Los Alamos National Laboratory
Quality Assurance Documents
for the
Nevada Nuclear Waste Storage Investigations

VOLUME I

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QUALITY ASSURANCE PROCEDURES (QP)

NOTE: Please note that the table of contents now reflects new procedural alpha numeric designators. As each procedure is revised, the new designator will be used and ultimately the old designator will be completely removed.

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CHANGE REQUESTS (CR)

CR No. 008	Modifies QP-06, R2 (CR in front of QP)
CR No. 009	Modifies QP-18, R1 (CR in front of QP)
CR No. 012	Modifies QP alpha numeric code (CR in front of Volume I Table of Contents)
CR No. 013	Modifies QP-16, R0 (CR in front of QP)
CR No. 017	Modifies QP-07, R2 (CR in front of QP)
CR no. 032	Modifies QP-17, R0 (CR in front of QP)
CR No. 019	Modifies QP-14, R1 (CR in front of QP)
CR No. 024	Modifies QP-16, R1 (CR in front of QP-16, R1)
CR No. 026	Modifies QP-19,R0 (CR in front of QP)

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TWS-HSE5-DP-202, R0	Operating Instructions for Amray Model 1000 Scanning Electron Microscope and Kevex Model 7000 Energy Dispersive X-Ray Analyzer for Evaluation of Air Samples Collected on Nuclepore Filters
TWS-HSE5-DP-206	Fiber Counting Procedure
TWS-HSE5-DP-211, R0	Preparation and use of Air Particulate Filter Sampling Devices
TWS-HSE5-DP-212, R0	Preparation, Calibration, and use of Cascade Impactors
TWS-HSE5-DP-213, R0	Procedure For The Calibration and Use of SKC Personal Sampling Pumps
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WX-Design Engineering Division DPs

TWS-WX-DP-59, R0	NNWSI Exploratory Shaft Facility Design Control Procedure

CHANGE REQUESTS (CR)

CR No. 006	Modifies TWS-INC-DP-35,R0 (CR in front of DP)
CR No. 025	Modifies TWS-INC-DP-35, R0 (CR in front of DP-35, R0)
CR No. 033	Modifies TWS-HSE5-DP-211, R0 (CR in front of DP)
CR No. 034	Modifies TWS-HSE5-DP-212, R0 (CR in front of DP)
CR No. 035	Modifies TWS-HSE5-DP-213, R0 (CR in front of DP)
CR No. 036	Modifies TWS-HSE5-DP-214, R0 (CR in front of DP)
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Section No.	Title	NNWSI Procedure Reference
1.	Organization	
2.	Quality Assurance Program	LANL-NNWSI-QAPP Sections 1 and 2. TWS-QAS-QP-02.1 TWS-MSTQA-QP-18
3.	Design Control	LANL-NNWSI-QAPP Section 3. TWS-WX-DP-59
4.	Procurement Document Control	LANL-NNWSI-QAPP Section 4. TWS-QAS-QP-04.1 TWS-QAS-QP-04.2 TWS-QAS-QP-04.3 TWS-QAS-QP-22
5.	Instructions, Procedures, and Drawings	LANL-NNWSI-QAPP Section 5. TWS-QAS-QP-03 TWS-QAS-QP-05.1 TWS-QAS-QP-05.2 TWS-MSTQA-QP-07 TWS-MSTQA-QP-11 TWS-QAS-QP-12.1 TWS-QAS-QP-13.1 TWS-MSTQA-QP-14 TWS-MSTQA-QP-15 TWS-QAS-QP-17.1 TWS-INC-WP-12 TWS-ESS-DP-01 TWS-INC-DP-02 TWS-ESS-DP-03 TWS-ESS-DP-04 TWS-CNC-DP-05

* Procedures affected by this issue have been underscored.

