

AUG 20 1990

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Mr. Ralph Stein, Associate Director
for Systems Integration and Regulations
Office of Civilian Radioactive Waste Management
U. S. Department of Energy, RW 30
Washington, D.C. 20585

Dear Mr. Stein:

SUBJECT: ACCEPTANCE/START WORK REVIEWS OF DOE STUDY PLANS ON CHARACTERIZATION OF VOLCANIC FEATURES AND MINERALOGY, PETROLOGY, AND CHEMISTRY OF TRANSPORT PATHWAYS

On November 30, 1989 the DOE transmitted the study plan entitled "Study Plan for Mineralogy, Petrology, and Chemistry of Transport Pathways" (Study Plan for Study 8.3.1.3.2.1) to NRC for review and comment. More recently, on May 15, 1990, the study plan entitled "Characterization of Volcanic Features" (Study Plan for Study 8.3.1.8.5.1) was transmitted by DOE to NRC for the same purposes. The NRC has completed its Acceptance Reviews and Start-Work Reviews of those documents using the draft NRC staff Study Plan Review Plan (SPRP), which was provided to DOE on January 15, 1988, and which was discussed in part during the December 15, 1988 NRC-DOE Meeting on Study Plans.

The result of both Acceptance Reviews was that the material submitted was considered substantively consistent with the agreement on content resulting from the NRC-DOE agreements made at the May 7-8, 1986 meeting on Level of Detail for Site Characterization Plans and Study Plans. In addition, the references for the study plans have, with only minor exceptions, been provided to NRC or are readily available in the public domain. Hence, both study plans were found acceptable for further review.

The purpose of the NRC's Start-Work Review is to identify concerns with studies, tests, or analyses that if started could cause significant and irreparable adverse effects on the site, the site characterization program, or the eventual usability of the data for licensing. Such concerns would constitute objections, as that term has been used in earlier NRC staff reviews of DOE's documents related to site characterization (Consultation Draft Site Characterization Plan (CDSCP) and Site Characterization Plan (SCP) for the Yucca Mountain site). The NRC staff Start-Work Reviews of the two study plans identified no objections with any of the activities proposed.

After completion of an Acceptance Review and a Start-Work Review, selected study plans are to receive a third level of review, called a Detailed Technical

Review, based on the potential importance of the study plan relative to potential NRC licensing concerns. We have decided to proceed with Detailed Technical Reviews of both study plans and will provide DOE with staff comments as soon as those reviews are completed.

At the December 15, 1988 Study Plan Meeting, NRC and DOE agreed that upon request DOE would provide NRC with particular procedures referenced in a study plan that has been submitted for review. We request that DOE provide us as soon as possible with the following procedures referenced in the subject study plans so that the staff can complete its reviews expeditiously:

Characterization of Volcanic Features

- Drilling Procedures: TWS-INC-7-3/86-5
- Nevada Test Site Core Petrography Procedure: TWS-ESS-DP-03
- Procedure for Volcanism Field Studies: TWS-EES-13-DP-606
- K/Ar Dating, NWM-USGS-GCP-06
- Procedure for ⁴⁰Ar/³⁹Ar Measurements
- Procedures for Geomorphic Field Studies: TWS-NS-DP-606,R0
- Procedures for Laboratory Studies of Soils
- Rock and Paleomagnetic Investigations: GPP-06,R0
- Procedure for Soil Field Studies: TWS-N5-DP-602
- Analysis of Basalt Ash Using PIXE (Proton-Induced X-ray Emission)
- Volcanic Hazard Investigations: TWS-INC-WP-12
- Sample Collection Procedures for Rock Varnish Studies: TWS-EES-DP-114
- Preparation of Powders from Rock, Cinder and Ash Samples: TWS-N5-DP-605
- Procedure for Infrared Spectroscopy Analysis of Rock Varnish
- Scanning Electron Microscope Method for Rock-Varnish Analysis
- Strontium and Neodymium Isotopic Procedures

Study Plan for Mineralogy, Petrology, and Chemistry of Transport Pathways

- Nevada Test Site Fracture-Filling Studies Procedure: TWS-ESS-DP-28
- Procedure for Determination of Volume Percentage of Constituents in Thin Sections of Topopah Spring Member and Similar Rhyolites: TWS-ESS-DP-102.

In addition, we request the following references from the "Characterization of Volcanic Features" which are not available in the open literature:

- ° Carr, W. J., Written Communications to Bruce Crowe, 1981, 1982 and 1984.
- ° Dorn, R., Personal Communications to Bruce Crowe, 1987.

If you have any questions concerning this letter, please contact King Stablein (FTS 492-0446) of my staff.

Sincerely,

ORIGINAL SIGNED BY

John J. Linehan, Director
 Repository Licensing and Quality
 Assurance Project Directorate
 Division of High-Level Waste Management
 Office of Nuclear Material Safety
 and Safeguards

- cc: R. Loux, State of Nevada
 C. Gertz, DOE/NV
 S. Bradhurst, Nye County, NV
 M. Baughman, Lincoln County, NV
 D. Bechtel, Clark County, NV
 D. Weigel, GAO
 A. Simmons, DOE/NV
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 P. Ndziezielski-Eichner, Nye County, NV.

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