

APR 1 1993

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MEMORANDUM FOR: Bill M. Morris, Director  
Division of Regulatory Applications, RES

FROM: B. J. Youngblood, Director  
Division of High-Level Waste Management, NMSS

SUBJECT: DHLWM REVIEW OF DRAFT NRC HIGH-LEVEL RADIOACTIVE WASTE  
RESEARCH PROGRAM PLAN (NUREG 1406)

All in all, we found the Research Program Plan to be a significant improvement over last year's effort. The program plan better describes the integration of the SPA and IPA processes into the research program. The appendices also better reflect the regulatory basis for the research program by showing the relationship among key technical uncertainties (KTU), user needs, and individual research projects.

The most serious deficiency of the report, at this point, is the lack of a consistent writing style throughout the text and appendices. It is our understanding that the plan is to be reviewed and modified by a technical editor. We believe that this will greatly improve the readability of the document.

Enclosed are comments and marked up pages of the Research Program Plan from the various Section reviewers (enclosures 2-8). As requested by Mel Silberberg, most of these comments have already been discussed with RES and resolved. However, some additional suggestions have also been generated from discussions about the research program plan and the specific comments already provided to RES. These additional suggestions are enclosed to this memorandum as Enclosure 1.

In addition to these comments, final agreement between NMSS and RES regarding Appendix C and Figure 2 in Chapter 2 of the text is being worked out between Mel Silberberg and Rex Wescott. When completed, Appendix C will outline a procedure for assuring that the research program is within the scope defined by key technical uncertainties through the user needs. Appendix C will also provide the mechanics for coordination of research and technical assistance. Figure 2 will graphically illustrate the interconnections among Iterative Performance Assessment, the License Application Review Plan and the Research Program.

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It is our understanding that you desire conditional agreement from us regarding this document before it is formally submitted to ACNW on April 20, 1993. After you have completed your informal interaction with ACNW on some key issues, we would like an opportunity for limited review of any changes resulting from these interactions. We understand that you are expecting to complete this interaction with ACNW by April 7, 1993.

*151*

B. J. Youngblood, Director  
 Division of High-Level Waste Management, HMSS

Enclosure:  
 As stated

cc: Bob Lillibridge, HLM

*(93028-HLHP)*

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*N. Eisenberg  
 D. Brooks*

\*SEE PREVIOUS CONCURRENCE\*

*JJ 4/11/93*

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B. J. Youngblood, Director  
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ADDITIONAL SUGGESTIONS ----- ENCLOSURE 1

- 1) An attachment should be added to Appendix C demonstrating how KTU's will become the justification for user needs and user needs will support the research program. This attachment should focus on Geology user needs 602 and 610 which are the only user needs updated to incorporate KTU's thus far.
- 2) The value of some programs appears to be overstated. Specific examples are as follows:
  - a) Page A 4, second paragraph, second sentence.
  - b) Page A-10, under Natural Analogues, the degree to which dissolution of spent fuel is analogous to dissolution from a natural ore body.
- 3) Page A-66. User Need 405 should be associated with "Sorption data & models".
- 4) Page A-10, last full paragraph, The Canadian Projects on irradiated fuel should be added.
- 5) Page A-5. First Paragraph, second sentence in Section A.0.1.6: The sentence implies that the Yucca Mountain Site has been selected for a high-level waste repository. This sentence should be modified to refer to selection for characterization of the site.
- 6) Page A-28, First sentence in Section titled "Underground Facility Related Research:" The sentence states that CDS's for the underground facility related research have not been done in the area of seismic response. This is incorrect. Draft Key Technical Uncertainties for RRT 3.2.1.7 and 3.2.1.8 are based on the uncertainties regarding the effects of vibratory ground motion on the stability of a corroded waste package canister, or in changes to the waste isolation characteristics of the repository block (including hydrologic parameters). We believe that these KTUs provide the basis for Research activities related to the effects of vibratory ground motion on the underground rock mass. We recommend that the report be revised to relate the Research activities with the KTUs identified.