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UNITED STATES
NUCLEAR REGULATORY COMMISSION
WASHINGTON, D.C. 20555-0001

April 9, 1996

MEMORANDUM TO: Commissioner Rogers

FROM: James M. Taylor
Executive Director for Operations

SUBJECT: CONSOLIDATION OF HIGH-LEVEL WASTE (HLW) ACTIVITIES IN NMSS AND PLANS TO KEEP RES INVOLVED IN HLW ACTIVITIES

On March 11, 1996, we met to discuss the proposed plans for consolidation of HLW in NMSS that were outlined in my February 28, 1996 memorandum to the Commission (COMSECY-96-002). During this meeting, we agreed with the importance of ensuring the RES activities involve working with real life problems. I agreed to identify, in more detail, the specific way this was to be accomplished with those generic research activities that were to continue in RES.

The attachment outlines the approach that ensures that RES will continue to oversee and conduct a generic research program, focusing on radionuclide behavior and transport in the environment, that could yield results potentially to the HLW program (as well as to LLW and decommissioning). The approach provides for a full range of interactions among RES, NMSS, and the Center for Nuclear Waste Regulatory Analyses (Center). These interactions would involve HLW program reviews, prioritization of technical needs, and exchanges and reviews of new technical information among all three organizations as part of the basis for program planning and implementation. To ensure there is no resource prohibition to continuing this interface, I propose to allocate 0.5 FTE for the HLW program to RES.

The staff considered three options upon being confronted with the reality of the need to reduce NRC's HLW program due to budget cuts. One option would be to reduce NMSS by 3 FTE and thereby allow RES to maintain its 3 FTE to oversee HLW research at the Center. However, NMSS has already transferred 8 FTE out of the HLW program; further reduction of 3 FTE would result in loss of NRC capability in the area of repository design and thermal-mechanical effects, which would critically impact two of the 10 key technical issue-related interactions with DOE and NRC's basis for commenting on DOE's Viability Assessment. A second option would be to reduce the Center by about $300K to preserve RES's 3 FTE level capability. However, Center reductions have already eliminated QA, systems, and some data base support in order to preserve necessary technical skills; further reduction of $300K would critically impact review of repository design and ESF, analyses of seismic effects on design, and analyses of thermal-mechanical effects.

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The third option is to consolidate NRC's Yucca Mountain HLW activities in NMSS, while assuring that RES, NMSS, and the Center remain in a highly interactive mode that allows NMSS and the Center HLW activities to benefit from the RES generic research program and that keeps RES fully cognizant of NMSS and Center HLW activities and technical issues. RES would be able to expend 0.5 FTE to participate in these interactions.

Given the factors discussed in COMSECY-96-002 and in this memorandum, the third option provides the best available approach to maintain NRC's HLW program capability to address all of the key technical issues at Yucca mountain and maintain the Center at its minimum acceptable staffing level while providing RES with the full range of interaction with the HLW program.

Attachment:
As stated

cc: Chairman Jackson
Commissioner Dicus
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STAFF PLANS TO ASSURE EFFECTIVE INTERFACE BETWEEN RADIONUCLIDE ENVIRONMENTAL RESEARCH AND YUCCA MOUNTAIN LICENSING

- RELEVANT TECHNICAL AND SCIENTIFIC DISCIPLINES
  - *HYDROLOGY*
  - *GEOLOGY*
  - *GEOCHEMISTRY*
  - *MATERIALS*

- TECHNICAL BRANCHES INVOLVED
  - *NMSS:*
    - *LLW AND DECOMMISSIONING*
    - *HLW AND URANIUM RECOVERY*
    - *PERFORMANCE ASSESSMENT AND HYDROLOGY*
    - *ENGINEERING AND GEOSCIENCES*
  - *RES:*
    - *WASTE MANAGEMENT BRANCH*

- NMSS - RES INTERACTION - CONTINUING
  - *STAFF TO STAFF*
  - *DWM DIVISION MEETINGS (WMB BRANCH CHIEF)*
  - *CENTER REVIEW GROUP MEETINGS (DRA DEPUTY)*
  - *ANNUAL CENTER PROGRAM REVIEW (DRA MANAGEMENT AND TECHNICAL STAFF)*
  - *NMSS OFFICE MANAGEMENT MEETINGS (DRA DEPUTY)*
  - *ANNUAL NMSS PRIORITIZATION OF TECHNICAL NEEDS TO RES*
  - *EXCHANGE AND REVIEW OF TECHNICAL PRODUCTS FOR PROGRAM PLANNING AND IMPLEMENTATION*
- NMSS - RES INTERACTION - INITIATIVES
  - *NMSS WILL BE FORMALLY INVITED TO RES MEETINGS ON RELEVANT TECHNICAL TOPICS*
  - *RES WILL BE FORMALLY INVITED TO YUCCA MOUNTAIN MEETINGS ON RELEVANT TECHNICAL TOPICS*
- CNWRA WILL RECEIVE FIRST CONSIDERATION FOR ALL NEW WORK INITIATED BY RES ON RADIONUCLIDE TRANSPORT

- REFOCUS TO NON-LICENSEE SPECIFIC RESEARCH
  - *CONSIDERATION OF A RANGE OF GEOLOGIES, SOILS, CLIMATES*
  - *ADDRESS MULTIPLE RADIONUCLIDE PHYSICAL AND CHEMICAL FORMS*
  - *DEVELOP PERFORMANCE ASSESSMENT "TOOL BOX" TO ACCOMMODATE LOCAL CONDITIONS*
- RESULTS APPLICABLE TO ALL SITUATIONS INVOLVING RADIONUCLIDES IN THE ENVIRONMENT, REGARDLESS OF ORIGIN
  - *DEVELOP MULTIPLE 'SOURCE TERMS'*
  - *ADDRESS MULTIPLE PATHWAYS*
  - *CONSIDER MULTIPLE DETECTION/MONITORING STRATEGIES*
- GEOLOGIC DISPOSAL OF HLW AT YUCCA MOUNTAIN IS A PARTICULAR APPLICATION OF RADIONUCLIDE TRANSPORT AND BEHAVIOR IN THE ENVIRONMENT
  - *UNSATURATED, FRACTURED, TUFACEOUS ROCK*
  - *ARID CLIMATE*
  - *SPENT FUEL*
- DESIGN/ENGINEERING, HIGH TEMPERATURE GEOCHEMISTRY, AND VOLCANISM NOT ADDRESSED IN RES PROGRAM