

SEP 30 1991

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Mr. Dwight E. Shelor, Associate Director  
for Systems and Compliance  
Office of Civilian Radioactive Waste Management  
U. S. Department of Energy, RW 30  
Washington, D.C. 20585

Dear Mr. Shelor:

SUBJECT: RESPONSE TO U.S. DEPARTMENT OF ENERGY (DOE) LETTER DATED  
AUGUST 29, 1991 TO THE U.S. NUCLEAR REGULATORY COMMISSION (NRC)  
REGARDING NRC REVIEWS OF DOE STUDY PLANS

This letter is in response to your letter to me dated August 29, 1991, in which you conclude that, having not received NRC review results for 15 DOE study plans, those study plans are therefore free of major NRC concerns. That conclusion is unwarranted, and no conclusion regarding NRC positions on the subject study plans can be drawn until NRC completes its review of the subject study plans and transmits its review results to DOE.

Your letter, and in particular, the conclusion, was surprising in its nonrecognition of the consultation process that has been in place and functioning between the NRC and DOE staffs regarding reviews of DOE study plans. The status of NRC reviews of DOE study plans was provided to DOE, along with a discussion of reasons why certain reviews were being deferred, in my November 27, 1990 letter (Enclosure 1) to you. In addition, the NRC and DOE staffs have had a number of teleconferences to discuss the timeliness of reviews of specific study plans. At no time during those interactions has DOE suggested that any site characterization activities are being delayed pending receipt of NRC review results for particular study plans.

With respect to the particular study plans included in your letter, you erroneously list Study Plan 8.3.1.2.2.1, "Characterization of the Unsaturated Zone Infiltration," as one of the study plans concerning which DOE has not received NRC comments. NRC review results for that study plan were transmitted to DOE on May 31, 1991. Subsequent to receipt of your letter, the NRC staff has confirmed by telephone that the DOE staff did receive those comments.

You correctly observe that in the May 7-8, 1986 NRC/DOE Meeting on the Level of Detail for Site Characterization Plans and Study Plans, NRC agreed to notify DOE of major concerns during the first three months of availability of study plans. However, at that time, and throughout the consultation process, NRC has emphasized that while its intent is to meet that schedule, actual achievement of that goal depends on a number of factors, including how many study plans are received from DOE within a given time (seven were received in less than seven weeks between January 22, 1991 and March 7, 1991), and whether there are other activities (e.g., reviews of other important DOE documents) requiring significant staff resources.

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Enclosure 2 to this letter lists the 28 study plans which DOE has transmitted to NRC and reflects the review status of each one. DOE has received review results for eight study plans (including one of the 15 listed in your August 29, 1991 letter). Within the next two months, DOE may expect to receive review results for 11 more study plans (including seven of the 15 you listed). One study plan was very recently submitted to NRC; hence, DOE will receive review results for that study plan in about three months. Reviews of the eight remaining study plans (including seven of the 15 you listed) are being deferred. These study plans may be obsolete or need significant modification if DOE chooses a new or modified exploratory studies facility. Deferral of reviews of these study plans has been explained in my November 27, 1990 letter to you and discussed for particular study plans in a number of NRC-DOE teleconferences.

If DOE uses the consultation process currently in place to communicate its need for NRC review of DOE study plans, NRC will adjust its efforts to properly respond to DOE's need based on the priorities established by DOE. If you have any questions concerning this letter, the enclosure, or the status of any particular study plan review, please contact King Stablein (FTS/301-492-0446) of my staff.

Sincerely,

(Original Signed by *Joseph J. Holonich*)

*for*

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

Enclosures: As Stated

- 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
- P. Niedzielski-Eichner, Nye County, NV
- C. Thistlethwaite, Inyo County, CA
- V. Poe, Mineral County, NV
- F. Sperry, White Pine County, NV

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Date: 09/27/91	: 09/30/91	: 09/30/91	:	:	:



UNITED STATES  
NUCLEAR REGULATORY COMMISSION  
WASHINGTON, D. C. 20555

NOV 27 1990

Mr. Dwight Shelor, Acting Associate Director  
Office of Systems and Compliance  
Office of Civilian Radioactive Waste Management  
U. S. Department of Energy, RW 30  
Washington, D.C. 20585

Dear Mr. Shelor:

SUBJECT: STATUS OF NRC REVIEWS OF DOE STUDY PLANS

The purposes of this letter are to inform DOE of the status of NRC staff reviews of the DOE study plans which have been formally transmitted to NRC and to request further information from DOE to assist NRC in scheduling its reviews.

