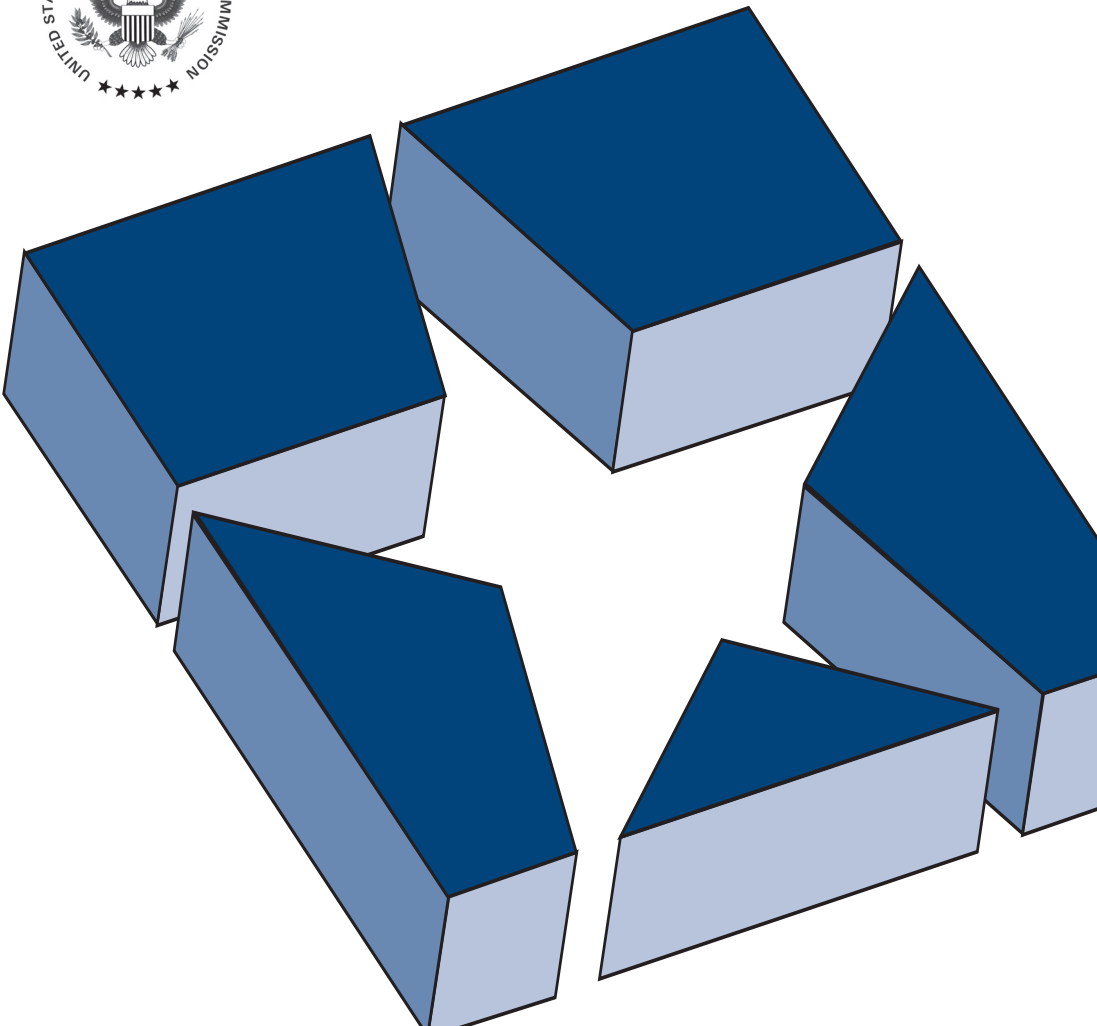


ACNW

FY 2005 – FY 2006 Action Plan

Advisory Committee on Nuclear Waste

U.S. Nuclear Regulatory Commission





MESSAGE FROM THE ACNW CHAIRMAN

The Advisory Committee on Nuclear Waste (ACNW) has revised its Action Plan to update the priority issues it will consider in FY 2005 and FY 2006. The updated plan is referred to as the "FY 2005 – FY 2006 Action Plan for the Advisory Committee on Nuclear Waste." The Commission has approved the Plan (COMSECY-04-0077), and the Plan reflects Commission comments. The Action Plan establishes a framework for guiding the Committee in providing independent and timely technical advice to the Nuclear Regulatory Commission on nuclear waste disposal and radioactive material management issues. The Plan includes the first-tier priority issues the ACNW will address this year and second-tier priority issues it will address if time and resources permit, unless otherwise directed by the Commission.

