



**Department of Energy**  
Office of Civilian Radioactive Waste Management  
Yucca Mountain Site Characterization Office  
P.O. Box 98608  
Las Vegas, NV 89193-8608

QA: L

NOV 10 1994

Robert M. Nelson, Jr., Acting Project Manager, YMSCO, NV

ISSUANCE OF SURVEILLANCE RECORD YMP-SR-94-052 RESULTING FROM YUCCA MOUNTAIN QUALITY ASSURANCE DIVISION (YMQAD) SURVEILLANCE OF THE YUCCA MOUNTAIN SITE CHARACTERIZATION OFFICE (YMSCO) AND AFFECTED ORGANIZATIONS (SCPB: N/A)

Enclosed is the record of Surveillance YMP-SR-94-052 conducted by the YMQAD at the YMSCO and Affected Organization facilities, July 25-October 13, 1994.

The purpose of the surveillance was to evaluate activities associated with technical data management on the project. Four Corrective Action Requests (CAR) were issued as a result of this surveillance. Responses to these CARs, which were transmitted via separate letters, are due by the date indicated in Block 13 of each CAR.

This surveillance is considered completed and closed as of the date of this letter. A response to this surveillance record and any documented recommendations is not required. However, the open CARs will continue to be tracked until they are closed to the satisfaction of the quality assurance representative and the Director, YMQAD.

If you have any questions, please contact either Robert B. Constable at 794-7945 or John R. Matras at 794-7197.

Richard E. Spence, Director  
Yucca Mountain Quality Assurance Division

YMQAD:RBC-740

Enclosure:  
Surveillance Record  
YMP-SR-94-052

180046

YMP-5

9411210251 941110  
PDR WASTE  
WM-11 PDR

102.7  
WM-11  
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NOV 10 1994

cc w/encl:

D. A. Dreyfus, HQ (RW-1) FORS  
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J. D. Hoffman, Esmeralda County, Goldfield, NV  
Eureka County Board of Commissioners,  
Yucca Mountain Information Office, Eureka, NV  
Lander County Board of Commissioners, Battle Mountain, NV  
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B. R. Mettam, County of Inyo, Independence, CA  
Mifflin and Associates, Las Vegas, NV  
S. L. Bolivar, LANL, Los Alamos, NM  
R. E. Monks, LLNL, Livermore, CA  
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C. K. Van House, YMQAD/QATSS, Las Vegas, NV  
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OFFICE OF  
RADIOACTIVE WASTE MANAGEMENT  
U.S. DEPARTMENT OF ENERGY  
WASHINGTON, D.C.

QUALITY ASSURANCE SURVEILLANCE RECORD

SURVEILLANCE DATA

<sup>1</sup> ORGANIZATION/LOCATION: See Page 2	<sup>2</sup> SUBJECT: Technical Data Management Process	<sup>3</sup> DATE: July 25 through October 13, 1994
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<sup>4</sup>SURVEILLANCE OBJECTIVE:  
See Page 2

<sup>5</sup> SURVEILLANCE SCOPE: Evaluate the activities associated with acquired and developed data and how this data is submitted, traced, used and how qualification status is maintained.	<sup>6</sup> SURVEILLANCE TEAM: Team Leader: <u>John R. Matras</u> Additional Team Members: <u>Mary G. McDaniel</u>
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<sup>7</sup> PREPARED BY: <u>John R. Matras</u> <u>7-22-94</u> Surveillance Team Leader Date	<sup>8</sup> CONCURRENCE: <u>N/A</u> QA Division Director Date
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SURVEILLANCE RESULTS

<sup>9</sup>BASIS OF EVALUATION/DESCRIPTION OF OBSERVATIONS:  
  
See pages 2 through 9

<sup>10</sup>SURVEILLANCE CONCLUSIONS:  
  
See pages 10 through 12

<sup>11</sup> COMPLETED BY: <u>John R. Matras</u> <u>11-7-94</u> Surveillance Team Leader Date	<sup>12</sup> APPROVED BY: <u>[Signature]</u> <u>11-9-94</u> QA Division Director Date
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**Block 1 (continued) ORGANIZATION/LOCATION:**

Department of Energy (DOE), EG&G Energy Measurement Systems, and the Management and Operating (M&O) Contractor Technical Data Management Group, Las Vegas, NV; Lawrence Livermore National Laboratory (LLNL), Livermore, California; Los Alamos National Laboratory (LANL), Los Alamos, New Mexico; Sandia National Laboratory (SNL), Albuquerque, New Mexico

**Block 4 (continued) SURVEILLANCE OBJECTIVE:**

- 1) Verify that technical data management activities provide for the identification and status of technical data in such a manner that traceability can be maintained.
- 2) Verify traceability of data for selected data sets.
- 3) Evaluate technical data management activities in general, and make recommendations for program improvement.

