State Street Portland, ME 04104	Medical
*Mid-Maine Medical Center North Street Waterville, ME 04901	Medical
*Millinockett Regional Hospital Department of Radiology 200 Somerset Street Millinocket, ME 04462	Medical
*Mount Desert Island Biological Laboratory Salisbury Cove, ME 04672	Industrial
Mt. Desert Island Hospital Wayman Lane Bar Harbor, ME 04609	Medical
*Northeast Laboratory Services P.O. Box 788 Waterville, ME 04901	Industrial
*Northern Cumberland Memorial Hospital South High Street Bridgton, ME 04009	Medical
*Osteopathic Hospital of Maine, Inc. 335 Brighton Avenue Portland, ME 04102	Medical

<u>Nuclear Regulatory Commission Licensees</u>	<u>Type of Facility</u>
*Penobscot Bay Medical Center Glen Cove Rockland, ME 04841	Medical
Philips Elmet Corporation 1560 Lisbon Road Lewiston, ME 04240	Industrial
*Pineland Center Box C Pownal, ME 04069	Medical
*Quality Assurance Laboratories, Inc. 80 Pleasant Avenue South Portland, ME 04106	Industrial
*Redington-Fairview General Hospital Department of Nuclear Radiology Showhegan, ME 04976	Medical
Rumford Community Hospital 420 Franklin Street Rumford, ME 04276	Medical
*Scott Paper Company Somerset Plant R.F.D. #3 Skowhegan, Me 04976	Industrial
*Scott Paper Company S. E. Warren Company Division 89 Cumberland Street Westbrook, ME 04092	Industrial
*St. Mary's General Hospital 45 Golder Street Lewiston, ME 04240	Medical
*St. Regis Paper Company River Road Bucksport, ME 04416	Industrial

<u>Nuclear Regulatory Commission Licensees</u>	<u>Type of Facility</u>
State of Maine Department of Marine Resources Research Department State House Augusta, ME 04333	Governmental
State of Maine Department of Environmental Protection State House Ray Building AMHI Augusta, ME 04333	Governmental
*Stephan's Memorial Hospital 80 Main Street Norway, ME 04268	Medical
*The Cary Medical Center Department of Radiology and Nuclear Medicine MRA Box 37 Van Buren Road Caribou, ME 04736	Medical
*The Jackson Laboratory Otter Creek Road Bar Harbor, ME 04609	Medical
*The St. Joseph Hospital 297 Center Street Bangor, ME 04401	Medical
United Timber Corporation Pine Street Dixfield, ME 04224	Industrial
*University of Maine Orono, ME 04473	Educational
*Ventrex Laboratories, Inc. 217 Read Street Portland, ME 04103	Industrial

Nuclear Regulatory Commission Licensees

Type of Facility

*Veterans Administration Center
Radioisotope Lab
Togus, ME 04333

Medical

*Waterville Osteopathic Hospital
Kennedy Memorial Drive
Waterville, ME 04901

Medical

*Responded to survey.

APPENDIX B
DEMOGRAPHY: SUPPORTING DOCUMENTATION

TABLE B-1. SCHOOL ENROLLMENT IN MAINE, FALL 1980(1,2)

County	Elementary ^a		Secondary ^b		Higher Education		Total
	Private	Public	Private	Public	Private	Public	
Androscoggin	1,392	12,809	755	6,162	513	1,500	23,131
Aroostook	186	13,857	49	6,859	2,662	0	23,613
Cumberland	2,159	26,690	1,356	13,409	9,613	8,279	61,506
Franklin	66	3,894	12	1,971	1,967	0	7,910
Hancock	198	5,550	383	2,350	645	173	9,299
Kennebec	1,528	13,956	839	6,487	3,642	2,774	29,226
Knox	98	4,408	31	1,679	0	0	6,216
Lincoln	91	3,573	579	1,451	0	0	5,694
Oxford	314	7,047	977	3,579	0	0	11,917
Penobscot	981	18,500	736	9,242	10,806	1,938	42,203
Piscataquis	7	2,770	491	894	0	0	4,162
Sagadahoc	14	4,248	231	2,013	0	0	6,506
Somerset	166	7,285	448	3,056	0	0	10,955
Waldo	59	4,075	4	1,589	0	339	6,066
Washington	59	5,055	359	1,806	1,008	0	8,287
York	1,852	18,925	1,195	7,308	776	1,113	31,169
TOTAL	9,170	152,642	8,445	69,855	31,632	16,116	287,860

a. Prekindergarten through eighth grade.

b. Ninth grade through twelfth grade plus post-high school.

TABLE B-2. HOSPITAL BEDS IN MAINE BY COUNTY⁽³⁾

<u>County</u>	<u>Number of Beds</u>
Androscoggin	472
Aroostook	398
Cumberland	1,490
Franklin	80
Hancock	166
Kennebec	1,759
Knox	343
Lincoln	68
Oxford	147
Penobscot	1,070
Piscataquis	96
Sagadahoc	92
Somerset	128
Waldo	58
Washington	138
York	491
<hr/> TOTAL	<hr/> 6,996

TABLE B-3. FEDERAL LABORATORIES IN MAINE⁽⁴⁾

Agency:	Department of Agriculture, Agricultural Research Service
Name of Facility:	New England Plant, Soil, and Water Laboratory
Location:	Orono
Major Mission:	Conducts programs in the field of soil, water, and air, entomology and plant pathology.

REFERENCES

1. State of Maine, Department of Educational and Cultural Services, "Fall Enrollment 1980-81," ED 517 computer printout, Augusta: Department of Educational and Cultural Services, 1981.
2. State of Maine, Department of Educational and Cultural Services, "Maine Post Secondary Schools 1980-81," Augusta: Department of Educational and Cultural Services, 1981.
3. American Hospital Association, Guide to the Health Care Field, Chicago: American Hospital Association, 1980.
4. U.S. Congress, House, Committee on Appropriations, Investigative Report on "Utilization of Federal Laboratories," 95th Cong., 2nd sess., Washington, D.C.: U.S. Government Printing Office, 1978.

APPENDIX C

GOVERNMENT STRUCTURE: SUPPORTING DOCUMENTATION

APPENDIX C
MAINE STATE DEPARTMENTS

DEPARTMENT OF CONSERVATION
Richard E. Barringer, Commissioner
AMHI Ray Building
Augusta, ME 04333
(207) 289-2211

DEPARTMENT OF DEFENSE AND
VETERANS SERVICES
Major General Paul R. Day, Adjutant
General and Commissioner
Camp Keys
Augusta, ME 04333
(207) 622-7624

DEPARTMENT OF ENVIRONMENTAL PROTECTION
Henry E. Warren, Commissioner
AMHI Ray Building
Augusta, ME 04333
(207) 289-2811

DEPARTMENT OF INLAND
FISHERIES AND WILDLIFE
Glenn H. Manuel, Commissioner
284 State Street
Augusta, ME 04333
(207) 289-3371

DEPARTMENT OF PUBLIC SAFETY
Arthur A. Stilphen, Commissioner
36 Hospital Street
Augusta, ME 04333
(207) 289-3801

DEPARTMENT OF TRANSPORTATION
Roger L. Mallar, Commissioner
Transportation Building
Augusta, ME 04333
(207) 289-2551

DEPARTMENT OF AGRICULTURE
Stewart N. Smith, Commissioner
State Office Building
Augusta, ME 04333
(207) 289-3871

DEPARTMENT OF BUSINESS
REGULATION
Gordon L. Weil, Commissioner
Central Building, Annex
Hallowell, ME 04347
(207) 289-3916

DEPARTMENT OF MARINE RESOURCES
Spencer Apollonio, Commissioner
Baker Building
98 Winthrop Street
Hallowell, ME 04367
(207) 289-2291

DEPARTMENT OF EDUCATIONAL
AND CULTURAL SERVICES
Harold Raynolds, Commissioner
Education Building
Augusta, ME 04333
(207) 289-2736

DEPARTMENT OF HUMAN SERVICES
Michael R. Petit, Commissioner
Human Services Building
Augusta, ME 04333
(207) 289-2736

DEPARTMENT OF INDIAN AFFAIRS
Charles W. Rhynard,
Commissioner
State Office Building
Augusta, ME 04333
(207) 289-2831

DEPARTMENT OF MENTAL HEALTH AND
CORRECTIONS
George A. Zitnay, Commissioner
State Office Building
Augusta, ME 04333
(207) 289-3161

DEPARTMENT OF MANPOWER AFFAIRS
David W. Bustin, Commissioner
20 Union Street
Augusta, ME 04333
(207) 289-3788

MEMBERS OF THE MAINE SENATE: 110th LEGISLATURE 1980-1982

<u>District</u>	<u>Member</u>	<u>Party Affiliation</u>
1	Walter W. Hichens	Republican
2	Dennis L. Dutremble	Democrat
3	Frank P. Wood	Democrat
4	John M. Kerry	Democrat
5	Roland L. Sutton	Republican
6	David G. Huber	Republican
7	Ronald W. Usher	Democrat
8	Barbara Gill	Republican
9	Gerard P. Conley	Democrat
10	Mary Najarian	Democrat
11	Nancy Randall Clark	Democrat
12	Barbara M. Trafton	Democrat
13	Richard R. Charette	Democrat
14	Carroll E. Minkowsky	Democrat
15	David R. Ault	Republican
16	Donald R. O'Lerary	Democrat
17	Andrew J. Redmond	Republican
18	Richard H. Pierce	Republican
19	Beverly M. Bustin	Democrat
20	Charlotte Z. Sewall	Republican
21	Samuel W. Collins, Jr.	Republican
22	Melvin A. Shute	Republican
23	Thomas M. Teague	Republican
24	Jerome A. Emerson	Republican
25	Howard M. Trotzky	Republican
26	Dana C. DeVoe	Republican
27	Joseph Sewall	Republican
28	Thomas R. Perkins	Republican
29	Larry M. Brown	Democrat
30	Charles P. Pray	Democrat
31	James A. McBrairy	Republican
32	Paul E. Violette	Democrat
33	Michael E. Carpenter	Democrat

MEMBERS OF THE MAINE HOUSE OF REPRESENTATIVES:

110TH LEGISLATURE 1980-1982

<u>District</u>	<u>Member</u>	<u>Party Affiliation</u>
1	Darryl N. Brown	Republican
2	Daniel J. Callahan	Republican
3	Martin Hayden	Democrat
4(1)	Harriet B. Lewis	Republican
4(2)	George L. Boyce	Republican
4(3)	Alfred L. Brodeur	Democrat
4(4)	John M. Michael	Democrat
5	J.P. Normand LaPlante	Democrat
6(1)	John Telow	Republican
6(2)	Louis Jalbert	Democrat
6(3)	Romeo T. Boisvert	Democrat
6(4)	Gregory G. Nadeau	Democrat
6(5)	Georgette B. Berube	Democrat
6(6)	Roger M. Pouliot	Democrat
7	Richard E. McKean	Democrat
8	A. Forrest Nelson	Republican
9	Philip F. Peterson	Republican
10	Kenneth L. Matthews	Republican
11	Mary H. MacBride	Republican
12	John Lisnik	Democrat
13	Hilda C. Martin	Democrat
14	John L. Martin	Democrat
15	Raynold Theriault	Democrat
16	Edward A. McHenry	Democrat
17	Luman P. Mahany	Democrat
18	Carl W. Smith, Sr.	Republican
19	Gennette MacNair Ingraham	Republican
20	Carl B. Smith	Democrat
21(1)	Edith S. Beaulieu	Democrat
21(2)	David H. Brenerman	Democrat
21(3)	Lawrence E. Connolly, Jr.	Democrat
21(4)	Merle Nelson	Democrat
21(5)	Harlan Baker	Democrat
21(6)	Josephn C. Brannigan	Democrat
21(7)	Peter J. Manning	Democrat
21(8)	H. Craig Higgins	Democrat
21(9)	Harriet A. Ketover	Democrat
21(10)	John J. Joyce	Democrat
22	Sherry F. Huber	Republican
23	G. William Diamond	Democrat
24	Porter D. Leighton	Republican
25	Robert G. Dillenback	Republican
26	Marian E. Gowen	Republican
27	James Mitchell	Democrat
28	Patrick T. Jackson, Jr.	Republican

MEMBERS OF THE MAINE HOUSE OF REPRESENTATIVES:

110th LEGISLATURE 1980-1982 (continued)

<u>District</u>	<u>Member</u>	<u>Party Affiliation</u>
29	Gordon F. Cunningham	Republican
30	Ada K. Brown	Democrat
31(1)	J. Robert Carrier	Democrat
31(2)	Russell R. Day	Republican
32	Sharon B. Benoit	Democrat
33	Linwood M. Higgins	Republican
34	Nancy N. Masterton	Republican
35(1)	A. Mavoureen Thompson	Democrat
35(2)	Edward J. Kane	Democrat
35(3)	Harold M. Macomber	Democrat
36	Charles M. Webster	Democrat
37	Richard E. McCollister	Democrat
38	Edward L. Dexter	Republican
39	Richard W. Armstrong	Republican
40	Roland S. Salsbury, Jr.	Republican
41	Ruth S. Foster	Republican
42	Dana S. Swazey	Democrat
43	Meredith E. Bordeaux	Democrat
44	Alfred W. Perkins	Republican
45	Catherine L. Damren	Republican
46	Leland C. Davis, Jr.	Republican
47	Norman E. Weymouth	Republican
48	Thomas A. Kilcoyne	Democrat
49	Polly Reeves	Democrat
50	Elizabeth H. Mitchell	Democrat
51(1)	Daniel B. Hickey	Democrat
51(2)	Patrick E. Paradis	Democrat
51(3)	Sylvia V. Lund	Republican
52(1)	Mark L. Fitzgerald	Democrat
52(2)	Judy C. Kany	Democrat
52(3)	Paul F. Jacques	Democrat
53	Donald V. Carter	Democrat
54	Guy I. Hunter	Republican
55	Marjorie C. Hutchings	Republican
56	Bonnie Post	Democrat
57	Clifford F. O'Rourke	Republican
58	Vernon Jordon	Republican
59	Gary W. Fowlie	Democrat
60	Muriel D. Holloway	Republican
61	David B. Soule, Jr.	Democrat
62	Douglas E. Curtis	Republican
63	Karen L. Brown	Republican
64	Laurence L. Kiesman	Republican
65	Susan Jane Bell	Republican
66	R. Donald Turtchell	Democrat
67	Francis J. Perry	Democrat
68	Phyllis R. Erwin	Democrat

MEMBERS OF THE MAINE HOUSE OF REPRESENTATIVES:

110th LEGISLATURE 1980-1982 (continued)

<u>District</u>	<u>Member</u>	<u>Party Affiliation</u>
69	Weston S. Sherburne	Republican
70	Sandra K. Prescott	Democrat
71	Herbert E. Clark	Democrat
72	Michael H. Michaud	Democrat
73	Harold R. Cox	Democrat
74	Robert D. Treadwell, Sr.	Republican
75	James W. Reeves	Republican
76	Robert A. MacEachern	Democrat
77	Richard S. Davies	Democrat
78	Katharine J. Gavett	Republican
79	Michael D. Pearson	Democrat
80	Eugene J. Paradis	Republican
81	Donald A. Strout	Republican
82	James T. Dudley	Democrat
83(1)	Edward C. Kelleher	Democrat
83(2)	Swift Tarbell	Republican
83(3)	John N. Diamond	Democrat
83(4)	Angela Z. Aloupis	Republican
83(5)	Robert N. Soulas	Republican
84	Stephanie Locke	Democrat
85	John E. Masterman	Republican
86	Donald M. Hall	Democrat
87	Pamela L. Cahill	Republican
88	Lorraine N. Chonko	Democrat
89	Courtney B. Stover	Republican
90	Mary E. Small	Republican
91(1)	Antoinette C. Martin	Democrat
91(2)	E. Christopher Livesay	Republican
92	Patrick K. McGowan	Democrat
93	W. Norman Walker	Republican
94	Dan A. Gwadosky	Democrat
95	Alexander Richard	Democrat
96	Bernard H. Austin	Republican
97	Lionel H. Congry	Republican
98	Lloyd G. Drinkwater	Republican
99	Nathaniel J. Crowley, Sr.	Democrat
100	Dana P. Stevenson	Republican
101	Fred W. Moholland	Democrat
102	Robert J. Gillis	Republican
103	Harry L. Vose	Democrat
104	Edwin C. Randall	Republican
105	Maynard G. Connors	Republican
106	Neil Rolde	Democrat
107	Cecil O. Lancaster	Republican
108	Orland G. McPherson	Republican
109	Warren F. Studley	Republican

MEMBERS OF THE MAINE HOUSE OF REPRESENTATIVES:

110th LEGISLATURE 1980-1982 (continued)

<u>District</u>	<u>Member</u>	<u>Party Affiliation</u>
110	Alberta M. Wentworth	Republican
111	Thomas W. Murphy, Jr.	Republican
112	Vinton T. Ridley	Democrat
113(1)	John L. Turtle, Jr.	Democrat
113(2)	David S. Paul	Democrat
114	Harold L. Hanson	Republican
115(1)	Robert J. Norton	Democrat
115(2)	Richard Laverriere	Democrat
115(3)	Norman O. Racine	Democrat
116	George A. Carroll	Democrat
117	John McSweeney	Democrat
118	Phyllis J. Roberts	Democrat
119	Barry J. Hobbins	Democrat

Indian Representatives:

Reuben Cleaves - Passamaquoddy
Reuben E. Phillips - Penobscot

APPENDIX D
STATE LEGISLATION AND LOCAL ORDINANCES

An Act Assuring Legislative Participation in Nuclear Waste
Repository Research and Development Activity within the State

APPROVED

JUN 3 '81

BY GOVERNOR

CHAPTER

439

PUBLIC LAW

STATE OF MAINE

IN THE YEAR OF OUR LORD NINETEEN HUNDRED AND EIGHTY-ONE

H. P. 1526 — L. D. 1636

AN ACT Assuring Legislative Participation in Nuclear Waste Repository Research and Development Activity within the State.

Be it enacted by the People of the State of Maine, as follows:

Sec. 1. 10 MRSA § 52, sub-§§ 2-A and 2-B are enacted to read:

2-A. Environmental impact statement. "Environmental impact statement" means any document prepared pursuant to or in compliance with the requirements of the United States National Environmental Policy Act of 1969, Section 102(2) (c), 83 Stat. 852.

2-B. High-level waste. "High-level waste" means spent nuclear fuel, radioactive wastes resulting from the reprocessing of spent nuclear fuel, and includes both the liquid waste which is produced directly in reprocessing and any solid material into which such liquid waste is made.

Sec. 2. 10 MRSA § 52, sub-§§ 3-A and 3-B are enacted to read:

3-A. Low-level waste. "Low-level waste" means any source, by-product or special nuclear material other than high-level waste or transuranic contaminated waste.

3-B. Low-level waste licensee. "Low-level waste licensee" means any person licensed under section 103 or 151 to generate, treat, store or dispose of low-level radioactive wastes.

Sec. 3. 10 MRSA § 52, sub-§ 4-A is enacted to read:

4-A. Repository. "Repository" means a facility for the disposal of high-level waste, transuranic contaminated waste or spent nuclear fuel, whether or not the facility is designed to permit the subsequent recovery of such material, except for facilities to be used exclusively for research and development purposes containing an insignificant amount of such material.

Sec. 4. 10 MRSA § 52, sub-§ 6-A is enacted to read:

6-A. Transuranic contaminated waste. "Transuranic contaminated waste" means material contaminated with elements having an atomic number greater than 92, including neptunium, plutonium, americium and curium, in concentrations of greater than 10 nanocuries per gram.

Sec. 5. 10 MRSA § 151-A is enacted to read:

§ 151-A. Coordination and liaison with federal agencies

The following state agencies shall serve as liaison with federal agencies and coordinate administration of the issues indicated.

1. Department of Human Services. The Department of Human Services shall coordinate monitoring of radiation and health and safety in medical and industrial use of radiation.

2. Bureau of Civil Emergency Preparedness. The Bureau of Civil Emergency Preparedness shall coordinate off-site emergency procedures for nuclear facilities, and shall serve as liaison with federal agencies with jurisdiction over defense activities and emergency response management.

3. Department of Transportation. The Department of Transportation shall coordinate transportation of radioactive materials.

4. Department of Environmental Protection. The Department of Environmental Protection shall coordinate management of high and low-level wastes.

5. Maine Geological Survey. The Maine Geological Survey shall provide technical assistance for radioactive waste management.

6. Office of Energy Resources. The Office of Energy Resources shall serve as liaison with the United States Department of Energy and the United States Nuclear Regulatory Commission.

