STRATEGIC ASSESSMENT ISSUE PAPER

DSI 5: LOW-LEVEL WASTE

INTRODUCTION

In August 1995, the Nuclear Regulatory Commission (NRC) staff initiated a Strategic Assessment and Rebaselining Project. This project was intended to take a new look at the NRC by conducting a reassessment of NRC activities in order to redefine the basic nature of the work of the agency and the means by which that work is accomplished, and to apply to these redefined activities a rigorous screening process to produce (or rebaseline) a new set of assumptions, goals, and strategies for the NRC. The results of this project are intended to provide an agency-wide Strategic Plan which can be developed and implemented to allow the NRC to meet the current and future challenges.

A key aspect of this project was the identification and classification of issues that affect the basic nature of NRC activities and the means by which this work is accomplished. These issues fall into three categories. The first category includes broad issues defined as Direction-Setting Issues (DSIs). DSIs are issues that affect NRC management philosophy and principles. The second category includes subsumed issues. Subsumed issues are those that should be considered along with the DSIs. The third category includes related issues. These are issues that should be considered after the Commission makes a decision on the option(s) for a DSI. Also, as part of the project, other issues of an operational nature were identified. These are not strategic issues and are appropriately resolved by the staff, and are not discussed in the issue papers.

Following the reassessment of NRC activities, issue papers were prepared to provide a discussion of DSIs and subsumed issues, and to obtain a review of these broad, high-level issues. These papers are intended to provide a brief discussion of the options as well as summaries of the consequences of the options related to the DSIs. Final decisions related to the DSIs will influence the related issues which are listed, but not discussed, in each issue paper. As part of the Strategic Assessment and Rebaselining Project, the issue papers are being provided to interested parties and to the public. Following distribution of the issue papers, a series of meetings are planned to provide a forum to discuss and receive comment on the issue papers. After receiving public comment on the issue papers, the Commission will make final decisions concerning the DSIs and options. These decisions will then be used to develop a Strategic Plan for the NRC. In summary, the Strategic Assessment and Rebaselining Project will analyze where the NRC is today, including internal and external factors, and outline a path to provide direction to move forward in a changing environment.

I. SUMMARY

A. Direction-Setting Issue

Radioactive materials are widely used in the U.S. for energy production, the manufacture of industrial and consumer products, the diagnosis and treatment of disease, and research. A byproduct of these activities is low-level radioactive waste (LLW). LLW usually contains small amounts of radioactivity in large volumes, although some LLW at the high end of the definition of LLW requires extensive controls to prevent unsafe radiation exposures. LLW is either stored temporarily (usually at one of the approximately 2000 generator facilities in the U.S.) or sent for permanent disposal to one of the three currently licensed and operating disposal facilities in the country.

The Low-Level Radioactive Waste Policy Act of 1980 (LLRWPA), amended in 1985, gave States the responsibility for developing new facilities. Since Congress passed the law, States have been working on developing as many as 12 new facilities, some for regional compacts, others just for the States in which they are located. Progress in siting new disposal facilities has been slow and no new-State developed facilities are yet in operation. However, the need to develop new disposal capacity is less pressing than 10 years ago. On July 1, 1995, South Carolina reopened its Barnwell disposal facility to most LLW generators in the country, and the current legislature and governor plan to keep it open for up to 10 more years. Generators in the Northwest and Rocky Mountain Compacts can dispose of their waste at the Hanford disposal facility, and all LLW generators can dispose of certain types of Class A LLW at the Envirocare facility in Utah.

NRC has a broad safety interest in the development of new and reliable disposal facilities. NRC has historically favored disposal and discouraged long-term storage as a method of managing LLW. This philosophy is consistent with the national goal of developing new disposal capacity as embodied in the Low-Level Radioactive Waste Policy Amendments Act of 1985 (LLRWPAA). Because progress in achieving this goal has been slower than expected, one of the principal issues addressed in this paper is what actions, if any, NRC might take to facilitate development of new disposal facilities. For the LLW program area, the following direction-setting issue (DSI) was therefore identified:

> What should be the role and scope of the NRC's low-level radioactive waste program?

NRC can adopt several broadly defined roles with respect to the national program for LLW disposal. First, NRC can actively advance the objective of developing new disposal capacity in the country, either within or outside the existing framework of the LLRWPAA.

Second, NRC can operate an LLW regulatory program anywhere along a continuum. The options range from implementing a minimalist program that simply fulfills the legal requirements, to building and maintaining a strong program that includes comprehensive regulatory and technical-assistance functions, such as topical report reviews and participation in international standards-setting activities.

Third, NRC can modify its current LLW philosophy and accept long-term, "assured" storage as a viable strategy for managing the country's LLW. Although NRC has been opposed to long-term storage of LLW in the past, this assured storage concept could be safer than storage of LLW onsite by generators.

A fourth approach is to shut down the LLW program (as recently proposed for the fiscal year (FY) 99 budget) and transfer it to another organization.

This issue paper provides six options regarding NRC's role in managing its LLW program.

B. Options

Option 1: Assume a Greater Leadership Role

NRC would become a strong advocate for new disposal capacity. In addition to performing routine regulatory functions, such as licensing and inspection and assisting the States upon request, NRC would actively encourage disposal strategies whenever opportunities became available. The basis for this option is that NRC's job is to protect public health and safety and that the U.S. has a significant amount of LLW, which must be disposed of safely. Therefore, without promoting the use of nuclear materials, NRC could support the development of new LLW disposal capacity, taking whatever actions could help achieve this end, such as helping resolve the Department of Interior (DOI) concerns over the Ward Valley facility. In addition, if NRC believed that the LLRWPAA was not likely to lead to development of new facilities by the States, NRC could encourage Congress to explore other approaches, such as disposal of commercial LLW in Department of Energy (DOE) facilities or privatization of new facility development.

Option 2: Assume a Strong Regulatory Role in the National LLW Program

Under this option, NRC staff would perform a wide variety of technical and regulatory functions to further the development of new facilities and develop new technologies. The program would encompass all the activities that were performed before the recent reductions in the LLW program, including topical report reviews; staff participation in a variety of LLW meetings with generators, States, and the public; research directed solely to LLW disposal;

and continued development of guidance for the LLW program. This option differs from Option 1 in focusing not on broad policy matters concerning the national LLW program, but on maintaining a strong NRC regulatory role within the existing legislative framework.

Option 3: Retain Current Program

The existing program would be maintained. The staff would continue to perform NRC's present LLW functions, including some technical assistance to States, review of Agreement State LLW programs, and routine licensing and inspection of Barnwell and Hanford. Research, topical report reviews, and new guidance development would be curtailed or severely limited. Only those actions that are legislatively required or significantly contribute to the national LLW disposal program would be performed.

Option 4: Recognize Progress and Reduce Program

NRC would formally recognize that the objectives of the LLRWPAA have been largely fulfilled at the present time, although in way different from that originally envisioned. Almost all of the country's LLW generators have access to permanent disposal facilities at this time, and development of new facilities is well along in several States. This view of the LLRWPAA's success to date also recognizes that States need to continue with their current site development efforts to meet their future requirements. However, because there is no urgency to developing new capacity, NRC's program under this option would become a maintenance program.