The enclosure to this letter lists the 14 study plans which DOE has formally transmitted to NRC and reflects the review status of each one. The first five study plans listed, which were the study plans identified by DOE as being related to exploratory shaft facility (ESF) construction-phase testing, were transmitted to NRC in support of the ESF design contained in the Site Characterization Plan (SCP) for the Yucca Mountain site. Inasmuch as DOE is in the process of conducting an ESF alternatives study to reevaluate the ESF, these five study plans may be obsolete or need significant modification if a new or modified ESF alternative is chosen. Given the current state of uncertainty about the ESF, we do not believe it is a prudent use of NRC staff resources to review these study plans now. When DOE selects its ESF alternative, and considers these study plans in light of that selection, it should notify NRC whether these study plans are relevant to that ESF alternative.

We recognize that some aspects of some of these five study plans may be related to surface-based testing. If DOE identifies the portions of these study plans that are related to surface-based testing, affirms that those portions remain current, and indicates that those surface-based tests are scheduled to begin in the near-term, the NRC staff will take whatever steps are necessary to avoid being on DOE's critical path for starting work.

The sixth and seventh study plans listed in the enclosure have been reviewed by NRC. The dates when letters containing the results of the reviews were sent to DOE are shown in the enclosure.

Reviews of the eighth and tenth study plans listed in the enclosure are in progress. The acceptance/start work reviews (Phase I) have been completed and the results transmitted to DOE on the dates shown. Results of the detailed technical reviews of both documents are scheduled to be transmitted to DOE within a month.

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The ninth study plan listed in the enclosure covers one activity of the eight activities specified in the SCP under study 8.3.1.2.3.1, characterization of the site saturated-zone ground-water flow system. The one activity described is closely related to other activities in this study and could have significant impacts on or be significantly impacted by the studies yet to be described. Given the incompleteness of this study plan, we consider it to be difficult for the staff to perform an adequate review of the material provided. As NRC representatives stated at the July 19, 1990 NRC-DOE management meeting, the NRC would prefer to review study plans which are complete and not currently undergoing substantial revision. DOE acknowledged at that meeting that this study plan is being revised to incorporate descriptions of six additional planned activities. Accordingly, review of this study plan is presently being deferred.

The last four study plans listed on the enclosure have been transmitted to NRC in the past few weeks. However, the transmittal letters contained no information concerning when DOE plans to start the work described in the study plans. Such information would be useful to the NRC staff as it plans and schedules its reviews of the study plans. However, despite the lack of such information, the NRC staff has initiated Phase I reviews of the four study plans. Schedules for completion of these reviews will be finalized shortly.

In conclusion, the NRC proposes that, at the next NRC-DOE management meeting, DOE provide the information discussed above on the subject study plans so that NRC is assured that it is properly responding to DOE's need for NRC reviews of the study plans.

Sincerely,



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

Enclosure: As Stated

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

DOE STUDY PLANS RECEIVED AS OF 11/20/90  
AND THEIR REVIEW STATUS

STUDY PLAN	DATE RECEIVED	PHASE I REVIEW (DATE COMPLETED)	DETAILED REVIEW (DATE COMPLETED)
1. Water Movement Tests	2/9/89	*	
2. Characterization of the Yucca Mountain Unsaturated Zone Percolation ESF Study	2/9/89	*	
3. Characterization of Structural Features in the Site Area	2/9/89	*	
4. Excavation Investigations	2/9/89	*	
5. Characterization of the Site Ambient Stress Conditions	2/9/89	*	
6. Characterization of the Yucca Mountain Quaternary Regional Hydrology	6/30/89	11/24/89	6/08/90
7. Evaluating the Location and Recency of Faulting Near Prospective Surface Facilities	6/30/89	11/24/89	3/16/90
8. Mineralogy, Petrology, and Geochemistry of Transport Pathways	11/30/89	8/20/90	12/90 (scheduled)
9. Testing of the C-Hole Sites with Reactive Tracers	4/6/90	**	
10. Characterization of Volcanic Features	5/15/90	8/20/90	12/90 (scheduled)
11. Characterization of the Yucca Mountain Regional Surface--Water Runoff and Streamflow	10/4/90	In progress (Schedule TBD)	

STUDY PLAN	DATE RECEIVED	PHASE I REVIEW (DATE COMPLETED)	DETAILED REVIEW (DATE COMPLETED)
12. Laboratory Thermal Expansion Testing	10/4/90	In progress (Schedule TBD)	
13. Characterization of Flood Potential and Debris Hazards of the Yucca Mountain Site	10/11/90	In progress (Schedule TBD)	
14. Historical and Current Seismicity	10/22/90	In progress (Schedule TBD)	

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

\*\* Review has been deferred because study plan is incomplete and undergoing substantial revision.