Sec. 6. 10 MRSA § 152 is repealed and the following enacted in its place:

§ 152. Contracts with federal agencies

The Governor may, subject to the conditions of Title 5, section 1669, execute contracts with appropriate federal officers or agencies relating to the responsibility for radiation hazards under the Federal-State Amendment to the United States Atomic Energy Act of 1954, Public Law 86-377. He may execute contracts with federal officers or agencies relating to radioactive waste management and disposal, subject to the further limitations of subchapter III-A.

Sec. 7. 10 MRSA § 153 is amended to read:

§ 153. Agreements and cooperative arrangements authorized

Any Except as expressly limited, any appropriate department or agency may cooperate with the Federal Government in performing functions on behalf of the Federal Government relating to atomic energy, and in the administration of this chapter or any matter pertaining thereto, and for that purpose may ~~with the approval of the coordinator~~ enter into agreements or cooperative arrangements with the Federal Government.

Such department or agency may receive, administer and disburse any funds or contributions received from the Federal Government for the purposes mentioned in this chapter.

Sec. 8. 10 MRSA c. 3, sub-c. III-A is enacted to read:

SUBCHAPTER III-A

HIGH-LEVEL WASTES

§ 161. Intent

It is the intent of the Legislature to cooperate fully with the Federal Government to manage safely and effectively high-level radioactive wastes, provided that the Federal Government financially assists the State in this participation. It is further the intent of the Legislature to participate to the maximum extent in siting federal high-level waste repositories.

§ 162. Limitation

No state department or agency may accept any funds related to siting high-level repositories, nor may any state agency participate in these efforts, unless the applicable requirements of this subchapter have been fulfilled.

§ 163. Area studies

1. **Definition.** "Area studies" means geological reconnaissance and field work, including core sample drilling, to define locations of up to 30 square miles that may be suitable for high-level radioactive waste repositories.

2. **Exploration.** No person may explore geological formations within this State for the purpose of siting a high-level waste repository without a written permit from the State Geologist. The State Geologist shall approve requests for these exploration permits if the proposed activity is consistent with the plan required by subsection 3.

3. **Plan.** Prior to initiation of area studies, the Commissioner of Environmental Protection shall submit a plan for these studies to the Legislature for approval. This plan shall include procedures for the establishment of a state review group to review the conduct of area studies and report their findings. This review group shall include representatives of the scientific community, the Legislature and the general public.

4. **Reports.** All findings and reports conducted under this section shall be submitted to the Governor and the Legislature.

§ 164. Location studies

1. **Definition.** "Location studies" means detailed site evaluations, socioeconomic studies, environmental studies, surveys of plant and animal populations and other studies to identify specific sites that may be suitable for high-level waste repositories.

2. Prior to initiation of location studies, the Commissioner of Environmental Protection shall submit a plan for these studies to the Legislature for approval. This plan shall include as a minimum public hearings on the following issues:

- A. The technical feasibility of the proposed waste management technology;
- B. The environmental impact of a waste repository in the area of study;
- C. The social impact of a waste repository in the area of study; and

D. The economic impact of a waste repository in the area of study.

3. **Legislative findings.** No agent of the State may participate in site selection or construction of a high-level radioactive waste repository unless the Legislature finds that all of the issues in subsection 2 have been adequately addressed.

§ 165. Site selection

1. **Definition.** "Site selection" means the selection of a specific site as a candidate to be licensed as a high-level radioactive waste repository.

2. **Limitation.** No agent of the State may participate in site selection efforts unless the Federal Government agrees that the site selection process will include:

A. Compliance with the United States National Environmental Policy Act of 1969, Public Law 91-190, including preparation of a specific environmental impact statement; and

B. Compliance with all applicable state and local laws.

Sec. 9. 10 MRSA c. 3, sub-c. III-B is enacted to read:

SUBCHAPTER III-B

LOW-LEVEL RADIOACTIVE WASTES

§ 171. Purpose

In accordance with the United States Low-level Radioactive Waste Policy Act of 1980, Public Law 96-573, the Legislature accepts its responsibility for providing for the capacity for the disposal of low-level waste generated within this State. It is the purpose of this subchapter to establish a program for the safe management of low-level waste, and to provide capacity for its disposal either within this State or in regional facilities.

§ 172. Reporting

Each low-level waste licensee shall annually report, by March 31st, the volume and radioactivity of low-level wastes generated and the volume and radioactivity of low-level wastes shipped to commercial disposal facilities. This report shall be submitted to the Commissioner of Environmental Protection, and shall include information on the specific radioactive materials handled.

§ 173. Geological characterization

Within one year of the effective date of this subchapter, the State Geologist shall report to the Governor and the Legislature on the suitability of areas of this State for low-level waste disposal. In determining suitability, the State Geologist shall consider proposed and final rules for facility siting under 10 Code of Federal Regulations, Part 61.

§ 174. Regional compacts

The Governor may negotiate on behalf of the State, with other states and the Federal Government with respect to the siting, licensing, operation and use of

low-level waste facilities within and outside this State. The Governor may recommend regional compacts with states that have: Identified their annual low-level radioactive waste generation; and identified areas within their state that meet preliminary site criteria.

Any regional compact for low-level waste disposal shall be ratified by legislative Act.

§ 175. Low-level Waste Siting Commission

1. Establishment. There is established a Low-level Waste Siting Commission, referred to as the "commission."

2. Membership; appointment. The commission shall consist of 9 members, who shall be appointed as follows. The Commissioners of Environmental Protection and Human Services, and the State Geologist, or their designees, shall be members of the commission. The President of the Senate shall appoint 2 Senators and one person from an organization that is a low-level waste licensee. The Speaker of the House of Representatives shall appoint 2 Representatives and one person from an organization that is a low-level waste licensee. The members shall be appointed in a timely manner. The Chairman of the Legislative Council shall call the first meeting of the commission, and at this meeting the commission shall elect a chairman and a vice-chairman from its membership.

3. Duties. The duties of the commission are to:

A. Study the management, transportation and disposal of low-level waste generated in or near this State;

B. Evaluate current radioactive waste classifications and propose alternatives, if appropriate;

C. Evaluate methods and criteria for siting low-level waste disposal facilities; and

D. Assist the Governor in regional efforts to manage low-level waste.

4. Reports. The commission shall regularly report on its progress to the Governor and the Legislature.

5. Compensation. Members, except state employees, shall receive reimbursement for the necessary actual expenses incurred in carrying out their duties.

6. Assistance. The Commissioner of Environmental Protection shall assist the commission in the conduct of its business.

§ 176. Low-level Waste Siting Fund

1. Establishment. There is established the Low-level Waste Siting Fund to be used to carry out the purpose of this subchapter. This fund shall be administered by the Commissioner of Environmental Protection in accordance with established budgetary procedures. The commissioner may accept state, federal and private funds to be used to assure safe and effective low-level waste management, and to develop capacity to safely dispose of these wastes.

2. Service fee. In the fiscal years 1982 and 1983 a service fee of \$1 per cubic foot shall be levied on all low-level radioactive waste generated in this State and shipped to commercial disposal facilities. The revenue from this service fee shall be credited to the fund established in subsection 1 and used to carry out the purposes of this subchapter.

3. Allocation. The expenses for the administration of the commission in carrying out the duties as set forth in this subchapter shall be paid from such amounts as the Legislature may allocate from the revenues in the Low-level Waste Siting Fund. These amounts shall become available in accordance with Title 5, chapters 141 to 155.

4. Balance carried forward. Any unexpended balance shall not lapse, but shall be carried forward to the same fund for the next fiscal year and shall be available for the purposes authorized by this subchapter.

5. Report to Legislature. The commissioner shall report annually to the Legislature the revenues and expenditures under this subchapter.

Sec. 10. Allocation. The following funds are allocated from the Low-level Waste Siting Fund to carry out the purposes of this Act.

LOW-LEVEL WASTE SITING COMMISSION	1981-82	1982-83
All Other	\$5,000	\$5,000

IN HOUSE OF REPRESENTATIVES..... 1981

Read twice and passed to be enacted.

.....Speaker

IN SENATE, 1981

Read twice and passed to be enacted.

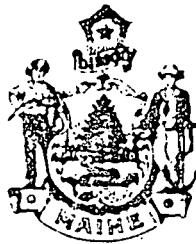
.....President

Approved..... 1981

.....Governor

Letter From James E. Tierney, Attorney General, to
the Honorable Judy C. Kany

JAMES E. TIERNEY
ATTORNEY GENERAL



STATE OF MAINE
DEPARTMENT OF THE ATTORNEY GENERAL
AUGUSTA, MAINE 04333

January 20, 1981

Honorable Judy C. Kany
House of Representatives
State House
Augusta, Maine 04330

Dear Representative Kany:

You have asked several questions regarding the constitutional power of the Legislature to prohibit the transportation, treatment, and disposal in Maine of hazardous materials and wastes originating outside of the State. More specifically, you have inquired as to whether the State may prohibit the transportation, treatment, and disposal of such materials and wastes at sites owned by private persons or municipalities, at sites owned by the State itself, or at sites owned by the federal government. For the reasons which follow, it is our opinion that, with the exception of the operation of State-owned disposal sites, the State may constitutionally undertake none of these activities. The State may regulate the transportation, treatment and disposal of specific substances, but only on the basis of the danger to the public health posed by the substance itself and not solely on the basis of its place of origin.

A discussion of the powers of states to interfere with the interstate movement of hazardous materials and wastes should begin with the recent decision of the United States Supreme Court in Philadelphia v. New Jersey, 437 U.S. 617 (1978). In that case, the Supreme Court held that a New Jersey statute prohibiting the importation of solid and liquid waste from out of state violated Article I, Section 8, clause 3 of the United States Constitution

1/

(the "Commerce Clause"). After finding that the interstate movement of wastes constituted "commerce" within the meaning of the clause, id. at 621-23, the Court found (1) that the New Jersey statute overtly discriminated against wastes coming from outside the State, and (2) the State had failed to show that landfilling of such wastes was any more dangerous to the health of New Jersey residents than landfilling of wastes generated within the State such as to justify discriminatory treatment. Thus, the statute was found to violate the Commerce Clause.^{2/} Id. at 623-29. The Court acknowledged the

1/ The Commerce Clause provides that "The Congress shall have Power . . . To regulate Commerce . . . among the several States." It is not necessary, however, for the Congress to have enacted legislation in order for the clause to be violated. Cooley v. Board of Wardens of the Port of Philadelphia, 53 U.S. (12 How.) 299 (1851).

Before reaching the question of whether the New Jersey statute violated the Commerce Clause itself, the Court made it clear that the Congress had enacted no statute, pursuant to the Commerce Clause or any other clause of the Constitution, preempting the states from regulating in the area of waste disposal, expressly finding that various federal acts dealing with waste disposal, including the Resource Conservation and Recovery Act of 1976 (RCRA), 42 U.S.C. § 6901 et seq., contained no expression of preemptive intent. Philadelphia v. New Jersey, *supra*, at 620, n. 4. This means, of course, that any regulations promulgated by the Environmental Protection Agency pursuant to RCRA would also lack preemptive force. This is not to say, however, that any failure of the State to comply with the requirements of RCRA would be without consequences. It is possible that the enactment of a statutory barrier against the interstate movement of waste might jeopardize state eligibility for funds from the Environmental Protection Agency. See Sections 3006(b) and 3009 of RCRA, 42 U.S.C. §§ 6926(b), 6929; 40 C.F.R. § 123.32 (1980).

2/ Pursuant to this decision, our office issued an opinion shortly thereafter indicating that 17 M.R.S.A. § 2253, a Maine statute identical to that of New Jersey, was similarly unconstitutional. Opinion of the Attorney General to Henry A. Warren (October 18, 1978).

existence of certain older cases sustaining various state quarantine laws against Commerce Clause challenge, Asbell v. Kansas, 209 U.S. 251 (1908) (diseased cattle); Reid v. Colorado, 187 U.S. 137 (1902) (diseased cattle); Bowman v. Chicago & Northwestern R. Co., 125 U.S. 465, 489 (1888) (legislation regulating transportation of liquor not a quarantine law), but distinguished those cases on the ground that, while they involved discrimination against out-of-state commerce, the discrimination was justified in that the cases concerned articles whose very movement risked contagion and required immediate destruction. Philadelphia v. New Jersey, supra, at 628-29.3/

In addition to the Philadelphia case, a subsequent decision of the Tenth Circuit Court of Appeals, Hardage, v. Atkins, 582 F.2d 1264 (10th Cir. 1978) is relevant to your inquiry in that it invalidated on Commerce Clause grounds an Oklahoma statute which authorized the prohibition of the importation of hazardous wastes.4/ In Hardage, the Court, on the strength of the Philadelphia case, reversed a lower court ruling that hazardous wastes were not within the purview of the Commerce Clause, and found that the Oklahoma statute was discriminating against interstate commerce and therefore unconstitutional. The court did not, however, determine whether the statute concerned articles whose very movement endangered the public health such as to bring it within the quarantine cases, supra.

The principle which emerges from the foregoing, therefore, is that the State may not prohibit the transportation, treatment or disposal of hazardous materials or wastes originating from outside

3/ The Court also indicated, quoting Pike v. Bruce Church, Inc., 397 U.S. 137 (1970), that where a state statute contained no overt discrimination against interstate trade, it will generally be sustained against Commerce Clause challenge if it can be shown that it serves a "legitimate local public interest," and that its effects on interstate commerce are only "incidental." Philadelphia v. New Jersey, supra, at 624. Where the statute facially discriminates against interstate commerce, as would be the case with virtually all of your proposals, this test would appear inapplicable.

4/ The Court adhered to this holding in a second appeal of the same case decided a year and a half later, in which the plaintiff disposal facility operator sought to have the Court reverse its prior judgment on grounds not relevant here. Hardage v. Atkins, 619 F.2d 871 (10th Cir. 1980).

its borders solely on the basis of their origin. The only way in which such a general prohibition may be sustained is if it concerns a specific hazardous material or waste which can be shown to be so dangerous to the public health in and of itself as to warrant restrictions or prohibitions on its movement, treatment or disposal.^{5/}

We do not think that your proposed legislation would fall within this latter rule. Under such a proposal, as we understand it, the State would permit the transportation, treatment or disposal of domestically generated hazardous materials or wastes, but would prohibit the disposal of identical wastes which are produced elsewhere. Such a scheme would appear to fall squarely within the facts of the Philadelphia case, since its purpose would be to attempt to reserve the State's finite disposal resources for state-generated wastes, a purpose clearly violating the Commerce Clause's ban on "economic protectionism." As the Supreme Court recognized, a state might attempt to protect its resources by slowing the flow of all wastes into its disposal sites,^{6/} Philadelphia v. New Jersey, supra, at 626, but it may not do so by discriminating against

5/ In saying this, we offer no judgment as to whether any particular hazardous waste is in fact so dangerous as to warrant such a prohibition, or as to what degree of proof of a hazard would be necessary to sustain such a statute in court.

6/ We make no distinction here between disposal at private or municipal sites. It should be noted, however, that several cases have sustained local prohibitions against the disposal of out-of-town wastes at a municipal landfill on the ground that such prohibitions do not discriminate against interstate commerce and otherwise satisfy the requirement of the Pike v. Bruce Church, Inc. test, see note 3 supra, for such non-discriminatory prohibitions. Greenwillow Landfill, Inc. v. Akron, 485 F. Supp. 671, 678-79 (N.D. Ohio 1979); Dutchess Sanitation Service v. Plattekill, 426 N.Y.S. 2d 176 (App. Div. 1980); Monroe-Livingston Sanitary Landfill, Inc. v. Caledonia, 422 N.Y.S.2d 249 (App. Div. 1979).

7/
interstate commerce.

The situation may be somewhat different, however, if the State were to operate a treatment or disposal site itself^{7/} and seek either to restrict access to the site to its residents or to impose substantially larger fees on non-resident users. The Supreme Court left this question open in Philadelphia, expressly directing the reader's attention to Hughes v. Alexandria Scrap Corp., 426 U.S. 794, 805-10 (1976). Philadelphia v. New Jersey, supra, at 627, n. 6. In that case, the Court held that the Commerce Clause was not violated when the State entered the market to encourage the removal of abandoned automobiles from its streets by paying a bounty to resident "processors" for each vehicle which they destroyed. The Court found that this kind of subsidy to encourage desirable behavior on the part of resident businesses did not impermissibly burden interstate commerce. It is possible to argue, therefore, that by establishing a hazardous waste treatment, storage or disposal site by limiting access to residents and resident businesses only, the State of Maine would only be engaging in a similar form of subsidy for the benefit of its resident businesses. See Reeves, Inc. v. Stake, U.S. 48 U.S.L.W. 4746 (June 19, 1980). That being the case, we would think that an argument can be made that the State may limit access to such a site to its residents.^{8/}

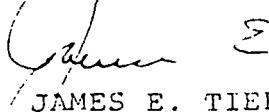
- 7/ You have also asked whether this result might be any different if the State were to distinguish in its prohibition between types of hazardous wastes, such that if certain wastes were generated within the State, similar wastes would be allowed in for disposal, but all other hazardous wastes would be prohibited. While such a scheme might be drafted in a manner which facially treated residents and non-residents equally, the fact remains that place of origin would still determine, albeit in a somewhat different fashion, whether or not a particular waste could be disposed in Maine. Given the broad language in the Philadelphia decision that control of hazardous waste disposal "may not be accomplished by discrimination against articles of commerce coming from outside the State unless there is some reason, apart from their origin, to treat them differently," 437 U.S. at 626-27 (emphasis added), we doubt that such a scheme could survive a Commerce Clause challenge. As indicated above, the State might be able to restrict importation of specific substances, but only if it could be shown that their very movement into the State endangered the public health.
- 8/ By a "state site," we mean one which is either owned by or leased to the State, and operated by it, either by its own employees or by a contractor.
- 9/ In reaching this conclusion, we do not address the question of whether the State, having established a treatment, storage or disposal site of its own, may also prohibit the establishment of other privately-owned or operated sites.

A similar approach might be used to sustain the imposition of substantially higher fees on non-resident users of a State-owned site against Commerce Clause challenge. In addition, however, such a plan would require scrutiny under the Privileges and Immunities and Equal Protection Clauses of the Fourteenth Amendment of the Constitution. There is, however, substantial authority for the proposition that such higher fees do not violate these clauses when, as here, the resource or facility in question is being managed or financed through taxes paid by the State's residents. See, e.g., Baldwin v. Montana Fish and Game Comm'n., 436 U.S. 371 (1978) (higher non-resident fee for non-resident hunting license); Hooban v. Boling, 503 F.2d 648 (6th Cir. 1974), cert. den. 421 U.S. 920 (1975) (higher non-resident tuition for state university.) It is impossible to say, of course, how high a fee must be before it becomes constitutionally infirm.¹⁰ The most that can be said at present is that a substantial discrimination may be made.

Finally, you ask whether the State may impose restrictions on the disposal of hazardous wastes originating out of state at a site owned by the federal government. The answers here would appear to be the same as for restrictions on disposal at private or local sites; the prohibition is discriminatory against interstate commerce on its face and is not justified with regard to the hazards posed by particular substances. It therefore violates the Commerce Clause. In addition, this proposal poses the further constitutional problem that in establishing such a site, the federal government would doubtless be acting in pursuit of one of the enumerated powers granted to it by the states in enacting the United States Constitution, and may therefore be immune to any regulation whatever by the states. Arizona v. California, 283 U.S. 423 (1931); Hunt v. United States, 278 U.S. 96 (1928); Johnson v. Maryland, 254 U.S. 51 (1920). Without knowing the exact purpose of such a site, we cannot answer this question with any certainty. The problem, however, is clearly quite substantial.

I hope the foregoing answers your questions. Please feel free to reinquire if further amplification is needed.

Sincerely,

 JAMES E. TIERNEY
Attorney General

JET:mfe

^{10/} In Baldwin, the differential was as high as 2500 percent (\$9 fee for residents and \$225 fee for non-residents to hunt elk). Baldwin v. Montana Fish & Game Comm'n., supra, at 373.

