HIGH-LEVEL RADIOACTIVE WASTE IN NEVADA

Bulletin No. 87-14

LEGISLATIVE COMMISSION

OF THE

LEGISLATIVE COUNSEL BUREAU

STATE OF NEVADA

August 1986

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FEBRUARY 1987

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COMMITTEE ON HIGH-LEVEL RADIOACTIVE WASTE

459.0085 Creation; membership; duties; salary and expenses of members.

1. There is hereby created a committee on high-level radioactive waste. It is a committee of the legislature composed of:

(a) Three members of the senate, appointed by the majority leader of the senate.

(b) Four members of the assembly, appointed by the speaker.

2. The legislative commission shall select a chairman and a vice chairman from the members of the committee.

3. The committee shall meet at the call of the chairman to study and evaluate:

(a) Information and policies regarding the location in this state of a facility for the disposal of high-level radioactive waste;

(b) Any potentially adverse effects from the construction and operation of a facility and the ways of mitigating those effects; and

(c) Any other policies relating to the disposal of high-level radioactive waste.

4. The committee shall report the results of its studies and evaluations to the legislative commission and the interim finance committee at such times as the legislative commission or the interim finance committee may require.

5. The committee may recommend any appropriate legislation to the legislature and the legislative commission.

6. The director of the legislative counsel bureau shall provide a secretary for the committee on high-level radioactive waste. Each member of the committee is entitled to a salary of $80 for each day or part of a day during which he attends a committee meeting or is otherwise engaged in the work of the committee. Per diem allowances, salary and travel expenses of members of the committee must be paid from the legislative fund.

(Added to NRS by 1985, 685)

TO THE MEMBERS OF THE 64TH SESSION OF THE NEVADA LEGISLATURE:

This report is submitted in compliance with Nevada Revised Statutes (NRS) 459.0085 (Senate Bill 55, chapter 211, Statutes of Nevada, 1985) which created a committee on high-level radioactive waste.

The legislative committee was directed to study and evaluate information and policies which pertain to the location in the State of Nevada of a deep geologic repository for the storage of high-level radioactive waste. In addition, the committee is to review any potentially adverse effects from the construction and operation of a facility and the means to mitigate those effects.

The activities of the committee are financed through an agreement with Nevada's agency for nuclear projects. The money which the legislature receives for this program is a portion of a grant to the State of Nevada from the United States Department of Energy pursuant to the Nuclear Waste Policy Act of 1982 (Public Law 97-425).

The report contains the legislative committee's recommendations as they were presented to the legislative commission. A status report on the federal and state programs is also included. All supporting documents and minutes of the committee meetings are on file with the research division library of the legislative counsel bureau.

This report is transmitted to the members of the 1987 legislature for their consideration and appropriate action.

Respectfully submitted,

Nevada Legislature's
Committee on High-Level
Radioactive Waste

Carson City, Nevada
February 1987

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COMMITTEE MEMBERS

Senator Thomas J. Hickey, Chairman
Assemblyman James W. Schofield, Vice Chairman

Senator James I. Gibson
Senator Kenneth K. Redelsperger
Assemblyman Jane F. Ham
Assemblyman John E. Jeffrey
Assemblyman Gaylyn J. Spriggs

SUMMARY OF RECOMMENDATIONS

The Nevada legislature's committee on high-level radioactive waste recommends for the consideration of the 64th session of the Nevada legislature that:

1. A resolution be adopted similar to Assembly Joint Resolution No. 4 (File No. 141) of the 1985 legislative session which urges the President and the Congress of the United States to provide assistance to the state to mitigate adverse impacts resulting from the study of the site in addition to those impacts if a repository for storage of high-level radioactive waste is located in Nevada. (BDR 200)

   This resolution does not endorse or oppose the proposed facility.

2. A resolution be adopted similar to Assembly Joint Resolution No. 5 (File No. 140) of the 1985 legislative session which urges the Federal Government to assume total financial responsibility for the mitigation of all adverse impacts and the assumption of total liability for injuries from activities associated with any facility for the storage of high-level radioactive waste which is constructed in this state. It also requires local purchases of related materials. (BDR 201)

   This resolution does not endorse or oppose the proposed facility.

3. The appropriate section of the Nevada Revised Statutes be amended to conform the pay rate for members of the Nevada legislature's committee on high-level radioactive waste with that of other standing committees. (BDR 40-202)

REPORT TO THE 64TH SESSION OF THE NEVADA LEGISLATURE FROM THE NEVADA LEGISLATURE'S COMMITTEE ON HIGH-LEVEL RADIOACTIVE WASTE

I. INTRODUCTION AND BACKGROUND

The Nuclear Waste Policy Act of 1982 (NWPA) was signed into law in January 1983 by President Reagan. This action was the beginning of the present effort to establish a repository for the disposal of civilian high-level radioactive waste.

Civilian radioactive waste results from the generation of electricity from nuclear reactors. Management of this waste apparently received little attention from the Congress through the early 1970's. In the late 1970's, the Federal Government allocated substantial funds and personnel to develop a plan for the long-term management of nuclear waste. Following this planning effort, the lawmakers moved to find a permanent solution to managing nuclear waste.

Inventories of spent fuel are kept in storage at nuclear power plants. The spent reactor fuel is not being reprocessed for reuse. Inventories of spent fuel continue to grow, impacting the on-site storage areas at nuclear power plants.

In December 1982, in response to this problem, Congress passed the NWPA. This comprehensive piece of legislation now serves as the guide for both the federal repository siting effort and provides the mechanism for participation by affected states.

The State of Nevada has been actively involved in the program since 1983. A detailed description of the state's participation is included in the main body of this report.

ORGANIZATIONS AND ENTITIES IN NEVADA DEFINED

Nevada's involvement in the High-Level Radioactive Waste Repository Siting Program includes a number of formal and informal committees and organizations which are discussed in various portions of this report. These entities are described as follows for the convenience of the reader.

Formal Organizations

1. The Nevada legislature's committee on high-level radioactive waste consists of three senators and four assemblymen. This is a permanent standing committee of the legislature.

2. Nevada's commission on nuclear projects consists of seven members appointed by the governor. Three members are of the governor's own choosing; two members are chosen from a list of three names submitted by the legislative commission; and two members are chosen, one each from a list of three names submitted by the Nevada Association of Counties and the Nevada League of Cities.

3. Nevada's agency for nuclear projects is the staff for the commission on nuclear projects. The staff consists of 12 members--eight professionals and four administrative support persons. In addition, two persons are assigned to the agency from the office of the attorney general--one attorney and one administrative support person.

Informal Organizations

4. The state and local government planning group consists of representatives of southern Nevada county and city governments and staff from the executive and legislative branches of state government. Counties and cities involved include: Clark, Lincoln and Nye counties and the cities of Caliente, Henderson, Las Vegas and North Las Vegas. This organization works closely with the agency for nuclear projects on the planning programs which have been undertaken by that agency. These programs include socioeconomic impact studies and transportation planning.

5. The technical review panel was established by the state and local government planning group and consists of nine members who are nationally and internationally renowned experts in the fields of anthropology, economics, geography/hazards analysis, physical science, psychology, sociology and transportation. The panel members assist the state and local government planning group in its review of socioeconomic impact studies which are provided for under the NWPA.

II. FORMATION OF LEGISLATIVE COMMITTEE

The 1985 Nevada legislature adopted Senate Bill 55 (chapter 211), which established the legislature's committee on high-level radioactive waste. This law now is found in Nevada Revised Statutes (NRS) 459.0085, "Creation; membership; duties; salary and expenses of members." The committee's charge from the legislature was to study, evaluate and report on:

1. Information and policies regarding the location in Nevada of a facility for the disposal of high-level radioactive waste;

2. Any potentially adverse effects from the construction and operation of a facility and the ways of mitigating those effects; and

3. Any other policies relating to the disposal of high-level radioactive waste.

Pursuant to Item No. 2 above, the committee notes that the NWPA specifies the obligations and rights of states which have been selected for site characterization. Included in those obligations and rights is the authority to conduct independent evaluations of the technical work which is undertaken by the United States Department of Energy (DOE). This includes the socioeconomic work which will be described in the Environmental Impact Statement which is required under the National Environmental Protection Act (NEPA). Under the NWPA, the states are required to provide independent reports, evaluations and recommendations to the President of the United States at the conclusion of the site characterization period. The states are responsible for monitoring project impacts on citizens, communities and institutions beginning with site characterization, which is now officially underway. This activity is totally funded by the DOE.

A. LEGISLATURE'S COMMITTEE OBJECTIVES

In 1983, the 62nd session of the Nevada legislature passed Senate Concurrent Resolution No. 52 (File No. 136). This resolution directed the appointment of an interim subcommittee to observe and participate in any study by the DOE of possible sites in the State of Nevada for a repository for high-level radioactive waste.

During the 1985 legislative session, the interim subcommittee was changed to a permanent legislative oversight committee (Senate Bill 55, chapter 211) to work with the governor and the governor's commission on nuclear projects which was also created by action of the 1985 legislature (Senate Bill 56, chapter 680).

The legislative committee's major objectives fall within the following categories:

1. To review the effectiveness of federal and state programs and to make recommendations pertaining thereto;

2. To review and make recommendations concerning appropriations and expenditures associated with the program;

3. To ensure that forums for public scrutiny of the federal and state programs are provided;

4. To coordinate and cooperate with federal, state and local agencies; and

5. To identify and recommend enactment of necessary legislation.

The work program to implement these objectives is as follows:

1. Program Oversight:

    a. Review of federal program and documents.

    b. Review of state program and documents.

2. Coordination and Participants:

    a. Federal agencies:

        (1) United States DOE Headquarters;

        (2) United States DOE Project Office; and

        (3) Other federal agencies.

    b. State agencies:

        (1) Executive branch; and

        (2) Legislative branch.

    c. Local government agencies.

    d. General public.

3. Possible Areas of Specific Study:

    a. Information system.

    b. Liability.

    c. Taxes and fees.

    d. Transportation planning.

To facilitate the implementation of the committee's objectives, subcommittees were established to deal with the major elements of the High-Level Radioactive Waste Repository Siting Program. They are:

1. Communications;

2. Socioeconomics; and

3. Transportation.

B. LEGISLATURE'S COMMITTEE MEETINGS AND FUNDING

The committee held a series of meetings in northern and southern Nevada. The purpose of the meetings was to monitor the overall progress of the federal and state programs. The subcommittees also met to gather information pertaining to the issues of communications and public information, socioeconomics and transportation planning.

In addition to the formal committee and subcommittee meetings, the members participated in five meetings of the Working Group on High-Level Radioactive Waste of the National Conference of State Legislatures (NCSL). The purpose of these NCSL meetings was to exchange information and ideas with legislators from other affected states and to collectively monitor the effectiveness of the state's participation in the overall program effort. Staff to the committee also participated in various technical work sessions at federal, state and local levels.

It is anticipated that the committee will continue to carry out its oversight role pursuant to NRS 459.0085 and to maintain its close working relationship with legislators from other affected states through the NCSL working group. The staff to the committee will continue to participate as a member of the state and local government planning group on all the technical aspects of the program.

Funding for the legislature's oversight program is provided by a grant to the State of Nevada's agency for nuclear projects. In fiscal year 1986-87, Nevada received $4,249,048, of which $110,770 went to the legislative committee. The overall funding for the federal program is provided by an adjustable ongoing fee charged quarterly for all electricity generated by commercial nuclear facilities. The current rate of assessment is 1.0 MILL per net kilowatt hour. A copy of the agreement between the agency for nuclear projects and the legislative counsel bureau is included as Appendix A.

III. NEVADA'S AGENCY FOR NUCLEAR PROJECTS AND COMMISSION ON NUCLEAR PROJECTS

A. BACKGROUND INFORMATION

Nevada's agency for nuclear projects was initially established as a division of Nevada's department of minerals in July 1983. The operation continued under the department of minerals until December 1983 when the legislature's interim finance committee approved a transfer of the program to the governor's office. It then became known as Nevada's nuclear waste project office. The program functioned in this form until 1985 when the Nevada legislature passed Senate Bill 56 (see Appendix B).

With the passage by the legislature, and the signing by the governor, of Senate Bill 56, both the agency for nuclear projects and the commission on nuclear projects were statutorily authorized. Following this action, Governor Richard H. Bryan formally appointed the seven members of the commission. The principal objective of the legislation was to develop a formal program through which Nevada could participate in and monitor the DOE High-Level Radioactive Waste Repository Siting Program which was established by the NWPA.

Nevada Revised Statutes 459.0092, "Commission on nuclear projects: Duties," describes the duties of the commission on nuclear projects as follows:

1. Be informed on issues and developments relating to the disposal of radioactive waste.
2. Report to the governor and the legislature on any matter relating to the disposal of radioactive waste which it deems appropriate and on any such matter requested by the governor.
3. Advise and make recommendations to the governor and the legislature on the policy of this state concerning all projects involving the disposal of radioactive waste.
4. Formulate the administrative policies of the agency and its divisions.
5. Advise the state and local governments on litigation relating to radioactive waste.
6. Adopt such regulations and perform such other duties as are necessary to carry out the provisions of NRS 459.009 to 459.0098, inclusive.

Nevada Revised Statutes 459.0094, "Executive director of agency for nuclear projects: Duties," describes the duties of the agency for nuclear projects as follows:

1. Appoint, with the consent of the commission, an administrator of each division of the agency.
2. Advise the commission on matters relating to the potential disposal of radioactive waste in this state.
3. Evaluate the potentially adverse effects of a facility for the disposal of radioactive waste in this state.
4. Consult frequently with local governments and state agencies that may be affected by a facility for the disposal of radioactive waste and appropriate legislative committees.
5. Assist local governments in their dealings with the Department of Energy and its contractors on matters relating to radioactive waste.
6. Carry out the duties imposed on the state by 42 U.S.C. §§ 10101 to 10226, inclusive, as those sections existed on January 1, 1985.

7. Cooperate with any governmental agency or other person to carry out the provisions of NRS 459.009 to 459.0098, inclusive.

Appendix C is a current organizational chart which depicts the structure of the agency for nuclear projects. It also illustrates the agency's and commission's relationship with other branches of state government.

The commission formally submitted its report to the governor and the legislature in December 1986. The report describes the manner in which it fulfilled its duties as described in NRS 459.0092. A copy of the commission's report is on file in the research division library of the legislative counsel bureau.

B. PUBLIC INFORMATION PROGRAM

Nevada's agency for nuclear projects, pursuant to the NWPA, developed a program to provide information to residents of the state and interested political subdivisions within the state. The agency describes its public affairs program as a dynamic process which undergoes modification in direct response to changes in the DOE High-Level Radioactive Waste Repository Siting Program.

Its efforts are primarily aimed at:

1. Selectively examining literature dealing with nuclear waste and related topics;

2. Attending meetings in Nevada and elsewhere at which persons knowledgeable on the nuclear waste subject speak and at which relevant current information is otherwise available;

3. Interviewing persons who are interested in and concerned about the topic of nuclear waste; and

4. Developing a list of institutions, groups, individuals and other entities related to the nuclear waste subject in Nevada.

Short-Term Objectives of the Program

The following have been identifed as key objectives by Nevada's agency for nuclear projects:

1. Facilitate the role of the agency for nuclear projects as primary point-of-contact and clearinghouse for utilization by all entities, individuals and the general public of the entire state. Coordinate, to the extent possible and feasible by providing information to the

public concerning activities being conducted by the DOE in order to make DOE's efforts in this regard more responsive to the needs of Nevada; and

2. Initiate and implement a comprehensive public information program that will provide all entities, individuals and the general public of Nevada with factual, complete and timely information regarding the following subject areas with respect to nuclear waste:

   a. Nuclear Waste Policy Act of 1982 and related federal legislation and activities; and

   b. Pertinent Nevada legislation; legislative committee on high-level radioactive waste; commission on nuclear projects; and related hearings.

Long-Term Goals of the Program

Six goals have been identified by Nevada's agency for nuclear projects. They are:

1. Support and facilitate maximum achievement of meaningful state, local government and public particiption in all processes relevant to Nevada, under the NWPA and other pertinent federal legislation or actions;

2. Support and facilitate the study of the disposal of high-level radioactive waste in the State of Nevada and related activities essential to the preservation of the public health and welfare, and protection of the environment, under Senate Bill 56 and other pertinent Nevada legislation and actions;

3. Initiate and facilitate educational activities through various delivery mechanisms to reduce the "knowledge gap" between scientists, public officials and the general public of Nevada;

4. Promote and facilitate active and informed public participation in decision processes of the DOE and state with respect to nuclear waste;

5. Inform the public throughout the State of Nevada of the DOE's proposed High-Level Radioactive Waste Repository Siting Program, with special emphasis on providing it with information independent of that made available through DOE; and

6. Provide the foundation for a comprehensive public affairs program which will effectively serve the interests and needs of future Nevadans with respect to radioactive waste in perpetuity.

Implementation Methods

The following methods have been employed by the agency for nuclear projects in the implementation of its public affairs program:

1. Attending regular conferences, seminars, workshops and informal sessions with Nevada entities and individuals who are presently or potentially involved, informed and/or affected throughout the State of Nevada;

2. Establishing library services including issues tracking systems, publication and circulation of abstracts and directories;

3. Serving as a liaison with general news media (electronic and print) through information, interviews, media kits, meetings with editorial boards, public affairs broadcasts and public service announcements of meetings;

4. Printing a Nevada Nuclear Waste Newsletter on a bimonthly basis;

5. Appointing a speakers' bureau;

6. Preparing bulletins, factsheets, "focus papers" for technical audiences, pamphlets, and so forth; and

7. Preparing slide programs and other audio visual materials.

Additional methods to disseminate information on the high-level radioactive waste program that are being considered by the agency are:

1. A telephone newsline;

2. Closed-circuit television;

3. Public school, college and university courses of instruction and support material, including educational kits;

4. A "Tele-data" system; and

5. Public "reference centers" (rooms with information materials) available at the agency for nuclear projects and elsewhere.

A representative copy of a factsheet and a newsletter prepared by the agency are included as Appendix D and Appendix E, respectively. Other materials which are described in the preceding sections are available from the agency for nuclear projects in Carson City, Nevada, and in libraries throughout the State of Nevada.

C. SOCIOECONOMIC PROGRAM

Program Approach

Nevada's agency for nuclear projects, along with representatives from affected local jurisdictions, developed the framework for a comprehensive socioeconomic study, which is authorized by the NWPA. Following the development of the framework, the agency sent requests for proposals to qualified firms. After considerable screening by the agency and the local government steering committee, Mountain West Research of Phoenix, Arizona, was selected on April 7, 1986, as the prime contractor to undertake the preparation of the state's studies. In addition to Mountain West Research, a number of subcontractors were chosen because of their nationally recognized expertise to assist Mountain West Research. They include:

Arizona State University, Tempe, Arizona;
Clark University, Worcester, Massachusetts;
Decision Research, Eugene, Oregon;
Planning Information Corporation, Denver, Colorado;
Research Triangle Institute, Research Triangle Park, North Carolina;
The University of Nevada-Las Vegas;
The University of Nevada-Reno;
The Wharton School, University of Pennsylvania, Philadelphia, Pennsylvania; and
Utah State University, Logan, Utah.

Mountain West Research has now developed the study design which describes in detail the nature and extent of specific studies which will assist the state in meeting the requirements of the NWPA. A copy of the draft study design is available in the research division library of the legislative counsel bureau. The study is intended to provide an overview of the program to develop the state's analysis of the socioeconomic impacts of the High-Level Radioactive Waste Repository Siting Program on the State of Nevada and, more particularly, the local jurisdictions which are affected.

Program Goal

The stated goal of the state's socioeconomic program is to identify and quantify the impacts associated with siting, constructing, operating (including transportation of nuclear materials), closing and decommissioning a high-level nuclear waste repository at Yucca Mountain in Nye County, Nevada, and to identify attendant mitigation and compensation strategies.

Program Objectives

It is within the context of the overall goal that eight objectives of the agency for nuclear projects and the state and local government planning group were adopted as follows:

1. Provide factual bases for informed and scientifically and legally defensible decisions and prepare the State of Nevada for subsequent negotiation, legislation and litigation (if necessary);

2. Identify the full range of impacts which the State of Nevada, local governments or individual citizens might incur and, therefore, serve as the basis for impact planning, impact mitigation and compensation of claims;

3. Identify mechanisms and strategies for obtaining mitigation and compensation so as to enable the state to obtain full and timely mitigation of impacts, and compensation where impacts are not mitigable;

4. Assist the state in minimizing or avoiding social and economic dislocations caused by site investigation, characterization, construction, operation, retrieval, closure or decommissioning relative to a repository at Yucca Mountain;

5. Enable state and local governments to minimize or avoid social and economic costs incurred by state and local governments or private citizens as a result of repository-related activities;

6. Enable state and local governments to maximize benefits from repository development;

7. Provide the basis and framework for allocating costs and benefits equitably through the mitigation process; and

8. Enable state and local governments to minimize risks and consequences of possible repository-related accidents.

The socioeconomic study is a 3-year program. It is intended to provide the necessary technical capability so that the agency for nuclear projects and the state and local government planning group can effectively fulfill their obligations as described in the NWPA. The first year goals are to establish an accurate current data base, develop a monitoring program design, integrate the technical work into a policy and statutory context and provide all possible socioeconomic technical data and analysis which will facilitate preliminary decisions concerning compensation and mitigation at the state and local levels. In the second and third years, the initial data base and data management system will be expanded to include the full capabilities of the study design.

Appendix F illustrates the socioeconomic impact assessment and projection model. One of the key points in this model is that impact assessment is based upon the comparison of the socioeconomic conditions for two circumstances: one with the proposed project, the other without the proposed project. Another key point is that this comparison must be for the same time period; thus, if the project characteristics to be assessed are expected to take place in 1995, then the description of the study area for the "without" project condition must also be estimated for 1995. Since socioeconomic systems are dynamic, adequate data and methods must be employed so that the inevitable trends and patterns of change can be projected for both cases. It would be entirely misleading to compare 1995 socioeconomic conditions with the project to 1986 baseline conditions without the project.

Peer Review

Work performed by Mountain West Research on the socioeconomic study is subject to a peer review by three separate organizations: the agency for nuclear projects, the state and local government planning group and the technical review panel. The agency for nuclear projects, as the state entity responsible for the study, receives all work products prepared during the course of the study. It provides the initial review of each work product. In addition, the state and local government planning group reviews and approves study efforts and products.

The technical review panel has the responsibility of approving methodological approaches which are employed in the study. The panel also provides comment on the performance of the research and the appropriateness of the conclusions reached at various points during the study.

D. TRANSPORTATION PROGRAM

Overview

Transportation of spent nuclear fuel and other high-level radioactive waste is of concern to Nevada primarily because Yucca Mountain may become the site for a repository which will receive large quantities of waste shipments under the NWPA which are scheduled to begin in the late 1990's.

Early in 1986, the DOE began planning for the transportation of high-level radioactive waste to a repository. The NWPA, which governs the repository program, assumes that transportation of waste will be conducted within the existing framework of laws, regulations and responsibilities. The existing framework is the point from which the potential repository host states will begin their detailed planning.

The regulation of high-level radioactive waste transportation is primarily a federal responsibility. Several federal agencies are involved and their respective roles vary according to carrier, origin and ownership of the waste material shipped. The agencies have responsibility in the areas of cask certification, driver training, enforcement of regulations, labeling and packaging, physical security, prenotification of shipments to states, routing and transportation. The agencies and their responsibilities are illustrated in Appendix G.

States participate in regulating some aspects of radioactive waste shipments. Nevada Revised Statutes 706.441, "Permit required unless exempted; duties and liability of carrier; revocation of certificate and permit for noncompliance," is an example of a state law which was adopted to deal with intrastate shipments of radioactive waste. The law includes permit requirements for motor carriers and describes the duties and liabilities of the carriers. The law also includes provisions for prenotification. Included as Appendix H is NRS 706.441.

Regulatory Framework

The framework of laws, regulations and responsibilities under which current shipments of radioactive waste are managed is the point of reference for discussions of how future shipments to a Monitored Retrievable Storage (MRS) facility and a repository will be handled. Section 9 of the NWPA explicitly recognizes the existing legal framework.

Appendix I illustrates the current allocation of governmental responsibilities which affect high-level radioactive waste transportation.

E. LOCAL GOVERNMENT PARTICIPATION

Since 1983, Nevada has conducted a unified high-level radioactive waste program. An important facet of this program has been the involvement of the local governments in southern Nevada. This has been accomplished through a contractual arrangement with the agency for nuclear projects. Grant funds are provided to the local jurisdictions to assist them in their repository study efforts.

Various activities in which these local governments are involved individually include coordination, impact assessment, planning, program management and mitigation. In addition, they are members of the state and local government planning group. Through this group, involved local governments collectively review major elements of the state's program such as the socioeconomic study and the transportation planning program.

The following is a summary of the state's contractual agreements with local governments.

FINANCIAL ASSISTANCE PROVIDED TO LOCAL GOVERNMENTS IN NEVADA THROUGH THE AGENCY FOR NUCLEAR PROJECTS
1986-1987

Local Government	Amount of Contract	Time Period
Nevada Counties:		
Clark County	$ 70,000	1 year
Lincoln County*	131,744	1 year
Nye County	213,000	1 year
Nevada Cities:		
Henderson	29,425	1 year
Las Vegas	102,000	1 year
North Las Vegas	58,500	1 year
TOTAL:	$604,669	

*The funding in this category is being administered jointly by Lincoln County and the City of Caliente.

IV. UNITED STATES DEPARTMENT OF ENERGY

The committee's monitoring and review of the DOE's repository siting effort are reflected in the status of several major elements of DOE's program. These are considered program milestones and are described as follows:

A. MILESTONES OF DOE REPOSITORY SITING PROGRAM

1. First Repository Site Identification

In February 1983, pursuant to the NWPA, the DOE formally named nine sites in six states as being potentially acceptable for a high-level nuclear waste repository. They included:

One site in Louisiana;
Two sites in Mississippi;
One site in Nevada;
Two sites in Texas;
Two sites in Utah; and
One site in Washington.

2. Siting Guidelines and Environmental Assessments

In December 1984, pursuant to the NWPA and following review by affected states, Indian Tribes, key federal agencies and the Nuclear Regulatory Commission, the siting guidelines and Draft Environmental Assessments were issued for each of the nine sites.

3. Nomination of Five Suitable Sites

In May 1986, the Final Environmental Assessments were issued and five of the nine sites were nominated as suitable for site characterization. They were:

Richton Dome, Mississippi;
Yucca Mountain, Nevada;
Deaf Smith County, Texas;
Davis Canyon, Utah; and
Hanford, Washington.

Also in May 1986, the U.S. Secretary of Energy recommended three of the nominated sites to the President of the United States for approval for site characterization. They were:

Yucca Mountain, Nevada;
Deaf Smith County, Texas; and
Hanford, Washington.

In his statement of recommendation, the Secretary noted that his decision is supported by extensive data, analysis, evaluation and documentation. The guidelines established the basic process and criteria under which the sites were evaluated. The Environmental Assessments provided analysis and evaluation of available data relevant to the suitability of the nominated sites.

In addition, he noted that the DOE considered the provisions in the siting guidelines for diversity of rock types and geohydrologic settings in arriving at the final selection. At the same time as the recommendation was made, the Secretary made a preliminary determination that the three sites were suitable for development as geologic repositories consistent with the siting guidelines.

4. Presidential Approval

In May 1986, following the Secretary's recommendation, the President approved the selection of Yucca Mountain, Nevada; Deaf Smith County, Texas; and Hanford, Washington, as the three sites to undergo final site characterization.

B. MAJOR DECISIONS AFFECTING THE REPOSITORY SITING PROGRAM

1. On April 30, 1985, the President notified the DOE that it should proceed with plans to dispose of defense waste in the same repository as civilian high-level waste.

2. On December 2, 1985, the Court of Appeals for the Ninth Circuit Court issued its decision in the State of Nevada vs. Herrington No. 7846. The court ruled in favor of Nevada by stating that the DOE was required under the

grant provisions of the NWPA to fund state and Indian Tribe presite characterization studies which involve independent primary data collection.

3. On May 28, 1986, the U.S. Secretary of Energy announced that the DOE was indefinitely postponing activities related to the selection of a second geologic repository. The Secretary indicated that the decision to delay the search for a second repository site was based primarily on economic considerations, noting that the production of nuclear waste had not achieved the volume originally estimated.

4. On October 15, 1986, the U.S. Senate and House of Representatives approved a reduced funding schedule for the High-Level Radioactive Waste Repository Siting Program. The conferees agreed to provide $499 million for the Nuclear Waste Disposal Fund, of which $420,000 was available immediately and $79 million will become available subject to prior approval of the Subcommittees on Energy and Water Development. Appropriations of the U.S. Senate and House of Representatives are subject to certification by the U.S. Secretary of Energy that he has made a good faith effort to comply with the requirements relative to consultation with states selected for site characterization for a repository under the NWPA.

   No funds were provided for drilling of exploratory shafts at any site in fiscal year 1987. The fund reduction is applied against the entire program effort, including site specific activities for the first and second waste repositories.

The legislature's committee feels that it is important to note that several of the DOE's activities as described under "Milestones of DOE Repository Siting Program" and "Major Decisions Affecting The Repository Siting Program" are currently the subject of litigation, including several lawsuits which were filed by the State of Nevada. The lawsuits involve a challenge of the DOE's siting guidelines, the review of the Final Environmental Assessments and the first repository nomination, recommendation and selection process.