The ACNW's Action Plan is anchored to the NRC's Draft Strategic Plan for FY 2004 – FY 2009 (NUREG 1614, Volume 3). The Action Plan is consistent with the ACNW's Charter and the ACNW's Operating Plan.

One of the ACNW's most important goals in its Action Plan is to position itself to respond to the challenges and schedule uncertainties that lie ahead. Other important goals of the Committee include advising the Commission on bringing to bear the best science and technology in resolving key issues; bringing a risk-informed approach to the forefront of NRC decisionmaking; and improving public involvement and openness in the regulatory process. A final goal is to improve the efficiency and effectiveness of both NRC's and ACNW's operations.

We would appreciate any comments you have on the ACNW's Action Plan. Please contact John Flack at (301) 415-0426 or by email to jhf@nrc.gov.

A handwritten signature in black ink that reads "Michael T. Ryan". The signature is written in a cursive, flowing style.

Michael T. Ryan
Chairman
Advisory Committee on Nuclear Waste

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PURPOSE OF PLAN

The purpose of this Action Plan (Plan) is to guide the Advisory Committee on Nuclear Waste (ACNW) in carrying out its mission. The Plan describes the ACNW's mission, vision, desired outcomes, commitments, goals, objectives, and priority topics. The Plan also links the ACNW goals to the Commission's strategic goals identified in NRC's Strategic Plan (NUREG-1614, Vol. 3) for fiscal years (FYs) 2004–2009.

This Plan also provides the Commission, NRC staff, and other interested stakeholders with information about the priority topics that will be the focus of ACNW reviews over the next 2 years. The Committee selected the first- and second-tier priority topics in a top-down manner designed to support its mission, vision, goals, and objectives. The priority topics consist of self-initiated topics, and those requested by the Commission, as well as those requested by the NRC staff and other stakeholders.

SCOPE OF ACNW ACTIVITIES

The Committee reports to and advises the Commission on technical matters related to nuclear materials and waste management. The bases for ACNW reviews include Title 10, Parts 20, 40, 50, 60, 61, 63, 70, 71, and 72 of the *Code of Federal Regulations* (CFR), and other applicable regulations and legislative mandates. The ACNW will undertake studies and activities related to, for example, 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. To fulfill its responsibilities, the Committee will interact with representatives of the public, the 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.

RISK-INFORMED, PERFORMANCE-BASED (RIPB) APPROACH

The Committee believes that it best serves the Commission by taking an RIPB approach to ACNW activities. The Committee will accomplish this goal, in part, by supporting the Commission in applying the principles in the NRC's probabilistic risk assessment (PRA) policy statement, dated August 10, 1995 (60 FR 42622), to waste and materials regulations. The ACNW will continue to encourage the use of PRA principles and associated analyses (sensitivity studies, uncertainty analyses, and importance measures) to enhance the effectiveness and efficiency of the regulatory process. The ACNW will also encourage realism, transparency, and consistency in risk and performance assessments, and will continue to identify uncertainties and sources of uncertainty in these assessments.

In addition to supporting the PRA policy statement, the Committee will encourage implementation of a flexible overall RIPB regulatory framework for the NRC's materials and waste regulations. A RIPB approach will increase flexibility and reduce inefficiencies that stem from rigid interpretation and prescriptive approaches in the application of regulations. A RIPB framework will facilitate the use of defensible and transparent regulations and will improve confidence in regulatory decisions.

ACNW MISSION

The ACNW's mission is to provide the Commission with independent and timely technical advice on nuclear materials and 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

VISION

The ACNW's advice and recommended solutions are forward-looking, are based upon the 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

- 1 ACNW advice reflects the need for safety and the need to balance risk, cost, and benefit in all of the NRC's decisions.
- 2 ACNW advice is clear, concise, and easily understood.
- 3 ACNW provides an effective forum for the public to participate in the regulatory process, increases public confidence in the regulatory process, and ensures that communication paths with the public remain open and effective.
- 4 ACNW advice is provided in ample time for consideration by the Commission in making regulatory decisions.
- 5 ACNW advice reflects sound technical judgment and influences the NRC's regulations and guidance.
- 6 ACNW advice alerts the Commission to emerging and potentially challenging issues.
- 7 ACNW advice reflects consideration and awareness of relevant waste and materials issues that cut across other Federal agencies, institutions, and industry.
- 8 ACNW advice provides value to the Commission, the NRC staff, the public, and other stakeholders.

