



UNITED STATES
NUCLEAR REGULATORY COMMISSION
ADVISORY COMMITTEE ON NUCLEAR WASTE
WASHINGTON, DC 20555 - 0001

ACNWS-0153

April 14, 2005

The Honorable Nils J. Diaz
Chairman
U.S. Nuclear Regulatory Commission
Washington, DC 20555-0001

SUBJECT: SUMMARY REPORT—158TH MEETING OF THE ADVISORY COMMITTEE
ON NUCLEAR WASTE, MARCH 15–17, 2005, AND OTHER RELATED
COMMITTEE ACTIVITIES

Dear Chairman Diaz:

During its 158th meeting on March 15–17, 2005, the Advisory Committee on Nuclear Waste (ACNW) discussed the following matters.

REPORT

Report to Nils J. Diaz, Chairman, NRC, from Michael T. Ryan, Chairman, ACNW, Subject: Status of High-Significance Agreements Associated With the Proposed High-Level Waste Repository at Yucca Mountain, dated March 25, 2005

HIGHLIGHTS OF KEY ISSUES CONSIDERED BY THE COMMITTEE

1. Preparation for the March 16, 2005, Briefing With the Nuclear Regulatory Commission Commissioners

On March 15, 2005, the ACNW Members who would be briefing the Commission each went through their presentation slides and notes in final preparation for that briefing. Each presenter received questions and comments from the other Members to help refine and clarify his or her prepared remarks.

Conclusions/Action Items

No action items.

2. Preparation for a Visit to the Center for Nuclear Waste Regulatory Analyses

Committee Members Ruth Weiner, William Hinze, and James Clarke are planning a visit to the Center for Nuclear Waste Regulatory Analyses (CNWRA) on April 13–15, 2005. The technical topics to be discussed are decommissioning, igneous activity, container life, source term, near-field environment, radionuclide retardation, and total system performance, with the primary focus on igneous activity. The Committee discussed and agreed on a number of detailed questions to be included in the technical discussions.

Conclusions/Action Items

The Members participating in the visit will report back to the ACNW during its April 18–19, 2005, meeting. A letter to the Commission will likely be prepared.

3. Estimation of Groundwater Recharge at the Watershed Scale: Implications for Model Abstractions and Validations

The Committee was briefed on research about groundwater recharge by representatives of NRC's Office of Nuclear Regulatory Research and from the Agricultural Research Service (ARS) of the U.S. Department of Agriculture. The work relates to two interagency agreements with the ARS regarding (a) estimating groundwater recharge using state-of-the-science methods and (b) evaluating model abstraction techniques for estimating water flux and transport in soils. This work can enhance estimates of infiltration and groundwater recharge to support NRC staff evaluations of radionuclide transport at decommissioning or low-level radioactive waste (LLW) sites.

Conclusions/Action Items

A letter from the Committee to the Commission will be drafted for review and finalization at the next ACNW meeting.

4. Semiannual Briefing by the Director of the Office of Nuclear Material Safety and Safeguards

Mr. Jack Strosnider, Director of NRC's Office of Nuclear Materials Safety and Safeguards (NMSS), and managers from his staff addressed the Committee. He focused on new programmatic developments in NMSS since the last meeting with the Committee, and also gave highlights of the NMSS briefing to the Commission on February 15, 2005. Mr. Strosnider discussed key areas where NMSS is seeking ACNW review.

Conclusions/Action Items

The Committee has noted the areas where NMSS is seeking ACNW review. That information will be considered, along with the ACNW Action Plan and Staff Requirements Memoranda from the Commission, in planning future Committee reviews.

