

October 31, 1995

Dr. Robert G. Baca, Manager  
 Performance Assessment Program Element  
 Center for Nuclear Waste Regulatory Analyses  
 Southwest Research Institute  
 6220 Culebra Road  
 San Antonio, Texas 78228-0510

SUBJECT: TECHNICAL DIRECTION AND NEW ADMINISTRATIVE ITEMS UNDER THE  
 PERFORMANCE ASSESSMENT ELEMENT

Dear Dr. Baca:

The Nuclear Regulatory Commission staff will be working with the U.S. Environmental Protection Agency (EPA) over the next several months to evaluate various options to implement the recent National Academy of Sciences (NAS) recommendations on a disposal standard for the proposed repository at Yucca Mountain, Nevada. As part of these interactions, the NRC is planning to share with EPA the results of staff analyses performed to evaluate various aspects of the NAS recommendations. Some very short turn-around, as well as more extensive analyses, will be necessary to support both the staff's interactions with EPA and the development of NRC's conforming rule. We anticipate that the CNWRA will assist the staff in these endeavors, building on our joint work in the area of iterative performance assessment (IPA).

The purpose of this letter, therefore, is to provide technical direction under Subtask 1.1, "Implementation of the EPA Standard," for the CNWRA to evaluate various aspects of the NAS recommendations using the IPA Phase 2 computational capability. Consistent with the staff's earlier telephonic comments on a CNWRA proposal (draft dated October 16, 1995), the Center is requested to undertake a series of analyses that will address, among others, the following technical implementation issues:

- What are the processes within the saturated zone that most influence dilution of releases?
- What are the critical aspects of the exposure scenario that must be part of the reference biosphere?
- What are the characteristics of the estimated peak dose and what parameters influence it the most (e.g., importance of radionuclides)?
- How will the peak dose be influenced by disruptive events?
- What options are feasible to implement the stylized calculation for human intrusion?

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Dr. Robert G. Baca

Because of the EPA time table for a issuance of a site-specific standard, the CNWRA will be need to complete some initial, "reconnaissance-level" analyses relative to the aforementioned implementation issues sometime within the next few (2 - 4) weeks. As discussed with you on October 24, 1995, the Center's initial analyses will support the staff's proposed draft plan for a series of longer-term analyses, now under development by the staff.

Accordingly, it will be necessary for the Center to establish two Administrative Items (AIs) in support of this direction, as suggested during our October 27, 1995, phone conversation. The first recommended AI would consist of viewgraphs/slides depicting the results of Center's initial analyses; this AI would be due by November 30, 1995. The second AI would be a letter report providing the necessary technical documentation to support the information depicted in the viewgraphs/slides; this AI would be due by December 15, 1995.

This effort is considered to be within the scope of Subtask 2.1. Kindly let me know if this work will have a significant impact on the cost or schedule associated with this subtask. If you have any questions regarding the contents of this letter, please contact me at 301/415-6677. Thank you once again for your assistance in this matter.

Sincerely,

/s/

Michael P. Lee, Manager  
Performance Assessment Program Element  
Division of Waste Management  
Office of Nuclear Material Safety  
and Safeguards

cc: S.L. Fortuna, PMDA  
B.D. Meehan, CAB

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