Other challenges include the State of Tennessee's lawsuit which alleges that any DOE proposal to request authority from the U.S. Congress to construct an MRS facility would violate the NWPA. The State of Texas filed two petitions which call for review of the DOE's decision to indefinitely postpone the search for a second repository and its preliminary determination that sites in Nevada, Texas and Washington are suitable for development as the Nation's first repository.

The committee feels that it is imperative that the State of Nevada monitor the status of all of the litigation since the outcome is likely to have an impact on the state's position in the final site selection process.

For a more detailed explanation and status of pending litigation, please see Appendix J, "Nuclear Waste - Quarterly Report on DOE's Nuclear Waste Program as of September 30, 1986."

V. LEGISLATIVE OVERSIGHT

A. EVALUATION OF PROGRAM

The legislative committee's program monitoring effort involved a review of the effectiveness of both the federal and state programs. It carefully analyzed the state's role under the commission-agency format and its progress pursuant to the NWPA. As noted previously, the committee identified three major components of the overall program for the most detailed evaluation--communication and public affairs, socioeconomics and transportation. In addition, it assessed the state's efforts in interacting with other host states and nonhost states, the DOE Project Operations Office in Las Vegas, Nevada, and the DOE Headquarters in Washington, D.C.

Throughout the interim, the committee heard testimony on all facets of the program. The committee believes that: (1) the state's efforts in the development of its planning program for communication, socioeconomics and transportation are moving in a positive direction and (2) working relations with the DOE Project Operations Office and host and nonhost states has been very effective. The committee feels, however, that working relations between the DOE Headquarters and the state were not as effective.

The final results of the program monitoring effort are illustrated by its recommendations to the 64th session of the Nevada legislature. The committee felt that it was imperative to emphasize the need for the Federal Government to provide assistance to the state to mitigate adverse impacts from both the study of, as well as construction of, a storage facility in Nevada. It also felt that it was critical to urge the Federal Government to assume total financial responsibility and total liability for injuries from activities associated with any facility for high-level radioactive waste storage built in Nevada. Those issues cited above are reflected in the committee's recommendations which are found on page vii of this report.

Program oversight as outlined in the "Formation of Legislative Committee" portion of this report is considered by the committee to be its primary responsibility. For a more comprehensive explanation on this effort, please see Appendix K, "Presentation By Senator Thomas J. Hickey Before The Commission On Nuclear Projects."

B. POSSIBLE FUTURE LEGISLATION

In addition to the activities, findings and recommendations which are listed earlier in this report, the committee also determined that there was a possibility that additional legislation may result from two study elements which are currently being developed by consultants for Nevada's agency for nuclear projects. They are as follows:

1. Grants Equal To Taxes

Section 116(c)(B)(3) of the NWPA directs the U.S. Secretary of Energy to grant to each state and "unit of general local government" in which a site for a repository is approved:

> ***an amount each fiscal year equal to the amount such state and unit of general local government, respectively, would receive were they authorized to tax site characterization activities at such site, and the development and operation of such repository, as such state and unit of general local government tax the other real property and industrial activities occurring within such state and unit of general local government.

The term "unit of general local government" is defined in the NWPA to mean "any borough, city, county, parish, town, township, village, or other general purpose political subdivision of a state" [42 U.S.C. Section 10101(28)]. Preliminary research of other federal programs indicates that an independent school district is not considered to be a "unit of general local government."

The NWPA does not waive federal tax immunity. Section 116(c)(B)(3) provides for annual grants equivalent to the taxes (GETT) that would be collected by states and units of general local government if they could tax the real property of the site and the industrial activities associated with site characterization development and operation of the repository.

The term "site characterization" in 42 U.S.C. Section 10101(21) is defined to mean:

> ***(A) siting research activities with respect to a test and evaluation facility at a candidate site; and (B) activities, whether in the laboratory or in the field,

undertaken to establish the geologic condition and the ranges of the perimeters of a candidate site relevant to the location of a repository, including borings, surface excavations, excavations of exploratory shafts, limited subsurface lateral excavations and borings, and in situ testing needed to evaluate the suitability of a candidate site for the location of a repository, but not including preliminary borings and geophysical testing needed to assess whether site characterization should be undertaken.

A review of the legislative history of the NWPA and comparable grant payment programs indicates that Congress intended that the GETT provide full tax equivalency. The GETT is intended to encompass all state and local taxes that would be paid by a private company engaged in site characterization activities, development and operation of the repository.

Nevada's agency for nuclear projects awarded a contract to Mountain West Research of Phoenix, Arizona, to review the portion of the NWPA as it pertains to the GETT provisions. The review, analysis and recommendations are contained in a report entitled, "Summary Draft Grants Equal To Taxes" (Appendix L). It should be noted that the recommendations which are outlined in the report are some of the possible alternatives the state may wish to review in its efforts to acquire the revenue due under the terms of the GETT provisions of the NWPA. The report does not represent the position of the potentially impacted counties and cities in southern Nevada.

2. Transportation

Nevada's agency for nuclear projects is also just beginning to develop a complete transportation planning program. It is possible that recommendations for legislation will result from this effort. The committee expects to review this study to determine if any legislation is appropriate. No specific date has been set for the completion of the transportation plan at this time.

Nevada's agency for nuclear projects has developed a framework and tentative schedule for its transportation and planning effort. The steps in this program are as follows:

a. Development of Data and Information Base

Gathering statewide data and information on enforcement, emergency preparedness, existing infrastructure, inspection and response capabilities and routing possibilities is expected to be the first step. Coordinating this research activity with ongoing

socioeconomic studies will parallel the data gathering effort. During this phase, the agency will work closely with all state and local agencies which are involved in transportation related activities.

b. Development of Formal Relationships with State and Local Agencies

Formalization of relationships is required to develop effective interaction during the entire planning process. The agency recognizes the need for input into its planning effort at all levels and throughout the entire program. It is felt that a formal structure will provide an orderly and integrated approach to transportation planning and will also aid in coordinating with the socioeconomics study.

c. Timing

Following the development of the integrated data base and the formalization of the relationships of state and local agencies, the work plans over a possible 2-year or longer period will be developed. The agency for nuclear projects and the state and local government planning group will coordinate the work plan effort in a manner similar to the socioeconomics study.

d. Legislative Action

It is possible, during the course of the transportation planning program, that the legislature may be called upon to address issues relating to nuclear material transportation accidents, personal injury liability, property damage and so forth. The state's transportation planning program is expected to facilitate the legislature's evaluation of possible necessary legislation.

VI. LIST OF SELECTED DOCUMENTS

Copies of the following documents are on file in the research division library of the legislative counsel bureau in Carson City, Nevada.

United States Department of Energy Program Related Documents

1. "A Multiattribute Utility Analysis of the Sites Nominated for Characterization for the First Radioactive Waste Repository - A Decision-Aiding Methodology." May 1986.

2. "Annual Report to Congress." Office of Civilian Radioactive Waste Management. May 1985.

3. "Environmental Assessment Overview Yucca Mountain Site Nevada Research and Development Area, Nevada." May 1986.

4. "Environmental Assessment Yucca Mountain Nevada Research and Development Area, Nevada." Volumes II and III. May 1986.

5. "Information Services Directory." August 1986.

6. "Nuclear Waste Fund Fee Adequacy and Assessment." March 1986.

7. "Public Information Guidelines." Office of Civilian Radioactive Waste Management. June 1986.

8. "Radioactive Waste Management System Project Decision Schedule." July 1985.

9. "Recommendation by the Secretary of Energy of Candidate Sites for Site Characterization for the First Radioactive Waste Repository." May 1986.

10. "Transportation Business Plan." January 1986.

11. "Transportation Institutional Plan." August 1986.

Other Documents

12. "A Guide to Risk Analysis and Spent Fuel Transportation." National Conference of State Legislatures. Barbara Foster. October 1986.

13. "A Report to the Utility Nuclear Waste Management Group. The U.S. Department of Energy's Implementation of the Consultation Provisions of the Nuclear Waste Policy Act." James L. Creighton. August 1985.

14. "Spent Nuclear Fuel and High-Level Radioactive Waste Transportation. Recommendation and Scoping of a Comprehensive Transportation Plan. A Transportation Primer." Western Interstate Energy Board. September 1985.

15. "Spent Nuclear Fuel and High-Level Radioactive Waste Transportation." White Paper. Western Interstate Energy Board. June 1985.

VII. APPENDICES

APPENDIX A

Agreement Between the Agency for Nuclear Projects and the Legislative Counsel Bureau

A G R E E M E N T

THIS AGREEMENT between the NEVADA AGENCY FOR NUCLEAR PROJECTS and the LEGISLATIVE COUNSEL BUREAU is entered into this 1st day of July 1986.

W I T N E S S E T H:

WHEREAS, the United States has enacted the Nuclear Waste Policy Act of 1982, (hereinafter referred to as "ACT"), which would site a high-level nuclear waste repository in a state by 1998; and

WHEREAS, the Secretary of the U.S. Department of Energy has identified the State of Nevada as containing a potentially acceptable site for the siting of the aforementioned repository; and

WHEREAS, the Sixty-third Session of the Nevada Legislature has resolved, in Senate Bill 55, (Chapter 211, Statutes of Nevada, 1985), to study and evaluate issues presented by the ACT and by the action of the U.S. Department of Energy; and

WHEREAS, Section 116 (c) of the ACT provides that funds be made available to the legislative and executive branches of governments of states affected by the ACT to study issues presented in the siting of a high-level nuclear waste repository; and

WHEREAS, the Sixty-third Session of the Nevada Legislature has created the NEVADA AGENCY FOR NUCLEAR PROJECTS to act as the liaison with the U.S. Department of Energy in matters related to the ACT;

NOW, THEREFORE, based upon the foregoing premises and consideration of the following covenants, the parties agree as follows:

1. A legislative committee created by Senate Bill 55 shall study the implications of the ACT as they pertain to the State of Nevada in accordance with the Scope of Work attached to this Agreement as Attachment "A."
2. The NEVADA AGENCY FOR NUCLEAR PROJECTS shall pay the sum of One Hundred Ten Thousand Seven Hundred Dollars and 00/100 ($110,700.00) to the LEGISLATIVE COUNSEL BUREAU

to fund the study referred to in Section 1 above, on a quarterly cost reimbursement basis.

3. Payments shall be made by the NEVADA AGENCY FOR NUCLEAR PROJECTS TO THE LEGISLATIVE COUNSEL BUREAU for reimbursement of projected expenditures for the forthcoming quarterly period. The LEGISLATIVE COUNSEL BUREAU shall submit an invoice to the NEVADA AGENCY FOR NUCLEAR PROJECTS reflective of projected reimbursable costs in advance of the quarter in which funds are to be expended. If actual costs exceed projected costs in any quarter, such costs may be added to costs projected for the following quarter. Payments shall be contingent on the availability of federal funds.

4. The LEGISLATIVE COUNSEL BUREAU may apply for further funds to complete the study if the sum set forth in Section 2 above is inadequate, and this Agreement may be modified to provide for additional funds to be paid to the LEGISLATIVE COUNSEL BUREAU upon receipt of such application.

5. This Agreement shall not become effective until approved by the Nevada State Board of Examiners.

6. The LEGISLATIVE COUNSEL BUREAU shall use the funds made available under this Agreement only for matters pertinent to the ACT and issues arising from that ACT.

7. The LEGISLATIVE COUNSEL BUREAU agrees to comply with and submit Department of Energy Compliance forms, Attachment "D" to this Agreement, to the United States Department of Energy.

8. The employees, agents and consultants of the LEGISLATIVE COUNSEL BUREAU shall, for the purposes of this Agreement, be deemed to be independent contractors, and not employees of the NEVADA AGENCY FOR NUCLEAR PROJECTS.

9. This Agreement may not be modified except by mutual assent of the parties expressed in a subsequent written agreement.

10. The term of this Agreement shall be from July 1, 1986 until June 30, 1987.

11. The LEGISLATIVE COUNSEL BUREAU shall make available to the Nevada Commission on Nuclear Projects, upon request, documents, work papers and other written materials associated with the aforementioned study, except any whose disclosure is prohibited by NRS 218.625.

IN WITNESS WHEREOF, the parties below have affixed their respective signatures.

NEVADA AGENCY FOR NUCLEAR PROJECTS

By: _____ Date: 7-3-86
Robert R. Loux, Executive Director

LEGISLATIVE COUNSEL BUREAU

By: _____ Date: 7-2-86
Donald A. Rhodes, Director

NEVADA STATE BOARD OF EXAMINERS

By: _____ Date: JUL 15 1986
William A. Bible

APPROVED AS TO FORM:
BRIAN McKAY, ATTORNEY GENERAL

By: _____ Date: _____
Barry L. Swainston
Deputy Attorney General

APPENDIX B

Nevada Senate Bill No. 56, Chapter 680, Statutes of Nevada, 1985

Senate Bill No. 56—Committee on Human Resources and Facilities

CHAPTER 680

AN ACT relating to radioactive waste; creating the commission on nuclear projects and the agency for nuclear projects; providing for an executive director of the agency and prescribing his duties; and providing other matters properly relating thereto.

THE PEOPLE OF THE STATE OF NEVADA, REPRESENTED IN SENATE AND ASSEMBLY, DO ENACT AS FOLLOWS:

Section 1. The legislature hereby finds, and declares it to be the policy of this state, that the study of the disposal of high-level radioactive waste in the State of Nevada and related activities is essential to the preservation of the public health and welfare. This study must involve the governor, the legislature and local governments as direct participants.

Sec. 2. Chapter 459 of NRS is hereby amended by adding thereto the provisions set forth as sections 3 to 13, inclusive, of this act.

Sec. 3. *As used in sections 3 to 13, inclusive, of this act, unless the context otherwise requires:*

1. "Agency" means the agency for nuclear projects.

2. "Commission" means the commission on nuclear projects.

3. "Executive director" means the executive director of the agency.

4. "Radioactive waste" is limited to:

(a) The highly radioactive material resulting from the reprocessing of spent nuclear fuel, including liquid waste and any solid material derived from the liquid waste that contains concentrations of matter produced by nuclear fission sufficient to require permanent isolation, as determined by the Nuclear Regulatory Commission;

(b) Spent nuclear fuel that has been withdrawn from a reactor following irradiation and has not been separated into its constituent elements by reprocessing; and

(c) Other material that the Nuclear Regulatory Commission determines must be permanently isolated.

Sec. 4. *1. The commission on nuclear projects, consisting of seven members, is hereby created.*

2. The commission consists of:

(a) Three members of the governor's own choosing.

(b) Two members chosen by the governor from a list of three names submitted to him by the legislative commission.

(c) Two members chosen by the governor, one of whom is chosen from a list of three names submitted to him by a statewide organization of county governments and one of whom is chosen from a list of three names submitted to him by a statewide organization of city governments.

3. After the initial terms, members shall serve terms of 2 years.

4. Each member of the commission is entitled to a salary of $80 for each day's attendance at a meeting of the commission.

Sec. 5. *The members of the commission shall annually select a chairman from among themselves.*

Sec. 6. *The commission shall:*

1. Be informed on issues and developments relating to the disposal of radioactive waste.

2. Report to the governor and the legislature on any matter relating to the disposal of radioactive waste which it deems appropriate and on any such matter requested by the governor.

3. Advise and make recommendations to the governor and the legislature on the policy of this state concerning all projects involving the disposal of radioactive waste.

4. Formulate the administrative policies of the agency and its divisions.

5. Advise the state and local governments on litigation relating to radioactive waste.

6. Adopt such regulations and perform such other duties as are necessary to carry out the provisions of sections 3 to 13, inclusive, of this act.

Sec. 7. *1. The agency for nuclear projects is hereby created. It consists of the commission and:*

(a) The division of technical programs.

(b) The division of planning.

2. The governor shall appoint an executive director, who serves at the pleasure of the commission, and who must:

(a) Be appointed from a list of three persons submitted to the governor by the commission.

(b) Possess broad management skills related to the functions of the agency and have the ability to coordinate planning and communication among the Federal Government, the state and the local governments of this state on issues related to radioactive waste.

Sec. 8. *The executive director shall:*

1. Appoint, with the consent of the commission, an administrator of each division of the agency.

2. Advise the commission on matters relating to the potential disposal of radioactive waste in this state.

3. Evaluate the potentially adverse effects of a facility for the disposal of radioactive waste in this state.

4. Consult frequently with local governments and state agencies that may be affected by a facility for the disposal of radioactive waste and appropriate legislative committees.

5. Assist local governments in their dealings with the Department of Energy and its contractors on matters relating to radioactive waste.

6. Carry out the duties imposed on the state by 42 U.S.C. §§ 10101 to 10226, inclusive, as those sections existed on January 1, 1985.

7. Cooperate with any governmental agency or other person to carry out the provisions of sections 3 to 13, inclusive, of this act.

Sec. 9. *The executive director may:*

1. Provide information relating to radioactive waste to the legislature, local governments and state agencies that may be affected by the disposal of radioactive waste in this state.

2. Consult departments, agencies and institutes of the University of Nevada System or other institutions of higher education on matters relating to radioactive waste.

3. Employ, within the limitations of legislative authorization, technical consultants, specialists, investigators and other professional and clerical employees as are necessary to the performance of his duties.

4. Make and execute contracts and all other instruments necessary for the exercise of the duties of the office.

5. Obtain equipment and supplies necessary to carry out the provisions of sections 3 to 13, inclusive, of this act.

Sec. 10. (Deleted by amendment.)

Sec. 11. *1. The administrator of each division shall administer the provisions of law relating to his division under the supervision of the executive director.*

2. The executive director and the administrator of each division:

(a) Are in the unclassified service of the state and are entitled to be reimbursed for travel expenses and expenses of subsistence in amounts provided by law for state officers and employees.

(b) Shall devote their full time to the business of the agency and not engage in any other gainful employment or occupation.

Sec. 12. *The administrator of the division of technical programs shall:*

1. Evaluate the:

(a) Potential effects of radioactive waste upon the physical environment;

(b) Potential health hazards from the disposal of radioactive waste; and

(c) Design of and engineering techniques involved in a facility for the disposal of radioactive waste.

2. Assure the quality of techniques and procedures used in research involving radioactive waste and of any information developed as a result of the research.

3. Analyze the geological and technical information which would affect the feasibility and safety of locating a facility for the disposal of radioactive waste in this state.

4. Perform any other duties assigned to him by the executive director.

Sec. 13. *The administrator of the division of planning shall:*

1. Coordinate activities between the agency, political subdivisions of the state and affected state agencies.

2. Disseminate information to the state, interested political subdivisions of the state or any agency of either and members of the public regarding radioactive waste.

3. Study the effects of a facility for the disposal of radioactive waste upon transportation and social and economic conditions in this state.

4. Assess the means of mitigating the adverse effects of a facility for the disposal of radioactive waste.

5. Perform any other duties assigned to him by the executive director.

Sec. 14. In appointing the first members of the commission on nuclear projects, the governor shall appoint:

1. Three members to terms expiring June 30, 1986; and
2. Four members to terms expiring June 30, 1987.

Sec. 15. 1. The agency for nuclear projects is authorized to accept from the Federal Government and expend for the study of the disposal of high-level radioactive waste in Nevada:

For the fiscal year 1985-1986	$4,159,356
For the fiscal year 1986-1987	4,259,048

2. Any money not expended during the fiscal year 1985-1986 is available for expenditure in the fiscal year 1986-1987.

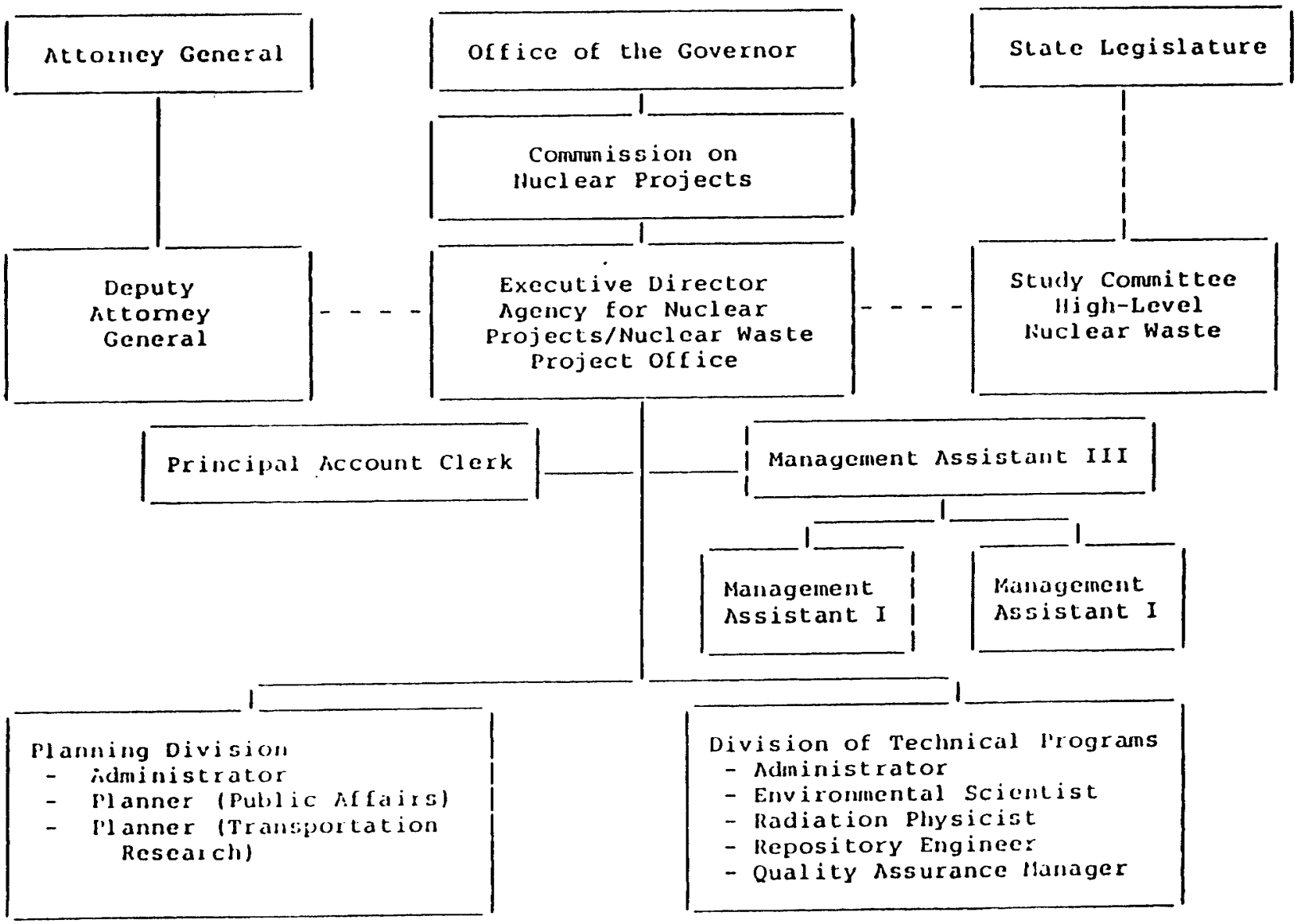
APPENDIX C

State of Nevada Agency for Nuclear Projects
Organizational Chart

As of 9/86

STATE OF NEVADA AGENCY FOR NUCLEAR PROJECTS

ORGANIZATIONAL CHART



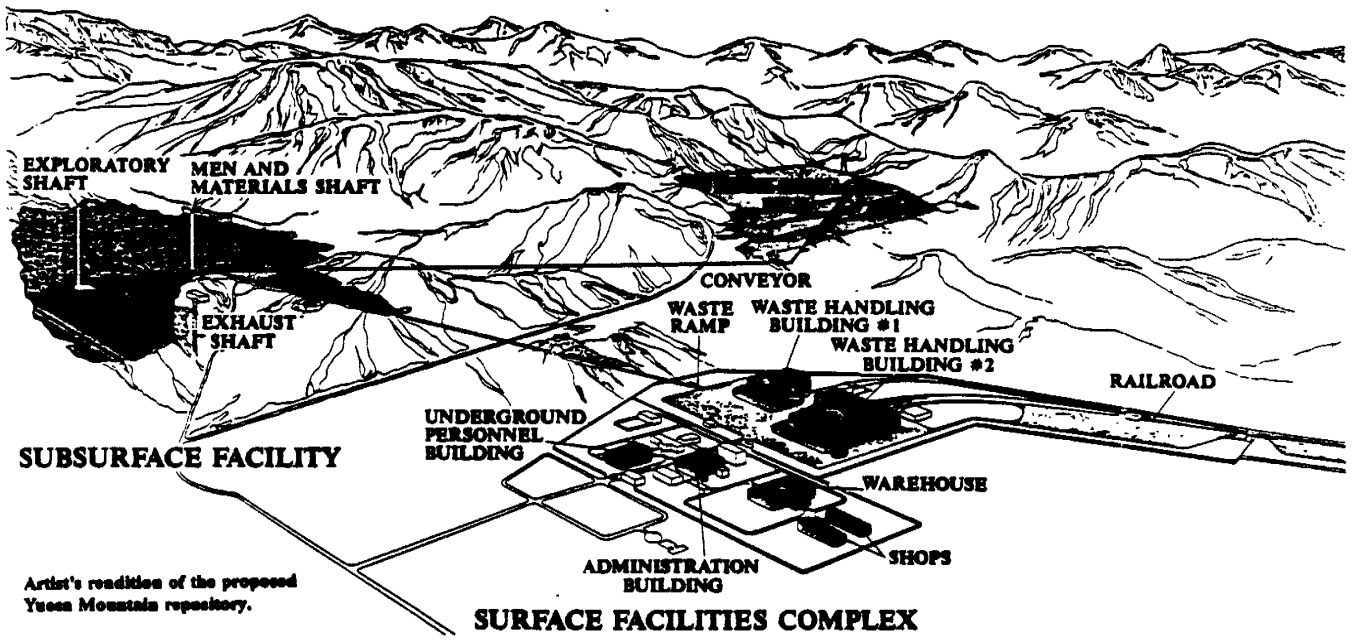
APPENDIX D

Nevada Nuclear Waste Factsheet 1

Nevada Nuclear Waste Project Office

Nevada Nuclear Waste Factsheet 1

A Yucca Mountain repository: What will it look like?



Artist's rendition of the proposed Yucca Mountain repository.

If Yucca Mountain meets all the required tests and approvals, DOE plans to begin construction in late 1993. There would be a central surface facility covering 150 acres, as well as the underground repository spreading over 1,500 acres.

The probable location for the surface facilities would be on the east side of Yucca Mountain. They would be used for waste-handling and packaging operations in support of the underground activities, and to provide general repository support services. There would be fire and medical services as well as administrative offices, repair shops, a security office, warehouses, two separate waste-handling buildings, a machine shop and electrical shop.

Utilities, roads and a railroad would be extended to the site. New wells with storage provisions would supply the water required during construction and operation of the repository.

The subsurface facilities would be a mile west of the surface complex. The repository horizon would be more than 750 feet below the surface and at least 650 feet above the water table. Access to the underground area would be via gently sloping ramps from the surface waste-handling area.

The subsurface facilities consist of main access drifts to the emplacement areas, the emplacement drifts, and service areas near the shafts and ramps. The layout of the facilities depends upon whether the waste is emplaced vertically or horizontally.

There would be six access openings connecting the subsurface with the surface areas. One would be used to transport personnel and materials. It would be 25 feet in diameter and about 1,110 feet deep. The waste-handling ramp would be used to transport waste underground. It would be 24 feet in diameter and about 6,700 feet long. Another ramp would be used for the mined-material conveyor system and as an exhaust outlet for construction area ventilation. The ramp would be 19 feet in diameter and 4,650 feet long. The remaining three shafts would ventilate various underground areas. □

We want to hear from YOU...

Please add the following name and address to your mailing list:

_____

_____

_____

My address is incorrect. Please change it to:

_____

_____

_____

I have the following suggestions for newsletter articles:

I'd like you to send me:

1. ☐ Previous Newsletters
2. ☐ Yucca Mountain Repository Map
3. ☐ All Nuclear Waste Fact Sheets
   or
   - ☐ A Yucca Mountain Repository: What will it look li
   - ☐ A Yucca Mountain repository: How would it opera
   - ☐ The Nuclear Waste Policy Act of 1982: What does
   - ☐ What is spent nuclear fuel and how much waste is
   - ☐ Why Yucca Mountain?

MAIL TO: Nuclear Waste Project Office
Agency for Nuclear Projects
Capitol Complex
Carson City, Nevada 89710

APPENDIX E

Nevada Nuclear Waste Newsletter
Vol. I, No. 1

Nevada Nuclear Waste Project Office

Nevada Nuclear Waste Newsletter

Vol. I, No. 1 December 1985

Where Should High-Level Nuclear Waste Be Stored?

As Nevadans become increasingly aware and interested about the fact that the Federal Department of Energy (DOE) may recommend a site in the Silver State as the nation's first permanent high-level nuclear waste repository, residents of this state are asking more questions on the subject.

What is the current status of the issue?

How did we get where we are at this time?

What are plans for the future?

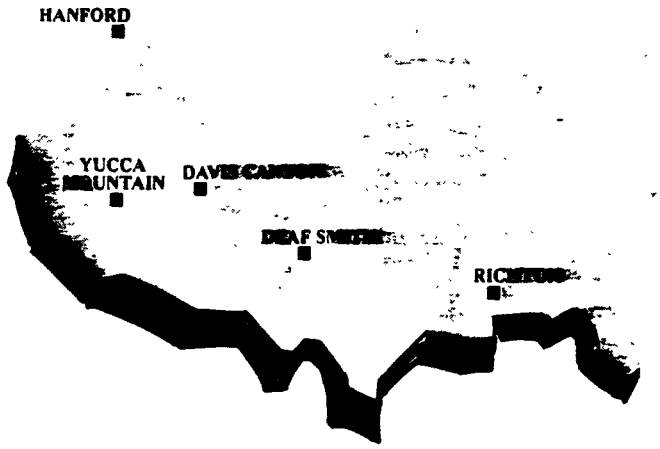
DOE is scheduled in February of next year to nominate and recommend to the President of the United States, based upon preliminary evaluation, sites that DOE has found suitable for characterization as potential locations for the first repository. ("Characterization" is the word for detailed testing and analysis of the potential sites.)