COMMITMENTS

To achieve its desired outcomes, goals, and objectives, the Committee makes the following commitments:

- 1 Make safety its highest priority.
- 2 Be responsive to the Commission's needs and requests.

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- 3 Maintain technical excellence, independence, and credibility.
 - 4 Adopt the NRC's plain language initiative.
 - 5 Regard the public as its ultimate stakeholder and seek better ways to obtain meaningful public involvement.
 - 6 Implement a risk-informed philosophy by asking: What is the risk? What are the important contributors to risk? What are the uncertainties associated with the risk?
 - 7 Strive to examine issues and offer advice while regulatory solutions are still being formulated.
 - 8 Foster an atmosphere of mutual problem solving with the NRC staff.
 - 9 Remain flexible, anticipate change, and evaluate options and contingencies.
 - 10 Keep informed of external trends and events that may adversely impact the NRC.
 - 11 Keep abreast of international trends and developments that could affect the NRC's regulatory practices or approaches and apply the experience when practicable.
 - 12 Identify relevant waste and materials issues that cut across the NRC and other Federal agencies, institutions, and industry.
 - 13 Abide by the Committee's Action Plan to foster the efficiency and effectiveness of Committee activities and products.

GOALS AND OBJECTIVES

The ACNW has developed goals and objectives consistent with its mission and vision. The following five goals provide strategic direction for the ACNW over the next 2 years and align well with the new strategic goals identified in the NRC's Strategic Plan for FY 2004 – FY 2009. Each goal has several objectives that will be used to focus the Committee's attention.

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 Management Goal to ensure excellence in agency management.)

Objective 1: Advise the Commission in a timely fashion on technical developments that may require changes in the 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 sound science in resolving key safety issues. (This goal supports the NRC's Safety Goal to ensure protection of public health and safety and the environment.)

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 an efficient and effective 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 two NRC Strategic Goals, the Safety Goal to ensure protection of public health and safety and the Effectiveness Goal to ensure that NRC actions are effective, efficient, realistic, and timely.)

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

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.

Goal 4: Support the NRC's openness goal by evaluating current issues before the Commission and staff in a public forum. (This goal supports NRC's Openness Goal to ensure openness in our regulatory process.)

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 Effectiveness Goal, to ensure that NRC actions are effective, efficient, realistic, and timely.)

Objective 1: Select and evaluate feedback from stakeholders on ACNW operations.

Objective 2: Evaluate and modify existing ACNW operational procedures as appropriate to accomplish "more with less."

PRIORITY TOPICS AND PROCESS IMPROVEMENTS

In support of the above goals, the ACNW has identified its highest priority topics through FY 2006, and other important topics that it plans to address as time and resources permit. The highest priority topics are identified as first-tier priorities, while other important topics are identified as second-tier priorities. Unless otherwise directed by the Commission, the Committee plans to place most of its emphasis on reviewing issues under the first-tier topics. The ACNW will stay informed of issues associated with the second-tier topics, but with less emphasis on these topics, unless priorities change.

The Committee has also defined the criteria it uses to select its priority topics. In support of its fifth goal to support the effectiveness and efficiency of NRC operations, the ACNW has identified the improvements in operational processes it will carry out this year and next. The Committee will track its progress toward these process improvements in a separate internal planning document, and will periodically evaluate their impact.

For each priority topic addressed, the Committee will prepare a task action plan to identify the nature and scope of the issue, and a strategy for proposed action. The task action plans will include a schedule, purpose, scope, planned products, and performance measures to evaluate the Committee's effectiveness.

Identified below are the criteria for selecting priority topics, followed by a brief background discussion of the selected topics.

Criteria for Selecting Priority Topics

The Committee selects priority topics during its annual planning retreat by discussing potential NRC activities during the next year, reducing this discussion to a list of potential topics, and then identifying the highest priority topics by jointly judging how many of the following criteria are met:

- the likelihood that a topic, if not properly addressed, will result in significant adverse impact on the environment, significant risk to the health and safety of the public, or unnecessary economic costs
- topics for which the Commission or the Executive Director for Operations requests ACNW review
- topics for which the ACNW can provide a unique input that will add significant value to the resolution of the issue
- the relevance of the topic in the NRC's near-term regulatory agenda and the need for timely ACNW review
- the level of interest shown by NRC's external stakeholders in a topic and the degree to which ACNW engagement of the topic will enhance openness

The total number of topics is limited based on the judgments concerning the amount of time required by each topic and the projected resources available to the Committee with first-tier topics being accorded more resources.