City of Biddeford, Maine
Hazardous Materials Control Ordinance

City of Biddeford, Maine
 HAZARDOUS MATERIALS CONTROL ORDINANCE
 Article XIII, Section 16

Table of Contents

	Page	
Sec. 16-1	Purpose	1
Sec. 16-2	Legislative Authority	1
Sec. 16-3	Severability	1
Sec. 16-4	Definitions	1
Sec. 16-5	Regulation	5
16-5-1	Minimum quantities to require a permit	5
16-5-2B.	Necessity for a permit	5
16-5-3C.	Classes of permits by types of materials and types of uses	5
Sec. 16-6	Administrative Procedures	6
16-6-1	Planning Board to receive applications	6
16-6-2	Application for permit renewal	6
16-6-3	Owners to be identified	6
16-6-4	Applications to conform to Section VII	6
16-6-5	Planning Board to issue permits	6
16-6-6	Planning Board may impose permit conditions	6
16-6-7	Planning Board shall respond within 60 days and shall hold a hearing	6
16-6-8	Applicant shall respond within 45 days	7
16-6-9	Permit issuance or denial within 45 days of the public hearing	7
16-6-10	Permit to be posted	7
16-6-11	Permit to apply only to site delineated in the application	7
16-6-12	Separate permits required for separate sites	7
16-6-13	Separate permits may be issued for distinct portions of a site	7
16-6-14	Planning Board to be notified of impending closure	7
16-6-15	Permits shall expire each year, but are renewa ble	7
Sec. 16-7	Hazardous Materials Use, Storage or Disposal Site Permit Applications	7
16-7-1	Class I and Class II Hazardous Materials Use Permits	7
16-7-2	Class III and Class IV Hazardous Materials Use Permits	8
16-7-3	Class V. Hazardous Materials Storage Permits	9
16-7-4	Industrial Waste Incinerator Permits	9
16-7-5	Application Supporting Information for Class I, II, III, and IV Permits	10
16-7-6	Application Supporting Information for Class V Permits	11
16-7-7	Application Supporting Information for Class I Industrial Waste Incinerator Permits	12

Sec. 16-8	Hazardous Materials Use, Storage, or Disposal Site Design Standards	13
16-8-1	Class I Standards	13
16-8-2	Class II Standards	13
16-8-3	Class III Standards	14
16-8-4	Class IV Standards	14
16-8-5	Class V Standards	14
16-8-6	Class I Industrial Waste Incinerator Standards	15
Sec. 16-9	Hazardous Materials Use, Storage, or Disposal Site Operation	16
16-9-1	Class I, II, III, IV, and V Sites	16
16-9-2	Industrial Waste Incinerators	18
Sec. 16-10	Decision Making Criteria	19
Sec. 16-11	Suspension and Revocation of Permit	19
16-11-1	Code Enforcement Officer authorized to suspend or revoke a permit	19
16-11-2	Code Enforcement Officer may issue notice of violation indicating corrective action necessary	20
16-11-3	Permit holder may appeal to the Planning Board	20
Sec. 16-12	Applicability	20
Sec. 16-13	Present Hazardous Materials Users	20
16-13-1	Effected persons to apply within 60 days	20
16-13-2	Applicants whose present business requires a Class I or Class II permit shall not be in violation of this ordinance until the Board issues or denies the permit applied for	20
16-13-3	Applicants whose present business requires a Class III, Class IV, or Class V permit shall not be in violation of this ordinance until the Board issues or denies the permit applied for	20
Sec. 16-14	Availability of Records and Access for inspections	20
16-14-1	Permit holder to keep records	20
16-14-2	Permit holder to make premises available for inspections	20
Sec. 16-15	Change of Ownership, Administration, Location or Services	21
16-15-1	Permit shall become void	21
16-15-2	Planning Board may extend the expiration date	21
16-15-3	Permit shall apply only as specifically delineated in the application	21
16-15-4	Planning Board shall issue a temporary permit upon return of the previous permit	21
Sec. 16-16	Violations and Appeals	21
16-16-1	Persons aggrieved may appeal to the Superior Court	21
16-16-2	Maximum and minimum fines	21
Sec. 16-17	Permit Application Fees and Annual Permit	21
16-17-1	Permit application fees	21
16-17-2	Annual permits fees	22

HAZARDOUS MATERIALS CONTROL ORDINANCE *

The City of Biddeford Hereby Ordains:

Section I: Purpose

The regulations set forth in this ordinance are adopted to:

- A. Provide for the protection of groundwater and surface water quality through the control of hazardous materials handling, storage, or disposal;
- B. Protect the health, safety, and welfare of the citizens of the City of Biddeford

Section II: Legislative Authority

This ordinance is enacted pursuant to authority granted in 30 M.R.S.A. Section 1917, 38 M.R.S.A. Section 1320, and 38 M.R.S.A. Section 1321.

Section III: Severability

If any part or parts, section or subsection, sentence, clause or phrase of this ordinance or the rules and regulations promulgated thereunder is for any reason declared to be unconstitutional or invalid, such shall not affect the validity or constitutionality of the remaining portions of this ordinance or the rules and regulations promulgated thereunder.

Section IV: Definitions

A. "Hazardous Materials" shall mean all materials in quantities controlled by this ordinance with the characteristics listed below, specifically excluding salt, solid wastes lawfully deposited in the City of Biddeford Landfill, domestic sewage, domestic sewage sludge, nonradioactive cooling water, boiler blow down water, sand and gravel washing waste, waste that is lawfully discharged to surface waters or any public sewerage system, virgin petroleum products for retail sales or use on site as a fuel, and agricultural organic wastes.

1. "Type 1 Toxic Materials" shall mean a material which, due to toxicity, ability to harm genetic material, or persistence of a representative sample of a standard leachate from the waste, has any of the properties defined below.

(a) Has a concentration of any substance, for which a federal drinking water standard exists, greater than or equal to 10 times that drinking water standard. (b) Has a concentration (mg/l) of any substance in the NIOSH Registry of Toxic Effects of Chemical Substances ("Registry") greater than or equal to 0.35 times the lowest oral mammalian LD50 expressed in mg/kg units for that substance.

(c) Has a concentration (mg/l) of any substance equal to 10 times the lowest 96 hour LC50 (mg/l) for that substance as listed in the "Registry."

2. "Type 2 - Reactive Materials" shall mean a material which has any of the following properties:

(a) Materials which in themselves are normally unstable and readily undergo violent chemical change but do not detonate. Also materials which may react violently with water, which may form potentially explosive mixtures with water, or which generate toxic fumes when mixed with water.

(b) Materials which in themselves are capable of detonation or explosive reaction but require a strong initiating source or which must be heated under confinement before initiation or which react explosively with water.

(c) Materials which in themselves are readily capable of detonation or of explosive decomposition or reaction at normal temperatures and pressures.

(d) Reactive materials can also be identified by the following tests:

(i) Thermally unstable liquid materials can be identified using the JANAF (Joint Army-Navy-Air Force) L.P. Test No. 6.

(ii) Thermally unstable liquid or nonfluid materials can be identified using the protocol specified in ASTM Standard Method E-476-73.

(iii) Materials unstable to mechanical shock can be identified using the Picatinny Arsenal Impact Test (Picatinny Arsenal Technical Report No. 1740 (Revision 1) (1958), or the Bureau of Mines Impact Test (U.S. Bureau of Mines Bulletin 346 (1931)).

3. "Type 3 - Radioactive Materials" shall mean low level liquid and gaseous radioactive materials and high level solid liquid or gaseous materials. Low level liquid and gaseous radioactive materials shall mean all liquid and gaseous materials that exceed the maximum permissible concentrations for discharge to unrestricted areas as listed in Appendix B, Table II, Columns 1 and 2 of Title 10, Part 20 of the Code of Federal Regulations except that defined as high level liquid or gaseous radioactive waste. High level liquid and gaseous radioactive waste includes the liquid and gaseous wastes resulting from the operation of the first cycle solvent extraction system, or equivalent, and concentrated wastes from subsequent extraction cycles, or equivalent, in a facility for reprocessing of irradiated reactor fuel; and, any other radioactive waste which the Planning Board shall subsequently specify as high level radioactive waste as adopted by order of the Council.

4. "Type 4 - Flammable Waste" shall mean any waste such that any sample of that waste has a flash point less than 140 degrees Fahrenheit (60 degrees centigrade) determined by the Pensky-Martens Closed Cup Tester, using the protocol specified in ASTM Standard D-93-73.

5. "Type 5 - Corrosive Waste" shall mean any waste such that any sample of that waste has either of the following properties:

(a) A pH less than 2. or greater than 12. as determined by the pH meter, using the protocol specified in the "Manual of Methods for

Chemical Analysis of Water and Wastes" (EPA-625-16-74 003).

(b) A corrosion rate greater than 0.250 inch per year on steel (SAE 1020) at a test temperature of 130 degrees Fahrenheit as determined using the protocol specified in NACE (National Association of Corrosion Engineers) Standard TM-01-69.

6. "Type 6 - Infectious Waste" shall mean any waste which is generated from the following sources:

(a) Health care facilities

Certain departments of hospitals as defined by Standard Industrial Classification (SIC) Codes 8062 and 8069 in "Standard Industrial Classification Manual, 1972" U.S. Government Printing Office, Stock No. 4101-0066.

- (i) Obstetrics department including patients' rooms
- (ii) Emergency department
- (iii) Surgery department including patients' rooms
- (iv) Morgue
- (v) Pathology department
- (vi) Autopsy department
- (vii) Isolation rooms
- (viii) Laboratories
- (ix) Intensive care unit
- (x) Pediatrics department

(b) Laboratories, as defined by SIC Codes 7391, 8071 and 8922 but does not include any waste which is discharged directly to an underground seepage system at the site at which it is generated.

7. "Type 7 - Other Waste" shall mean any industrial waste which is not a Type 1 - Toxic Waste; Type 2 - Reactive Waste; Type 3 - Radioactive Waste; Type 4 - Flammable Waste; Type 5 - Corrosive Waste; or Type 6 - Infectious Waste; and which is not discharged directly to an underground seepage system at the site at which it is generated.

8. "Waste Oil" shall mean discarded oil generated by residential, institutional, commercial, industrial, agricultural sources or oil recovered from spills.

B. "Hazardous Materials Use Permit" shall mean a certificate issued by the City of Biddeford Planning Board authorizing the handling, transportation, storage, or disposal of hazardous materials for a specific use site by a specific person or firm and specifying the types of records which must be kept, the types and schedules of reports which must be filed, and such other requirements which the Planning Board finds to be necessary for the protection of the health, safety, and welfare of the citizens of Biddeford.

C. "Planning Board" or "Board" shall mean the Biddeford Planning Board.

D. "Code Enforcement Officer" shall mean the Code Enforcement Officer of the City of Biddeford or employees of the City of Biddeford under his direction.

E. "Storage" shall mean the placement of materials in drums, tanks, lagoons, or other structures intended to retain the materials for subsequent use or disposal.

F. "Use" shall mean any employment of materials for any purpose unless specifically exempted by this ordinance.

G. "Disposal" shall mean the discharge, dumping, spilling, leaking, or placing of any materials into or on the land or water.

H. "Ground Water" shall mean the water present in the saturated zone of an aquifer.

I. "Aquifer" shall mean geologic deposits or structures from which useable quantities of ground water are available for households, municipalities or industries.

J. "Industrial Waste" shall mean waste oil, liquid waste, containerized gaseous waste or waste sludge produced by an industrial process or produced by an industrial waste water treatment plant but does not include any solid waste nor any domestic sewage or domestic sewage sludge or cooling water or boiler blow down water or sand washing or gravel washing waste or waste that is discharged directly into a municipal sewer system or waste that is lawfully discharged into any surface body of water.

K. "Hazardous materials use, storage or disposal site" shall mean real and personal property acquired, constructed or operated for the purpose of the storage, use, or disposal of hazardous material. Such sites shall be placed in one of the following five classifications: Class I, Class II, Class III, Class IV, or Class V.

1. "Industrial Waste Incinerator" shall mean an arrangement of chambers and equipment designed for burning industrial waste to a gaseous emission and a residue.

L. "Liner" shall mean a layer of material used as a barrier to impede the movement of hazardous materials or industrial waste into ground or surface water. Liners may include but not be limited to natural soils, asphalt treatments, polymeric membranes and/or treated soils.

M. "Load" shall mean a mass or weight of industrial waste or hazardous material contained in one transporting container.

N. "Manifest" shall mean a separate record for identifying the quantity, composition, type and the origin, routing and destination of hazardous materials or industrial waste.

O. "Oil" shall mean any of a class of substances typically unctuous, viscous, combustible, liquid at 60 degrees Fahrenheit and soluble in ether or alcohol but not in water.

P. "Open Burning" shall mean the combustion of any material under such conditions that the products of combustion are emitted directly into the open atmosphere without passing through a stack or chimney.

Q. "Operator" shall mean any authorized individual responsible for the control of the site.

R. "Person" shall mean any individual, group of individuals, firm, corporation, association, partnership or private or public entity, including a district, county, city, town or other governmental unit or agent thereof, and in the case of corporation, any individual having active and general supervision of the properties of such corporation.

S. "Surface Water" shall mean a body of water whose top surface is exposed to the atmosphere including but not limited to rivers, ponds, lakes, streams, marshes and wetlands.

T. "Solid Waste" shall mean garbage, refuse and other discarded solid materials generated by residential, institutional, commercial, industrial and agricultural sources but does not include solids or dissolved material in domestic sewage or sewage sludge.

U. "Water Table" shall mean the upper level of the ground water.

Section V: Regulation

A. The construction, expansion, or utilization of facilities to handle, store, or dispose of hazardous materials Types 1,2,4,5,6,7 and 8 in quantities in excess of 120 gallons, 16 cubic feet, or 1000 pounds at any one time, or 180 gallons, of 24 cubic feet, or 1500 pounds per month, shall require a hazardous materials use permit. The construction, expansion, or utilization of facilities to handle, transport, store, or dispose of Type 3 hazardous materials (radioactive materials) in quantities in excess of one pound shall require a hazardous materials use permit.

B. No person shall construct, develop, establish, operate, manage, own or maintain an industrial or commercial site which will use, store, or dispose of hazardous materials in quantities covered by the ordinance without having first obtained a permit from the Planning Board. A permit or permit renewal shall be issued for a period of one (1) year from the date of issuance, unless sooner suspended or revoked. Each permit or permit renewal shall be issued only for the site designated in the plans accompanying the application and shall not be transferable or assignable except with the written approval of the Planning Board.

C. There shall be five classes of hazardous materials use, storage, and disposal permits issued by the Planning Board. These permits may be issued to the respective classes of sites, categorized by the expected use of the site as described below:

The five classes of hazardous materials use, storage, or disposal sites may accept or store hazardous materials in quantities covered by this ordinance in accordance with the following:

1. Class I hazardous materials use, storage, or disposal sites may accept, use, process, and dispose of all types of hazardous materials, unless specifically prohibited by the Planning Board.
2. Class II hazardous materials use, storage, or disposal sites may accept all types of materials for storage in tanks but only Types 4,5,6 and 7 hazardous materials and waste for storage in lagoons or disposal unless specifically prohibited by the Planning Board.
3. Class III hazardous materials use, storage, or disposal sites may accept all types of hazardous materials for storage in tanks preparatory to use on site or resale.

4. Class IV hazardous materials use, storage, or disposal sites may accept only Types 6 and 7 hazardous materials for storage in lagoons of pits or for disposal unless specifically prohibited by the Planning Board.
5. Class V hazardous materials storage sites may drain hazardous materials, including waste crank case oils, hydraulic fluids, and coolants from automobiles and trucks and store such materials on site within the volume limitations of this ordinance and in accordance with their permit limitations.
6. Where a particular hazardous material or an inseparable mixture of hazardous materials may be categorized into more than one type of hazardous materials that which has the lowest type number will be the basis for determining the class site that must be used for the disposal of this material or mixture of materials.

Section VI: Administrative Procedures

- A. The Planning Board shall receive applications from applicants desirous of being permitted to operate hazardous materials use, storage, or disposal sites. The application must be made upon forms provided by the Planning Board and shall contain plans and specifications required by this ordinance. The application shall also contain such other information as the Planning Board requires which may include affirmative evidence of ability to comply with this ordinance.
- B. Application for the renewal of a permit must be submitted three (3) months prior to the expiration date of the permit.
- C. Each application shall be accompanied by a list of direct and indirect owners, in affidavit form. If the entity is a corporation or association, the list shall include all officers, directors and other persons owning ten percent (10%) or more of the corporate stock.
- D. Applications for hazardous materials use permits shall contain the information required in Section VII of this ordinance.
- E. The Planning Board may issue permits for hazardous materials use, storage and/or disposal in accordance with the provisions of this ordinance.
- F. The Planning Board may impose such permit conditions as it determines are necessary for the protection of the health, safety, and welfare of the City of Biddeford. Such conditions may include, but are not limited to, testing of ground and surface waters, specific limitations on the manner and methods by which hazardous materials are handled, transported, stored or disposed of, and/or such performance bonding as the Board determines to be necessary. No such limitation may be less restrictive than the requirements of this ordinance for Class I and II permits. Variance may be granted for Class III, Class IV and Class V permits providing that such variances do not increase the risks to the health, safety, and welfare of the citizens of Biddeford and meet the purposes of this ordinance.
- G. The Planning Board shall respond within 60 days to persons submitting an application for a hazardous materials use permit. This response shall state whether or not the information supplied in the application is sufficient for the Board to determine that the health, safety and welfare of the citizens of Biddeford will be adequately protected. The Planning Board shall respond to each new set of information presented by the applicant within 60 days of its submittal. If the Planning Board determines that the information is sufficient to determine whether or not the proposed use will threaten the health, safety, and welfare of the citizens of Biddeford, it shall call a public hearing on the proposal within thirty (30) days of formal notice of that determination.

H. The applicant shall respond to each determination by the Planning Board that the information contained in the application is not sufficient with the required information within forty-five (45) days, or some other period of time as specified by the Planning Board.

I. The Planning Board may grant a hazardous materials use permit within 45 days of public hearing if it determines that the proposed use will not threaten the health, safety, and welfare of the citizens of Biddeford. If issued, this permit shall contain record keeping requirements and such other conditions as it determines are necessary. If the Planning Board denies a hazardous materials use permit, it shall state the reasons for rejection of the application in its order for denial.

J. A permit issued hereunder shall be kept posted in a conspicuous place on the permitted facility and must be kept legible and protected from the weather.

K. The permit shall apply only to the operations and site which is delineated on plans submitted as part of the application. Additional areas or services shall be subject to the approval of the Planning Board in accordance with this ordinance.

L. Separate permits shall be required for hazardous materials use sites which are located in separate geographical areas even though they are under the same management.

M. A separate permit may be issued to a distinct part of a site which can be identified as a separate unit.

N. A permittee shall notify the Planning Board of the impending closure of the site at least thirty (30) days prior to such closure.

O. Permits shall expire one (1) year from the date of issue, unless sooner suspended or revoked, but may be renewed.

Section VII: Hazardous Materials Use, Storage or Disposal Site Permit Applications

A. Class I and Class II Hazardous Materials Use Permits - A person may be entitled to a Class I or Class II hazardous materials use permit if he or she meets the following:

1. The applicant must document his or her right, title and interest to the land on which the hazardous material use, storage, or disposal is to occur and the site must be at least 20 acres in size.

2. If the site is to be used for hazardous materials disposal, the applicant must have access to at least one piece of earth-moving equipment with a minimum weight of 17,000 pounds.

3. The applicant must have obtained zoning approval from the City of Biddeford for the proposed use and site.

4. The applicant must have complied with the minimum criteria set forth for the particular class site for which the permit is sought as delineated in this ordinance.

5. The applicant must have obtained all permits from the Department of Environmental Protection which do not require the approval of the City of Biddeford for the disposal, storage, or use of hazardous materials.

6. The applicant must affirm that neither the site nor the owner is, in whole or in part, encumbered in any way whatsoever by any pre-existing injunctive court order prohibiting the use of the site for the use, storage or disposal of hazardous materials.

7. The applicant must have obtained a surety bond in the amount of \$1,000,000.00 guaranteeing the operation on the site in accordance with these rules and regulations, or the applicant must post a sum equal to or greater than \$1,000,000.00 with the City of Biddeford, any or all of which may be used by the City of Biddeford to correct failures to comply with this ordinance or to pay for actual damages it finds have been caused by the applicants hazardous materials use, storage, or disposal activities. Such surety bonds or cash deposits shall be held by the City of Biddeford for a period of 40 years after the site is no longer in operation.

8. The applicant must have submitted an application in accordance with the procedures and requirements set forth in the ordinance.

9. The applicant must have paid the application fee.

B. Class III and Class IV Hazardous Materials Use Permits - A person may be entitled to a Class III and Class IV hazardous materials use permit if he or she meets the following:

1. The applicant must document his or her right, title, and interest to the land on which the hazardous materials use site is to be operated.

2. The applicant must have obtained zoning approval from the City of Biddeford for the site at which hazardous materials use, storage or disposal will occur.

3. The applicant must demonstrate compliance with the minimum criteria set forth for the particular class site for which the permit is sought as delineated in this ordinance.

4. The applicant must have obtained the necessary permits and/or approval from the Department of Environmental Protection of the State of Maine which do not require the approval of the City of Biddeford for the disposal, storage, or use of hazardous materials.

