

YUCCA MOUNTAIN PROJECT OFFICE  
QUALITY ASSURANCE SURVEILLANCE REPORT  
OF

SANDIA NATIONAL LABORATORIES  
SURVEILLANCE NUMBER YMP-SR-89-081  
CONDUCTED APRIL 18, 19 & 20, 1989

ACTIVITY SURVEILLED:

QUALITY ASSURANCE REVIEW AND/OR IMPLEMENTATION  
OF THE FOLLOWING PROCEDURES:

1. YUCCA MOUNTAIN PROJECT TECHNICAL DATA MANAGEMENT PLAN, 1/89
2. AP 5.3Q, REV. 0
3. AP 6.8Q, REV. 1
4. AP 6.10Q, REV. 0
5. AP 6.11Q, REV. 0
6. AP 5.4Q, REV. 0
7. DOP 3-16, REV. 0
8. DOP 3-3, REV. B
9. DOP 3-4, REV. C
10. DOP 17-1, REC. B
11. SNL ESF TITLE II DATA EVALUATION PLAN, 1/89
12. DOP 3-8, REV. B

PREPARED BY: *F. Peters* DATE: 5/4/89  
F. PETERS

PREPARED BY: *E. Ripley* DATE: 5/4/89  
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PREPARED BY: *J. Jardine* DATE: 5/4/89  
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PREPARED BY: *P. Bryant* DATE: 5/4/89  
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PREPARED BY: *P. Karnoski* DATE: 5/4/89  
P. KARNOSKI

PREPARED BY: ~~\_\_\_\_\_~~ DATE: 5/3/89  
E. WILMOT

PREPARED BY: *N. Voltera* DATE: 5/4/89  
N. VOLTURA

PREPARED BY: *C. Hampton* DATE: 5/4/89  
C. HAMPTON

APPROVED BY: *E. Ripley* DATE: 5/4/89  
MANAGER, SURVEILLANCE DIVISION

APPROVED BY: *N. Voltera for James Blaylock* DATE: 5/4/89  
PROJECT QUALITY MANAGER

## 1.0 INTRODUCTION

This report contains the results of a Yucca Mountain Project Office (Project Office) Quality Assurance (QA) surveillance of Sandia National Laboratories. The surveillance was divided into the following four (4) areas. Under each area is a listing of the plans and procedures used by each team to verify Sandia National Laboratory's implementation of its QA Plan.

### A. Quality Lists & Assignment of Quality Assurance Levels.

1. AP 6.8Q, Rev. 1, Identification of Items Important to Waste Isolation
2. AP 6.10Q, Rev. 0, Identification of Items Important to Safety
3. AP 6.11Q, Rev. 0, Identification of Activities to be Placed on the Quality Activities List
4. AP 5.4Q, Rev. 0, Assignment of Quality Assurance Levels

### B. Reference Information Base

1. Yucca Mountain Project Technical Data Management Plan, January 1989
2. SNL ESF Title II Data Evaluation Plan, dated January 1989.
3. AP-5.3Q, Rev. 0, Information Flow into the Project Reference Information Base.
4. DOP 3-8, Rev. B, Reference Information Base Change Control.

### C. Records

1. DOP 17-1, Rev. B, Records Management System

### D. ESF Design and Interface Control

1. DOP 3-16, Rev. 0, Specification of Design Requirements
2. DOP 3-03, Rev. B, Analysis Definition Requirement
3. DOP 3-04, Rev. C, Design Investigation Control
4. DOP 3-08, Rev. B, Reference Information Base Change Control

The surveillance was conducted at the Sandia National Laboratory office in Albuquerque, New Mexico, April 18 through 20, 1989.