The DOE schedule also anticipates that the President will approve the DOE recommendation of sites in 1986 and that characterization will begin next year at the approved locations. The plan calls for designation by the President in 1991 of one of the characterized sites as the first permanent repository, to then be licensed, constructed and begin receiving waste by the end of the century.

DOE has declared its intention to nominate and recommend only three sites to the President for characterization. This is despite assertion by officials of Nevada and other states, and by other authorities that scientific study of more than three sites is required by law prior to narrowing the field.

Though DOE has rejected such suggestions from many sources, it is possible that the Davis Canyon site in Utah or the Richton Dome site in Mississippi could be

(Please turn to page 8.)



U.S. Department of Energy has ranked potential repository sites in Nevada, Texas, and Washington as its leading choices for detailed testing and analysis, from which one site would be selected to receive high-level nuclear waste.

In This Issue

1985 Nevada Legislation Regarding Nuclear Waste

Four bills and two resolutions concerning nuclear waste were adopted by the 63rd Session of the Nevada State Legislature in 1985. They are the following:

Senate Bill 55
Committee on High-Level Nuclear Waste

AN ACT relating to high-level radioactive waste; establishing the legislative committee on high-level radioactive waste; prescribing its powers and duties; and providing other matters properly relating there.

Senate Bill 56
Commission on Nuclear Projects

AN ACT relating to radioactive waste; creating the commission on nuclear projects and the agency for nuclear projects; providing for an executive director of the agency and prescribing his duties; and providing other matters properly relating thereto.

Section 1. The legislature hereby finds, and declares it to be the policy of this state, that the study of the disposal of high-level radioactive waste in the State of Nevada and related activities is essential to the preservation of the public health and welfare. This study must involve the governor, the legislature and local governments as direct participants.

Senate Bill 67
Consultation and Cooperation Agreement

AN ACT relating to high-level radioactive waste; authorizing the governor to negotiate for an agreement with the United States concerning disposal of such waste; requiring a public hearing and the signatures of the governor and the chairman of the legislative commission to make the agreement effective; and providing other matters properly relating thereto.

Assembly Bill 40
Transportation of Hazardous Waste

AN ACT relating to hazardous waste; requiring a manifest for its transportation; allowing the use of certain money for cleaning certain sites of contamination; requiring reimbursement of the money; reinforcing local regulation of certain activities; reducing the requirement of confidentiality; providing penalties; and providing other matters properly relating thereto.

Assembly Joint Resolution 4
Mitigation of Adverse Effects

ASSEMBLY JOINT RESOLUTION— Urging the Congress and the President of the United States to take all measures necessary to mitigate the adverse effects of a facility for the disposal of high-level radioactive waste in this state.

Assembly Joint Resolution 5
Liability

ASSEMBLY JOINT RESOLUTION— Urging the Federal Government to assume the total financial responsibility for the mitigation of all adverse effects of any facility for the disposal of high-level radioactive waste in this state. □

Legislative Study Committee Created In 1985 Session

A legislative committee to study evaluate the information and policies State regarding the potential location high-level radioactive waste repository created during the last legislative se by the passage and signing of Senat 55.

The seven-member committee will see the U.S. Department of Energy's gram and the activities of the State A for Nuclear Projects to identify pot adverse effects from the constructio operation of such a facility and the w mitigating those effects. The comm will also conduct a general review o policies relating to the disposal of level radioactive waste.

Periodic meetings will be held thr out the state during the next 18 m culminating in a report to the Legis Commission and Legislature. The meeting of the committee was held i Vegas on August 20.

The committee is chaired by Thomas J. Hickey (D-Las Vegas). C on the committee are Assemblyman . W. Schofield (D-Las Vegas), vice man; Senators James I. Gibson Henderson) and Kenneth K. Redelsp (R-Pahrump); and Assemblymen Ja Ham (R-Las Vegas), John E. Jeffre Henderson) and Gaylyn J. Sprigg Hawthorne). □

Where to Write

Readers of the *Nevada Nuclear Waste Newsletter* who desire additional information about issues or documents discussed in the *Newsletter* are encouraged to write to the offices listed below.

Nevada State Nuclear Waste Project Office/Agency for Nuclear Projects, Capitol Complex, Carson City, Nevada 89710.

Department of Energy, Nevada Operations Office, P.O. Box 14100, Las Vegas, Nevada 89114. □

The *Nevada Nuclear Waste Newsletter* is published by the Nevada State Nuclear Waste Project Office/Agency for Nuclear Projects. Mailing address: Capitol Complex, Carson City, Nevada 89710.

The *Newsletter* is funded through United States Department of Energy Grant Number DE-FG08-85NV10461. □

Local Government Involvement: Nevada a Model for the Nation

When Congress pieced together the final version of the Nuclear Waste Policy Act during the frantic days before adjournment in December 1982, it did not deal with at least one important issue in a bill that many view as a masterpiece of legislative compromise and integration of divergent elements and interests.

Although Congress clearly intended for local governments to play a part in decision-making relative to the country's high-level nuclear-waste repository program, it did not delineate a specific role for cities and counties that may be affected by the repository site-selection process or, later, by the construction and operation of such a facility.

Nevada was among the first of the potential repository host states to recognize this omission and to act to provide a voice for its local governments in this important decision-making process.

Acting in concert with the Interim committee on High-Level Nuclear established by the 1983 Legislature Nuclear Waste Project Office organize tentially affected southern Nevada cou and cities into an informal advisory g

Comprised of the planners from County, Nye County, Lincoln County the Cities of Las Vegas, North Las V Henderson, Boulder City, and Cal this ad hoc group provides the State with advice and direction on key aspe the repository program affecting local ernments.

In order to facilitate local involvem the State program, the Nuclear Project Office applied for and rec pass-through grant funds from the U S partment of Energy for affected locali

Funds are made available from the to enable local governments to develo ministrative and planning capacities n

Nuclear Projects Commission Created By Legislation

The Nevada State Commission on Nuclear Projects was created by the passage and signing of Senate Bill 56, an action by the last legislative session.

The Commission, appointed by Governor Richard Bryan, is charged with the responsibility to advise and make recommendations to the Governor and the Legislature regarding the policies of the State concerning projects involving the disposal of high-level radioactive waste.

Appointed by Governor Bryan were former Governor, Grant Sawyer; Clark County Commission Chairwoman, Thalia Dondero; Las Vegas City Councilman, Ron Lurie; Southern Nevada businessman, James Cashman III; President of the Southern Nevada Building Trades Council, Frank Caine; Commission on Judicial Discipline administrator, Anne Peirce of Reno; and community college English teacher, Michon Mackedon of Fallon.

The Commission will also provide advice and guidance to the Nuclear Waste Project Office/Agency for Nuclear Projects which has been in existence since December, 1983. Additionally, the Commission will submit a list of three candidates for executive director of the agency to the Governor who shall make the final appointment.

It is anticipated that the Commission will elect a chairman and other officers at its first meeting. □

to actively participate in decision-making relative to federal nuclear-waste activities and to assess potential impacts associated with a repository at Yucca Mountain.

Nevada's effort to involve local governments early and substantively in the State's oversight of the federal high-level waste-disposal program is considered a model for other states to follow.

One report, prepared by the consulting firm of Creighton and Creighton for the Utility Nuclear Waste Management Group (a consortium of major electric utility companies) relative to DOE's handling of the repository program called the Nevada model for involving localities "particularly ideal" and suggested that it be used in other states to assure meaningful involvement of cities and counties in the process nationwide. □

Governor's Statement

The proposal by the Federal Department of Energy to locate the country's first high-level nuclear waste repository in southern Nevada is undeniably an issue of significant concern to most Nevadans. Whether we support or oppose this effort, we can—and must—agree that one aspect of this undertaking presents a substantial area of common ground for all Nevadans. All of us agree that the health and safety of Nevada's citizens, and our state's unique environment, economy and way of live, must be protected.

Since 1983, the Nevada Nuclear Waste Project Office has been formally engaged in the process of assuring that this overriding concern is addressed in all aspects of the U.S. Department of Energy's activities relative to its high-level waste planning. Bob Loux and his staff of professionals have worked diligently to keep DOE's feet to the fire in order to prevent the Federal Government from railroading the site selection process into Nevada.

The 1985 State Legislature acknowledged the importance of the Office and the significance of the issue by formally establishing the agency in statute and augmenting it by providing for a Commission on Nuclear Projects to support the office and to afford guidance to the Governor and the Legislature.

In the years ahead, critical decisions regarding the siting of a nuclear waste repository will be made. It is absolutely essential that Nevada be a full participant in those decisions.

To date, meaningful state participation in key U.S. DOE decisions has been nonexistent. Despite repeated calls for a greater voice in matters affecting the state, and despite the very clear language in the Nuclear Waste Policy Act requiring meaningful state involvement, DOE has attempted to keep states at arms length.

For nearly two years, the State Nuclear Waste Project Office has been planning, in conjunction with its technical experts and the DOE regional office in Las Vegas, to conduct independent geologic and hydrologic studies at the site. The purpose of these studies would be to collect data necessary to monitor DOE activities and independently substantiate DOE's conclusions about conditions at the site. Over a year ago, the DOE office in Washington, D.C., which oversees the entire program, issued guidelines for financial assistance which prohibit states from carrying out any independent data collection activities.

The state was left with no alternative but to file court action against the department in order to obtain the funds needed to conduct state oversight activities as provided for in the Act. Until now, our concerns with the department have centered around the subjectivity of DOE's entire site screening process and the apparent politicization of the selection procedure. By attempting to deny Nevada funds for independent, on-site data collection, the department appears to be tacitly admitting that its technical investigations won't withstand close scrutiny and that it intends to try to pursue a political rather than scientific process for selecting a nuclear dump site.

We in Nevada must not settle for anything less than our full rights and responsibilities under the Nuclear Waste Policy Act. That means having the opportunity for full participation in key repository-related decisions which have the potential for affecting our citizens for centuries to come.

I trust that the Nuclear Waste Project Office and the newly created Commission on Nuclear Projects will continue to pressure the Department of Energy to fully involve Nevada in its repository decision-making process. If that process is, as DOE claims, based on objective, scientifically justifiable criteria—and not on political and ease of siting considerations, as many of us fear—DOE should logically champion a broad role for potential host states and should welcome close scrutiny of its activities. By insisting on running a "closed shop" with regard to repository program decisions, DOE lends credence to accusations that its entire effort is based on predetermined siting decisions and rests on political gerrymandering rather than on technical issues of site suitability. □

RICHARD H. BRYAN
Governor of Nevada

Transportation: Major Nuclear Waste Issue

Is nuclear [waste] transport safe or is it America's next nuclear gamble? On the basis of hundreds of government and industry reports, interviews, surveys and extensive Council on Economic Priorities original research, we conclude that transportation, as presently practiced, is unsafe.

—Marvin Resnikoff, Ph.D., of the Council on Economic Priorities

More than 5,000 spent fuel elements have been shipped over the past two decades without a single accident causing release of radiation. In view of this history, a study on nuclear waste by the League of Women Voters states that "compared to the transport of other hazardous materials, radioactive shipments have a gold-star record."

—Excerpt from the September 1982 issue of ***Science Concepts***

4

These two statements epitomize the debate over the issue of high-level radioactive waste transportation from nuclear reactors and other locations where spent nuclear fuel and highly radioactive materials are currently stored to proposed high-level waste-repository sites.

The Department of Energy (DOE) has based its planning for repository-related waste transport on the assumption that because spent-fuel shipping containers or casks are so well engineered and virtually impregnable (according to DOE), the chance of a shipping accident involving the release of radiation is almost non-existent. As a result, DOE's transportation-risk estimates have been based on a no-release premise.

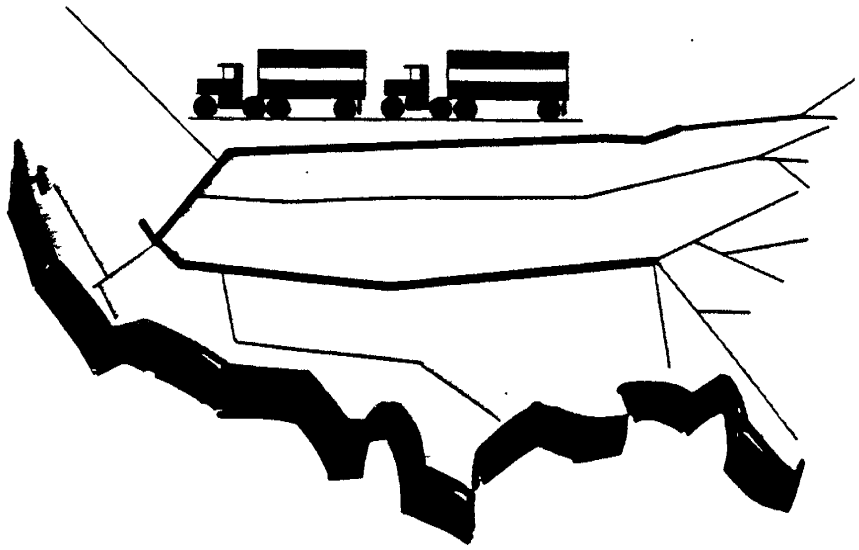
Critics fault DOE for taking an overly optimistic (non-conservative) approach to risk analyses and point to the fact that there are numerous accident or sabotage scenarios where radiation leakage from shipping casks would be possible.

These critics point to inadequacies in structural and crack tests for casks and note that the containers that will ultimately be used to ship waste to a repository are likely to be lighter, less heavily shielded, and more prone to significant accident damage.

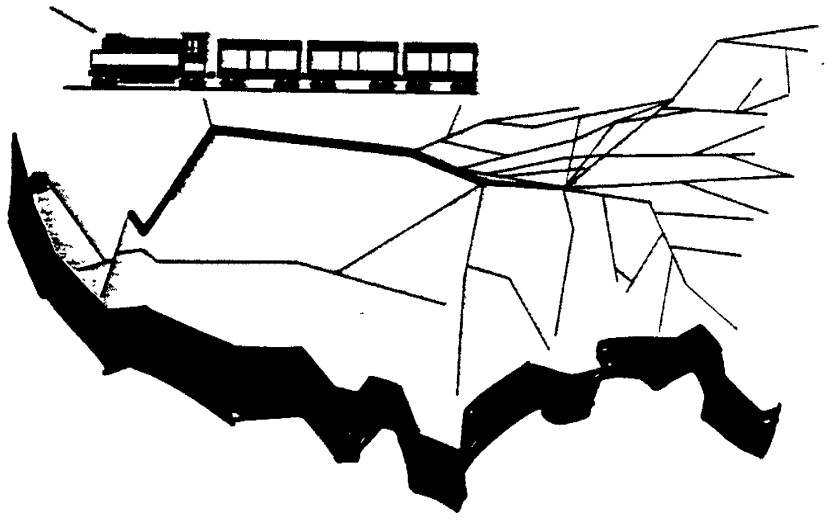
This debate is important to Nevada—and to states through which high-level nuclear waste will pass on its way to a potential Western repository—because it bears directly on the adequacy of DOE's site-selection process.

The Nuclear Waste Policy Act directs DOE to consider transportation variables when comparing candidate sites. Using DOE's reasoning (i.e., that there is virtually no chance of a radiation-releasing shipping accident), transportation becomes a non-variable in site selection because risks are, for all practical purposes, insignificant and roughly equal for all sites under consideration.

However, if the possibility of a worst-case (or even moderate-case) accide factored into the analyses, things su distance, population characteristic routes, terrain, weather conditions routes, emergency-response capabilit communities bordering shipping corri etc., suddenly become important fact selecting a site.



More than 6,400 truckloads of high-level nuclear waste would flow into Nevada ea year if all such shipments were made by truck. Over the 30-year operational life of repository, there could be as many as 180,000 such shipments.



U.S. Department of Energy estimates that it will require approximately 830 rail shipments per year to move high-level nuclear waste to the repository. Over 24,900 such shipments would be made over the 30-year repository operational period if all such shipping were done by rail to Nevada

Differences in risks (and costs needed to address those risks) become apparent when a Western location (such as Nevada or Washington) is compared to a potential Eastern site.

Nevada's Nuclear Waste Project Office has been involved in numerous activities designed to guarantee that DOE adequately considers transportation issues in its siting decisions. Together with local governments in southern Nevada, the Office has worked to encourage DOE to conduct route-specific transportation analyses and not rely on the overly general and generic assessments DOE has provided to date.

The State Office and affected local governments commented extensively on the treatment of transportation issues in DOE's draft EA for the Yucca Mountain site. Comments were critical of DOE for failing to examine Nevada-specific transportation variables and for performing a less-than-adequate comparative risk and cost analysis.

The Department of Energy is currently engaged in developing "plans" governing the business (i.e., procurement, cask design and development, etc.) and "institutional" (i.e., relations among DOE, states, interest groups, and other publics) aspects of its proposed transportation system.

A draft *Transportation Business Plan* was issued for public comment in August 1985. A separate draft *Transportation Institutional Plan* was released in September 1985.

The comment period for the *Business Plan* closed on September 30, 1985. State and local (Nevada) government comments generally supported DOE's efforts to engage in a comprehensive planning approach for transportation-related issues.

However, DOE was criticized for needlessly separating its planning for "business" elements from planning for "institutional" factors when, in fact, these should be interrelated components of a single planning process.

The Nuclear Waste Project Office also faulted the *Business Plan* for failing to provide roles for affected states, tribes, and local governments in aspects of systems acquisition and transportation operations that are of key importance (i.e., adequacy of cask design and production criteria that minimize chances for accident-related releases of radiation, selection of shipping modalities, route designation, etc.).

The draft *Institutional Plan* is still being reviewed. Comments will be prepared and submitted prior to the December 31, 1985, deadline. □

Nevada Begins Assessment of Potential Repository Impacts

On September 13, 1985, the Nevada Nuclear Waste Project Office (NWPO) formally issued a Request for Proposals (RFP) for a major socioeconomic study to identify potential impacts to the state and to local communities should a nuclear-waste repository be constructed at Yucca Mountain in southern Nevada.

The issuance of this RFP followed months of joint planning by NWPO staff and representatives from southern Nevada counties and cities to set parameters for the proposed study and to assure that local as well as statewide factors would be fully considered in the study design.

"A major focus of the study will be to quantify impacts in terms of real costs to local communities and to the state."

A major federal project such as a high-level radioactive waste repository has the potential for affecting Nevada in numerous ways. Given the location of the proposed site in rural Nye County, the repository project may bring with it job opportunities and capital into an area of the state that is chronically affected by the boom-bust cycles of mining and, to a lesser degree, agriculture.

However, the repository project is also likely to attract an influx of new workers and their families—something that could place serious strain on a small county's ability to provide education, health care, law enforcement, and other necessary services.

The fact that the proposed repository site lies in rural Nye County does not mean that other parts of Nevada will be unaffected. Highly radioactive materials will have to be transported via rail lines and highways throughout the state.

Communities situated along major waste-shipping corridors may experience significant social and economic impacts, among them reduced property values, outmigration of residents, lost economic opportunities as a result of fears over the possibility of nuclear accidents, etc.

The planned Nevada socioeconomic impact study is designed to provide State and local planners with clear and quantifiable answers to questions about the social and economic effects of a nuclear repository on the State, its local governments, and its citizens.

In the cover letter transmitting the RFP to prospective responders, the NWPO stipulated that it is not looking for traditional, run-of-the-mill economic analyses. Rather, the State is seeking innovative approaches that pertain specifically to the unique characteristics of Nevada and its localities. A major focus of the study will be to quantify impacts in terms of real costs to local communities and to the State, and then identify ways to mitigate or lessen the effects that negative impacts may have at all levels of government. □

Congress Deliberates Renewal of Price-Anderson Liability Act

Due to expire in 1987, the Price-Anderson Act has provided for insurance to cover accidents from the nation's nuclear power plants for the past 30 years. In Congressional deliberation on its renewal, the issue of the applicability of the Price-Anderson Act to federal high-level nuclear waste transportation and storage has been the subject of much debate.

Nevada's Governor Bryan along with Governor White of Texas and Governor Gardner of Washington have agreed on four basic principles that must be incorporated in any legislation regarding liability for accidents involving transportation and storage of high-level radioactive wastes:

1. The federal government must be held strictly liable for any accidents;
2. Victims must be fully compensated;
3. The method of compensation must be simple, free of red tape, and preferably administrative;
4. State and local governments must be held completely harmless.

The governors have developed actual language that incorporates these principles and requested several congressional representatives to include this language in any legislation introduced to provide liability coverage for all high-level radioactive waste accidents.

Resolutions have been passed by such groups as the National Governors Association, National Association of Attorneys General, the National Conference of State Legislatures, the Nevada State Legislature, and the Washington State Legislature endorsing these principles. □

Tectonic, Hydrologic Aspects of Yucca Mountain Cause Concern

In comments compiled by the Nevada Nuclear Waste Project Office on the U.S. Department of Energy's **Draft Environmental Assessment for Yucca Mountain** (the "draft EA"), deep concern was expressed about the tectonic and hydrologic aspects of the site. The concern is that the site may not be capable and, therefore, suitable for containing and isolating radioactive waste for 10,000 years.

Yucca Mountain is located adjacent to the southwestern boundary of the Nevada Test Site in southern Nevada. It is located within a physiographic province called the Great Basin. The Great Basin is an area of rugged bedrock mountain ranges and intervening alluviated valleys.

Surface water is usually confined to the valleys, but ground water is interbasinal. The mountains were formed by block faults, some of which are still active. Many of the larger earthquakes in the western U.S. have occurred in the Great Basin.

Yucca Mountain is a typical fault-block mountain range, bounded on both sides by large displacement faults and further broken internally by smaller faults and fractures. The rock materials of Yucca Mountain are multiple layers of volcanic ash flows called tuff. Young cinder cones and lava flows occur immediately west of the site.

The site can be characterized as geologically and hydrologically complex. It is possibly the most complex of the sites under consideration for the first repository.

Yucca Mountain is located in a tectonically active region of southern Nevada. The site is located within the Walker-Lane Disturbed Zone and its projected extension, the Las Vegas Shear Zone. The Walker-Lane Zone is a major structural feature in the western Great Basin. Some scientists speculate that these tectonic zones may be responsible for the volcanic activity observed adjacent to the site.

Mapped strike-slip faults at the north end of Yucca Mountain are similar to other strike-slip faults observed along these tectonic zones. Another strike-slip fault in the Great Basin was responsible for the 7.3 magnitude Cedar Mountain earthquake, one of the largest earthquakes in the region in recent history.

The Department of Energy's conclusion in the draft EA is that the nature and rates of expected tectonic activity are not sufficient to threaten the waste-isolation capability of Yucca Mountain.

The EA does not consider the many 6+ magnitude earthquakes that have historically occurred in the Great Basin in relation to the site. Yucca Mountain is located cent to the Southern Nevada Seismic an east-west zone of diffuse earthquak

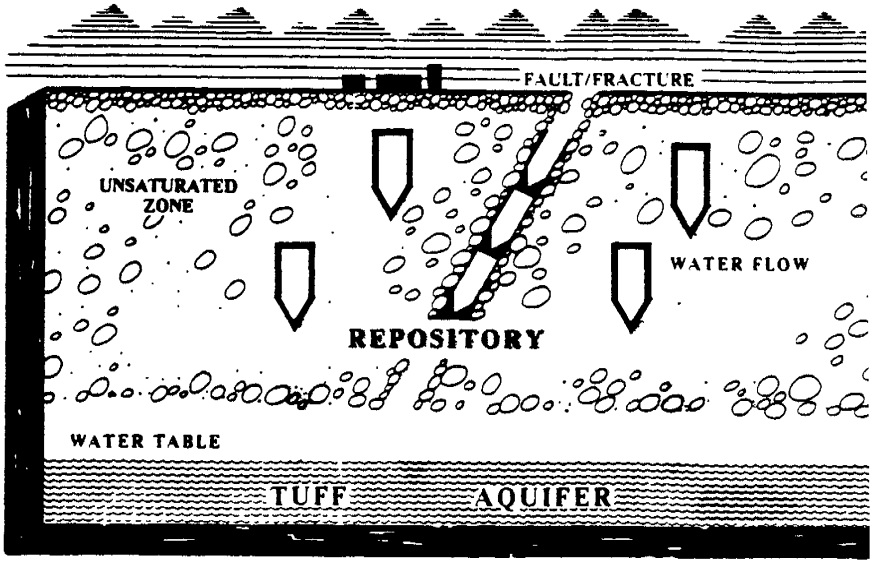
A majority of earthquakes within belt cannot be associated with any par lar fault. The boundary of this belt is trary at best and may include the site. nitude 6+ earthquakes have been ident in this belt, but not at the site.

Given the location of this belt and past earthquake history, a postulated magnitude earthquake may not be a servative estimate for Yucca Moun The DOE concludes that earthquake a ity is not a major concern since only a earthquakes (all less than magnitud have been recorded in the Yucca Mour area.

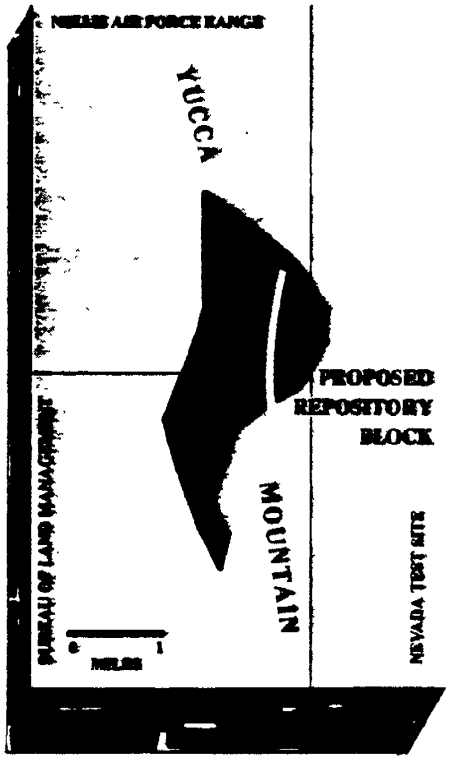
The draft EA indicates that last m ment on the faults at Yucca Mou occurred over 250,000 years ago, and t is no "unequivocal" evidence to sug movement within the last 40,000 years

However, field observations f trenches cut across these faults display logical indicators that suggest mover within the last 40,000 years, possibl young as 10,000 years. These indic suggest that the faults may be potent active and may be capable of an earthq and resulting ground movement within life of the repository

The repository is proposed for const tion in the unsaturated zone beneath Y



The State of Nevada contends that water may flow rapidly along faults or fractures i the illustrated unsaturated zone of Yucca Mountain, through the repository to the Tu aquifer and then to the accessible environment.



Irregular white lines represent major mapped faults of the Yucca Mountain Area, some of which may be potentially active.

Mountain, approximately 400 feet above the water table. In the draft EA, calculations of moisture flow through the unsaturated zone are based upon a conceptual model that utilizes rock matrix flow as the predominant mechanism.

Given the rock conditions beneath Yucca Mountain, this mechanism would produce very slow travel times for radionuclide release from the repository to the accessible environment. The accessible environment is a boundary of 5 km in any direction from the repository set by the EPA for calculating repository performance.

However, researchers from Nevada's hydrologic community believe that because Yucca Mountain is extensively faulted and fractured, fracture flow is also a flow mechanism in the unsaturated zone. Water flow through fractures is well documented in the tuffs of Rainier Mesa on the Nevada Test Site and has been shown to be quite rapid.

The State believes that DOE should devote more research to fracture flow at Yucca Mountain and should revise the EA to acknowledge the possibility of fracture flow and its implications on meeting travel times and performance assessments. Acknowledging the presence of fracture flow would produce more conservative ground-water travel times.

Experience in siting investigations has shown that even with the simplest of sites, technical surprises emerge as the investigations become more intense. With sites known to be geotechnically complex, such surprises can increase many fold, delaying program schedules while questions are resolved and lessening confidence that a site can ultimately be licensed and operated.

Because of this physical complexity, there is concern about DOE's ability to adequately and thoroughly characterize the site and demonstrate with confidence the site's ability to contain and isolate waste from the environment. □

DOE Publishes 'Mission Plan'

The Secretary [of Energy] shall prepare a comprehensive report, to be known as the mission plan, which shall provide an informational basis sufficient to permit informed decisions to be made in carrying out the repository program.

With those words, Congress incorporated the requirement for a comprehensive informational and planning vehicle into the framework it established for siting, constructing, operating, and ultimately sealing (forever) repositories for the disposal of the nation's high-level nuclear waste.

The Act directed the Department of Energy (DOE) to submit a draft of the Mission Plan to the states, affected Indian tribes, the Nuclear Regulatory Commission, and other U.S. government agencies for comment no later than March 1984. A "final" version of the plan was to have been submitted to Congress no later than May 1984.

DOE issued a "working draft" of the *Mission Plan* for comment by states, tribes, and other interested parties in December 1983. A formal, two-volume draft was released for public review and comment on May 9, 1984. The final, or official, version of the document was submitted to Congress in June 1985.

