

U. S. NUCLEAR REGULATORY COMMISSION  
SAFETY EVALUATION  
FOR  
LOS ALAMOS NATIONAL LABORATORY  
QUALITY ASSURANCE PROGRAM PLAN  
(LANL-YMP-QAPP, REVISION 4.4)

Prepared by: Kenneth R. Hooks 10/18/89  
Kenneth R. Hooks  
Repository Licensing and Quality  
Assurance Project Directorate  
Division of High-Level Waste Management

Reviewed and  
Approved by James E. Kennedy 10/25/89  
James E. Kennedy, Section Leader  
Repository Licensing and Quality  
Assurance Project Directorate  
Division of High-Level Waste Management

## 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., 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 (NNWSI) Quality Assurance (QA) 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 (ref. Linehan/Stein letter and Safety Evaluation (SE) dated December 30, 1988) that it contained 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 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 Program Descriptions," Revision 2, dated March 1989 (NRC Review Plan).

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. 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. NRC staff is not reevaluating, in this SE, approaches already approved in the 88-9 QA Plan, that Los Alamos National Laboratory (LANL) has adopted.

This SE documents NRC's review and evaluation of the Los Alamos National Laboratory (LANL) QAPP (LANL-YMP-QAPP, Revision 4.4), which commits to comply with the requirements of the 88-9 QA Plan. This SE also describes the regulatory criteria against which the LANL 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

DOE forwarded the LANL QAPP, LANL-YMP-QAPP, Revision 4.3 (ref. Appel/Linehan letter dated March 15, 1989), for NRC review and acceptance. The NRC staff reviewed and evaluated the LANL 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 LANL, for the DOE YMP. The NRC staff also reviewed selected procedures that LANL had prepared to implement the QAPP, as a part of the staff's QAPP evaluation.

As a result of its review of the LANL QAPP, the NRC staff generated eight comments which were transmitted to DOE (ref. Linehan/Appel letter dated July 19, 1989). LANL revised the QAPP to resolve NRC's comments, and DOE submitted the revised pages for NRC staff review and acceptance on October 2, 1989.

### 3. STAFF EVALUATION

The following sections of the LANL 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 LANL 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 3, "Scientific Investigation Control and Design Control" (Criterion III)
- d. Section 4, "Procurement Document Control" (Criterion IV)
- e. Section 5, "Instructions, Procedures, Plans, and Drawings" (Criterion V)
- f. Section 6, "Document Control" (Criterion VI)
- g. Section 7, "Control of Purchased Items and Services" (Criterion VII)
- h. Section 12, "Control of Measuring and Test Equipment" (Criterion XII)
- i. Section 13, "Handling, Shipping, and Storage" (Criterion XIII)
- j. Section 15, "Control of Nonconformances" (Criterion XV)
- k. Section 16, "Corrective Action" (Criterion XVI)
- l. Section 17, "Records" (Criterion XVII)
- m. Section 18, "Audits" (Criterion XVIII)

#### 3.2 LANL 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 LANL 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 LANL QAPP and, where applicable, why NRC finds them acceptable. In general, the exceptions in the QAPP are based on LANL's present scope of work, which does not include engineered items; thus LANL has deleted these requirements from the LANL QAPP.

##### 3.2.1 "Identification and Control of Samples and Data" (Criterion VIII)

The requirements of Section VIII Part A of the 88-9 QA Plan apply to activities related to engineered items and do not apply to scientific investigations. LANL has not included the Part A requirements in its QAPP. However, it has included the appropriate controls for samples and data in Sections 8.1 and 8.2 respectively of its QAPP. This is acceptable to the NRC staff.

##### 3.2.2 "Control of Processes" (Criterion IX)

Section 9.0 of the LANL QAPP defines acceptable process control for scientific investigations, and does not include requirements for special process controls, since LANL has no engineered items in its scope of work. This is acceptable to the NRC staff.

### 3.2.3 "Inspection" (Criterion X)

The requirements of Section X of the 88-9 QA Plan apply to engineered items, so LANL has not included these requirements in its QAPP. LANL has included requirements for surveillances of its scientific investigations in Section 18.3, "Surveys" of its QAPP. This is acceptable to the NRC staff.

### 3.2.4 "Testing" (Criterion XI)

LANL has not included these requirements in its QAPP since it is not conducting any activities to which the requirements apply. The controls for scientific investigations, including laboratory experiments and tests, are defined in Section 3.1 of the LANL QAPP. This is acceptable to the NRC staff.

### 3.2.5 "Inspection, Test, and Operating Status of Engineered Items" (Criterion XIV)

The requirements of Section XIV of the 88-9 QA Plan apply to engineered items, not scientific investigations; LANL has not included these requirements in its QAPP. This is acceptable to the NRC staff.

## 4. CONCLUSION

Based on its review and evaluation, the NRC staff concluded that the LANL QAPP, Revision 4.4 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 documents, 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 LANL QAPP complies with the 88-9 QA Plan that the NRC staff accepted December 30, 1988. The NRC staff review of the LANL QAPP concludes that it meets the aforementioned guidance and NRC staff positions or has provided an acceptable rationale for where its QAPP is not applicable.

On the basis of its detailed review and evaluation of the LANL 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.