**Block 9 (continued) BASIS OF EVALUATION/DESCRIPTION OF OBSERVATIONS:**

**SURVEILLANCE INITIATION**

In response to a recommendation made in Surveillance Record YMP-SR-94-033 a surveillance was conducted by the Yucca Mountain Quality Assurance Division (YMQAD) on technical data management activities. Surveillance YMP-SR-94-052 was conducted between July 25, 1994 and October 13, 1994 and included the DOE, LLNL, LANL, SNL, EG&G Energy Measurement Systems (EG&G) and the M&O Technical Data Management Group. This surveillance focussed on the technical data management activities of each participant and data traceability issues including identification, qualification status, and traceability of referenced data and related documentation.

In preparation for the laboratory surveillances, interviews of technical data management personnel were conducted and reviews of applicable documents performed. The surveillance team then interviewed and reviewed objective evidence at the three laboratories, LLNL, SNL and LANL. The surveillance team concluded the surveillance with interviews of Work Breakdown Structure (WBS) Managers and performed some additional document reviews.

**SURVEILLANCE PREPARATION**

The Yucca Mountain Project (YMP) Technical Data Manager, who is responsible to the Assistant Manager for Suitability and Licensing for the technical data management program, was interviewed to obtain an overall understanding of the data management system. The YMP Technical Data Manager provided the



The surveillance team interviewed EG&G Energy Measurement Systems' Technical Database Administrator. The TDB is a computerized tool for maintaining data sets. This computerized tool is GENISES, Geographic Nodal Information Study and Evaluation System Technical Data Base. Interviews were conducted with TDB Administrator as to the contents of data packages received from the laboratories and data sets distributed to the laboratories from the TDB. Data transferred from the TDB is tracked in ATDT using the transfer Technical Data Information Form (TDIF) and in the TDB by TDB Administrator to the individual requesting the data but not to the actual use of the data. Data removed from the PDA is tracked in ATDT using the transfer TDIF to the individual requesting the data but not to the actual use of the data. Data removed from the CRF and the RIB are not tracked at all. If data in the technical data management system is revised/updated there is no management system that can track/identify documents potentially affected by the revision/update. It is recommended that YMSCO/OCRWM evaluate the ability of the technical data management system or other configuration management system to identify where data was used. (Refer to recommendation 2)

A review of the Quality Assurance Requirements and Description Document (QARD), Revision 1, Supplement III, Scientific Investigation, Subsections III.2.3 through III.2.5 was conducted by the surveillance team. In an attempt to thoroughly understand the QARD, the requirements implemented by these subsections were reviewed along with discussions with the Director, YMQAD. As a result of these discussions minor changes to the QARD are recommended to clarify intent. (Refer to recommendation 3)

#### LABORATORY SURVEILLANCE

The laboratory surveillance activities observed the following format:

- Interview with the Quality Assurance representative regarding the effectiveness of Technical Data Management Program.
- Interview with the technical data coordinator(s) regarding their role and the function of the Participant Data Archive (PDA).
- Review of selected data sets with the technical data coordinators using ATDT, records management system, and technical data or copies of the technical data submittal maintained in the PDA. Verification of the identification and qualification status of the selected

data sets were verified by the surveillance team including, as applicable, identification and qualification status of any identified source data for the data set.

- Interviews with Principle Investigators (PI) and/or Technical Leads (TL) on their understanding of and experiences with the technical data management system and any areas where improvements could be made.
- Concluding discussion with the Technical Project Officer (TPO) for each laboratory to summarize surveillance results and to discuss the TPO's perspectives on technical data management.

#### Sandia National Laboratory

Interviews with Quality Assurance (QA) identified that there is data that needs to be entered into the Technical Data Management System but was not due to budget constraints. Using the Requirements Traceability Network (RTN), a review was conducted of the SNL implementation of Supplement III, Subsections III.2.3 through III.2.4 of the QARD.