## 2.0 SURVEILLANCE PERSONNEL

This surveillance was performed by the following individuals:

E. L. Wilmot, Deputy Project Manager, YMPO, Las Vegas, Nevada  
C. E. Hampton, QA Specialist, YMPO, Las Vegas, Nevada  
N. A. Voltura, QA Specialist, YMPO, Las Vegas, Nevada  
E. P. Ripley, QA Engineer, SAIC, Las Vegas, Nevada  
F. D. Peters, QA Engineer, SAIC, Las Vegas, Nevada  
J. A. Jardine, QA Engineer, SAIC, Las Vegas, Nevada  
E. P. Bryant, QA Engineer, SAIC, Las Vegas, Nevada  
P. J. Karnoski, QA Engineer, T&MSS, Las Vegas, Nevada

## 3.0 SUMMARY

The following summaries are provided for each of the four areas surveilled:

### A. Quality Lists and Assessments of Quality Assurance Levels

The results of this surveillance activity indicate that implementation of Project APs 6.8Q, 6.10Q, 6.11Q and 5.4Q by both the YMPO and SNL is not in compliance with the requirements of the Yucca Mountain Project Quality Assurance Plan, 88-9, Rev. 2. The documents used as a basis for the preparation of the products from APs 6.8Q, 6.10Q, 6.11Q, and 5.4Q were not approved documents nor was their issuance controlled.

Other deficiencies observed during the surveillance include failure of each 6.8Q task participant to sign Barrier Identification Tables and Barrier Description Worksheets, failure to prepare or delegate responsibility for the preparation of Quality Level Assignments and, failure to transmit source documents or information to the Project CCB for baselining. Four Standard Deficiency Reports (SDRs) and two Observations resulted from this portion of the surveillance.

### B. Reference Information Base

The results of this surveillance activity indicates that there are some problems with the implementation of quality assurance requirements in the Reference Information Base activities, which are classified as QA Level I activities. Specifically, the SNL ESF Title II Data Evaluation Plan was not properly reviewed and approved according to the requirements contained in the SNL QAPP, and it was not issued as a controlled document.

In addition, DOP 3-8 is inadequate in a number of different ways, including the assignment of responsibilities, the inclusion of appropriate documentation in the QA records, and the notification of appropriate organizations when errors are discovered during the RIB evaluation activities.

Two Standard Deficiency Reports (SDRs) and three Observations resulted from this portion of the surveillance.

C. Records

The original scope of the surveillance was broadened to include Records Management based upon the surveillance teams' concerns and observations during the surveillance process that the Records center staff did not appear to be controlling the dissemination of records. The results of this portion of the surveillance indicates that SNL is not fully implementing the requirements contained in DOP 17-1, Rev. B. One Standard Deficiency Report (SDR), addressing four deficient conditions, was generated as a result of this portion of the surveillance.

As indicated by the access list, all SNL 6310 employees and on-site contractors are permitted to use the Records Center with no access restriction. By not limiting access to the Records Center, the LRC is unable to ensure that the fundamental requirement of protecting Quality Assurance Records is being fulfilled. It was observed on several occasions that the voluntary system for checking out record binders is not being honored by all SNL employees.

In addition to the concern that records may be subject to loss through lack of access restriction, it is also a concern of the surveillance team that records are being unnecessarily exposed to damage. In a number of settings, records are not adequately being stored to provide protection from potential damage/loss.

D. ESF Design and Interface Control

The results of this portion of the surveillance indicates that SNL is deficient in the control of documents contributing to the design of the Exploratory Shaft Facility and Repository. These deficiencies were found to be violations of the SNL Quality Assurance Program Plan, (SNL-NWRT-QAPP) or the absence of requirements in implementing procedures such as Department Operating Procedures (DOPs).

SDRs were written because SNL has not designated design documents as controlled information. This includes Work Plans, Problems Definition Memos (PDMs) and Design Information Memos (DIMs). As a result of this practice, such design information may not be listed unless an author informs the publications coordinator that a document has been issued. As a result, the listings contained out-of-date versions of documents and the files lacked some previous versions of procedures.

