

October 10, 2000

B. John Garrick, Chairman  
Advisory Committee on Nuclear Waste  
U.S. Nuclear Regulatory Commission  
Washington, D.C. 20555

SUBJECT: ADVISORY COMMITTEE ON NUCLEAR WASTE RECOMMENDATIONS  
FROM SITE VISITS IN THE UNITED KINGDOM AND FRANCE,  
MAY 15 -19, 2000

Dear Chairman Garrick:

In May of this year, the Advisory Committee on Nuclear Waste visited nuclear waste management sites and participated in information exchanges in the United Kingdom (UK) and France. This letter responds to your letter, dated August 18, 2000, in which you provided observations from your trip and recommendations from your site visits and information exchanges. Your six recommendations address:

- The classification of radioactive wastes containing low levels of radioactive material;
- The rubblizing of concrete, to monitor the interior of concrete, to demonstrate compliance with radiation standards;
- Clearance of materials from facility decommissioning activities;
- Public and other stakeholder involvement in waste repository siting;
- The use of clear, concise, and simplified communication of key issues, results, and uncertainties, to stakeholders; and,
- Color-coded "standard" radiation warning signs used in France.

Our responses to your recommendations are enclosed. Thank you for providing the Commission with recommendations generated by your visits to European nuclear material facilities, and by your interactions with government regulatory agencies, licensees, developers, and other stakeholders involved in decommissioning and waste disposal in France and the UK.

Sincerely,  
*/RA/*

William D. Travers  
Executive Director  
for Operations

Enclosure: "Responses to ACNW Comments Generated by Its May 2000 Visit to the United Kingdom and France," with Attachment "Public Outreach Flyers"

cc: Chairman Meserve                      Commissioner McGaffigan  
w/encl Commissioner Dicus              Commissioner Merrifield  
w/o Commissioner Diaz                  SECY  
att.

SUBJECT: ADVISORY COMMITTEE ON NUCLEAR WASTE RECOMMENDATIONS  
FROM SITE VISITS IN THE UNITED KINGDOM AND FRANCE,  
MAY 15 -19, 2000

Dear Chairman Garrick:

In May of this year, the Advisory Committee on Nuclear Waste visited nuclear waste management sites and participated in information exchanges in the United Kingdom (UK) and France. This letter responds to your letter, dated August 18, 2000, in which you provided observations from your trip and recommendations from your site visits and information exchanges. Your six recommendations address:

- The classification of radioactive wastes containing low levels of radioactive material;
- The rubblizing of concrete, to monitor the interior of concrete, to demonstrate compliance with radiation standards;
- Clearance of materials from facility decommissioning activities;
- Public and other stakeholder involvement in waste repository siting;
- The use of clear, concise, and simplified communication of key issues, results, and uncertainties, to stakeholders; and,
- Color-coded "standard" radiation warning signs used in France.

Our responses to your recommendations are enclosed. Thank you for providing the Commission with recommendations generated by your visits to European nuclear materialN facilities, and by your interactions with government regulatory agencies, licensees, developers, and other stakeholders involved in decommissioning and waste disposal in France and the UK.

Sincerely,  
*/RA/*

William D. Travers  
Executive Director  
for Operations

Enclosure: "Responses to ACNW Comments Generated by Its May 2000 Visit to the United Kingdom and France," with Attachment "Public Outreach Flyers"

cc w/encl w/o att:

Chairman Meserve, Commissioner McGaffigan, Commissioner Dicus, Commissioner Merrifield, Commissioner Diaz, SECY

**Distribution:** EDO Ticket: G20000407 ADAMS Accession Number: ML003754846(pkg)

NMSS R/F EPAB DCBr/f EDO/r/f DWMr/f PTressler SBurns  
CPaperiello CRC-00-0274 AThadani CPoland Jholonich

\* - See Previous Concurrence

OFFICE:	DWM/EPAB*	Editor*	EPAB*	DWM
NAME:	RTurtill	EKraus	TEssig	JGreeves
DATE:	9/27/2000	9/28/2000	9/27/2000	9/28/2000
OFFICE:	NMSS	DEDMRS	OEDO	
NAME:	WKane	CPaperiello	WTravers	
DATE:	10/02/2000	10/6/00	10/10/00	/ /2000