Section No.	Title	NNWSI Procedure Reference
5.	Instruction, Procedures, and Drawings (continued)	TWS-ESS-DP-06
		TWS-ESS-DP-07
		TWS-ESS-DP-09
		TWS-ESS-DP-10
		TWS-ESS-DP-11
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		TWS-INC-DP-62
		TWS-INC-DP-63
		TWS-INC-DP-65
		TWS-INC-DP-101
		TWS-ESS-DP-102
		TWS-ESS-DP-103
		TWS-ESS-DP-105
		TWS-ESS-DP-106

* Procedures affected by this issue have been underscored.

Section No.	Title	NNWSI Procedure Reference
5.	Instruction, Procedures, and Drawings (concluded)	TWS-ESS-DP-107 TWS-ESS-DP-110 TWS-ESS-DP-111 TWS-ESS-DP-112 TWS-ESS-DP-113 TWS-INC-DP-114 TWS-ESS-DP-115 TWS-ESS-DP-116 TWS-HSE5-DP-201 TWS-HSE5-DP-202 TWS-HSE-5-DP-206 TWS-HSE5-DP-211 TWS-HSE5-DP-212 TWS-HSE5-DP-213 TWS-HSE5-DP-214 TWS-HSE5-DP-215 TWS-HSE12-DP-301 TWS-HSE12-DP-307 TWS-HSE12-DP-310 TWS-HSE12-DP-311 TWS-HSE12-DP-312 TWS-HSE12-DP-313 TWS-HSE12-DP-316 TWS-HSE12-DP-317 TWS-HSE12-DP-318
6.	Document Control	LANL-NNWSI-QAPP Section 6. TWS-MSTQA-QP-03 TWS-QAS-QP-07 TWS-MSTQA-QP-10 TWS-MSTQA-QP-19
7.	Control of Purchased Items and Services	LANL-NNWSI-QAPP Section 7. TWS-QAS-QP-04.1 TWS-QAS-QP-04.2 TWS-QAS-QP-04.3
8.	Identification and Control of Items	LANL-NNWSI-QAPP Section 8.
9.	Control of Processes	LANL-NNWSI-QAPP Section 9. TWS-MSTQA-QP-14

* Procedures affected by this issue have been underscored.

Section No.	Title	NNWSI Procedure Reference
10. & 11.	Inspection and Test and Control	LANL-NNWSI-QAPP Sections 10 & 11. TWS-MSTQA-QP-11 TWS-MSTQA-QP-14
12.	Control of Measuring and Test Equipment	LANL-NNWSI-QAPP Section 12. TWS-QAS-QP-12.1, R1
13.	Handling, Storage, and Shipping	LANL-NNWSI-QAPP Section 13. TWS-QAS-QP-13.1
14.	Inspection, Test, and Operating Status	LANL-NNWSI-QAPP Section 14.
15.	Control of Nonconforming Items	LANL-NNWSI-QAPP Section 15. TWS-MSTQA-QP-16
16.	Corrective Action	LANL-NNWSI-QAPP Section 16. TWS-QAS-QP-21
17.	Quality Assurance Records	LANL-NNWSI-QAPP Section 17. TWS-MSTQA-QP-03 TWS-QAS-QP-17.1
18.	Audits	LANL-NNWSI-QAPP Section 18. TWS-QAS-QP-17

* Procedures affected by this issue have been underscored.

ACCEPTANCE OF PROCURED SERVICES PERFORMANCE

Effective Date 6/27/88

A. M. Pendergrass
Preparer

June 27, 1988
Date

H. P. Nunes
QA Project Leader

June 27, 1988
Date

D. T. Oakley
Technical Project Officer

6/27/88
Date

ACCEPTANCE OF PROCURED SERVICES PERFORMANCE

1.0 PURPOSE

This procedure specifies the requirements for and methods by which the performance of procured services is accepted and the means by which acceptance is documented.

