

## SAFETY EVALUATION

### 1. INTRODUCTION

The U. S. Department of Energy (DOE) established the Yucca Mountain Project (YMP) to investigate whether Yucca Mountain is a suitable site for the high-level radioactive waste repository. All YMP organizations (i.e., the Yucca Mountain Project Office (YMPO), Nevada Test Site (NTS) Support Contractors and Participating Organizations) must meet the requirements described in the Nevada Nuclear Waste Storage Investigations Quality Assurance Plan NNWSI/88-9, Revision 2, (88-9 QA Plan) and incorporate them into their QA Program Plans (QAPPs) and procedures.

The U. S. Nuclear Regulatory Commission (NRC) staff reviewed the 88-9 QA Plan for the YMP and concluded that (see Linehan/Stein letter and Safety Evaluation (SE) dated December 30, 1988) it contains adequate requirements and planned and systematic controls to address the requirements of 10 CFR Part 60, Subpart G and Appendix B to 10 CFR Part 50, in an acceptable manner. The detailed NRC staff analysis of the 88-9 QA Plan approaches for meeting the requirements of Appendix B to 10 CFR Part 50 are contained in the 88-9 QA Plan SE. Those approaches approved in the 88-9 QA Plan, which have been adopted by Holmes and Narver (H&N), are not reevaluated in this SE. The 88-9 QA Plan can serve as an adequate framework for DOE/YMPO and its project participants to develop specific policies, plans, and procedures to implement the QA Program for the YMP. The NRC review criteria used in evaluating the 88-9 QA Plan are contained in the "NRC Review Plan for High-Level Waste Repository Quality Assurance," Revision 2, dated March 1989 (NRC Review Plan).

This SE documents NRC's review of the H&N QAPP, Revision 4, which commits to comply with the requirements of the 88-9 QA Plan. This SE describes the regulatory criteria against which the H&N QAPP was reviewed, provides a basis for NRC staff acceptance, and describes the differences from the 88-9 QA Plan and/or the NRC staff's review criteria.

### 2. BACKGROUND

On March 3, 1989, DOE forwarded the H&N QAPP, Revision 3, for NRC review and acceptance. The NRC staff reviewed the H&N QAPP to determine whether it contained adequate requirements and planned and systematic controls to address the applicable criteria of Appendix B to 10 CFR Part 50 which apply to H&N for the DOE YMP. Selected procedures prepared by H&N to implement the QAPP were also reviewed by the NRC staff as a part of its evaluation of the QAPP.

As a result of the review of the H&N QAPP, the NRC staff generated 19 comments which were discussed with DOE and the State of Nevada, on April 13, 1989 (telephone conversation) and May 10, 1989 (meeting at NRC Headquarters in Rockville, Maryland). DOE revised the H&N QAPP to resolve the NRC comments and resubmitted it for NRC staff review and acceptance on August 11, 1989.

### 3. STAFF EVALUATION

The following sections of the H&N QAPP are in accordance with the 88-9 QA Plan and meet the applicable criteria of Appendix B to 10 CFR Part 50.

3.1 H&N QAPP Sections in Accordance with 88-9 QA Plan and Appendix B, 10 CFR Part 50

- a. Section 1, "Organization" (Criterion I)
- b. Section 2, "Quality Assurance Program" (Criterion II)
- c. Section 5, "Instructions, Procedures, and Drawings" (Criterion V)
- d. Section 6, "Document Control" (Criterion VI)
- e. Section 8, "Identification and Control of Items, Samples and Data (Criterion VIII)
- f. Section 9, "Special Processes" (Criterion IX)
- g. Section 10, "Inspections" (Criterion X)
- h. Section 11, "Test Control" (Criterion XI)
- i. Section 12, "Control of Measuring and Test Equipment" (Criterion XII)
- j. Section 13, "Handling, Storage, and Shipping" (Criterion XIII)
- k. Section 15, "Control of Nonconforming Items" (Criterion XV)
- l. Section 16, "Corrective Action" (Criterion XVI)
- m. Section 17, "Quality Assurance Records" (Criterion XVII)
- n. Section 18, "Audits" (Criterion XVIII)

3.2 H&N QAPP Section Areas Differing from 88-9 QA Plan, and/or 88-9 QA Plan Areas Not Applicable, Plus NRC Acceptance Rationale

The following sections of the H&N QAPP describe those areas that differ from the 88-9 QA Plan and/or those areas of the 88-9 QA Plan that do not apply to the H&N QAPP and, where applicable, why NRC finds them acceptable:

3.2.1 "Design Control" (Criterion III)

Section 3 of the H&N QAPP requires that design activities be performed in accordance with approved instructions, procedures, or drawings and be assigned a quality level approved by DOE/YMPO. The H&N design control program has adopted the 88-9 QA Plan requirements and applies them to all design activities performed in support of the YMP. However, H&N will not perform scientific investigations, which are also covered under Criterion III, since it is an architectural and engineering service organization responsible for design of underground support systems and above ground facilities. The NRC staff finds this acceptable.

