



UNITED STATES  
NUCLEAR REGULATORY COMMISSION  
ADVISORY COMMITTEE ON NUCLEAR WASTE  
WASHINGTON, D.C. 20555

December 23, 1997

The Honorable Shirley Ann Jackson  
Chairman  
U.S. Nuclear Regulatory Commission  
Washington, D.C. 20555-0001

Dear Chairman Jackson:

SUBJECT: 1998 STRATEGIC PLAN AND PRIORITY ISSUES FOR THE ADVISORY  
COMMITTEE ON NUCLEAR WASTE

The Advisory Committee on Nuclear Waste (ACNW) has developed a Strategic Plan that includes priority issues it will consider in 1998. A copy of the plan is attached for your consideration. The ACNW's Strategic Plan is anchored to the NRC's Strategic Plan, and supports the NRC mission, vision, and select goals, strategies and substrategies relevant to NRC's responsibilities for management and oversight of commercial nuclear waste and materials. The ACNW's Strategic Plan also interfaces with the ACNW Operating Plan, which is being updated to reflect the priority issues identified herein.

One purpose of the ACNW Strategic Plan is to guide the Committee in carrying out its mission over the next year. A highlight of the plan is identification of the Committee's near-term priority issues for this year, and longer-term issues for times beyond one year. The ACNW does not plan to focus to any great extent on most of the longer-term issues this year due to resource constraints and timeliness of these issues, unless directed to do so by the Commission. In addition to priority technical issues, activities related to ACNW operational processes that we plan to initiate this year to improve our efficiency and effectiveness are identified.

We would appreciate any comments or suggestions from the Commission.

Sincerely,

A handwritten signature in black ink, appearing to read "B. John Garrick", written over a horizontal line.

B. John Garrick  
Chairman

Attachment: As stated



## ACNW 1998 STRATEGIC PLAN AND PRIORITY ISSUES AND ACTIVITIES

This plan provides strategic direction to the ACNW in 1998 and beyond for focusing on issues most important to the NRC in carrying out its mission of protecting public health and safety, promoting the common defense and security, and protecting the environment. It also communicates ACNW's mission, vision, goals, and priority activities and shows how these goals support the NRC's Strategic Plan.

### SCOPE OF ACNW ACTIVITIES

The ACNW provides advice on issues concerning the storage and disposal of high- and low-level radioactive waste (HLW and LLW, respectively), including the interim storage of spent nuclear fuel, materials safety and decommissioning, and other issues as requested by the Commission.

### ACNW MISSION

The ACNW's mission is to provide independent and timely technical advice on nuclear waste management issues to support the NRC in its conduct of an efficient regulatory program that enables the Nation to use nuclear materials in a safe manner for civilian purposes.

### ACNW VISION, DESIRED OUTCOMES, AND COMMITMENTS

#### Vision

The ACNW strives to provide advice and recommend solutions that are forward-looking, are based upon best-available science and technology, can be implemented, and reflect the need to balance risk, benefit, and cost to society to enable the safe use of nuclear materials.

#### Desired Outcomes

The ACNW strives to:

1. provide technically sound and timely advice that can be incorporated into NRC technical approaches, documents, and regulations;
2. provide advice that reflects state-of-the-art science and technology that can be readily incorporated into NRC regulatory practices;

3. communicate its message clearly and concisely to its intended audience;
4. be respected by the Commission, NRC staff, EPA, DOE, and the public and be perceived as adding value;
5. be trusted by the public to provide frank, open advice, and offer a forum for public participation in the regulatory process, thereby making the regulatory decisionmaking process more transparent to the public;
6. assist in resolving conflicts between NRC and DOE, EPA, and other stakeholders by providing a forum for interaction, and by continually encouraging communication between and among these entities; and
7. operate in a spirit of openness as intended by the Federal Advisory Committee Act (FACA) and the Government in the Sunshine Act.

### **Commitments**

The Committee makes the following commitments in pursuit of its vision:

1. be responsive to the Commission's needs;
2. remain flexible, be responsive to change, and consider various options and contingencies;
3. foster an atmosphere of mutual problem-solving with the NRC staff;
4. challenge the status quo, as appropriate, thereby becoming an "engine for change";
5. identify in advance those issues that could have an impact on NRC's ability to achieve its mission;
6. focus on risk, by asking, "what is the risk, what are the contributors to risk, and what are the uncertainties?";
7. keep abreast of international trends and developments that could influence NRC policies or approaches;
8. maintain technical excellence and independence;
9. operate in a cost-effective and efficient manner; and

10. measure the Committee's effectiveness.