OFFICIAL RECORD COPY

**RESPONSES TO ACNW COMMENTS GENERATED BY ITS MAY 2000 VISIT TO THE UNITED KINGDOM AND FRANCE**

- **ACNW Comment and Supporting Background Information:** The ACNW noted that both the United Kingdom (UK) and France use an integrated approach to decommissioning that includes clearance of material that meets certain limits for either disposal in conventional waste disposal facilities, or unrestricted use. Both countries have developed a category of waste called very low-level waste (VLLW) that is not required to be disposed of in low-level waste (LLW) sites. In France, VLLW would go to conventional disposal sites, and non-radioactive material would be cleared for unrestricted use. **ACNW recommends that the NRC should consider development of regulatory classifications that clearly differentiate between LLW (low-level waste), VLLW (very low-level waste), and non-radioactive waste.**

**Response:** We agree that different types of waste from nuclear facilities can be classified and managed in different ways, and that current methods of classification and management could be improved to allow for more risk-informed practices.

With respect to waste that can be considered as non-radioactive, and thus cleared for unrestricted use, the staff and Commission have made this issue a priority. SECY-00-0070, "Control of Solid Materials: Results of Public Meetings, Status of Technical Analyses, and Recommendations for Proceeding," provides a summary of the extensive work done by the staff on this issue and alternatives for proceeding. On August 18<sup>th</sup>, 2000, the Commission directed the staff to contract with the National Academy of Sciences (NAS) to conduct a study that will result in recommendations on possible alternatives for release of slightly contaminated materials. Results of the study are expected in approximately 18 months. The staff is also continuing to develop technical bases to support decision-making in the future.

With respect to developing a VLLW category of wastes that could be disposed of in conventional LLW disposal sites, we have recently explored a number of more risk-informed disposal practices.

- In COMSECY-98-022, the Commission directed the staff to permit transfers of "unimportant quantities" of source material for disposal in Resource Conservation and Recovery Act hazardous waste facilities, under certain prescribed conditions, to ensure protection of public health and safety and the environment. These concentrations of source material in waste do not pose significant levels of risk to the public, and do not necessarily require disposal in a licensed LLW facility.
- In the March 9, 2000, SRM for SECY-99-259, "Exemption in 10 CFR Part 40 for Materials Less Than 0.05 Percent Source Material - Options and Other Issues Concerning the Control of Source Material," the Commission further directed the staff to revise 10 CFR Part 40 to address the "unimportant quantity" exemption, and to explore with other Federal Agencies how to better address low-activity source material. Alternative disposal of these low-activity source materials will be a part of this discussion.

Enclosure

*Response to ACNW Comments  
Generated by European Visit*

- In a July 26, 2000, SRM on SECY-99-012, concerning disposal of non-11e.(2) byproduct material in mill tailings impoundments, and the use of “alternate feed” materials in uranium mills, the Commission directed the staff to allow more flexibility in the disposal of other types of radioactive waste (particularly that which is not highly radioactive) in uranium mill tailings impoundments.
- In a June 15, 2000, letter to the NAS, the staff committed to participating in and exploring funding for the Academy’s proposed study, “Improving Practices for Regulating and Managing Low-Activity Radioactive Waste.”

We will keep the ACNW apprised of any significant developments regarding these efforts.

- **ACNW Comment and Supporting Background Information:** At Sellafield, in the UK, the Committee members toured decommissioning activities at the “Windscale Piles.” The Committee reported that concrete “rubble” is broken up into small aggregate size to facilitate monitoring for radioactivity. **ACNW recommends that the UK method of rubblizing concrete to an aggregate of small pieces seems to solve the problem of how to monitor the interior of concrete. ACNW suggests that the NRC consider this process as a method of demonstrating compliance with a radiation standard.**

**Response:** The U.S. Nuclear Regulatory Commission (NRC) has established generic radiological screening limits for residual radioactive contamination for building surfaces. These limits were developed for NRC’s DandD computer code using a building occupancy scenario. However, NRC has not established volumetric limits such as those that could be applied to a volume of rubblized material. In setting such limits, one would have to examine other possible disposition scenarios, such as burial and/or various other reuses of the rubblized material. Radiological limits for such scenarios could be established, and in fact, NRC is exploring the need to establish such limits for the release of solid materials. Although research in this area is ongoing, limits have not been established. Until such time as NRC establishes such limits, NRC licensees are free to propose site-specific approaches similar to the UK method identified above, that are then evaluated by NRC staff.