Option 5: Transfer LLW Program to EPA

NRC would recommend to Congress that its LLW responsibilities be transferred to the Environmental Protection Agency (EPA). It is expected that EPA would delegate some LLW responsibilities to States in a manner similar to the current Agreement State arrangement. EPA currently regulates transuranic waste disposal at the Waste Isolation Pilot Plant, and regulates hazardous wastes under the Resource Conservation and Recovery Act. This action would broaden EPA's waste disposal regulatory responsibilities. The NRC LLW disposal program would be eliminated.

Option 6: Accept Assured Long-Term Storage

Instead of discouraging long-term storage, NRC would accept this strategy, called "assured storage," as a viable solution for managing waste. Assured storage involves a centralized storage facility, similar to an earth-mounded concrete bunker, that might subsequently be converted into a permanent

disposal facility if the public decided this was desirable. Such a facility might have greater public acceptance than a facility designed and licensed solely for permanent disposal of LLW.

II. DESCRIPTION OF ISSUES

A. Background/Bases

LLW are materials that have no further use which contain radioactivity, such as contaminated wastes from reactors, failed equipment, compacted trash, contaminated protective clothing, laboratory wastes, and animal carcasses. Only LLW is disposed of at State or compact facilities. There are four classes of LLW, in ascending order of hazard: Class A, Class B, Class C, and greater than Class C (GTCC). For classes A, B, and C, NRC regulations in 10 CFR Part 61 set concentration limits for both short-lived and long-lived radionuclides. These limits are actually formulas that reflect both the half-lives and the hazards of the radionuclides in each class. A rule of thumb is that Class A waste is intended to be safe after 100 years, Class B after 300 years, and Class C after 500 years. The requirements and controls used to manage the hazards increase in stringency from Class A to Class C. GTCC wastes are not intended for disposal with Class A, B, and C LLW because of their greater hazard, and might be disposed of in a geologic repository with high-level waste.

There are additional sources of radioactivity, naturally occurring and accelerator-produced radioactive materials (NARM) that include some materials that are similar to LLW. NARM exists in nature as radium, radon, and other materials. NARM also includes man-made radioactive materials and waste created in devices such as cyclotrons and linear accelerators. Under the AEA, NRC does not regulate NARM. Instead, other Federal agencies and States have responsibilities and authorities for its regulation. While NARM is occasionally disposed of in LLW facilities, the quantities are not significant.

Currently, there are three operating LLW disposal facilities in the U.S. The Hanford facility in Richland, Washington, is open to the generators in the Northwest and Rocky Mountain regional compacts; generators in other States are prohibited from disposing of their waste in this facility. The Barnwell facility in Barnwell, South Carolina, is open to all generators in the country, except those in the State of North Carolina. The Envirocare facility in Clive, Utah, accepts only certain types of Class A waste and is open to all generators in the country. Recently, the Envirocare facility expanded the types and concentrations of LLW it can accept and is now taking a larger share of the commercial LLW in the country. All of these facilities are licensed

for disposal by Agreement State regulatory organizations. For Hanford and Barnwell, however, NRC has also issued licenses for the possession of special nuclear material (SNM).

Twelve new disposal facilities are being developed by the States and regional compacts. The LLRWPAA makes each State either by itself or in cooperation with other States responsible for providing for disposal of LLW generated within the State. Of these 12, 9 are in Agreement States or States that plan to become Agreement States, and 3 in non-Agreement States.

The NRC's LLW program includes those activities necessary to fulfill NRC's responsibilities to regulate storage and disposal of LLW. NRC's regulation of other aspects of LLW management, such as incineration and sanitary sewer discharge, are not included in the LLW program as defined here, but are addressed as a part of other programs, such as byproduct material licensing under Part 30. Like NRC's other programs for regulating users of radioactive materials, the LLW program has included rulemaking, guidance development, reviews of license applications, inspections, and reviews of Agreement State LLW regulatory programs.

NRC's LLW program activities are further defined by the LLRWPAA, which gives NRC the responsibility for (1) defining LLW, (2) reviewing and processing a license application from a Non-Agreement State for a new LLW disposal facility within 15 months of the date of receipt, (3) licensing the Federal disposal of commercial LLW that is greater than Class C (GTCC), and (4) granting individual generators of waste emergency access to non-Federal facilities.

NRC also has statutory responsibilities pertaining to LLW under Section 274 of the Atomic Energy Act of 1954 (AEA), as amended, regarding cooperation with the States in the regulation of byproduct material, source material, and SNM. NRC is responsible for overseeing the adequacy and compatibility of Agreement State programs, including the LLW licensing and regulatory activities of States.

The activities listed below either are included in or could be restored to NRC's LLW program. The activities were all part of the NRC's LLW program in FY94, but some have since been curtailed or eliminated in connection with budget reductions. In the discussion of the individual options later in this paper, the staff states whether these activities below would be performed for a given option.

- Rulemakings and Guidance

The staff has maintained and updated the regulation for LLW disposal in 10 CFR Part 61 and related provisions in 10 CFR Part 20. The staff is also responsible for maintaining NRC requirements in 10 CFR Part 62, which provides

criteria and procedures for acting on emergency access requests, to fulfill responsibilities given to NRC in Section 6 of the LLRWPAA. Rulemaking efforts by the staff in the last several years have included the uniform manifest rulemaking, the advance notice of proposed rulemaking (ANPR) on private land ownership, the LLW import/export rulemaking amending 10 CFR Part 110, and a clarification in the definitions in Part 61 regarding the applicability of the regulation to above-ground vault disposal facilities. This category also includes development of NRC guidance in such areas as LLW performance assessment, interim storage of LLW, baghouse dust disposal, waste concentration averaging, and mixed waste.

- Licensing of LLW Disposal Facilities

NRC has issued licenses for the possession of special nuclear material (SNM) at the Hanford and Barnwell disposal sites. These are licenses of limited scope that principally address criticality safety at the disposal facilities. The Agreement State regulatory organizations have issued licenses for disposal and regulate most activities that affect the performance of the site. For its SNM licenses, NRC reviews operations of the disposal facilities and acts on periodic amendments and renewal requests. NRC defers to a significant degree to Agreement State oversight of the disposal facilities that are licensed by South Carolina and Washington.

NRC is required by Section 9 of the LLRWPAA to review license applications for all non-agreement States. Michigan, Connecticut, and New Jersey could submit license applications to NRC at some time in the future. Also included in the licensing category are 10 CFR 20.2002 disposals and topical report reviews. Under 10 CFR 20.2002, if certain criteria are satisfied, a licensee may be authorized to dispose of LLW on its site, or at an offsite location that is not a licensed Part 61 disposal facility. A topical report is a vendor's report on a particular regulatory issue (for example, waste form stability). Staff approval of a topical report enables a licensee to simply reference the report in its license application and other documents, avoiding the need for extensive additional review by the staff.