First-Tier Priority Topics

1 PROPOSED YUCCA MOUNTAIN REPOSITORY

The U. S. Department of Energy (DOE) plans to submit a Yucca Mountain License Application (YMLA) for construction of the Nation's first proposed geologic repository for disposal of high-level radioactive waste (HLW) at Yucca Mountain. The submittal date is uncertain, but as this is being written, the date is likely to be in the early part of FY 2006. The YMLA is expected to consist of three main parts: general information, a Safety Analysis Report (SAR), and a Final Environmental Impact Statement (FEIS). Once the YMLA's submitted, ACNW members will become familiar with the YMLA in order to be prepared to provide technical advice on the Yucca Mountain project as requested by the Commission.

Until the YMLA is submitted, the Committee will continue to perform preclicensing technical reviews. These reviews would include working group meetings that focus on risk-significant areas. Areas of interest include external events (e.g., igneous activity, seismic events), performance assessment models, above-ground surface facilities, outstanding high-risk agreements between NRC and DOE, including the Integrated Issue Resolution Status Report. The Committee will also review the project work plan and other guidance documents that will be used by the staff in the YMLA review.

In addition, the Environmental Protection Agency's (EPA's) 10,000-year regulatory compliance period specified in the EPA standards was vacated by the U.S. Court of Appeals. The Court found that EPA's 10,000-year compliance period was not consistent with the National Academy of Sciences (NAS) 1995 findings and recommendations. NRC will need to amend its rule in 10 CFR Part 63 to conform to any amendment of the EPA standards. Previously, the ACNW assisted the Commission in developing 10 CFR Part 63, including the period of compliance. The Committee will assist the Commission with any proposed revisions to 10 CFR Part 63 to conform to a revised EPA standard that complies with the Court decision on the length of the compliance period.

2 RISK-INFORMING REGULATORY ACTIVITIES

The ACNW will continue to support the Commission's Policy Statement on the use of Probabilistic Risk Assessment (PRA) Methods. Committee activities will include evaluating the strengths and weaknesses of adapting PRA techniques to the nuclear material and waste areas, and communicating risk insights to the Commission for use in decisionmaking. The Committee will continue to promote the use of PRA principles and associated analyses (sensitivity studies, uncertainty analyses, and importance measures), and will encourage (a) realism, transparency, and consistency in risk and performance assessments, including the identification of uncertainty in these assessments and (b) implementation of a flexible overall RIPB regulatory framework for regulatory decisions.

For FY 2005 and FY 2006, the ACNW plans to focus its activities on NRC's efforts to risk inform the materials and waste regulations, including the use and application of risk metrics, goals, and criteria. Other areas of interest include the application of the RIPB methodology to the regulation of low-activity waste, license termination, decommissioning, and fuel cycle.

3 DECOMMISSIONING, LICENSE TERMINATION RULE (LTR) (INSTITUTIONAL CONTROLS, REALISTIC SCENARIOS, AND INTENTIONAL MIXING)

The Committee will focus on decommissioning and LTR issues through the coming year. The Committee will develop review plans through consultation with the Office of Nuclear Materials Safety and Safeguards (NMSS) staff and will conduct specific reviews supporting current regulatory initiatives. Many decommissioning sites are being considered for license termination. These facilities include reactors, fuel cycle facilities, and uranium and thorium contaminated sites. The Committee plans specifically to review the application of the LTR to complex decommissioning sites like the West Valley Demonstration Project and other sites such as Sequoyah Fuels.

4 CLEARANCE (CONTROL AND DISPOSITION OF SOLID MATERIALS)

The ACNW has closely tracked the agency's reexamination of its approach for control of materials at licensed facilities. Considerable effort and numerous public workshops have been conducted on this topic over a period of several years. The clearance issue is directed toward defining an acceptable approach for the release of very small amounts of radioactivity. Stakeholder interest in this issue is very high. In its guidance to the staff, the Commission directed consideration of all alternatives in the development of the proposed rule, including exploring the feasibility of conditional or restricted clearance. The ACNW will use a risk-informed approach to provide timely advice to the Commission (i.e., provide advice in time to support rulemaking schedules).