3.2.2 "Procurement Document Control" (Criterion IV)

Section 4 of the H&N QAPP describes the requirements that apply to procurement document control. Procurement of equipment is the responsibility of Reynolds Electrical and Engineering Co., Inc. (REECo). H&N provides REECo with the necessary technical requirements to be included in the procurement documents. H&N reviews the procurement documents to assure that appropriate references to specific drawings, specifications, codes, standards, regulations, procedures and instructions are included. H&N will issue and control direct-service contracts necessary to support field surveillance, inspection, nondestructive examination services, microfilming, and archival storage of records.

As required by Section VII, paragraph 1.4.2.1 of the 88-9 QA Plan, when a Support Contractor such as H&N uses another contractor (REECo) for the activities for which it is responsible, the user organization shall initiate a request to YMPO to conduct a YMPO surveillance of the organization performing the work. The surveillance shall be conducted to determine that the item or activity is being produced or performed in accordance with the user organization's

requirements. These surveillances may use NTS Support Contractor or Participating Organization personnel as technical advisors. When REECO is used as a purchasing agent, it will act in accordance with its own QAPP which must meet the requirements of the 88-9 QA Plan and the applicable positions of ANSI/ASME NQA-1-1986. The NRC staff finds this acceptable.

### 3.2.3 "Control of Purchased Materials, Equipment, and Services" (Criterion VII)

The same controls described in the aforementioned Section 3.2.2 apply to the control of purchased materials, equipment, and services.

### 3.2.4 "Inspection, Test, and Operating Status" (Criterion XIV)

Section 14 of the H&N QAPP applies to engineered items and systems. H&N meets the 88-9 QA Plan requirements; however, it has no direct responsibility for operational testing of these items, since it is an architectural and engineering service organization. The status of engineered items is maintained through tags, physical location, markings, travelers, stamps, and inspection or test inspection or test records. Authority is required to be identified for status indicator application and removal. The NRC staff finds this acceptable.

## 4. CONCLUSION

Based on its evaluation, the NRC staff concludes that the H&N QAPP, Revision 4, meets the requirements of 10 CFR Part 60, Subpart G and the applicable criteria of Appendix B to 10 CFR Part 50. The provisions to meet these requirements are contained in the NRC Review Plan, Revision 2, dated March 1989 and in the following, which are referenced in the Review Plan:

- ANSI/ASME, NQA-1, "Quality Assurance Program Requirements for Nuclear Facilities," 1986.
- U. S. Nuclear Regulatory Commission, Generic Technical Position, "Peer Review for High-Level Nuclear Waste Repositories," NUREG-1297, 1987.
- U. S. Nuclear Regulatory Commission, Generic Technical Position, "Qualification of Existing Data for High-Level Nuclear Waste Repositories," NUREG-1298, 1987.
- U. S. Nuclear Regulatory Commission, "Technical Position on Items and Activities in the High-Level Waste Geologic Repository Program Subject to Quality Assurance Requirements," NUREG-1318, 1988.
- U. S. Nuclear Regulatory Commission, "Final Technical Position on Documentation of Computer Codes for High-Level Waste Management," NUREG-0856, 1982.

The H&N QAPP complies with the 88-9 QA Plan which the NRC staff accepted December 30, 1988. The NRC staff review of the H&N QAPP concludes it meets the aforementioned guidance and NRC staff positions or has provided acceptable alternatives. The H&N QAPP describes alternatives or modifications in the areas of design control; procurement document control; control of purchased materials, equipment, and services; identification and control of items, samples, and data; and inspection, test, and operating status. The NRC staff has evaluated the alternatives and modifications and finds them to be acceptable.

On the basis of its detailed review and evaluation of the H&N QAPP, the NRC staff concludes that it contains adequate requirements and planned and systematic controls that address each of the applicable criteria of Appendix B to 10 CFR Part 50 in an acceptable manner.