- Inspection of LLW Disposal Facilities and LLW Generators

The LLW program includes inspections of the SNM licensees at the Hanford and Barnwell disposal sites. NRC also inspects LLW packaging, storage, and treatment at generators' facilities before the waste is shipped for disposal.

- Oversight and Technical Assistance to Agreement States and Host States

This NRC LLW activity has included Agreement State reviews; technical assistance to the Agreement State regulatory organizations and to host States (States that have or plan to have a disposal facility within their borders); and workshops and meetings with State developers of new facilities, including the LLW Forum.

- Interactions With Outside Groups

Some outside groups have an interest or responsibility in the LLW program. These groups include environmental groups and other government agencies such as DOE, the National Academy of Sciences, the State Department, the International Atomic Energy Agency (IAEA) and foreign governments. The staff has also consulted with EPA on LLW issues, for example, by commenting on EPA's efforts to promulgate environmental standards for DOE LLW disposal facilities.

- Research

NRC performs research on aspects of LLW disposal. NRC is phasing out research that is directed only towards LLW disposal. Some projects are being refocused to address decommissioning aspects, although the results can also be used in the LLW program. The Research issue paper in this strategic assessment gives an overview of NRC's research program.

- Greater Than Class C Licensing

Under the LLRWPAA, NRC is responsible for licensing DOE's disposal of LLW that is GTCC. Although GTCC waste is classified as low-level waste, it is generally not acceptable for near-surface disposal, and disposal methods must be generally more stringent than those for other low-level wastes. Part 61.55 states, "In the absence of specific requirements in this part, such waste [GTCC] must be disposed of in a geologic repository as defined in Part 60 of this chapter unless proposals for disposal of such waste in a disposal site licensed pursuant to this part are approved by the Commission."

- Responses to Congressional and Public Requests

Because of widespread interest in LLW by the public, the staff responds to numerous requests from Congress and others on issues related to LLW disposal. Requests from Congress are relatively routine. Several hundred phone calls from the public are handled each year.

- Import/Export of LLW

The staff is required to license the import and export of low-level radioactive waste from the U.S. Two applications have been received to date, and several companies have consulted with NRC staff about possible license applications.

B. External Factors

Progress in siting new disposal facilities under the LLRWPAA has been slow and most new disposal facilities are expected to be located in Agreement States. Thus, NRC's direct involvement in licensing new facilities has been very limited. NRC has had interactions with non-Agreement States regarding their facility development plans, in particular the States of Connecticut, Michigan, and New Jersey. However, none of these States has submitted a schedule for completing and submitting to the NRC an LLW license application, and NRC does not expect to receive an application from a non-Agreement State within the next 5 years, although one may be submitted to NRC within the next 10 years.

The lack of broadly based public acceptance has significantly affected the development of new LLW disposal facilities. Most State efforts have been hampered by opposition at the State and local levels, and one State effort has been hampered at the Federal level. Even with this opposition, however, the staff expects new facilities to be licensed and begin operation by 2000. The staff expects that the Ward Valley facility in California will open eventually. Also, the States of Nebraska, North Carolina, and Texas (all Agreement States) have license applications under review.

Another significant external factor is that LLW disposal and management options are available today for waste generators. Thus, a critical need to develop new LLW disposal capacity over the next few years is not envisioned. There are three reasons for this situation. First, generators will continue to have access to LLW disposal facilities. South Carolina plans to keep the Barnwell facility open to States, with the exception of North Carolina, for up to 10 more years, and the Northwest Compact permits certain types of LLW waste from all over the country to be disposed of at the Envirocare facility in Utah. Second, nuclear utilities and other generators are implementing strong programs to minimize waste generation, to recycle where possible, and to decontaminate or reduce volume when it is economical. The trend toward waste volume reduction has continued to the point where current disposal volumes are only about half of what they were a few years ago. Third, interim storage appears to have presented few problems. It is considered a viable interim solution and many licensees will continue to manage their waste this way. These factors reduce the interest of States and the public in establishing and adhering to timely goals for building new disposal facilities.

The Advisory Committee on External Regulation of DOE Nuclear Safety published a report recommending that DOE facilities, including DOE's LLW disposal facilities, be regulated by an external organization. NRC is one organization that could oversee DOE, if external regulation is adopted. If NRC were to regulate DOE LLW facilities, some of the LLW program activities that are considered for elimination in this paper might have to be retained.

C. Internal Factors

A factor that may affect NRC's regulatory program is the Government-wide effort to streamline and reduce costs. The Administration has established staff reduction goals as part of the National Performance Review. In SECY-95-154, "National Performance Review, Phase II," the staff recommended that NRC consider devolving to the States all regulation of LLW disposal to help meet these goals. SECY 95-201, "Alternatives to Terminating the Nuclear Regulatory Commission Low-Level Radioactive Waste Disposal Program," described the implications of terminating or reducing the program and offered two alternatives to terminating the program. The paper was returned to the staff so that the subject might be further considered as a part of the strategic assessment initiative and so that the Commission would have the benefit of the Advisory Committee on Nuclear Waste's (ACNW's) views on the subject. In the meantime, the staff has begun to reduce LLW program activities to meet agency budget ceilings.

In its December 29, 1995, letter to the Commission, the ACNW expressed concerns regarding the elimination or reduction of the LLW program and recommended a strong, centralized program for LLW in NRC to achieve consistent, adequate, and coherent LLW programs in the U.S. (consistent with the safety priority of the LLW program in relation to other agency programs). The Committee identified a number of areas that it believed should be strengthened above the levels that the staff had recommended in "Option 2" in SECY 95-201, including topical report reviews, reviews of Agreement States LLW Programs, research in LLW, international activities, and others.

D. Stakeholders' Views

Some of the approaches for changing NRC's LLW program discussed in this paper have already received widespread public review. In addition to ACNW's review and comment on SECY-95-201, as noted above, the staff sent the paper to over 400 individuals and groups for review and comment in December 1995. Twenty-nine individuals and groups commented. More than half favored a stronger centralized regulatory program at NRC, at or above the current staffing levels. Several recommended that NRC become more active in advocating LLW disposal, for example, by approaching DOI on Ward Valley concerns. The

Agreement States, however, preferred NRC do essentially only what is legally required. The commenters did not review several of the options that are described in this issue paper.

III. DISCUSSIONS

A. Discussion of Direction-Setting Issue

What should be the role and scope of the NRC's low-level radioactive waste program?

For the last 16 years, the primary focus of the national LLW program has been the development of new disposal capacity. To address this DSI, NRC's potential contributions to this objective need to be examined, in addition to what NRC must do to fulfill its basic public health and safety responsibilities. This section therefore also addresses three fundamental questions that are associated with the DSI.

1. Should NRC advocate development of additional disposal capacity in the U.S.?

2. What actions could NRC take to foster the development of additional disposal capacity and how much of a difference would these actions make?

3. If NRC chooses not to take actions to advocate new disposal capacity, what should NRC do?

Each of these is discussed below.

1. Should NRC advocate development of additional disposal capacity in the U.S.?

The widely held view among States, compacts, and LLW generators is that additional disposal capacity is necessary. Behind this view lie the following arguments.