The Observations concerned the SNL practice of by-passing the Technical Project Officer (TPO) in the transmittal of design information directly to Participants, thereby eliminating a central management authority from the chain of control and possibly allowing design information to be lost or revised without verification. It

was also observed that the SNL Quality Assurance organization is under-staffed, preventing it from adequately participating in the process of providing adequate QA guidance regarding QA requirements at the start of design activities. This understaffing might have prevented the adequate inclusion of quality assurance requirements in the design procedure review process.

Five Standard Deficiency Reports (SDRs) and three Observations resulted from this portion of the surveillance.

#### 4.0 PERSONNEL CONTACTED

##### Quality Lists & Assignment of Quality Assurance Levels

T. Hunter, SNL  
M. Tierney, SNL  
R. Sandoval, SNL  
L. Klamerus, SNL  
B. Richards, SNL  
T. Blewjas, SNL  
L. Shepard, SNL  
M. Tang, SNL  
N. Voltura, DOE/YMPO  
T. Lezcano-Kirch, SAIC

##### Reference Information Base

T. Hunter, SNL  
R. Sandoval, SNL  
J. Schelling, SNL  
P. Tillery, LATA  
K. Molley, LATA

##### Records

S. Sharpton, SNL  
Y. Hubbard, Tech Reps  
M. Salisbury, Tech Reps

##### ESF Design & Interface Control

R. Stinebaugh, PI, SNL  
A. Stevens, Division Supervisor, SNL  
T. Blejwas, Division Supervisor, SNL  
R. Richards, SNL  
S. Sharpton, SNL  
R. Hill, SNL  
C. Mora, SNL  
S. Bauer, SNL  
S. Edmunds, SNL

## 5.0 SYNOPSIS OF SDRS/OBSERVATIONS

### A. Quality Lists and Assignment of Quality Assurance Levels

#### SDR No. 321

Contrary to the requirements of Exhibit 1 of AP 5.4Q, Rev. 0 and the YMP QAP, 88-9, Section VI, Para. 1.1 unapproved and uncontrolled versions of documents were used as a basis for preparing the products of APs 6.8Q, 6.10Q, 6.11Q and 5.4Q.

#### SDR No. 322

Contrary to the requirements of the YMP QAP, 88-9, Rev. 2, Section I, Para. 1.0, SNL did not delegate the execution of preparing Quality Level Assignment Item/Activity Summary Sheets or Decision Criteria Records to SAIC or MACTEC personnel. These documents were prepared by SAIC personnel, reviewed by MACTEC personnel and approved by SNL personnel.

#### SDR No. 323

Contrary to the requirements of Para. 5.1.8 and 5.1.16 of AP 6.8Q, Rev. 1, Paras. 5.31 and 5.35 of AP 6.10Q, Rev. 0 and Paras. 5.4.4 and 5.6.3 of AP 6.11Q, Rev. 0, no evidence could be produced to demonstrate that the source documents or information used as a basis for preparing the products of APs 6.8Q, 6.10Q, or 6.11Q were transmitted to the Project Change Control Board and baselined.

#### SDR No. 324

Contrary to the requirements of Para. 5.1.10 of AP 6.8Q, Rev. 1, each task participant did not sign the Barrier Identification Tables or Barrier Description Worksheets.

#### Observation No. YMP-SR-89-081

No evidence could be produced to confirm the assignment of Bechtel National personnel as the Project Staff Member for leading the implementation of AP 6.10Q. Although this instance would normally be identified as a deficiency, it is stated as an observation because the individual from Bechtel who served as team leader was, in fact, the individual suggested as the team leader in correspondence from the Project Office. In addition, this individual had completed the proper training on AP 6.10Q.

#### Observation No. YMP-SR-89-081

SNL has not implemented the requirements of QAP 2-5, Rev. B, approved 2/10/89, entitled "Training and Familiarization Procedures". Implementation of this procedure is overdue and complicates the

ability of a SNL manager to determine what training a given individual needs in order to perform a given task. SNL supervisors indicate that they "just know" what a given individual needs in the way of training, however, this method does not assure they system will function properly nor documentation will be available as evidence regardless of who the supervisor is.