DOE STUDY PLANS RECEIVED AS OF 09/20/91  
AND THEIR REVIEW STATUS

STUDY PLAN	DATE RECEIVED	PHASE I REVIEW (DATE COMPLETED)	DETAILED REVIEW (DATE COMPLETED)
1. Water Movement Tests	2/9/89	*	#
2. Characterization of the Yucca Mountain Unsaturated Zone Percolation ESF Study	2/9/89	*	#
3. Characterization of Structural Features in the Site Area	2/9/89	*	#
4. Excavation Investigations	2/9/89	*	#
5. Characterization of the Site Ambient Stress Conditions	2/9/89	*	#
6. Characterization of the Yucca Mountain Quaternary Regional Hydrology	6/30/89	11/24/89	6/08/90
7. Evaluating the Location and Recency of Faulting Near Prospective Surface Facilities	6/30/89	11/24/89	3/16/90
8. Mineralogy, Petrology, and Geochemistry of Transport Pathways	11/30/89	8/20/90	3/13/91
9. Testing of the C-Hole Sites with Reactive Tracers	4/6/90 (com- plete version 3/7/91)	9/13/91 (scheduled)	#
10. Characterization of Volcanic Features	5/15/90	8/20/90	3/18/91
11. Characterization of the Yucca Mountain Regional Surface--Water Runoff and Streamflow	10/4/90	5/14/91	5/31/91 (scheduled)

	STUDY PLAN	DATE RECEIVED	PHASE I REVIEW (DATE COMPLETED)	DETAILED REVIEW (DATE COMPLETED)
12.	Laboratory Thermal Expansion Testing	10/4/90	**	#
13.	Characterization of Flood Potential and Debris Hazards of the Yucca Mountain Site	10/11/90	5/8/91	Not needed
14.	Historical and Current Seismicity	10/22/90	5/14/91	Not needed
15.	Laboratory Thermal Properties	1/22/91	**	#
16.	Geodetic Leveling	2/14/91	5/21/91 <sup>***</sup>	#
17.	Characterization of the Yucca Mountain Regional Ground Water Flow System	2/15/91	6/26/91 <sup>***</sup>	Not needed
18.	Quaternary Faulting within the Site Area	2/19/91	5/8/91 <sup>***</sup>	Not needed
19.	Characterization of the Unsaturated-Zone Infiltration	3/1/91	5/31/91	Not needed
20.	Probability of Magmatic Disruption of the Repository	3/5/91	5/7/91 <sup>***</sup>	##
21.	Characterization of Site Saturated-Zone Groundwater Flow System	3/7/91	9/13/91 (scheduled)	#
22.	Hydrochemical Characterization of the Unsaturated Zone	9/17/91	12/17/91 (scheduled)	#
23.	Percolation in the Unsaturated Zone, Surface-Based Study	5/10/91	10/9/91 (scheduled)	#



STUDY PLAN	DATE RECEIVED	PHASE I REVIEW (DATE COMPLETED)	DETAILED REVIEW (DATE COMPLETED)
24. Meteorological Monitoring (Met. Data Collection at the Yucca Mt. Site)	5/28/91	9/13/91 (scheduled)	#
25. Characterization of Meteorology for Regional Hydrology	6/21/91	9/27/91 (scheduled)	#
26. Lab Determination of Mechanical Properties of Intact Rock	6/21/91	**	#
27. Analysis of Paleo-environmental History of Yucca Mt Region	6/24/91	10/25/91 (scheduled)	#
28. Characterization of Yucca Mt Unsaturated Zone Gas Phase Movement	6/24/91	9/17/91***	Not needed

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

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

\*\*\* Letter to DOE is pending.

# Decision on whether a detailed 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.

## Decision on whether a detailed review is to be done is pending.