- The LLRWPAA and LLRWPA established a national legal framework to facilitate development of new LLW disposal capacity. Congress passed the LLRWPA of 1980 because States that had operating disposal facilities at that time did not want to take all of the nation's waste. These host States wanted additional disposal capacity to be created in the country so that they would not be responsible for the whole country's LLW.

- The Barnwell disposal facility, which is the primary disposal facility for Class A, B, and C LLW in the country, will remain open only as long as the governor and legislature are willing to keep it open.

- Prompt and permanent disposal of LLW protects the public health and safety better than interim or indefinite storage. In comparison to permanent disposal, storage causes increased occupational exposures to workers and a greater risk that a fire or some other event will expose the public to radiation.

- Waste should be managed in a way that will not impose undue burdens on future generations, as stated in the IAEA's Safety Fundamentals document, "The Principles of Radioactive Waste Management." This document notes that those who receive the benefits of a practice should bear the responsibility for managing the resulting waste.

- Lack of disposal availability leads to a risk of "midnight dumping," abandonment of LLW, and increased use of techniques (such as incineration or sanitary sewer discharge) that will place more radionuclides into the environment than permanent disposal.

In short, disposal is desirable for reasons of public health and safety, equity among the States, and intergenerational equity. According to this view, NRC should strongly support development of additional disposal capacity.

Another view is that a national system is now in place for safely managing LLW and is working and that reasonable progress continues to be made in reaching the original LLRWPAA goal of new facilities. This view is based on the following:

- The States have determined, under the authority provided to them in the LLRWPAA, which licensed facilities should remain open and which States should have access to them.

- At the present, almost all of the country's LLW generators have access to an operating disposal facility--Hanford or Barnwell for all types of LLW, Envirocare for certain kinds of Class A waste--and are expected to have access to Barnwell for up to 10 more years, and to the other facilities for longer.

- Michigan generators stored LLW for 5 years, and 32 other States for a year (July 1994-June 1995). Their experience was that LLW can be safely managed and stored if disposal capacity is not available. Thus, even if access to a disposal facility is lost for a short time and generators must store LLW, the risk to health and safety, based on qualitative experience to date, appears to be small.

In short, this view concludes that although additional capacity is needed to assure disposal for decades to come, the existing disposal facilities and LLW management techniques have provided a cushion in the schedules. This view suggests that although NRC should support the development of new capacity, strong support is not essential.

2. What actions could NRC take to foster the development of additional disposal capacity and how much of a difference would these actions make?

NRC could take several roles in encouraging development of new LLW disposal capacity. First, NRC could advocate development of new disposal capacity, either within or outside the existing framework of the LLRWPAA. In this role, NRC could try to influence policy in the national LLW disposal program and would take whatever steps would help advance the development of new disposal capacity. Second, NRC could have a strong regulatory program for LLW disposal. The program would be focused on specific regulatory issues, rather than national disposal policy. In addition to addressing specific issues in this role, NRC would facilitate the national effort to develop new disposal capacity by ensuring that issues and concerns are addressed early and resolved appropriately.

In the advocacy role, NRC would address broad policy-level issues related to the national program for developing new disposal capacity. NRC's efforts could be relatively modest, such as offering its views to Congress on significant LLW issues, or much more comprehensive requiring intensive staff support. For example, within the current legislative framework, NRC could actively promote resolution of the issues surrounding the Ward Valley disposal facility in California by offering to work with the DOI in resolving its concerns with the site. These concerns, which DOI wants to resolve before transferring the Federal land to the State, appear to be the last obstacle to the State of California's moving ahead with that project, and any NRC effort that would help resolve the concerns could be worthwhile.

Outside of the framework of the LLRWPAA, NRC could suggest broader actions to develop new disposal capacity. For example, NRC could promote disposal of commercial LLW in existing Department of Energy (DOE) facilities. This approach would become more attractive if NRC were made responsible for regulating of DOE LLW disposal facilities. However, this approach might undermine one of the original objectives of the LLRWPAA--that States determine among themselves how to share the burden of waste disposal.

In taking a strong regulatory role in LLW (i.e. performing such functions as promulgating regulations, developing guidance, processing license amendments and renewals, conducting inspections, and providing technical assistance to States), NRC could also contribute to achieving the goal of new disposal capacity. Although a clear line cannot be drawn, in this role, NRC would

focus not on national policy regarding developing new disposal capacity, but on specific technical and legal issues. Increased NRC assistance could help Agreement States promptly detect any weaknesses in LLW programs early and resolve difficult technical issues. NRC's continued strong involvement as a regulator in the national program could also contribute to stable disposal facility regulations.

Many issues in any new disposal facility program need to be resolved before a facility can operate. At best, NRC can only address a few of these in either of these roles, especially for facilities in Agreement States. However, States in general and others have indicated that NRC's contributions in the past have been very helpful. With regard to EPA's interest in promulgating a LLW standard, NRC worked well with EPA and helped reach a position acceptable to all parties. In another instance, because of its unique position in the national program, NRC was asked by the National Academy of Sciences to independently provide its projections of the amount of plutonium that the Ward Valley facility would receive. This issue was on the critical path for issuing the National Academy of Sciences (NAS) report on Ward Valley. NRC was able to respond quickly and keep the issue off the critical path.

In the advocacy role, each issue that NRC might address would need to be evaluated on its own to determine what the contribution might be. In the strong regulatory role, specific issues would be addressed as part of the ongoing program.

3. If NRC chooses not to take actions to advocate new disposal capacity, what should NRC do?

NRC could shut down the LLW program (as recently proposed for the FY99 budget) and transfer it to another organization; or build and maintain a strong program that includes regulatory and technical assistance functions, such as are discussed above; or take one of several intermediate options.

The strong program would be similar to that recommended by the ACNW in its December 29, 1995 letter to the Commission commenting on SECY-95-201. This program would encompass all the activities described earlier in this paper and would contribute to a consistent, coherent, and adequate national LLW regulatory program, but would not specifically take actions to encourage development of new disposal capacity. Under this option, in addition to basic actions to protect public health and safety, NRC would encourage new technologies by performing topical report reviews upon request, do appropriate research, and help ensure that State and licensee programs have greater uniformity.

Another option would be a smaller program. Several arguments favor a smaller program:

- NRC is not expected to receive a license application for a new facility for at least the next 5 years.
- The regulatory framework of guidance and regulations for LLW disposal is in place and essentially completed. Agreement States have compatible regulations and use NRC's guidance.
- Agreement States with license applications under review have mature LLW program organizations and staffs.

In addition to these options focused on disposal facilities, NRC can explore long-term, "assured" storage as a viable strategy for managing the country's LLW. This approach might be particularly useful if certain scenarios are possibilities, i.e. the national disposal program does not progress and most generators lose access to disposal facilities. An assured storage facility would likely be seen as a safer way of storing LLW than onsite storage by generators.

B. Discussion of Subsumed Issues

In deciding whether to retain or to significantly alter the scope or direction of the LLW program, NRC must also consider three strategic issues.