5. The applicant must affirm that neither the site nor the owner is, in whole or in part, encumbered in any way whatsoever by any pre-existing injunctive court order prohibiting the use of the site for the use, storage or disposal of hazardous materials.

6. The applicant must have submitted an application in accordance with the procedures and requirements set forth in this ordinance.

7. The applicant must agree to:

- a. obtain a surety bond of not more than \$500,000 to guarantee the operation of the site in accordance with this ordinance, or
- b. post a sum of not more than \$500,000 with the City of Biddeford, any or all of which may be used by the City of Biddeford to correct failures to comply with this ordinance or to pay for damages it finds have been caused by the applicants use, storage, or disposal of hazardous materials.

The amount of the bond or the amount of cash to be posted shall be determined by the Planning Board based upon its review of the application and its assessment of the risk associated with the activities for which the hazardous materials use permit is being sought. Such surety bonds or cash deposits shall be held by the City of Biddeford throughout the life of the permitted facility, and shall terminate or be relinquished only after the prescribed closure period, from 0 to 20 years, as set by the Planning Board, has elapsed.

C. Class V Hazardous Materials Storage Permits - A person may be entitled to a Class V hazardous materials storage permit if he or she meets the following criteria:

1. The applicant must demonstrate right, title, or interest to the site at which the proposed hazardous materials storage is to be located.
2. The proposed use must be in accordance with the zoning ordinance of the City of Biddeford, and any waivers, variances, special exceptions, and other permits for deviations from this ordinance must be obtained prior to making application for this permit.
3. The applicant must have obtained the necessary permits and/or approvals from the Department of Environmental Protection, the Department of Human Services, or other departments of the State of Maine prior to making application for this permit.
4. The applicant must have submitted an application in accordance with the procedures and requirements of this ordinance.
5. The applicant must never have had a Class V hazardous materials storage permit revoked by the City of Biddeford.
6. The applicant must affirm that neither the site nor the owner is, in whole or in part, encumbered in any way by any pre-existing injunctive court order prohibiting the use of the site for the storage of hazardous materials.
7. The applicant must have paid all fees required by this ordinance.

D. Industrial Waste Incinerator Permits - A person may be entitled to an industrial waste incinerator permit if he or she meets the following criteria:

1. The applicant must document right, title and interest to the land on which the industrial waste incinerator is to be operated.
2. The applicant must have obtained zoning approval from the City of Biddeford for the location of the industrial waste incinerator.
3. The applicant must have complied with the minimum criteria set forth as delineated in this ordinance.
4. The applicant must have obtained the necessary permits and/or approval from the Department of Environmental Protection of the State of Maine.
5. The applicant must affirm that neither the site nor the owner is, in whole or in part, encumbered in any way whatsoever by any pre-existing injunctive court order prohibiting the use of the site for the operation of an industrial waste incinerator.
6. The applicant must have obtained a surety bond in the amount of \$1,000,000.00 guaranteeing the operation on the incinerator site in accordance with this ordinance, or the applicant must post a sum equal to or greater than \$1,000,000.00 with the City of Biddeford, any or all of which may be used by the City of Biddeford to correct failures to comply with this ordinance or to pay for actual damages it finds have been caused by the applicants hazardous materials use, storage, or disposal activities. Such surety bonds or cash deposits shall be held by the City of Biddeford for a period offive years after the site is no longer in operation.
7. The applicant must have submitted an application in accordance with the procedures and requirements set forth in this ordinance.

8. The applicant must have paid the application fee.

E. The following plans and specifications shall be submitted as application supporting information for applications for Class I, II, III, and IV Permits. All plans except the initial investigation plan must be stamped by a registered professional engineer, a registered land surveyor, a certified geologist, or a registered soil scientist, as is appropriate.

1. Initial Investigation Plan - A copy of the latest geologic survey map available, with the site outlined, should be submitted prior to all other required information. This will allow initial investigations of the area relating to wetlands, aquifers and impacts to shoreland zones before large investigation and development expenditures are made.

2. Radius Plan - A radius plan including all of the information listed below shall be submitted. The radius plan shall include all areas within a one-half ($\frac{1}{2}$) mile radius out from all perimeter property lines of the site and shall locate and delineate the following:

- a. Zoning of the areas
- b. All buildings and dwellings
- c. All water supplies (wells, etc.)
- d. All surface water courses and other wetlands
- e. All roads
- f. All boring locations
- g. Site property lines
- h. North arrow
- i. Extent of 100 year flood plain
- j. Monitoring well locations

3. Site Plan - A site plan including all of the information listed below for all areas within the site shall be submitted.

- a. All boring locations
- b. All buildings
- c. All water supply wells
- d. All surface water courses and wetlands
- e. All roads
- f. Site property lines
- g. Power lines, pipe lines, rights of way and other utilities
- h. All fences
- i. North arrow
- j. All disposal trenches (if any)
- k. Ground contours at two foot intervals
- l. All monitoring well locations

4. Hydrological Survey Plan - A hydrological study shall be made for each site. A plan including all of the information listed below shall be submitted.

- a. Ground water contours
- b. Boring locations
- c. Monitoring well locations
- d. Top of monitoring well pipe elevation
- e. Soil profiles including ground water location and impervious formations
- f. Boring logs from borings and monitoring wells

5. Cross Section Plan - A minimum of two cross section plans, drawn at

right angles, including all of the information listed below shall be submitted for Class I and II permits, for Industrial Waste Incinerator Permits, and at the option of the Planning Board, for Class III and Class IV Permits.

- a. All disposal locations
- b. Bedrock location
- c. Ground water elevation
- d. Soil profiles
- e. Location of liner (if any)
- f. Design of liner system
- g. Under-drain monitoring system (if any)
- h. Trenches (if any)

6. Operating Plan - An operating plan including all of the information listed below shall be submitted.

- a. Proposed operations
- b. Fire control and prevention provisions
- c. Operating hours
- d. Types of hazardous materials to be used, stored, or disposed
- e. Personnel and duties
- f. Projected use of completed site if used for disposal
- g. Odor control program
- h. Equipment to be on site during operation
- i. Communication equipment available
- j. Estimated life of site
- k. Aesthetic considerations
- l. Salvaging operations
- m. Leachate treatment operations (if any)
- n. Surface drainage control method

F. The following plans and specifications shall be submitted as application supporting information for Class V Permits.

1. Radius Plan - A radius plan including all of the information listed below shall be submitted. The radius plan for an automobile service garage shall include all areas two hundred (200) feet in all directions from all perimeter property lines of the site. The radius plan for all automobile graveyards shall include all areas one thousand (1000) feet from the perimeter property lines of the site. Both radius plans shall locate and delineate the following:

- a. Zoning of the areas
- b. All buildings and dwellings
- c. All water supplies including public and private wells
- d. All surface water courses and other wetlands
- e. Site property lines
- f. North arrow
- g. Extent of the 100 year flood plain

2. Site Plan - A site plan including all information listed below for all areas within the site shall be submitted.

- a. All buildings
- b. All water supply wells
- c. Site property lines
- d. Roads

e. Tank locations and access points

3. Operating Plan - An operating plan including all of the information listed below shall be submitted.

a. Proposed operation

b. Proposed removal schedule for hazardous materials stored on site

The following plans and specifications shall be submitted as application supporting information for Class I Industrial Waste Incinerator Permits. All plans must be stamped by a registered professional engineer.

1. Initial Investigation Plan - A copy of the latest geologic survey map available, with the incinerator site outlined, should be submitted prior to all other required information. This will allow initial investigations of the area relating to wetlands, aquifers and impacts to shoreland zones before large investigation and development expenditures are made.

2. Radius Plan - A radius plan including all of the information listed below shall be submitted. The radius plan shall include all areas within a one-half ($\frac{1}{2}$) mile radius out from all perimeter property lines of the industrial waste incinerator site and shall locate and delineate the following:

- a. Zoning of the areas
- b. All buildings and dwellings
- c. All water supplies (wells, etc.)
- d. All surface water courses and other wetlands
- e. All roads
- f. All boring locations (if any)
- g. Site property lines
- h. North arrow

3. Site Plan - A site plan including all of the information listed below for all areas within the site shall be submitted.

- a. All boring locations (if any)
- b. All buildings
- c. All water supply wells
- d. All surface water courses and wetlands
- e. All roads
- f. Site property lines
- g. Power lines, pipe lines, rights of way and other utilities
- h. All fences
- i. North arrow
- j. On site residue disposal and storage areas (if any)
- k. Site drainage facilities

4. Construction and Engineering Plans - A complete set of construction and engineering plans and specifications relating to the incinerator and all associated buildings, equipment, and hazardous materials storage must be submitted.

5. Operating Plan - An operating plan must be submitted including all of the information listed below.

- a. Operating hours
- b. Operating and design capacities
- c. Personnel and duties

- d. Odor control
- e. Substitute disposal arrangements
- f. Communication equipment
- g. Provisions for limited access
- h. Aesthetic considerations
- i. Residue disposal arrangements
- j. Fire control and prevention provisions
- k. Routine overhaul and maintenance schedules
- l. Industrial waste handling procedures
- m. Water and waste water treatment and disposal
- n. On site traffic control
- o. Storage procedures
- p. Industrial waste container disposal procedures

Section VIII: Hazardous Materials Use, Storage, or Disposal Site Design Standards

A. Class I sites shall be located, designed, constructed and maintained in accordance with the following:

1. The containment vessel must be lined on all surfaces except the top surface with material that is equivalent to a five foot layer of soil with a permeability of 1.0×10^{-8} centimeters per second.
2. The liner material may not be reactive with the hazardous material(s) to be placed in any storage or disposal site.
3. Deposited material shall not have top surfaces directly exposed to the atmosphere.
4. The liner must be covered by at least four feet of suitable fill material that will minimize frost effects on the liner, or a registered professional engineer must certify that any tanks used will not be subject to the effects of frost.
5. Industrial waste shall not be disposed of within 2,500 feet of any dwelling or private drinking water supply well. Industrial waste shall not be disposed or stored on any watershed of an existing or planned public drinking water supply well.
6. Sites shall not be located within any 100 year flood plain.
7. All areas, including a 200 foot buffer zone, of the site shall be enclosed with a chain link fence six feet in height.
8. The site shall not be located within 1,000 feet of a surface body of water within its watershed.

B. Class II sites shall be located, designed, constructed and maintained in accordance with the following:

1. The containment vessel must be lined on all surfaces except the top surface with material that is equivalent to a ten foot layer of soil with a permeability of 1.0×10^{-7} centimeters per second.
2. The liner material may not be reactive with the deposited hazardous materials.
3. Deposited materials shall not have top surfaces directly exposed to the atmosphere.
4. The liner must be covered by at least four feet of suitable fill material that will minimize frost effects on the liner or a registered professional engineer must certify that any tanks employed to store hazardous materials will not be subject to the effects of frost.
5. Hazardous materials shall not be disposed of within 2,500 feet of

any dwelling or private drinking water supply well. Hazardous materials shall not be disposed or stored on any watershed used as a surface public drinking water supply or any area likely to drain to a public drinking water supply.

6. The site shall not be located within any 100 year flood plain.

7. All areas, including a 200 foot buffer zone, of the site shall be enclosed with a chain link fence six feet in height.

8. The site shall not be located within 1,000 feet of any residence.

C. Class III hazardous materials use or storage sites shall be located, designed, constructed, and maintained in accordance with the following:

1. The material separating the deposited or stored material and the highest level of the ground water table must be equivalent to a five foot layer of soil with a permeability of 1.0×10^{-5} centimeters per second.

2. The liner material may not be reactive with the stored or used hazardous materials.

3. Hazardous materials stored on site shall not have its top surface directly exposed to the atmosphere.

4. The storage area liner and the storage tanks must be certified by a registered professional engineer to be designed in such a fashion that frost, normal wear, and foreseeable accidents will not adversely affect their functioning.

5. Hazardous materials covered by this permit shall not be stored or used within 500 feet of any residence, or public or private drinking supply well, and all lands within this area shall be controlled through ownership, easement, or other legal means to assure that such uses are not established within 500 feet during the life of the site. Nor shall they be stored or used in any watershed tributary to a public drinking water supply whether from surface waters or from wells.

6. The site shall not be within the 100 year flood plain.

D. Class IV sites shall be located, designed, constructed and maintained in accordance with the following:

1. The material separating the deposited or stored material and the highest level of the ground water table must be equivalent to a five foot layer of soil with a permeability of 1.0×10^{-2} centimeters per second.

2. Hazardous materials to be disposed of on site shall not be disposed within 1,000 feet of any dwelling or within 500 feet of a private drinking water supply well. Industrial or commercial waste containing hazardous materials shall not be deposited on any watershed used as a surface public drinking water supply or any area likely to drain to a public drinking water supply well.

3. Any trenches used for the disposal of hazardous materials in the site must either be enclosed with six foot chain link fencing or covered with grates constructed of chain link fence and supported by frames.

4. The site shall not be located within 200 feet of any surface body of water.

5. Hazardous materials stored for subsequent sale, or use on site shall be stored at least 200 feet from the nearest residence and shall be stored in a manner which the Planning Board deems to be protective of the health, welfare, and safety of the citizens of Biddeford.

6. The site shall not be within the 100 year flood plain.

E. Class V sites shall be located, designed, constructed, and maintained in accordance with the following:

1. The Class V hazardous materials storage site shall not be within the 100 year flood plain unless flood protection of the area in which hazardous materials are stored is provided by structures designed by a registered professional engineer.

2. The Class V hazardous materials storage site shall provide not more than one (1) underground tank with 500 gallon capacity to store waste oil drained from automobiles or trucks serviced on site.

3. Automobile graveyards with Class V hazardous materials storage permits shall use underground storage for hazardous materials drained from unserviceable, discarded, worn-out, or junked motor vehicles, or parts thereof, stored or processed on site.

F. There is only one (Class I) of industrial waste incinerators. Class I incinerators may burn all types of industrial waste unless specifically prohibited by the Planning Board.

1. Class I Industrial Waste Incinerators - Class I industrial waste incinerators shall be located, designed, constructed and maintained in accordance with the following:

a. The minimum temperature at the exit of the final combustion chamber shall be 1000 degrees centigrade and the materials shall be retained in the combustion chamber for a minimum of 2 seconds.

b. The rate of combustion shall not exceed the design limitations.

c. Gaseous and particulate emissions from the incinerator shall conform with the regulations of the Division of Air Quality of the Department of Environmental Protection of the State of Maine.

d. An alternate method of disposal using a Class I industrial waste disposal site must be available for use in the event of breakdown.

e. The incinerator shall not be located within 1,000 feet of any private dwelling or private drinking water supply well. No incinerator shall be located on any watershed of a surface public drinking water supply or any area likely to drain to a public drinking water supply well.

f. The incinerator shall not be located within any 100 year flood plain.

g. All areas of the site, including a 200 foot buffer zone, shall be enclosed with a chain link fence six feet in height.

h. The site shall not be located within 1,000 feet of a surface body of water.

i. All industrial waste must be stored within a building or in an area that would meet the design criteria of a Class I industrial waste disposal site.

j. The residue from the incinerator must be disposed of at a Class I hazardous materials use, storage or disposal site, or at such other sites outside of the City of Biddeford which meet the requirements of that town and the state in which it is located.

k. All water used to quench the incinerator residue, scrub the flue gas, clean the facility, as well as all drainings from the incinerator and the storage buildings, shall be disposed of in a manner that will not pollute any source of private or public water supply, any of the waters of the state or ground waters.

1. All incinerator facilities shall have a suitable means for extinguishing all types of fires.

Section IV: Hazardous Materials Use, Storage or Disposal Site Operation

A. Class I, II, III, IV, and V Hazardous Materials Use, Storage or Disposal Sites shall be operated as follows:

1. Water Contamination - Hazardous materials use, storage or disposal sites shall not be located or operated in a manner so that they will cause or contribute to the pollution of any source of private or public water supply or any surface water or any ground water.

2. Open Burning - Open burning of hazardous materials at hazardous materials use, storage or disposal sites shall be prohibited.

3. Inspection - All land, buildings, facilities and equipment used in the use, storage or disposal of hazardous materials must be available for inspection by the Code Enforcement Officer at any reasonable time.

4. Sampling - All industrial wastes must be available for sampling and testing by the Code Enforcement Officer at any reasonable time.

5. Odors - Suitable measures shall be taken to minimize odors originating at all hazardous materials use, storage or disposal sites. No odors shall be detectable off the site.

6. Safety - Hazardous materials use, storage or disposal sites shall be designed, operated and maintained in such a manner as to protect the health, safety and welfare of the users of the site, personnel associated with the operation of the site, and any other persons or their property who or which might come into contact with the site or with gaseous or liquid materials emanating from the operations of the site.

7. Record Keeping - Records shall be kept by the operator of the hazardous materials use, storage or disposal site except Class V sites stating accurately and truthfully the source, quantity, type of hazardous materials, hauler and any other pertinent information for each load of hazardous material accepted for use, storage or disposal. These records shall be submitted monthly or at some other interval specified by the Planning Board to the Code Enforcement Officer and made available during inspections of the site and at other times as requested.

8. Signs - A sign shall be erected and maintained at the entrance to the Type I, II, III and IV hazardous materials use, storage or disposal site, clearly legible and visible, which shall contain the following:

- a. Name of site
- b. Emergency phone number
- c. Accepted types of hazardous materials
- d. Operating hours

9. Fire Protection - All hazardous material use, storage or disposal sites shall arrange in writing for the Biddeford Fire Department to provide emergency service whenever called, and shall provide such special equipment and training as is necessary to reasonably prepare the Biddeford Fire Department to respond to emergencies at the site.

10. Labeling - No Class I, II, III, and IV hazardous materials use, storage or disposal site shall accept any hazardous material unless each load has an identifying label accurately describing the contents affixed to each transporting container.

11. Maintenance of Site - For a period specified in the permit and

by Section A2 of this ordinance following the last use, storage or disposal of hazardous materials at permitted sites, the operator shall retain control of the site and maintain the site in a condition consistent with this ordinance unless the permitted use of a Class III site was for hazardous materials use and storage only. Such maintenance of the site shall be guaranteed by an escrow account established by the individual or firm operating the site through equal annual payments over the first half of the site's life expectancy. The total amount of this account shall be determined by the Planning Board and shall be a condition of the permit.

12. Ground Water Separation - No land disposal of hazardous materials, and no lagoon storage of hazardous materials shall be conducted where the deposited material shall be within five feet of the maximum ground water table measured during the wet season as determined by the Planning Board at time of application.

13. Limited Access - Access to and all operations at hazardous materials use, storage or disposal sites where disposal of hazardous materials is occurring shall be limited to those hours between sunrise and one-half hour past sunset and only when authorized operating personnel are on duty.

14. Fire Extinguishers - All mobile equipment used at a hazardous materials use, storage or disposal site shall be equipped with dry chemical fire extinguishers.

15. Surface Drainage - Adequate measures shall be taken to prevent surface water runoff from entering the area of hazardous materials use, storage or disposal and to prevent the collection of standing water within the hazardous materials use, storage or disposal site.

16. Hazardous Materials Disposal Areas - The depositing, storing or disposing of any hazardous material at a hazardous material disposal site in places not designated for this purpose on the site plan shall be prohibited.

17. Borings - A sufficient number of borings, but not less than six at Class I and II sites and not less than three at Class III and Class IV sites, shall be installed at each site in order to allow for the adequate determination of ground water contours, soil profiles and other data. The borings shall be installed to a depth of 20 feet below the ground water table or to refusal whichever is first. Pipes shall be installed in each boring hole so that ground water level determinations can be made during the wet season as determined by the Planning Board a minimum of 24 hours after the boring is installed. After these measurements have been made, the pipes shall be removed and the boring holes shall be filled with suitable material prior to the installation of any liner at the site and/or the acceptance of any hazardous material at the site.

18. Monitoring Wells - The operator of a Class I, II, III, or IV hazardous materials use, storage or disposal site shall install and maintain monitoring wells in locations selected by the Planning Board and shall be of a design approved by the Planning Board. It shall be the responsibility of the operator of the site to arrange for the sampling and analysis of these wells before the acceptance of any hazardous material and on a monthly schedule or other schedule as set by the Planning Board thereafter. Results of these analyses must be submitted to the Code Enforcement Officer monthly or as required by the permit if another sampling schedule is set.