Seven data sets were selected and interviews were performed with the Technical Data Coordinator, PI, and TL. Data set DTN SNT01220930001.002, "Design Support Analysis: North Ramp Design Package 2C. (Rev. 1) was verified for traceability to the source data and verified traceability for use in M&O engineering package "North Ramp Design Package 2C. It should be noted that this package was identified at random as there is no management system that can be used to identify what data was used in reports, specifications, drawings, etc. (Refer to recommendation 2) This data set was identified as qualified but used a non-qualified RIB item in developing the data set. Nowhere in the report was it identified that this RIB data was non-qualified. Corrective Action Request (CAR) YM-94-077 (Refer to block 10 of this report) was written as a result of the interviews and reviews of objective evidence associated with this data set. This problem is due to the fact that there are no project guidelines on the use of data and if data is used in a report, drawing, specification, etc. how data should be identified. It is recommended that further guidance should be developed on the use of unqualified data when developing qualified data sets. (Refer to recommendation 4)

The Technical Data Coordinator indicated that he should be involved early in the development or gathering of data. Presently he is involved at the end of this process. Activities would include initiating the TDIF and identifying where in the technical data management system (PDA, CRF, TDB, and RIB) the data will reside when complete. Interviews with TLs indicated that they were not sure when in the data gathering cycle data

should be submitted to the Technical Data Management system (including raw data such as millivolt reading or the processed millivolt readings) and then once submitted, where the data should go (TDB, CRF, RIB or PDA). It is recommended that in the revision of the technical data management procedures, when and where data are submitted to the technical data management system be addressed. (Refer to recommendation 3) They were also not sure how modeling data should be handled. Interviews with the PI responsible for Total System Performance Assessment felt that data generated from models was not part of the Data Management System. The controls on data generated by models used in performance assessment need to be defined. (Refer to recommendation 5)

#### Los Alamos National Laboratory

The interview with the QA representative, which also included the Technical Data Coordinator, identified that LANL has struggled with data submittal due in part to numerous turnovers of personnel in this area. LANL has initiated a review of data submittal and ATDT entries to date and identified some necessary follow-up actions. (Note: After the laboratory surveillance and prior to issuance of this report, it was identified that the Technical Data Coordinator had resigned). It was also stated that the technical data management system is perceived as complicated; LANL has experienced difficulty in submitting data using the Technical Data Parameter Dictionary and was not able to readily obtain specific requested data from the Technical Database. The Technical Data Coordinator also indicated that they had not made a data submittal since about December, 1993. Both the QA representative and the Technical Data Coordinator indicated that training for the PIs by the Project on the technical data management program, including use of the Technical Data Parameter Dictionary, would be very beneficial. (Refer to recommendation 6)

Using the RTN, a review was conducted of the LANL procedures that implement Supplement III, Subsections III.2.3 through III.2.4 of the QARD. Twelve data sets were reviewed for correct identification and qualification status. This included the review of any identified source data. Of the twelve data sets reviewed seven were identified as qualified but were either not acquired or developed under the QA program or referenced source data that were not acquired or developed under the QA program. CAR YM-94-083 was issued to identify this condition and is described in block 10 of this report. (Refer to recommendation 7)

The record package for DTN LA000000000011.001 included an excerpt from a document dated November 17, 1992 and titled "Erosion Rates At Yucca Mountain, Nevada." This excerpt was labeled "PREDECISIONAL PRELIMINARY DRAFT" and addressed data qualification of rock varnish (cation ratio) dating. A final

qualification report could not be located at LANL or from the records system during the LANL surveillance. It was identified in the concluding interview with the TPO that the erosion data had been qualified. Additional reviews and discussions with a WBS manager as discussed in the "Follow-up Interviews and Reviews" section of this report identified that an exercise to qualify this data has been performed. It is recommended that the project clearly define how existing data is qualified, ensure that documentation requirements provide traceability between the data and qualification documentation, and how this qualification status is identified in the technical data management system. (Refer to recommendation 7)

Interviews were conducted with two PIs. One interview was to follow-up on the problem identified regarding obtaining information from the technical database. It appeared that very specific, limited information was requested from the technical database, but the surveillance team was informed that the PI was offered approximately 1 million bytes of information on electronic media in response to the request. (Note: Subsequent cooperative efforts between the LANL Technical Data Coordinator, Technical Database Administrator, and RIB Administrator outside this surveillance activity resulted in part of the requested information being provided from the Technical Database and actions started to obtain the remaining information from the RIB). Another PI indicated that the data submittal process seemed cumbersome due in part to the Technical Data Parameter Dictionary. (Refer to recommendation 7) The Technical Data Parameter Dictionary had not included the parameters applicable to his investigation and changes had been requested. The PI confirmed that the changes had indeed been incorporated.