5 HEALTH PHYSICS (FUNDAMENTAL RADIATION BIOLOGY THAT AFFECTS STANDARDS)

The Commission has approved Option 2 of SECY-04-0030, to initiate a more proactive radiation protection research program. Key health physics areas to focus on recognizing advances in fundamental radiation biology, radiation dosimetry, radiation effects on humans, and the fate and transport of radioactive material to the environment. The ACNW will stay informed of the activities of the Committee on Health Risks from Exposure to Low Levels of Ionizing Radiation (BEIR VII) which is updating its analysis of risks to humans from exposure to low-level, low-linear-energy-transfer ionizing radiation.

6 WASTE INCIDENTAL TO REPROCESSING (WIR)

NRC's role in reclassification of HLW has expanded. DOE must now consult with NRC on case-by-case determinations of whether the waste meets reclassification criteria specified in various laws, regulations, and orders. The ACNW will provide independent advice to the Commission concerning these WIR assessments by the staff. The issues include reclassification criteria, risk-informed approaches to performance assessments, and development of a standard review plan. The Committee's advice will be directed at ensuring that the Commission's WIR decisions are risk informed and performance based, technically sound, consistent across sites, and fully integrated with other NRC regulations and guidance.

Second-Tier Priority Topics

1 WASTE MANAGEMENT RESEARCH PROGRAM REVIEW

The ACNW will continue to report periodically to the Commission on NRC's waste-related research and technical assistance programs. Specifically, the Committee will continue to examine the research performed by the NRC's Office of Nuclear Regulatory Research on nuclear waste safety and the technical assistance work performed by the Center for Nuclear Waste Regulatory Analyses, as appropriate.

2 TRANSPORTATION OF RADIOACTIVE MATERIALS

The ACNW has provided advice and comment on the Package Performance Study the testing program for Type B spent fuel casks. The ACNW will monitor United States and international developments in Type B cask testing and regulatory activities.

3 LOW-LEVEL RADIOACTIVE WASTE (LLW)

The ACNW plans to review 10 CFR Part 61, the regulations governing the disposal of LLW. The Committee plans to evaluate how these regulations and their implementation could be risk informed and performance based. A number of issues have been identified during the last 20 years of unsuccessful LLW disposal facility licensing activities. Using this information to risk inform 10 CFR Part 61 guidance could make the LLW licensing process more effective. Additionally, the Committee plans to prepare a "white paper" on LLW issues and keep informed of new developments related to the management of LLW, including new disposal siting initiatives in states, other industry trends in LLW processing, and disposal and studies by the National Academy of Sciences on LLW and low-activity waste management.

4 PROPOSED PRIVATE FUEL STORAGE (PFS) FACILITY

The ACNW will continue to stay informed of the technical issues associated with the licensing of this facility and with its proposed operation and will provide such reviews as appropriate. In 2003, the Atomic Safety and Licensing Board issued three decisions on the PFS license application. Their decisions concerned an acceptable seismic design basis, the likelihood of an aircraft crash hazard, and the treatment of spent nuclear fuel transportation in an EIS.

5 FUEL CYCLE FACILITIES

The Committee will examine the licensing review process, including predecisional material (as approved by the Commission in COMSECY-04-0012), and associated technical findings for technical, safety, or process issues. The ACNW will focus on waste-management-related technical issues. Specifically, the Committee will focus on technical and safety issues associated with increasing uranium enrichment, and the ultimate disposition of depleted uranium that is expected to be generated by the uranium enrichment processes.

ACNW in conjunction with the ACRS is also reviewing the construction authorization request for a fuel fabrication facility to convert DOE's surplus plutonium to mixed oxide fuel for use in commercial nuclear reactors. Duke COGEMA Stone & Webster has submitted the application and NRC has already issued a draft SER on the proposed facility.

Working Groups

Approximately four ACNW working group meetings are held each year. Working group meetings focus on specific technical subjects related to the nuclear waste or materials areas. Presentations generally include NRC staff, experts, and other interested stakeholders. The ACNW plans to hold the following working group meetings in FY 2005.

I HEALTH PHYSICS

A panel of experts will review three main health physics topics: (1) summary results and findings of the BEIR VII investigations, (2) followup on technical bases for the draft International Commission on Radiological Protection recommendations, and (3) emerging issues in radiation biology (biodosimeters, bystander effects, etc.). This is a follow-on to the Committee's working group meeting of October 2004. The Committee believes that this working group will help the Commission reformulate fundamental radiation protection guidance.

