POLICY ISSUE
INFORMATION

October 17, 2007 SECY-07-0180

FOR: The Commissioners

FROM: Luis A. Reyes
Executive Director for Operations

SUBJECT: STRATEGIC ASSESSMENT OF LOW-LEVEL RADIOACTIVE WASTE REGULATORY PROGRAM

PURPOSE:

To provide the Commission with a description and results of the staff's strategic assessment of the U.S. Nuclear Regulatory Commission's (NRC's) low-level radioactive waste (LLW) regulatory program. The results of this strategic assessment include a prioritized listing of ongoing and future staff actions and activities, along with associated schedules and resource estimates. This paper does not address any new commitments.

SUMMARY:

In this paper, the NRC staff provides the results of its strategic assessment of the agency's LLW regulatory program, along with a description of the process used to perform the assessment. Twenty potential activities that the staff could undertake to improve the LLW regulatory framework were evaluated and prioritized. The staff ranked 7 of these as high priority. The enclosed report provides a detailed discussion of the strategic assessment process and results.

CONTACTS: Michael Tokar, FSME/DWMEP
(301) 415-5381

James E. Kennedy, FSME/DWMEP
(301) 415-6668

James Shaffner, FSME/DWMEP
(301) 415-5496

BACKGROUND:

The primary statutory drivers of the NRC's LLW regulatory program are the Atomic Energy Act (AEA) of 1954, as amended, and the Low-Level Radioactive Waste Policy Amendments Act (LLRWPAA) of 1985. The AEA provides the authority by which the NRC regulates the possession and use of nondefense-related radioactive material.

Congress enacted the LLRWPAA to ensure that disposal capacity would be available for all types of LLW generated by AEA licensees. The LLRWPAA also required that certain actions be undertaken by NRC, including development of guidance for licensing engineered disposal facilities, promulgation of a rulemaking for granting emergency access to disposal facilities, and establishing procedures and the technical capability for processing a LLW disposal facility license application within 15 months of receiving an application. As a result, the NRC's LLW regulatory program at its height (in 1986) was staffed by approximately 28 full-time equivalents (FTE). The FTE level ranged from 13 to 22 until the mid-1990s, when the program was scaled back because of the completion of the NRC's LLRWPAA-related activities and an overall reduction in LLW activities nationwide, as no new disposal sites were developed.

The magnitude and scope of the NRC's current LLW regulatory program reflects a decision made by the Commission in response to an issues paper prepared by the staff in 1996.[1] The Commission chose to maintain a program of 5-10 FTE, 1 of 6 options presented in the paper. Currently, more than half of these resources (i.e., approximately 70% of the 5 FTE in fiscal year (FY) 2008) are dedicated to baseline work, which includes: (1) import/export licensing; (2) providing technical support to other programs on LLW disposal issues; (3) reviewing and approving 10 CFR 20.2002 alternative disposal requests; and (4) addressing issues identified by the Commission, such as depleted uranium waste classification and 10 CFR 20.2002 transparency measures. The staff also works with external organizations (for example, the Agreement States and other Federal entities such as the U.S. Government Accountability Office (GAO), U.S. Department of Energy, U.S. Environmental Protection Agency, and U.S. Army Corps of Engineers) in addressing LLW disposal issues.

Meanwhile, several issues have been identified and grown in importance, in part because no new disposal sites have been developed. Examples of these issues include the following:

- The desire of industry for greater flexibility and reliability in LLW disposal options;
- Increased storage of Class B and Class C LLW because of the potential closing of the Barnwell, South Carolina, disposal facility in 2008 to out-of-compact waste generators;
- The coming need to dispose of large quantities of power plant decommissioning waste, as well as depleted uranium from enrichment facilities;
- Increased security concerns; and,

[1] "Direction Setting Issue 5: Low-Level Waste," September 16, 1996, ADAMS ML061700297.

- New waste streams that may be generated (for example, by the next generation of nuclear reactors and the potential reemergence of nuclear fuel reprocessing in the United States).

These and other issues have prompted much interest from several national organizations regarding the current status of regulation and disposal of LLW. The concerns of several of these groups are contained in position papers issued by the American Nuclear Society and Health Physics Society; ACNW&M letter reports; recent reports issued by the GAO; and questions and issues raised in various forums by the National Academy of Sciences (NAS), industry groups, such as the Nuclear Energy Institute (NEI) and Electric Power Research Institute (EPRI); and public interest groups, such as the Sierra Club. In some cases, these organizations have recommended specific actions the staff could take to address their concerns, ranging from developing regulatory guidance for implementing 10 CFR 20.2002 (alternative disposal methods) to making major revisions to the NRC's LLW disposal regulations in 10 CFR Part 61.

