

April 18, 2001

The Honorable Richard A. Meserve  
Chairman  
U.S. Nuclear Regulatory Commission  
Washington, D. C. 20555-0001

SUBJECT: ADVISORY COMMITTEE ON NUCLEAR WASTE 2001 ACTION PLAN AND  
PRIORITY ISSUES

Dear Chairman Meserve:

The Advisory Committee on Nuclear Waste (ACNW) has modified its 2000 Action Plan to update the priority issues it will consider in the year 2001 and beyond. A copy of the Action Plan is enclosed for your consideration.

The Action Plan supports the U.S. Nuclear Regulatory Commission's (NRC's) Strategic Plan for FY 2000 - FY 2005 (NUREG-1614, Vol. 2) and supports NRC's mission, the principles of good regulation, and relevant strategies and performance goals identified by the Commission. The plan is consistent with the ACNW charter and is reflected in the ACNW Operating Plan, which will be updated to reflect the priority issues identified herein.

One purpose of the ACNW Action Plan is to guide the Committee in carrying out its mission in the near term and beyond. The Committee identifies first-tier priority issues it will address this year and the second-tier issues it will address if time and resources permit, unless directed otherwise by the Commission. In addition to the priority issues addressed in this Action Plan, the ACNW will continue to identify process improvements that it will implement to improve its efficiency and effectiveness. Process improvements will be reported in the ACNW Operating Plan submittal rather than in the Action Plan.

The Committee has identified four first-tier priority issues in this Action Plan:

1. **Site Suitability and License Application** reflect activities associated with the proposed Yucca Mountain repository, as the time for the site recommendation decision and a possible license application draws near.
2. **Risk-Informed and Performance-Based (RIPB) Regulatory Framework** acknowledges that the Committee remains committed to and engaged in the agency's move toward an RIPB regulatory structure. The Joint ACNW and Advisory Committee on Reactor Safeguards (ACRS) Subcommittee will continue to support the NRC staff and the Commission in developing and implementing an overall RIPB framework for nuclear waste and materials.

3. **Decommissioning** will remain an area of continued focus. The decommissioning topics include the development of decommissioning guidance, the decommissioning activities associated with the West Valley Demonstration Project, and continued attention to developments in the control of solid materials.
4. The **Yucca Mountain Review Plan** will contain the license application acceptance criteria and review methods. The Committee will support the staff in risk-informing the development of this plan.

The Committee has also identified the following four second-tier priority issues in this Action Plan:

1. **Research** remains a second-tier priority issue. The Committee will continue to review waste-related research performed by the Office of Research, as well as the technical assistance performed by the Center for Nuclear Waste Regulatory Analyses, and report to the Commission.
2. **Low-Level Radioactive Waste (LLW)** remains a second-tier priority issue. The Committee continues to believe that LLW disposal issues need to be resolved to allow society to continue to benefit from the use of nuclear materials.
3. **Transportation of Radioactive Waste** is now a second-tier priority item. The Committee will continue to stay informed on technical issues and support the NRC staff in its work on changes to Part 71 and on the Package Performance Study, as well as provide other assistance as the Commission requests.
4. **Proposed Private Fuel Storage Facility** is a new second-tier priority issue. The Committee will continue to stay informed of the technical issues associated with this facility design and proposed operation and provide such assistance as the Commission requests.

Risk Harmonization has been removed from the Committee's priority list this year because of time and resource limitations. We would appreciate your comments or suggestions on the enclosed Action Plan.

Sincerely,

/RA/

B. John Garrick  
Chairman

Enclosure: ACNW 2001 Action Plan

## **THE ADVISORY COMMITTEE ON NUCLEAR WASTE 2001 ACTION PLAN AND PRIORITY ISSUES AND ACTIVITIES**

This plan provides strategic direction and guidance to the Advisory Committee on Nuclear Waste (ACNW) in 2001 and beyond for addressing the issues most important to the U.S. Nuclear Regulatory Commission (NRC) in carrying out its mission to protect public health and safety, promote the common defense and security, and protect the environment. It also defines ACNW's mission, vision, goals, and priority activities and indicates how these goals support the NRC's Strategic Plan. The plan provides ACNW clients and stakeholders with information about the topics that the ACNW will be addressing in its reviews.