#### Lawrence Livermore National Laboratory

An interview was conducted with two representatives from QA and the Project Administrator, who had recently assumed the technical data coordination functions. LLNL indicated that they do not have much experience with the technical data management system (as indicated by the limited number of LLNL data sets in the ATDT at the time of the surveillance) but progress is being made. LLNL has instituted a requirement to submit the scientific notebooks to the technical data management program on an annual basis. A copy of the notebooks will be maintained in the PDA until the notebook is completed and submitted to the records system. Currently they are uncertain as to when and what data should be submitted to the Technical Database. (Refer to recommendation 7) What should be done with modeling data is also in question. (Refer to recommendation 5)

Using the RTN, a review was conducted of the LLNL procedures that implement Supplement III, Subsections III.2.3 through III.2.4 of the QARD. Six data sets were evaluated. Three data sets, which represent the total population of LLNL data sets identified as

qualified, were reviewed for correct identification and qualification status. No source data was identified for these data sets. Two of the three data sets reviewed were identified as qualified but were not acquired or developed under the QA program. CAR YM-94-084 was issued to identify this condition and is described in block 10 of this report. (Refer to recommendation 7)

It should be noted that during the surveillance GEMBOCHS, thermodynamic data files for use with geochemical modeling code EQ3/6, was removed from the Technical Data Management system. The GEMBOCHS Administrator briefed the surveillance team on the function and structure of this tool. Guidance should be developed on what data bases should reside in the technical data management system. (Refer to recommendation 4)

An interview was conducted with a TL in Performance Assessment who discussed what he considered data from a performance assessment perspective. According to the TL data used as inputs to models was data. The data outputs from these models was one of the following: information, recommendations or conclusions. (Refer to recommendation 5)

#### FOLLOW-UP INTERVIEWS AND REVIEWS

As a result of the findings at the laboratories that identified data sets incorrectly labeled as qualified, CAR YM-94-101 was issued to the Project Office to require that the catalog be updated with the correct qualification status and notify data users (design, performance assessment and scientific investigation) to evaluate the effects of the change in status. CAR YM-94-101 is described in block 10 of this report. It is recommended that the method for notifying users of data that the status of this data has updated/revised and incorporated into a configuration management system for data. (Refer to recommendation 2)

Two DOE WBS Managers were interviewed at the conclusion of the surveillance to determine the level of understanding of data management requirements, to determine how the WBS managers are notified of the need for data by the data users (Performance Assessment, design, scientific investigation, licensing, etc.), how the laboratories are notified of data requests, and where data should reside in the Data Management system (RIB, TDB, PDA and CRF). The WBS managers are responsible for requesting data to be gathered. The WBS Managers stated that Planning and Control System (PACS) is the method for scheduling of the delivery of these data sets to the Data Management system. Although both WBS Managers agreed that PACS is the scheduling tool, there are no procedures or guidelines describing the request and scheduling process. It was stated that the Technical Data Parameter Dictionary should be used by the WBS Managers for identifying data that should be in the data management system.

The data set parameters should be identified on the "Yucca Mountain Site Characterization Project Participant Deliverable Milestone Worksheet" in the Criteria Statement. One WBS Manager was very familiar with the Data Management system the other was somewhat familiar and the rest of the WBS Managers, they felt, were less familiar. The WBS Managers should be trained on the technical data management system. (Refer to recommendation 6) The WBS Managers should be involved in the revision of the data management procedures. (Refer to recommendation 7)

An attempt was made to confirm the qualification status of LANL DTN LA00000000011.001 "Erosion Data". Further investigation located from the records system what appears to be the qualification documentation for this data, however, locating these records was difficult and accomplished only by referral from personnel involved in the activities. What other data this documentation may apply to has not been determined. CAR YM-94-101 was issued to the Project Office to address impact on traceability from the qualification documentation to the associated data, appropriate reference to the qualification documentation within the technical data management system, and the ability to retrieve qualification documentation within the Records Management System. The WBS Manager involved in this qualification exercise identified that the NRC, as of August 22, 1994, has not accepted the qualification of the erosion data. The qualification of existing data needs to be clarified in the implementing procedures. (Refer to recommendation 7)

Attachment 1 identifies the objective evidence reviewed during this surveillance and the personnel interviewed.