**B. Reference Information Base**

SDR No. 319

DOP 3-8 is inadequate in a number of different ways, including the assignment of responsibilities, the documentation of QA Level I activities, and corrective actions when errors are discovered.

SDR No. 320

The ESF Title II Data Evaluation Plan was not properly reviewed, approved, or controlled, according to the requirements in SNL's QAPP.

Observation No. YMP-SR-89-081-3

DOP 3-8 is inconsistent with AP 5.3Q and AP 3.3Q in some areas and should be revised to be consistent with those documents. This should include a review of DOP 3-8 with respect to these other documents to be sure that no other inconsistencies exist.

Observation No. YMP-SR-89-081-4

The RIBCD form in DOP 3-8, Rev. B, is confusing in some aspects and should be revised for clarity.

Observation No. YMP-SR-89-081-5

DOP 3-8 needs to be revised to clarify the responsibilities for the identification, review, and approval of confirmatory testing associated with RIB information items, the evaluation of these items as the best available and as suitable for their intended use and the qualification of such RIB information items to support licensing.

**C. Records**

SDR No. 325

Upon receipt at the SNL RC until entry into the system, "in process" records are being stored on open steel shelving with no protection from damage, loss, or deterioration.

Incomplete SAND packages, with no traceable duplicates, are being stored on open steel shelving with no protection from damage, loss, or deterioration.

SNL RC has not completed a list of record types.

One-of-a-kind drawings are not being stored in a two-hour fire rated vault.

The access list currently in place does not provide for restricted access to the RC.

D. ESF Design and Interface Control

SDR No. 326

Work Plans are not controlled documents. Since Work Plans provide a description of quality affecting work to be performed, contain references to applicable regulation, requirements, procedures, etc., they meet the definition of documents which are to be controlled via the SNL document control system.

SDR No. 327

Problem Definition Memos (PDMs) are not coordinated internally, externally interfaced, distributed under controlled conditions or involve QA in the review process. Design Information Memos (DIMs) are not issued as controlled documents nor is the listing of DIMs controlled to insure a current record of revisions and quality levels.

SDR No. 328

SNL has not developed a QA Program procedure to control the preparation, review, approval, issuance and control of subsequent changes for the Repository Design Requirements Document, nor is there a QA Program procedure to identify and control the development, review and approval of the technical bases used to establish design input.

SDR No. 329

SNL subcontractor PBQ&D identified deficiencies in several F&S Title I 100% drawings. The deficiencies were noted in a PBQ&D monthly report but no formal action was taken by SNL to notify the Project Office or F&S so as to correct the deficient drawings.

SDR No. 330

SNL has not clearly addressed their responsibilities in its management role of the ESF activities which include the SDRD, the RIB and design input review and verification.

Observation No. YMP-SR-89-081-6

Operating Procedure (DOP) 3-16, provides no control of "design requirements" documents and no QA involvement in the review of those documents. Since this procedure has not been used yet, it is suggested that it be revised to meet the applicable requirements of the SNL-NWRT-QAPP and NNWSI/88-9 prior to implementation.

Observation No. YMP-SR-89-081-7

Communications between SNL Principal Investigators (PIs) and the Participants in areas of design requirements and procurement do not pass through the TFO, thereby eliminating a central management authority and the control which that position would exercise over such documents as DIMs, PDMS, Work Plans and procurement packages.

Observation No. YMP-SR-89-081-8

With the increase in SNL's responsibilities for management of ESF activities, the SNL QA staff must be increased with full-time SNL personnel.

6.0 RECOMMENDATIONS

Due to the lack of evidence of a Project QA review on the products of each of the subject APs and due to the use of unapproved documents to prepare the products required by each AP, it is recommended that all products of the APs, having been approved and released for Project use, should be rescinded and their further release delayed pending a complete review by the Project QA staff.

7.0 REQUIRED ACTIONS

A written response is required for each SDR and observation referenced in this report. The original copies of these SDRs/Observations have been transmitted under separate cover.