2.0 SCOPE

This quality procedure (QP) applies to acceptance of Quality Assurance (QA) Level I and II services procured and performed for the Los Alamos National Laboratory (LANL) Nevada Nuclear Waste Storage Investigations (NNWSI) Project. Acceptance of Quality Assurance (QA) Level I and II items and equipment is addressed in TWS-QAS-QP-04.1, "NNWSI Procurement Procedures."

The extent to which the performance of services is evaluated must be consistent with relative importance, complexity, and amount of service procured.

3.0 DEFINITIONS

3.1 Corrective Action

Corrective action is the measures taken by the supplier to rectify significant conditions that are adverse to quality and, where necessary, to preclude repetition of such conditions. The condition requiring corrective action, the cause, the recommended corrective action, and the verification that corrective action has been implemented are documented on a Corrective Action Report (CAR) (Attachment 1).

3.2 Nonconformance

A nonconformance in a service procurement is a failure of the supplier to fulfill the requirements contained in the procurement documents such that the quality of the service rendered is unacceptable or indeterminate. A nonconformance in a service procurement is reported and the resolution is documented through a CAR.

3.3 Services

Services that may be procured by LANL in support of the NNWSI Project are performance by subcontractors of activities such as analysis, third party inspections, engineering and consulting, installation, repair, overhaul, and maintenance work.

4.0 RESPONSIBILITIES

4.1 Requester Responsibilities

The requester of the service will be responsible for the technical aspects of accepting the performance. The requester will, as applicable,

- prepare the statement of work to include conditions of service acceptance;
- select the method(s) to determine acceptance and review the information produced by implementing the method(s);
- issue CARs, if appropriate;
- document acceptance or nonacceptance of the service performance;
- request the QAS or Waste Management Project Office (WMPO) to conduct surveys, surveillances, and/or audits of service suppliers; and
- document acceptance or rejection of the results of procured services.

4.2 QAS Responsibilities

The QAS is responsible for documenting on a CAR the nonconforming conditions and corrective actions required for procured services, if required, and for performing QA oversight activities. The QAS will

- review the requester's documentation on acceptance or nonacceptance of the service performance, if requested,
- conduct surveys and/or audits of service suppliers, as needed,
- prepare and complete CARs, as needed,
- obtain the QAPL's concurrence on recommended corrective action of a CAR before sending it to the supplier to be implemented,
- send a copy of the CAR to the MAT buyer who placed the service contract, and
- provide the QAPL with a copy of the closed CAR.

4.3 QAPL Responsibilities

The QAPL is responsible for concurring with the recommended corrective action of a CAR before it is implemented.

4.4 WMPO Responsibilities

WMPO is responsible for conducting surveillance of a participating organization or Nevada Test Site (NTS) support contractor used by another participating organization or NTS support contractor, when requested by the organization using such a contractor or participating organization.

5.0 PROCEDURES

5.1 Acceptance

Acceptance of the performance of a service procurement is made by one or more of the following methods, as specified by the requester of the service:

- technical verification of data generated,
- survey and/or audit of the activity,
- review of objective evidence for conformance to the requirements contained in the procurement documents (statement of work), and/or
- satisfactory implementation of CARs.

The service procurement will be accepted unless unacceptable conditions are documented by the requester and sent to the QAS. Either of these individuals will then prepare and compile a CAR.

5.1.1 Technical Verification of Data

The requester of the service will, when appropriate, provide for technical verification of data generated. Standard or known samples and duplicate samples may be submitted for analysis; duplicate samples may be submitted to another anlysis laboratory for independent analysis. The requester will document these verification activities on the Acceptance of Results of Procured Services form (Attachment 2) and place it in the group resident file with the other service procurement documents.

5.1.2 Survey and/or Audit

The QAS will perform surveys and/or audits of the supplier's activities consistent with the importance and complexity of the service and as needed when the requester has reason for concern about potential nonconforming conditions. The outcomes of these activities will be documented by the QAS in accordance with LANL NNWSI implementing procedures. The QAS will send copies of all audit and survey reports to the requester, who will place them in the group resident file with the other service procurement documents.