**Block 10 (continued) SURVEILLANCE CONCLUSIONS:**

The surveillance verified that technical data management activities provided identification of technical data through the use of the data tracking number but the system was difficult to use. The identification of the qualification status of technical data was not clearly understood which resulted in CARs at the three laboratories.

Technical data was traceable within the laboratories but the traceability issue needs to be explored project wide.

The technical data management activities are not consistently understood and implemented across the project so training and rewriting of the technical data management procedures is required.

Four Corrective Action Requests (CARs) have been issued and 8 recommendations were made as a result of this surveillance.

**Corrective Action Requests:**

<u>Responsible Organization</u>	<u>CAR Number</u>	<u>Description</u>
SNL	YM-94-077	A non-qualified RIB item was used in developing a data set and the status of the data set was identified as "QA".
LANL	YM-94-083	Existing technical data is identified as qualified when actually the data was not qualified.
LLNL	YM-94-084	Existing technical data is identified as qualified when actually the data was not qualified.
YMSCO	YM-94-101	As described above unqualified data sets were identified as qualified on the associated TDIF. This error was perpetuated into

the Technical Data Catalog and must be corrected.

Recommendations:

1. An evaluation should be performed of technical data at the OCRWM level. The evaluation should consider if YMSCO/OCRWM technical data management functions should be integrated, or if OCRWM controls similar to YMSCO controls should be established for OCRWM generated technical data, or if current YMSCO controls are sufficient.
  2. There is no management system that can identify where data retrieved from the technical data management system was used. It is recommended that a system be developed to apply appropriate "configuration controls" to data so that users can be notified of technical data that has been updated/revised. This "configuration control" may be appropriate for selected data, perhaps RIB items, as opposed to all data included in the TDMS.
  3. Revise QARD Section III.2.3, Data Identification, and Section III.2.4, Data Validation and Qualification to clarify intent. Replace the use of the term "validation" with "technical review" and "qualification" where appropriate and clarify the requirements associated with the qualification of data.
  4. Clarify in appropriate procedures the activities associated with data use in the following activities:
    - the methodology to identify a need for data by the data users,
    - the methodology to be followed when unqualified data is used in developing qualified data sets, performance assessment, site characterization and design documentation,
    - how data (qualified, unqualified, RIB, etc.) should be identified in reports, specifications, drawings, etc.,
    - how the data was used (corroborative, design input, etc.), and
    - what technical data should reside in the technical data management system and when technical data like the technical data in GEMBOCHS are to be controlled outside the technical data management system and what controls apply to them.
- Data users (design, performance assessment and scientific investigation), WBS managers, and data gatherers need to be involved in this process.
5. Develop procedures for the control of data generated from modeling used in performance assessment.

6. Ensure training is provided to applicable personnel, including WBS Managers, data generators (PI and TL), data users (design, performance assessment and scientific investigation) on technical data management system with specific emphasis on the items identified in recommendations 3 and 4 above.
  7. Clarify in appropriate procedures activities concerning data identification, traceability, and status in the following:
    - the process to be followed when putting data into the data management system,
    - the process to be followed when requesting data out of the data management system,
    - the process for establishing the status of data as "qualified" with respect to acquired or developed data,
    - the process for qualifying existing data, and ensure that documentation requirements provide traceability between the data and qualification documentation,
    - technical data parameter dictionary relationship to the technical data management system,
    - the process of establishing the qualification status of data sets in the data management system, and
    - what (raw data to processed data to interpretation of the data), when (data gathering cycle), and where (TDB, CRF, RIB or PDA) technical data are submitted to the technical data management system.
- Data users (design, performance assessment and scientific investigation), WBS managers, and data gatherers need to be involved in this process.
8. This surveillance concentrated on snap shots of data sets during the data sets's life cycle. It is recommended that an audit/surveillance be performed looking at data being used in design, performance assessment and site characterization and follow the pedigree of this data all the way to it's source and identify source data and follow the pedigree to use.

