



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

ACNWR-0257

January 8, 2007

The Honorable Dale E. Klein
Chairman
U.S. Nuclear Regulatory Commission
Washington, D.C. 20555-0001

SUBJECT: WORKING GROUP MEETING ON DECOMMISSIONING LESSONS
LEARNED

Dear Chairman Klein:

At its 174th meeting on November 14, 2006, the Advisory Committee on Nuclear Waste (the Committee) conducted a working group meeting (WGM) on Decommissioning Lessons Learned. The meeting featured presentations from representatives of the Nuclear Energy Institute (NEI), the Fuel Cycle Facilities Forum, Argonne National Laboratory, the Army Corps of Engineers, the Kansas Department of Health and Environment, the Nuclear Regulatory Commission (NRC) Offices of Nuclear Regulatory Research, Federal and State Materials and Environmental Management Programs, and Nuclear Reactor Regulation. The meeting also included an invited expert panel, whose members have participated in other WGMs on decommissioning issues.¹

The following recommendations are provided:

Recommendations

- The staff should continue and expand its efforts to seek coherent decommissioning requirements with states and the Environmental Protection Agency. Differences in requirements contribute substantially to increased costs and delays.
- The staff should evaluate the potential impact of cumulative releases that, while permitted and legal, can cause the derived concentration guideline levels (DCGLs) for soil and groundwater to be exceeded when the facility is decommissioned. Derivations of DCGLs should consider the interrelationships between contaminated soil and future groundwater contamination.

¹ The expert panel consisted of Eric Darois, Radiation Safety and Control; David Kocher, SENES Oak Ridge and consultant to the ACNW, Tracey Ikenberry, Dade Moeller and Associates; and Thomas Nauman, of Shaw, Stone and Webster.

- The staff should continue its development of guidance related to decommissioning lessons learned into the planning for new facilities. Approaches to capturing unintended releases, providing access to potentially contaminated system components, and providing secondary containment and environmentally sound management of potentially contaminated liquids should be included in guidance.

Observations

- Several other groups in addition to the NRC staff are capturing decommissioning lessons learned. These groups include the NEI, the Electric Power Research Institute, the International Atomic Energy Agency, and the Department of Energy.
- Allowed discharges to the atmosphere and surface waters during the facility lifetime can result in DCGLs for remediation being exceeded. Early development of DCGLs during the licensing process and potential modification of DCGLs during the facility operating period may have merit.
- Multi-agency jurisdictions impact decommissioning costs and schedule. Variations in the cleanup requirements adopted by different states and regulatory agencies and the lack of a risk-informed waste classification system can lead to increased decommissioning costs and schedule delays. Consistency in requirements and approaches that are risk-informed would be very beneficial.
- In many decommissioning projects, waste disposal costs drive the ultimate cost of decommissioning. The total cost includes the disposal cost as well as substantial transportation costs resulting from the typically long distances from decommissioning sites to disposal facilities. Additional disposal facilities that provide cost-competition and are closer to decommissioning sites would lower total decommissioning costs significantly.
- An additional contributor to increased decommissioning costs is the need to remove unanticipated contaminated material from unknown legacy disposal or releases.
- Effective environmental management of liquids that can become contaminated is essential to minimization of decommissioning costs. Secondary containment of process liquids and storm-water management are critical in this regard.
- Preliminary site characterization typically addresses licensing requirements only. Baseline characterization of subsurface and hydro-geological factors is best done when construction is complete since construction affects site subsurface conditions. On-site backfilling of construction debris can affect subsurface hydro-geology as well.
- Accessibility of potentially contaminated system components is essential. Embedded or buried piping should be avoided or designed and constructed in such a way that access for inspection and needed maintenance is provided.

- Decommissioning of facilities decades from now may be very different from the current practices of decommissioning. Representatives of the expert panel urged that the lessons learned process be continued in the future. Lessons learned should be revisited to assess their continued applicability over time.

The Committee supports the capture and dissemination of information concerning decommissioning lessons learned. The Committee is planning the development of a white paper that integrates what it has learned about several key aspects of decommissioning. The Committee looks forward to continued interactions with the staff and other stakeholders as this initiative progresses.

Sincerely,

/RA/

Michael T. Ryan
Chairman