- **ACNW Comment and Supporting Background Information:** In the UK, the unrestricted use of superficially decontaminated solid metal pieces is only allowed for objects with external surfaces that can be readily monitored. Complex shapes are reduced to simple shapes for ease of monitoring. **ACNW suggests that the NRC consider this process as a method of demonstrating compliance with surficial contamination limits.**

**Response:** Currently, NRC uses existing guidance for making decisions on specific licensing actions concerning the release of solid material. This guidance is described in an August 7, 2000, memorandum from the Office of Nuclear Materials Safety and Safeguards and the Office of Nuclear Reactor Regulation, to NRC Regional Administrators and Headquarters Offices and Divisions. Thus, on a case-by-case basis, NRC licensees can take an approach similar to the UK method to meet surface contamination limits.

On the broader question of establishing national policy and limits, NRC is in the process of examining the control of solid materials. Currently, NRC has deferred a decision on rulemaking in this area and has contracted with the NAS to study alternatives for control of solid materials. While the NAS is conducting its study, NRC is continuing development of technical bases, including study of protocols for surveying solid materials with surficial and volumetric contamination.

- **ACNW Comment and Supporting Background Information:** In both France and the UK, the ACNW noticed a significant openness in both the government and licensee interactions with the public, principally via elected public representatives such as local councils. They also make extensive use of public tours to communicate with the public. The result seems to be a long-term relationship from which trust and confidence can develop. **ACNW recommends that the NRC should consider as part of its public outreach effort issuing a document that defines specific roles, activities, and opportunities for elected representatives and other stakeholders to participate in the regulatory process.**

**Response:** In its Strategic Plan,<sup>1</sup> NRC sets forth a goal of fostering public confidence by providing the public, those we regulate, and other stakeholders in the national and international community, with clear and accurate information about, and a meaningful role in, our regulatory program. To efficiently and effectively meet this goal, NRC is developing Communication Plans for each of the major arenas identified in its Strategic Plan, including: “Nuclear Reactor Safety;” “Nuclear Materials Safety;” “Nuclear Waste Safety;” and “International Nuclear Safety Support.” The Commission believes that development and implementation of these Communication Plans for important programs supporting each arena, such as the High-Level Waste Program, are a fundamental tool of its public outreach effort. Each of these Communication Plans will contain an explicit list of affected stakeholders, as well as a detailed plan for stakeholder inclusion in the regulatory process. In addition, NRC is actively working with the staff to improve the overall ability of the Agency to communicate with internal and external stakeholders, through specific training in: communication skills and techniques, managing change, conducting meetings, and plain language.

In addition, as part of its effort to enhance its interactions with the public, NRC’s Division of Waste Management (DWM), with the support of the Center for Nuclear Waste Regulatory Analyses, has developed posters and handouts that address, at least partially, the Committee’s concerns. One such flyer illustrates the role that various Federal regulatory agencies play in the oversight of the proposed repository at Yucca Mountain. Another identifies the opportunities for public involvement in NRC’s oversight and potential licensing of the proposed repository. Printed on the back of each is more detailed, explanatory text, as well as addresses, phone numbers, and website addresses where the reader may obtain additional information. Although these publications do not address opportunities specifically for elected representatives, we believe the information provided is of broad utility to anyone, including elected officials, interested in how to participate in NRC’s regulatory process. Copies of both publications

---

2.”  
<sup>1</sup> NUREG-1614, “FY 2000-2005 Strategic Plan, “Volume 2, Part 1 and Volume 2, Part

are enclosed. It is our intent to continue to seek innovative ways to illustrate and explain NRC's regulatory program and decision-making process for the broadest possible community of interested stakeholders.