### **SCOPE OF ACNW ACTIVITIES**

The Committee reports to and advises the Commission on technical matters related to nuclear waste management. The bases of ACNW reviews include 10 CFR Parts 61, 71, and 72, the proposed Part 63, and other applicable regulations and legislative mandates. The ACNW will undertake studies and activities related to the transportation, storage, and disposal of high-level and low-level radioactive waste (HLW and LLW, respectively), including the interim storage of spent nuclear fuel; materials safety; decommissioning; application of risk-informed and performance-based (RIPB) regulations; and evaluation of licensing documents, rules, regulatory guidance, and other issues, as requested by the Commission. The Committee will interact with representatives of the public, NRC, the Advisory Committee on Reactor Safeguards (ACRS), other Federal agencies, State and local agencies, Indian Nations, and private, international, and other affected organizations as appropriate to fulfill its responsibilities.

### **OVERARCHING PHILOSOPHY**

In conducting its self-assessments, the Committee realized that it has been most effective when it addresses important complex issues on timetables that permit thorough examination of the issues and communication with stakeholders while regulatory solutions are being formulated.

The Committee will take a top-down, systems-based approach in its review of issues, focusing on the interconnections between issues.

The Committee continues to believe that it will best serve the Commission by taking an RIPB approach to its activities. By this statement, the Committee means that it will strive to identify the inherent risk associated with various issues, to encourage transparency and focus on risk in decision-making, including the identification of uncertainty, and to encourage an informed approach to risk assessments. The Committee will accomplish these goals by encouraging development of an overall RIPB regulatory framework for materials and waste-related regulations that is flexible enough for diverse applications. The ACNW believes that an RIPB approach will provide a more rational method and reduce unnecessary rigid interpretation and prescriptive approaches in the application of regulations. The ACNW further believes that an RIPB framework could advance efforts toward risk harmonization and alleviate conflicts associated with dual regulatory authority by providing a systematic and quantitative framework for assessing and comparing risk assessment approaches across and within agencies. An RIPB framework will

Enclosure

facilitate the use of more rational and transparent regulation and will thus lead to an improved confidence in regulatory decisions. In this way, the NRC can develop more efficient regulations that have an obvious relation to safety and encourage a more effective allocation of NRC and licensee resources.

The Committee will continue to examine international experience and apply the lessons learned. The ACNW strives to involve the public in its deliberations, to increase public confidence in the regulatory process, and to ensure that communication paths with the public remain open and effective.

## **ACNW MISSION**

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

## **ACNW VISION, DESIRED OUTCOMES, AND COMMITMENTS**

In addition to a mission statement describing the ACNW's purpose, the Committee has identified a vision statement and desired outcomes to guide the Committee's implementation of its mission, as well as commitments that will guide the Committee toward these outcomes.

### Vision

The ACNW strives to provide advice and to 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 Committee aspires to achieve the following outcomes:

1. Provide clear, useful advice, along with the rationale for this advice, in adequate time for consideration by the Commission in making regulatory decisions.
2. Alert the Commission to potential challenges that may be averted by taking action and provide recommendations as to the appropriate action.
3. Forewarn the Commission of emerging issues that may later require action.
4. Ensure that the Committee's advice reflects state-of-the-art technology; is practical; and allows for incorporation into the NRC's technical approaches, regulations, and guidance.
5. Ensure that the Committee's advice reflects an understanding of inherent risks and considers, first, the need for adequate protection and, second, the need to balance risk, cost, and benefit in all of the NRC's decisions.

6. Focus on risk and make the regulatory process more transparent.
7. Provide advice that is valued by the Commission, the NRC staff, the U.S. Department of Energy (DOE), and the public.
8. Earn the public's trust by providing frank, open advice and by offering a forum for public participation in the regulatory process.
9. Resolve conflicts between the NRC and other stakeholders by encouraging communication and providing a neutral forum for interaction.

### Commitments

To accomplish its mission, the Committee will carry out the following commitments:

1. Focus on nuclear safety.
2. Be responsive to the Commission's needs.
3. Maintain technical excellence.
4. Foster an atmosphere of mutual problem solving with the NRC staff.
5. Remain unbiased, be responsive to change, and consider various options and contingencies.
6. Identify, in advance, those issues that could impact the NRC's ability to achieve its mission.
7. Focus on risk by asking: What is the risk? What are the important contributors to risk? What are the uncertainties associated with the risk?
8. Keep abreast of international trends and developments that could affect the NRC's regulatory practices or approaches, and factor international experience into the Committee's advice, where appropriate.
9. Consider issues from the perspective of relationship and harmonization with other NRC and stakeholder activities.
10. Regard the public as its ultimate stakeholder and seek better ways to obtain more public involvement.
11. Abide by the Committee's Action Plan to foster efficiency and effectiveness of Committee activities and products.