The *Mission Plan*, in its current version, contains DOE's "best estimate of the objectives and strategies of the Civilian Radioactive Waste Management Program and of the facilities, institutional activities, management approach and information needed to implement the program." In short, the plan is intended to be the evolving blueprint by which DOE proposes to implement the Nuclear Waste Policy Act.

In testimony last September before Congressional committees reviewing the document, Nuclear Waste Project Office Director Robert Loux highlighted State concerns with key elements of the final plan. Loux noted that, according to *Mission-Plan* schedules, the Department of Energy intends to make a preliminary determination that certain sites are, in fact, suitable for development as repositories before detailed testing and data collection occurs during site characterization.

Loux pointed out that the "preliminary determination of suitability" is an action Congress required as part of the Nuclear Waste Policy Act (Sec. 114(f)) to assure that DOE would have alternative sites from which to choose after characterization work is completed. He noted that if DOE is permitted to make that determination prior to site characterization, there is no guarantee that even one suitable site will survive the in-depth testing phase.

Loux also said that allowing DOE to make its determination early in the site-evaluation process could mean that the Department would be able to select two less-than-suitable sites plus its "preferred" site for characterization, knowing in advance that two of the sites will not qualify as repositories.

Such a scenario could mean that the Nuclear Regulatory Commission and Congress are ultimately presented with one site that may be only marginally adequate. Under such circumstances, the alternatives are limited to (1) approving DOE's choice or (2) incurring major schedule delays and additional costs in revisiting the entire characterization process.

Another concern voiced by Nevada and other affected states and tribes involves the overly ambitious timetable for opening the first repository. DOE indicates in the *Mission Plan* that it intends to adhere to a 1998 date for beginning repository waste-storage operations.

Given the delays already incurred by the program and the likelihood of additional schedule slippages in the future, there is a real possibility that the rigid 1998 deadline will cause DOE to rush critical technical and scientific evaluations needed during site characterization. □

7

Glossary of Terms for Tectonic, Hydrologic Article

Tectonics—The study of the broader structural features of the earth and their causes.

Physiographic province—A region of similar structure and climate that has had a unified geomorphic history (i.e., history of its surface features).

Interbasinal—Occurring between basins or valleys.

Fault—A fracture or fracture zone in the earth's surface along which there has been displacement (i.e., movement) of the sides of the fracture relative to one another.

Fault block—A block of rock bounded on at leat two sides by faults.

Strike-slip fault—A fault in which the net slip or movement is horizontal.

Dip-slip fault—A fault in which the net slip or movement is vertical.

Unsaturated zone—That area of the subsurface that is above the level of the water table. Rocks within this area are less than completely filled with water.

Matrix flow—The flow of water through more or less solid rocks (i.e., the migration of water through the pores of the rock itself).

Fracture flow—The flow of water through cracks or fractures in rock formations (fracture flow is much more rapid than matrix flow, but only occurs where the rock contains numerous interconnected cracks).

STORAGE *(Continued from page 1.)*

added to or substituted for one or two of the sites in Nevada, Texas or Washington State. That is because sites in those five states were identified by DOE in its *Draft Environmental Assessment* one year ago as the leading candidates from an original list of nine states for the first repository.

Another possibility is that DOE could advance one or more from its list of sites in 17 other states—all in the East—under consideration for nomination and recommendation to the President later for characterization leading to establishment of the nation's second high-level nuclear waste repository. (In the "jargon" of the selection process, states with potential sites for the first repository are known as "first round" and the others are referred to as "second round.")

In its *Draft Environmental Assessment* of the Yucca Mountain site in Nevada, published in December 1984, DOE said:

"In conclusion, the DOE believes that the Deaf Smith [Texas], the Hanford [Washinton state] and the Yucca Mountain [Nevada] sites offer, on balance, the most advantageous combination of characteristics and conditions for the successful development of a repository and should therefore be recommended for characterization."

Nevada and many other states challenged that conclusion, but DOE has maintained its position. Furthermore, DOE has indicated a preference for the Nevada site even among those three. For example, *The Nevada Appeal* reported in its issue of October 14, 1985:

"TONOPAH—Nevada's Yucca Mountain is technically the U.S. Department of Energy's first choice for a high-level nuclear waste repository," a DOE planner said Saturday.

"In a speech to the Society of Professional Journalists in Tonopah, Dr. Donald Vieth, the chief agency planner for the selection of a repository site, said the Yucca Mountain site is technically the best location for the nation's first high-level repository."

The Nevada State Nuclear Waste Project Office, and many others, contend that technical studies to this point are insufficient to support a finding of suitability for the Yucca Mountain site. Declaration of suitability cannot precede extensive geological study, it is held by those who differ with DOE.

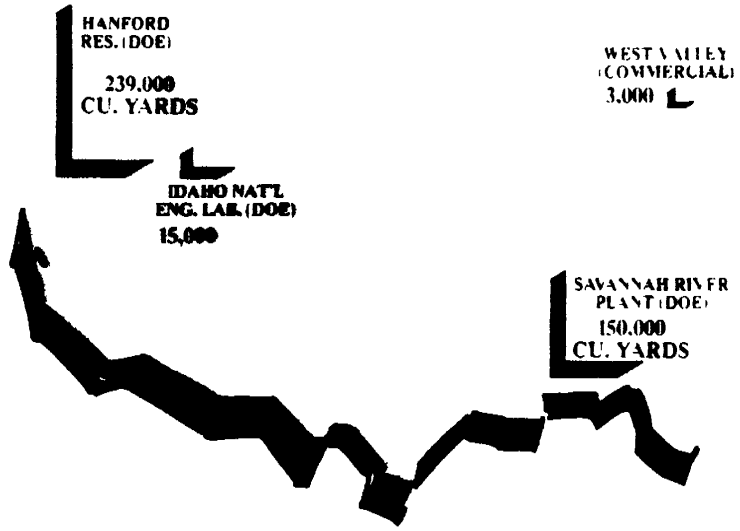
Questions regarding faults, earthquake dangers, and possible contamination of underground water sources are among unresolved technical concerns regarding the Yucca Mountain site. Transportation, liability, and socioeconomic issues also are yet to be studied in detail.

The Government Accounting Office (GAO) has cautioned that if only three sites are characterized and all are disqualified or eliminated, the waste disposal program could be set back ten years while alternate sites are identified and characterized. Therefore, GAO has recommended several options to avoid that dilemma, including additional testing prior to approval for characterization or characterization of more than three sites.

Meanwhile, DOE proposes to build one or more monitored retrievable storage (MRS) facilities to relieve current storage problems at nuclear power plants.

DOE has identified three potential sites for an MRS facility, all in Tennessee. Some observers believe, and many Tennesseans dislike the prospect, that the MRS facilities may hold overflow waste from on-site storage of reactors for a long time, especially if activation of the first permanent repo is delayed. Congress has yet to ap construction of an MRS facility.

Most of the nuclear waste to be disposed of in the repository is produced by electr generating atomic power plants located primarily in the eastern part of the United States. Individual plants or clusters of plants are represented by each dot on the m



Highly radioactive waste products of nuclear defense activities are currently stored these four principal locations. The President has determined that much of the wast be disposed of in the first permanent commercial repository.

Background

Origins of the problem of nuclear may be found in the dawn of the A Age more than 40 years ago. By-prc of the atomic and nuclear generating esses have accumulated in temporary age facilities since the 1940s.

Though most of the high-level nu waste of the early days was associatec defense, today about 50 percent of th tion's total waste is from that source. the other half of the accumulation is commercial generation of electricity the introduction of that era in the 1 There are approximately 90 operating tors in the United States, most of th the East.

Today, there are estimated to be more than 10,000 metric tons of high-level nuclear waste in temporary storage in the United States. The amount of such waste that must be disposed of by the year 2020 is expected to rise dramatically to some 130,000 metric tons.

Temporary storage facilities include underground tanks in South Carolina and Washington state, and water-filled tanks in which spent fuel rods from nuclear generating plants are submerged on-site. Temporary storage must continue until the first permanent repository is in operation. A second such permanent facility is anticipated to follow.

The need to move from interim measures to permanent solutions led to the adoption by the United States Congress of Public Law 97-425, the Nuclear Waste Policy Act of 1982. It was signed into law by President Reagan on January 7, 1983.

The act includes provisions for:

☐ **Development of deep-mined geologic waste repositories for the disposal of high-level radioactive waste and spent nuclear fuel, and**

☐ **Establishment of a program of research, development, and demonstration regarding the disposal of high-level radioactive waste.**

It is under that act that the activities of the Department of Energy, leading to establishment of the first permanent repository, are primarily conducted.

The act also establishes the Nuclear Waste Fund, which derives its revenue from an assessment of 1.0 mil per kilowatt-hour of electricity generated by nuclear power. This is the source of funding to carry out the provisions of the act.

Plans

In the absence of change as the result of persuasion, action by the President, federal legislation, or court action, the DOE schedule calls for accomplishment of the following major events on this timetable:

☐ **February 1986: Nominate/recommend three sites for characterization.**

☐ **Early 1986: Approval or disapproval by the President of the recommendations of sites for characterization.**

☐ **August 1986: Start exploratory shafts on sites approved for characterization. These shafts would be drilled 1,800 to 4,000 feet deep, depending on the site, and will provide access to potential sites for mine-like structures through which studies will be carried out.**

☐ **January 1988: Completion of shaft construction and initiation of testing at depth.**

☐ **December 1989: Completion of exploratory shaft testing for draft Environmental Impact Statements, and associated recommendations.**

☐ **June 1990: Issue draft Environmental Impact Statements.**

☐ **December 1990: Issue final Environmental Impact Statements.**

☐ **January 1991: Issue Site Selection Report, recommending selected site to the President.**

☐ **March 1991: President recommends site to Congress. (State may submit notice of disapproval to Congress.)**

☐ **May 1991: License application to Nuclear Regulatory Commission (NRC) for selected site.**

☐ **August 1993: Receive NRC construction authorization and begin construction of repository.**

☐ **December 1997: Receive license from NRC to operate.**

☐ **January 1998: Begin operations.**

(From beginning of operations until approximately 2020, some 70,000 metric tons of nuclear waste would be brought to the repository where it would be implanted and eventually sealed from access. Scientists estimate that the material would remain radioactive and hazardous for 10,000 to 100,000 years.) ☐

9

Litigation Develops Over Nuclear Waste Repository Siting Project

On December 14, 1984, the State of Nevada filed suit challenging the Secretary of Energy's refusal to grant the Nevada Nuclear Waste Project Office funds to investigate hydrologic and geologic conditions at the Yucca Mountain site.

One of the State's attorneys, Special Deputy Attorney General Mal Murphy, argued before the Ninth Circuit Court of Appeals on August 12 that Nevada, having a candidate site for the first repository, is entitled pursuant to sections 116 and 117 of the Nuclear Waste Policy Act to fully participate in the siting process.

That participation, Murphy argued, contemplates the approval of the State's grant request to conduct reasonable independent tests at the Nevada Site to check investigative methodologies and to verify technical conclusions reached by the Department of Energy.

The Department of Justice attorney, Martin Matzen, argued that the Secretary of Energy has a good deal of discretion to deny the State's request for funds to conduct monitoring and testing activities. He suggested that the Court should give great deference to the Secretary's decisions relative to the denial of grant requests from the Nuclear Waste Fund.

The Nuclear Waste Fund is a billion-dollar trust fund that has been created by contributions from the generators of the nuclear waste, as required by the Nuclear Waste Policy Act. Presently, the generators are contributing approximately $1 million per day to the fund.

The appellate court is expected to render a decision soon on the controversy. All of the states that may be considered for either the first or second repository as well as Tennessee (which has been identified as having potential sites for a monitored retrievable storage facility), are anxiously awaiting the Court's decision.

Friend-of-the-court briefs were filed supporting Nevada's position by the States of Washington, Utah, Minnesota, and Texas. Thirty-four utilities joined in filing a friend-of-the-court brief in support of the Secretary of Energy.

Guidelines

Nevada also filed a Petition for Review with the Ninth Circuit Court of Appeals on May 28, 1984, challenging the general guidelines for the recommendation of sites for nuclear-waste repositories published by the Department of Energy on December 6, 1984.

Nevada argued that the guidelines failed to establish objective standards as to the screening process, methodology for ranking potential sites, weighing post-closure versus pre-closure considerations, and transportation.

Nine other states have filed similar petitions challenging these and other aspects of the guidelines. The Environmental Policy Institute has also filed a petition. All of the petitions including Nevada's have been consolidated in the Ninth Circuit Court of Appeals and are presently awaiting the outcome of a motion to dismiss filed by the Justice Department in the Washington State and EPI petitions.

The basis of the government's motion is that the guidelines do not represent a final action of the Secretary of Energy that is reviewable under the NWPA. The Ninth Circuit Court is expected to render a decision on the motion soon. ☐

U.S. Congressional Committees With Jurisdiction Over Nuclear Waste

House

Energy Conservation and Power Subcommittee
House Energy and Commerce Committee
Edward J. Markey, Chairman
H2-316 House Office Building, Annex II
Washington, DC 20515

Energy and the Environment Subcommittee
House Interior and Insular Affairs Committee
Morris K. Udall, Chairman
1327 Longworth House Office Building
Washington, DC 20515

Energy Research and Production Subcommittee
House Science and Technology Committee
Marilyn Lloyd, Chairman
B374 Rayburn House Office Building
Washington, DC 20515

Senate

Energy Research and Development Subcommittee
Senate Energy and Natural Resources Committee
Pete V. Domenici, Chairman
SD-317 Dirksen Senate Office Buildi
Washington, DC 20510

Nuclear Regulation Subcommittee
Senate Environmental and Public V Committee
Alan K. Simpson, Chairman
SD-410 Dirksen Senate Office Buildi
Washington, DC 20510 □

DOE's Draft Environmental Assessments: Step Towards Narrowing the Field

We nuclear people have made a Faustian bargain with our society. We offer energy that is (potentially) cheaper than energy from fossil fuels. . . . But the price that we demand of society . . . is a vigilance . . . that we are quite unaccustomed to. [Are we] prepared to exert the eternal vigilance needed to ensure the proper and safe operations of [our] nuclear energy system?

—Dr. Alvin Weinberg, former director of Oak Ridge National Laboratories (1971)

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During the past 12 months, the U.S. Department of Energy (DOE) began the public airing of evidence and data designed to determine if, in fact, one (or more) of the sites it is investigating as possible locations for the country's first high-level nuclear waste repository will meet the criteria for "eternal vigilance" that Dr. Weinberg spoke about and which Congress defined in more operational terms in the Nuclear Waste Policy Act.

Prior to choosing at least three sites for detailed, in-depth evaluation and testing (site characterization), the Act requires DOE to prepare environmental assessments (EA) to determine which of the potentially acceptable sites should be investigated further. Each EA must contain:

□ **An evaluation as to whether the site is suitable for characterization under the siting guidelines (which were developed by DOE pursuant to the Act for the purpose of screening potential sites);**

□ **An evaluation as to whether the site is suitable for development as a repository under each such guideline that does not require site characterization to apply the guideline;**

□ **An evaluation of the effects of site characterization activities on public health and safety, and on the environment;**

□ **A reasonable comparative evaluation of each candidate site with other sites and locations that have been considered;**

□ **A description of the decision process by which the site was recommended; and**

□ **An assessment of the regional and local impacts of locating a repository at the proposed site.**

In the draft report issued for the Nevada site, DOE concluded that "on the basis of the evaluations [contained in the draft EA] . . . the Yucca Mountain site is not disqualified under the guidelines." The draft EA also concluded that Yucca Mountain is suitable for site characterization because "the evidence does not support a conclusion that the site will not be able to meet each of the qualifying conditions. . . ." Using a three-tiered ranking methodology, the draft EA showed the Nevada site to be among the top three of the five sites that were compared. On the basis of these findings, DOE indicated that it intends to nominate Yucca Mountain as one of the three sites chosen for characterization.

In an 800-page comment document, which contains the views of 7 local governments and 15 State agencies, the State Nuclear Waste Project Office provided DOE with an extensive evaluation of the draft EA for Yucca Mountain. Major findings of the State review included the following:

□ **Information in the draft EA strongly supports the argument that the selection of the Yucca Mountain site for characterization had been predetermined for some time;**

□ **Omissions and deficiencies of content cast considerable doubt on the ity of the analyses contained and the clusions reached in the draft EA;**

□ **Critical land and water issue treated inadequately in the draft E**

□ **Socioeconomic impact analys the draft document ignore risk, as unchanging demographics, proceed the premise that all markets fun with perfect efficiency, use mode questionable validity, and do not ad relevant differences between Clark Nye Counties (while ignoring the r the State entirely);**

□ **Information contained in the EA suggests that four disqualifying ditions may be present: (1) the pote for large earthquakes and active fau at the site, (2) movement of ground v through the proposed repository loc at a rate faster than permitted by D own guidelines, (3) conflicts betwe repository at Yucca Mountain and f weapons testing at the Nevada Test and (4) possible degregation of v quality and quantity for human sumption and irrigation in the Amar Valley area.**

□ **There are numerous other tech areas in the draft EA where DOE's tive findings are not supported by available evidence, including the are mineral resource potential, potentia volcanic activity, potential for majo mate changes, the geochemistry of host rock and its ability to insure isolation capability of the site, and ers.**

The Department of Energy is curr revising the draft EA based on the ments it received. A final version o document is due to be released in lat cember 1985 or early 1986 □

Recent Publications

Comptroller General of the United States, *Report to Congress, The Nuclear Waste Policy Act: 1984 Implementation Status, Progress, and Problems* (Gaithersburg, Md.: U.S. General Accounting Office, Sept. 30, 1985).

Creighton & Creighton, Inc., *A Report to The Utility Nuclear Waste Group, The U.S. Department of Energy's Implementation of the Consultation Provisions of the Nuclear Waste Policy Act* (Saratoga, Calif.: Creighton & Creighton, Inc., August 1985).

(U.S.) Department of Energy, *Draft Environmental Assessment, Yucca Mountain Site, Nevada Research and Development Area, Nevada* (Washington, D.C.: U.S. Government Printing Office: 1984-459-432).

(U.S.) Department of Energy, *Draft Transportation Business Plan* (Washington, D.C.: U.S. Government Printing Office: 1985-461-208:20110).

(U.S.) Department of Energy, *Draft Transportation Institutional Plan* (Washington, D.C.: U.S. Government Printing Office: 1985-461-208:20127).

(U.S.) Department of Energy, *Mission Plan for the Civilian Radioactive Waste Management Program* (Washington, D.C.: U.S. Government Printing Office: 1985-461-208:20059).

(U.S.) Environmental Protection Agency, "Environmental Standards for the Management and Disposal of Spent Nuclear Fuel, High-Level and Transuranic Radioactive Wastes," in *Federal Register, Rules and Regulations* (Washington, D.C.: U.S. Government Printing Office, Vol. 50, No. 182, Sept. 19, 1985), pp. 38066-38089.

State of Nevada Comments on the U.S. Department of Energy Draft Environmental Assessment for the Proposed High-Level Nuclear Waste Site at Yucca Mountain (Carson City, Nev.: Nevada State Nuclear Waste Project Office, March 1985).

Western Interstate Energy Board, *Spent Nuclear Fuel and High Level Radioactive Waste Transportation* (Denver, Colo.: Western Interstate Energy Board, June 1985).

'A Nuclear Waste Primer'

The Preface of *A Nuclear Waste Primer*, published by the League of Women Voters Education Fund, states the following:

The aim of this publication is to offer the nonexpert a brief, balanced introduction to nuclear waste. It outlines the dimensions of the problem, discussing the types and quantities of waste. It then defines the sources, types and hazards of radiation and sketches the history and current status of waste management. Finally, it reviews the choices for managing radioactive wastes over the short and long term, describing in some detail the Carter administration's program to manage nuclear wastes.

Our purpose in producing this primer is to clarify the issues, to provide reliable, objective information and to highlight key points of view so that citizens can understand the overall problem, weigh the alternatives and act responsibly to influence the course of national waste management policy.

***A Nuclear Waste Primer* was researched and written by Marjorie Beane, Director of the Nuclear Energy Education Program, LWVEF Energy Department. . . .**

A revised edition of *A Nuclear Waste Primer* is scheduled to be published this month. Copies of the revised edition may be obtained by writing to the League of Women Voters of the United States (Attn.: Publications Sales Dept.), 1730 M St., N.W., Washington, D.C. 20036. Ask for Publication No. 448 and remit for each copy $5.95 ($3.00 for League members) plus 50 cents for handling for each order. Bulk rates are available upon request to the League.

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Selected Events, Meetings, Deadlines

Dec. 2-3, 1985: Quarterly meeting of first-round states (Mississippi, Nevada, Texas, Utah, and Washington; plus Louisiana) and affected Indian Tribes representatives with Department of Energy (DOE) representatives in Atlanta, Ga.

Dec. 20, 1985: Deadline for comments to DOE on its *Draft Institutional Transportation Plan*.

January 1986: DOE scheduled to submit *Environmental Assessments* and formal proposal to Congress for construction of Monitored Retrieval Storage (MRS) site.

Early 1986: DOE scheduled to release its (final) *Environmental Assessments* for candidate first repository sites.

February 1986: DOE scheduled to issue its Nominations and Recommendations of candidate sites for first repository characterization.

Early 1986: President of the United States anticipated to issue decision regarding sites recommended by DOE for characterization.

March 1986: DOE scheduled to release its *Site Characterization Plan* (SCP).

Questions and Answers

1. What is radioactivity?

Radioactivity is a natural process. Atoms of most substances are internally balanced, or stable. They have no tendency to change, or break up into simpler atoms. But some complex atoms, like uranium, are unstable. They regain stability by expelling particles or bursts of energy, a process called radiation-activity, or *radioactivity*.

The particles and energy emitted by these unstable atoms are invisible, odorless, tasteless, soundless—our senses cannot warn of their presence. But even modest amounts of radiation can cause sickness, cancer, and birth defects. The hazardous particles and energy bursts are:

- Alpha particle (two protons and two neutrons expelled from an atom's nucleus)
- Beta particle (an electron expelled from an atom)
- Gamma ray (a burst of wave energy like an x-ray).

Radiation is a health hazard because it can penetrate human tissue and "ionize" the atoms in living cells. The ionized atoms possess altered electrical charges, and, therefore, a different chemical behavior, which can upset normal body chemistry. The result is *radiation sickness*.

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There are different types of radiation, and they have different abilities to do bodily harm. Also, body tissues differ in their resistance to radiation.

To take these differences into account, radiation doses are measured in a unit called "rem" (Roentgen Equivalent in Man). A roentgen is a unit of measure of the ionizing effects of radiation. Doses over 10 rems can cause radiation sickness. A dose of 500 rems will kill half the people exposed. A typical American receives 208 millirems (thousandths of a rem) a year.

Everyone is exposed daily to small amounts of natural radiation, which apparently cause no harm. But when man's activities expose people to concentrated radiation or to minor radiation for long periods, a hazard can exist. This is the reason for controlling the storage of radioactive waste, and regulating its disposal.

2. What is nuclear waste?

Nuclear waste is a product generated as a result of human activity. Nuclear waste is classified into four categories depending on its origin, level of radioactivity, and potential hazard: high-level waste, low-level waste, transuranic waste, and tailings.

High-level waste is the most highly radioactive waste. It is characterized by high-level radiation which decays (loses radioactivity) rapidly. High-level waste must be handled by remote control behind heavy protective shielding. It is mainly produced by nuclear reactions in the fuel of nuclear power reactors.

Low-level waste is less radioactive than high-level waste. Low-level waste is defined by law as waste that is not classified as high-level waste, transuranic waste, or spent nuclear fuel. Low-level waste does not require extensive shielding. It is produced by many commercial, medical, and industrial processors.

Transuranic waste contains man-made elements that are heavier than uranium. It emits medium energy radiation and decays slowly. Most transuranic waste results from reprocessing nuclear fuel. Transuranic waste requires disposal similar to high-level waste because of its long decay period.

Tailings are radioactive rock and soil, the by-products of uranium mining and milling. They principally contain small amounts of radium which decay to emit radon, a radioactive gas.

3. What is spent nuclear fuel?

Spent fuel is fuel that has been burned (irradiated) in a nuclear reactor to the point where it no longer contributes efficiently to the nuclear chain reaction and must be replaced.

Pellets containing uranium oxide are the fuel for nuclear plants generating electrical p These solid pellets are sealed in metal approximately twice the diameter of a penc about 12 to 13 feet long. The tubes are bu together into assemblies, each containin tween 50 and 270 tubes, depending on the c of the reactor in which they are to be About one-third of the assemblies in a t power reactor are spent and replaced each

When it leaves the reactor, spent fuel is mally hot and highly radioactive. Much c heat and radiation decays away after abou years of storage, but spent fuel remains tially dangerous for much longer perio time. However, spent fuel is not explosive

4. How much high-level nuclear wa there?

At the present time, spent fuel is stor pools of water at the power plants. The spent fuel stored in power-plant pools beginning of 1981 was about 27,000 fuel a blies, weighing 7,720 tons. Those fuel a blies occupy 104,000 cubic feet of space— the equivalent of one football field 2 feet

Each nuclear power plant generating a n kilowatts of electricity produces about 3 (or 390 cubic feet) of spent-fuel assemblie year. By the year 2000, the accumulati spent fuel from commercial nuclear power tors is projected to total about 950,000 feet—or about nine football fields 2 feet d

By volume, many times more wastes ar produced as a result of defense uses of n energy than by the commercial nuclear industry. However, the total radioactivity isting commercial wastes exceeds that of d wastes.

As of 1980, the amount of high-level d waste in storage totaled 670,000 cubic f solid form. The total amount of defense w estimated to be 1,130,000 cubic feet (if s fied) by the year 2000. □

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Nuclear Waste Project Office
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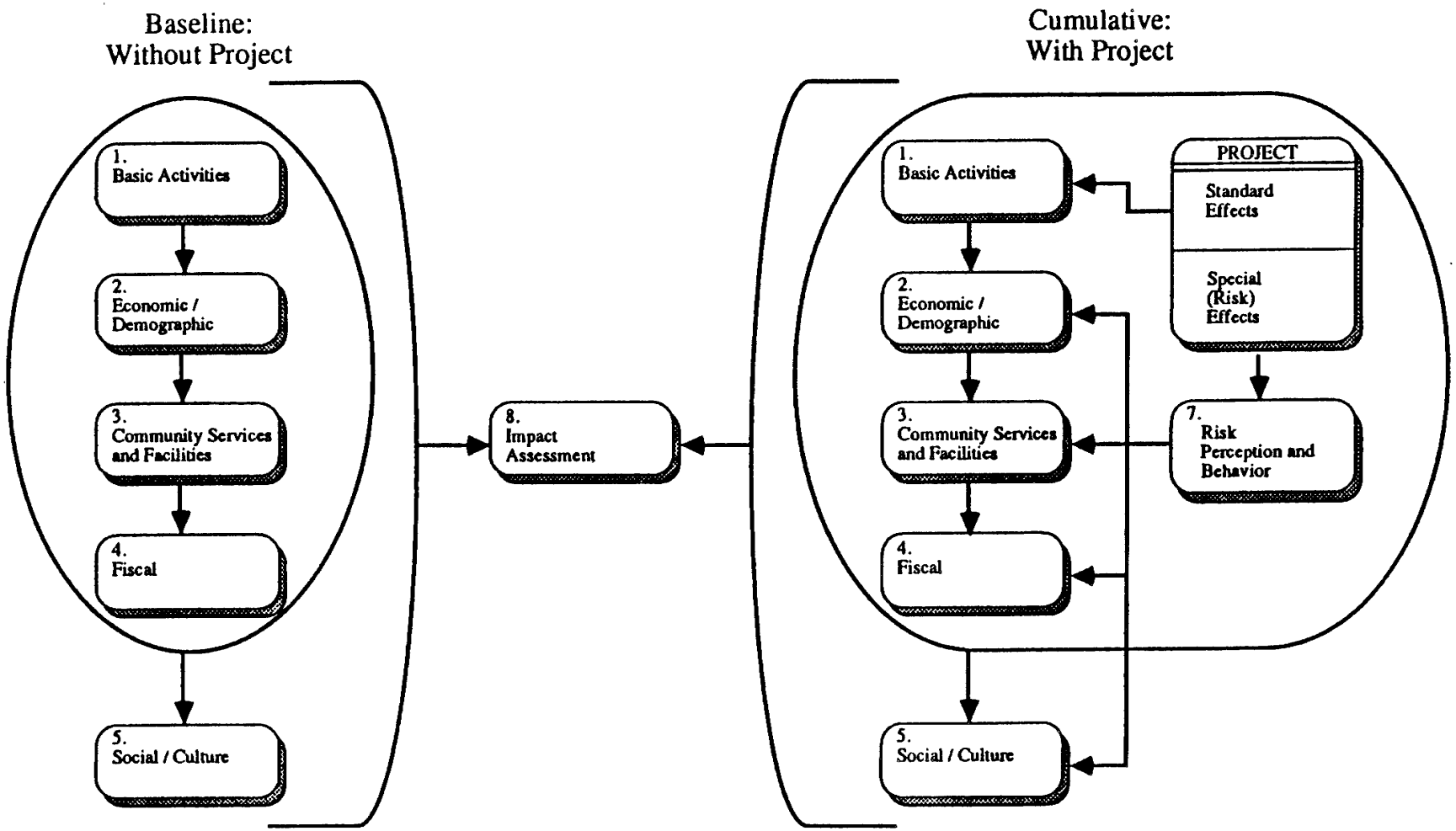
APPENDIX F

Socioeconomic Impact Assessment and Projection Model

Socioeconomic Impact Assessment and Projection Model



1. Basic Activities: Economic demand for goods and services that originate outside the county.
2. Economic - Demographic: Employment, Income, Business Activities, Population Characteristics, Housing, Land Use
3. Community Services & Facilities: Services & Facilities, Transportation, Governmental Structure & Activities
4. Fiscal: Revenues and Expenditures
5. Social Structure: Community, Groups, Individuals; Political Structure, Native Americans & Other Ethnic Groups, Social Well-Being, Quality-of-life
6. Project Description: Employment, Spending, Income, Taxes, Risk Factors, Worker Residency, Household Composition
7. Risk Perception and Behavior: Risk assessment; information sources; perception by groups or types of individuals; political, social and economic behavior.
8. Impact Assessment: Comparison of Baseline (without project) with Cumulative (with project).