- **ACNW Comment and Supporting Background Information:** Probabilistic risk assessments (PRAs) are used extensively in the UK by both developers and regulators, whereas in France the use of PRAs is not generally accepted or required by regulatory policy. A significant concern expressed to us in both countries was the difficulty in communicating to the public highly technical reports and safety assessments. Areas of continuing concern include the transparency of risk assessments, the level of confidence that can be attached to the level of risk, and approaches to broaden stakeholder participation in the risk assessment process. **ACNW recommends that the NRC should ensure that important technical points and key documents related to public concerns are presented clearly and concisely and are simplified so that stakeholders can appreciate the key issues, results, and uncertainties.**

**Response:** NRC agrees that technical points and key documents should be presented in such a way that stakeholders can appreciate key issues, results, and uncertainties. NRC Strategic Plan clearly illustrates NRC's commitment to and focus upon this important area. The NRC has established a goal of presenting information in a manner that is readily understandable to all stakeholders to avoid unnecessarily raising stakeholder concerns. In addition, NRC is committed to further enhancing public confidence in NRC, and to ensuring that information is placed in its proper safety context and presented in a manner that is easily understood. NRC is committed to disseminating information that is clear, technically sound, accurate, reliable, objective, timely, and expressed using plain, simple English. All stakeholders should be able to rely on our statements and information.

As a part of an expanded public outreach effort, NRC's DWM has established a public outreach team of technical and support staff from DWM and the Center for Nuclear Waste and Regulatory Analysis. The job of this team is to develop and refine tools and techniques that will assist the technical staff in communicating with the public about NRC's mission and regulatory activities at Yucca Mountain. As part of its assignment, the public outreach team routinely reviews the transcripts and feedback from past public meetings to identify questions and lessons learned and to incorporate this information in preparation for future interactions. This information eventually will form the foundation of a database of frequently asked questions with plain language responses that have been reviewed and that reinforce NRC's important messages of independence and scientific objectivity. The team is also working to identify key technical topics that are frequently misunderstood or misrepresented, again with the intent of developing plain language explanations and illustrations that address these topics.

Finally, NRC recognizes that the task of presenting information about risk poses a special challenge. Public concern about nuclear safety has sometimes been high, particularly within the public who live near nuclear facilities. NRC must candidly inform the public about nuclear safety incidents and issues, provide means for meaningful input and dialogue, and demonstrate through its performance that it is a capable and objective regulator. The Agency recognizes that although the public may not always

agree with NRC actions, public confidence in NRC is enhanced when the Agency consistently carries out its mission in a thorough, disciplined, and timely manner.

- **ACNW Comment and Supporting Background Information:** At l'Aube, ACNW observed the use of a color-coded radiation hazard symbol (green for suspect areas, yellow for very low levels, orange for intermediate levels, and red or magenta for high levels) rather than the "universal" magenta. The l'Aube employees seem to be more sensitive to the distinction. As a result, the signs seem more effective than the single color signs used in the United States. **As the color-coded "standard" radiation warning signs used in France seemed very effective, ACNW recommends that the NRC consider adopting such a system.**

**Response:** The use of such a system in France appears to be quite effective. However, it would not be cost-effective at this time for NRC to revise any of its regulations and guidance to accommodate this recommendation. NRC adoption of a similar color-coded system as used in France would require fairly extensive revisions of the regulations, such as those in 10 CFR Part 20 requiring specific posting of areas.

Moreover, the current system in the United States appears to be working very well. Although a color-coded system should be considered when radiation warning posting regulations are revised, in the meantime, individual licensees are free to adopt a color-coded system, in addition to the required posting, if they wish to do so. The regulations permit licensees to post any information, together with the required postings, that they consider useful to workers. Some licensees have in fact adopted variations of such a system at their facilities, such as, for example, large blue signs that indicate low radiation areas where workers in radiologically controlled areas may wait to start their jobs. The use of a color-coded scheme such as that recommended would come under the category of additional useful information.