19. Equipment - All operators shall have all equipment necessary for operating the site in accordance with this ordinance. All equipment shall be maintained in such a manner that it shall be fit for the purposes for which it was intended by the manufacturers.
20. Communication - A suitable means of communication (telephone, two-way radio, etc.) shall be available at the site.
21. Manifest - The operator of any site shall not accept any industrial waste unless a manifest is completed for each load of hazardous material.
22. Insurance - The operator of any hazardous materials use, storage or disposal site shall be insured for damages to employees and other persons and their property. The amount of such insurance may be a condition of the permit.
23. Automobile Graveyard Hazardous Materials Storage - Operators of an automobile graveyard shall drain, in so far as is practical, all hazardous materials contained in unserviceable, discarded, worn-out, or junked motor vehicles, or parts thereof, to tanks provided on site immediately upon bringing such motor vehicles or parts on site.
24. Tank Inspections - All hazardous material storage tanks shall be pressure tested annually, and tanks failing such tests shall be reported immediately to the Code Enforcement Officer, drained or pumped to another permitted storage or disposal facility, and replaced within 10 days.

B. Industrial Waste Incinerators shall be operated as follows:

1. Water Contamination - Industrial waste incinerators shall not be located or operated in a manner so that they will cause or contribute to the pollution of any source of private or public water supply or any surface water or any ground water.
2. Open Burning - Open burning at an industrial waste incinerator site shall be prohibited.
3. Inspection - All land, buildings, facilities and equipment used in the disposal of industrial waste must be available for inspection by the Code Enforcement Officer at any reasonable time.
4. Sampling - All industrial wastes must be available for sampling and testing by the Code Enforcement Officer at any reasonable time.
5. Odors - Suitable measures shall be taken to minimize odors originating at all industrial waste incinerators. No odors shall be detectable off the incinerator site.
6. Safety - Industrial waste incinerators shall be designed, operated and maintained in such a manner as to protect the health, safety, and welfare of the users of the incinerator, personnel associated with the operation of the incinerator, and any other persons or their property who or which might come into contact with the incinerator or with gaseous or liquid materials emanating from the operations of the incinerator.
7. Record Keeping - Records shall be kept by the operator of the industrial waste incinerator stating accurately and truthfully the source, quantity, type of waste, hauler and any other pertinent information for each load of industrial waste accepted for disposal. These records shall be submitted monthly to the Code Enforcement Officer or at such other intervals as the Planning Board shall require and they shall be made available during inspections of the incinerator and at other times as requested.

8. Signs - A sign shall be erected and maintained at the entrance to the industrial waste incinerator, clearly legible and visible, which shall contain the following:

- a. Name of incinerator
- b. Emergency phone number
- c. Accepted types of waste
- d. Operating hours

9. Emergency Protection - All industrial waste incinerators shall arrange in writing for the Biddeford Fire Department, the Biddeford Rescue Squad, and with such other organizations as are necessary to provide emergency service whenever called, and they shall provide whatever special equipment and training is reasonably necessary to enable these organizations to respond to emergencies or fires at the site. Documentation of this arrangement shall become a part of the emergency plan for the site, and copies of this plan shall be made available to all affected organizations.

10. Labeling - No industrial waste incinerator shall accept any industrial waste unless each load has an identifying label accurately describing the contents affixed to each transporting container.

11. Fire Extinguishers - All mobile equipment used at an industrial waste incinerator shall be equipped with dry chemical fire extinguishers.

12. Surface Drainage - Adequate measures shall be taken to prevent surface water runoff from entering the area of the incinerator and to prevent the collection of standing water within the industrial waste incinerator site.

13. Waste Disposal Areas - The depositing, storing or disposing of any industrial waste at an industrial waste incinerator site in places not designated for this purpose on the site plan shall be prohibited.

14. Equipment - All operators shall have all equipment necessary for operating the industrial waste incinerator in accordance with these rules. All equipment shall be maintained in such a manner that it shall be fit for the purposes for which it was intended by the manufacturer.

15. Communication - A suitable means of communication (telephone, two-way radio, etc.) shall be available at the industrial waste incinerator.

16. Manifest - The operator of any industrial waste incinerator shall not accept any industrial waste unless a manifest is completed for each load of industrial waste.

17. Insurance - The operator of any industrial waste incinerator shall be insured for damages to employees and other persons and for damages to property. The amount of such insurance shall be determined by the Planning Board and shall be a condition of the permit.

Section X: Decision Making Criteria

The Planning Board may adopt such guidelines and regulations regarding the classification, use, handling, storage, or disposal of hazardous materials as it may deem necessary to implement the provisions of this ordinance.

Section XI: Suspension and Revocation of Permit

A. The Code Enforcement Officer is authorized to suspend or revoke a permit where he/she finds there has been a failure to comply with this ordinance.

B. Whenever the Code Enforcement Officer determines that a hazardous materials use, storage or disposal site is not being operated in conformance with any portion of this ordinance, he/she may cause to have issued a notice of violation indicating corrective action necessary to comply with this ordinance. Such notice may include an order to cease the operation of the site where violations of the permit constitute a threat to the public health, safety, and welfare.

C. The permit holder may appeal the Code Enforcement Officer's suspension or revocation of his/her permit or the Code Enforcement Officer's notice of violation to the Planning Board for Administrative review.

Section XII: Applicability

This ordinance shall become effective on _____.

Section XIII: Present Hazardous Materials Users

A. Existing persons to whom this ordinance applies shall submit an application for a hazardous materials use permit within 60 days of the date at which this ordinance is in force in order to receive the protection afforded in Part B & C of this section.

B. No applicant for a hazardous materials use permit Class I or Class II whose present business or hazardous materials use would require a permit under the conditions of this ordinance shall be held to be in violation of this ordinance until such time as the Planning Board either issues or denies the permit for which application is made. The Planning Board may consider the permit application made by persons to whom this section applies for a period not to exceed six months plus the period of time set by the Planning Board for two extensions (to be granted at the Board's discretion). If the Planning Board does not grant the applicant the permit for which the application is made during the time specified above, the application shall be deemed to have been denied.

C. No applicant for a hazardous materials use permit Class III, Class IV, or Class V, whose present business or hazardous materials use would require a permit under the conditions of this ordinance, shall be held to be in violation of this ordinance until such time as the Planning Board either issues or denies the permit for which application is made. The Planning Board may deny the permit application where it determines that the applicant has failed to provide an adequate application or where it determines that the applicant has failed to provide such additional information as the Planning Board has requested pursuant to the provisions of this ordinance.

Section XIV: Availability of Records and Access for Inspections

A. The permit holder shall keep such records as are required by the permit and shall make such records available upon the request of the Code Enforcement Officer of the City of Biddeford, the Planning Board or designees of the Council during normal business hours.

B. The permit holder shall make all lands, buildings, facilities, and equipment

used in the handling, storage, transportation, or disposal of hazardous materials available to the Code Enforcement Officer, the Planning Board and/or other designees of the Council of the City of Biddeford for purposes of inspection at any time.

Section XV: Change of Ownership, Administration, Location, or Services

A. The permit(s) shall immediately become void and shall be returned to the Planning Board upon the sale, lease or change in ownership of the business or other use for which the hazardous materials use permit has been issued.

B. The Planning Board may extend the expiration date of the permit for such time as is required for processing a new application for a hazardous materials use permit.

C. The permit shall apply only to those sites, uses and methods specifically delineated in the application, additional services, changes in operation, uses, or methods, or changes in sites shall require a separate permit or a modification of the existing permit at the option of the Planning Board.

D. The Planning Board may issue a temporary permit to the purchaser, lessor, or other new operator of an existing, permitted hazardous materials use, storage, transport, or disposal site upon the return of the previous permit and upon the presentation of a bond or cash deposit in the amount required for the previous permit. The conditions of the temporary permit shall be identical to the conditions of the previous permit. The temporary permit shall be for a period of not more than six (6) months, but may be extended at the option of the Planning Board.

Section XVI: Violations and Appeals.

A. Persons aggrieved by the conditions of a permit issued by the Planning Board or the denial of a permit by the Planning Board under the terms of this ordinance may, within 30 days of permit issuance or notification of denial, appeal the conditions or denial to the Superior Court of the State of Maine.

B. Any person found to be in violation of this ordinance shall be subject to a fine of not more than \$1,000 and not less than \$250 for each offense, each day during which a violation occurs shall constitute a separate offense.

Section XVII: Permit Application Fees and Annual Permit Fees

A. Applicants for a Class I, II, III, or IV Permit to operate a hazardous materials use, storage, or disposal site shall pay an application fee to the City of Biddeford of \$200. Applicants for Class I, Class II, or Class I Industrial Waste Incinerator Permits shall also establish an escrow account from which the Biddeford Planning Board may make payments for professional reviews of and advice on the applications. The amount of this escrow account shall be \$200 plus \$75 for each 1000 square feet of the site or any portion thereof which will be used to store, transport, process, or dispose of hazardous materials.

B. Annual permit fees shall be as follows:

Class I and Class II	\$200.00
Class III and Class IV	\$ 25.00
Class V	\$ 5.00

Section XVIII: Readings and Public Hearing

A. First Reading:

B. Public Hearing:

C. Second Reading:

D. Adopted:

Androscoggin Valley Regional Planning Commission
Model Hazardous Waste Ordinance

INTRODUCTION

The attached model Hazardous Waste Ordinance is an attempt to provide municipalities with a workable and, what we feel is, a legally defensible regulation dealing with the issue of hazardous waste handling, storage and disposal. It is the opinion of this agency that some of the recently circulated hazardous waste ordinances prohibiting hazardous waste handling, storage or disposal are legally questionable. In creating this model ordinance, we make the assumption that the municipality is not attempting to exclude or prohibit the handling, storage or disposal of hazardous waste but rather that the community prefers an ordinance that is stringent enough to insure the protection of its citizens and natural resources from the dangers of hazardous wastes.

The format of this ordinance is based upon a site plan review ordinance developed by AVRPC. It was chosen for its comprehensive approach. The intent of this Hazardous Waste Ordinance is to be as comprehensive as possible in order to give the municipality as much control as possible in the siting, construction and operation of a hazardous waste facility.

The specifics of this ordinance concerning hazardous waste are taken from the United States Environmental Protection Agency regulations and the State of Maine Department of Environmental Protection regulations. The state regulations are based on the federal regulations but are, in many cases, more specific and stringent. This ordinance reflects both sets of regulations and in certain aspects is again slightly more stringent.

Exemptions to this ordinance have been made as a matter of practicality and include wastes on working farms and wastes from normal domestic house-keeping. Also, the storage of hazardous waste at existing facilities (industrial and/or manufacturing) in certain quantities and storage areas have been exempted.

This ordinance is fully intended to be a working model; it may be amended or modified to suit a municipality's specific needs. Municipalities in the AVRPC district should feel free to contact Commission staff for assistance in adapting the model.

ACKNOWLEDGEMENT

The Androscoggin Valley Regional Planning Commission and its staff wish to acknowledge the many hours of volunteer work contributed by James Pray in order to develop this ordinance. The preparation of this model involved extensive research of state and federal regulations and a painstaking approach to the construction of the ordinance.

HAZARDOUS WASTE MODEL ORDINANCE

The Town of _____ hereby Ordains:

Section I - Purpose

The regulations set forth in this ordinance are adopted to:

- A. Provide for the protection of ground water and surface water quality through the control of hazardous waste handling, storage or disposal;
- B. Protect the health, safety and welfare of the citizens of _____.

Section II - Legislative Authority

A. Authority:

1. This ordinance is adopted pursuant to Home Rule Powers as provided for in Article VII-A of the Maine Constitution and Title 30, M.R.S.A., Section 1917, 38 M.R.S.A. Section 1320, and 38 M.R.S.A. Section 1321.
2. This ordinance shall be known as the "Hazardous Waste Ordinance" of the Town of _____, Maine, adopted and effective by vote of the Town Meeting on (month), (day), 19 .

B. Administration:

1. The Planning Board of the Town of _____ shall administer this ordinance.
2. No person shall construct, develop, establish, operate, own or maintain an industrial or commercial site which will handle, store or dispose of hazardous waste without having first obtained a permit from the Planning Board. A permit or renewal permit shall be issued for a period of one (1) year from the date of issuance, unless suspended or revoked. Each permit or renewal permit shall be issued only for the site designated in the plans accompanying the application and shall not be transferable or assignable except with the written approval of the Planning Board.

Section III - Validity and Severability and Conflict with Other Ordinances

A. Validity and Separability:

1. Should any section or provision of this ordinance be declared by any court to be invalid, such decision shall not invalidate any other section or provision of the ordinance.

B. Conflict with other Ordinances:

1. Whenever the requirements of this ordinance are inconsistent with the requirements of any other ordinances, code or statute, the more restrictive requirements shall apply.

Section IV - Applicability

- A. This ordinance shall apply to all development proposals for new construction of hazardous waste storage, handling, processing and/or disposal facilities and shall also apply to any expansion of existing facilities.
- B. Existing facilities including commercial or industrial operations which store, handle, process, or dispose of hazardous wastes shall comply with renewal permit criteria in Section VI. C. of this ordinance.

C. Exemptions:

1. Agriculture: The storage and handling of products used for agricultural purposes on working farms.
2. Household waste: Products which are used for normal domestic housekeeping.
3. Industrial Storage: Industrial or manufacturing facilities storing less than two hundred (200) kilograms per calendar month.

Industrial or manufacturing facilities storing less than one thousand (1,000) kilograms per calendar month when such storage is within a fully inclosed secure structure with concrete retaining walls on all sides.

Section V - Application Procedure and Site Plan Content

A. The Site Plan of Development Application shall include as a minimum:

1. A map at a convenient scale (i.e. U.S.G.S. 7½ minute or 15 minute topographic) delineating the parcel, existing dwelling units, other structures, 100 and 500 year flood zones, private and public water supplies, land currently used for agricultural purposes, aquifers and aquifer recharge areas.
2. Maps and or engineering drawings at a scale of not less than one (1) inch to fifty (50) feet and shall include:
 - a. name and address of the applicant or his authorized agent and name of proposed development and any land within 500 feet of the proposed development in which the applicant has title or interest;

- b. perimeter survey of the parcel made and certified by a Registered Land Surveyor relating to reference points, showing true north point, graphic scale, corners of parcel and date of survey and total acreage. Areas within 200 feet of the proposed development site shall be included;
- c. topography indicating contours at intervals of 2 or 5 feet in elevation as specified by the Planning Board;
- d. existing soil conditions described using the Unified Soil Classification System by a Registered Geologist or Soil Scientist in the State of Maine;
- e. location of aquifers and aquifer recharge areas and surface watershed boundaries as described by a Registered Geologist in the State of Maine;
- f. location, ground floor area and elevations of buildings and other structures on parcels abutting the site;
- g. location and dimension of on-site pedestrian and vehicular access ways, parking areas, loading and unloading facilities, design at ingress and egress of vehicles to and from the site on to public streets;
- h. existing and proposed locations and dimensions of any utility lines, sewer lines, water lines, easements, drainage ways and public or private right-of-way;
- i. landscape plan showing location, type and approximate size of plantings and location and dimension of all fencing and screening;
- j. profiles of underlying soil and bedrock conditions prepared by a Registered geologist in the State of Maine;
- k. engineering drawings including plans and profiles of all storage, handling, processing and disposal facilities signed by a Professional Engineer licensed in the State of Maine. Additionally, construction drawings which show the site upon closure;
- l. location and details of ground water monitoring wells;

3. A written statement by the applicant that shall consist of:

- a. evidence by the applicant of his title and interest in the land ~~for~~ which the application covers;

- b. municipal tax maps and lot numbers and names of abutting land owners;
- c. summary of existing and proposed easements, restrictions and covenants placed on the property;
- d. erosion and sedimentation control plan;
- e. copies of letters to the abutting landowners; town manager, selectmen, road commissioner/ public works director, fire chief, police chief, notifying them of the proposed development;
- f. statement of financial capacity which should include the names and sources of the financing parties including banks, government agencies, private corporations, partnerships and limited partnerships and whether these sources of financing are for construction loans, or long term mortgages or both;
- g. list of applicable local, state and federal ordinances, statutes, laws, codes and regulations such as, but not limited to, zoning ordinances, the Resource Conservation and Recovery Act, the Toxic Substance Control Act, the Clean Water Act;
- h. the applicants evaluation of the availability and suitability of off-site public facilities;
- i. a description of the site utilization and a description of specific activities and all methods of operation signed by a Professional Engineer licensed in the State of Maine;
- j. an emergency management plan covering fire, spillages and other potential accidents involving hazardous wastes, which shall be prepared by a qualified professional approved by the Planning Board;
- k. a letter from the fire chief acknowledging his acceptance of the emergency management plan as well as a description of response activities by all local, state and federal agencies;
- l. an operations manual including a description of all operating procedures as well as emergency response plans, safety procedures and monitoring well sampling programs.

B. Application Procedures:

1. The application for a permit allowing hazardous waste handling, storage or disposal shall be filed with the Planning Board for review and accompanied by a fee of \$____ for processing the application. Within 30 days of the filing of an application, the Planning Board shall notify the applicant in writing either that the application is a complete application or, if the application is incomplete, the specific additional material needed to make a complete application. After the Planning Board has determined that a complete application has been filed, it shall notify the applicant in writing and begin its review of the proposed development.
2. The Planning Board shall hold a public hearing within 30 days of the filing of the completed application. The Planning Board shall publish the time, date and place of the hearing at least two times, the date of the first publication to be at least seven (7) days prior to the hearing, in a newspaper of areawide circulation. The abutting landowners shall be notified of the hearing. Public hearings by the Planning Board shall be conducted according to the procedures outlined in Title 30, M.R.S.A. Section 2411, Subsection 3 (A), (B), (C), (D), and (E).
3. Within 30 days of the public hearing, the Planning Board shall either approve, approve with conditions, or disapprove the application. The time limit for review may be extended by mutual agreement between the Planning Board and the applicant.
4. Within seven (7) days of reaching their decision, the Planning Board shall notify the applicant in writing of any action taken and the reason for taking such action.

Section VI - Requirements and Performance Standards

A. Requirements:

1. Monitoring wells shall be located to adequately sample ground water for contamination. The location, construction standards and monitoring program will be determined by a registered geologist.
2. Applicant must have acquired insurance of two million dollars (\$2,000,000) per occurrence and an annual aggregate of four million dollars (\$4,000,000) exclusive of legal defense costs, for claims arising out of injury to persons or property from the operations of the hazardous waste facility. The deductible written into the insurance policy must not exceed five (5) percent of the incident limit of liability of the policy. Such insurance shall be in effect for a period of 40 years after the site is no longer in operation.

3. Applicant must provide a surety bond to the Town of _____ in an amount sufficient to cover the construction or expansion costs of the hazardous waste facility as proposed to the Planning Board. This surety bond shall be released contingent upon approval of final construction by the Planning Board.
4. Applicant must have obtained a surety bond in the amount of \$100,000 guaranteeing the operation of the site in accordance with these rules and regulations, or the applicant must post a sum equal to or greater than \$100,000 with the Town of _____, any or all of which may be used by the Town of _____ to correct failures to comply with this ordinance.
5. The applicant shall provide such special equipment (on-site) and training to reasonably prepare the town's fire department to respond to emergencies at the site.

B. Performance Standards: The following standards are to be used by the Planning Board in judging applications and shall serve as minimum requirements for approval of the plan. The plan shall be approved, unless in the judgement of the Planning Board, the applicant is not able to reasonably meet one or more of these standards. In all instances, the burden of proof shall be on the applicant and such burden of proof shall include the production of evidence necessary to complete the application.

1. Buffering of development site: the lot shall be setback and landscaped in order to screen the appearance of outstanding features of the development i.e. exposed storage areas, truck loading and unloading areas, to provide an audio/visual buffer to minimize their adverse impact on surrounding properties.
2. External lighting: all external lighting shall be designed to minimize adverse impact on neighboring properties.
3. Vehicular Access: the proposed site layout shall provide for safe access and egress from public and private roads by providing adequate location, numbers and control of access points including site distances, turning lanes and traffic signalization when required by existing and projected traffic flow on the municipal road systems.

4. Parking and Circulation: the layout and design of all means of vehicular and pedestrian circulation, including walkways, interior drives, and parking areas, shall provide for safe general interior circulation, separation of pedestrian and vehicular traffic, service traffic, loading areas, and arrangements and use of parking areas.
5. Emergency Vehicle Access: provisions shall be made for providing and maintaining convenient and safe emergency vehicle access to the site and all facilities at all times.
6. Surface Water Drainage and Soil Erosion: adequate provision shall be made for surface drainage so that removal of surface waters will not adversely affect neighboring properties, downstream water quality or public storm drainage systems. On-site absorption of runoff waters shall be utilized to minimize discharges from the site. Also unreasonable soil erosion or reduction in flow capacity of the land to hold water so that a dangerous or unhealthy condition may result shall be prevented.
7. Water Pollution: in making this determination, the Board shall at least consider: (1) the elevation of land and its relation to flood plains, the nature of soils and subsoils and their ability to adequately support the development; (2) the applicability of any D.E.P. approved licenses; (3) the slope of the land; (4) the ground water resources including aquifer recharge areas; and, (5) the applicable federal, state and local laws, ordinance codes and regulations.
8. Air Pollution: in making this determination, the Board shall consult federal and state authorities to determine that applicable air quality laws and regulations can be met.
9. Safety/Fire Hazards: has sufficient facilities and equipment available for the needs of the development including fire-fighting and spill prevention and control.
10. Sewage Disposal: will provide for adequate sewage waste disposal.
11. Municipal Services: the development will not have an unreasonable adverse impact on the municipal services including municipal road systems, fire department, police department, solid waste program, sewage treatment plant, open spaces, recreational programs and facilities and other municipal services and facilities.