APPENDIX G

Federal Responsibilities for Commercial Spent Fuel/High Level Waste Transportation

Federal Responsibilities for Commercial Spent Fuel/HLW Transportation

USDOE

Take title to the spent fuel at the reactor
Provide casks for waste transport
Make all shipping arrangements
Collect disposal fees from the waste owners and generators
Regulate USDOE's transportation contractors
Assist state and local governments in responding to transportation emergencies
Sponsor emergency response training

NRC

Establish shipping cask requirements
License casks
Establish lifting and tie-down standards for packages
Establish safeguard requirements to prevent sabotage of shipments
Approve shipment routes for spent fuel
Require advance notification to states of shipments

USDOT

Regulate carriers of radioactive materials
Regulate the conditions of transportation -e.g., routing, handling and storage, vehicle requirements, driving and parking, driver qualifications
Establish requirements for labeling packages and placarding vehicles

FEMA

Assist federal and state agencies in developing emergency response plans
Coordinate federal agencies' emergency response in the event of an accident

Source:
Spent Nuclear Fuel and High-Level Radioactive Waste Transportation Primer
DE-AC04-84-AL25747
Prepared by the Western Interstate Energy Board

APPENDIX H

Nevada Revised Statutes 706.441, "Permit required unless exempted; duties and liability of carrier; revocation of certificate and permit for noncompliance."

706.441 Permit required unless exempted; duties and liability of carrier; revocation of certificate and permit for noncompliance.

1. No common, contract or private motor carrier of property may transport radioactive waste upon the highways of this state unless he obtains from the commission a permit specifically allowing him to transport radioactive waste. An interstate common or contract carrier must register with the commission the certificate issued to him by the Interstate Commerce Commission when he applies for such a permit.

2. The commission shall issue a permit to a carrier allowing him to transport radioactive waste if the carrier:

(a) Registers his certificate issued by the Interstate Commerce Commission and complies with the regulations of the public service commission respecting the registration of interstate carriers; or

(b) Demonstrates to the satisfaction of the public service commission that he complies and will continue to comply with all laws and regulations of this state and the Federal Government respecting the handling and transport of radioactive waste and the safety of drivers and vehicles.

3. A carrier of radioactive waste shall reject any package containing such waste which is tendered to him for transport in this state if the package is leaking or spilling its contents, or does not bear a shipping label or is not accompanied by a bill of lading or other shipping document in a form prescribed by the regulations of the state board of health. A carrier who accepts such waste for transport in this state is liable for any package in his custody which leaks or spills its contents, does not bear the required shipping label or is not accompanied by the required shipping documents, unless, in the case of a leak or spill of such waste and by way of affirmative defense, the carrier proves that he did not and could not know of the leak when he accepted the package for transport.

4. A carrier of radioactive waste shall notify the commission not less than 4 nor more than 48 hours before he begins to transport the waste in this state.

5. A carrier need not obtain the permit required by this section if he has been exempted from licensing by the health division of the department of human resources because he transports only radioactive waste the possession of which has been exempted from licensure pursuant to the regulations of the state board of health.

6. The commission may revoke a certificate issued pursuant to this chapter, and shall revoke a permit to transport radioactive waste issued pursuant to this section, or in the case of a carrier whose certificate is issued by the Interstate Commerce Commission it may file a complaint with that commission, if it finds that, while transporting radioactive waste, the carrier has failed to comply with any laws or regulations of this state or the Federal Government respecting the handling or transport of radioactive waste and the safety of drivers or vehicles.

(Added to NRS by 1981, 235)

APPENDIX I

Current Allocation of Governmental Responsibilities Regarding Nuclear Waste Transportation

Current Allocation of Governmental Responsibilities
Regarding Nuclear Waste Transportation

Governmental activities	Federal Government responsibility	Shared responsibility	State or local government function
Regulations for transportation casks	x		
Regulations for prenotification	x		
Regulations for routing	x	x	
Regulations for driver training	x		
Regulations for shipping papers	x		
Regulations for labeling and placarding	x		
Inspection & enforcement		x	
First line emergency response			x
Second line and more sophisticated means of emergency response		x	

Source: "Nuclear Materials Transportation: Safety Concerns, Governmental Regulations and Activities and Options to Improve Federal Programs." Congressional Research Service 1985.

APPENDIX J

Nuclear Waste - Quarterly Report on DOE's Nuclear Waste Program as of September 30, 1986

United States General Accounting Office

GAO

Fact Sheet for Congressional Requesters

November 1986

NUCLEAR WASTE

Quarterly Report on DOE's Nuclear Waste Program as of September 30, 1986

LITIGATION RELATING

TO THE NUCLEAR WASTE PROGRAM

During the quarter ending September 30, 1986, none of the pending court cases involving the nuclear waste program were resolved. Nine new petitions were filed requesting court reviews of DOE actions.

PENDING CASES

On July 1, 1986, DOE filed a motion with the U.S. Court of Appeals for the Ninth Circuit to transfer to the U.S. Court of Appeals for the District of Columbia (1) all of the siting guidelines cases (which had been previously consolidated in the Ninth Circuit) and (2) the petitions filed last quarter by Nevada, Texas, Washington, the National Parks and Conservation Association, and the Sierra Club, requesting a court review of the final environmental assessments and/or the first repository nomination, recommendation and selection process. (See the previous quarterly report (RCED-86-206FS, Aug. 11, 1986, pp. 16-18) for a more complete description of these cases.) In its motion, which was pending as of the end of this quarter, DOE argues that such a transfer would be for the convenience of the parties and take advantage of the District Court's national perspective.

Details on pending cases not included in the above motion, are described in the following sections.

Nevada, et al. v. Herrington

On May 28, 1986, the day the Secretary of Energy announced the first repository candidate sites, the state of Nevada filed five petitions in the Ninth Circuit. Four directly concern DOE's first repository siting process as it relates to the Yucca Mountain site and are included in DOE's motion for transfer. The other petition asked the court to prohibit site characterization until DOE awards the state its grant request for funds enabling the state to seek judicial review of the Secretary's and President's action. That petition is not affected by the motion for transfer and has been consolidated with a similar petition filed by the state of Washington's Department of Ecology. (See p. 18.) Nevada has filed its brief, but Washington and DOE have not yet filed theirs. No date has been set for oral arguments.

Natural Resources Defense Council, Inc., et al. v. EPA and the United States of America

The states of Maine, Minnesota, Texas, and Vermont and various environmental groups, including the Natural Resources Defense Council, Inc., and the Environmental Policy Institute, have filed suits challenging EPA's High-Level Waste Standards, which were published in September 1985. The suits were consolidated, and in March 1986 briefs were filed in the U.S. Court of Appeals for the First Circuit in Boston. These states and environmental groups allege that EPA standards are arbitrary and capricious and that the groundwater and individual protection provisions of the standards violate provisions of the Safe Drinking Water Act. They also allege that EPA violated the Administrative Procedures Act by not providing adequate notice to permit a genuine opportunity to comment on the proposed standards.

Tennessee v. Herrington

On August 20, 1985, the state of Tennessee filed suit in the U.S. District Court in Nashville, alleging that any DOE proposal to request authority from the Congress to construct an MRS facility in Tennessee would violate NWPA. Tennessee contends that DOE did not consult with the state before conducting a study to determine the suitability of three Tennessee locations for the facility. Tennessee requested that the Secretary of Energy be enjoined from presenting any proposal to the Congress for an MRS facility in Tennessee until the requirements of the act have been fulfilled.

On October 21, 1985, DOE asked the court to dismiss the case, contending that the District Court lacked jurisdiction. The District Court determined on November 12, 1985, however, that it does have jurisdiction, and on February 5, 1986, concluded that DOE violated the act by failing to consult and cooperate with the state's governor and legislature in the MRS siting process. On February 7, 1986, the District Court permanently enjoined DOE from making any proposal to the Congress that relies on siting studies developed prior to consultation and cooperation with Tennessee.

On February 13, 1986, DOE asked the U.S. Court of Appeals for the Sixth Circuit to (1) reverse the District Court's decision, (2) dissolve the injunction, or (3) stay the injunction pending the outcome of the appeal. On March 6, 1986, the circuit court denied DOE's request to dissolve or stay the injunction. Oral arguments were held in late July 1986 and as of September 30, 1986, the parties were awaiting the court's decision.

Lakes Environmental Association v. DOE

On April 25, 1986, the Lakes Environmental Association, a group of local property owners in Maine petitioned the U.S. Court of Appeals for the First Circuit to review and set aside certain aspects of the general siting guidelines and the screening methodology for the second repository. The Association expressed concern about the Sebago Lake area being identified in the draft Area Recommendation Report as a proposed potentially acceptable site for a nuclear waste repository. Although second repository siting activities were postponed, this case was still active as o the end of the quarter.

NEW LITIGATION THIS QUARTER

Washington and the Nuclear Waste Board v. Herrington

On September 19, 1986, the state of Washington and its Nuclear Waste Board petitioned the U.S. Court of Appeals for the Ninth Circuit for declaratory relief in reference to its earlier petition requesting a court review of DOE's postponement of secon repository site-specific activities. The petition requested that the court declare that DOE's indefinite postponement of site-specific second repository activities violates the mandate o NWPA. The motion was pending as of the end of the quarter.

Safe Power v. Herrington

On July 11, 1986, the Coalition for Safe Power, an Oregon nonprofit corporation, petitioned the U.S. Court of Appeals for the Ninth Circuit to review several of DOE's actions, including (1) the nomination, recommendation, and selection procedure for the Hanford and Yucca Mountain sites, (2) the final environmental assessments for the Hanford and Yucca Mountain sites, and (3) the postponement of site-specific second repository activities. The petition asked the court in part to set aside the nomination and recommendation of the Hanford and Yucca Mountain sites, to set aside the environmental assessments as unlawful, and to issue an order to reactivate site specific work for a second repository. According to a DOE official, subsequent to its July 1, 1986, motion, DOE requested that this case be moved to the U.S. Court c Appeals for the District of Columbia.

Idaho v. Herrington

On July 31, 1986, the state of Idaho filed a petition with the U.S. Court of Appeals for the Ninth Circuit seeking a court review of the environmental assessment, nomination, and recommendation of the Hanford, Washington, site and the second repository postponement decision. The petition requests in part that the court declare DOE's actions relating to the Hanford site to be invalid. A DOE official told us that DOE has also requeste

that this petition be transferred to the U.S. Court of Appeals for the District of Columbia.

Oregon v. Herrington

On August 14, 1986, the state of Oregon petitioned the U.S. Court of Appeals for the Ninth Circuit in part to review the nomination and recommendation for presidential approval of the Hanford, Washington, site, and the postponement of second repository siting activities. The petition requests the court in part to declare these acts invalid. DOE told us that it has also requested that this petition be transferred to the U.S. Court of Appeals for the District of Columbia.

Washington Department of Ecology et al. v. Herrington

On July 31, 1986, the state of Washington's Department of Ecology, its Nuclear Waste Board, and the state of Washington petitioned the U.S. Court of Appeals for the Ninth Circuit to review DOE's decision denying the state's request for grant funds that would have enabled it to pursue judicial review of actions concerning the Nuclear Waste Policy Act. This case was consolidated with the Nevada petition previously filed. (See p. 15.) The case was pending as of the end of the quarter.

Texas v. Herrington

On September 24, 1986, the state of Texas filed two petitions with the U.S. Court of Appeals for the Fifth Circuit to review (1) DOE's action indefinitely postponing second repository siting activities and (2) DOE's preliminary determination that the three sites that DOE recommended as candidate sites for the nation's first nuclear waste repository are suitable for development.

Nuclear Waste Task Force, Inc., et al. v. Herrington

On September 26, 1986, a group of organizations and private citizens filed a petition with the U.S. Court of Appeals for the Fifth Circuit seeking a court review of DOE's preliminary determination that the three sites recommended by DOE and approved by the President are suitable for development of a repository. At the end of the quarter, this case was still pending.

Utah v. Herrington

On September 30, 1986, the state of Utah petitioned the United States Court of Appeals for the Tenth Circuit to review (1) DOE's environmental assessment for the Davis Canyon site and (2) DOE's nomination of that site as suitable for site characterization.

APPENDIX K

Presentation By Senator Thomas J. Hickey Before The Commission On Nuclear Projects

PRESENTATION BY SENATOR THOMAS J. HICKEY
BEFORE THE COMMISSION ON NUCLEAR PROJECTS

FEBRUARY 7, 1986

THE ROLE OF THE NEVADA LEGISLATURE IN THE PROGRAM FOR MANAGEMENT OF HIGH-LEVEL RADIOACTIVE WASTE

MR. CHAIRMAN AND MEMBERS, I WANT TO THANK YOU FOR INVITING ME TO TODAY'S MEETING OF THE COMMISSION. AS YOU KNOW, YUCCA MOUNTAIN IS NEARING IDENTIFICATION AS ONE OF THREE LOCATIONS IN THE NATION WHICH ARE TO RECEIVE INTENSIVE STUDY AS POTENTIAL SITES FOR THE HIGH-LEVEL NUCLEAR WASTE REPOSITORY. IT IS, THEREFORE, IMPERATIVE THAT THIS COMMISSION AND THE LEGISLATURE'S COMMITTEE ON HIGH-LEVEL RADIOACTIVE WASTE MAINTAIN CLEAR LINES OF COMMUNICATION. THIS WILL ENSURE THAT THE CITIZENS OF THE STATE OF NEVADA ARE PROPERLY REPRESENTED AS DECISIONS CRITICAL TO THE STATE ARE BEING MADE.

I WOULD LIKE TO TELL YOU A LITTLE BIT ABOUT THE LEGISLATURE'S INVOLVEMENT IN THIS PROGRAM.

IN 1983, THE NEVADA LEGISLATURE ESTABLISHED AN INTERIM LEGISLATIVE SUBCOMMITTEE TO REVIEW FEDERAL AND STATE PROGRAMS ASSOCIATED WITH THE LOCATION OF A NUCLEAR WASTE FACILITY. THE LEGISLATIVE SUBCOMMITTEE'S ROLE WAS PRIMARILY IN THE FOLLOWING AREAS:

1. TO IDENTIFY AND RECOMMEND ENACTMENT OF NECESSARY LEGISLATION;

2. TO REVIEW THE EFFECTIVENESS OF STATE AND FEDERAL PROGRAMS AND MAKE RECOMMENDATIONS TO THE APPROPRIATE PEOPLE;

3. TO REVIEW AND MAKE RECOMMENDATIONS CONCERNING APPROPRIATIONS AND EXPENDITURES ASSOCIATED WITH THE PROGRAM; AND

4. TO ENSURE THAT FORUMS FOR PUBLIC SCRUTINY OF THE FEDERAL AND STATE PROGRAMS ARE PROVIDED.

IN JULY 1984, THE LEGISLATIVE SUBCOMMITTEE SUBMITTED A REPORT TO THE LEGISLATIVE COMMISSION. THE REPORT INCLUDED THE SUBCOMMITTEE'S RECOMMENDATIONS FOR LEGISLATION WHICH WERE APPROVED BY THE LEGISLATIVE COMMISSION. THE REPORT ALSO INCLUDED A DESCRIPTION OF RELEVANT ACTIVITIES AT THE FEDERAL, STATE AND LOCAL LEVELS. BECAUSE OF THE IMPORTANCE OF THE PROGRAM, THE LEGISLATIVE SUBCOMMITTEE CONTINUED TO BE ACTIVE AFTER THE PUBLICATION OF ITS OFFICIAL REPORT IN JULY 1984. A REPORT UPDATE WAS PREPARED BY THE SUBCOMMITTEE IN FEBRUARY 1985. I BROUGHT COPIES OF BOTH DOCUMENTS FOR THE COMMISSION'S INFORMATION.

IN ADDITION TO REVIEWING THE RELEVANT FEDERAL DOCUMENTS, THE MEMBERS HAVE PARTICIPATED IN THE NATIONAL CONFERENCE OF STATE LEGISLATURES' "WORKING GROUP ON HIGH-LEVEL RADIOACTIVE WASTE." A NUMBER OF MEETINGS OF THE WORKING GROUP HAVE BEEN HELD ACROSS THE COUNTRY DURING THE LAST TWO YEARS. THE SUBCOMMITTEE ALSO PARTICIPATED IN SPECIAL WORKING GROUP MEETINGS IN MID-FEBRUARY 1985, TO DISCUSS REVIEW OF THE "DRAFT ENVIRONMENTAL ASSESSMENTS" AND IN NOVEMBER 1985, TO REVIEW THE "DRAFT INSTITUTIONAL TRANSPORTATION PLAN."

THE SUBCOMMITTEE'S STAFF HAS WORKED CLOSELY WITH BOB LOUX AND YOUR OTHER STAFF MEMBERS. THE LEGISLATIVE STAFF HAS ALSO CONTINUED TO FUNCTION AS A MEMBER OF THE INSTATE TECHNICAL REVIEW COMMITTEE, TO PARTICIPATE IN THE WESTERN INTERSTATE ENERGY BOARD'S TRANSPORTATION STUDY, AND TO PROVIDE DIRECT ASSISTANCE FOR THE NCSL WORKING GROUP.

MOST OF THE LEGISLATION PASSED DURING THE 1985 SESSION RELATIVE TO THIS SUBJECT RESULTED FROM THE RECOMMENDATIONS OF THE SUBCOMMITTEE. YOU ARE ALREADY AWARE OF SENATE BILL 56 WHICH CREATED YOUR COMMISSION AND THE AGENCY FOR NUCLEAR PROJECTS.

SENATE BILL 55 OF THE 1985 SESSION CHANGED THE INTERIM SUBCOMMITTEE TO A FULL-SCALE LEGISLATIVE COMMITTEE WHICH, APPARENTLY, WILL BE ACTIVE UNTIL A REPOSITORY IS CONSTRUCTED OR UNTIL NEVADA IS NO LONGER CONSIDERED FOR A POTENTIAL SITE. AS PROVIDED IN THE BILL, THE COMMITTEE CONSISTS OF THREE SENATORS AND FOUR ASSEMBLYMEN.

STAFF SUPPORT IS PROVIDED IN THE FORM OF ONE RESEARCHER AND A HALFTIME SECRETARY. ALL OF THE FUNDING FOR THE POSITIONS AND COMMITTEE ACTIVITIES IS PROVIDED BY THE UNITED STATES DEPARTMENT OF ENERGY, THE DOE, THROUGH A CONTRACT WITH YOUR AGENCY.

THE BASIC FUNCTION OF THE COMMITTEE WILL CONTINUE TO BE "OVER-SIGHT." ONE AREA OF COMMITTEE CONCERN WILL BE THE MONITORING OF DOE ACTIVITIES AND THE REVIEW AND ANALYSIS OF DOCUMENTS PREPARED BY THE FEDERAL AGENCY UNDER THE NUCLEAR WASTE POLICY ACT. THE COMMITTEE WILL ALSO STUDY SPECIFIC AREAS RELATED TO THE HIGH-LEVEL RADIOACTIVE WASTE PROGRAM SUCH AS TRANSPORTATION PLANNING, THE DEVELOPMENT OF AN INFORMATIONAL SYSTEM AND SOCIOECONOMIC CONSIDERATIONS. ANOTHER COMMITTEE INTEREST WILL BE MONITORING OF THE STATE'S OVERALL PROGRAM FOR ANALYZING THE YUCCA MOUNTAIN SITE.

AS A POTENTIAL SITE MOVES FURTHER THROUGH THE REVIEW PROCESS, WHICH WILL LAST FOR SEVERAL YEARS, THE PROCEDURES FOR DEFINING THE STATE'S PARTICIPATION BECOME MORE FORMAL.

THE FEDERAL LAW PROVIDES THAT NO LATER THAN 60 DAYS AFTER THE APPROVAL OF A LOCATION FOR "SITE CHARACTERIZATION," THE SECRETARY OF ENERGY MUST SEEK TO ENTER INTO A CONSULTATION AND COOPERATION AGREEMENT WITH THE RELEVANT STATE. BASICALLY, THIS AGREEMENT DEFINES HOW THE STATE AND THE DOE WILL COMMUNICATE DURING THE REMAINDER OF THE PROGRAM. SENATE BILL 67 OF THE 1985 LEGISLATIVE SESSION AUTHORIZES THE GOVERNOR TO NEGOTIATE THE CONSULTATION AND COOPERATION AGREEMENT. IT ALSO DIRECTS HIM TO CONFER WITH THE LEGISLATURE AND THE AFFECTED LOCAL GOVERNMENTS BEFORE AND DURING THE NEGOTIATIONS. THE FINAL AGREEMENT DOES NOT BECOME EFFECTIVE UNTIL THE LEGISLATIVE COMMISSION HOLDS PUBLIC HEARINGS AND APPROVES THE DOCUMENT. OUR GOAL WAS TO ENSURE A BROAD BASE OF PARTICIPATION IN DEVELOPING AND APPROVING THIS CONSULTATION AND COOPERATION AGREEMENT.

DURING THE 1985 SESSION, THE LEGISLATURE ALSO ADOPTED TWO RESOLUTIONS PERTAINING TO IMPACTS WHICH MAY RESULT FROM A HIGH-LEVEL RADIOACTIVE WASTE FACILITY IN NEVADA. ASSEMBLY JOINT RESOLUTION NO. 4 URGES THE PRESIDENT AND CONGRESS TO PROVIDE ASSISTANCE TO THE STATE TO MITIGATE ADVERSE IMPACTS IN A NUMBER OF AREAS, RANGING FROM EDUCATION TO TOURISM.

ASSEMBLY JOINT RESOLUTION NO. 5 URGES THE PRESIDENT AND THE CONGRESS TO ENSURE THAT THE FEDERAL GOVERNMENT ASSUMES TOTAL FINANCIAL RESPONSIBILITY FOR MITIGATING ALL ADVERSE IMPACTS ASSOCIATED WITH PRELIMINARY STUDY, CONSTRUCTION, OPERATION AND EVENTUAL CLOSURE OF A REPOSITORY FOR HIGH-LEVEL RADIOACTIVE WASTE IF THE REPOSITORY IS LOCATED IN NEVADA. THE RESOLUTION ALSO URGES ASSUMPTION OF TOTAL LIABILITY BY THE FEDERAL GOVERNMENT FOR ANY INJURIES RESULTING FROM ACTIVITIES ASSOCIATED WITH THE FACILITY. THE MEASURE FURTHER URGES THAT ALL MATERIALS AND EQUIPMENT FOR THE FACILITY BE PURCHASED IN NEVADA (IF POSSIBLE),

AND THAT THESE PURCHASES BE SUBJECT TO STATE AND LOCAL SALES AND USE TAXES. BOTH RESOLUTIONS SPECIFY THAT THEY ARE NOT INTENDED TO SUPPORT OR OPPOSE THE CONSTRUCTION OF THE REPOSITORY IN NEVADA.

IN CLOSING, I WOULD LIKE TO EMPHASIZE THAT IT IS NOT THE INTENT OF THE NEVADA LEGISLATURE'S COMMITTEE TO DUPLICATE THE EFFORTS OF THE GOVERNOR'S COMMISSION OR TO INDEPENDENTLY EMBARK ON ANY TECHNICAL STUDIES. WE INTEND TO PRESERVE OUR "OVERSIGHT" AND POLICY REVIEW ROLE. OUR ROLE IN THE SPECIAL STUDY AREA WILL BE TO WORK CLOSELY WITH THE COMMISSION AND THE AGENCY FOR NUCLEAR PROJECTS TO ASSIST YOU IN YOUR EFFORTS TO PRODUCE MEANINGFUL REVIEWS AND REPORTS THAT HAVE AS THEIR BASIS THE BEST INTERESTS OF THE PEOPLE OF THE STATE OF NEVADA.

IF I MAY JUST LEAVE YOU WITH ONE THOUGHT FROM MY EXPERIENCE IN THIS PROGRAM IT WOULD BE THIS: EXPECT TO INVEST A CONSIDERABLE AMOUNT OF TIME AND ACTIVITY IN BECOMING KNOWLEDGEABLE ABOUT ALL OF THE ASPECTS OF THIS VERY CRITICAL ISSUE. I FIND THAT, BECAUSE OF THE COMPLEXITY OF THIS ISSUE, IT TAKES TIME AND EFFORT WELL BEYOND WHAT WOULD BE CONSIDERED NORMAL, AS BOARDS AND COMMISSIONS GO, TO MAKE RESPONSIBLE, INFORMED DECISIONS. YOUR CHALLENGE IS BEFORE YOU, AND OUR LEGISLATIVE COMMITTEE WANTS TO HELP YOU AND PARTICIPATE WITH YOU IN ANY WAY THAT WE CAN.

THANK YOU FOR YOUR ATTENTION AND I WOULD BE HAPPY TO ANSWER ANY QUESTIONS YOU MAY HAVE.

TJH:mkw:SPEECH3
1/30/86

APPENDIX L

Summary Draft Grants Equal to Taxes

SUMMARY DRAFT

GRANTS EQUAL TO TAXES

(Nevada Site: Yucca Mountain High-Level Nuclear Waste Repository)

September 11, 1986

Prepared for:
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PR #586001.55

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1.0 Introduction

The Nuclear Waste Policy Act of 1982 (the "Act") states in Section 116 (c) (3) that:

> The Secretary shall also grant to each State and unit of general local government in which a site for a repository is approved under section 112 (c) an amount each fiscal year equal to the amount such state would receive were they authorized to tax site characterization activities at such site, and the development and operation of such repository, as such state and unit of general local government tax the other real property and other industrial activities occurring within such state and general unit of local government. Such grants shall continue until such time as all such activities, development and operation are terminated at such site.

The objective of the Grants Equal to Taxes (GETT) Study was to investigate possible avenues of maximizing GETT payments to state and local jurisdictions and to provide a basis for repository-related legislation. To meet these objectives, a number of tasks were undertaken.

The proposed USDOE site characterization and repository construction, operation, closure, and decommissioning activities at Yucca Mountain were reviewed to determine opportunities for applying GETT provisions of the Act. Section 2.0 presents a brief project description based upon information currently available from DOE. These descriptions and cost estimates are extremely preliminary in nature and will certainly be adjusted from time to time as work on the site progresses. If other preliminary estimates for industrial sitings are a guide, estimates of manpower, equipment and supplies, costs and expenditures can be expected to rise significantly. This pattern has been especially the experience for nuclear industry development over the past three decades, even when the effects of inflation are taken into account. Therefore, one way of viewing DOE descriptions is to consider them as the low-end estimates for all factors with the high-end as yet undetermined but with a possibility of being greater by a factor of three or four times.

A legal analysis of the Nuclear Waste Policy Act of 1982 was an essential component of this study. In light of the limited legislative history of the GETT section of the Act, a survey of other comparable state and federal programs granting relief from state tax immunity was undertaken. Section 3.0 provides a summary and interpretation of this survey as it applies to GETT legislation.

State, county, and local tax ordinances were examined to determine which tax categories would be potentially applicable to the GETT requirements of the Act. This review included the counties of Nye, Clark, and Lincoln and the cities of Las Vegas, North Las Vegas, Henderson, Boulder City, and Caliente. Representatives of the Moapa Indian Reservation were contacted regarding their taxing ordinances. At this time, the tribe has only one tax--an employment tax on industry. As the project develops, further examination of tribal taxing structure may be warranted. Section 4.0 summarizes the existing tax ordinances applicable to the GETT legislation and discusses the potential and implications for GETT payments. Until a more complete project description is available, allocations of GETT payments to local jurisdictions cannot be made.

The last section (5.0) contains the policy and strategy recommendations that have resulted from an analysis of the research data and discussions with the state and local people who have reviewed the information over the period of our work. The overall finding is that the GETT provisions of the NWPA will provide significant revenues to the State of Nevada, its local governmental jurisdictions and its citizens. In order to realize these revenues we make a number of recommendations in Section 5.0. In addition, continuous monitoring of the GETT program is called for in order to adjust to developments at the federal, state, and local levels. This draft report, although it completes Phase I, Task 5 work, should be viewed as the first component of an ongoing effort.

2.0 Project Description

On May 28, 1986, Yucca Mountain, Nevada was selected as one of three sites by the Department of Energy and President Reagan as potentially acceptable for the nation's first high-level nuclear waste repository. The other two sites being considered are in Hanford, Washington and Deaf Smith County, Texas.

The Yucca Mountain site is located in southern Nye County about 100 miles by road northwest of Las Vegas. The DOE Environmental Assessment (EA) states that the nearest town is Amargosa Valley, 16 miles south of the site. Actually, Amargosa Valley's town border appears to be much closer to the site, perhaps within three miles. The site is on Federal land under the control of three separate agencies: (1) the U.S. Department of Energy (DOE) controls the eastern portion through a withdrawal of land from the Nevada Test Site; (2) the Department of the Air Force controls the northwestern portion through the land-use permit for the Nellis Air Force Range (NAFR); and the Bureau of Land Management holds the southwestern portion in public trust. A total of 24,710 acres of land would be controlled by DOE for repository uses. An additional 5,000 acres of public land administered by the Bureau of Land Management may also be withdrawn from public use. A number of ancillary activities will occur in other areas within Nevada. For example, a rail spur will be constructed to provide access to the site. In addition, certain administrative activities may occur in the Las Vegas metropolitan area.

