



Department of Energy
Washington, DC 20585

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Mr. Kenneth R. Hooks, Acting Director
Repository Licensing & Quality
Assurance Project Directorate
Division of High-Level
Waste Management
Office of Nuclear Material
Safety and Safeguards
U.S. Nuclear Regulatory Commission
Washington, D.C. 20555

References: (1) Ltr, Youngblood to Shelor, dtd 12/30/93
(2) Ltr, Shelor to Holonich, dtd 2/24/93

Dear Mr. Hooks:

The U.S. Nuclear Regulatory Commission (NRC) forwarded a concern (Reference 1) pertaining to the technical assessment for data qualification undertaken by the U.S. Department of Energy (DOE) as part of the topical report (TR), "Evaluation of the Potentially Adverse Condition 'Evidence for Extreme Erosion During the Quaternary Period' at Yucca Mountain, Nevada." DOE's documentation package for this exercise was sent to NRC in Reference 2. DOE implemented data qualification for the first time in this TR because almost all of the data used to reach the conclusions in the TR predated DOE approval of the Los Alamos National Laboratory (Los Alamos) and the U.S. Geological Survey quality assurance (QA) programs.

In Reference 1, NRC noted that the TR (Appendix A, Section 2, page 57) stated that data can be qualified through two methods: technical assessment and peer review. DOE needs to clarify that the process undertaken for the TR's data qualification exercise was a technical assessment, and that the guidance provided by NUREG-1298 was used. NRC appears to have concluded that a peer review was also instituted to be a companion or parallel activity. In Reference 1, NRC notes various level-of-detail concerns they believe are manifest in Los Alamos' peer review in light of the guidance provided in NUREG-1297, "Peer Review For High-Level Nuclear Waste Repositories."

The Los Alamos peer review on the varnish cation ratio (VCR) dating technique was requested by Los Alamos management as a means to conduct an internal technical verification that the VCR dating technique was suited for applications that were, at that time, underway to establish Quaternary geochronologic frameworks for erosion, volcanism, and tectonic studies. The Los Alamos peer review was not conducted with the expectation that it was the means by which the data set was to be qualified.

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The Los Alamos peer review constituted supporting information in DOE's qualification exercise that: (1) placed into the record an independent, critical review of the VCR technique that was beyond the materials considered by the technical assessment team; (2) provided confidence that the technique applied was superior to a competing VCR dating methodology; (3) provided confidence that the VCR results obtained with Los Alamos' methodology represented the best achievable for the technique. NRC stated that several points (Reference 1) were not considered in the Los Alamos peer review report. Most of these points (Section IV[4] of NUREG-1297) are, in fact, present in Los Alamos' 1989 peer review. However, they are commingled and may not be itemized in a way that would allow easy traceability.

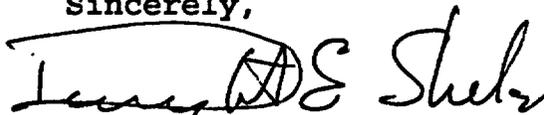
All of the major requirements for a peer review are reflected in the 1989 Los Alamos peer review record; namely, that the Los Alamos review constituted "a documented, critical review performed by peers who are independent of the work being reviewed." Moreover, the criteria for peer reviewer technical qualifications and independence in NUREG-1297 (Section IV[3][a] and [b]) are faithfully preserved in the Los Alamos peer review.

DOE's procedure implementing the guidance from NUREG-1298, Administrative Procedure 5.9Q (Qualification of Existing Data), Revision 2, used a combination of methods to qualify data. These methods consisted of: (1) equivalent QA program; (2) corroborating data; and (3) peer review, to conclude that the data is qualified. DOE finds the incorporation of an existing and relevant peer review into the technical assessment process to be appropriate in light of the statement made in NUREG-1298, Section IV(2) that "Additional confidence/credibility could be achieved when a combination of methods is used."

DOE notes that in Reference 1 the NRC staff accepts that a data qualification process has been successfully completed and that a data set has been qualified. DOE further notes observations in Reference 1 that will benefit future data qualification efforts; for example, inclusion of a peer review report's recommendations for consideration as part of a technical assessment for data qualification.

If you have any questions, contact Chris Einberg of my staff at (202) 586-8869.

Sincerely,



Dwight E. Shelor
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