

**Study Plan Assessment for
8.3.1.8.5.1: Characterization of
Volcanic Features**

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 8.3.1.8.5.1 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 8.3.1.8.5.1

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 the these controls against the relevant requirements of NNWSI/88-9.

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ENCLOSURE

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 December 14, 1988. A screening review of the study plan was completed by the Project Office on January 17, 1989. The draft study plan was forwarded to the Project participants for technical review on January 27, 1989, and transmitted to DOE/HQ on January 25, 1989.

DOE/HQ provided eight technical specialists who generated 153 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. Nine Project Office and participant reviewers provided 72 comments. The Project Office reviews included technical, management, and quality assurance reviews. The Project reviews were performed under AP-1.10Q, Revision 0, December 14, 1988.

A comment resolution meeting was held with DOE/HQ on July 11 and 12, 1989, to develop proposed resolutions to each comment from both the Project Office and DOE/HQ reviews. Effective July 21, 1989, the DOE/HQ review was governed by Implementing Line Procedure 22.3.1. A revised draft of the Study Plan, incorporating resolutions to the comments from these reviews, was submitted to the Project Office on January 2, 1990. A Project Office review of the responses to the DOE/HQ comments found that some comments had not been completely addressed. Consultation with study plan author determined that these omissions were the result of a word processing error. A corrected revised draft was submitted to the Project Office on February 20, 1990, that resolved these problems. The final disposition of each DOE/HQ comment was documented on comment resolution forms and DOE/HQ verified the resolution of these comments on March 15, 1990.

The Project Office Comment Resolution Forms were sent to the individual reviewers with copies of the revised study plans. All forms with mandatory comments were approved and signed by the reviewers and returned to the Project Office by February 21, 1990.

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 8.3.1.8.5.1. 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 8.3.1.8.5.1 were in accordance with AP-1.10Q, which implements the NRC-reviewed and accepted controls described in NWSI/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.

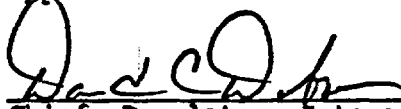
4.0 REFERENCES

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, NWSI/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 4/12/90



Director, Regulatory and Site Evaluation Division 4/12/90



Director, Quality Assurance

4/18/90