C. Annual Renewal Permit Standards: A yearly operations permit application shall be submitted to the Planning Board accompanied by a fee of \$____ for processing the application. The Planning Board shall grant a yearly operations permit contingent upon the findings that the following have been met.

1. Maintenance of a current operations manual;
2. An acceptable emergency exercise;
3. Test monitoring of wells;
4. An acceptable facility inspection by a registered engineer.

Section VII - General Provisions

- A. The Planning Board may modify or waive any of the above applications requirements when the Planning Board determines that because of the special circumstances of the site, such applications requirements would not be applicable or would be an unnecessary burden upon the applicant and would not adversely affect the abutting land owners and the general health, safety and welfare of the town.
- B. A permit granted under this ordinance shall expire if the work or change is not commenced within one year from the date the permit is granted, although such permit may be renewed for additional periods. Renewal of a permit shall be treated as a new application and shall be subject to all provisions of this ordinance.

Section VIII - Violation, Enforcement and Fines

- A. Violation and Enforcement: The Planning Board, the Selectmen or the appropriate municipal official, upon a finding that any provision of this ordinance or the condition(s) of a permit issued under this ordinance is being violated are authorized to institute legal proceedings to enjoin violations of this ordinance.
- B. Fines: A person who violates the provisions of this ordinance or the condition(s) of a permit shall be guilty of a civil violation and on conviction shall be fined not less than \$100 nor more than \$499. Each day such violation continues, shall also be liable for court costs and reasonable attorney fees incurred by the municipality.

Section IX - Appeals

- A. If the Planning Board disapproves an application or grant approval with conditions that are objectionable to the applicant or any abutting landowner or any aggrieved party, or when it is claimed that the provisions of the ordinance do not apply, or that the true intent and meaning of the ordinance has been misconstrued or wrongfully interpreted, the applicant, an abutting landowner, or aggrieved party may appeal the decision to Superior Court within thirty (30) days from the Planning Board's final decision in accordance with Rule 80 B of the Maine Rules of Civil Procedure.

Section X - Amendments

- A. This ordinance may be amended by a majority vote of the Town Meeting. Amendments may be initiated by a majority vote of the Planning Board or by request of the Board of Selectmen to the Planning Board or on petition of 10% of the votes cast in the last gubernatorial election in the town. The Planning Board shall conduct a public hearing on any proposed amendment.

Section XI - Definitions

- A. "Hazardous Wastes" is defined as a waste material which is radioactive, ignitable, corrosive, reactive and/or toxic. It will include: (1) all wastes determined to be hazardous by the Resource Conservation and Recovery Act, Section 3001 and regulations promulgated pursuant to said section including 40 CFR 261; (2) wastes determined to be hazardous by the State Board of Environmental Protection pursuant to 38 M.R.S.A. §1303 and 1303-A; (3) wastes defined as radioactive waste materials by 38 M.R.S.A. §361-D (1) (B).
- B. "Planning Board" shall mean the _____ Planning Board.
- C. "Ground Water" shall mean the water present in the saturated zone of the ground.
- D. "Aquifer" shall mean geologic deposits or structures from which useable quantities of ground water are available for households, municipalities or industries.
- E. "Surface Water" shall mean a body of water whose top surface is exposed to the atmosphere including but not limited to rivers, ponds, lakes, streams, marshes and wetlands.
- F. "Hazardous Materials use, storage or disposal Permit" shall mean a certificate issued by the _____ Planning Board authorizing the use, storage or disposal of hazardous materials for a specific use site by a specific person, or firm and specifying such other requirements which the Planning Board finds to be necessary for the protection of the health, safety and welfare of the citizens of _____.

G. "Person" shall mean any individual, group of individuals, firm, corporation, association, partnership or private or public entity, including a district, county, city, town or other governmental unit or agent thereof, and in the case of a corporation, any individual having active and general supervision of the properties of such corporation.

H. "Household Waste" means any waste material (including garbage, trash, and sanitary wastes in septic tanks) derived from households (including single and multiple residences, hotels and motels).

APPENDIX E
INTEREST GROUPS

APPENDIX E

NATIONAL INTEREST GROUPS WITH POTENTIAL
CONCERN WITH LOW-LEVEL RADIOACTIVE
WASTE MANAGEMENT

AMERICAN ASSOCIATION
OF PHYSICISTS IN MEDICINE
335 East 45th Street
New York, NY 10017
(212) 661-9404

AMERICAN COLLEGE OF
NUCLEAR PHYSICIANS
1101 Connecticut Avenue, N.W.
Washington, DC 20036
(202) 857-1135

AMERICAN HOSPITAL ASSOCIATION
444 North Capitol Street, N.W.
Suite 500
Washington, DC 20001
(202) 638-1100

AMERICAN NUCLEAR ENERGY COUNCIL
1750 K Street, N.W., Suite 300
Washington, DC 20006
(202) 484-2670

AMERICAN NUCLEAR SOCIETY
2029 K Street, N.W., Suite 501A
Washington, DC 20006
(202) 463-7220

AMERICAN PUBLIC HEALTH ASSOCIATION
1015 15th Street, N.W.
Washington, DC 20005
(202) 789-5600

ATOMIC INDUSTRIAL FORUM
7101 Wisconsin Avenue
Washington, DC 20014
(202) 654-9260

CONSERVATION FOUNDATION
1717 Massachusetts Avenue, N.W.
Washington, DC 20036
(202) 797-4300

CRITICAL MASS ENERGY PROJECT
P.O. Box 1538
Washington, DC 20013
(202) 546-4790

ENVIRONMENTAL ACTION COALITION
157 Fifth Avenue, Suite 1130
New York, NY 10010
(212) 929-8481

ENVIRONMENTAL ACTION, INC.
1346 Connecticut Avenue, N.W.
Room 731
Washington, DC 20036
(202) 833-1845

ENVIRONMENTAL DEFENSE FUND
1525 18th Street, N.W.
Washington, DC 20036
(202) 833-1484

ENVIRONMENTAL LAW INSTITUTE
1345 Connecticut Avenue, NW
Sixth Floor
Washington, DC 20036
(202) 452-9600

LEAGUE OF WOMEN VOTERS
OF THE UNITED STATES
1730 M Street, N.W.
Washington, DC 20036
(202) 296-1770

MOBILIZATION FOR SURVIVAL
3601 Locust Walk
Philadelphia, PA 19104
(215) 563-1512

NATIONAL ASSOCIATION OF
TOWNS AND TOWNSHIPS
1527 18th Street, N.W.
Washington, DC 20036
(202) 452-8100

NATIONAL INTEREST GROUPS WITH POTENTIAL
CONCERN WITH LOW-LEVEL RADIOACTIVE
WASTE MANAGEMENT (continued)

NATIONAL WILDLIFE FEDERATION
1412 16th Street, N.W.
Washington, DC 20036
(202) 797-6800

NATURAL RESOURCES DEFENSE
COUNCIL
122 East 42nd Street
New York, NY 10017
(212) 949-0049

NATIONAL AUDUBON SOCIETY
950 Third Avenue
New York, NY 10022
(212) 832-3200

SIERRA CLUB
530 Bush Street
San Francisco, CA 94108
(415) 981-8634

SOCIETY OF NUCLEAR MEDICINE
475 Park Avenue
New York, NY 10016
(212) 889-0717

UNION OF CONCERNED SCIENTISTS
1208 Massachusetts Avenue
Cambridge, MA 02138
(617) 547-5552

MAINE STATE AND LOCAL INTEREST GROUPS
WITH POTENTIAL CONCERN WITH
LOW-LEVEL WASTE MANAGEMENT ISSUES

MAINE NUCLEAR REFERENDUM COMMITTEE
Box 346
North Edgecomb, ME 04556
Raymond Shadis

GREATER PORTLAND NUCLEAR
REFERENDUM COMMITTEE
7 Holbrook St.
Freeport, ME 04032
Leslie Van Cott
(207) 773-5340

MAINE PUBLIC INTEREST RESEARCH GROUP
92 Bedford St.
Portland, ME 04101

SOCIAL CONCERNS COMMITTEE
First Parish United Church
Kennebunk, ME

MAINE AUDUBON SOCIETY
118 Old Route One
Falmouth, ME

NATURAL RESOURCES COUNCIL
20 Willow St.
Augusta, ME
Mark Ishikauian
(207) 622-3101

SAFE POWER FOR MAINE
R.F.D. 1
Box 480
Bucksport, ME 04416

or P.O. Box 774
Camden, MA

ISLAND ENERGY COALITION
P.O. Box 428
Bar Harbor, ME 04609

FRIENDS OF EASTPORT
Crows Neck
Lubec, ME 04652

BELFAST REGIONAL GROUP
P.O. Box 774
c/o Judy Barrows
Camden, ME

MAINE STATE AND LOCAL INTEREST GROUPS
WITH POTENTIAL CONCERN WITH
LOW-LEVEL WASTE MANAGEMENT ISSUES (continued)

FARMINGTON MAINE GROUP
RFD #3
c/o Jack Carson
Farmington, ME 04938

ANTI-NUCLEAR FOLKS
Route 1
c/o Dansinger
Newport, ME 04953

FARMINGTON CLAMSHELL ALLIANCE
Route 49
c/o Goodman
Temple, ME 04984

CONSERVATION COALITION
72 Winthrop St.
c/o Lance Tapley
Augusta, ME

AMERICAN FRIENDS SERVICE COMMITTEE
Route 1
Monmouth, ME 04259

LEAGUE OF WOMEN VOTERS OF MAINE
Box 216
Farmer, ME 04282

SAFE ENERGY CONGRESS
Portland, ME
Rochre Graham
(207) 773-6595

APPENDIX F

REPRESENTATIVE NEWSPAPER ARTICLES ON
LOW-LEVEL RADIOACTIVE WASTE MANAGEMENT ISSUES

Nun blasts N-industry

A New York woman described by a Maine anti-nuclear power committee as an expert on the health effects of radiation said Sunday the nuclear industry is "selling nuclear power like breakfast food."



Sister Bertell

Rosalie Bertell, a Roman Catholic nun from the Ministry for Concern for Public Health in Buffalo, N.Y., blasted the industry for spreading "lies." She said atomic power is "being irresponsibly pushed as a technology."

Sister Bertell addressed a sparse gathering of nuclear opponents at the Portland Club. She was brought to Maine by the Maine Nuclear Referendum Committee.

Mainers go to the polls Sept. 23 to consider an act calling for the shutdown of Wiscasset's Maine Yankee nuclear power station.

"The heaviest public relations material relative to nuclear power is that which assure that radiation releases are so low they are indistinguishable from naturally-occurring radiation," Sister Bertell said.

"What they should be saying is there is no record of deaths because they don't keep good records," she added. "This is the gut issue. It's about time we brought it into the open."

"You've had it with the lies. You don't sell nuclear power like breakfast food."

Sister Bertell was among three scientists who went to Washington after the Three-Mile accident and claimed the government was understating the accident's effect on the environment.

Name: Press-Herald
City: Portland
Edition: Morning
Circulation: 53,847
Date: September 15, 1980

Pro and Con Speakers Battle Away in Nuke Debate

By BILL SCHULZ
Sun Staff Writer

While the heads of the Maine Referendum Committee and Save Maine Yankee received top billing for their nuclear referendum debate on television Thursday night, two of the foot soldiers in the battle brought their cases before the Auburn Businessmen's Association.

Like two well-trained boxers in the 13th round of a 15-round title bout, Scott Memhard of the Lewiston-Auburn Referendum Committee and Mike Healey of Save Maine Yankee, were trying to land their punches before Tuesday's final bell.

Memhard, head of the local referendum committee, led off the debate after winning a coin toss. He was met with polite applause from the business group.

Introduced as "a teacher by trade," Memhard opened his remarks by saying the people of Maine are being "cleverly manipulated by certain vested interests." He said he is not against Central Maine Power Co., since "they too were sold a bill of goods by the federal government to jump on the nuclear bandwagon" when the plant was first constructed.

"I am proud of the citizens of Maine," Memhard said. Through the petition drive which initiated the referendum in the first place, he said, "the referendum committee has already won by giving the citizens a chance to consider the issue."

Memhard said the economic issues of the possible shutdown of the plant concerned him the least. However, he said those economic issues are important and, he said, "as businessmen, I'm sure you are concerned and you should be."

He said the real costs of operating a nuclear power plant are unseen, "hidden until the future." Citing the costs of disposing of nuclear waste and dismantling the plant after it "gets too radioactive to run," Memhard said the costs to the people of Maine could run into the billions of dollars.

"In the end, we just don't need it. There is enough reserve power to replace the power we get from the plant," he said.

Memhard said CMP has phased out 30 percent of its hydro-electric power. He also said through conservation and industrial

cogeneration, the people of Maine can live without the plant.

"What's left," he said, "is a compelling reason to close the plant. The nuclear waste, which is the biggest problem, is a dangerous legacy we will be leaving to our children and our grandchildren, for the next 250,000 years."

"Are we willing to take that kind of risk?" he concluded.

Healy, a Portland attorney and treasurer of the pro-nuclear group, gave a brief history of the Wiscasset plant and the referendum.

"I have lived in Maine all my life," he began, "and in my mind there has been no more important issue presented to Maine people than the referendum. It has ramifications for Maine people and ramifications way beyond the boundaries of Maine."

Healy said the operating record of the

Maine Yankee plant is "the most outstanding performance in the world," considering its record-setting 390 days of continuous operation in 1978.

"The plant has saved the people of Maine \$285 million since it came on line," he said. "If it is shut down, CMP has estimated it will cost the citizens of Maine \$140 million in 1981 alone."

The cost to businesses in the state would be great, he said, "and we would all pay in the end."

He went on to say the people of Maine would pay even more if the plant is shutdown. "Why did the people who drafted this proposal fail to write in compensation to the utility for the costs of closing the plant? The courts will decide how much we'll pay to close it and I believe the costs would be somewhere between the cost of building a new plant and its original construction cost."

Speaking to the issue of plant safety, Healy said, "We pay 8,000 people at the Nuclear Regulation Commission and we must trust them . . . as we trust an airline pilot when we get on a plane or a doctor when we have him perform surgery."

"There are hundreds of highly-skilled people working in those plants," he continued, "who know what the risks are and I don't think they would expose themselves or us to any high levels of radiation."

Healy concluded by saying the USSR, France, Germany and Japan are going ahead with construction of nuclear plants. "If all these other countries are committed, they must know it is feasible economically. What does it mean to us (if we stop nuclear generation)? They are going to become more competitive and the U.S. is going to slip further and faster than we have in the past few years. I don't think we can afford to do it."

As the debate concluded, one person who had listened for the full two hours looked over the pro and con referendum literature on a table by the exit and tossed a "Vote Yes" button into an ashtray.

Still others passed by the "Vote No" bumperstickers and stuffed "ban nuclear" decals in their pocket.

Name: Sun
City: Lewiston
Edition: Morning
Circulation: 32,954
Date: September 19, 1980

Guest editorials

The aftermath

Columnists, politicians and energy experts no doubt will be picking apart the results of Tuesday's referendum on nuclear power for many months to come. It may take that long to come to grips with the full meaning of Maine's decision to keep its sole nuclear power plant open, and running.

But some things are plain now.

The first is that more than 150,000 Maine residents were willing to do without Maine Yankee, despite the economic hardships that probably would have followed its closure. Warnings that electric bills would jump by \$140 million were not enough to convince a substantial number of Maine voters that the plant is, over the long run, either safe or efficient.

The second is that the referendum prompted an unprecedented look at Maine's energy options. The debate that stretched over several months examined not only the nuclear power industry, but the potential for hydroelectric, solar and wind projects. That is what used to be called "consciousness raising," and the intelligent discussion of our energy needs that for the most part characterized the debate will certainly continue.

Many voters who knew little or

nothing about Maine's energy needs will now be prepared to take a more active, and productive, role in determining where we go from here. The generation of electrical power has become a little less mysterious.

Maine voters have indeed supported the continued operation of Maine Yankee, and by a significant margin.

But officials at Central Maine Power Co. would be missing the point to look on the results of the referendum simply as a "vote of confidence" in Maine Yankee, as CMP President E.W. Thurlow remarked Tuesday night. It was not, he added, a mandate to build additional nuclear plants, but there's more to it than that.

More accurate would be the assertion that in an inflation-riddled economy, Maine voters were understandably concerned over the threat of rising electric bills.

CMP would do well to view the referendum results as a request that it do more to develop non-nuclear means of electrical generation and that the better part of Maine's voting public is keenly interested in what the company comes up with.

— Scott Gibson
KJ City Editor

Name:	Kennebec Journal
City:	Augusta
Edition:	Morning
Circulation:	18,327
Date:	September 25, 1980

Brennan 'absolutely opposed' to Maine nuclear dump

By MAUREEN DEA
Associated Press writer

High-ranking federal energy officials were set to meet with Gov. Joseph E. Brennan in Augusta on Thursday to discuss Maine's potential as a nuclear waste dump site, according to Brennan aide Kirk Studstrup.

Studstrup said Brennan asked the DOE to brief him on its search for a permanent nuclear dump site for the nation.

"Basically, we wanted to have people from DOE who were responsible for this

nuclear waste program to brief us precisely on what the program is, and on the state's role in the DOE process," Studstrup said.

The closed-door meeting was to include three representatives from the U.S. Department of Energy's Office of Nuclear Waste in Washington, including Critz George. Studstrup said he thought George is heading DOE's search for a permanent nuclear dump for the nation. George could not be reached for comment Wednesday.

The Washington group was also to meet Thursday with several invited legislators, representatives from the state Office of

Energy Resources and other Brennan administration officials interested in a more technical discussion than the governor wanted, Studstrup said.

Both meetings were to be closed to the public and press, he said.

The governor's Nuclear Safety Advisory Panel, which includes both pro- and anti-nuclear advocates, was not invited to either session although members might be briefed later, Studstrup said.

He said the safety advisory panel is not now dealing with the nuclear dump issue and that "it was decided to go with people in government who deal with this on a day-

to-day basis."

Former Maine Congressman Stanley Tupper, a member of the panel and a nuclear opponent, said Wednesday that he agreed with that decision, because the role of the advisory panel was limited.

"I suspect this is entirely dealing with energy problems and we're just dealing with health and safety issues of nuclear power," Tupper said from his Boothbay Harbor home.

The governor, who urged Maine residents in September to vote to keep Maine

Yankee open, said last month that he was "absolutely opposed" to creation of a permanent nuclear dump in Maine. Brennan said states in the Southwest offer much safer sites and that safety should be the key factor in deciding where to build such a dump.

The DOE recently included Maine on a list of 16 states to be studied as possible nuclear dump sites because of their extensive granite formations. The department has also studied the salt domes in the Southwest and is to study states with other deposits, such as shale and basalt, that

may make them suitable for nuclear dumps.

The federal government hopes to build a permanent nuclear dump to serve the nation by the end of this century, once it has pinpointed the best spot.

Several weeks ago, Brennan and his Nuclear Safety Advisory Panel held a closed meeting with top officials from the federal Nuclear Regulatory Commission to discuss several issues, including plans by Maine Yankee to expand the amount of spent nuclear fuel stored on the Wiscasset plant site.

Name:	Kennebec Journal
City:	Augusta
Edition:	Morning
Circulation:	18,327
Date:	November 20, 1980

Pittston urged to take lead in ban on nuke wastes

By M. KATHLEEN WAGNER
EJ district reporter

PITSTON — Pittston could lead Maine communities in banning the disposal or storage of hazardous and radioactive wastes.

So said Alan Philbrook, the chairman of the Pittston's Hazardous Waste Committee, during Wednesday night's public hearing to review the proposed ban.

Voters will consider the proposal at a special town meeting Dec. 17.

Philbrook, an outgoing member of the Maine Nuclear Reference Committee's board of directors, wrote the model ordinance, which the MNRC is urging all Maine municipalities to adopt.

worked at Maine's only nuclear power plant from 1974 to 1975.

High-level waste, including spent fuel, is kept at the Wiscasset facility, he said, but space is running out there.