1. If NRC chooses to reduce its LLW program, what should be NRC's approach for retaining technical competency and capabilities to review a license application for a new low-level waste disposal facility from a Non-Agreement State?

As stated earlier, NRC does not expect to receive an application from a non-Agreement State within the next 5 years, although one may be submitted to NRC within the next 10 years. The staff estimates that reviewing an application would require about 8 staff-years and special competencies in 12 disciplines. These competencies include corporate knowledge of the low-level waste regulation and guidance documents and technical competence in such areas as performance assessment, near-surface groundwater hydrology, and geochemistry. Some of the options in this paper would significantly reduce the resources to be applied to LLW, so that the staff's expertise in LLW would eventually diminish. Some options require that a cadre of staff be working full time on LLW disposal issues and be available to review a license application (if one were submitted). Under other options, except the shutdown option, NRC staff would be available from decommissioning and other waste management programs if a license application were received. However, the staff would likely need training in LLW and would have to postpone their other projects while they were reviewing the LLW license application.

2. If NRC chooses to reduce its LLW program, how should the NRC posture itself to assure that technically competent and knowledgeable staff are available to respond to States' requests for technical assistance on difficult and controversial LLW disposal issues?

This issue is similar to the first issue, except in degree. Both concern having technically competent staff available for LLW work, in the first for a license application review, involving approximately 8 staff years, and in this issue, for technical assistance to States. Historically, about 1 full time staff equivalent (FTE) has been used each year in technical assistance to States. Routine and/or large requests for NRC staff assistance in the review of license applications are not expected. However, Agreement States will continue to request prompt NRC technical staff assistance whenever challenged on controversial LLW disposal issues. If the LLW program is downsized, NRC will have difficulty making staff available with the expertise and knowledge needed to provide ad hoc technical assistance to the Agreement States.

3. Should the NRC proceed to promulgate final guidance on performance assessment of LLW disposal facilities?

The staff has been working for several years to develop guidance on site-specific assessment of the post-closure performance of LLW disposal facilities. This activity has reflected developments in NRC's understanding of LLW disposal and in computer technology. A draft branch technical position (BTP) on performance assessment of LLW disposal sites has been released to the public. Responses have been mixed. Many States endorse the BTP as a step forward, but States reviewing LLW license applications generally have called the BTP unnecessary and disruptive. The BTP would contribute to risk-informed, performance-based regulation, the approach that it endorses and explains.

IV. OPTIONS

The legal, regulatory, policy, programmatic, and human resource consequences of the various options are described. For the most part, the options are independent (i.e. cannot be combined), but Options 1 and 6 may be joined with any of the other options. Each option gives the NRC a particular role to play, and each role would entail a different program. Table 1 in Appendix A shows how specific LLW program activities would likely be treated under the various options.

Option 1: Assume a Greater Leadership Role

1. Option

Under this option, NRC would actively advocate new disposal facilities in the interest of protecting public health and safety, either by working within the existing framework of the LLRWPAA or by seeking legislative changes. NRC would undertake policy initiatives, for example, by approaching DOI on Ward Valley, or by seeking legislative changes it felt would contribute to the development of new disposal capacity. Staff efforts would be a function of the particular initiatives and could be very small or large.

2. Discussion

Within the current framework, NRC would no longer simply "encourage" disposal (i.e. by making statements), but would actively seek to facilitate the licensing of new facilities by the States. At a minimum, this strategy would involve policy level actions; it could also involve extensive staff efforts to support policy issues, depending upon how this strategy was implemented. For example, at this time, NRC could take various actions with respect to the DOI's decision to require more information before allowing the transfer of Federal land to the State of California for the Ward Valley facility. The actions could range from a letter from the Chairman to Secretary Babbitt to high-level meetings with DOI officials, to independent staff reviews and assessments of the technical issues that DOI has asked to be further studied. Each of these actions would be consistent with assuming a greater leadership role in advocating the development of new LLW disposal capacity.

If NRC believed that the LLRWPAA is not likely to lead to new disposal facilities without being amended, NRC could recommend that Congress enact legislation. One approach might be to add penalties or incentives to the LLRWPAA to replace those that have expired or passed. The last milestones of the LLRWPAA of 1985 were January 1, 1993 and 1996, and there are no longer any incentives or penalties under the Amendments Act for States which fail to develop new disposal capacity.

Outside of the framework of the LLRWPAA, NRC could undertake several initiatives. NRC could encourage Congress to pass legislation that would require or allow DOE LLW disposal facilities to accept commercial LLW. This option would be more attractive if NRC were charged with responsibility for regulating DOE facilities and had to devote its resources to reviewing DOE LLW facilities. A similar concept is being actively considered by States and DOE for treatment and disposal of mixed waste.

This approach could be an efficient use of resources if NRC were given responsibility for regulating DOE. Because NRC staff would be actively involved in reviewing DOE LLW facilities, they would be better qualified to provide any technical assistance needed by States in regulating their own facilities or in reviewing an application from a non-Agreement State. Under this option, a DOE disposal facility would be expected to replace at least some new State and compact facilities.

NRC could also investigate whether privatization of the disposal facility development efforts in the country might be beneficial. As used here, privatization means commercial (nongovernment) organizations developing and operating new LLW disposal facilities outside of the framework of the LLRWPAA (which gives States responsibility for LLW management). Private companies (such as Envirocare) can develop facilities now under the LLRWPAA, but are subject to authority of the compact, which can prohibit import of waste to the region in which the facility is located. The Envirocare facility is allowed to import waste from all of the U.S. by the Northwest Compact. Thus, under existing law, a private contractor would need the permission of the host compact to develop a national facility.

There are several arguments for privatization. One is that the only new LLW facility in the U.S. in the last 25 years is the privately developed Envirocare facility. Another is that, because disposal costs have increased approximately tenfold since the passage of the LLRWPA, market forces and economics will be a larger factor in determining which sites will operate and the private sector would be most responsive to these forces.

Many of the ideas in this option were considered in the General Accounting Office (GAO) report,"Radioactive Waste: Status of Commercial Low-Level Waste Facilities," published in May 1995 (GAO/RCED-95-67). The GAO report concluded that approaches other than the current national program appeared to have drawbacks and noted that supporters of the current program felt that exploring other approaches could undermine both the progress that many states have made and the long-standing support of most States for the current approach. The GAO report did not examine the optional NRC roles discussed in this paper (e.g. NRC approaches to DOI), but did examine privatization, added incentives and penalties in the LLRWPAA, long-term storage, and export of LLW to a foreign country. The reader is referred to that report for a more in-depth analysis of some of these alternatives.

How the subsumed issues would be addressed with this option would depend on which other option were chosen with this one. Privatization and utilization of DOE facilities would have an indirect effect on subsumed issues because there would be fewer State facilities and thus less likelihood that a license application would be submitted to NRC, or that the States would request technical assistance.

3. Impacts

Regulatory Changes - there would be no changes if NRC worked within the existing framework of the LLRWPAA; if not, changes in the law that pertains to LLW disposal in the country would be needed. Some of them could be major changes.

