



**Department of Energy**  
Washington, DC 20585

April 9, 1992

Mr. Joseph J. Holonich, Director  
Repository Licensing and 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:

This letter is in reference to the status of the U.S. Nuclear Regulatory Commission (NRC) Phase I Reviews of Site Characterization Plan study plans prepared for the U.S. Department of Energy (DOE) based on study plans submitted by DOE to NRC to date.

In accordance with the agreement made in the May 7-8, 1986, DOE/NRC Meeting on the Level-of-Detail for the Site Characterization Plan, DOE agreed to submit a prepared study plan to NRC prior to commencing any study-related work activities at the applicable site area.

Also in accordance with the May 1986 agreement, NRC agreed to review the study plan and notify DOE of any major concerns regarding the study plan within approximately 90 days. The NRC Phase I Review provides a basis for which NRC determines that the study plan contains sufficient detail and assurance to NRC that DOE may proceed with the work activities without NRC being concerned that the site is at risk.

Enclosed is a status of DOE study plans provided to NRC for review and a status of the NRC Phase I Reviews received by DOE to date. DOE appreciates the cooperation and review efforts by NRC in this regard. However, as indicated by the enclosed listing, there remain five study plans for which NRC has not provided Phase I Reviews and for which the time frame as agreed to in the May 1986 meeting has passed.

In particular, DOE, via letter dated December 6, 1991 (Roberts to Linehan), requested that Study Plan 8.3.1.5.1.2, "Paleoclimate Study: Lake, Playa, and Marsh Deposits," be exempted from a three-month delay while NRC completes the Phase I review because the study, although new, is a standard paleoenvironmental study that collects data outside the controlled area and will not result in adverse impacts to waste isolation or test-to-test interference. In the NRC's review of the Site Characterization Plan, the NRC provided no objections, comments, or questions on

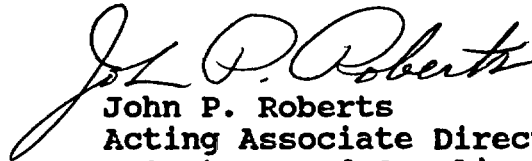
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this specific study. NRC contacted DOE shortly after receiving the study plan to explain that NRC staff resources and other work load may impact timeliness of the review, but every effort would be made to respond to DOE within a month. To date, DOE has received no indication of NRC activity with regard to this study plan.

DOE would appreciate a status of the remaining study plans undergoing NRC review as soon as practicable to facilitate the work efforts being conducted at the Yucca Mountain Site. Should you have questions, please contact Sharon Skuchko of my office at (202) 586-4590.

Sincerely,



John P. Roberts  
Acting Associate Director for  
Systems and Compliance  
Office of Systems and Compliance  
Office of Civilian Radioactive  
Waste Management

Enclosure:  
Status of Study Plan Phase I Reviews

cc w/Enclosure:  
C. Gertz, YMPO  
K. Hooks, NRC  
C. Abrams, NRC  
R. Loux, State of Nevada  
M. Baughman, Lincoln County, NV  
J. Bingham, Clark County, NV  
B. Raper, Nye County, NV  
P. Niedzielski-Eichner, Nye County, NV  
G. Derby, Lander County, NV  
P. Goicoechea, Eureka, NV  
C. Schank, Churchill County, NV  
F. Mariani, White Pine County, NV  
V. Poe, Mineral County, NV  
E. Wright, Lincoln County, NV  
J. Pitts, Lincoln County, NV  
R. Williams, Lander County, NV  
J. Hayes, Esmeralda County, NV  
M. Hayes, Esmeralda County, NV  
B. Mettam, Inyo County, CA

STATUS OF STUDY PLANS SENT TO NRC FEB 1989 THROUGH FEB 1992

<u>Study Plan Number and Title</u>	<u>Date Sent to NRC</u>	<u>NRC Phase I Review</u>	<u>Detailed Review</u>
Study Plan 8.3.1.2.2.2 Water Movement Tracer Test (ESF)	02/09/89	**	#
Study Plan 8.3.1.2.2.4 Characterization of the Yucca Mountain Unsaturated Zone Percolation Study (ESF)	02/09/89	**	#
Study Plan 8.3.1.4.2.2 Characterization of Structural Features in the Site Area (ESF)	02/09/89	**	#
Study Plan 8.3.1.15.1.5 Excavation Investigations (ESF)	02/09/89	**	#
Study Plan 8.3.1.15.2.1 Characterization of the Site Ambient Stress Conditions (ESF)	02/09/89	**	#
Study Plan 8.3.1.5.2.1.3-.5 Characterization of the Yucca Mountain Quaternary Regional Hydrology	06/30/89	11/24/89	06/08/90
Study Plan 8.3.1.17.4.2 Evaluating the Location and Recency of Faulting Near Prospective Surface Facilities	06/30/89	11/24/89	03/16/90
Study Plan 8.3.1.3.2.1 Mineralogy, Petrology, and Geochemistry of Transport Pathways	11/30/89	08/20/90	03/13/91
Study Plan 8.3.1.2.3.1.7 Testing of the C-Hole Sites with Reactive Tracers	04/06/90 (complete version 03/07/91)	12-06-91	##
Study Plan 8.3.1.8.5.1 Characterization of Volcanic Features	05/15/90	08/20/90	03/18/91