Attachment 1

SNL

Personnel Contacted:

George Perkins, Task Leader for Total System Performance Assessment  
Marie Steele, Database Manager  
Matt Shain, PDA Administrator  
John Friend, QA Specialist  
Joe Jung, Task Leader  
Connie Chocas, PI  
Eloise James, Assistant PDA Administrator  
Marlene Tucker, Supervisor, Records Management  
Peggy Warner, Manager, Records Management  
Les Shephard, TPO

Objective Evidence:

Letter, Shephard to Simecka, "Transmittal of "Design Support Analysis: North Ramp Design Package 2C", December 20, 1993

Letter, Shephard to Simecka, 'Correction to Letter dated December 20, 1993, To: William B. Simecka, From L.E. Shephard, Subject: Transmittal of "Design Support Analysis: North Ramp Design Package 2C", (Yucca Mountain Milestone OS72, Completed 12/20/93)', April 13, 1994

Letter, Shephard to Simecka, "Interim Data Transmittal, "Design Support Analysis: North Ramp Design Package 2C (Rev.1)". This Data Supersedes Data Previously identified by DTN:SNT011220930001.001, TDIF#: 302273, April 1, 1994

Data Tracking Log maintained on *QUATRO Pro* a Software Program

SNL YMP PDA File Guides

Quality Assurance Implemetng Procedures (QAIP) 1-5, Rev. 06, "Establishing Work Agreements"

QAIP 2-4, Rev. 00, "Conducting and Documenting Analyses"

QAIP 6-3, Rev. 01, "Conducting and Documenting Reviews of Documents"

QAIP 17-2, Rev. 02, "Participant Data Archive"

Technical Data Sets Reviewed:

TDIF 301881 DTN SNL020303193001.005  
TDIF 301783 DTN SNL01B0505301.001  
TDIF 302002 DTN SNF28021693001.001  
TDIF 301428 DTN SNF29041993002.001  
TDIF 303124 DTN SNT01220930001.002  
TDIF 302344 DTN SNSAND92045000.000  
TDIF 302273 DTN SNT01220930001.001

LANL

Personnel Contacted:

Jeff Walterscheid, Technical Data Coordinator  
Paul Gillespie, Quality Assurance Specialist  
Cleoves Martinez, Quality Assurance Specialist  
Barbara Carlos, PI  
Julie Canapa, TPO  
Dave Vaniman, PI  
Sandra Martinez, Records Processing Center Operations Coordinator  
Mike Clevinger, Quality Assurance Specialist

Objective Evidence:

LANL-YMP-QP-03.5, R3, Documenting Scientific Investigations

LANL-YMP-QP-08.3, R2, Transfer of Data

LANL-YMP-QP-03.23, R2, Preparation and Review of Technical  
Information Products and Study Plans

EEG-13-06-94-184 Las Alamos letter Mercer-Smith to Jim Beckett  
EG&G Earth and Environmental Science (EEG)

Technical Data Sets Reviewed:

TDIF 300051, DTN LA000000000014.001  
TDIF 301130, DTN LA000000000014.002  
TDIF 301206, DTN LA000000000012.002  
TDIF 300807, DTN LA000000000026.001  
TDIF 300933, DTN LA000000000026.002  
TDIF 300496, DTN LA000000000011.001  
TDIF 300485, DTN LA000000000019.001  
TDIF 301816, DTN LA000000000019.002  
TDIF 300449, DTN LA000000000012.001  
TDIF 301206, DTN LA000000000012.002  
TDIF 301670, DTN LA000000000053.001  
TDIF 300235, DTN LA000000000008.001

LLNL

Personnel Contacted:

Raymond Hamati, QA Engineer  
Royce Monks, QA Manager  
Barbara Bryan, Project Administrator  
Carol Passos, Technical Data Coordinator Assistant  
Bill Clark, TPO  
Bill Bourcier, Task Leader  
Jim Johnson, GEMBOCHS Administrator  
Bill Halsey, Technical Lead

Objective Evidence:

Technical Data, Milestones, & Records Form & Log

Active Scientific Notebook Log Book

LLNL YMP WBS & Site Characterization Plan Flowchart

033-YMP-QP 1.0, Rev. 4, Organization

033-YMP-QP 2.2, Rev. 1, Peer Review

033-YMP-QP 2.5, Rev. 1, Acceptance of Data Not Generated Under  
the Control of the QARD

