

May 10, 1999

MEMORANDUM TO: William D. Travers  
Executive Director for Operations

FROM: Annette Vietti-Cook, Secretary /s/

SUBJECT: STAFF REQUIREMENTS - SECY-99-074 - STAFF REVIEW OF U.S. DEPARTMENT OF ENERGY VIABILITY ASSESSMENT FOR A HIGH-LEVEL RADIOACTIVE WASTE REPOSITORY AT YUCCA MOUNTAIN, NEVADA

The Commission has approved the proposed letter to the Department of Energy (DOE **EXIT**) which transmits staff comments on the Viability Assessment. The comments in the [attachment](#) should be incorporated prior to forwarding the letter to DOE. The results of the review should also be transmitted to the appropriate Congressional committees for information.

(EDO)

(SECY Suspense: 6/11/99)

Attachment: [As stated](#)

cc: Chairman Jackson  
Commissioner Dicus  
Commissioner Diaz  
Commissioner McGaffigan  
Commissioner Merrifield  
OGC  
CIO  
CFO  
OCA  
OIG  
OPA  
Office Directors, Regions, ACRS, ACNW, ASLBP (via E-Mail)  
PDR  
DCS

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[ATTACHMENT](#)

### **Commission Comments and Changes to Staff Comments in SECY-99-074**

1. The following paragraph should be added at the top of page 2 of the letter to address the issue of defense-in-depth with respect to the repository.  
  
"The staff notes that in the TSPA-VA, DOE placed heavy reliance on engineered barriers (e.g., waste package performance, cladding credit) to achieve isolation. In addition, the discussion of "defense-in-depth" in the LA Plan considers additional engineered features (drip shields, backfill, ceramic coatings) to compensate for uncertainty and provide margin of safety. In the Statement of Considerations for proposed 10 CFR Part 63, the Commission stated its expectation that natural and engineered barriers would each make a definite contribution to the isolation of waste in order to provide reasonable assurance that the overall safety objective would be met. In any future license application, DOE is expected to demonstrate that natural barriers and the engineered barrier system work in combination to enhance overall performance of the geologic repository. Additional attention needs to be given to how this demonstration will be made."
2. In view of the ACNW comments in its April 8, 1999 letter to Chairman Jackson, those of the Total System Performance Assessment Peer Review Panel in its February 1999 report on the VA and the 1997 letter report from the NWTRB stating that the issue of volcanism can be considered resolved for most purposes, the staff should critically evaluate its current position on volcanism that this issue is not adequately addressed in the VA. The purpose of such a review would be to ensure that the NRC staff is not taking an overly conservative approach on this issue and thus inadvertently negatively impacting the process by diverting scarce DOE and NRC resources from more safety significant issues. The staff should also ensure that its position is transparent and well documented. The staff should work closely with DOE to resolve the issue of volcanism in a timely manner.
3. The April 8, 1999 ACNW letter to Chairman Jackson on the DOE Viability Assessment should be provided as an enclosure to the DOE letter for information purposes only. The cover letter should note that the ACNW letter is being provided to DOE for information only.
4. In the "Repository Design" section, the "Comment" paragraph, change the second sentence to read: Significant changes in the repository design may affect the timely availability of data **and well developed supporting information** to be used for repository PA that is necessary for developing a complete and defensible LA.

5. In the "Repository Design" section, the "Importance" paragraph, change the last sentence to read: It is equally important to develop analytical tools that can make quantitative comparisons of alternatives so that the preference of one over the rest could be established on a rational basis **and in a transparent manner**.
6. In the "Repository Design" section, the "Status of Resolution" paragraph, line 1, revise the first sentence to read: "The NRC has to date concentrated on the design control process being employed by the DOE to document design changes **for the exploratory studies facility**."
7. In the "Repository Design" section, the "Status of Resolution" paragraph, line 5, correct the spelling of 'judgment' and insert the following new sentences prior to the sentence beginning with 'DOE plans to' **NRC recognizes the importance of allowing for certain design improvements and data gathering during the pre-closure period that could improve repository safety and reduce uncertainties in the predicted performance of the repository. However, it must also be recognized that the LA and supporting information must be well developed to allow NRC to make a finding of reasonable assurance of safety.**
8. In the "Saturated Zone Flow and Transport" section, the "Importance" paragraph, line 5, delete the first 'the.'