

September 17, 1997

Dr. Robert G. Baca, Manager  
Performance Assessment Program Element  
Center for Nuclear Waste Regulatory Analyses  
Southwest Research Institute  
6220 Culebra Road, Bldg. 189  
San Antonio, Texas 78238-5166

SUBJECT: REVIEW OF INTERMEDIATE MILESTONE 5708-771-720 ENTITLED  
"INFORMATION AND ANALYSES TO SUPPORT SELECTION OF CRITICAL  
GROUPS AND REFERENCE BIOSPHERES FOR YUCCA MOUNTAIN  
EXPOSURE SCENARIOS"

Dear Dr. Baca:

On August 29, 1997, the Center for Nuclear Waste Regulatory Analyses (CNWRA) transmitted the Intermediate Milestone entitled "Information and Analyses to Support Selection of Critical Groups and Reference Biospheres for Yucca Mountain Exposure Scenarios." Chris McKenney and Bobby Abu-Eid have reviewed the subject document. Based on their review, it was determined that this deliverable was transmitted on time and is adequate and consistent with the technical direction provided to the CNWRA. Therefore, the requirements of Intermediate Milestone 5708-771-720 are considered acceptably met.

Some minor editorial comments and suggestions for improving the basis of your assumptions in the report were raised during the review. These comments are enclosed for your consideration. If you have any questions regarding the contents of this letter, please contact me at (301) 415-6681.

Sincerely,

[Original signed by:]

Timothy J. McCartin, Element Manager  
Performance Assessment & HLW  
Integration Branch  
Division of Waste Management  
Office of Nuclear Material Safety  
and Safeguards

Enclosure: As stated

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

Ticket: CNWRA 97-0079

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**Comments on CNWRA Document Entitled:  
"Information and Analysis to Support Selection of Critical Groups  
and Reference Biospheres for Yucca Mountain Exposure Scenarios"**

1. Selection of the scenario (e.g., resident farmer vs. nonfarmer) was based on groundwater pumping depth. The study used contour lines (Figure 2-2) delineating pumping groundwater depth at the YM site and the surrounding communities. In this context, the study could be improved by: (a) providing rationale, discussion, and analysis for selecting the 100 m depth as the upper limit for excluding establishing a farm on any location at the site or the surrounding areas; (b) providing justification for establishing certain contour lines where no wells or data is shown to support Figure 2-2.
2. The poultry transfer factor was not used because of lack of current evidence for local poultry meat farming. Is there additional justification for excluding poultry meat farming in arid environments?
3. The soil leaching factors used in GENII-S were derived using Baes and Sharp (1981) equation. The equation used certain physical parameters (e.g., total precipitation, total irrigation, etc.) that are site specific. One of those parameters is the Kd value. However, the study used the Kd value for a sandy soil reported by Sheppard and Thibault (1990). The author should explain the reason for not selecting a site specific value.
4. Additional discussion would be helpful in explaining the basis for the parameters corresponding to pluvial biosphere conditions.
5. On page iii, paragraph 4, second line, correct "code was is to generate" to "code was to generate."

Enclosure