

September 26, 1994

Mr. Ronald A. Milner, Acting Director
Office of Program Management and Integration
Office of Civilian Radioactive Waste Management
U.S. Department of Energy
1000 Independence Avenue, SW
Washington, DC 20585

SUBJECT: STAFF EVALUATION OF OPEN ITEM RESPONSE TO QUESTION 1 OF SITE
CHARACTERIZATION PLAN PROGRESS REPORTS 6 & 7

Dear Mr. Milner:

Attached is the Nuclear Regulatory Commission staff's evaluation of the U.S. Department of Energy (DOE) second response to Open Item Question 1 of Site Characterization Plan Progress Reports 6 & 7. The DOE response is contained in a letter from Stephan Brocoum (DOE) to Joseph Holonich (NRC) dated August 10, 1994. The staff considers this open item to be closed.

Question 1 asked "What evaluation has DOE made of the potential for air movement from the ESF to adversely impact the collection of geochemical data necessary for site characterization"? This question recommended that "Consideration should be given to the anticipated effect of air movement from the ESF on surface-based geochemical tests. If air movement from the ESF is anticipated to significantly affect the gathering of geochemical data necessary for licensing from surface-based tests, it is recommended that this data be collected before it can be compromised." The staff considers this open item to be closed because the DOE is implementing an accelerated surface based testing plan that is collecting liquid and gas geochemical data from the Yucca Mountain stratigraphy above the water table before the liquid and gas chemistry can be significantly impacted by construction of the ESF. Additional information concerning the NRC staff's review of this open item is contained in the Attachment. If DOE's proposed program approach results in changes to the accelerated surface based testing plan, DOE is requested to advise the NRC staff so that issues related to this open item may be reevaluated.

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If you have any questions regarding this letter or would like to discuss this concern further, please contact William Ford, of my staff. Mr. Ford can be reached at (301) 415-6630.

Sincerely,
/s/

Margaret Federline, Chief
Performance Assessment and
Hydrology Branch
Division of Waste Management
Office of Nuclear Material Safety
and Safeguards

Attachment: As stated

- cc: R. Loux, State of Nevada
- T. J. Hickey, Nevada Legislative Committee
- J. Meder, Nevada Legislative Counsel Bureau
- R. Nelson, YMPO
- M. Murphy, Nye County, NV
- M. Baughman, Lincoln County, NV
- D. Bechtel, Clark County, NV
- D. Weigel, GAO
- P. Niedzielski-Eichner, Nye County, NV
- B. Mettam, Inyo County, CA
- V. Poe, Mineral County, NV
- F. Mariani, White Pine County, NV
- R. Williams, Lander County, NV
- L. Fiorenzi, Eureka County, NV
- J. Hoffman, Esmeralda County, NV
- C. Schank, Churchill County, NV
- L. Bradshaw, Nye County, NV
- W. Barnard, NWTRB
- R. Holden, NCAI
- E. Lowery, NIEC

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QUESTION 1. PROGRESS REPORTS 6 AND 7

What evaluation has DOE made of the potential for air movement from the ESF to adversely impact the collection of geochemical data necessary for site characterization?

EVALUATION OF DOE RESPONSE

The second DOE response to this question is contained in a letter from Stephan Brocoum (DOE) to Joseph Holonich (NRC) dated August 10, 1994. In its second response, the DOE stated that the geochemical characterization of the unsaturated zone is still planned to be conducted as described in study plans 8.3.1.2.2.3 (Characterization of the Percolation in the Unsaturated Zone, Surface-Based Study), 8.3.1.2.2.6 (Characterization of the Yucca Mountain Unsaturated-Zone Gaseous-Phase Movement), and 8.3.1.2.2.7 (Hydrochemical Characterization of the Unsaturated Zone). In addition, the second DOE response describes an accelerated surface-based plan which was developed to characterize pneumatic conditions undisturbed by the tunnel boring machine.

The accelerated surface-based plan identifies nine boreholes from which data will have been collected prior to ESF construction (UE25a#4, NRG-2b, NRG-4, NRG-5, NRG-6, SD-12, SRG-4, UZ-7, and UZ-14). With the exception of hole UE25a#4 all of these holes will be sampled for gas chemistry. Five of the holes will be sampled for water chemistry (NRG-6, SD-12, SRG-4, UZ-7, and UZ-14). Of these five holes, three of them will be completed from the surface to the water table (SD-12, UZ-7, and UZ-14). In addition to these three holes, it is known that another hole (UZ-16) has been drilled from the surface to the water table and will collect both liquid and gas chemistry samples. This means that at four hole locations, gas and water samples will have been collected from all the hydrologic units above the water table prior to ESF construction.

The second DOE response also identifies 11 additional boreholes (NRG-7a, SD-4, SD-10, SRG-3, UE25a#4, UZ-1, UZ-4, UZ-5, UZ-6/6s, UZ-7A, UZ-13, and UZ-16) which will collect pre- and concurrent-ESF construction gas chemistry data. Of these boreholes six have already been drilled (NRG-7a, SD-7, UZ-1, UZ-6/6s, UZ-7A, and UZ-16). In addition, gas sampling and hydrologic sampling has been completed for holes UZ-1, UZ-16, UZ-6/6s.

Based on DOE's commitment to conduct a testing program based on the accelerated surface based testing plan, which will collect liquid and gas geochemical data from the Yucca Mountain stratigraphy above the water table, before the liquid and gas chemistry can be significantly impacted by construction of the ESF, the NRC staff considers this question closed.