The function of a repository is the permanent isolation of high-level radioactive waste as well as the isolation of radioactive waste generated at the repository from the handling of incoming wastes. The total volume of wastes allowed by the Nuclear Waste Policy Act (NWPA) to be buried at the site prior to the operation of a second repository is 70,000 metric tons of uranium (MTU).

The design of the repository is not yet complete and will continue to evolve as more data are collected. Three design concepts have been identified to date. The first was the reference repository design, which was described in the Draft EA. The second, which is the basis for most of the evaluations in the Final EA, is the two-stage repository design concept. This design has evolved with minor changes to a design called the current design concept. The most important differences between these concepts are the proposed waste inventory and the staging of construction and waste-receipt activities. The reference design concept was a single-stage facility designed to accept a waste

inventory of 35,000 MTU spent fuel and 35,000 MTU equivalent of commercial high-level waste and reprocessed waste. In the two-stage repository concept, the repository would accept only spent fuel (70,000 MTU) and would be constructed in two phases and operated in two stages. The third design has been designated as the current design concept, the repository would receive 62,000 MTU of spent fuel and 8,000 MTU equivalent of defense high-level waste; it would be constructed in two stages and would be able to receive spent fuel as early as five years out of the reactor.

The second design concept, the two-stage repository design, is the design for which the most complete data is available. It is this design that will be described in this section and is based on receiving 10-year-old fuel.

Basically, the repository would consist of a series of drifts mined out of the volcanic tuff. The drifts function as access and ventilation corridors and rooms in which the waste is emplaced. The waste would be placed in holes drilled into the walls or floors of the rooms, depending on whether horizontal or vertical emplacement is used. Previous designs have used vertical emplacement; however, recent studies at Sandia National Laboratories indicate that there are potential cost savings associated with horizontal emplacement.

Before construction can begin, the Yucca Mountain site must be selected by DOE as the actual repository site over the other two sites also being considered. In order to make that determination, DOE will carry out site characterization activities at each of the three sites. These activities will probably begin during 1986 and be completed within 55 months.

2.1 Site Characterization

The Nuclear Waste Policy Act of 1982 defines site characterization as:

> activities, whether in the laboratory or in the field, undertaken to establish the geologic condition and the ranges of perimeters of a candidate site relevant to the location of a repository, including borings, surface excavations, excavations of exploratory shafts, limited subsurface excavations and borings, and in situ testing needed to evaluate the suitability of a candidate site for the location of a repository, but not including preliminary borings and geophysical testing needed to assess whether site characterization should be undertaken.

Before beginning to sink the exploratory shafts, DOE is required by the Act to prepare a site characterization plan that is to include a description of the site and site characterization activities. This plan has not yet been completed; however, DOE's Environmental Assessment does include a preliminary description of site characterization activities at Yucca Mountain.

These activities include:

- Twenty new exploratory holes would be drilled from surface-based drill pads to complete the characterization of the site's hydrologic and geologic conditions.
- The new exploratory holes would be drilled within 8 km (5 miles) of the Yucca Mountain site.
- An access road 8 km (5 miles) long would be constructed to each drill pad. This is a worst-case assumption used for calculating environmental impacts.
- An exploratory-shaft facility.
- Geophysical surveys.
- Hydrologic testing would be performed using radioactive materials.

Each drill site must be prepared to accommodate a drill rig and crew. Site preparation activities include clearing and grading the site and staging area, constructing a raised and leveled drill pad, constructing a parking area and equipment yard, excavating fill dirt from either adjacent or nearby areas, and constructing a mud-and-cuttings pit. It is assumed that an average of 2.5 acres per drill site would be disturbed by site preparation. After the site has been prepared, an exploratory hole would be drilled, and associated geophysical logging and hydrologic testing would be performed.

Equipment and facilities that would be used at the drill site include a diesel-powered drill rig, pumps for circulating the drilling fluid, drill pipe, drilling and coring tools, two trailers for supervisory and lavoratory space, an electric generator, and an air compressor.

According to DOE, the evacuation and construction of the exploratory-shaft facility would be the primary source of potential environmental impacts during site characterization. This facility would be located in Coyote Wash on the eastern side of Yucca Mountain at an elevation of about 4,200 feet. The exploratory shaft facility would

consist of (1) an exploratory shaft large enough for the transport of people and equipment (inside finished diameter of 12.1 feet), (2) underground testing areas, (3) a secondary egress shaft (inside diameter of 5.9 feet), and (4) the surface facilities needed to support construction and testing. Both shafts would extend slightly beyond the proposed depth of the repository.

Construction of the surface facilities is expected to take from six to seven months to complete. Prefabricated metal buildings will be assembled at the site on concrete foundations to provide space for a shop, a warehouse, hoist houses, and the integrated data system. Utilities and communication systems would also have to be installed.

Subsurface construction is expected to take 23 months. Testing will begin before all of the subsurface construction is finished.

Most site characterization activities would take place at the Yucca Mountain site. Some other Nevada Nuclear Waste Storage Investigations (NNWSI) Project activities would take place in the Las Vegas area, including work that would be performed at the existing DOE offices in Las Vegas.

Labor Force Requirements. The peak total site characterization employment is estimated to be about 690 jobs including direct and indirect employment. (Indirect employment assumes 1.54 indirect workers associated with each direct worker. This is the multiplier Nellis Air Force Base officials use in their analysis of the economic impact of employment at the Air Force Base.) Direct employment is expected to reach 273 during subsurface construction and testing phase. It is estimated that 60 percent of the direct work force would consist of individuals who are currently employed on DOE activities related to the NNWSI Project. Therefore, only 109 of the workers employed during peak employment would be new employees.

Most of the materials used in site characterization would be required for the construction of the exploratory shaft facility. Those materials include cement, steel, copper wire, wood power poles, gasoline, diesel, electricity and explosives. According to DOE, it is expected that a substantial portion of these materials would be procured through contractors located in southern Nevada.

Facility Costs. Construction cost estimates were not included in the EA. However, according to an article in The Phoenix Gazette (May 29, 1986), DOE estimates site characterization studies to cost $780 million over six years. Most likely, in addition to construction costs, this estimate includes costs to prepare the Environmental Impact Statement and licensing and permitting costs. Detailed cost estimates for site characterization activities should be included in DOE's Site Characterization Plan. As previously stated, this plan must be prepared before any activities can begin.

The construction costs that apply solely to work done at the Yucca Mountain site are only a portion of the total value added to the site. This is discussed in more detail in Section 5.2.3, below where the recommendations for appraisal of the site are made. In summary, however, the value of the improvements should include all those costs that qualify the site to make an application for the permits and licenses required by law and by the regulations of responsible federal and state agencies. This intangible value-added component could very well make up the major value of the site and could be many times the amount spent on shafts, drifts, roads, utilities, buildings, and a rail spur.

2.2 Construction, Operation and Decommissioning

If Yucca Mountain is selected as the site for the repository, the resulting activities can be divided into the following four phases:

(1) Construction
(2) Operation
(3) Retrievability
(4) Decommissioning

Each of these phases will be described below:

Repository construction would proceed in two phases that would begin simultaneously. Phase I construction (1993-1998) consists of construction and acceptance and start-up testing of the Stage 1 surface facility and underground facilities required to accept and emplace 2,100 metric tons uranium (MTU) per year. During Phase II construction, which ends in year 2000, all facilities, including the Stage 2 waste handling building, required to consolidate and accept 3,000 MTU per year, will be completed. It should be noted that Phase II construction overlaps the operations period, which begins in

1998. Underground evacuation would begin in the construction period and continue throughout most of the operations period.

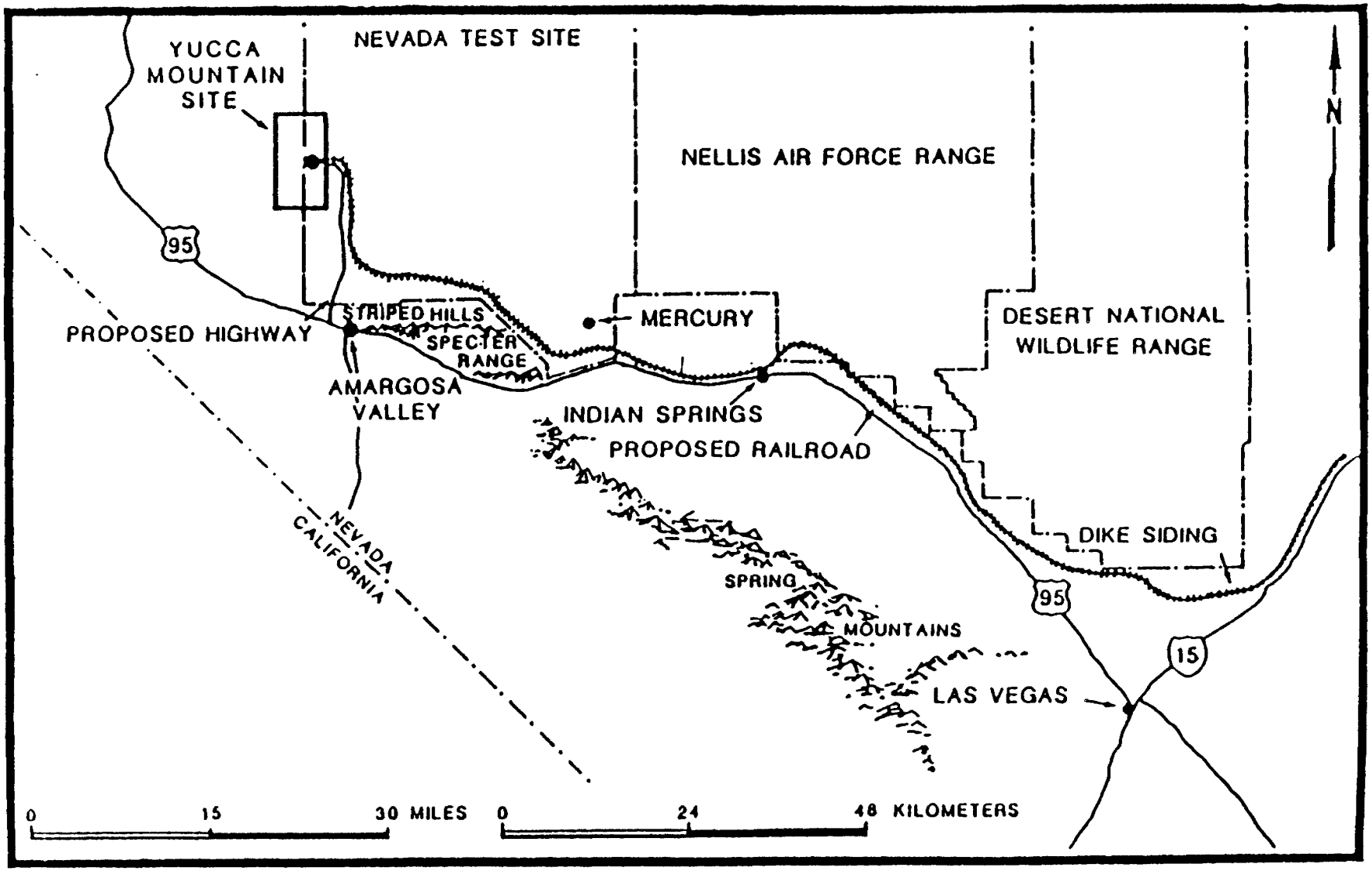
Most surface construction would take place at the main surface facilities. These facilities would include buildings and equipment to receive and package all incoming waste shipments and to treat radioactive waste materials generated at the site. The proposed facilities would encompass 150 acres along the gently sloping east side of Yucca Mountain. These facilities would have a storage capacity for accommodating the equivalent of a three-month accumulation of waste receipts (i.e., 100 MTU equivalent during Stage 1 operation and 750 MTU equivalent during Stage 2 operation).

Surface construction away from the main surface facility complex would include roads, rail connections, mine ventilation buildings, a bridge across Fortymile Wash, and other ancillary facilities. The proposed highway and rail access routes to the site are shown on Figure 2-1. The proposed highway access would originate at Highway 95, approximately .5 miles west of Amargosa Valley and run 16 miles north to the site. The proposed rail spur would originate at Dike Siting, 11 miles northeast of downtown Las Vegas, and extend approximately 100 miles to the site.

The proposed facilities will encompass about 1,520 acres of subsurface area beneath the ridge line of Yucca Mountain—approximately one mile west of the proposed surface facilities complex. The repository horizon would be over 750 feet below land surface within the Tonopah Spring Member of the Paintbrush Tuff—approximately 650 to 1,300 feet above the water table.

The subsurface facilities will consist of main access drifts to the emplacement areas, the emplacement drifts, and service areas near the shafts and ramps. The layout of the facility will depend upon whether the waste will be emplaced vertically or horizontally. For vertical emplacement, waste disposal containers would be emplaced in vertical boreholes in the floors of the emplacement drifts. For horizontal emplacement, the containers would be emplaced in horizontal boreholes in the draft pillars (walls). The subsurface layout for the horizontal waste emplacement requires considerably less excavation.

Figure 2.1. Proposed highway and rail access routes to the Yucca Mountain repository.



Source: USDOE, Environmental Assessment: Yucca Mountain Site, Nevada Research and Development Area, Nevada. Vol. 1, May, 1986.

The operations period (1998 to 2048) would last 50 years and consist of two phases: a 28-year emplacement phase followed by a 22-year caretaker phase. The activities planned during the emplacement phase include waste receipt, processing, and placement; continued underground construction of waste-emplacement rooms and supporting services; the initial retrieval option period; and storage and management of mined rock for potential use as backfill.

Radioactive waste would be shipped to the repository by rail or by truck in federally licensed casks. Assuming 250 operating days per year, the design basis for receiving waste is four truck and rail shipments per operating day--approximately 1,000 truck and 500 rail shipments per year.

During Stage 1 operations (which would begin in the fifth year after construction starts), surface and underground facilities would be constructed to receive and emplace 400 MTU per year of spent, unconsolidated fuel. Stage 2 facilities to be completed three years later than Stage 1 facilities, would have a capacity of 3,000 MTU per year; and they would be capable of receiving other types of waste and consolidating spent fuel.

The 22-year caretaker phase would begin after the last emplacement and continue until the start of decommissioning during which time the facilities as well as the surrounding environment would be monitored. In compliance with Nuclear Regulatory Commission requirements, retrievability would be possible at any time up to 50 years after waste emplacement begins. If a decision to retrieve the waste were made during the caretaker phase, the lifetime of the project would be extended approximately 30 years during which time actual waste retrieval would be accomplished. The decision to close and decommission the repository could be made any time during the caretaker phase. The decommissioning and closing of the repository would last for eight years under the vertical-emplacement alternative or three years under the horizontal-emplacement alternative. During this final phase, the surface facilities would be dismantled, and contaminated waste from these buildings emplaced in the repository. During this time, all underground areas would be sealed. The site would be permanently marked as a nuclear waste repository and abandoned.

Labor Force Requirements. Labor force requirements for the facility vary among the four phases and depending upon the type of emplacement, vertical or horizontal. The vertical method of emplacement will require a larger work force than the horizontal method.

According to DOE estimates, during the construction period, the work force at the repository would rise steadily to a peak of 1,651, if the horizontal emplacement method is chosen, to 1,905 workers if the vertical method is chosen, in the fourth and fifth year, respectively, of construction. The construction work force at the facility would gradually decrease during the last two to three years of the seven-year construction period. Preliminary estimates indicate that the average work force level during the final year of construction would range from 1,404 to 1,765, depending on the type of emplacement method. These work force estimates represent a substantial decrease over those given in the Draft EA; final EA estimates for peak construction are 40 percent lower for both emplacement methods. Work force estimates for the last year of construction are 25 percent lower in the final EA.

Peak employment levels during the operation of the facility would be 85 to 90 percent of the peak employment levels during the construction phase. Peak operation period for horizontal emplacement is from 2002 through 2010 and from 2002 to 2018 for vertical emplacement. Peak operation employment is estimated to range from 1,404 (horizontal emplacement method) to 1,765 (vertical employment method). While horizontal employment estimates remained relatively consistent from the draft to final EA, the vertical employment projections decreased 24 percent in the final EA.

Employment levels would drop significantly during the caretaker phase (2026-2046) to 146 (horizontal) and 162 (vertical) workers. These levels would be only 20 percent of the work force during the last year of operation for both emplacement methods. During the last year of the caretaker phase, employment would increase to a work force of 296 (horizontal) and 290 (vertical).

During decommissioning of the repository, the employment levels at the site are expected to rise significantly above levels in the Retrievability Period. During the first year of the decommissioning phase, employment is expected to increase steadily. The maximum number of required workers would be 441, if the horizontal emplacement method is chosen, and 412, if vertical emplacement is used. These increased employment levels should remain constant for three years, again assuming the maximum personnel requirements. Employment will decrease in the final year of decommissioning until the work required to completely seal the mined area and secure the surface facilities is completed. Upon completion of this phase, all formal employment associated with the repository would cease.

Again, the estimates in the final EA are significantly lower than those presented in the Draft EA. Decommissioning employment figures are 30 to 70 percent lower in the final EA for horizontal and vertical emplacement methods, respectively.

Facility Costs. Cost estimates for constructing and operating a waste repository at Yucca Mountain are not given in either the draft or final EA. Estimated amounts of energy resources and construction materials required annually are presented. Concrete and steel are the construction materials which will be needed in the greatest amounts. The types of equipment needed are also listed, but no quantities or costs are given.

A study by Sandia National Laboratories (1983) estimates the total cost of various materials available in southern Nevada during the initial five-year construction period could reach $68 million. Assuming annual expenditures of $10 million, the cost of materials could reach $300 million during the operation phase.

These descriptions and cost estimates are extremely preliminary in nature and will certainly be adjusted from time to time as work on the site progresses. If other preliminary estimates for industrial sitings are a guide, estimates of manpower, equipment and supplies, costs and expenditures can be expected to rise significantly. This pattern has been especially the experience for nuclear industry development over the past three decades even when the effects of inflation are taken into account. Therefore, one way of viewing DOE descriptions is to consider them as the low-end estimates for all factors with the high-end as yet undetermined but with a possibility of being greater by a factor of three or four times.

3.0 Legislative History of the Act and Comparable Federal and State Programs

3.1 The Grant Language

The Nuclear Waste Policy Act of 1982 ("Act")[1] directs the Secretary of Energy to grant to each State and "unit of general local government" in which a site for a repository is approved:

> an amount each fiscal year equal to the amount such state and unit of general local government, respectively, would receive were they authorized to tax site characterization activities at such site, and the development and operation of such repository, as such state and unit of general local government tax the other real property and industrial activities occurring within such state and unit of general local government." Section 116 (c) (B) (3) (Emphasis added).

The term "unit of general local government" is defined in the act to mean "any borough, city, county, parish, town, township, village, or other general purpose political subdivision of a state." 42 U.S.C. Section 10101 (28). Our preliminary research of other federal programs indicates that an independent school district is not considered to be a "unit of general local government." It is, however, a unit of state government and should obtain GETT payments under the provision of state eligibility.

The Act does not waive federal tax immunity. Section 116 (c) (B) (3) provides for annual grants equivalent to the taxes ("GETT") that would be collected by states and units of general local government if they could tax the real property of the site and the industrial activites associated with site characterization,[2] development, and operation of the repository.

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[1] Pub. L. No. 97-425, 42 U.S.C. Section 10101 et seq.

[2] "Site characterization" is defined to mean:

(A) siting research activities with respect to a test and evaluation facility at a candidate site; and

(B) activities, whether in the laboratory or in the field, undertaken to establish the geologic condition and the ranges of the perimeters of a candidate site relevant to the location of a repository, including borings, surface excavations, excavations of exploratory shafts, limited subsurface lateral excavations and borings, and in situ testing needed to evaluate the suitability of a candidate site for the location of a repository, but not including preliminary borings and geophysical testing needed to assess whether site characterization should be undertaken. 42 U.S.C. Section 10101 (21).

A review of the legislative history of the Act and comparable grant payment programs indicates that Congress intended that the GETT provide full tax equivalency. The GETT is intended to encompass all state and local taxes that would be paid by a private company engaged in site characterization activities, development, and operation of the repository.

3.2 Legislative History

The legislative history of the Act provides little guidance as to the scope of Section 116 (c) (B) (3). There was little floor debate over this section. Where Section 116 (c) (B) (3) is discussed in the Congressional reports, the reports essentially paraphrase the statutory language. For example, H.R. Rep. No. 785, 97th Cong., 2d Sess. 72 (1982) states that:

> Subsection 116 (b) (3) directs the Secretary to grant to each state and unit of general local government in which a site for a repository is approved for site characterization activities . . . an amount each fiscal year equal to the amount such state and unit of general local government, respectively, would receive were they authorized to tax site characterization activities and the development and operation of a repository, as such state and unit of general local government taxes other real property and industrial activity.

There is language in one report which suggests a more limited scope to Section 116 (c) (B) (3). H.R. Rep. No. 491, 97th Cong., 2d Sess. 56 (1982)[3] states that Section 116 (c) (B) (3) requires

> the Secretary to grant to states where sites are being characterized or otherwise developed payments in lieu of taxes which would be paid <u>if the project or facility were taxed like other industrial activities in the state. The payments are intended to be based on the assessed value of the activities in the year for which the payment would be levied.</u> (Emphasis added.)

[3]This report accompanied H.R. 3809, which was eventually approved by both the House and the Senate and became Pub. L. No. 97-425.

The limiting language is "assessed value." "Assessed value" is a property tax concept that is generally not used in connection with taxes on "activities". On balance, however, we believe that the legislative language is sufficient to support full tax equivalency.

3.3 Comparable Federal Programs

In light of the limited legislative history of Section 116 (c) (B) (3), other federal programs designed to compensate state and local governments for the federal presence within their borders have been examined. Our research indicates that most federal payment programs compensate state and local governments only for the loss of real property taxes. There are very few programs designed to compensate state and local governments for other taxes normally associated with industrial activities.

3.3.1 Real Property Tax Programs

There are over 50 different programs designed to compensate state and local governments for the loss of real property taxes. A number of these programs use what is known as a payment in lieu of taxes ("PILT") approach to compensation. There are three types of PILT payments: (1) fixed sum payments; (2) partial tax equivalency payments; and (3) full tax equivalency payments. It is within this third category that we believe the GETT falls.

Full tax equivalency payments are payments made on the full amount of real property tax which would be due were the property fully taxable in private ownership. The payments provide 100 percent compensation for real property tax liability, using the taxing authority's normal valuation or assessment practices, as well as the millage rates appropriate for that type of property.

Very few programs provide for full tax equivalency payments. Only the Department of Housing and Urban Development and the Veterans Administration payments on acquired properties due to foreclosure, and certain payments of federally owned corporations provide full tax equivalence.

In addition to the various grant and payment programs, Congress has consented to state and local taxation of the property of a number of federally owned corporations and financial institutions. Taxable property of federal corporations and institutions includes

the real and personal property of the Federal Deposit Insurance Corporation, the Federal Home Loan Banks, the Federal Savings and Loan Insurance Corporation, the Federal Land Banks, and the Federal Reserve Banks.

3.3.2 Other Taxes Associated with Industrial Activities

Sales and Use Taxes

Our research has not identified any grant in lieu of sales or use tax programs. A number of Congressionally created, privately owned corporations that have not been granted any tax immunity do pay sales, use, and other taxes. With the exception of the taxes levied on these corporations, however, a state cannot impose a sales or use tax directly on an instrumentality or operation of the federal government.

The validity of a state sales or use tax, when the federal government is the purchaser, depends upon where the legal incidence of the tax falls. If the legal incidence of the tax falls on the seller (vendor-type sales tax), the tax is permissible. If, however, the legal incidence of the tax falls on the purchaser (vendee-type tax), the tax is unconstitutional.

Although a state may not impose a tax directly on the instrumentalities or operations of the United States, government contractors, unless they are agents of the United States,[4] are generally subject to sales and use taxes. This is true even if the economic burden of the tax ultimately falls upon the United States. United States v. New Mexico, 455 U.S. 720 (1982).

A sales or use tax that does not fall directly on the United States may still be unconstitutional if it operates so as to discriminate against the United States. States may tax federal contractors differently than non-federal contractors, however, as long as the real tax burden imposed on the federal project does not exceed the tax burden imposed on the non-federal project. Washington v. United States, 460 U.S. 536 (1983).

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[4]In United States v. New Mexico, 455 U.S. 720 (1982) the Supreme Court stated that traditional notions of agency do not justify tax immunity. If the contractor receives any material benefit from its relationship with the United States, the contractor is independent of, and thus cannot be an agent of, the United States.

Gross Receipts/License Taxes

A gross receipts tax is typically applied to service industries. It is a permissible tax on activities and operates very similarly to a sales tax, except that a gross receipts tax is always on the vendor of property or services. A gross receipts tax on federal contractors is permissible. See United States v. New Mexico, 455 U.S. 720 (1982), which upheld New Mexico's gross receipts tax imposed on all amounts received by cost-plus contractors from the United States for salary and expense reimbursements.

Income Taxes

Our research has not identified any grant in lieu of income tax programs. Only those Congressionally created, privately owned "for profit" corporations such as COMSAT and Conrail that have not been granted any tax exemptions pay income taxes.

User and Other Fees

While user and other fees are not "taxes" in the traditional sense, they are included in this report because they are a potential source of revenue for the state. There are a number of federal programs in which fees collected from activities on federal lands are shared with the state or local government in which the tax exempt land is situated. The sharing of funds from activities on park lands, such as visitor or camping or grazing land fees is common. User charges and other levies are also shared with state and local governments.

3.4 Comparable State Programs

Although there are no commercial high-level radioactive waste repositories in the United States, there are three low-level radioactive waste repositories. All three repositories are operated by private companies and are located on public land. The first is in Beatty, Nevada and is operated by U.S. Ecology. The second, also operated by U.S. Ecology, is in Hanford, Washington. The third is in Barnwell, South Carolina and is operated by Chem Nuclear Systems. The taxes and fees paid by these companies provide an excellent illustration of what taxes and fees might be paid by a private company operating a high-level waste repository.

Nevada charges a base rate on a cubic foot basis for burial at Beatty. In addition, each user pays a user fee to the state and a series of third party inspection fees to the state's commercial inspection firm. South Carolina also charges on a cubic foot basis for

burial at Barnwell. South Carolina labels their charge a "tax". The tax imposed is $4.00 per cubic foot of waste. The State of Washington imposes a thirty percent tax on the gross income of every person engaged in the business of disposing of low-level waste in Washington.

While there are only three low-level radioactive waste repositories currently in operation, a number of additional repositories are in the planning stage. The Low-Level Radioactive Waste Policy Act of 1982, as amended[5] ("LRWPA") authorizes states to enter into regional compacts to provide for the disposal of wastes generated within their borders. The LRWPA limits the maximum surcharge that can be imposed on wastes generated in a state that is not a party to the regional compact, but otherwise allows compacts to determine what fees and taxes can be imposed.

Nevada is a party to the Rocky Mountain Low-Level Radioactive Waste Compact. This compact authorizes party states to impose fees to recover the costs of regulating the packaging, shipping, and transportation of low-level radioactive wastes. In addition, the compact authorizes a per unit "compact surcharge" and a per unit "state surcharge" on each unit of waste disposed of at any facility.

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[5]Pub. L. No. 99-240, 42 U.S.C. 2021b et seq.

4.0 Application of GETT in Nevada

The existing tax statutes of Nevada have been reviewed in order to determine their applicability to the grants equal to taxes section of the Nuclear Waste Policy Act. Although there could be other sources of revenue from a private industrial development (i.e., business licenses and permits), the Nuclear Waste Policy Act states that the federal government must make grants equal to the taxes they would pay if they were a private industrial development. Table 4-1 lists most of the local revenue sources, with those taxes noted that the federal government would be required to pay under the Act. Those taxes that the U.S. government would normally pay (e.g., motor vehicle fuel taxes) would not be eligible for GETT and thus, are not included in this section. As state and local statutes are currently structured in Nevada, those taxes that could generate GETT funds are: ad valorem property tax, real property transfer tax, sales and use tax, special fuel tax, motor vehicle privilege tax, and motor vehicle registration. The existing statutes regarding each of these taxes will be discussed in this section along with their implications for GETT funding.

4.1 Ad Valorem Property Tax

The Nevada Constitution, Article 10, Section 1, authorizes the legislature to establish a uniform and equal rate of property assessment and taxation for all property, real, personal and possessory. A number of exemptions are allowed which include unpatented mines and mining claims; personal property moving through or over the state in interstate commerce or which is consigned to a warehouse, motor vehicles when taxed by another method and business inventories after the fourth year of taxation, and property of other governments. Separate assessments may be provided for the appraisal and valuation of agricultural and open space real property.

"Real property" is defined in NRS 316.035 to include all houses, buildings, fences, ditches, structures, erections, railroads, toll roads, and bridges, or other improvements built or erected upon any land. Any intangible real property such as water rights are considered real property and included in the assessment.