Also, the U.S. government agreed to accept radioactive waste from foreign countries which purchased reactor technology from four American corporations, Philbrook said, and those contracts now are maturing.

With its low taxes, Route 20, rural land and dense granite, Pittston is a "perfect" candidate for receiving radioactive waste, Philbrook said. Drafted technology calls for boring the waste down 3,000 to 5,000 feet in granite, he added.

"To date," Philbrook said, "there has

About 40 towns have initiated the legislation, Philbrook said, and nearly 200 will be working to pass it by January.

The Pittston resident said he expects "nothing but 100 percent support" from those communities and no dissenting votes at his own town's special meeting.

A few questions — but no opposition — came from the 12 people at Wednesday's hearing.

'An awakening'

"This is an awakening for a lot of people who voted 'no' to successfully defeat the September referendum to close the Maine Yankee atomic power plant," Philbrook said.

Such people are beginning to realize, he added, that "if you're going to have nuclear power, you're going to have nuclear waste."

Why no action on the proposed ordinance wait until annual town meetings in many towns in March? — Because, Philbrook said, New England nuclear industries are "looking very hard" at Maine alternatives to their usual disposal sites at Barnwell, S.C. and Hanford, Wash., which are restricting nuclear waste intake under new state laws.

Low-level nuclear waste from Maine Yankee still is buried in concrete drums at the South Carolina site's abandoned mine shafts, said Philbrook, an engineer who

has been one radioactive waste site where they have not been accidents, people haven't been hurt or there haven't been emissions."

Aside from nuclear wastes, Philbrook said, Central Maine Power Co. "is but looking right now for a place to dispose coal ash" from its Mason generating station, which is being converted to coal, and the coal-fired plant to be built on Sears Island.

Arsenic and lead are two components of coal ash, he added.

Gray and Winslow already are suffering from toxic waste pollution, Philbrook said, adding that the proposed ordinance would protect the E.C. Barry landfill in Pittston.

The ordinance would ban all hazardous substances listed in the federal Clean Water Act, which is constantly updated, Philbrook said. Violators would incur court action, initiated by the Board of Selectmen on behalf of the town.

A town meeting vote would be required to grant exceptions to the ordinance. Without some variance provision, Philbrook said, a court could overturn the ban as unconstitutional. With it, "the feds cannot override this," he said.

A long-range goal for the ordinance, Philbrook said, is to discourage industries from turning out products with toxic wastes by making it "harder and harder and more and more costly" to dispose of them.

Name: Kennebec Journal
City: Augusta
Edition: Morning
Circulation: 18,327
Date: December 5, 1980

Panel backs waste ban

NEWCASTLE — The Lincoln County Democratic Committee has endorsed a model ordinance which would govern the storage and disposal of radioactive and hazardous waste.

The ordinance, developed by the Maine Nuclear Referendum Committee, is being considered by many area municipalities.

It would ban the storage or disposal of those materials within a municipality unless local voters give specific approval.

The committee heeded the remarks of Michael McConnell, a Whitefield resident who is a member of the MNRC as well as the county committee.

"The right of choice which this ordinance returns to local citizens is funda-

mental to the practice of democracy" McConnell told the committee.

"Business and government must begin to be accountable to the people who are directly affected by their actions," McConnell said. "It is about time we took steps to reverse the trend of the last 30 years or so, in which individual and local rights have been progressively encroached upon."

One concern voiced by committee members is that the wording of the ordinance might not suit the specific needs of individual communities, but the group resolved that its endorsement is "in principle, with particular emphasis on the aspect of local control."

Name:	Journal
City:	Lewiston
Edition:	Evening
Circulation:	14,058
Date:	December 13, 1980

Legislative panel suggests talks on possible radioactive waste site

By The Associated Press

A legislative panel recommended Thursday that Gov. Joseph E. Brennan begin talks with other New England governors about setting up a low-level radioactive waste dump in the region.

Brennan also should create a special commission to determine if Maine should enter into a regional agreement or build its own low-level waste disposal site, according to the Legislature's Subcommittee on Radioactive Wastes.

Maine now ships all its low-level wastes — from hospitals, universities, research centers, Portsmouth Naval Shipyard and non-fuel waste from Maine Yankee — to a licensed dump in South Carolina.

But that dump, one of only three in the nation, is running out of space as are those in Washington and Nevada.

The National Governors' Association recently proposed federal legislation that would allow states to set up regional low-level radioactive waste dumps.

Rep. William Blodgett, subcommittee

chairman, warned that Maine, which produces a relatively small amount of such wastes, should be very cautious about entering any regional agreement with southern New England states, which produce a great deal.

"I'm a little skeptical that southern New England states are so anxious for us to get involved," said Blodgett, a Waldoboro Democrat who was defeated in his governor re-election last month. "There's money in it for them" unless they hope to use Maine as the site for such a dump, he said.

Blodgett said if Maine were to decide on a regional dump, he'd rather the state only enter an agreement with Vermont and New Hampshire.

But Rep. Sherry Huber, R-Falmouth, said Maine should at least explore the idea of a New England-wide disposal site.

Any regional agreement would need the approval of both Congress and the Maine Legislature. The panel also said public hearings should be held around Maine as

talks about a possible regional dump proceed.

The subcommittee, created by the Legislature in 1979 to look into high and low-level radioactive waste disposal issues, plans to submit its final report to the Legislature on Jan. 1.

The panel also agreed Thursday to urge Brennan to intervene in Maine Yankee's spent fuel storage request, which is pending before the federal Nuclear Regulatory Commission.

Panel members said they didn't have the expertise to decide whether Maine should take a stand for or against Maine Yankee's request, but said Maine "should be as involved as possible in the case. The nuclear plant wants to expand its spent fuel storage capacity by restacking high-level radioactive fuel rods in the spent fuel pool on the plant grounds.

Brennan has said he is seriously "considering" asking the attorney general's office to intervene in the case. The governor has asked state Health Engineering

Director Donald Hoxie for an analysis of the technical issues involved in Maine Yankee's request, according to Brennan aide Kirk Studstrup. Hoxie has also been asked to advise Brennan on whether the state should seek outside technical advice, Studstrup said Thursday.

Studstrup said he hopes to talk with Hoxie next week about the requests.

Maine has "interested party" status in the case, but has not requested formal intervenor status, which allows it to cross-examine and present witnesses.

Maine Yankee contends that increased storage space is needed because its spent fuel pool will be filled in a few more years and the plant could be forced to close. The plant contends that the proposed restacking method is safe.

But an anti-nuclear group headed by former Maine Congressman Stanley Tupper is intervening against the proposal. Sensible Maine Power contends the method proposed would increase the risk of a nuclear accident.

Name:
City:
Edition:
Circulation:
Date:

Kennebec Journal
Augusta
Morning
18,327
December 20, 1980

Low-level wastes

Subcommittee chairman Rep. William Blodgett noted that the three southern New England states produce enormously greater quantities of this type of radioactive material, than the three northern states. This suggests there probably should be two dump sites in the six-state region.

It seemingly will make sense for Brennan to focus his attention upon discussions with the governors of New Hampshire and Vermont. Even so, the problem does involve this northeast quadrant of our nation, and the six governors should meet and consider it from an objective point of view.

There is nothing wrong with the proposal of the Maine

Legislature's Subcommittee on Radioactive Waste that Gov. Joseph E. Brennan discuss the matter of establishing a low-level radioactive waste dump in the region. At the same time, such a dump should not be approved in Maine unless our state receives some significant benefit from such a move.

Low-level radioactive wastes are produced by hospitals, research centers, universities, the naval shipyard at Kittery and the like. These wastes are nowhere near the problem of the leftover material from nuclear power plants. Nonetheless, there is no reason why Maine should be the chosen site for all of New England.

Name:	Sentinel
City:	Waterville
Edition:	Morning
Circulation:	24,219
Date:	January 9, 1981

Augusta officials unruffled by proposed nuclear ban

By DEBBIE SLINE
EJ staff writer

Augusta officials view a proposed ban on nuclear and toxic waste dumps as a harmless, and probably unnecessary, weapon in the battle to keep Maine communities environmentally safe.

The proposal, promoted by the Maine Nuclear Referendum Committee, will be considered by the City Council in January.

Piscatare became the first community in the state to impose such a ban when it endorsed a similar measure Wednesday. Designed by the MNRC, the ban would require public approval before any nuclear or toxic waste could be dumped within city limits.

MNRC representatives are working individually for passage of the measures in numerous towns and cities this year. The committee, which mounted an unsuccessful campaign last fall to shut down the Maine Yankee Atomic Plant, drafted a

model ordinance after learning that the Wiscasset facility had been picked as a possible location for a nuclear center in the future.

A study released earlier this month recommended the construction of four breeder reactors at Maine Yankee by the year 2025, although officials of the Central Maine Power Co. later said they weren't interested in the idea.

Maine also has been mentioned as a potential site for a nuclear waste disposal area because of its dense granite formations.

Augusta officials reacted this week to the proposed ban with bare enthusiasm, predicting that it would be a non-controversial addition to city ordinances.

City Manager Paul G. Poulin said he turned the model ordinance over to the city attorney as a precautionary measure, but added, "I really don't see it as being controversial."

Questions have been raised about the

strength the ordinance would have in the face of state or federal attempts to establish a dump in a community. A local community's legal rights in that area are uncertain, since the nuclear industry is under the regulation of the U.S. Nuclear Regulatory Commission.

City Attorney Charles E. Moreshead was not available Friday for comment on the success such a ban would be likely to have in preventing the location of a dump in Augusta.

But Public Works Director Elmer F. Degon, who oversees the operation of the Hatch Hill disposal area, said he does not believe a nuclear or toxic waste dump could be imposed on a community.

"I think the feds probably could say there was going to be a hazardous waste disposal area in an area," he said. "But I just don't think it would be politically feasible for the state or the feds to do such a thing."

"It's too autocratic."

He pointed out that community opposition has repeatedly succeeded in delaying or defeating a variety of projects in Maine, such as the Pittston Co. oil refinery proposed for Eastport and Central Maine Power Co.'s plans for a coal-fired generating plant on Sears Island.

"None of these things are happening, so public opinion says (a waste dump) just won't happen."

Degon said that if a waste dump were proposed in Augusta, the council would have plenty of time to act, and added the

city probably doesn't need the proposed ban now.

"I see absolutely no harm in the ordinance," he added. "I just think the constitutional prerogatives offer enough safeguards."

Mayor David N. Elvin expressed stronger support for the ordinance, which he hopes would protect the city against any attempts to locate a dump site here.

"I hate to see more regulations on top of regulations," he said. "But I guess where we stand at this point in our lives, we'd

better do something to protect it."

He said the ordinance might help the city guard against a situation such as that in Winthrop, where toxic chemicals have been found in the ground water. The chemicals are believed to have come originally from the Winthrop dump, where barrels of industrial waste were dumped years ago.

He said the problem of hazardous waste is likely to become more pressing in the future. "The Mafia is into it and they're making good money on that, too.

"It's not going to go away, I guess."

Name: Kennebec Journal
City: Augusta
Edition: Morning
Circulation: 18,327
Date: January 21, 1981

Maine Yankee Spent-Fuel Plan Will Be Reviewed, NRC Rules

Guy Gannett Service
and Wire Services

WISCASSET — Maine Yankee's proposal to increase its on-site spent nuclear fuel storage will be reopened to public intervention following a ruling of the Atomic Safety and Licensing Board of the U.S. Nuclear Regulatory Commission this week.

The order to republish the proposal in the Federal Register came Tuesday from board Chairman Robert M. Lazo, following an October motion by the anti-nuclear group Sensible Maine Power calling for the renotice.

The group has been the only intervenor on the proposal, although attorney general-elect James E. Tierney wrote in a letter to House Speaker John L. Martin Thursday that he intends to pursue intervention, provided the state finds sufficient date — and money — to support doing so.

The Federal Register renotice will give the state and other interested petitioners the opportunity to intervene un-

til 30 days following the notice, which must appear by Jan. 26, according to NRC public affairs spokeswoman Claire Miles.

She said the licensing board agreed with Sensible Maine Power that amendments made Sept. 29 by Maine Yankee to its original proposal were significant enough to reopen the intervention period.

Maine Yankee's Sept. 1979 application sought to increase on-site storage from 935 to 1,545 spent fuel assemblies, a process which would involve recombining each of the 176-rod assemblies into more compact bundles to save space in the plant's storage pool.

A year later, the utility's amended application called for the on-site storage of all the waste used at the plant until its license expires in the year 2008, using racks that would allow tighter packing of the fuel assemblies.

Tierney, scheduled to be sworn in as attorney general today, said in a

telephone interview Thursday that he feels the state should be represented in the intervention process, but that more technical information is needed before making a firm decision.

"We've got to know the life expectancy of the plant, if there's a possibility that the wastes could come from someplace else besides Maine Yankee, and if there are other ways of storing it," Tierney said. "Also, Maine Yankee says the storage is for the life of the plant. What happens when the plant is decommissioned?"

Tierney was asked by the house speaker Wednesday to step into the case "basically to find out the facts," and eventually take a position. Before petitioning for intervention, Tierney said he plans to hire consultants.

Former U.S. Congressman Stanley R. Tupper, who serves as co-counsel for Sensible Maine Power, had previously called on Gov. Joseph E. Brennan to intervene in the case.

Tupper said Thursday he was pleased with the NRC's decision to carry his group's motion and reaffirmed his support for state intervention.

NRC spokeswoman Miles said that the commission normally schedules a pre-hearing conference for about 60 days after the intervention deadline, and rules on whether a formal hearing will be held based on that conference.

Sensible Maine Power filed 14 health, safety and environmental contentions with the NRC in April, nine of which were approved for hearing June 11 by the commission staff counsel.

Among the contentions which will be heard is Maine Yankee's "failure to identify, describe or analyze the specific operating procedures" to govern the disassembly, reassembly and compaction proposed for the Wiscasset site, according to SMP co-counsel David Santee Miller of Washington, D.C.

Name: Kennebec Journal
City: Augusta
Edition: Morning
Circulation: 18,327
Date: February 17, 1981

AG says state can't ban N-waste

By DAN SIMPSON
Guy Gannett Service

Maine can regulate the transportation and disposal of hazardous waste, but cannot prohibit such waste from coming into the state, according to an opinion from Attorney General James E. Tierney.

The only exception on importation could be for a state-operated site, the opinion said.

Tierney, basing his opinion on recent court rulings, said the state "may not prohibit the transportation, treatment or disposal of hazardous materials or wastes originating from outside its borders solely on the basis of their origin."

The opinion said the only way a general prohibition could be sustained would be to prohibit a specific hazardous material, about which it could be shown that movement was so dangerous to public

health that it should be restricted.

Tierney's opinion was in response to a request from Rep. Judy Kany, D-Waterville, who plans to submit legislation dealing with hazardous waste.

The attorney general's ruling was based on a 1970 U.S. Supreme Court ruling in which the court held that a New Jersey law prohibiting the importation of solid or liquid waste from out of state violated the "Commerce Clause" of the U.S. Constitution.

That clause gives Congress the power to regulate commerce between the states — the court found that the movement of the waste material constituted commerce.

The Supreme Court ruling said the New Jersey law discriminated against wastes coming from outside the state, and that the state had failed to show that waste from outside was any more dangerous

than waste from within to justify the discrimination.

Tierney cited a lower federal court ruling, also in 1978, which invalidated an Oklahoma law which prohibited importation of hazardous waste. The law was overturned on the same constitutional grounds as the New Jersey case.

The opinion says any legislation that would permit transportation or disposal of hazardous waste generated in the state, but prohibit any similar wastes that are produced elsewhere, probably would be unconstitutional.

It said the purpose of such legislation "would be to attempt to reserve the state's finite disposal resources for state-generated waste, a purpose clearly violating the Commerce Clause's ban on economic protectionism."

Tierney, though, said a state-operated

site might be treated differently.

He said a state site might be able to restrict access to its residents or to impose substantially higher fees on out-of-state firms seeking to use it.

The opinion said that might not be unconstitutional, since the state could then argue it was creating in a subsidy to benefit its resident businesses.

Rep. Kany has had conversations with the attorney general's office since receiving the opinion, and said local communities also could establish their own hazardous waste disposal sites and restrict use to local business.

But, she said, there is a catch to that because the municipality then could not prohibit a private site handling similar types of waste from being established, and the community could not prevent the private site from allowing outside waste to be deposited.

Name: News
City: Bangor
Edition: Morning
Circulation: 31,770
Date: February 19, 1981

APPENDIX G
SURVEY METHODOLOGY

APPENDIX G
SURVEY METHODOLOGY

Low-level radioactive waste generators in Maine were surveyed as part of this project in order to determine low-level waste management practices in general and the characteristics of shipped low-level waste in particular. The waste generator survey was conducted in two steps. The first step consisted of mailing the survey form shown in Figure G-1 to all generators. The second step consisted of site visits to generators.

The information requested by the survey form included:

- type of facility;
- disposal method(s) for all low-level waste;
- sources of all radioactive waste;
- amount and destination of low-level waste shipped;
- physical form of shipped waste;
- onsite processing of shipped waste;
- quantity of shipped waste; and
- disposal cost of shipped waste.

The questionnaire was designed to minimize the time and effort required to fill it out (e.g., most possible answers were provided). In addition, the questions asked were limited to those which have a direct bearing on the overall characterization of waste management practices within the State, rather than on a detailed characterization of each facility.

A list of licensees was obtained from the Nuclear Regulatory Commission⁽¹⁾. To encourage recipients to respond, the questionnaire was accompanied by:

- cover letters from the State of Maine Department of Human Services and Centaur Associates explaining the purpose of the study and questionnaire, and identifying persons at the Department of Human Services and Centaur Associates, Inc. who would be available to respond to questions (see Figure G-2);

FIGURE G-1. SURVEY FORM

PLEASE RETURN TO: CENTAUR ASSOCIATES, INC.
1120 Connecticut Ave., N.W.
Suite 465
Washington, D.C. 20036
ATTN: Michael Frankel

LOW-LEVEL RADIOACTIVE WASTE SURVEY

Licensee Name _____
 Name Of Facility _____
 Street Address _____
 City/State/Zip _____
 Telephone No. () _____
 Person Supplying Information _____
 Title _____

PART I - TYPE OF FACILITY
 (Check The One Category Which Is Most Applicable.)

INDUSTRIAL

Incorporates Radioactivity Into Products
 Uses Radioactivity In Process Control
 Commercial Power Reactor
 Pharmaceutical Manufacturer
 Other (Specify) _____

MEDICAL

Hospital
 Medical Research/Education
 Other (Specify) _____

EDUCATIONAL

University
 High School
 Other (Specify) _____

GOVERNMENTAL (NON-MEDICAL OR EDUCATIONAL)

Federal
 Military
 State
 Local

PART II - DISPOSAL METHOD(Check Each Disposal Method Which You Employ.)

Ship To Commercial Low-Level Waste Disposal Site
 (Direct Or Through Broker)
 Release To Sewer
 Combine With Common Refuse
 Vent To Atmosphere
 Bury On-Site
 Return To Vendor
 Distribute In Product Form
 No Waste Generated
 Other (Specify) _____

PART III - SOURCE AND DESTINATION OF RADIOACTIVE WASTE(Check Each Source Of Your Potential Radioactive Waste And, If You Ship, Indicate The Percentage Of Your Total Shipped Waste Volume Originating From Each Source Category And Its Destination.)

SOURCE OF RADIOACTIVITY	PERCENT OF TOTAL WASTE VOLUME SHIPPED	WHERE SHIPPED
<input type="checkbox"/> Nuclear Reactor	_____	_____
<input type="checkbox"/> Neutron Generator	_____	_____
<input type="checkbox"/> Cyclotron Or Synchrotron	_____	_____
<input type="checkbox"/> Sealed Source	_____	_____
<input type="checkbox"/> Unsealed Radioactive Material	_____	_____
<input type="checkbox"/> Natural Ores Or Mill Tailings	_____	_____
<input type="checkbox"/> Other (Specify) _____	100%	_____

If You Do Not Ship Radioactive Waste, You Have Completed The Questionnaire. Thank You. If You Do Ship, Please Continue With The Questions On The Reverse Page.

FIGURE G-1. SURVEY FORM (continued)

PART IV - PHYSICAL FORM OF SHIPPED WASTE

(Check Each Form Of Waste Which You Ship And Indicate The Percentage Of Your Total Shipped Waste Volume Each Form Represents.)