NRC Program Impacts and Efficiencies - Varies. If NRC's role were simply to be a catalyst within the LLRWPAA framework, NRC resource impacts could be minor (such as testimony and some letters), but would be much more significant if staff were to become extensively involved in Ward Valley issues with DOI and California. Seeking and implementing legislative changes that would make DOE responsible for disposal of commercial LLW would require significant resources.

Reaction of Stakeholders - The LLW Forum in its meeting on March 8, 1996 specifically asked the Commission to become more involved in the national program, especially Ward Valley. Legislative changes, such as those required for privatization or use of existing DOE facilities, have historically been controversial. Almost all stakeholders have supported the framework in the LLRWPAA.

Option 2: Assume a Strong Regulatory Role in National LLW Program

1. Option

Under this option, the staff would continue those activities from FY94, the baseline program that budgeted for approximately a dozen FTE. The principal difference between this option and the first is that the first includes high-level policy involvement by NRC, whereas this option involves only additional staff level activities. Generally, the activities performed in the past included maintaining and updating the regulations and guidance for LLW disposal, performing reviews of topical reports, maintaining and renewing the existing SNM licenses for Hanford and Barnwell, inspecting the SNM licensed disposal facilities and performing research. The staff would also have substantial interaction with the States in technical assistance and in reviewing Agreement State programs.

2. Discussion

This alternative would primarily be directed to improving protection of public health and safety by providing leadership in LLW disposal regulation in the U.S. and by participating in international activities. The incremental improvement in safety from this option over Option 3, "Retain Current Program Priorities," would come from the expectation that NRC's larger involvement would ultimately ensure that new disposal facilities come on line sooner than

if NRC had not been involved. Because virtually all generators have access to disposal facilities at this time and may have access for up to 10 more years, the near-term incremental safety improvement may be small. However, NRC would be available to help ensure consistency and coherence in the national program and to foster development of new technologies for LLW disposal (for example, through its topical report program and research) and a better understanding of LLW performance issues.

In this option, the same resources would be applied as when States were first developing their programs for new disposal capacity. However, the national LLW program has changed significantly in the last 10 years, and the same level of assistance is no longer needed. Further, the National Performance Review recommended in SECY 95-154 that NRC consider devolving to the States all regulation of LLW disposal regulation. Therefore, this option might not be considered consistent with efficient and effective regulation.

The subsumed issues would be fully addressed under this option. Staff would be readily available for assistance to States or to review a license application, and the performance assessment BTP would be completed.

3. Impacts

Regulatory Changes Required - No changes in legislation or regulations would be required under this option.

NRC Program Impacts and Efficiencies - NRC would continue the program that had been in place through FY94. In response to budget pressures, NRC has already reduced the program to a level of approximately 6-7 FTEs. Thus, this option would mean an increase in staff devoted to LLW over the current level of effort. Additional resources would need to be taken from other NRC programs.

Reaction of Stakeholders - The staff has already requested comments from the public on its planned budget cuts in LLW. Approximately half favored this option or one similar to it. Most of the other commenters favored a smaller program (about half this size) or a minimalist program. The ACNW, however, in its December 29, 1995, letter to the Chairman, recommended that the Commission evaluate the priority of the LLW program relative to other agency programs and structure the LLW program in accordance with this priority and national needs. The program elements recommended by the ACNW were generally similar to those proposed under this option. In the public comments on SECY 95-201, Agreement States heavily favored an effort between Options 3 and 4 and did not favor a level of NRC effort as large as proposed in this option.

Option 3: Retain Current Program Priorities

1. Option

The existing program would be maintained. The staff would continue to perform NRC's present LLW functions, including some technical assistance to States, review of Agreement State LLW programs, and routine licensing and inspection of Barnwell and Hanford. Research, topical report reviews, and new guidance development would be curtailed or severely limited. Only those actions that are legislatively required or significantly contribute to the national LLW disposal program would be performed. This option is a middle ground, enabling NRC to perform its legislatively required responsibilities and to continue to make some contributions in the LLW program.

2. Discussion

NRC would be able to respond to requests from States for assistance but would not budget for license application reviews. Under this option, the principle activities affected are topical reviews and research, both of which would be eliminated, and interactions with outside groups, which would be reduced. With respect to the subsumed issue for new license applications, any new licensing (resulting from an application for a GTCC facility or a non-Agreement State facility) would not be budgeted or specifically planned for. Staff from other waste management programs using similar skills and experience, such as decommissioning, would be redirected if an application were received. For the technical assistance subsumed issue, resources would generally be available to respond to State requests. The performance assessment branch technical position would be completed under this option.

3. Impacts

Regulatory Changes Required - None.

NRC Program Impacts and Efficiencies - Currently, the LLW program is using 5-10 FTEs. This option would continue that level of effort.

Stakeholder Reaction - About one third of the stakeholders commenting on SECY 95-201 favored an option similar to this.

Option 4: Recognize Progress and Reduce Program

1. Option

Under this option, NRC would recognize that the objectives of the LLRWPAA have been fulfilled for the time being, albeit differently than originally envisioned, and that a minimalist NRC program is sufficient.

2. Discussion

This option emphasizes the fact that States have provided for disposal at Hanford as a regional facility and at Barnwell and Envirocare as national facilities. Most importantly, the genesis of the Low-Level Waste Policy Act of 1980 (i.e. host States' dissatisfaction with not being able to decide whom to provide disposal for) has been addressed. The three States with operating disposal facilities have kept them open and decided which other States should have access. It is likely that California's and other States' facilities will be licensed and operate, and even if some generators temporarily lose access for disposal in the future, they will probably be able to store LLW safely on an interim basis, unlike during the situation in 1979 that precipitated the LLRWPA of 1980. These factors could justify a maintenance program at NRC of just a few FTEs, roughly half the level in Option 3.

NRC could also conclude that because the provisions of the LLRWPA and LLRWPAA have been implemented, both the NRC and Agreement State regulatory frameworks are mature and well developed, that staffs in Agreement States with license applications under review and in State LLW development organizations are experienced in LLW disposal, and that, in some cases, substantial progress has been made in developing and licensing new facilities.

This option recognizes that although there will continue to be problems (such as opening the Ward Valley facility in the near term), the States are more capable of solving these problems today. The LLRWPAA framework of giving the States responsibility has basically worked and should continue to do so.

NRC would scale back its LLW program to a small maintenance effort of just a few FTEs for legislatively required functions. NRC would generally perform no rulemaking or guidance development, eliminate research directed only at LLW issues and topical report reviews, and would generally discontinue staff participation in meetings with outside organizations, such as the LLW Forum and Conference of Radiation Control Program Directors (CRCPD). The staff would perform only routine licensing matters, such as amendments and renewals of the Barnwell and Hanford SNM applications, reviews of on-site disposal requests under 20.2002, and inspections of the SNM licenses.