In addition to such external factors, internal factors also influence the staff's ability to achieve the agency's LLW objectives. An example of an internal factor is the serious challenge to the agency's knowledge base in the LLW area posed by the approaching retirement of much of the senior staff. The small size and unique nature of the program make it difficult to recruit and train new staff while meeting programmatic goals.

Because the demands on LLW program resources are greater than the resources available, the program needs a strategy to identify and prioritize the tasks to be performed in response to these internal and external considerations. Consequently, NRC staff undertook the effort described below to assess the current LLW regulatory program to ensure that it remains positioned to achieve agency objectives.

DISCUSSION:

The strategic assessment process involved four major steps: (1) development of strategic objectives and goals; (2) information gathering; (3) evaluation of the information obtained; and (4) decisionmaking. The complete report is contained in the enclosure. With regard to the first step, the staff formulated a strategic objective to be consistent with, and to complement, the overall agency goals provided in the NRC's FY 2004 – 2009 Strategic Plan[2] and draft FY 2007-FY 2012 Strategic Plan.[3] As indicated in both plans, the agency's overarching strategic objective is to, "enable the use and management of radioactive materials and nuclear fuels for beneficial civilian purposes in a manner that protects public health and safety and the environment, promotes the security of the nation, and provides for regulatory actions that are open, effective, efficient, realistic and timely." Both plans calls for the assessment of key issues affecting the safe management of civilian LLW and further note that NRC programs should,

[2] U.S. Nuclear Regulatory Commission, "FY 2004–2009 Strategic Plan," NUREG-1614, Vol. 3, August 2004.

[3] U.S. Nuclear Regulatory Commission, "FY 2007 - 2012 Strategic Plan," NUREG-1614, Vol. 4, August 2007. The draft plan, which will be finalized by the Commission after it receives and considers public comments, will replace the current FY 2004-2009 Strategic Plan.

" . . . anticipate challenges and respond quickly to changes in the regulatory and technical environment."

The strategic objective developed for the LLW program is as follows:

> The objective of NRC's LLW regulatory program is to provide for a stable, reliable, and adaptable regulatory framework for effective LLW management, while maintaining safety, security and protection of the environment.

In carrying out this strategic assessment, the staff used a variety of means to elicit stakeholder input, including participating in a workshop organized and led by the Low-Level Waste Working Group of the Advisory Committee on Nuclear Waste and Materials (ACNW&M) and issuing a *Federal Register* Notice[4] asking for comments from the public on the staff's approach. The staff also solicited opinions and suggestions from Agreement State regulators and representatives of industry groups. In addition, the staff considered concerns and opinions presented in recent position papers issued by national scientific and technical organizations.

After considering stakeholder input and factoring in its own experience, the staff developed a list of proposed activities that supported the strategic objective and were responsive to identified programmatic needs. The staff evaluated 20 activities and assigned them priorities of high, medium, or low. The enclosed report contains a full discussion of the bases for the ranking and prioritization of each of the 20 tasks, including those with a medium or low ranking. After consideration of the potential activities that the staff could undertake to improve the LLW regulatory framework, the staff believes, like ACNW&M,[5] that the current regulations are fully protective of the public health and safety and worker health and safety. At the same time, there are a number of opportunities for better risk-informing the LLW regulatory framework and improving the effectiveness of LLW management and regulation. The 20 activities evaluated in this assessment would contribute to those goals.

Table I shows the activities assigned a high priority. The staff evaluated these activities in more detail to determine how budgeted resources in FY 2008 and FY 2009 should be applied, using the same prioritization criteria described above. The staff then established tentative schedules for FY 2008 and FY 2009. As shown in the table, the staff projects that it will complete the first three of the highest ranked tasks by the end of FY 2008. The staff expects to initiate work on the fourth task in second quarter of FY 2008 and will complete it no earlier than FY 2009, based on available resources. The staff will initiate work on the remaining tasks listed in the table as resources become available. It is important to note that the staff's projected schedule assumes the expertise of the current staff (as discussed in Appendix E of the enclosed report); significantly more time would be needed to complete the activities using new or less-experienced staff). The staff plans to revisit the unscheduled tasks as part of the budget process in the out-years to assess whether the current priorities should change as a result of changing external and internal factors.

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[4] *Federal Register* Notice, Vol. 71. No. 130, pp 38675-38676, July 7, 2006.

[5] Letter from Michael Ryan, Chairman, ACNW&M, to Nils Diaz, Chairman, NRC, December 27, 2005.

