

March 19, 1998

Dr. Stephan Brocoum  
Assistant Manager for Licensing  
U.S. Department of Energy  
Office of Civilian Radioactive Waste Management  
Yucca Mountain Site Characterization Office  
P.O. Box 30307  
North Las Vegas, Nevada 89036-0307

Subject: ERRATUM TO ISSUE RESOLUTION STATUS REPORT  
KEY TECHNICAL ISSUE: REPOSITORY DESIGN AND  
THERMOMECHANICAL EFFECTS

Dear Dr. Brocoum:

As you know, the staff of the U.S. Nuclear Regulatory Commission (NRC) issued REVISION 0 of the subject report for the U.S. Department of Energy's information and use. Subsequent to this release, it was brought to NRC staff's attention by your staff that the first paragraph on page 28 of the subject report was incomplete. The NRC staff checked and found that an omission had indeed occurred during the final production of the report. Therefore, please find enclosed a corrected version of page 28 of the report. We thank you for bringing the error to our attention.

If you have any questions, please contact Dr. Mysore Nataraja of my staff at (301) 415-6695, or via Internet mail service (msn1@nrc.gov).

Sincerely,

/S/

N. King Stablein, Acting Chief  
Engineering and Geosciences Branch  
Division of Waste Management  
Office of Nuclear Material Safety  
and Safeguards

Enclosure: As stated

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**Enclosure**

DOE continues to defend its decision to classify concrete inverts as temporary structures and considers that they can be removed and replaced by temporarily transferring the loads from the steel sets to another load carrying frame while the 'temporary' invert is removed and replaced by another qualified invert. The staff, however, believes that, the concrete inverts are part of the roof support system and should be given the same QA classification as the rest of the roof support components, such as the steel sets and roof bolts. The staff also believes that the procedure of temporarily transferring the loads is not only cumbersome and complicated but also could potentially result in stressing the rocks and the steel sets in addition to posing increased worker-safety concerns.

The staff recommends that DOE take up appropriate actions necessary to document the quality of concrete used and its characteristics, such as physical, chemical and mechanical properties and conduct the necessary analyses to study any long-term adverse impacts.

## **5.2 Seismic Design Methodology**

Based on the review of Rev. 2 of TR-2, the seismic design methodology presented by DOE is acceptable to the staff. The concerns related to repeated seismic loading for the preclosure design have been closed based on the rationale presented in TR-2. The staff has no further questions on this subissue at the present time.

The question of consideration of repeated seismic loading for the (postclosure) design of WP and TSPAs is expected to be covered during the review of TR-3. As stated earlier, the staff will review TR-3 on seismic and fault displacement inputs for design and PAs and consider the set of three TRs in the context of how the TRs together address the issue of simplifying the licensing review. The staff will continue to be involved in observing DOE's expert elicitation during the preparation of final hazard curves for the YM site along with the identification of design basis accelerations and fault displacements. The IRSRs planned for 1998 are expected to document the complete review results of all three TRs. It should be noted that this IRSR does not take any position with respect to the acceptability of DOE's seismic and fault displacement design of the GROA. Such a finding will be made during the license application review.

### **5.2.1 Status of Open Items Related to Seismic Design Methodology**

There are currently no open items related to the seismic design methodology subissue. However, questions on the seismic design of the ESF and the bases for the seismic inputs have been raised in the past. The open items resulting from such past reviews have been tracked under the design control process subissue (see Section 5.1.1).

## **5.3 TM Effects**

This subissue will be addressed in subsequent revisions of this IRSR.

### **5.3.1 Status of Open Items Related to TM Effects**

More work needs to be done in finalizing this section. Therefore, the status of open items presented here may be incomplete.