One consequence of the argument that the objective of the LLRWPAA has been fulfilled is that States could give less attention to developing new facilities. But, even now, with access to disposal facilities readily available into the foreseeable future, the lead States of California and Texas have continued to develop their facilities, and others are also moving ahead. Massachusetts recently announced plans to scale back its LLW disposal facility program, and other States have delayed their programs in response to the current situation, but these developments can be considered appropriate, given the disposal capacity that is currently available and being developed.

NRC's position would not be that the LLRWPAA goals have been achieved completely, but that its disposal objective has been fulfilled for the time being and that more remains to be done.

With respect to subsumed issues, NRC would not perform any work on the Performance Assessment BTP if it were not finished by the time a decision was made on this option. The staff presently plans to complete it next year, but this schedule may be extended if public comments are more difficult to resolve than is currently expected. If NRC received a license application from a non-Agreement State, resources would need to be redirected to conduct the review. The likelihood of receiving an application in the next 5 years is considered remote. NRC would be much less responsive to States' requests for technical assistance and would do less, and likely do it more slowly, than in the past.

3. Impacts

Regulatory Changes Required - None.

NRC Program Impacts and Efficiencies- Staff resource requirements would be small, on the order of just a few FTEs.

Option 5: Transfer the LLW Program to EPA

1. Option

NRC would recommend to Congress that its LLW responsibilities be transferred to EPA. It is expected that EPA would delegate LLW responsibilities to the States in a manner similar to the current Agreement State arrangement. EPA currently regulates transuranic waste disposal at the Waste Isolation Pilot Plant, and also regulates hazardous waste disposed under the Resource Conservation and Recovery Act. This action would broaden EPA's waste disposal regulatory responsibilities. All of the current activities in the NRC LLW disposal program would be eliminated.

2. Discussion

The argument for transferring the LLW program is that EPA currently regulates other waste disposal activities in the U.S., including transuranic waste disposal at the Waste Isolation Pilot Project and hazardous wastes at hundreds of facilities around the country under the provisions of the Resource Conservation and Recovery Act. Under this option, it is assumed that EPA would maintain a program similar to NRC's existing Agreement State program in LLW. The activities that would be transferred to EPA include the following:

- Rulemakings and guidance development related to land disposal.
- Licensing of LLW disposal facilities
- Oversight and technical assistance to Agreement States
- Inspections
- Import/export licensing
- Licensing of Greater than Class C waste
- "Emergency Access" Reviews

This transfer would not include LLW activities incidental to operational radiation safety programs of NRC licensees, decommissioning work, inspections of LLW storage, or onsite disposals proposed in connection with decommissioning of a major nuclear facility. These programs are closely related to the core licensing responsibilities of NRC under 10 CFR Parts 30, 40, 50, and 70 and cannot be practically separated.

Statutory changes would be required if NRC transferred its LLW program. Both the AEA and the LLRWPAA would need to be amended. Under this approach, AEA amendments would transfer the LLW disposal aspects of NRC's licensing and regulatory responsibility over materials licensees, such as LLW packaging.

This option might have several other consequences. Reopening the LLRWPAA to make the changes required by this option could also open it for other changes. This approach could be seen as de-stabilizing the regulatory framework that NRC has maintained for more than 20 years. Part 61 would need to be rescinded to be consistent with legislation removing LLW disposal responsibilities from NRC. Transferring LLW disposal responsibility to EPA could decrease government efficiency by separating control for nuclear operations and waste disposal.

On the other hand, transfer of NRC's responsibilities in LLW disposal would provide EPA an opportunity to better harmonize LLW and hazardous waste regulation. For example, the scenarios postulated to cause exposure to radiation or chemicals used by NRC and EPA respectively are different. Having all of the programs at one agency could facilitate harmonization in this respect. Currently, the agencies are working at harmonizing risk levels and risk management in their programs, but the effort might be more efficient if a single agency were responsible for waste programs.

None of the subsumed issues would be applicable since NRC would not regulate LLW disposal.

3. Impacts

Regulatory Changes Required - Changes to both the Atomic Energy Act and LLRWPAA would be required. NRC would also rescind 10 CFR Parts 61 and 62 once its responsibilities in LLW disposal were eliminated. Portions of 10 CFR Part 20 may also need to be rescinded, such as those defining shipping manifest requirements and disposal of medical waste.

NRC Program Impacts and Efficiencies - Assuming that legislative changes could be effected, NRC would no longer be involved in LLW disposal and no resources would be needed or budgeted. Several staff years would probably be required to help effect legislation in Congress. The agency would save on the order of 5-10 FTE from its current levels in the LLW program, not including peripheral support activities.

Option 6: Accept Long-Term Storage

1. Option

Instead of discouraging long-term storage, NRC would accept or at least explore in depth this strategy, called "assured storage," as a viable solution for managing waste. Assured storage involves a centralized storage facility similar to an earth-mounded concrete bunker, which subsequently might be converted into a permanent disposal facility. It has been argued that it may have greater public acceptance than a facility designed for permanent disposal of LLW.

2. Discussion

The sponsors of the concept (principally staff from a DOE contractor) argue that public acceptance would be greater if the public were offered a choice over whether LLW was intended for storage or disposal. They also argue that a long period of storage would provide an opportunity to obtain performance data that could be used to predict disposal facility performance.

The concept relies on institutional controls, engineered barriers, and site characteristics in decreasing order to isolate waste. Maintenance and monitoring of the facility would continue indefinitely with assured storage, and engineered barriers, such as concrete vaults, could be repaired as necessary. By contrast, the disposal facility regulation in 10 CFR Part 61 places emphasis on site characteristics, and limits the period of institutional controls.

Since assured storage is a new concept, consideration would need to be given to NRC's established review procedures for a license application and whether they would ensure the protection of the public health and safety and the

environment for this type of facility. In doing so, several complex issues would need to be addressed. For example, NRC would need to determine at what point indefinite storage constitutes disposal. Accordingly, it is not clear whether consideration of a license application would occur under 10 CFR Part 30, 10 CFR Part 61, or perhaps under a new section developed in response to a petition for rulemaking, in accordance with the provisions in 10 CFR Part 2.802. This issue, and the overall approach to licensing such a facility, are important licensing matters that would require a thorough review by the staff and the Commission.

The staff has also identified several other issues for consideration: the need to ensure adequate financial assurance for the ultimate disposition of the waste, and the storage of special nuclear material (SNM) that might necessitate another licensing action in addition to that for the storage of byproduct and source material. If SNM is to be included in the inventory of stored LLW, then licensing under 10 CFR Part 70, or equivalent Agreement State regulations, would be required. In addition, if the SNM inventory were to exceed the limits in 10 CFR 150.11, an NRC license would be required even if the facility were to be located in an Agreement State.

As noted below in the impacts section, any of Options 1 through 4 could be selected with this option, and the subsumed issues would be addressed as stated for each option. Logically, however, if NRC advocated LLW storage, its disposal efforts could be reduced.

3. Impacts

Regulatory Changes Required - Although States are responsible under the LLRWPAA for developing disposal capacity, and assured storage facilities would not fulfill that obligation, there are no penalties remaining in that law that would prevent or discourage a State from pursuing assured storage. The framework for licensing for storage in 10 CFR 30, 40, and 70 is only for interim storage. NRC could investigate potential revisions to existing regulations or development of new regulations to address assured storage facilities.