Table I: LLW Program Tasks Prioritized as High

Task No.	Task Description	Resources (FTE)	Schedule
1	Review and Update Guidance on Extended Storage of LLW for Materials and Fuel Cycle Licensees, and Review Industry Guidance for Reactors	1.2	Complete 2nd Quarter FY08 (first task) Complete 4th Quarter FY08 (second task)
2	Develop and Implement Guidance on 10 CFR 20.2002 Alternate Disposal Requests	1.3	Initiated 3rd Quarter FY07 Complete 4th Quarter FY08
3	Determine if disposal of large quantities of depleted uranium from enrichment plants warrant change in uranium waste classification	1.4	Initiated 3rd Quarter FY07 Complete 4th Quarter FY08
4	Update Branch Technical Position on Concentration Averaging and Encapsulation	2.0	Begin 2nd Quarter FY08
5	Develop Procedures for Import/Export Reviews	1.0	Initiate in FY09
6	Develop Guidance Document on Alternate Waste Classification (10 CFR 61.58)	3.6 - 4.3	Revisit in FY09
7	Perform Scoping Study on Byproduct Material Financial Assurance	0.2 - 0.4	Revisit in FY09

It should also be noted that the NEI has recently indicated that it plans to submit reports for NRC review addressing some of the activities in the above table. NRC staff has met several times with NEI to discuss their efforts, which in the near-term, include an industry report on extended storage guidance for nuclear power plants which the staff plans to review. Staff also plans to meet with NEI on other reports as they are developed. NRC's review and endorsement of industry reports on these issues will leverage industry's efforts, will save staff resources, and will enable the staff to address a broader set of LLW issues with the current resources.

The activities in Table I address a number of important issues. Several of the activities are focused on facilitating the disposal of LLW, while looking for opportunities to further risk inform LLW management, and ensure that LLW will continue to be managed safely whether or not the Barnwell disposal facility closes to out-of-compact LLW generators in 2008, as currently projected. Updated LLW storage guidance, new or updated guidance on risk-informing disposals (using the provision in 10 CFR 61.58 and staff's concentration averaging guidance), and an examination of financial assurance in light of increased costs due to storage of LLW will help to ensure safe LLW management and facilitate disposal of certain wastes. Further, the development of staff procedures for evaluation of 10 CFR 20.2002 alternate disposal and import/export licensing requests will significantly improve internal efficiency, as well as provide needed guidance to licensees on staff's expectations for these requests. Lastly, the examination of disposal of large quantities of depleted uranium from enrichment plants will be responsive to a specific Commission request of the staff and provide a predictable regulatory framework for these licensees.[6]

In conducting this assessment, the staff sought the views of the Agreement States, which play a significant role in the regulation of LLW management and disposal. The States of

[6] Commission Memorandum and Order CLI-05-20, October 19, 2005.

Washington, South Carolina, and Texas commented on the NRC LLW regulatory program at the ACNW&M working group meeting, or in formal letters, or both. The staff also held teleconferences with officials from the States of Tennessee and Utah to obtain their views. These particular States play major roles in the regulation of LLW in the United States. As the staff implements the activities in Table I, it will continue to coordinate with Agreement States to ensure that their experience is considered and that the guidance developed will be useful in their programs.

RESOURCES:

Schedules for the activities in tasks 1-4 in Table I are based on budgeted resources. In FY 2008 and FY 2009, the LLW program budget is 5.0 and 7.0 FTE respectively. In both years, 3.5 FTE per year is allocated to baseline LLW activities. The remaining 1.5 FTE (FY 2008) and 3.5 FTE (FY 2009) will therefore be used for the tasks identified in Table I. No new resources are required. Schedules for other activities in Table I and in this assessment (Appendix C, Table C-1) will be addressed later in FY 2008 and beyond, and as the first several tasks near completion.

COORDINATION:

The Office of the General Counsel has reviewed this paper and has no legal objections. The Office of the Chief Financial Officer has reviewed this paper for resource implications and has no objections. The staff plans to brief the ACNW&M on this topic later this calendar year.

/RA/

Luis A. Reyes
Executive Director
for Operations

Enclosure:
Strategic Assessment of the NRC's
Low-Level Radioactive Waste
Regulatory Program

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Enclosure:
Strategic Assessment of the NRC's
Low-Level Radioactive Waste
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OFC	EPPAD	EPAD:BC	EPAD:DD	OGC	CFO
NAME	MTokar	RWhited	SFlanders	FCameron (NLO) (GSMizuno for)	LBarnett
DATE	05/25/07	06/04/07	05/31/07	05/24/07	05/14/07
OFC	DWMEP	TechEd	FSME	EDO	
NAME	LCamper	CPoland	CMiller	LAReyes	
DATE	06/01/07	06/19/07	10/01/07	10/17/07	

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