UNITED STATES
NUCLEAR REGULATORY COMMISSION
ADVISORY COMMITTEE ON NUCLEAR WASTE AND MATERIALS
WASHINGTON, D.C. 20555-0001

ACNWMR-0268

October 1, 2007

The Honorable Dale E. Klein
Chairman
U.S. Nuclear Regulatory Commission
Washington DC 20555-0001

SUBJECT: LOW-LEVEL RADIOACTIVE WASTE (LLW) MINIMIZATION STRATEGIES AND VIEWS ON COMMERCIAL LLW MANAGEMENT

Dear Chairman Klein:

In June 2008, the Barnwell disposal facility in South Carolina, one of only three licensed, commercially operated, low-level radioactive waste (LLW) disposal facilities in the country, will likely stop accepting LLW from states outside the Atlantic Compact (South Carolina, New Jersey, and Connecticut). LLW generators in 36 States will be affected when the Barnwell facility closes to non-compact states. In anticipation of this change, at the182nd meeting of the Advisory Committee on Nuclear Waste and Materials, the Nuclear Energy Institute (NEI) presented its plans for the management of commercial LLW.

The NEI presentation covered the following topics:

1 Plans to store Class B and Class C LLW safely and securely at nuclear power plant sites.

1 Operational changes at nuclear power plants to reduce Class B and Class C LLW generation.

1 Plans to reduce waste, particularly Class B and Class C LLW.

The NEI representative reported on both the short-term and long-term (strategic) issues that NEI is studying. The speaker noted that NEI recently formed the LLW Executive Committee (Executive Committee) to consider what should be done in the long term to improve the management of commercial LLW. The Executive Committee will focus on the following questions:

1 Is central processing, packaging, and storage of LLW feasible?

2 Is access to Federal disposal an option?

3 Should a Federal title be established for some classes of LLW?

4 Should the industry and government encourage development of other LLW commercial disposal sites?

5 Should industry petition rulemaking to Title 10 of the *Code of Federal Regulations* (10 CFR) Part 61, "Licensing Requirements for Land Disposal of Radioactive Waste"?

6 Should there be improved U.S. alignment with International Atomic Energy Agency (IAEA) framework for waste classification?

7 Are changes to the LLW Policy Act and its amendments necessary?

The Executive Committee intends to issue a report in early 2008 with its views on these issues.

OBSERVATIONS

Nuclear power plants are focused on interim LLW storage from the present through 2035. This is based on the predicted decommissioning schedules of the current fleet of power reactors at the end of one 20-year license renewal. The nuclear power industry reports that it is prepared to store Class B and Class C LLW for an extended period of time in interim waste storage facilities collocated at the reactor sites. To achieve this objective, the utilities have considered ways to reduce the volumes of Class B and Class C LLW that they generate. NEI indicated that by volume, nuclear power plant wastes are 86 percent, 11.9 percent, and 1.2 percent Class A, B, and C LLW, respectively. The key radionuclides that are driving overall classification are nickel-63, cesium-137, and strontium-90.

The types and kinds of commercial LLW being generated by other industries are less certain, and this sector is likely to be less prepared to manage and store LLW for any extended period of time.

The NEI representative reported that they are looking at the original technical bases (waste volumes, radioactive material content, waste form, and waste packaging) underlying the 10 CFR Part 61 regulation and are comparing these bases against LLW produced today. NEI is further considering a petition under 10 CFR 61.58, "Alternative Requirements for Waste Classification and Characteristics," to propose an alterative LLW waste classification system. They would like the alternative classification to maintain compliance with the protection criteria for the LLW disposal site as defined in 10 CFR 61.41, "Protection of the General Population from Releases of Radioactivity"; 10

CFR 61.42, "Protection of Individuals from Inadvertent Intrusion"; 10 CFR 61.43, "Protection of Individuals During Operations"; and 10 CFR 61.44, "Stability of the Disposal Site After Closure." Additionally, NEI is reexamining staff guidance found in the Branch Technical Position on Waste Averaging. This review will consider alternative averaging schemes that account for the characteristics of currently generated waste.

To ease the disposal burden on other LLW generators (hospitals, universities, research institutions, etc.), non-Part 61 disposal options, such as Resources Conservation and Recovery

Act (RCRA) Subtitle C and D sites, might be suitable for certain types of Class A LLW and other low-activity radioactive wastes (LAW) without having significant impacts on public health and safety and the environment.

Improved information is needed regarding types and kinds of LLW and LAW being generated by other industries to make decisions concerning alternative disposal of these wastes. This information could provide the technical basis for possible guidance or rulemaking regarding disposal of LAW at RCRA sites. The Committee intends to examine this issue in more detail over the next year and is developing a white paper on this topic.

RECOMMENDATION

The Committee recommends that the Commission initiate efforts in the near future to address interim storage and ultimate disposal options for LLW. Both the regulatory and institutional issues need to be addressed. It is important to integrate stakeholders into this dialogue as early as possible since this is a topic of significant public interest.

The Committee intends to track developments related to the forthcoming Executive Committee findings and compare those with the staff's 2006 LLW strategic planning recommendations.

Sincerely,
/RA/
Michael T. Ryan
Chairman

To ease the disposal burden on other LLW generators (hospitals, universities, research institutions, etc.), non-Part 61 disposal options, such as Resources Conservation and Recovery

Act (RCRA) Subtitle C and D sites, might be suitable for certain types of Class A LLW and other low-activity radioactive wastes (LAW) without having significant impacts on public health and safety and the environment.

Improved information is needed regarding types and kinds of LLW and LAW being generated by other industries to make decisions concerning alternative disposal of these wastes. This information could provide the technical basis for possible guidance or rulemaking regarding disposal of LAW at RCRA sites. The Committee intends to examine this issue in more detail over the next year and is developing a white paper on this topic.

RECOMMENDATION

The Committee recommends that the Commission initiate efforts in the near future to address interim storage and ultimate disposal options for LLW. Both the regulatory and institutional issues need to be addressed. It is important to integrate stakeholders into this dialogue as early as possible since this is a topic of significant public interest.

The Committee intends to track developments related to the forthcoming Executive Committee findings and compare those with the staff's 2006 LLW strategic planning recommendations.

Sincerely,
/RA/
Michael T. Ryan
Chairman

DOCUMENT NAME: Accession #:ML072710099
To receive a copy of this document, indicate in the box: "C" = Copy without attachment/enclosure
"E" = Copy with attachment/enclosure **"N"** = No copy
* See previous concurrence

OFFICE	ACNW&M	ACNW&M	ACNW&M SUNSI	ACNW&M	ACNW&M ACRS
NAME	MLee	ADias	JFlack	FGillespie	FPG for MTR
DATE	09/ 28 /07	09/ 28 /07	09/ 28 /07	09/ 28 /07	09/ 28 /07

OFFICIAL RECORD COPY

ACRS/ACNW&M ROUTIN SLIP (CONCURRENCE)

Document Name: C:\MyFiles\Checkout\Letter on LLW Briefings from 9-18-07 rev1_mod09242007_clean.doc

SUBJECT:

Name/Concurrence	Dates
M. Lee	/ /07
A. Dias	/ /07
F. Gillespie	/ /07
	/ /07
	/ /07
	/ /07

Will this document be put in ADAMS? X Yes ☐ No

FILE CODE:

Adams Accession No.: ML072710099