Nevada law requires assessment of all property, unless otherwise specified, at thirty-five percent of its taxable value. Three ways to value real property are allowed:

TABLE 4-1

LOCAL TAXES FEDERAL GOVERNMENT
WOULD BE LIABLE FOR UNDER GETT

Local Revenue Sources	Taxes Federal Government Liable to Pay
TAXES	
Property Tax	X
Room Tax	
County Option Motor Vehicle Fuel Tax	
Patented Mines and Proceeds of Mines Tax	
LICENSES AND PERMITS	
Business Licenses	
Liquor Licenses	
City or County Gaming Licenses	
Franchise Fees	
Non-Business Licenses and Permits	
INTERGOVERNMENTAL REVENUES	
Federal Grants	
State Grants	
Federal Payments in Lieu of Taxes	
State Shared Revenues:	
State Gaming Licenses	
Motor Vehicle Fuel Tax	
Cigarette Tax	
Liquor Tax	
Basic City County Relief Tax (CCRT)	X
Supplemental CCRT (SCCRT)	X
Special SCCRT	X
Court Administrative Assessments	
Motor Vehicle Privilege Tax	X
Motor Vehicle Registration	X
Other Local Government Grants	
Other Local Government Shared Revenues:	
County Gaming Licenses (City Share)	
Real Property Transfer Tax	X
Other Local Government	
Payment in Lieu of Taxes	
CHARGES FOR SERVICES	
FINES AND FORFEITS	
MISCELLANEOUS	
Interest Earnings	
Rents and Royalties	
OTHER FINANCIAL SOURCES	
Revenue Sharing	
Special Assessments	

Source: Mountain West, compiled from local budgets.

1) Comparative sales, based on prices actually paid in market transactions (this approach is used most often);

2) Summation of the estimated full cash value of the land and contributory value of the improvements;

3) Capitalization of the fair economic income expectancy or fair economic rent.

The computed taxable value of any property cannot exceed its full cash value. The taxable value for improvements and personal property is replacement cost less depreciation. Depreciation is calculated at 1.5 percent for each year of adjusted actual age of the improvements, up to a maximum of 50 years.

The Nevada Department of Taxation has the original power of appraisal and assessment of property of an interstate or intercounty nature exclusive of vehicles required to be registered pursuant to NRS Chapters 371 and 482 (see NRS 360.210 and 361.320). These properties include generally those of utilities, railroads, and common carriers and their franchises (railway property assessments could have implications for GETT and will be discussed separately below). The Nevada Tax Commission establishes the valuation for mobile homes and classifies and establishes the valuation of land for taxation purposes. See NRS 361.325. The Department also determines the net proceeds of operating mines and assesses them. All other property must be assessed by the county assessors. The county applies its tax rate to the assessed valuation. The maximum allowable rate is $3.64 per $100 assessed valuation.

The revenue from the current year's ad valorem property cannot exceed 4.5 percent increase of the previous year's, excluding debt, new real property, possessory interests and mobile homes. The maximum allowable revenue may not exceed the percentage determined by dividing the prior year's assessed value increased by 80 percent of the Consumer Price Index to which is added the value of new real property, possessory interests and mobile homes.

The state, counties, towns, schools, and special purpose districts can all levy property taxes. Local property tax rates are determined once a year during the budgetary process. The rates are calculated according to projections of sales and other revenues and the caps imposed by state statutes.

Table 4-2 displays the tax base and maximum allowable distribution of ad valorem revenues for fiscal year 1985-1986 for Nye, Clark, and Lincoln counties and their respective incorporated cities. The last column lists the total combined property tax rate for each jurisdiction, including debt service, special districts and the state's rate. The state adds two cents per $100 assessed valuation to each local jurisdiction's rate.

Property tax revenues make up anywhere from 2 percent (in North Las Vegas) up to 16 percent (in Clark County) of the local jurisdiction's General Fund revenues.

According to the Nuclear Waste Policy Act, all property owned by DOE, NRC, and other federal agencies at the repository site that is used for site characterization activities, development and operation of the repository should generate GETT funds. The spent fuel rods and high-level defense waste probably would not be taxable as real property under the statutory definition but may contribute to the grant base in other ways. The casks and canisters, however, because of their permanent emplacement, represent improvements to erections or structures and should be assessed according to their value.

The state should receive two cents in GETT funds for each $100 of assessed valuation of property at the repository. Since the repository will be located within Nye County, the county should receive GETT funds at a rate equal to their current county mill levy times 35 percent of the site's taxable value. Real and personal property owned by federal contractors would not be eligible for GETT as they are required by law to pay these taxes anyway.

Whether property located outside the actual repository site will contribute to the GETT depends upon how narrowly the grant language is construed. Interpreting the grant language narrowly, the GETT encompasses those property taxes that could be collected from "site characterization activities at such site" and from "development and operation" of the repository. The addition of "at such site" limits site characterization activities and the taxes that can be collected on such activities to the repository site. Although site is not a defined term, "candidate site" is defined to mean "an area, within a geologic and hydrologic system, that is recommended by the Secretary . . . for site characterization, approved by the President . . . for site characterization . . ., or undergoing site characterization . . . ."

TABLE 4-2

AD VALOREM DISTRIBUTION AND RATES FOR 1985 - 1986
($ in millions)

	Assessed Value	School	County	Total Cities	Total Towns	Total Special Districts	Total State	Total	Total Combined Unit Rate[1] (in percent)
Nye County	$ 310.69	$ 3.43	$ 2.14	$ 0.03	$ 0.34	$ 0 .17	$ 0.06	$ 6.17	1,8902[2]
Clark County	7,518.17	80.71	57.00	13.10	6.61	11.21	1.50	170.12	1.9017[2]
Boulder City	115.50			0.11					2.0153
Henderson	383.70			1.44					2.2603
Las Vegas	2,055.40			10.12					2.4378
Mesquite	11.30			0.09					2.7553
North Las Vegas	315.00			1.42					2.3301
Lincoln County	48.42	0.44	0.22	0.03	0.01	0.08	0.01	0.79	1.3846[2]
Caliente	4.13			0.03					2.1213

[1]Rate is per $100 assessed value and includes debt service, special districts, schools, and the state's rate.

[2]The county's rate does not reflect rate for the cities, towns, and certain special districts.

Source: Nevada Department of Taxation. 1985 - 1986 Ad Valorem Tax Rates for Nevada Local Governments ("Redbook").

There is no indication in the legislative history that Congress intended such a narrow construction, however. It may be argued that the legislative history indicates that Congress intended to provide full tax equivalency. Since there is no limitation on development and operation, property located outside the repository site, such as rail spurs and office buildings, that are an integral part of the development and operation of the repository should generate GETT payments.

As a general rule, payments made in lieu of property taxes are paid to local government units. While local government units can expect a real property payment component in the GETT, there may not be a substantial increase in total property tax revenues. Property tax rates are generally determined by local government budgets. Additions to a tax base typically spread the tax burden, but do not increase total revenues.

A potential limitation on the real property component of the GETT are local property tax limitations, such as limitations on maximum assessments and revenue increases. It may be argued that since the Act provides for a grant, not tax payments, local tax limitations are not applicable. The language of the Act, however, limits federal payments to the amount state and local governments "would receive were they authorized to tax" the site and associated activities. This language strongly suggests that the federal government takes the state law as it finds it, subject to all limitations.

Nevada may be able to avoid the local property tax limitations noted above if the property is valued by the Nevada Tax Commission ("Commission") rather than local assessors. The Commission currently values land, mobile homes, and all property of an intercounty and interstate nature. The Commission would then equitably allocate the assessed value of the property among the local taxing jurisdications in the state. Spreading the assessed value among local taxing jurisdictions would reduce the impact of local property tax limitations in each such jurisidication.

However, the Act limits grants to those units of general local government in which site characterization activities or the development and the operation of the repository occur. The units of general local government in which there are not site characterization or development and operation activities may not have a basis for a grant under the Act regardless of any change in state law.

It is not clear from the Act whether property valuation will be done by state, local or federal assessors, or some combination of the three. Since the Act does not waive federal tax immunity, local assessment is probably not required. There is some language in one of the House reports, however, which indicates that assessment will be local. H. Rep. No. 491 states that "payments are intended to be based on the assessed value of the activities in the year for which the payment would be levied." Moreover, as discussed in Section 3.3.1, other federal programs which provide full tax equivalency use the local taxing authority's normal valuation or assessment practices.

Even if valuation initially is done by state and/or local assessors, in the event of a dispute the final determination of the amount of property tax payment is unclear. Three types of resolution are possible: litigation in federal court, establishment of a dispute resolution process, or final determination by the federal government. An agreement between TVA and the State of Wyoming specifies that appeals on tax matters will follow the existing state procedures. This might serve as a model for DOE/Nevada agreement.

Railways. The assessed valuations in Table 4-2 include railway property assessments, both real property and private car line assessments. The Nevada Department of Taxation centrally assesses all operating railway properties in the state as well as the private car lines. The assessments are then distributed to the counties by line mileage in the county. The county then applies its own rate. Any non-operating railway property would be assessed locally.

The Union Pacific Railway goes through Clark and Lincoln counties; no railway currently exists in Nye County. The following table displays the total line mileage (main and side track) and the assessed valuations for Clark and Lincoln counties.

According to DOE, a new 100-mile railroad spur from Dike Siding, 11 miles north of Las Vegas, to the site will be constructed. The EA does not state the ownership of this rail spur. If DOE or any other Federal agency owns the rail spur, GETT funds should be generated equal to the amount of property taxes that would accrue to Nye and Clark counties if it were privately owned.

TABLE 4-3

RAILWAY MILEAGE AND ASSESSMENTS
(as of 6/30/85)

	Total Mileage	Assessed Valuation
Clark County	248.68	$8,957,401
Lincoln County	177.09*	$6,875,231

*Union Pacific abandoned 44.14 miles of track in Lincoln County in October 1985, which will reduce the county's mileage to 132.95 miles in the future.

Source: Nevada Department of Taxation.

Private car lines are also assessed by the Nevada Department of Taxation. The valuation is determined by the miles traveled in Nevada by type of car. The following formula is used in determining the value for assessment purposes of the private cars:

1. One thousand five hundred dollars assessed valuation for each 109,500 miles traveled in Nevada for tank cars (.013698/mile).

2. Two thousand dollars assessed valuation for each 146,000 miles traveled in Nevada for refrigeration cars (.013698/mile).

3. One thousand five hundred dollars assessed valuation for each 146,000 miles traveled in Nevada by other types of cars including, without limitation, stock, box, hopper, and flat cars (.010274/mile).

Only the car itself is valued for property tax purposes so the formula is the same for loaded and empty cars. Private cars carrying government cargo are still taxed. However, if the car is owned by the Federal government, it is exempt from property taxes. Therefore, any nuclear waste or other cargo transported to the repository via a railroad car owned by the Federal government should generate GETT funds equal to the amount of property taxes a private car line would pay.

Before a nuclear waste container car could be valued, a determination as to which type of car it should be valued as would be necessary. The "other" category includes boxcars, gondolas, piggy backs and other special use cars. It is not clear if nuclear waste container cars would fall under this category or not.

At the present time, the private car line tax is not a significant source of income for the state. Total state revenue from this source was only $20,000 last year.

4.2 Sales and Use Taxes

Sales and use taxes are quantitatively an important source of tax revenue for the State of Nevada. They are generally regarded as taxes on consumption as the burden is ultimately placed on the consumer.

In Nevada the sales tax is imposed upon the retailer for the privilege of selling tangible personal property at retail. See NRS 372.105. The use tax, on the other hand, is an excise tax imposed upon the persons storing, using, or otherwise consuming tangible personal property in this state purchased from a retailer out of state. See NRS 372.190. Property acquired out of state is subject to this tax as if it had been a taxable sale acquired within the state. The retailer in each case is required to collect the tax insofar as it can be done.

A use tax is not applied to the storage, use or consumption of property which has been subjected to the sales tax. Exemptions include sales to governmental organizations, motor vehicle fuel, domestic fuel, certain containers, gas, electricity, and water delivered through mains, lines or pipes, and food for home consumption.

According to the Nevada Department of Taxation, the taxable sales for Nye, Clark, and Lincoln counties in fiscal year 1984-1985 were as follows:

Nye County	$77,130,520
Clark County	4,321,333,075
Lincoln County	9,644,967

The sales and use tax is imposed at a total rate of 5.75 percent (6 percent in Nye County). This rate includes the state tax, local school support tax, Basic City-County Relief Tax (BCCRT), and Supplemental City-County Relief Tax (SCCRT).

The state retains 2 percent of the proceeds and distributes 1.5 percent of the proceeds to the State Distributive School Fund. Proceeds of 0.5 percent of the BCCRT tax are returned to the county of origin. If there is no incorporated city, the county

receives the entire amount. If there is one city, proceeds are split between the county and the city on the basis of population. This is the case in Nye and Lincoln counties which both have only one incorporated city, Gabbs and Caliente, respectively. If there is more than one city, the entire amount is divided among the cities based upon population. This situation applies to Clark County with its five incorporated cities. Population figures are estimated annually by the State Department of Community Services.

The distribution of BCCRT revenues by jurisdiction during fiscal year 1984-1985 were as follows:

TABLE 4-4

BCCRT REVENUES AND DISTRIBUTION
FISCAL YEAR 1984-1985

	BCCRT Revenues	Percent of County
Nye County	$706,460	94.8
Gabbs	38,665	5.2
Clark County	0	
Boulder	948,684	4.1
Henderson	2,740,647	11.8
Las Vegas	15,554,957	67.1
Mesquite	94,702	.4
North Las Vegas	3,847,096	16.6
Lincoln County	45,794	73.6
Caliente	16,429	26.4

Source: Nevada Department of Taxation, Annual Report, Fiscal 1984-1985.

Proceeds of the SCCRT sales and use tax, 1.75 percent, go into a state pool and are distributed to the local jurisdictions according to their relative growth of assessed valuation. This means that the SCCRT portion of the sales and use tax revenues are not necessarily returned to the county of origin. The SCCRT was established to supplement local property tax revenues which were restricted by the 1981 session of the legislature (this is usually referred to as the "tax shift").

In fiscal year 1985-1986, the total SCCRT fund was $135,581,650. Clark County received 55 percent of this fund; Nye County, 1.7 percent; and Lincoln County, 0.37 percent. Table 4-5 shows the distribution of the SCCRT in fiscal year 1985-1986 as well as the revenues received by jurisdiction.

TABLE 4-5

SCCRT REVENUES AND DISTRIBUTION
FISCAL YEAR 1985-1986

	Revenues		Percent of State	Percent of County
Nye County	$2,328,875		1.7	
Gabbs		$23,440		1.01
Unincorporated		2,305,435		98.99
Clark County	74,772,982		55.1	
Boulder City		708,531		0.95
Henderson		2,231,289		2.98
Mesquite		156,397		0.21
Las Vegas		13,218,683		17.68
North Las Vegas		1,359,129		1.82
Unincorporated		57,098,953		76.36
Lincoln County	503,960		0.37	
Caliente		26,835		5.32
Unincorporated		477,125		94.68

Source: Nevada Department of Taxation.

Counties can also impose an additional 0.25 percent sales tax for mass transportation and construction of public roads. All counties with a population of less than 250,000 may impose an additional 0.25 percent tax for the promotion of tourism. The imposition of either tax requires approval from the voters in the county. Nye County has elected to levy the additional 0.25 percent tax for the construction of roads. Clark and Lincoln counties do not have either of the additional taxes. However, as a result of the 1985 Nevada legislative session, Clark County also has the option of using 0.25 percent of the sales tax for flood control purposes. The electorate in Clark County will vote in September to determine if this source of funding will be used for flood control.

The BCCRT and SCCRT combined represent between 20 to 40 percent of local jurisdictions revenues.

During the budgetary process, the state estimates sales revenues for the year. These estimates affect local property tax rates and discrepancies in the state's estimates have significant implications for local budgets. If sales revenues exceed state projections, the excess is put into the state reserve accounts. The reserve account of $7.5 million was set up for distribution to local governments if the state's estimates of sales tax revenues were low. Another $2.5 million can be distributed to local jurisdictions for emergencies. Any amount in excess of $10 million at the beginning of any fiscal year must be distributed to local governments in the following fiscal year.

While the vendor is responsible for collecting the tax, the legal incidence of Nevada's sales tax falls on the vendee. United States v. Nevada Tax Comm'n 291, F. Supp. 530 (D. Nev. 1968), aff'd, 493 F.2d 435 (9th Cir. 1971). Whether sales and use taxes will contribute to GETT depends upon whether the purchaser is the federal government or a private contractor. Because Nevada has a vendee-type sales tax, the State is prohibited from collecting a sales tax when the purchaser is the federal government. The GETT should include the sales taxes on purchases by the federal government.

Since sales to governmental organizations are exempt from paying sales and use taxes, materials and equipment purchased by DOE within the State of Nevada for use on the repository should generate 5.75 percent of sales value in GETT revenues. Also, the materials and equipment purchased by DOE outside the State of Nevada for use on the repository should generate 5.75 percent of sales value (equivalent to use tax) to the state in GETT revenues. These funds would then be distributed in the same manner as normal sales and use tax described above.

In addition, Nye County should be eligible for GETT revenues equal to 0.25 percent of the value of materials purchased in Nye County for use on the repository and purchased elsewhere for use on the repository. Proceeds from these GETT revenues would go to Nye County for road maintenance.

In general, federal contractors are not exempt from sales and use taxes, United States v. New Mexico, 455 U.S. 720 (1982), Washington v. United States, 460 U.S. 536 (1983), as they are considered to be the consumers of materials bought for or used on the project. These taxes will be collected under state law and therefore, their purchases should not be considered part of the basis for GETT.

Until a more precise project description is available, estimates of GETT revenues from this source cannot be made. More information is needed on who will be making the purchases (DOE or private contractor), where (which county in Nevada or outside Nevada), and what the costs or market values would be in each case.

4.3 Special Fuel Tax (Diesel)

The state imposes a tax on any person consuming diesel fuel for the propulsion of motor vehicles upon the public highways of Nevada. The tax rate is 13 cents per gallon and goes to the state highway fund. Local jurisdictions do not receive any of this revenue. Since the U.S. and its instrumentalities are exempt, and diesel or other defined special fuels purchased by DOE, NRC and other federal agencies for use on public highways in conjunction with repository activities should generate GETT funds. Tracking of public highway use of diesel and special fuels by DOE, NRC, and other federal agencies may be difficult.

All fuel used off road is currently exempt and would, therefore, not be eligible for GETT.

4.4 Motor Vehicle Privilege Tax

The motor vehicle privilege tax is imposed in lieu of the personal property tax on vehicles. The tax is imposed on the owner or operator of vehicles upon the public highways of Nevada. The rate is four cents on each $1.00 of valuation. Valuation is determined at 35 percent of the manufacturer's suggested retail price in Nevada. Used vehicles are valued by the same method with a depreciation factor applied according to the age of the vehicle. The minimum tax is $6.00 on any vehicle and $3.00 on any trailer weighing 1,000 pounds or less. Exempt are vehicles owned by the U.S., the State of Nevada and its political subdivisions.

In Nye and Lincoln counties, 99 percent of the revenues collected from this source go to the county assessor and 1 percent to the state. In Clark County, 94 percent goes to the county assesor and 6 percent goes to the state. The counties and their respective jurisdictions are expected to receive the following revenues from this tax in fiscal year 1986-1987:

Nye County	$250,000
Clark County	6,674,565
Boulder City	67,572
Henderson	236,100
Las Vegas	1,341,934
North Las Vegas	206,000
Lincoln County	33,800
Caliente	4,049

On the whole, this is not a significant source of revenue for the local jurisdictions. These revenues generally represent less than 2 percent of their total budgets.

All vehicles owned by DOE, NRC, and other federal agencies operated on public highways in conjunction with the repository site should generate GETT funds at the rate of 4 cents for every $1 of vehicle value, which would be distributed between the county and state as described above. The Project Description does not state the number or type of vehicles that would be used in conjunction with the repository.

4.5 Real Property Transfer Tax

The Real Property Transfer Tax is imposed on the grantee in a conveyance of real property. The rate is 55 cents for each $500 of value. Value is the actual consideration paid or to be paid, excluding liens, when property is not a gift. A gift deed is taxable on the market value.

Proceeds from this tax go to the County General Fund if there are no incorporated cities. If one incorporated city, 25 percent goes to the county and the remaining 75 percent distributed between the county and city based on population. If there are two or more incorporated cities, the 75 percent is distributed among the cities based on their population.

The local jurisdictions in the three counties are expected to receive the following revenues from this source in fiscal year 1986-1987:

Nye County	$40,000
Clark County	
Boulder City	53,633
Henderson	155,900
Las Vegas	1,050,000
North Las Vegas	200,000
Lincoln County	4,000
Caliente	800

Transfers to the United States are currently exempt from paying this tax. Any transfer of real property in conjunction with the repository should generate GETT funds equal to 55 cents on each $500 of sales price if the State can establish that the transfer tax is within the scope of Section 116 (c) (b) (3). Proceeds from these grants would be distributed between the county and incorporated cities as described above.

Possible transfers of property could occur if DOE takes over ownership of the BLM and NAFR land on which the Yucca Mountain site is located. Of concern would be how to determine the value of this transfer of property. The proceeds of such a transfer would accrue to Nye County and its one incorporated city, Gabbs. Other possible transfers of property would occur if DOE purchased property to open up new offices in conjunction with the repository activities.

Construing the grant language narrowly, one could argue that the transfer tax is not within the scope of Section 116 (c) (B) (3) because the basis of this tax, the transfer, is a prerequisite to, but is not a part of site characterization, development, or operation of the repository. Construing the grant language more liberally, however, the GETT was intended to encompass all taxes that would be paid by a private company. If a private company would pay the transfer tax, then the tax is within the scope of Section 116 (c) (B) (3).

It is not entirely clear that a private company in circumstances analogous to those present here would pay the transfer tax. RNS Section 375.090(10) exempts from taxation conveyances of "real property to a corporation or other business organization if the person conveying the property owns 100 percent of the corporation or organization to which the conveyance is made." It may be argued that the conveyor of the repository property, the United States, owns 100 percent of the Department of Energy, the organization to which the conveyance would be made. On the other hand, the language

of the Act could be seen as establishing a special entity, the Office of Civilian Radioactive Waste Management, which although operating within DOE is the agent of the waste producers and not a normal governmental office for purposes of tax liability.

4.6 Motor Vehicle Registration

Owners and operators of motor vehicles, trailers or semi-trailers intended to be operated upon any highway in Nevada must pay a registration fee based on the class of vehicle and weight. One dollar of each registration is paid to the county in which the vehicle is registered, except in Clark County where registration is handled by the Nevada Department of Motor Vehicles. The remainder of the fee is paid to the State Highway Fund.

Vehicles owned by the United States are exempt from this fee. Each vehicle located in Nye, Clark, and Lincoln counties, owned and operated on Nevada highways by DOE, NRC and other federal agencies in conjunction with repository activities, should generate GETT revenues for the state. Nye and Lincoln counties should receive $1 per registration in their county. It would be expected that most of the vehicles would be registered in Nye County and some in Clark County. The number of vehicles this would involve is not known at this time. According to the statutes, vehicles operated solely off road would not have to be registered and thus, would not generate any GETT funds.

5.0 Recommendations

The recommendations are divided into five sections:

- o General Recommendations
  - — Full tax equivalency under the NWPA
  - — Classification of the Yucca Mountain site as a specific industrial activity
  - — Definition of the Yucca Mountain site
  - — Definition of units of general local government
  - — Appeals and dispute resolution process
  - — Monitoring GETT Revenues
- o Valuation and Property Tax Recommendations
  - — A new category of property tax
  - — State valuation and assessment
  - — The basis of hazardous waste site valuation and assessment
  - — Development of assessment methods and procedures
  - — The valuation-assessment ratio
  - — Property tax rates
  - — Property tax collections and distributions
- o Other taxes applicable during site characterization and construction
  - — Real property transfer tax
  - — Sales and use taxes
- o Recommendations for operations, storage, and possible retrieval phases at the Yucca Mountain site
  - — Hazardous materials transaction tax
  - — Hazardous material storage tax
  - — Hazardous materials severance or retrieval tax
- o Summary Recommendations
  - — Action on a new industrial tax category
  - — Action on evaluation and assessment of the Yucca Mountain site
  - — Action in preparation of congressional modification of the NWPA—GETT provisions
  - — Action on sales and use taxes in Nye County
  - — Action on the real estate transfer tax by Nye County
  - — Action in dealing with DOE guidelines for GETT

5.1 General Recommendations

5.1.1 Full Tax Equivalency under the NWPA

We recommend that the state adopt the position that the Congressional intent was to provide "full tax equivalency" in establishing the GETT provisions of the NWPA.

The investigations of the legislative history undertaken by Crowell & Moring concludes: "On balance, however, we believe that the legislative language is sufficient to support full tax equivalency." (Draft, "Grants Equivalent to Taxes" dated June 17, 1986). The importance of the legislative intent should be stressed since the intent supercedes petty squabbles over specific phrases and words in the Act that in another context may seem debatable or open to narrow and restrictive interpretation. Thus, if the legislative intent is "full tax equivalency," a DOE interpretation that school districts are not eligible for GETT payments because they are not unequivocably defined as "units of general local government," is directly contrary to the Congressional intent because any and all private property holders located within the taxing jurisdiction of a school district would have to pay property taxes. In other words, making such a restriction denies the principle of full tax equivalency. DOE cannot have it both ways: they cannot claim the same status as "other real property and industrial activities"--Draft PETT Guidelines, Section 1.0, p.2 ff.; NWPA Section 116 (c) (3)--on the one hand, and deny liability for school district taxes on the other. DOE should be treated as other taxpayers of the same type, or they should be treated separately. The Congressional intent appears to be clear on this point--high-level nuclear waste sites should be treated the same with equal rights and responsibilities. The responsibility for every other property tax payer is to pay school district taxes.

5.1.2 Classification as a Specific Industrial Activity

We recommend that the Yucca Mountain project be classified by the State of Nevada as a major long-term hazardous waste storage facility.

The definition of a major long-term hazardous waste storage facility should include any facility that is designed to contain toxic materials of chemical, biological, radiological or other configurations which requires extended storage and/or isolation (50 or 100 years or more) from human or environmental contact.

The terms defining a major long-term hazardous waste storage facility can be defined to include only those sites that present significant transgenerational responsibilities for public officials. The exact meaning of the terms will be the immediate concern of those responsible for drafting and enacting the legislation. However, the following factors should be considered. A "major" facility can refer to the size, development cost (e.g., one that requires an investment of over $1 billion), or level of toxicity. The words "long-term" can be defined in terms of the duration required for

the isolation of the waste (e.g., 100 years, or 1,000 years, or 10,000 years). "Hazardous" can be defined in terms of either short or longer periods during which human and/or animal contact, either directly or indirectly, causes lethal effects. "Waste" can refer to an end product; one that is not part of a process to produce other or different effects than its own containment.

Legislation drafted and submitted to the State Legislature and any commission, or correspondence should refer to the Yucca Mountain project as being a major long-term, hazardous waste storage facility which falls under this specific industrial category.

5.1.3 Definition of the Site

We recommend that the site description include all aspects of the Yucca Mountain project and that the state include the full and complete definition of the project in any commentary on DOE guidelines, in any proposals to the Consultation and Cooperation (C & C) agreements, as a clarification and specification in the language of the NWPA should it be considered by Congress for modification, and in any litigation initiated on differences over the GETT provisions of the NWPA.

The site of a major long-term hazardous waste storage facility should be defined as that area containing the waste up to and including all surface areas; and overlapping or adjacent areas used directly to support construction and operation (including long-term storage following decommissioning); any exclusionary zone used to exclude toxic contact from the public or the environment; all property within the State of Nevada that is directly and/or solely used in support of the waste facility operations, including all facilities for management, administration, planning, engineering, auditing, or in any other manner dealing with the construction, operation or storage functions at the site; any other ancillary facility that supports activities at the site, such as transportation (e.g., rail lines or spurs), maintenance and refuelling facilities, worker housing, recreation and food service facilities, any temporary quarters, storage for vehicles, and/or materials used on the site or by support operations.

The DOE draft guidelines (June 6, 1986, Section 3.3, page 4; July 21, 1986 Section 3.3, p.5) do not exclude, per se, ancillary activities and facilities. Given the Congressional intent of full tax equivalency, the state should insist on the inclusion of all ancillary facilities and activities related to site characterization, construction, operation, transportation, storage, or retrieval of the Yucca Mountain Nuclear Waste

Repository be subject to GETT payments to state and local governments as a major long-term hazardous waste storage facility.

5.1.4 Definition of Units of General Local Government

We recommend that the state include school districts and all other governmental entities as eligible for revenues from the GETT provisions of the NWPA in any agreement with DOE, such as the proposals for C & C agreement.

This position is consistent with the full tax equivalency intent of the law which, in effect, makes the question of terminology and definition of units of general local government moot. Clearly, any other type of industrial activity would be subject to all taxes levied by all state, regional and local taxing entities.

Several approaches can be taken to assure that school districts, for example, are included in the GETT payments. This is necessary because it appears that DOE may attempt to limit the jurisdictions eligible. In their draft guidelines (June 6, 1986; July 21, 1986), they refer to the definition of "unit of local government" as defined in NWPA Section 2 (28) as "any borough, city, county, parish, township, village, or other general purpose subdivision of a state." This terminology was apparently drawn from earlier legislation on other matters—perhaps from federal revenue-sharing legislation—and inserted as a "ready phrase" by those congressional employees who actually supplied the statute language in the closing days of that session. The DOE guidelines go on to speculate that "It should be noted that 'special purpose' entities such as school districts, sanitation districts, etc., may not meet the statutory requirement that eligible jurisdictions be 'general purpose' political subdivisions." (Draft Guidelines, July 21, 1986, Section 4.0, p. 6) The guidelines also state: "DOE will need the assistance of both state and local jurisdictions to determine which governmental entities qualify as a general purpose political subdivision of a state for purposes of the NWPA."