033-YMP-QP 3.0, Rev. 4, Scientific Investigation Control

033-YMP-QP 3.3, Rev. 2, Review of Technical Publications and Data

033-YMP-QP 3.4, Rev. 3, Scientific Notebooks

033-YMP-QP 6.0, Rev. 4, Document Control

Technical Data Sets Reviewed:

TDIF 200186 DTN LLLLYMP9011018.000  
TDIF 200194 DTN LLLLYMP9110169.000  
TDIF 200191 DTN LLLLYMP9108066.000  
TDIF 200188 DTN LLLLYMP9104034.000  
Records Accession Number NNA.900530.0324  
Records Accession Number NNA.890915.0019

DOE

Personnel Contacted:

Claudia M. Newbury, YMP Technical Data Manager  
Tom W. Bjerstedt, WBS Manager  
Richard E. Spence, Director - YMQAD  
Ardyth M. Simmons, WBS Manger

Objective Evidence:

YAP-SIII.1Q, Rev. 0, Qualification of Existing Data

YAP-SIII.2Q, Rev. 0, Technical Information Flow to and From the  
Yucca Mountain Site Characterization Project Technical Data  
Base

YAP-SIII.3Q, Rev. 0, Control and Transfer of Technical Data on  
the Yucca Mountain Site Characterization Project

YAP-2.1Q, Rev. 0, Technical Assessment

Letter, From Richard E. Spence to Robert M. Nelson, Jr.,  
"Issuance of Surveillance Record YMP-SR-94-033 Resulting From  
Yucca Mountain Quality Assurance Division (YMQAD) Surveillance of  
the Yucca Mountain Site Characterization Office (YMSCO) and the  
Civilian Radioactive Waste Management System Management and  
Operating Contractor's (CRWMS/M&O) Technical Data Base", April  
15, 1994

Letter, John G. Davis (NRC) to Robert L. Morgan (DOE) dated  
June 29, 1983

"Procedural Agreement Between the Nuclear Regulatory Commission  
and the U.S. Department of Energy Identifying Guiding Principles  
for Interface During Geologic Site Investigation and Site  
Characterization" Signed Lake H. Barrett June 3, 1993 and Robert  
M. Bernero May 13, 1993

"Agreement Between the U.S. Department of Energy Office of  
Civilian Radioactive Waste Management and the Nuclear Regulatory  
Commission Division of High-Level Waste Management During Site  
Characterization Programs and Prior to the Submittal of an  
Application for Authorization to Construct a Repository" Signed  
Dwight D. Shelor May 20, 1993, Caral P. Gertz May 19, 1993 and  
Joseph J. Holonich

Letter, From Donald G. Horton To Distribution "Lessons  
Learned/Program Clarification", CEH-490 Dated Dec. 20, 1993

Letter, From John P. Roberts, OCRWM To Joseph J. Holonich, NRC  
"Data Qualification", Dated July 20, 1992

Yucca Mountain Site Characterization Project Office (YMPO)  
Technical Assessment (TA): Qualification of Data for Erosion  
Rates at Yucca Mountain, Records Accession Number NNA.930305.0121

Letter, Carl P. Gertz (DOE) to Larry R. Hayes (USGS) and Julie A.  
Canape (LANL), Technical Assessment (TA) for Data Qualification  
and Scientific Notebook Documentation Supporting U. S. Department  
of Energy (DOE) Topical Report on Erosion dated September 8,  
1992, Records Accession Number NNA.920914.0153.

M&O

Personnel Contacted:

Stephen Bodner, Technical Data Manager  
Robert Lewis, Automated Technical Data Tracking System  
Administrator  
Nile Jones, Reference Information Base Administrator  
Taki Asakura, Technical Data Specialist

Objective Evidence:

Automated Technical Data Tracking System  
Technical Data Parameter Dictionary  
Technical Data Catalog  
Reference Information Base

EG&G

Personnel Contacted:

James Beckett, Technical Data Base Administrator

Objective Evidence:

GENISES, Geographic Nodal Information Study and Evaluation System  
Technical Data Base  
YLP-SIII.1Q-EGG, Rev. 0, Technical Data Flow to and from  
Geographic Nodal Information Study and Evaluation System  
Technical Database