## GOALS AND OBJECTIVES

The ACNW has developed general goals and objectives consistent with its mission and vision. The five goals listed below serve to provide strategic direction for the ACNW this year and support select goals, strategies, and substrategies identified in NRC's Strategic Plan. For each goal, objectives that help us to focus on our priority issues are identified.

**Goal 1:** Assist the NRC in positioning itself to respond to external change and uncertainty in the management of nuclear waste. This goal supports the NRC mission, vision, and select strategies or substrategies under NRC Goals 2 through 7.

*Objective 1: Advise the Commission in a timely fashion on issues of a technical nature that may require changes in the regulations.*

*Objective 2: Inform the Commission about issues that could cause problems for the NRC or society if not given adequate attention, and recommend solutions.*

**Goal 2:** Strive to ensure that NRC is employing the best science in resolving key safety issues. This goal supports the NRC mission, vision, and select strategies or substrategies under NRC Goals 2 through 7.

*Objective 1: Keep abreast of cutting-edge methods and technologies being developed and utilized world-wide that are applicable for assessing and managing risks associated with cleanup, disposal, and storage of nuclear waste.*

*Objective 2: Advise the Commission on projected or perceived technical shortcomings in NRC staff capabilities that could adversely impact the agency's ability to address safety issues.*

- Goal 3:** Advise the NRC on how to increase its reliance on risk as a basis for decisionmaking, including using risk-assessment methods for waste management, that (1) implement a risk-informed approach, (2) are consistent across programs where possible, and (3) quantify and reveal uncertainties. This goal supports the NRC mission, vision, and select strategies and substrategies under NRC Goals 2 through 7.
- Objective 1:* Propose approaches and encourage the staff to gain a better understanding of the inherent risks of licensed activities in nuclear waste and materials, and the relationship between regulations, cost, and safety.
- Objective 2:* Examine risk-assessment approaches being utilized within the NRC's waste and materials programs and recommend improvements for making more transparent the underlying assumptions and associated uncertainties, incorporating greater realism where appropriate, and identifying apparent inconsistencies in approach.
- Goal 4:** Support the NRC in improving public involvement in its waste programs and gaining increased public confidence and respect. This goal supports the NRC mission, vision, and select strategies or substrategies under NRC Goal 6.
- Objective 1:* Provide opportunities through the FACA process for more public involvement in the regulatory process.
- Objective 2:* Recommend ways for the NRC to gain more meaningful public involvement in the regulatory process.
- Objective 3:* Assist the NRC in making more transparent the agency's decisionmaking process and ensuring agency documentation is thorough, clear, and readily understandable.
- Goal 5:** Improve the effectiveness and efficiency of ACNW operations. This goal supports the NRC mission, vision, and select strategies or substrategies under NRC Goal 7.
- Objective 1:* Increase the value of ACNW advice to the Commission and staff.
- Objective 2:* Improve and modify existing operational procedures to accomplish "more with less."

## PRIORITY ISSUES AND PROCESS IMPROVEMENTS

In support of its first four goals, the ACNW has identified priority issues for this year, and longer-term issues it plans to address in the future, given sufficient resources. Also identified are the criteria the Committee uses to select its priority issues. In support of its fifth goal, the ACNW has identified priority process-related activities it plans to carry out this year to improve its effectiveness.

The priority issues identified for 1998 are considered first-tier priorities, and the longer-term issues are considered second-tier ACNW priorities. The Committee does not plan to focus to any great extent on second-tier issues this year, unless directed by the Commission, or dictated by external events, such as changes in nuclear waste legislation. Each priority issue supports one or more of ACNW's goals, as indicated.

For each first-tier priority issue, the Committee plans to prepare a task action plan that identifies the nature and scope of the issue and a strategy for addressing it, including planned product[s] and schedule, and performance measures and targets that will enable the Committee to determine if it has achieved its goals.

