

Department of Energy

Washington, DC 20585

OCT 7 1993

Mr. Joseph J. Holonich, 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, DC 20555

Dear Mr. Holonich:

Enclosed with this letter is a controlled copy of Study Plan 8.3.1.2.2.6, Revision 1, "Characterization of the Yucca Mountain Unsaturated-Zone Gaseous-Phase Movement", prepared by the U.S. Department of Energy (DOE) for the Yucca Mountain site. The study plan numbers correspond to the same numbers used in the Site Characterization Plan (SCP) for the Yucca Mountain site.

Study plans are prepared, reviewed, and approved under Yucca Mountain Site Characterization Project Office (YMPO) quality assurance procedures.

This study plan was originally approved before the 1993 DOE/U.S. Nuclear Regulatory Commission (NRC) study plan agreement became effective. Therefore, DOE has reviewed Revision 1 of this study plan for consistency with the content requirements for study plans, as given in Attachment B to the Summary of the DOE/NRC meeting on the Level-of-Detail for the SCP (May 7-8, 1986). This revision incorporates changes related to the Exploratory Studies Facility and changes related to the State of Nevada's comments on Revision 0, as well as other minor changes. Enclosure 2 is a list of technical procedures to be used in conjunction with this study plan.

It should be noted that there may be some inconsistencies in the milestone report titles and schedules given in this study plan and those in the SCP. Study plans, in general, represent a further evolution of the study in the areas related to schedules and milestones relative to the SCP, and as such, represent DOE's current plans.

DOE did not identify any Site Characterization Analysis open items related to this study plan.

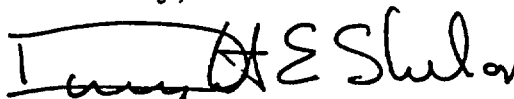
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The Document Transmittal/Acknowledgement Record for your controlled copy of the study plan should be signed and dated and returned to the Document Control Center in Las Vegas, Nevada. The NRC should be aware that the expanded testing program proposed in this revision may lead to an increased potential for test interference. This possibility is discussed in Section 2.2 of the study plan and will be evaluated by YMPO as testing proceeds.

If you have any questions, please contact Ms. Sheila Long at 202-586-1447.

Sincerely,



Dwight E. Shelor
Associate Director for
Systems and Compliance
Office of Civilian Radioactive
Waste Management

Enclosures:

1. Study Plan 8.3.1.2.2.6,
Revision 1
2. List of Technical Procedures

cc: w\enclosure
Alice Cortinas, CNWRA, San Antonio, TX

cc: w/enclosure 2
C. Gertz, YMPO
T. J. Hickey, Nevada Legislative Committee
R. Loux, State of Nevada
D. Bechtel, Las Vegas, NV
Eureka County, NV
Lander County, Battle Mountain, NV
P. Niedzielski-Eichner, Nye County, NV
W. Offutt, Nye County, NV
L. Bradshaw, Nye County, NV
C. Schank, Churchill County, NV
F. Mariani, White Pine County, NV
V. Poe, Mineral County, NV
J. Pitts, Lincoln County, NV
J. Hayes, Esmeralda County, NV
B. Mettam, Inyo County, CA
C. Abrams, NRC

Technical Procedures for the Gaseous-Phase Circulation Activity

Procedure No.

Technical Procedure

Total air circulation in open boreholes

- HP-175 Method for surface measurements of velocity, direction, temperature and humidity of convective airflow in topographically-affected wells
- HP-177 Operation of the Setra Model 270 barometric pressure transducer

Flow, temperature, and gas-composition profiles

- HP-07 Use of a trace gas for determining atmospheric contamination in a dry-drilled borehole
- HP-56 Gas and water-vapor sampling from unsaturated-zone test holes
- TBD Depth calibration of noncommercial logging tools
- HP-178 Procedure to measure temperature, humidity, differential pressure, and airflow at selected depths in UZ boreholes
- HP-160 Methods for analysis of samples for gas composition by gas chromatography
- HP-176 Procedure to collect gas composition samples at selected depth intervals
- HP-236T Installation and operation of PVC straddle packer string in UZ boreholes for gas and water-vapor sampling
- HP-240 Method for analysis of CO₂ and/or gas sample concentrations by gas chromatography using Summit Interests SIP 1000
- HP-242 Method of analyzing the concentration of halocarbon gases with an ITI Leakmeter 120
- TBD Data-acquisition system operations check
- TBD Mass flow rate meters - use and calibration
- TBD Pressure sensor and sensor lead calibration

Gas tracer test

HP-56	Gas and water-vapor sampling from unsaturated-zone test holes
TBD	Data-acquisition system operations check
TBD	Procedure for introducing gas tracers into test interval
TBD	Procedure for making chemical standards for tracers
HP-160	Methods for analysis of samples for gas composition by gas chromatography

NOTE: Where calibration requirements are applicable to equipment, they are described in appropriate technical procedures.