## GOALS AND OBJECTIVES

The ACNW has developed general goals and objectives consistent with its mission and vision. The following five goals serve to provide strategic direction for the ACNW this year and support selected goals identified in NRC's Strategic Plan. Each goal is followed by objectives to help the Committee better focus on priority issues.

**Goal 1:**        **Assist the NRC in positioning itself to respond to external change in its regulation of the management of nuclear waste and materials. [This goal supports the NRC's Nuclear Waste Safety and Nuclear Materials Safety strategic arenas and NRC's strategic goal and primary Performance Goal to maintain safety, protection of the environment, and the common defense and security.]**

*Objective 1: Advise the Commission in a timely fashion on technical developments that may require changes in NRC's regulations, policies, and practices.*

*Objective 2: Inform the Commission of issues that the NRC needs to address and recommend solutions.*

**Goal 2:**        **Support the NRC in employing the best science in resolving key safety issues. [This goal supports the NRC's Nuclear Waste Safety and Nuclear Materials Safety strategic arenas and the specific Performance Goal to make NRC activities and decisions more effective, efficient, and realistic.]**

*Objective 1: Keep informed of methods and technologies being developed and used worldwide that are applicable for assessing and managing risks associated with the cleanup, disposal, and storage of nuclear waste.*

*Objective 2: Advise the Commission on enhancements to the NRC staff's technical capabilities that are needed to address current and expected Commission needs.*

*Objective 3: Advise the Commission and the NRC staff on ways to use risk-informed and performance-based approaches to develop efficient and effective regulations and regulatory framework.*

**Goal 3:**        **Advise the NRC on how to increase its reliance on risk as a basis for decisionmaking, including methods that (1) implement a risk-informed approach, (2) quantify and reveal uncertainties, and (3) are consistent across programs. [This goal supports the NRC's Nuclear Waste Safety and Nuclear Materials Safety strategic arenas and the specific Performance Goal to reduce unnecessary regulatory burden on stakeholders.]**

*Objective 1: Encourage the NRC staff in seeking and proposing approaches to gain a better understanding of the inherent risks of activities within its regulatory responsibilities, as well as the relationship between regulations, cost, and safety.*

*Objective 2: Support the NRC staff in developing an overall flexible RIPB framework for managing nuclear materials, waste disposal, and cleanup, that will enhance the transparency of the underlying assumptions and associated uncertainties, increase the overall consistency of NRC's programs, and facilitate the development of more efficient and less burdensome regulations that are clearly defensible and linked to safety.*

**Goal 4: Support the NRC in improving public involvement and understanding in its waste and materials program and gaining increased public confidence and respect. [This goal supports the NRC's Nuclear Waste Safety and Nuclear Materials Safety strategic arenas and the specific Performance Goal to increase public confidence.]**

*Objective 1: Provide opportunities through the Federal Advisory Committee Act process for more meaningful public involvement in the regulatory process.*

*Objective 2: Recommend ways for the NRC to achieve more meaningful public involvement in the regulatory process, taking into consideration lessons learned from international experience.*

*Objective 3: Assist the NRC in making the agency's decisionmaking process more transparent and ensuring that agency documentation is readily understandable and addresses the relevant issues.*

**Goal 5: Support the effectiveness and efficiency of NRC operations. [This goal supports the NRC's Corporate Management Strategies to employ innovative and sound business practices.]**

*Objective 1: Advise the NRC on how to increase its reliance on risk insights as a basis for decisionmaking, including using risk assessment methods for the safe use of nuclear power, that (1) implement a risk-informed approach, (2) quantify and reveal uncertainties, and (3) are consistent across programs, where possible.*

*Objective 2: Propose approaches that provide a better understanding of the inherent risks associated with nuclear power and the relationship between safety, regulations, and cost, and advise the Commission on the proposals.*

*Objective 3: Provide technically sound and realistic approaches for resolving new and emerging issues and identify ways to utilize risk-informed and performance-based approaches related to the safe use of nuclear materials for civilian purposes.*

*Objective 4: Select and evaluate feedback from stakeholders on ACNW operations.*

*Objective 5: Evaluate and modify existing ACNW operational procedures as appropriate, to accomplish "more with less."*

## **PRIORITY ISSUES AND PROCESS IMPROVEMENTS**

In support of its first four goals, the ACNW has identified its highest priority issues for this year, along with other important issues it plans to address this year or next, time and resources permitting. The Committee has also defined the criteria it uses to select its priority issues. In support of its fifth goal, the ACNW has identified the process improvements it will continue to implement this year to improve its effectiveness. These process improvements will be incorporated into the ACNW Operating Plan and the status of the improvements reported.