NRC Program Impacts and Efficiencies - If the storage facility were in a non-Agreement State, NRC would license the facility. If it were in an Agreement State, NRC would probably be required to issue an SNM license for possession of special nuclear material. It is estimated that several FTE and a year or longer would be required to license the facility in a non-Agreement State. The time could be much longer if there were public opposition. About one staff year would be required for an SNM license.

This option is not independent of other options in this paper. For example, one State could proceed with an assured storage facility, while others continued development of disposal facilities. Thus, NRC could consider which of Options 1-4 it should adopt to address any ongoing disposal program in the States.

V. COMMISSION'S PRELIMINARY VIEWS

Staff actions regarding the various options should be held in abeyance pending the Commission's final decision on this issue paper.

The Commission's preliminary view on this issue is that the preferred option is Option 2 (Assume a Strong Regulatory Role in the National Program). This option would encompass all of the activities that were performed before the recent reductions in the low-level waste program.

In addition, the Commission seeks public comment on whether NRC should involve itself to a greater degree in implementing this option in such a way as to encourage an integrated approach to the regulation of LLW handling, processing, recycle, and disposal. For example, should NRC actively participate in the development of new technologies for waste compaction and better waste forms for on-site storage for licensees, to maximize safety and efficiency across the entire waste management and disposal process? Further, how should NRC address unauthorized disposal? Adopting such an approach would, of course, require that the NRC have a strong presence in the National low-level waste program and maintain an appropriate set of core capabilities.

APPENDIX A

Table 1--Summary of LLW Program Options

Activity	Description	Option 1* Assume Greater Leader Role	Option 2 Expand Program	Option 3 Retain Current Program	Option 4 Recognize Progress & Reduce Program	Option 5 Transfer to EPA	Option 6* Accept Assured Storage	Consequences of Eliminating a Program or Function
Rulemakings	Revisions to Part 61 and Part 20, such as conforming Part 61 to Part 20 effective dose equivalent requirements.	Varies	Yes	No	No	No	Varies	NRC would not make conforming changes to Part 61, for example, to conform to Part 20 dose specifications. NRC would not assume any major rulemakings in LLW disposal.
Petitions	Responses to Petitions submitted by outside parties	Varies	Yes	Yes	Yes	No	Varies	NRC would be unable to respond to petitions from licensees, industry and the public.
Policy and Guidance Development	Includes staff technical positions and other staff guidance. Current efforts are performance assessment BTP. Generic Letter on LLW storage, baghouse dust technical position.	Varies	Yes	Limited	No	No	Varies	States would have less information on how to interpret requirements in Part 61. Licensees would have less flexibility in implementing current regulations.

Table 1--Summary of LLW Program Options

Activity	Description	Option 1* Assume Greater Leader Role	Option 2 Expand Program	Option 3 Retain Current Program	Option 4 Recognize Progress & Reduce Program	Option 5 Transfer to EPA	Option 6* Accept Assured Storage	Consequences of Eliminating a Program or Function
Existing SNM Disposal License Maintenance	Includes maintenance of SNM licenses for Hanford and Barnwell.	Yes	Yes	Yes	Yes	No	Yes	States or EPA would have to assume all current NRC SNM licensing responsibilities at Barnwell and Hanford.

Table 1--Summary of LLW Program Options

Activity	Description	Option 1* Assume Greater Leader Role	Option 2 Expand Program	Option 3 Retain Current Program	Option 4 Recognize Progress & Reduce Program	Option 5 Transfer to EPA	Option 6* Accept Assured Storage	Consequences of Eliminating a Program or Function
Review New License Applications	New applications could be received from non-Agreement States (CT, NJ, & MI) or DOE for a GTCC facility. Also, applications for SNM possession are possible for new facilities in Agreement States.	Yes, with reprogrammed staff	Yes	Yes, with reprogrammed staff	Yes, with reprogrammed staff	No	Yes, with reprogrammed staff	If eliminated from NRC responsibility, EPA or a State would have to perform licensing. If NRC responsibility retained but resources not dedicated to and budgeted for LLW program, would have to reprogram (take resources from other waste programs) when application was received.
Topical Report Reviews	Includes review of topical reports related to LLW disposal submitted by vendors.	Varies	Yes	No	No	No	Varies	Vendors would have to rely on case-by-case reviews in the States in which their processes or products were used or on State reviews of topical reports. Could mean greater costs for vendors, possibility of inconsistent reviews.

Table 1--Summary of LLW Program Options

Activity	Description	Option 1* Assume Greater Leader Role	Option 2 Expand Program	Option 3 Retain Current Program	Option 4 Recognize Progress & Reduce Program	Option 5 Transfer to EPA	Option 6* Accept Assured Storage	Consequences of Eliminating a Program or Function
Inspections	Includes inspections of the Hanford and Barnwell disposal facilities	Yes	Yes	Yes	Yes	No	Yes	NRC could not eliminate inspections of Barnwell and Hanford until legislation removing NRC as licensing agency were passed.
20.2002 disposals	Licensees can request on site or off site disposal authorization under this provision. Typically such requests are received when the hazard is low and the cost of conventional disposal is very high.	Yes	Yes	Yes	Yes	Yes	Yes	Elimination of this activity would reduce the disposal option available to licensees now and would increase costs to licenses in those cases where a 20.2002 disposal was a viable option. Elimination could also impede the decommissioning of sites where radioactive material is stabilized onsite.
Agreement State Reviews	As part of the comprehensive evaluation of State programs. NRC staff conducts reviews of Agreement State LLW programs to determine if they are adequate.	Yes	Yes	Yes	Yes	No	Yes	Could increase the likelihood that a State with a marginal regulatory program would go undetected.

Table 1--Summary of LLW Program Options

Activity	Description	Option 1* Assume Greater Leader Role	Option 2 Expand Program	Option 3 Retain Current Program	Option 4 Recognize Progress & Reduce Program	Option 5 Transfer to EPA	Option 6* Accept Assured Storage	Consequences of Eliminating a Program or Function
Technical Assistance to States	NRC provides various kinds of technical assistance to States, including support for workshops, meetings, and technical and regulatory reviews.	Varies	Yes	Limited	Very limited	No	Varies	States would have to obtain their own expertise in specialized areas. In other cases, States would be unable to answer questions or address certain issues in LLW disposal, such as the basis for information in the Part 61 EIS.
Research	NRC performs research to confirm the safety basis for licensing LLW disposal, including infiltration, long-term performance of concrete and other engineered barriers, and performance assessment.	Varies	Yes	Limited	Limited	No	Varies	"Yes" means research would be conducted in many areas, including those only relevant to LLW. "Limited" means only research applicable to both decommissioning and LLW disposal. Staff expertise in LLW technical issues would diminish with time.
International Activities	NRC participates in international standards development, meets with regulatory staff from other countries on U.S. LLW disposal program, and supports IAEA and NEA activities.	Varies	Yes	Yes	No	No	Varies	NRC would relinquish leadership role in international activities.