## CRITERIA FOR SELECTING PRIORITY ISSUES

- the protection of the public health, workers, and the environment from adverse effects of the management of nuclear waste, especially in regard to disposal facilities, i.e., the risk significance of an issue;

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- issues that arise from strategies and activities of licensees and applicants;
- timeliness based on when an issue is scheduled to come before the Commission, and when the advice would be of greatest benefit to influence the Commission's regulatory decisions;
- the relationship of an issue to the NRC's Strategic Plan, including trends and directions in regulatory practice, such as the adoption of a risk-informed, performance-based method of regulation and decisionmaking;
- the potential for or likelihood of an issue to pose undue risk or costs to society;

- issues that are requested for ACNW review by the Commission or Commissioners; and
- issues that arise based on the scientific and technical basis of information supporting the safety and performance assessments of nuclear waste disposal facilities, including the quality and level of expertise involved.

### FIRST-TIER PRIORITY ISSUES

Viability Assessment and Site Characterization - The DOE is scheduled to complete its Viability Assessment (VA) by September 1998. The NRC staff anticipates receiving draft VA products before then, and submitting a Commission paper on its review of the VA in November 1998. In addition, the staff is developing Issue Resolution Status Reports (IRSRs) that document the status of and acceptance criteria for each Key Technical Issue (KTI) to support its review of the VA and License Application (LA), as well as a VA Review Plan. The staff's review of the VA will be a preliminary review of the eventual LA, and is expected to provide valuable insights. The ACNW plans to review DOE's conclusions and the NRC staff's review of the VA, as well as monitor the IRSRs. The ACNW also anticipates tracking the evolution of DOE's site characterization program and the DOE's waste isolation and containment strategy. This issue supports ACNW Goals 2 and 3.

Risk-Informed Performance-Based Regulation - The ACNW will continue to support the agency's effort to move from deterministic regulations toward risk-informed and performance-based regulation. The Committee anticipates continuing to encourage the NRC to adopt regulatory approaches that are comprehensible and enhance public understanding of the key safety issues, and continuing to encourage the NRC to use risk as a basis for setting priorities. Issues to be addressed under this topic include the following: HLW regulatory framework issues, including NRC staff's strategy to revise 10 CFR Part 60; NRC's comments on the proposed EPA HLW standard (40 CFR 197); NRC's review of DOE's proposed Siting Guidelines in 10 CFR Part 960; performance assessment, including continued monitoring of NRC's iterative performance assessments using the TPA code; problems associated with dual regulatory authority between EPA and NRC; and the evolving issues related to the use of expert judgment. This issue supports ACNW Goals 1 through 4.

Engineered Barrier System (EBS) - The ACNW will focus on the role of the EBS in the proposed repository, various components of the EBS and their

significance to performance, and the NRC's capability to evaluate EBS performance. A major focus will be on processes affecting waste package degradation and radionuclide release, including redox reactions, corrosion, radiolysis, microbiological effects, and reactions with introduced materials (e.g., concrete, iron). Also included will be the models and methods used to predict long-term degradation of waste packages over time, and the appropriate use of bounding models. This effort will likely include examining the use of coupled models to predict the near-field environment and its impact on containment, release, and transport of radionuclides. **This issue supports ACNW Goals 1 through 3.**

Decommissioning - The ACNW has a strong interest in waste disposal issues related to decommissioning. In the past, the ACNW has advised the Commission on streamlining the Site Decommissioning Management Program (SDMP), aspects of the Proposed and Final Rule on Radiological Criteria for License Termination, and lessons learned from decommissioning the Pathfinder site. The ACNW expects to review supporting guidance documents due in early 1998 for implementing the Final Decommissioning Rule, dose models and parameter selection criteria for decommissioning assessments, application of the LLW Performance Assessment Methodology to SDMP sites, and development of a multi-agency-sponsored decision support system to support decommissioning. Also of interest is the issue of incidental wastes at DOE facilities. Other activities may include tracking staff efforts to assess inherent risks of decommissioning and activities to simplify the decommissioning process, and assisting the Commission in contingency planning for a possible rapid increase in plant decommissioning due to deregulation. **This issue supports ACNW Goals 1 through 3.**

Research - The ACNW will examine waste-related research and technical assistance programs in the NRC. It will provide input to an ACRS report to Congress by February 1998, and a report to the Commission by June 1998. The ACNW will continue to monitor the NRC's research program to ensure that it is changing in response to the agency's shifting emphasis to risk-informed, performance-based regulation. This effort will include assuring that research is focused on helping to assess the relationship between regulations and safety, and understanding the inherent risks of licensed activities. **This issue supports ACNW Goals 1 through 4.**

