



Department of Energy

Washington, DC 20585

APR 06 1990

John Linehan
Division of High-Level
Waste Management
Office Nuclear Material Safety
and Safeguards
U.S. Nuclear Regulatory Commission
Washington, D.C. 20555

Dear Mr. Linehan:

Enclosed with this letter are controlled copies of study plan 8.3.1.2.3.1.7, prepared by the U.S. Department of Energy (DOE) for the Yucca Mountain site. The study plan number corresponds to the same number used in the Site Characterization Plan (SCP) for the Yucca Mountain site.

Number

Title

8.3.1.2.3.1.7, Revision 0

Study Plans for Testing of the
C-Hole Sites with Reactive
Tracers

DOE has reviewed the study plan for consistency with the content requirements for study plans, as given in Attachment B to the Summary of the DOE/Nuclear Regulatory Commission (NRC) meeting on the Level-of-Detail for the SCP (May 7-8, 1986). DOE is submitting this plan to NRC as agreed to in that meeting.

As discussed during the DOE/NRC meeting (December 15, 1988) on study plans, DOE has decided to control preparation and review of study plans as a Quality Assurance (QA) Level 1 activity. Because this study plan was in preparation prior to that decision, it was not prepared under current Project Office and DOE/HQ, QA Level 1 procedures. During the December 15, 1989 meeting on study plans, DOE agreed to prepare an assessment of the five construction phase Exploratory Shaft Facility study plans relative to current QA requirements. This assessment was transmitted to you on June 23, 1989. An abbreviated quality assessment, similar in intent and complementary to the earlier assessment, has been performed for study plan 8.3.1.2.3.1.7, and is enclosed with this letter. This evaluation has been performed under procedures consistent with NNWSI/88-9, Rev. 2. Results of this quality assessment indicated that the plan listed above meets all major quality assurance requirements for planning documents and is of sufficient technical quality for NRC review.

Please note that the Quality Assurance Level Assignments (QALA) for the activities to be performed under this study plan, are included as part of a QA appendix to the study plans. These QALAs were included in the study plans to satisfy the May 7-8,

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1986, Level-of-Detail Agreement for content of study plans. As you are aware, DOE is currently in the process of implementing QA procedures that are consistent with NNWSI QAP 88-9, Rev. 2 and NUREG 1318. Following the implementation of these procedures, DOE will reevaluate existing QALA's as appropriate. All study plans will be distributed as controlled documents, and as such, any revision to the study plans and appended QALA lists will be distributed as controlled documents.

It should also be noted that there are 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. Schedule changes will be tracked in the site characterization progress reports.

If you have any questions, please contact Jane Stockey of my staff at 586-4590.

Sincerely,



Linda Desell
Licensing Branch
Office for Systems Integration
and Regulations

Enclosures:

- 1) Study Plan 8.3.1.2.3.1.7 Study Plan Testing of the C-Hole Sites with Reactive Tracers (copies for controlled distribution)
- 2) Study Plan Assessment for 8.3.1.2.3.1.7: Testing of the C-Hole Sites with Reactive Tracers. to J. Linehan and R. Browning.)

cc w/enclosures:

K. Stablein, NRC
J. Linehan, NRC
A. Ramose, CNWRA

cc w/enclosure 1, enclosure 2 to be sent by project:

R. Loux, State of Nevada
B. Betchel, Clark County, NV
S. Bradhurst, Nye County, NV
M. Baughman, Lincoln County, NV

**Study Plan Assessment for
8.3.1.2.3.1.7: Testing of the C-Hole
Sites with Reactive Tracers**

1.0 INTRODUCTION

The U.S Nuclear Regulatory Commission (NRC) has expressed a concern that the quality assurance (QA) Level II controls used to prepare and review the five construction phase Exploratory Shaft Facility (ESF) Study Plans may not have been adequate and therefore the technical quality of the documents should be assessed and verified (DOE, 1989). Study Plans prepared under QA Level II controls were partially prepared and reviewed prior to the effective dates of Revision 2 of the Project Quality Assurance Plan (QAP), NNWSI/88-9, and the Yucca Mountain Project Administrative Procedure (AP)-1.10Q (Preparation, Review and Approval of SCP Study Plans). NNWSI/88-9 became effective December 9, 1988, and AP-1.10Q was approved December 14, 1988.

This document provides the Yucca Mountain Project Office assessment of Study Plan 8.3.1.2.3.1.7 and associated documentation of the DOE process for preparation and review against current QA requirements. The purpose of this assessment is to evaluate the controls that were in place during the development of this Study Plan and to determine whether the document is of the technical quality expected under QA level I controls. Similar assessments will be completed on all Study Plans that were technically reviewed before the effective date of the DOE line implementing procedure for review of Study Plans, July 21, 1989.

2.0 EVALUATION OF STUDY PLAN 8.3.1.2.3.1.7

2.1 Basis for the Assessment

NNWSI/88-9, Revision 2, was reviewed and approved by the Project Office; accepted by the NRC, and formally issued on December 9, 1988. A fundamental premise of this assessment is that Study Plans developed in accordance with NNWSI/88-9 are adequate to meet NRC requirements. NNWSI/88-9 imposes several requirements on the preparation, review and approval of Study Plans:

1. Study Plans must be prepared and reviewed by qualified personnel
2. The format and content of Study Plans must meet all applicable requirements (including specific provisions for technical, regulatory and quality-related content).
3. The process of development, review, approval, issuance and revision must be controlled.
4. Records documenting that all the requirements have been met must be maintained.

The following section summarizes the controls that were in place during the preparation and review of this Study Plan and provides an evaluation of these controls against the relevant requirements of NNWSI/88-9.

