

July 27, 2006

Mr. Mark H. Williams, Director
Regulatory Authority Office
Office of Civilian Radioactive Waste Management
U.S. Department of Energy
1551 Hillshire Drive
North Las Vegas, NV 89134-6321

SUBJECT: U.S. NUCLEAR REGULATORY COMMISSION STAFF OBSERVATIONS ON
THE U.S. DEPARTMENT OF ENERGY SPONSORED "PVHA-U FIELD TRIP:
VOLCANIC EVENT DEFINITION AND HISTORY OF VOLCANISM IN THE
YUCCA MOUNTAIN REGION," MAY 1-4, 2006

Dear Mr. Williams:

On May 1-4, 2006, members of the U.S. Nuclear Regulatory Commission (NRC) staff and the Center for Nuclear Waste Regulatory Analyses (CNWRA) observed the field trip, meetings, and discussions associated with the U.S. Department of Energy (DOE) Probabilistic Volcanic Hazard Analysis (PVHA-U). In general, we are pleased with DOE's progress in furthering the understanding of the volcanic history of the Yucca Mountain Region. We also applaud DOE's decision to provide the public with access to the PVHA-U meetings and the field trip. In light of this, we offer comments on the following three areas:

Availability of Information Given the PVHA Panel Members

The DOE, through its staff and contractors at Los Alamos National Laboratory, has developed a set of information related to volcanism in the Yucca Mountain Region. This information is made available to the PVHA-U panel through an FTP site, and via email, CD-ROM, or hard copy. NRC staff members have informally requested access to this information, but were told only that it will become available at sometime in the future.

For the NRC staff and the public, to fully understand the basis and validity of the reasoning used by various PVHA-U Panel Members, this information should be publicly available. The next public meeting of the PVHA-U will take place September 26 and 27, 2006. The subject of this meeting will be the results of the initial elicitation of individual panel members that we understand will occur over the next few weeks. These expert judgments will consider the specific information provided by DOE. The NRC staff requests, therefore, that DOE make as much of the information as possible available to NRC and the public before the next PVHA-U meeting.

Quality Assurance

The NRC staff agrees that, in an expert elicitation, the panel members are free to use any data they believe is useful to come to their own conclusions. NRC expects DOE to follow proper Quality Assurance procedures when processing the data, especially DOE generated data, as was implied during the closing session on May 4th. If the panel members request data that was generated outside the project, it may not be possible for DOE to ensure that proper procedures have been followed in generating the data. That being said, the DOE can assure that panel members and the public receive accurate data. However, if the requested data was generated within the Yucca Mountain Project, however, the NRC staff expects that all applicable DOE Quality Assurance procedures were followed in the creation, analysis, and reporting of the data.

The Use of Proponents

The procedures in use for the PVHA-U identify various roles for various personnel, including the use of proponents for specific areas of inquiry. The idea behind the use of proponents recognizes that there may exist more than one, or even several, legitimate interpretations of certain data or phenomena. The NRC staff is concerned that since most of the data discussed during the PVHA-U was generated and analyzed by DOE and its contractors; those same DOE staff members and contractors are serving as proponents of their own work. No proponents appear to have been identified for opposing views. For example, the conventional theory of dike propagation, as discussed in the DOE-sponsored "Final Report of the Igneous Consequences Peer Review Panel," April, 2003, would suggest that, to account for a feature such as the Lathrop Wells Cone, a dike with a strike length on the order of 20 kilometers long would be needed. In presentations and discussions on the PVHA-U field trip, however, DOE staff suggested that dikes on the order of a kilometer or so, extending through the crust, would best explain Lathrop Wells and the Quaternary cones of Crater Flat, with slightly longer dikes indicated for the Miocene and Pliocene cones. The expert panel received no presentation that considered how conventional dike propagation theory would account for observations in the Yucca Mountain Region, or that reconciles the contradictions between the two theories.

The NRC staff recognizes that DOE may not be able to identify and provide proponents for every issue. Greater effort should be made to encourage panel members to assume the role of proponent for competing interpretations, and the final report should acknowledge and consider the possible effect of these interpretations on the outcome.

M. Williams

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If you have any questions on these matters, please contact Dr. John Trapp of my staff at (301) 415-8063, or by email at jst@nrc.gov.

Sincerely,

/RA/

Lawrence E. Kokajko, Deputy Director
Division of High-Level Waste Repository Safety
Office of Nuclear Material Safety
and Safeguards

cc: See attached list

Letter to M. Williams from L. Kokajko dated: July 27, 2006

cc:

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Sincerely,

/RA/

Lawrence E. Kokajko, Deputy Director
Division of High-Level Waste Repository Safety
Office of Nuclear Material Safety
and Safeguards

cc: See attached list

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