As part of the priority technical issues described above, the Committee may focus on several initiatives throughout this year and beyond that would apply to some or all of these issues, such as international activities and seeking ways to improve public participation in NRC waste programs. International activities may include participating in technical exchanges with other

nations' regulatory waste programs or advisory panels. With respect to improved public participation, the Committee may explore ways to encourage the public to participate in ACNW meetings. If resources and time permit, the ACNW may also review lessons learned from other countries, other waste programs in the U.S., and directly from the public on ways to involve the public more meaningfully in NRC regulatory programs. An example may be to encourage the public to participate formally in the performance assessment process. These issues support ACNW Goals 2 through 4.

## SECOND-TIER PRIORITIES

Repository Design/Thermal/Coupled Processes - The ACNW will continue to focus its attention on the HLW repository design, including thermal testing and results, and the significance of coupled effects on the performance of the proposed repository. The ACNW will evaluate the adequacy of models to predict repository behavior. For example, retrievability would be considered under this topic. In addition, the issue of performance confirmation, including the type and quantity of data to be collected during this phase, will be explored. This issue supports ACNW Goals 1 through 3.

Interim Storage Facilities for Spent Fuel - The ACNW will begin to identify issues that the NRC may need to consider and prepare for in the event that proposed legislation is enacted to create a central, interim HLW storage facility. This issue supports ACNW Goals 1 through 3.

DOE Oversight - The ACNW will review waste-related activities associated with NRC's possible regulation of certain DOE facilities, if NRC assumes responsibility for those activities as a result of privatization or enactment of new legislation. This issue supports ACNW Goals 2 through 4.

LLW and Agreement States Program - The ACNW will examine the role of the NRC in LLW disposal from the perspective that current trends in the national program may ultimately interfere with society's benefiting from the use of nuclear material. The ACNW will advise the NRC on alternatives to the current national LLW disposal program. The ACNW also may examine interactions between NRC and Agreement and non-Agreement States, and whether communications can be improved. This issue supports ACNW Goals 1 and 4.

Radiation Risk Levels for Low-Level Ionizing Radiation - The ACNW will continue to examine the issue of radiation risk levels for low-level ionizing radiation. The ACNW may consider the question of what research, if any, the NRC should sponsor regarding the linear no-threshold (LNT) hypothesis, and the

appropriate regulatory approach, given the uncertainty about the LNT hypothesis. This issue supports ACNW Goals 1 through 4.

Control and Accountability of Radioactive Devices - The ACNW will examine the NRC's role in this issue, and whether, from a risk perspective, the NRC should initiate a rulemaking or take on a more aggressive role. This issue supports ACNW Goals 1 and 3.

#### PRIORITY OPERATIONAL ACTIVITIES

Operational processes or activities that the ACNW plans to implement this year in support of ACNW Goal 5, "Enhance the effectiveness and efficiency of ACNW operations," is discussed below.

Strategic Planning - On an annual basis, the ACNW will conduct a top-down planning meeting to identify primary goals and priority issues and activities, followed by a self-assessment to measure performance against these goals. The ACNW will establish performance goals and indicators to measure effectiveness, and will use such tools as customer surveys to solicit feedback from the public on the Committee's effectiveness.

Implement Changes in Operational Procedures - To improve its efficiency and effectiveness, the ACNW will improve its current processes for the following activities: letter writing, scope and duration of meetings, interactions with Commissioners and the program offices, use of ACNW staff and consultants. Improvements may include:

- ensure letters are concise and consistent;
- allow more time for strategic planning and agenda planning during meetings;
- seek more opportunities to collaborate with ACRS to explore issues of common interest;
- spend more time meeting individually with Commissioners;
- increase the number of interactions with Program Office Directors;
- use consultants to expand expertise;
- encourage ACNW staff to initiate special projects and make presentations to the Committee;

- foster an atmosphere of mutual problem solving with the staff;
- consider options for gaining earlier access to predecisional material to assist the Committee in providing more timely advice; and
- better define and limit the number of priority topics.

#### **UPDATING THIS PLAN**

The ACNW will conduct a strategic planning meeting at least once a year, and will update this plan as needed. Revisions to the plan may be based on input from the Commission, changes made to the NRC Strategic Plan or Annual Performance Plan, results from customer surveys and self-assessments, external events and factors, and available resources.