The highest priority issues of 2001 are first-tier priorities, and the other important issues are second-tier priorities. The Committee plans to conduct in-depth information gathering on most of the first-tier topics, whereas it does not plan to carry out a concentrated effort this year on most of the second-tier issues unless directed by the Commission or in response to changes in nuclear waste legislation. The Committee will keep informed of the issues associated with second-tier priorities so as to be able to advise the Commission if requested. The Committee may move several of these topics to the first-tier in its next Action Plan. Each priority issue supports one or more of ACNW's goals, as indicated.

For each priority issue addressed, the Committee plans to prepare a task action plan that will identify the nature and scope of the issue and a strategy for addressing it. The plan will include a schedule, planned products, and performance measures and targets to assess the Committee's performance against planned goals.

## **CRITERIA FOR SELECTING PRIORITY ISSUES**

The following criteria are used to select priority issues:

- issues that are requested by the Commission or the Executive Director for Operations for ACNW review,
- the potential for or likelihood of an issue to pose undue risk or costs to society,
- the significance of the issue to the protection of public health, workers, and the environment from adverse effects of the management of nuclear waste,
- issues for which the ACNW's review is "proactive" rather than "reactive,"
- issues that are long-term and require continuous attention by the agency,
- timeliness based on when an issue is scheduled to come before the Commission and when the advice would provide effective and efficient input into NRC 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 an RIPB method of regulation and decision-making, and
- issues that arise from strategies and activities of licensees and applicants.



## FIRST-TIER PRIORITY ISSUES

1. **Site Suitability and License Application** — The DOE is expected to make a site suitability determination in 2001, and the NRC staff will comment on whether DOE's at-depth site characterization analysis and waste form proposal seem to be sufficient for inclusion in a license application. The ACNW has begun interactions with the NRC staff on the staff's strategy for site characterization sufficiency comments. A review plan has been developed and revised with milestones for the Committee, the NRC staff, and DOE interactions, so that the ACNW will be positioned to provide advice to the Commission before the NRC's sufficiency comments are sent to the DOE.

If the Secretary of Energy recommends the Yucca Mountain Site to the President, and the President considers the site justified for application to the NRC for construction authorization, the President will submit a recommendation of the site to Congress. If there are no objections to the site from the Governor or legislature of Nevada, or if there is an objection and Congress passes a joint resolution of repository siting approval and the President signs it into law, a license application for construction authorization would be submitted by the Secretary of Energy within 90 days. The license application would be based on a particular facility design. The ACNW will review the construction authorization request in parallel to the NRC staff's review over the 3-year statutory time period for a licensing decision. The ACNW will include repository design and quality assurance issues under this item. This issue supports ACNW Goals 1 through 4.

2. **Risk-Informed and Performance-Based Regulatory Framework** — The ACNW will continue to support the agency's effort to implement a risk-informed and incrementally performance-based regulatory framework. Specifically, the ACNW and the Joint ACRS/ACNW Subcommittee will continue to encourage and assist the NRC staff in developing and implementing an overall RIPB framework for nuclear waste and materials. The Committee will continue to encourage the NRC to adopt transparent regulatory approaches, to enhance public understanding of the key safety issues, and to encourage the NRC to use risk as a basis for setting priorities. In particular, the Committee will continue to stress the need for RIPB risk assessments to quantify the contributions of individual barriers for waste isolation and for the staff to develop guidance that clarifies its intentions regarding quantification of barriers. Issues to be addressed under this Action Plan item will include the implementation of NRC's proposed HLW regulation, 10 CFR Part 63, and case studies brought to the joint ACRS/ACNW Subcommittee by the Office of Nuclear Material Safety and Safeguards Risk Task Group, such as the use of integrated safety analysis. This issue supports ACNW Goals 1 through 4.
3. **Decommissioning** — Decommissioning topics will continue to be a first-tier priority issue of the Committee through the coming year. The Committee will continue to focus on the development of decommissioning guidance. Decommissioning options, such as entombment, and important support needs, such as LLW disposal, will continue to receive attention. The Committee will continue to follow developments in the control of solid materials. The Committee also expects to further review the use of institutional controls, the disposal of Greater than Class C wastes, the decommissioning of the West Valley Demonstration Project, and a review of the Formerly Utilized Sites Remedial Action Program (FUSRAP). This issue supports ACNW Goals 1 through 4.