<u>FORM OF WASTE</u>	<u>PERCENT OF TOTAL WASTE VOLUME SHIPPED</u>
<input type="checkbox"/> Dry Solids, Trash, Irradiated Components	_____
<input type="checkbox"/> Solidified Or Absorbed Liquids, Solid Sludges, Spent Resins, Filter Sludges Or Evaporator Bottoms	_____
<input type="checkbox"/> Animal Carcasses Or Other Biological Waste	_____
<input type="checkbox"/> Sealed Sources	_____
<input type="checkbox"/> Other (Specify) _____	_____ 100%

Does Waste Shipped Contain Any Material Which Is Potentially:

<input type="checkbox"/> Chemically Toxic	<input type="checkbox"/> Combustible
<input type="checkbox"/> Corrosive	<input type="checkbox"/> Explosive

What Shipping Containers Do You Use?

What On-Site Processing Of Shipped Waste Do You Employ?

<input type="checkbox"/> 55 Gallon Steel Drums	<input type="checkbox"/> None
<input type="checkbox"/> 30 Gallon Steel Drums	<input type="checkbox"/> Mechanical Compaction
<input type="checkbox"/> Shielded Casks	<input type="checkbox"/> Incineration
<input type="checkbox"/> Wooden Boxes	<input type="checkbox"/> Solidification Or Evaporation Of Liquids
<input type="checkbox"/> Other (Specify) _____	<input type="checkbox"/> Absorption Of Liquids
	<input type="checkbox"/> Other (Specify) _____

PART V - WASTE QUANTITY AND DISPOSAL COSTS

(Indicate Total Yearly Volume [In Cubic Feet] And Disposal Costs Of Waste Shipped To A Commercial Disposal Facility.) (Indicate Total Yearly Volume [In Cubic Feet] Of Waste Projected To Be Generated Which Will Be Shipped.)

<u>Cubic Feet Of Waste Shipped</u>	<u>Total Cost</u>	<u>Cubic Feet of Waste To Be Shipped</u>
Actual Shipped in 1978		Estimated Shipped In 1981
Actual Shipped in 1979		Estimated Shipped In 1985
Actual Shipped in 1980		Estimated Shipped In 1990

(Indicate The Quantity Of Radioactivity [In Curies] In Waste Shipped To A Commercial Facility In
The Years 1978, 1979 And 1980.)

THANK YOU.



STATE OF MAINE
DEPARTMENT OF HUMAN SERVICES
AUGUSTA, MAINE 04333

FIGURE G-2. COVER LETTERS

MICHAEL R. PETIT
COMMISSIONER

Dear Licensee:

The U.S. Department of Energy's Low-Level Waste Management Program has been given responsibility for coordinating the development of a national low-level radioactive waste management system. As part of this development process, assessments of specific state and industry situations are being made. These assessments will form the basis for technical and resource assistance to states to help resolve low-level radioactive waste issues. I have directed the staff of the Bureau of Health, Radiological Health Program, to assist the U. S. Department of Energy in the preparation of briefing books on the current practice of radioactive waste management.

To more accurately reflect waste distribution and waste categories, state specific surveys (questionnaires) of waste generation rates, treatment and disposal practices are being sent to licensees. The briefing book will provide information to state and federal officials on current waste management practices. Other state specific considerations that affect the state's position on waste management policies will also be included.

Centaur Associates, Inc. has a contract to prepare the briefing book in Maine. Your prompt completion and return of the questionnaire to Centaur Associates would be appreciated.

Questions concerning the survey questionnaire and data analysis should be directed to:

Mr. Christopher Niemczewski
or
Mr. Michael Frankel (202) 296-4100
at
Centaur Associates, Inc.
1120 Connecticut Avenue, N.S.
Suite 465
Washington, D.C. 20036

In Maine, call Wallace Hinckley at the Division of Health Engineering. Telephone No. 289-3826.

Sincerely,

A handwritten signature in black ink that reads "Michael R. Petit".

Michael R. Petit
Commissioner

FIGURE G-2. COVER LETTERS (continued)

Centaur Associates, Inc. Suite 465
1120 Connecticut Avenue, N.W.
Washington, D.C. 20036
202/296 4100

April 2, 1981

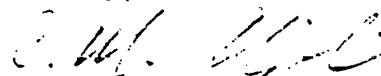
Dear Licensee:

As the attached letter indicates, Centaur Associates, Inc. is conducting a survey of radioactive waste generators in Maine for the U.S. Department of Energy's Idaho National Engineering Laboratory (EG&G Idaho, Inc.). Your organization has been included in the survey because it has a current license to use reactor generated radioactive materials. Please answer the survey questions on the enclosed form as they relate to all of your radioactive materials licenses at this address and return the survey form to us in the enclosed envelope by May 1, 1981.

The survey results will be used to develop a profile of low-level radioactive waste generated and will be included in the Maine State Briefing Book on Low-Level Radioactive Waste Management. The responses to the questions will be aggregated. No information will be attributed to a single organization.

We look forward to receiving your response to the survey form.

Sincerely,



Christopher Niemczewski

Enc.

- simple instructions on filling out the questionnaire, which addressed, among other things, the way the respondent should include the effects of the Nuclear Regulatory Commission's recent changes in the low-level waste disposal rules in his or her answers;
- a self-addressed, stamped envelope in which the questionnaire was to be returned.

In addition, about two weeks after the survey was sent out, a postcard was sent to those firms from whom completed forms had not been received, reminding them about the questionnaire.

The second part of the waste generator survey consisted of site visits to low-level radioactive waste generators. These visits were used to verify and supplement the information received from the questionnaire. The sites visited were chosen on the basis of size and type of facility to provide a representative sample of waste generators in the State.

Waste generators visited were initially contacted by letter to explain the purpose of the study and proposed visit. This letter was followed by a telephone call to set a date and time for the visit. In a few cases, when site visits could not be arranged due to schedule conflicts or other factors, these interviews were conducted by telephone.

The information obtained from the survey and site visits is presented in tabular form in Section 7 of this briefing book. The degree of response to each question is shown in Table G-1.

TABLE G-1. DEGREE OF RESPONSE TO SURVEY QUESTIONS

Type of Facility	No. of Licensees	Part I		Part II		Part III			
		Type of Facility		Disposal Method		Source of Radioactive Waste		Destination of Waste	
		No.	Percent of Licensees	No.	Percent of Licensees	No.	Percent of Licensees	No.	Percent of Licensees
Medical	29	23	79.3	23	79.3	13	44.8	2	6.9
Educational	6	5	83.3	5	83.3	4	66.7	1	16.7
Industrial	24	18	75.0	18	75.0	16	66.7	1	4.2
Commercial Power Reactor	1	1	100.0	1	100.0	1	100.0	1	100.0
Governmental	7	5	71.4	5	71.4	2	28.6	1	14.3
Total	67	52	77.6	52	77.6	36	53.7	6	9.0

TABLE G-1. DEGREE OF RESPONSE TO SURVEY QUESTIONS (continued)

Part IV

<u>Type of Facility</u>	<u>Physical Form</u>		<u>Hazardous Characteristics</u>		<u>Onsite Processing</u>		<u>Shipping Container Used</u>	
	<u>No.</u>	<u>Percent of Licensees</u>	<u>No.</u>	<u>Percent of Licensees</u>	<u>No.</u>	<u>Percent of Licensees</u>	<u>No.</u>	<u>Percent of Licensees</u>
Medical	4	13.8	4	13.8	3	10.3	3	10.3
Educational	3	50.0	3	50.0	3	50.0	3	50.0
Industrial	3	12.5	2	8.3	3	12.5	3	12.5
Commercial Power Reactor	1	100.0	1	100.0	1	100.0	1	100.0
Governmental	1	14.3	1	14.3	1	14.3	1	14.3
Total	12	17.9	11	16.4	11	16.4	11	16.4

TABLE G-1. DEGREE OF RESPONSE TO SURVEY QUESTIONS (continued)

Part V								
	Actual Waste Shipped		Shipping Cost		Projected Waste Shipped		Isotopes	
	No.	Percent of Licensees	No.	Percent of Licensees	No.	Percent of Licensee	No.	Percent of Licensees
Medical	4	13.8	3	10.3	4	13.5	4	13.8
Educational	3	50.0	3	50.0	3	50.0	3	50.0
Industrial	3	12.5	3	12.5	3	12.5	3	12.5
Commercial								
Power Reactor	1	100.0	0	0.0	1	100.0	1	100.0
Governmental	1	14.3	0	0.0	1	14.3	1	14.3
Total	12	17.9	9	13.4	12	17.9	12	17.9

REFERENCES

1. The Nuclear Regulatory Commission licenses nuclear reactors and users of special nuclear, source, and by-product materials. Potential generators of low-level waste were identified from the list of licensees.

APPENDIX H

GLOSSARY

APPENDIX H

GLOSSARY

activity	A measure of the rate at which a material emits nuclear radiation, usually given in terms of the number of nuclear disintegrations occurring in a given length of time.
Agreement State	A State that has entered into an agreement with the Nuclear Regulatory Commission to assume regulatory responsibility for radioactive materials under Section 274 of the Atomic Energy Act of 1954 as amended.
alpha particle	A positive charged particle emitted in the radioactive decay of certain isotopes. Made up of two protons and two neutrons bound together, it is identical to the nucleus of a helium atom. It is the least penetrating of the three common types of radiation--alpha, beta, and gamma radiation.
B (shipment type)	A classification (10 CFR 71) of shipments of radioactive material depending on the amount of radioactivity contained; broadly characterized, type B shipments contain more radioactivity than type A shipments of similar radioactivity and potential hazard. Federal regulations also specify standards for the packaging of shipments according to type.
background radiation	Radiation in the environment produced by naturally occurring radioactive materials in the crust of the earth, cosmic radiation, and the fallout from nuclear weapons tests.
beta particle	A negative charged particle emitted in the radioactive decay of certain isotopes; a free electron. Beta is one of the three types of radiation.
canister	A container, usually cylindrical, for remotely handled waste, spent fuel, or high-level waste. The waste will remain in this canister during and after burial. A canister affords physical containment but not shielding; shielding is provided during shipment by a cask.

cask	A large shipping container providing shielding for highly radioactive material and holding one or more canisters.
commercial disposal site	A facility at which nondefense low-level radioactive waste is buried under license of the Nuclear Regulatory Commission and/or an Agreement State.
commercial waste	Low-level radioactive waste generated by commercial power plants, manufacturing industries, and institutions (hospitals, universities, research institutions).
contact-handled waste	Waste that does not require shielding other than that provided by its container.
contamination	The uncontrolled and undesirable deposition of radioactivity on an object, material, or area. This contamination can be either transferable or fixed. Radiation penetrating the walls of a waste package from within is not contamination.
controlled landfill	Conceptually, a landfill similar to a commercial landfill for municipal waste, considered for the disposal of appropriate solid low-level waste.
curie	The standard unit for measuring radioactivity. It is equal to 37 billion nuclear transformations per second, or the radioactivity contained in one gram of radium.
decommissioning	The process of removing a facility from operation. It is then mothballed, entombed, decontaminated, and dismantled or converted to another use.
decontamination	The removal of unwanted material (especially radioactive material) from the surface or from within another material.
defense waste	Nuclear waste deriving from the manufacture of nuclear weapons and the operation of naval reactors. Associated activities such as the research carried on in the weapons laboratories also produce defense waste.
disposal	Operations designed to isolate waste from people and the environment, with no expectation of retrieval after emplacement.

dose (radiation)	A general term indicating the amount of energy absorbed per unit mass from incident radiation.
extended care	Procedures instituted at disposal sites after closure to monitor the long-term performance of the site.
fission	The splitting of a heavy nucleus into two approximately equal parts, each the nucleus of a lighter element, accompanied by the release of a large amount of energy and generally one or more neutrons. Fission can occur spontaneously, but it usually follows the absorption of neutrons.
fissionable	Describes an isotope that undergoes fission on absorption of a neutron of energy over some threshold energy.
gamma rays	Short-wavelength electromagnetic radiation emitted in the radioactive decay of certain isotopes. Gamma rays are the same as gamma particles. Of the three types of radiation, gamma rays are considered the most serious because of their ability to penetrate other materials.
half-life	The time required for the activity of a group of identical radioactive nuclei to decay to half its initial value. Each radioisotope has a unique half-life.
high-level waste	Discarded, unprocessed spent reactor fuel or the radioactive wastes produced during the reprocessing of used reactor fuel. It is characterized by intense, penetrating radiation and by high heat-generation rates. Even in protective canisters, high-level waste must be handled remotely.
Interagency Review Group on Nuclear Waste	A group established by President Carter to review waste management goals, plans, and activities.
isotope	In chemistry and physics, one of two or more atoms having the same atomic number but differing in atomic weight and mass number. The nuclei of isotopes contain identical numbers of protons, equal to the atomic number of the atom, and thus represent the same chemical element, but do not have the same number of neutrons. Thus, isotopes of a given element have identical chemical properties but slightly different physical properties, and very different half-lives, if they are radioactive. Also nuclide.

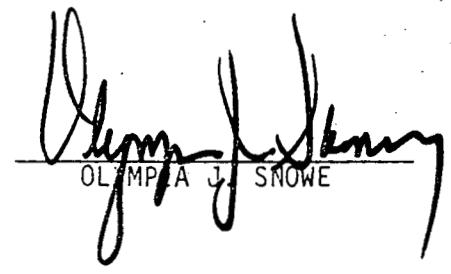
leaching	The process of extracting a soluble component from a solid by the percolation of a solvent (e.g., water) through the solid.
low-level waste	Radioactive waste other than uranium mine or radioactive waste mill tailings, spent fuel, or high-level radioactive waste. Low-level waste contains radioisotopes emitting primarily beta and/or gamma radiation and less than 10 nanocuries per gram of transuranic elements.
microcurie	One one-millionth curie. The maximum permissible body burden for persons exposed to radium risks is set at 0.1 microcurie.
millicurie	One one-thousandth curie.
nanocurie	One one-billionth curie.
Nuclear Regulatory Commission	Federal government agency established in 1974 by the Energy Reorganization Act to assume regulation of the commercial use of nuclear energy.
nuclide	Isotope.
radiation	The process of emitting radiant energy in the form of waves or particles.
radioactive decay	The decrease in the number of radioactive nuclei present in a radioactive material due to their spontaneous transmutation, which results in a decrease of the radioactive atoms in a sample. Also, the transmutation of a radioisotope into another isotope by the emission of a charged particle. All radioactive material is constantly decaying.
radioactivity	The property possessed by some atoms of spontaneously emitting alpha and beta particles and sometimes also gamma rays, by the decay of the nucleus of the atom.
radioactive isotope	Any species of atom having an unstable nucleus that decays emitting radiation, until stability is reached. It thus has a defined half-life. The stable end product is a non-radioactive isotope of another element. Also radioisotope, radioactive nuclide, or radionuclide.

rem	Abbreviation for "roentgen equivalent man." The unit for measuring radiation doses received by people.
repository	A facility for the storage or disposal of radioactive waste.
scintillation liquids	Organic chemical solutions that produce light when bombarded with radiation. These liquids are a major component of institutional low-level waste.
spent fuel	Nuclear-reactor fuel that, through nuclear reactions, has been sufficiently depleted of fissile material to require its removal from the reactor.
spent fuel storage pool	A water-filled and cooled basin in which spent fuel is stored before being sent away for reprocessing or disposal.
storage	Temporary disposition in a repository. Use of the word storage implies keeping open the possibility of retrieving the waste for reprocessing, for moving it elsewhere, etc. Storage usually implies the need for continued surveillance.
transuranic isotope	An isotope with an atomic number greater than that of uranium (92). All transuranic isotopes are produced artificially and are radioactive.
volume reduction	Various methods of waste treatment, such as evaporation for liquids or compaction for solids, aimed at reducing the volume of waste.
waste matrix	The material that surrounds and contains the waste and to some extent protects it from being released into the surrounding rock and groundwater. Only material within the canister that contains the waste is considered part of the waste matrix.

APPENDIX I

STATEMENT OF CONGRESSWOMAN OLYMPIA J. SNOWE
ON LOW-LEVEL RADIOACTIVE WASTE

STATEMENT OF OLYMPIA J. SNOWE
MAY 28, 1981


OLYMPIA J. SNOWE

IN RECENT YEARS, LOW-LEVEL RADIOACTIVE WASTE HAS BECOME AN ISSUE OF INCREASING CONCERN TO MANY OF OUR CITIZENS. SCIENTIFIC RESEARCH SURROUNDING THE SOURCES, EFFECTS AND DISPOSAL OF LOW-LEVEL IONIZING RADIATION HAS NECESSARILY QUADRUPLED. SPECIFIC RESEARCH EMPHASIS IS BEING PLACED ON THE RADIOACTIVE WASTE WHICH IS GENERATED BY THE OPERATION OF NUCLEAR REACTORS, AND BY RADIOACTIVE FISSION PRODUCTS WHICH ARE USED FOR MEDICAL, RESEARCH, AND INDUSTRIAL PURPOSES.

GIVEN THE INCREASED SCRUTINY FACING THE NUCLEAR INDUSTRY, SUCH RESEARCH IS CRUCIAL IF WE ARE TO COMPREHENSIVELY ADDRESS MANAGEMENT PROBLEMS RELATED TO THE DEVELOPMENT OF NUCLEAR POWER. IT IS IMPERATIVE THAT THE NUCLEAR REGULATORY COMMISSION THOROUGHLY EVALUATE THE PLANS, CONSTRUCTION AND OPERATION OF ALL NUCLEAR PLANTS. FURTHERMORE, I BELIEVE THE NRC MUST INCREASE ITS OVERSIGHT FUNCTION REGARDING ALL PROPOSED NUCLEAR POWER PLANTS. I BELIEVE NUCLEAR POWER WILL CONTINUE TO BE ONE ALTERNATIVE TO OUR ENERGY PROBLEMS, BUT ONLY IF IT IS IMPLEMENTED IN THE SAFEST POSSIBLE MANNER, AND ONLY IF WE CAN SOLVE THE DISPOSAL PROBLEM.

IF WE ARE TO SUCCESSFULLY TACKLE THE SAFETY ASPECTS OF LOW-LEVEL RADIOACTIVE WASTES, SEVERAL KEY ISSUES WILL HAVE TO BE RESOLVED. WE NEED TO CONSOLIDATE FEDERAL REGULATORY AUTHORITY IN THE AREA OF RADIATION HEALTH AND SAFETY. WE NEED TO ASSESS THE CURRENT STATUS OF RESEARCH ON THE HEALTH EFFECTS OF LOW-LEVEL IONIZING RADIATION. AND FINALLY, WE NEED TO DEVELOP A NATIONAL POLICY FOR THE DISPOSAL OF COMMERCIAL LOW-LEVEL WASTE. DURING THE 96TH CONGRESS, LEGISLATION WAS ENACTED WHICH AUTHORIZES

STATEMENT OF OLYMPIA J. SNOWE
MAY 28, 1981
PAGE TWO

STATES TO FORM REGIONAL COMPACTS FOR DISPOSAL OF LOW-LEVEL WASTES. SUCH EFFORTS WILL CONTINUE IN THE 97TH CONGRESS, AND I INTEND TO MONITOR THESE ISSUES CAREFULLY. I WILL WORK ON BEHALF OF EFFORTS TO ACHIEVE AN EQUITABLE AND RESPONSIBLE RESOLUTION TO THESE CONCERNS.

APPENDIX J

MEMORANDUM FROM THE MAINE STATE GEOLOGIST ON
THE SUITABILITY OF MAINE FOR A LOW-LEVEL RADIOACTIVE
WASTE DISPOSAL SITE

STATE OF MAINE

Inter-Departmental Memorandum Date October 29, 1980

To John Bailey
Walter A. Anderson
From Walter A. Anderson, State Geologist
Subject LLW Potential in Maine

Dept. Legislative Aids
Dept. Maine Geological Survey

This memorandum is in response to your request for information on the likelihood that Maine might contain suitable sites for the secure disposal of low-level nuclear wastes (LLW). The central and coastal area of Maine is underlain by a marine clay, the Presumpscot Formation, deposited during the waning phase of the last glaciation, which is potentially a suitable environment for LLW management.

The Maine Geological Survey has mapped the general extent of the Presumpscot and it is known to contain both sand and impervious clayey segments. The thickness and lateral extent of these segments is not well defined. Likewise, little study has been given to the flow of ground water to and through the Presumpscot. An understanding of both the stratigraphy and hydrology of the formation as a whole is necessary to assess the suitability of any site for LLW in the area. The results of a geologic investigation to develop this understanding would also be valuable in the siting of other activities within the area of Presumpscot deposition, such as on-lot sewage disposal, land fills, and municipal water supplies.

We believe strongly that, without an area wide definition of the Presumpscot's suitability, an intelligent evaluation of the potential for LLW disposal in Maine cannot be made.

A geologic investigation and delineation of the isolation potential of the Presumpscot would be a key step in the development of a nuclear waste management policy for the state. We look forward to the opportunity to aid in its development execution.

WAA/sjs