II DECOMMISSIONING

This working group will focus on guidance documents that will help implement the LTR. This guidance will focus on institutional controls, onsite disposal, realistic dose scenarios, restricted access options, and intentional mixing of contaminated soil. The working group will also focus on inspection and oversight procedures to prevent future legacy sites. The Committee through consultation with NMSS management believes that this working group will support near-term Commission decisionmaking regarding decommissioning.

III WASTE INCIDENTAL TO REPROCESSING (WIR)

This working group will focus on risk-informing the NRC's technical approach to meeting its responsibilities concerning whether DOE various waste streams are WIR. Congressional action expanded NRC's role in this area to require that DOE consult with NRC on all WIR determinations and the disposal of WIR. The Committee believes this working group will support the development of an effective and consistent NRC approach to reviewing DOE WIR determinations for soundness of technical assumptions, analysis, and conclusions, and implementation approach for the NRC's monitoring responsibilities.

IV CLEARANCE (CONTROL AND DISPOSITION OF SOLID MATERIALS)

This working group will review the current status of efforts to and issues regarding a risk-informed approach to support proposed rulemaking on control and disposition of solid materials that contain little or no radioactive material. The Committee believes this working group will support the development of the proposed rule.

V WEST VALLEY DEMONSTRATION PROJECT (WVDP)

The NMSS staff sought the Committee's advice regarding the WVDP. The Committee anticipates that the decommissioning of this complex site will use all of the options available in the LTR. This working group (the first of several on WVDP) will focus on the Decommissioning Plan and Draft Environmental Impact Statement for the West Valley Demonstration Project. The group will review both the NRC staff and DOE performance assessments and preliminary results that stem from the Project. New York State Energy Research and Development Authority and

representatives from local stakeholder groups are expected to participate. The Committee believes this working group will provide risk insights into complex decommissioning activities that will support Commission decisionmaking.

As time and resources permit, the Committee will also consider working group meetings in two other areas:

1. Risk-significant precicensing issues for Yucca Mountain, consistent with its previous working group activities regarding Yucca Mountain and Commission direction.
2. Low Level Waste: A working group on 10 CFR Part 61 may be held to investigate issues associated with risk-informing regulations and guidance for disposing LLW. A number of issues have been identified during the last 20 years of unsuccessful LLW disposal facility licensing activities. The Committee believes that using this experience to risk inform 10 CFR Part 61 guidance could make the LLW licensing process more effective. A “white paper” under development by the ACNW will help identify LLW issues for Commission consideration and guide future efforts in this area. The Committee, however, will not divert staff resources from other higher priority issues to address this issue unless a specific need arises requiring Agency action.

JOINT ACRS/ACNW SUBCOMMITTEE ACTIVITIES

The Commission authorized the establishment of the joint subcommittee in response to a request for ACRS/ACNW assistance on activities associated with risk-informing regulations developed by NMSS. The scope of the joint subcommittee’s work includes activities that are within the purview of both committees. Utilizing the expertise of both committees in a joint subcommittee will be more effective and efficient. The joint subcommittee could review topics on how to risk inform NMSS activities, proposed PRA for spent fuel dry cask storage, proposed safety goals for NMSS activities, and decommissioning issues on which both ACNW and ACRS are expected to give advice. The joint subcommittee could also review the Integrated Safety Assessment for the Mixed Oxide Fuel Fabrication Facility.

MEASURES OF SUCCESS

The Committee will assess the extent to which the goals and objectives in this Plan have been met and report the results in the annual ACNW operating plan. The Committee has established performance metrics to measure its overall effectiveness. The performance metrics include the ACNW’s effectiveness, efficiency, quality, timeliness, and success in contributing to the RIPB regulatory process. As part of its annual self-assessment, the Committee will solicit stakeholder feedback as one of the sources of information for evaluating the ACNW’s effectiveness.

UPDATING THE PLAN

The ACNW will continue to conduct top-down planning on an annual basis to identify goals and priority issues for the coming year. Revisions to the Plan will result from input from the Commission, changes in legislation, changes to the NRC Strategic Plan, the results of customer surveys and self-assessments, external events, and available resources. As part of the Committee’s efficiency and effectiveness goal, the ACNW will track, in a separate planning document, outcomes of its operational process improvements, special projects, ideas for working group meetings, possible follow-up action to past ACNW letters, and items that the Committee considers important but cannot pursue this year due to time or resource limitations.