4. **Yucca Mountain Review Plan** — The ACNW will review the license application acceptance criteria as they are developed and documented in the Yucca Mountain Review Plan (YMRP). The Committee intends to review both pre-closure and post-closure safety issues and to ensure that the review framework is risk-informed and performance-based. The ACNW will review the YMRP to ensure reviews are prioritized on the basis of risk significance. The Committee will make formal comments on the completed draft review plan when it is made publicly available. The Committee also expects to review the final review plan following the public comment period. This issue supports ACNW Goals 1 through 4.

## **SECOND-TIER PRIORITIES**

1. **Research** — The ACNW will continue to report yearly to the Commission on NRC's waste-related research and technical assistance programs. The Committee will examine research performed by the Office of Nuclear Regulatory Research and technical assistance performed at the Center for Nuclear Waste Regulatory Analyses. The Committee expects to conduct its review of the Center's activities in San Antonio, Texas. 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 RIPB regulation. This issue supports ACNW Goals 1 through 3.
2. **Low-Level Radioactive Waste** — The ACNW believes that, from a risk perspective, the national LLW program is of growing concern because of the failure of the Low-Level Waste Policy and Amendments Act of 1985 process to bring about new LLW disposal sites. The ACNW will consider the role of the NRC in LLW disposal from the perspective that lack of progress of the national LLW program could interfere with society's benefitting from the use of nuclear material, and therefore with NRC's ability to carry out its mission. Other possible topics for review under this issue may be mixed-waste (waste with a hazardous and radioactive component), including the effort by the NRC and the U.S. Environmental Protection Agency to end the dual regulation of mixed wastes; assured isolation; and an RIPB approach to regulation. The Committee will keep informed of developments in LLW management practices in other countries. This issue supports ACNW Goals 1 through 4.
3. **Transportation** — The transportation of HLW and spent fuel is an issue that creates public concern. The ACNW plans to continue to stay engaged in the coming year, expanding its involvement in transportation issues undertaken during the review of the Yucca Mountain Draft Environmental Impact Statement. The Committee's goal is to increase public confidence in this aspect of waste management by using a risk-informed approach. The Committee will be prepared to assist the Commission as needed. The Committee also expects to review the Package Performance Study and proposed changes to the NRC's transportation rule (10 CFR Part 71) from an RIPB perspective. This issue supports ACNW Goals 1 through 4.

4. **Proposed Private Fuel Storage Facility** — In June 1997 Private Fuel Storage submitted an application to the NRC for a license to operate an away-from-reactor independent spent fuel storage installation on the reservation of the Skull Valley Band of Goshute Indians. The NRC staff subsequently issued its safety evaluation report on this application in September 2000. The ACNW will continue to keep informed of the technical issues associated with this facility design and the proposed operation of the facility and will provide such assistance as the Commission requests.

## **PRIORITY OPERATIONAL ACTIVITIES**

Operational processes or activities that the ACNW plans to implement this year in support of ACNW Goal 5, “Support the effectiveness and efficiency of NRC operations,” will be included in the ACRS/ACNW Operating Plan. In addition, the ACNW will continue to conduct top-down planning to identify primary goals and priority issues and activities for the coming year, and perform self-assessments of the Committee’s performance against these goals. The ACNW has established performance goals and indicators to measure effectiveness and will use stakeholder surveys to solicit feedback on the Committee’s effectiveness.

## **MEASURES OF SUCCESS**

An Assessment of the extent to which the goals and objectives of this plan have been achieved (including the ACNW’s effectiveness, efficiency, quality, timeliness, and rate of success in contributing to the regulatory process) will be addressed in the annual ACRS/ACNW Operating Plan.

## **UPDATING THIS PLAN**

The ACNW will conduct periodic planning meetings to update this Action Plan as necessary. Revisions to the plan may be based on input from the Commission, changes to the NRC Strategic Plan, results of stakeholder surveys and self-assessments, external influences, and available resources.