Study Plan 8.3.1.15.1.2 Laboratory Thermal Expansion Testing	10-04-90	***	#
Study Plan 8.3.1.2.1.2 Characterization of the Yucca Mountain Regional Surface - Water Runoff and Streamflow	10/04/90	05/14/91	+
Study Plan 8.3.1.16.1.1 Characterization of Flood Potential and Debris Hazards of the Yucca Mountain Site	10/11/90	05/08/91	Not needed
Study Plan 8.3.1.17.4.1 Historical and Current Seismicity	10/22/90	05/14/91	Not needed
Study Plan 8.3.1.15.1.1 Laboratory Thermal Properties	01/22/91	***	#
Study Plan 8.3.1.17.4.10 Geodetic Leveling	02/14/91	10/04/91	Not needed
Study Plan 8.3.1.2.1.3 Characterization of the Yucca Mountain Regional Ground Water Flow System	02/15/91	10/04/91	Not needed
Study Plan 8.3.1.17.4.6 Quaternary Faulting within the Site Area	02/19/91	+	Not needed
Study Plan 8.3.1.2.2.1 Characterization of the Unsaturated-Zone Infiltration	03/01/91	05/31/91	Not needed
Study Plan 8.3.1.8.1.1 Probability of Magmatic Disruption of the Repository	03/05/91	10/05/91	To be provided
Study Plan 8.3.1.2.3.1.1-6, Characterization of the Site Saturated-Zone Ground-Water Flow System	03/07/91	12/06/91	##

Study Plan 8.3.1.2.2.7 Hydrochemical Characterization of the Unsaturated Zone	05/08/91 & 09/13/91 (to amend errors)	+	#
*Study Plan 8.3.1.2.2.3 Characterization of Percolation in the Unsaturated Zone, Surface-Based Study	05/10/91	03/26/92	Not needed
Study Plan 8.3.1.12.2.1 Meteorological Monitoring Plan (Study Plan for Meteorological Data Collection at the Yucca Mountain Site)	05/16/91	11/12/91	##
Study Plan 8.3.1.15.1.3 Laboratory Determination of Mechanical Properties of Intact Rock	06/21/91	***	#
*Study Plan 8.3.1.5.1.4 Analysis of the Paleoenvironmental History of the Yucca Mountain Region	06/24/91	12/06/91	##
Study Plan 8.3.1.2.1.1 Characterization of Meteorology for Regional Hydrology	06/21/91	10/21/91	Not needed
Study Plan 8.3.1.2.2.6 Characterization of the Yucca Mountain Unsaturated- Zone Gaseous Phase Movement	06/24/91	10/07/91	Not needed
Study Plan 8.3.1.9.2.2 Water Resource Assessment of Yucca Mountain, Nevada	09/20/91	TBD	
*Study Plan 8.3.1.14.2 Studies to Provide Soil and Rock Properties for Potential Locations of Surface Facilities and Subsurface Access Facilities	10/16/91	01/23/92	##

Study Plan 8.3.1.17.3.4 Effects of Local Site Geology on Surface and Subsurface Motions	12/04/91	TBD
Study Plan 8.3.1.5.1.2 Paleoclimate Study: Lake, Playa, and Marsh Deposits	12/06/91	TBD
Study Plan 8.3.1.2.1.4 Regional Hydrologic Synthesis and Modeling	01/15/92	TBD
Study Plan 8.3.1.17.3.1 Relevant Earthquake Sources	01/16/92	TBD
Study Plan 8.3.1.3.2.2 History of Mineralogic and Geochemical Alteration of Yucca Mountain	01/31/92	TBD
Study Plan 8.3.1.5.1.3 Climatic Interpretations of Terrestrial Paleoecology	02/07/92	TBD

\* DOE letter dated October 29, 1991, notified NRC of three study plans considered to be a high priority since these studies are either (1) supporting specific surface-based activities that the DOE would begin in FY92, or (2) supporting data acquisition to be used as input for Title II design of the ESF.

\*\* NRC review has been deferred because study plan is related to ESF construction-phase testing.

\*\*\* NRC review has been deferred because study plan is incomplete and/or undergoing substantial revision.

+ NRC letter to DOE is pending.

# NRC decision on whether a Detailed Technical Review of a particular study plan is to be done is made after completion of Phase I review. Phase I review has not been completed.

## NRC decision on whether a Detailed Technical Review is to be done is pending receipt of NRC-requested information from DOE.

TBD = To be determined by NRC as to when a Phase I Review is scheduled to be completed and if a Detailed Technical Review is necessary.