2.2 Description of the Review Process

At the time that this Study Plan was prepared by Los Alamos National Laboratory (LANL), procedures for Study Plan preparation, qualification of personnel, and for technical review were in place at LANL (DOE, 1989). The review procedure required independent and documented technical and policy reviews. Concurrent reviews by the Project participants and DOE/HQ were initiated after LANL submitted an initial draft of the Study Plan to the Project Office on February 8, 1988. This draft was forwarded to the Project participants for technical review on February 23, 1988, and transmitted to DOE/HQ on April 11, 1988.

DOE/HQ provided eight technical specialists who generated 82 comments that were documented on comment resolution forms. The DOE/HQ review was governed by their Final Procedures for HQ Approval of Study Plans Supporting the SCP, which became effective on April 14, 1987. Five Project participant reviewers provided 61 comments. The Project reviews were performed under the SCP Management Plan, Revision 2, April 5, 1988.

A comment resolution meeting was held with DOE/HQ on September 1-2, 1988, to develop proposed resolutions to each comment from both the Project Office and DOE/HQ reviews. A revised draft of the Study Plan, incorporating resolutions to the comments from these reviews, was submitted to the Project Office on February 16, 1989. The final disposition of each comment was documented on comment resolution forms and DOE/HQ verified the resolution of these comments on August 4, 1989. The verification by DOE/HQ identified minor problems with agreement on wording. A revised version was submitted to DOE/HQ on November 16, 1989, based on additional page changes supplied to the Project Office on September 20, 1989.

The Project Office initiated an AP-1.10Q management, regulatory, and QA review of the Study Plan on March 6, 1989. Because of the previous Project technical review, the AP-1.10Q screening and technical reviews were judged not necessary. The plan was reviewed by three reviewers who generated 18 comments (4 QA, 2 management, and 12 regulatory). LANL revised the study plan to address these comments and submitted the revised study plan versions, addressing all comments, to the Project Office on June 27, 1989, and August 28, 1989. The comments and final disposition were documented on comment resolution forms. The Project Office verified the resolution of each comment prior to approving the plan.

2.3 Evaluation of the Technical Quality of the Study Plan

The requirements of the participant, Project Office, and DOE/HQ implementing procedures for Study Plan development are summarized in the Study Plan Assessment for the Five Construction Phase Study Plans for the Exploratory Shaft Facility (DOE, 1989). For this assessment, these requirements were compared against the requirements of NNWSI/88-9. The LANL, the Yucca Mountain Project, and the DOE/HQ procedures for Study Plan preparation, review and approval adequately implement the applicable requirements of NNWSI/88-9 (DOE, 1989).

Although some minor revisions will be made to the DOE and participant procedures to improve the implementation of the relevant QA requirements, these changes will not affect the technical content of Study Plan 8.3.1.2.3.1.7. Documented, traceable technical reviews were completed by qualified reviewers; the Study Plan was also reviewed by QA and regulatory specialists, and management. The Project Office and DOE/HQ technical comments were reviewed and were found to constitute an adequate detailed technical review of the plan. The review process described above supports the conclusion that the technical quality of this Study Plan was not adversely impacted by the quality controls that were in place when the document was written and reviewed.

3.0 SUMMARY AND CONCLUSIONS

The DOE believes that the preparation and review of Study Plan 8.3.1.2.3.1.7 were substantially in accordance with AP-1.10Q, which implements the NRC-reviewed and accepted controls described in NNWSI/88-9. This assessment demonstrates that the development of the Study Plan was conducted under quality controls that were equivalent to those which would be found in a QA Level I program. Moreover, this assessment of the Study Plan and associated quality assurance records indicate that the technical content of the Study Plan would not change in any substantive way if the development of the Study Plan had been completed at QA Level I. The DOE considers this Study Plan to be technically acceptable for NRC review. The four requirements that provide the bases for this assessment have been fulfilled.

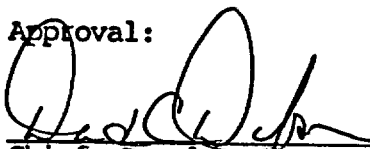
4.0 REFERENCES

U.S. Department of Energy, Yucca Mountain Project Office, Administrative Procedure (AP)-1.10Q, Preparation, Review and Approval of SCP Study Plans, Revision 0.

U.S. Department of Energy, Yucca Mountain Project Office, Quality Assurance Plan, NNWSI/88-9, Revision 2.

U.S. Department of Energy, Yucca Mountain Project Office (DOE), 1989, DOE Assessment of the Process Used to Review and Approve the Five Construction Phase Exploratory Shaft Study Plans.

Approval:



Chief, Regulatory Interactions Branch 2/16/90

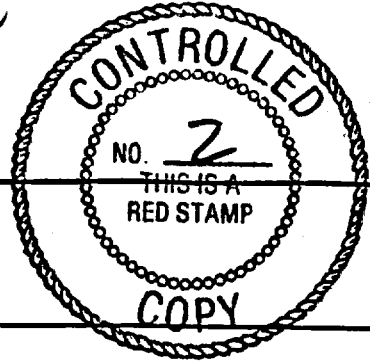


Director, Regulatory and Site Evaluation Division 2/16/90



Director, Quality Assurance

2/21/90



**Study Plan for
Study 8.3.1.2.3.1.7**



**Study Plan for Testing of the C-Hole Sites
with Reactive Tracers**

Revision 0

December 1989

**U.S. Department of Energy
Office of Civilian Radioactive Waste Management
Washington, DC 20585**

**Prepared by
Los Alamos National Laboratory**