5. Status of NRC's Review of USEC, Inc.'s License Application for a Gas Centrifuge Uranium Enrichment Facility

Staff from NMSS briefed the Committee on the status of the ongoing licensing reviews of USEC Inc.'s application for a proposed project to enrich uranium using a gas centrifuge process at the U.S. Department of Energy's (DOE's) Portsmouth site in Piketon, Ohio. The license application dated August 2004 requested authorization for uranium-235 enrichment of up to 10 percent. The staff addressed ongoing safety, safeguards, and environmental reviews. The staff informed the Committee that the Commission issued an order on October 7, 2004, accepting USEC's application for formal review and that the order set a 30-month licensing review schedule for completing the following activities: (1) a staff safety and safeguards review (including preparation of a safety evaluation report) and an environmental review (including preparation of a final environmental impact statement), both to be completed by February 2006; (2) a licensing board hearing to be completed by October 2006; and (3) a licensing decision by the Commission by February 2007. The staff also informed the Committee that other regulatory requirements are required, including a pre-operation inspection and liability insurance. The staff also informed the Committee that two petitions have been received; the staff has issued requests for additional information and has received USEC's response; USEC used a semiquantitative risk index method recommended in the standard review plan for fuel cycle facilities (NUREG-1520) in the USEC integrated safety analysis; and NRC and DOE staffs are working on a memorandum of understanding to define the agencies' regulatory oversight responsibilities and to avoid dual regulation. The Committee asked technical questions about the proposed uranium enrichment process and waste disposal issues, and indicated that it will continue following up on staff licensing activities.

Conclusions/Action Items

The Committee decided that there is no need for a letter on this topic at this time, but that it will continue to follow up with NMSS staff on technical issues pertaining to uranium enrichment and waste disposal issues.

6. Preparation for ACNW Visit to Japan

During this meeting week it was decided that, instead of the full committee, a subcommittee of 3 Members accompanied by one staff person would travel to Japan to visit nuclear facilities and meet with regulators and industry representatives. The Members received extensive background materials for the trip before the March 15th-16th ACNW meeting. The Members looked at illustrations of locations to be visited and heard a brief history of nuclear programs in Japan, beginning with the construction and operation of the first Japanese commercial nuclear power plant in 1966. A draft travel itinerary was discussed. The final itinerary should be available by the next meeting following additional coordination with the cognizant Japanese organizations.

Conclusions/Action Items

The Committee has deferred additional overviews for the Japan trip until the April meeting when briefing books will be available for the May trip.

7. ACNW White Paper on Low-Level Radioactive Waste Management Issues

The Committee reviewed the first three sections of a draft outline of a white paper on LLW prepared by Dr. Ryan. The Members thought that Dr. Ryan should add a fourth section on regulatory interface issues.

Conclusions/Action Items

Dr. Ryan agreed to revise the white paper and re-distribute it to the Committee for further comments. Members and staff agreed to fill in details on some of the sections. The revisions will be discussed during the 159th meeting in April 2005.

8. Reconciliation of ACNW Comments and Recommendations

During its Planning and Procedures meeting March 15, 2005, the Committee considered the EDO response dated December 16, 2004, to an ACNW letter dated November 3, 2004, concerning the Working Group on the Evaluation of Igneous Activity and Its Consequences for a Geologic Repository at Yucca Mountain, Nevada. Based on its review of the EDO's response, the Committee concluded that additional Committee consideration of the igneous activity issue is needed.

Conclusions/Action Items

The ACNW agreed to defer preparing a letter regarding the EDO's December 16, 2004, response until after the Members' April 2005 technical assistance review meetings with staff from the CNWRA. As part of this review, Committee Members expect to receive updates from the CNWRA on its technical assistance programs in the area of igneous activity.

9. Proposed Agenda for the 159th ACNW Meeting

The Committee agreed to consider the following topics at its 159th meeting on April 18–19, 2005:

- C Office of Nuclear Material Safety and Safeguard's Division Directors' Quarterly Program Update
- C ACNW White Paper on Low-Level Radioactive Waste
- C Discussion of the April 14–15, 2005, Visit to the Center for Nuclear Waste Regulatory Analyses
- C National Source Tracking System
- C U.S. Department of Energy Repository Design

- C Transportation Aspects of the Yucca Mountain Environmental Impact Statement
- C Electric Power Research Institute Topical Report on Future System States
- C Japan Waste Management Visit
- C Preparation of ACNW Reports

Sincerely,

/RA/

Michael T. Ryan
Chairman

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