DOE apparently is confused on the question of eligible jurisdictions on two counts: First, because they are not considering the context of congressional intent which is full tax equivalency; and second, because they are not considering the full context of the language in Section 116 (c) (3) of the NWPA. The context is that the grants be made "to each State and unit of general local government . . . ." In the case of school districts, for example, DOE has mistakenly considered them as included (or not included, as may be) under the class of "unit of general local government." A more likely

assignment is to the class of state activities since the responsibility for public education is clearly a state responsibility and the state has the duty and right to provide for public school districts through whatever taxing means it decides are most appropriate. The State assigns to school districts revenues from local property tax bases, along with state funds from a number of other sources, and the State specifies the process that is most efficient for the collection of those revenues. This, however, does not make school districts "units of local government" but maintains them as agents of the State. It is our opinion that school districts and any other local activity that functions to fulfill specific responsibilities of the State are eligible for GETT payments under the terms that such grants be made "to each State . . . ."

The DOE guidelines state that "any governmental entity that constitutes a general purpose political subdivision of a state" for other statutory purposes will be treated similarly for the purposes of the NWPA. We recommend that Nevada, if necessary, define school districts specifically as a "general purpose political subdivision". This may be necessary because of the ambiguity of the NWPA on the point and because school districts rely heavily on property tax revenues. The state should explore the impact of such a category on other state statutes and programs.

We recommend that the definition of eligible jurisdictions be clarified to include all state, regional, or local taxing authorities if modifications or amendments to the NWPA are possible. It should be noted that the specific NWPA language on this question is unclear. It is clear, in our opinion, that Congress intended full tax equivalency.

A related recommendation described in Section 5.2 may also make the definitional issue moot. This recommendation is for the state to centrally assess and tax the property and distribute the revenue on a formula basis. The allocation of these state-collected revenues could include any type of jurisdiction.

5.1.5 Appeals and Dispute Resolution Process

We recommend that the appeal and dispute resolution process for GETT related matters be specified by the state as the same as those that apply to private firms doing business in the State of Nevada.

This position is consistent with the full tax equivalency intent of the NWPA and the DOE draft guidelines state that the program should be "in a position resembling a

private sector taxpayer" (p. 2). The state should draft a position paper which will serve as a commentary and input to the final guidelines. This input should specify that the current state tax appeals procedures are applicable to the Yucca Mountain project. Provisions for state appeals processes could be included in any C & C agreement between the state and DOE. A model for such terms is the agreement between the Tennessee Valley Authority and the State of Wyoming (see paragraph 3, p. 2, dated 2 April 1980). Finally, the specific right of the state to utilize its tax appeals procedures should be recommended to Congress in any hearings that might deal with modifications to the NWPA.

5.1.6 Monitoring GETT Revenues

We recommend that the state monitor both GETT and impact mitigation payments in order to maximize the total return to the state's local jurisdictions and citizens.

The NWPA requires DOE to make both grants equal to taxes and to mitigate project related impacts. GETT payments are not designated to offset project impacts. State and local jurisdictions are entitled to full impact mitigation payments regardless of GETT revenues. This basic distinction is included in the draft DOE PETT Guidelines (Section 2.0, p. 2).

The purpose of this state monitoring effort would be to make decisions on the distribution of GETT monies and to design these expenditures so they would have the smallest possible mitigation effects on negative impacts experienced by state and local jurisdictions. The negative fiscal impacts would be subject to mitigation payments.

5.2 Valuation and Property Tax Recommendations

This study has identified three basic approaches to property taxes as they apply to the Yucca Mountain project.

- o Maintain the Status Quo. In this case almost the entire value of the project would be added to the tax base of Nye County. Under the current "cap" the property tax rates would likely fall dramatically unless the additional revenue could be expended. In addition school districts and special districts which in Nye County are the largest recipient of property tax revenues, may not qualify for GETT payments. According to the DOE draft guidelines, the Department considers it doubtful and it will probably have to be argued for by the state.

- A second choice is to treat the Yucca Mountain project similar to a public utility company. The state would assess the property and assign or distribute the assessed valuation to various counties. This could be done according to various formulas (e.g., population). Such a distribution would add to the assessed valuation base of each county and would be subject to the effects of the budget cap. Also, it is not clear that school districts or other special districts could collect GETT payments under the provisions of the NWPA. Equally unclear is that county and local governments aside from those in which the repository is actually sited could claim GETT payments under DOE guidelines even if the state assigned them part of the assessed value of the Yucca Mountain project.

- A third choice is to assess and tax the project at the state level and allocate the tax revenues to different governmental entities. This would maximize revenues, circumvent the effects of the budget cap on local property tax revenues, and provide maximum flexibility in distribution of revenues. This choice would require state legislative action to create a new category of property tax and procedures for assessment, tax collection and revenue distribution.

It is our opinion that the third option will maximize property tax revenues to the state as a whole and will provide maximum flexibility for the allocation and use of these revenues.

The recommendations that follow apply to the valuation, assessed value and property taxations of the Yucca Mountain project. The recommendations apply to all phases of the project and importantly have significant short-term implications for GETT payments for Nevada.

5.2.1 A New Category of Property Tax

We recommend that the State of Nevada create a new category of property tax which would apply to major long-term hazardous waste storage facilities.

We recommend that this category of industrial land use be defined to include those facilities which are designed to contain toxic materials of chemical, biological, radiological or other configurations that require long-term storage facilities, in order to isolate such wastes from human or environmental contact (see 5.1.2, above).

Such hazardous waste facilities are a category of land use so different and distinct from all other forms of industrial land use that existing Nevada categories do not properly address the valuation, assessment, and taxation issues.

5.2.2 State Valuation and Assessment

We recommend that major long-term hazardous waste storage facilities be centrally valued and assessed by the State of Nevada.

In our opinion, the valuation of the major long-term hazardous waste storage facility will be highly complex and technical. In addition, the multi-county nature of such facilities indicates a central assessment process (see Sections 5.2.5 and 5.5.2, below).

5.2.3 Valuation and Assessment Basis of a Hazardous Waste Site

We recommend that the Yucca Mountain project be valued on the basis of the "summation of the estimated full cash value of the land and the contributory value of the improvements".

The methods of assessing the value of real property are discussed in Section 4.1, above. Three methods are allowed in Nevada State law: 1) comparative sales, based upon prices actually paid in market transactions; 2) the summation of land and contributory value; and 3) capitalization of the fair economic expectancy or fair economic rent.

The "contributory value of the improvements" includes intangible real property rights such as water rights or rights of use such as those conferred by zoning, special use permitting, or other intangible activities that qualify the property for specific uses that are excluded for other properties with similar characteristics which lack the legally qualifying conditions. In the case of Yucca Mountain, all program expenditures that reasonably contribute to the qualification of the site as a high-level nuclear waste repository should be considered as a value added to the property, or in other words, as part of the improvements which constitute "contributory value."

The value of the property and on-site improvements will represent only a small portion of the total value of the site. Off-site research and development costs, administrative costs and other costs associated with intangible activities will represent a major portion of the value of the Yucca Mountain project, especially during site characterization. Program costs will have to be evaluated and attributed to the Yucca Mountain site as well as the other two sites selected for site characterization.

The "contributory value" to the Yucca Mountain site should be calculated as the sum of three components: the cost of qualifying the site prior to the enactment of the NWPA (i.e., activities during the period 1976 to 1983), the program costs assignable to the Yucca Mountain site that have been made under provisions of the NWPA (1983 to 1986), and the value of the raw land. The Office of Civilian Radioactive Waste Management (OCRWM) should provide an accounting of costs incurred by the DOE during the period 1976 to 1983, but in any case they are probably not less than $100 million. In addition, one-third of the costs of the program to site a high-level nuclear waste site during the period 1983 to 1986 should be assigned to the "contributory value" of the Yucca Mountain site since it is one of only three sites that the program has qualified for site characterization. Since the cost of this program is more than $1 billion (the Government Accounting Office, GAO/RCED-86-86, reports cumulative obligation of $946 million by the first quarter 1986), a one-third "contributory value" assigned to the Yucca Mountain site would be about $350 million.

The addition of the value of land (24,710 acres plus the potential that additional public land may be withdrawn at a later date); the costs incurred in studies between 1976-1983 of more than $100 million; plus about $350 million of value-added between 1983-1986, indicate that the current value should be about $500 million.

During site characterization, DOE expects to spend an additional $1 billion on the Yucca Mountain site, an equal or greater amount on the other two sites, plus several hundred million dollars to operate the OCRNW. If the Yucca Mountain site were to be chosen as the single site for construction and operation, the total program costs (before construction began) would be in excess of $5 billion and it could be argued that these costs should be assigned to the site finally selected for repository construction and development.

The value added to the Yucca Mountain site each year is very large due to the size and scope of the proposed program. Therefore, new updated assessments should be completed each year immediately prior to submitting the annual GETT claims.

5.2.4 Development of Assessment Methods and Procedures

We recommend that the State establish a Yucca Mountain site valuation committee to develop the approaches, methods and procedures for assessing the value and tax base of the project.

The Yucca Mountain project should be valued based on the "summation of the estimated full cash value of the land and contributory value of the improvements" (see Section 4.1, above). The technical details of what constitutes "contributory value," the necessary documentation for legal defensibility, and the methods for establishing and annual updating are complex and highly technical issues which will require the best professional appraisal advice available. The NWPO and other interested state and local officials should examine the present State capabilities and experience, and supplement this with whatever outside expertise is necessary to provide adequate evaluation and assessment of a high-level hazardous waste storage project. The need to initially establish sound and defensible methods, procedures and approaches cannot be over-emphasized. The initial valuation will set a precedence for subsequent valuations.

5.2.5 The Valuation-Assessment Ratio

We recommend that the State establish the assessed value of major long-term hazardous waste storage facilities at 100 percent of full-cash value.

In the case of major long-term hazardous waste sites, further development is stopped and the ultimate "highest and best" use of the property is determined for long periods of time. For example, in the case of a high-level nuclear waste repository, the "highest and best" use of the land is fixed for thousands of years. No other use of the property is desirable or, in a practical sense, even possible. Given that future economic value of the land is precluded, there appears to be no reason to discount its current tax liability and we suggest that property foreclosed from future development to other levels of "highest and best" use be assessed at its current full value.

In order to establish assessment of this class of property use at 100 percent of valuation, it will be necessary to enact a change to the Nevada State constitution (Article 10, Section 1) which will make this exception. Since this process requires action by both houses of the legislature and a vote by the citizens in a general election, the constitutional amendment process could take three to five years. The increase in state revenues could be significantly higher than would otherwise be the case.

5.2.6 Property Tax Rate

We recommend that the property tax rate applied to major long-term hazardous waste storage facilities be set at least biannually by the State legislature. We recommend that it be the current maximum allowed by the State constitution ($5 per $100).

For Nye County, applying the current combined unit rate (see, Table 4-2) of $1.89 per $100 of assessed value would produce the following results:

$$AV_{ym} \times CUR = FYR$$

where

AV_{ym} = Assessed value of Yucca Mountain ($500 million times 35 percent, which gives the assessed value)

CUR = Combined Unit Rate (e.g., Nye County rate of $1.89)

FYR = First year revenues

Introducing the figures into the formula gives us:

A: $175,000,000 x .0189 = $3,307,500

In the case that Amargosa Valley were to annex the BLM land of the Yucca Mountain site, they would include a portion of the assessed value in the town tax base. The amount of the addition to the tax base would have to be determined. The current tax rate for Amargosa Valley is $1.20 per $100 of assessed value.

If only the county were qualified to tax and the school district were not, the revenues would be:

B: $175,000,000 x .0066 = $1,155,000

If assessed and taxed by the state at 35 percent of valuation and at $5 per $100, the tax revenues would be:

C: $175,000,000 x .0500 = $8,750,000

If assessed at 100 percent of full cash value and at a rate of $5 per $100 (as recommended for state central assessment and tax collection) the result would be:

D: $500,000,000 x .0500 = $25,000,000

The smallest revenue amount would be under scenario B, Nye County revenues minus the school district. This is $1.2 million or about 10.5 percent of scenario C and less than 5 percent of scenario D. For scenario A, which includes the school district, the revenues would be about 38 percent of scenario C and just over 13 percent of scenario D.

5.2.7 Property Tax Collection and Allocations

We recommend that the property tax collected through the state-levied tax be distributed to local jurisdictions on a formula basis.

We suggest that the county government and other jurisdictions within the county where the facility is located receive a specified portion of the tax. This could be on a sliding scale with a greater percentage going to the county in the first years when the assessed value of the property would be relatively low and a smaller percentage (although not necessarily a smaller amount) assigned to the county as the tax base increases. The uses of these revenues could be specified. For example, this revenue source could apply to capital improvements to the infrastructure, and to the operations and maintenance of such infrastructure improvements; to a trust fund for economic development; to replace declining or discontinued federal support; to offset revenue reductions due to federal tax law changes; or for other long-term benefit programs for state residents.

In the case of the Yucca Mountain site, the annual tax revenues would depend upon the exact assessed value and the applicable tax rate. If the site were valued at $500 million and assessed at 35 percent, and the tax rate were $3.64 per $100, the tax revenues would be $6,370,000 per year. DOE estimates that the developed cost of the Yucca Mountain facility would be about $7 billion. Total tax revenues under this plan would be $89.1 million annually when the site began operations. The program costs, including expenditures on alternative sites, would be considerably higher and it could be argued that these expenditures are "value-added" to the final site. At the beginning of operations, the total program costs could be in the $12-15 billion range.

The revenue allocated to local jurisdictions should be excluded from the "tax cap" or the annual restrictions on revenue increases now effective in county property tax practices. In other words, these revenues should be seen as separate from, and not limited to current applications of the property tax, and should not impinge in any way upon the present tax base or revenues of the counties.

5.3 Other Taxes

5.3.1 Real Property Transfer Tax

We recommend that Nye County apply for Real Property Transfer payment following a professional appraisal of the Yucca Mountain project.

Based upon an assessed value of about $500 million, the real property transfer tax (55 cents per $500) would amount to about $550,000. This would be a one-time revenue benefit.

The basis for this recommendation is that Congress in formulating the NWPA, created the Office of Civilian Radioactive Waste Management to act as the agent for those "persons responsible for generating (high-level radioactive) waste and spent fuel." (10131 (a) (5); 10131 (b) (4)). At that time, Congress "established" the federal responsibility, the Nuclear Waste Fund, the OCRWM within DOE, and the concept of full tax equivalency (10136 (3)). The establishment of the OCRWM can be viewed as the creation of a quasi-public entity for purposes of tax liability. The date at which the OCRWN takes possession of the site, either as a legal owner or in fact of possession - with or without formal title - is the point at which liability for the Real Property Transfer Tax should occur. Congress, in creating the OCRWM, implied that land transfers are not between on-going public agencies, nor are these land transfers between the equivalent of subsidiaries of companies, but rather they are a transfer of real property from public ownership of various government agencies to the newly created and specifically established OCRWM, an office which was established as the agent for high-level radioactive waste generators and which is intended to make GETT payments on the basis of full tax equivalency. In our opinion this makes the OCRWM, as trustees of the Nuclear Waste Fund liable for this tax. The date of effective transfer should be negotiated with DOE; the value of the property transferred should be established by a professional appraisal provided by the state.

5.3.2 Sales and Use Taxes

We recommend that Nye and Clark counties apply for GETT payments in connection with sales and use of goods and services purchased by the federal government for use at the Yucca Mountain project.

Purchases, leases or use of goods and services by contractors working on the Yucca Mountain project are already subject to sales and use taxes and therefore are not included in GETT payments.

Goods and equipment purchased by the federal government are included under the GETT provisions. If equipment is then used by private contractors, then the private contractor should also be taxed for the implied value for the use of the government owned equipment. Such tax would fall outside of the provisions of the GETT and would be paid directly by the contractor.

5.4 Recommendations for Operations, Storage, and Possible Retrieval Phases of the Yucca Mountain Project

In the event that Yucca Mountain were developed as the nation's first permanent high-level nuclear waste repository, the processes of transporting, handling, storing, and possibly retrieving the waste would introduce a number of possible tax revenue sources. These taxes or fees differ from the property and the sales and use taxes in that they apply specifically to the hazardous materials introduced into the state by the DOE's Yucca Mountain project.

These potential revenue sources are described here but legislative action is not recommended at this time because the actual operation of the Yucca Mountain project is inherently uncertain and in any case project operations and, therefore, operations period tax liabilities would not begin for at least 15 years. The necessary actions to obtain maximum tax revenues during the site characterization period will require prompt and full attention during the current legislative session. Once the basic steps are taken to deal with immediate applications of the GETT program, then attention should be focused on the longer term potential of the revenue source.

During the next decade, the context of tax legislation on operations, storage and possible retrieval can change significantly. There is a distinct possibility that the NWPA could be changed, that the scope and direction of the repository project could be altered, and that Nevada State tax law could be revised. In all these cases, the NWPO should monitor and evaluate the changing context as it relates to GETT payments but should initiate legislative change only when it appears most opportune for producing actual tax revenues.

5.4.1 Hazardous Materials Transaction Tax

A user fee on nuclear waste generation and owners could generate significant revenues for the state. However, there may be a pre-emption issue if a user fee is imposed. The Act already imposes a fee on nuclear waste generators and owners in order to pay for the cost of the waste disposal program. Therefore, any additional fee is likely to generate strong opposition because, arguably, the state would be charging a fee without any requirement of providing a service.

User fees are currently applied by some states in connection with low-level nuclear waste disposal. These fees are imposed upon hospitals and other industrial users of the facilities. However, under the Act, the Department of Energy takes title to the nuclear waste being disposed of at the location where it is generated. Therefore, ownership of the nuclear waste is in the Department of Energy at the time it is brought to and stored at a nuclear waste disposal facility. Therefore, a user fee would not be collectable under state law because of federal tax immunity and would have to be collected under the grants equal to taxes provisions.

Another form of a transaction tax is a gross receipts tax which is typically applied to service industries. This tax operates in a manner similar to a sales tax, except that a gross receipts tax is always on the vender of property or services.

5.4.2 Hazardous Material Storage Tax

A state storage tax based on toxicity of the waste material may be appropriate. There are parallels in connection with the low-level nuclear waste repositories. Again, as with user fees, the principal issue may be the questions of pre-emption of such a tax by the Nuclear Waste Policy Act since it is essentially a user-type fee. Such a tax would be appropriate either against the contractor who operates the facility pursuant to state law or under the grant equal to tax provisions if the facilities are operated directly by the government.

5.4.3 Hazardous Materials Severance/Retrieval Tax or Fee

There are a number of reasons why the buried waste might be retrieved. One scenario might involve a significant failure of the repository. Another might be a breakthrough in the handling or treatment of radioactive wastes. Yet another potential possibility would be that reprocessing would become economical. At this point in time, these reasons for retrieval of the wastes seem remote but retrieval activities might be undertaken at some point during operations and/or storage periods.

5.5 Summary Recommendations

5.5.1 Action on Creating a New Industrial Tax Category

An important and fundamental recommendation made in connection with the GETT study is that the state create a new property tax category which will apply to major long-term hazardous waste storage facilities. There are several distinct advantages to this approach. First, it eliminates questions about which units of government qualify for GETT payments. Second, it maximizes revenues by applying a higher level of property tax rate than the counties or other units of government can employ under current law. And third, it avoids the possible negative effects on property under the current "budget cap" laws.

At the same time, it requires a major change in the state tax code and implies a major effort by state and local jurisdictions, and by other interested parties, to assure that the necessary legislation is properly drafted and enacted.

An associated recommendation is that a constitutional amendment be proposed to remove the current limitation of assessing this type of industrial property at more than 35 percent of its valuation. This too must be proposed by action of the State Legislature.

Therefore, we recommend that the NWPO and the State-Local Steering Committee take the lead in defining the exact terms of the proposed legislation, in drafting the necessary bills, providing the legislature with appropriate information, informing the public of the nature, purpose and expected outcome of the proposed legislation, and in coordinating efforts to secure legislation that meets the goals of maximizing GETT payments. A strategy and policy meeting of the State-Local Steering Committee should be scheduled as soon as possible to consider the specific steps in this general course of action. Those attending should include representatives from the State Attorney General's Office, the legislature, Departments of Taxation and Budget, and the Governor's Office, along with appropriate technical personnel.

5.5.2 Action on Valuation and Appraisal of the Yucca Mountain Site

The State of Nevada should perform a valuation appraisal of the Yucca Mountain site as of the date site characterization was initiated. The State should establish a working group of technicians in the area of property assessment to develop the methodology to be used to determine the full cash value of the property. Methods and

procedures for annual updates of the value should also be established by the work group. Particular expertise in contributory valuations and the appraisal of unique and highly technical projects is essential for this group.

5.5.3 Action to Prepare for Changes in the NWPA

The State and the State-Local Steering Committee should begin an immediate review of the GETT provisions with a view towards setting goals for any changes that might be made in the NWPA during the upcoming congressional session. The current study has been based upon the NWPA as written, and although our analyses have pointed out some significant restrictions and ambiguities, it has not attempted to formulate legal provisions that would be most favorable to the state. Rather, it has attempted to devise strategies that would maximize GETT payments under the law as written. If the NWPA were to be modified, other considerations for GETT payments and procedures might be important.

5.5.4 Action by Nye County on Sales and Use Taxes

Nye County should undertake discussions with DOE to define federal government purchases for the Yucca Mountain project and to make application for GETT payments in lieu of sales and use taxes. The county should begin collecting non-GETT sales and use taxes from DOE contractors working on the Yucca Mountain project. The processes to do this should be modelled on those now used to collect sales and use taxes from contractors at the Nuclear Test Site.

5.5.5 Action by Nye County on the Real Estate Transfer Tax

Following the professional appraisal of the Yucca Mountain project, Nye County should make application for the Real Estate Transfer Tax at the rate of $0.55 per $500 of value. This may have to be initiated following litigation on the issue of "withdrawal" of federal land for use as a potential repository site by OCRWM.

5.5.6 Action on the DOE Guidelines for GETT Payments

The NWPO, along with the State/Local Steering Committee, other state agency advisors and the technical consultants, should undertake an immediate review and analysis of the draft guidelines proposed by DOE for the GETT program. Based upon this review, clear policies and strategies should be established to provide input to the final guidelines.

APPENDIX M

Suggested Legislation

SUMMARY---Urges Federal Government to mitigate adverse effects of facility for disposal of high-level radioactive waste. (BDR 200)

FISCAL NOTE: Effect on Local Government: No.
Effect on the State or on Industrial Insurance: No.

JOINT RESOLUTION---Urging the Congress and the President of the United States to take all measures necessary to mitigate the adverse effects of a facility for the disposal of high-level radioactive waste in this state.

WHEREAS, The Nuclear Waste Policy Act of 1982, 42 U.S.C. §§ 10101 to 10226, inclusive, established a procedure for the selection of a site for a facility for the disposal of high-level radioactive waste; and

WHEREAS, The Secretary of Energy is considering an area near Yucca Mountain in Nye County, Nevada, for selection as the site for such a facility; and

WHEREAS, This resolution is not intended as an expression of support for or opposition to the placement of such a facility in Nevada; and

WHEREAS, The merits of the issue aside, if Nevada is chosen to be the location for the facility, it would severely strain the financial, environmental and human resources of this state; now, therefore, be it

RESOLVED BY THE AND OF THE STATE OF NEVADA, JOINTLY, That this legislature strongly urges the Federal Government to provide assistance to mitigate the adverse effects of such a facility in the following areas:

1. Education, including facilities and personnel for elementary and secondary schools, community colleges, vocational and technical schools and universities.

2. Public health, including the facilities and personnel for treatment and distribution of water, the treatment of sewage, the control of pests and the disposal of solid waste.

3. Law enforcement, including facilities and personnel for the courts, police and sheriff's departments, district attorneys and public defenders and prisons.

4. Fire protection, including personnel, the construction of fire stations and the acquisition of equipment.

5. Medical care, including emergency services and hospitals.

6. Cultural and recreational needs, including facilities and personnel for libraries and museums and the acquisition and expansion of parks.

7. Distribution of public lands to allow for the timely expansion of existing or creation of new communities and the construction of necessary residential and commercial facilities.

8. Vocational training and employment services.

9. Social services, including public assistance programs, vocational and physical rehabilitation programs, mental health services and programs relating to the abuse of alcohol and controlled substances.

10. Transportation, including any roads, terminals, airports or railways built for or in any way associated with the facility and the repair and maintenance of roads, terminals, airports or railways damaged as a result of the construction, operation and closure of the facility.

11. Equipment and training for state and local personnel in the management of accidents involving high-level radioactive waste.

12. Availability of energy.

13. Tourism and economic development, including the loss of revenue and future economic growth.

14. Other needs of the state and local governments that would not have arisen but for the search for the site and the construction, operation and eventual closure of the facility; and be it further

RESOLVED, That the mitigation of these adverse effects should begin as soon as they become known; and be it further

RESOLVED, That the Federal Government should provide whatever assistance is necessary, including equipment for data processing, to allow the state to establish appropriate methods to observe and assess the effects of the facility from the planning stages until the waste is no longer radioactive; and be it further

RESOLVED, That the entity to be established to coordinate the requests for assistance from the state and its political subdivisions be recognized by the Federal Government as the final authority on the needs and priorities of this state and its political subdivisions in the mitigation of the adverse effects of the facility; and be it further

RESOLVED, That the Federal Government should establish a special fund to be used to mitigate any adverse effects of the study of the site including, without limitation, the effects of physical exploration if the project is abandoned; and be it further

RESOLVED, That the ..... shall forthwith transmit copies of this resolution to the President of the United States, the Vice President of the United States as presiding officer of the Senate, the Speaker of the House of Representatives, each member of the Nevada congressional delegation and the Secretary of Energy; and be it further

RESOLVED, That this resolution becomes effective upon passage and approval.

SUMMARY---Urges Federal Government to assume financial responsibility for facility for disposal of high-level radioactive waste. (BDR 201)

FISCAL NOTE: Effect on Local Government: No.
Effect on the State or on Industrial Insurance: No.

JOINT RESOLUTION---Urging the Federal Government to assume the total financial responsibility for the mitigation of all adverse effects of any facility for the disposal of high-level radioactive waste constructed in this state and require local purchases of related materials.

WHEREAS, It is possible that Nevada will be chosen as the location of a national facility for the disposal of high-level radioactive waste; and

WHEREAS, This resolution is not intended as an expression of support for or opposition to the placement of such a facility in Nevada; and

WHEREAS, The merits of the issue aside, the construction and operation of the facility will have a significant effect upon the economy of this state; and

WHEREAS, Under the provisions of the Nuclear Waste Policy Act of 1982, 42 U.S.C. §§ 10101 to 10226, inclusive, the Federal Government is responsible for the safe and permanent disposal of high-level radioactive waste; now, therefore, be it

RESOLVED BY THE AND OF THE STATE OF NEVADA, JOINTLY, That this legislature strongly urges the President and the Congress of the United States to use their power to ensure that the Federal Government:

1. Bears the total financial responsibility for the mitigation of all adverse effects associated with the preliminary study, construction, operation and eventual closure of any such facility as soon as an injury is perceived;

2. Requires all materials and equipment for the facility to be purchased, if possible, in Nevada and subject to state and local sales and use taxes; and

3. Assumes all liability, without limitation, for any injuries resulting from the transportation of high-level radioactive waste to the facility, the construction, operation and eventual closure of the facility and any activity associated with the facility after its closure; and be it further

RESOLVED, That the ..... shall forthwith transmit copies of this resolution to the President of the United States, the Vice President of the United States as presiding officer of the Senate, the Speaker of the House of Representatives, each member of the Nevada congressional delegation and the Secretary of Energy; and be it further

RESOLVED, That this resolution becomes effective upon passage and approval.

SUMMARY---Increases rate of pay of members of committee on high-level radioactive waste. (BDR 40-202)

FISCAL NOTE: Effect on Local Government: No.
Effect on the State or on Industrial Insurance: Yes.

AN ACT relating to the committee on high-level radioactive waste; increasing the rate of pay for members of the committee; and providing other matters properly relating thereto.

THE PEOPLE OF THE STATE OF NEVADA, REPRESENTED IN SENATE AND ASSEMBLY, DO ENACT AS FOLLOWS:

Section 1. NRS 459.0085 is hereby amended to read as follows:

459.0085 1. There is hereby created a committee on high-level radioactive waste. It is a committee of the legislature composed of:

(a) Three members of the senate, appointed by the majority leader of the senate.

(b) Four members of the assembly, appointed by the speaker.

2. The legislative commission shall select a chairman and a vice chairman from the members of the committee.

3. The committee shall meet at the call of the chairman to study and evaluate:

(a) Information and policies regarding the location in this state of a facility for the disposal of high-level radioactive waste;

(b) Any potentially adverse effects from the construction and operation of a facility and the ways of mitigating those effects; and

(c) Any other policies relating to the disposal of high-level radioactive waste.

4. The committee shall report the results of its studies and evaluations to the legislative commission and the interim finance committee at such times as the legislative commission or the interim finance committee may require.

5. The committee may recommend any appropriate legislation to the legislature and the legislative commission.

6. The director of the legislative counsel bureau shall provide a secretary for the committee on high-level radioactive waste. [Each] Except during a regular or special session of the legislature, each member of the committee is entitled to [a salary of $80] receive the compensation provided for a majority of the members of the legislature during the first 60 days of the preceding regular session for each day or [part] portion of a day during which he attends a committee meeting or is otherwise engaged in the work of the committee [.] plus the per diem allowance and travel expenses provided for state officers and employees generally. Per diem allowances, salary and travel expenses of members of the committee must be paid from the legislative fund.