When a participating organization or NTS support contractor uses another such organization to provide services, the user organization will request WMPO to conduct a WMPO surveillance (survey) of the organization performing the service to determine that the work is being performed in accordance with requirements. The surveillance report will be sent to the requester who will place it in the group resident file with the other service procurement documents.

5.1.3 Review for Conformance to Procurement Documents

The requester will review objective evidence that shows whether the supplier's work conforms to specifications contained in the statement-of-work section of the procurement documents. The requester will document these verification activities on the Acceptance Results of Procured Services form (Attachment 2) and will place it in the group resident file with the service procurement documents.

5.2 Nonconformance

5.2.1 Identification of Supplier Nonconformance

The requester and QAS will determine supplier nonconformance based on implementation of one or more of the acceptance methods listed above. The nonconforming condition will be identified on a CAR issued to the supplier by the requester or QAS. A copy will be sent by the QAS to the MAT buyer who placed the contract.

5.2.2 Control of Supplier Nonconformance

Nonconforming services performed by the supplier will be controlled through prompt corrective action taken by the supplier. Upon

receiving a CAR, the supplier must identify appropriate corrective action measures taken to correct the nonconforming condition and, where necessary, to prevent repetition. The supplier will obtain concurrence of the QAPL for proposed corrective actions before implementing them and will implement them promptly after receiving concurrence.

5.2.3 Verification of Corrective Action

The QAS will verify the QAPL's concurrence with the supplier's proposed corrective actions and will take appropriate action, such as a survey or audit, to verify the implementation of corrective actions.

5.2.4 Acceptance of Service Following Nonconformance

As a part of closing out a CAR, the QAS and requester must determine acceptance or rejection of services performed before the corrective action was implemented by the supplier. This decision will be documented as a part of the CAR action, and a copy of the decision will be sent by the QAS to the MAT buyer who placed the contract.

6.0 QUALITY ASSURANCE REQUIREMENTS

6.1 Records

Records that document acceptance or rejection of results and any corrective actions for a service procurement consist of some or all of the following:

- technical verification of generated data, which is documented on the Acceptance of Results of Procured Service form,
- review of objective evidence, which shows conformance to procurement document specifications,
- survey and/or audit reports covering the supplier's activities, and
- CARs.

The Acceptance of the Results of Procured Services form, when completed, will be attached to the purchase request and other procurement documents in the resident file. The completed form becomes part of the Project's permanent procurement records.

6.2 Document Control

This QP will be issued, controlled, and revised in accordance with LANL NNWSI Project implementing procedures.

7.0 ATTACHMENTS

Attachment 1, Los Alamos NNWSI Project Corrective Action Report
Attachment 2, Acceptance of Results of Procured Services form

Los Alamos NNWSI Project
CORRECTIVE ACTION REPORT

Initiator: Signature/Organization/Phone	**CAR No:** **Initiation Date:** **QA Level:**
Title of Work to which CAR Applies:	
Condition Requiring Corrective Action:	
Corresponding Documentation:	
Assigned To:	**Date:**
Cause and Recommended Corrective Action:	
QAPL Concurrence:	**Date:**
Corrective Action Completed:	**Date:**
Implementation Verified By:	**Date:**
CAR Closeout:	**Date:**

Los Alamos
Los Alamos National Laboratory
Los Alamos, New Mexico 87545

ACCEPTANCE OF THE RESULTS OF PROCURED SERVICE

ATTACH TO SERVICE PROCUREMENT DOCUMENTS

PR No.: _____ REQUESTOR OR EVALUATOR: _____

SERVICE PERFORMED: _____

ACCEPTANCE METHOD

1. TECHNICAL VERIFICATION OF DATA GENERATED ☐ ACCEPT ☐ REJECT ☐ N.A.

   COMMENTS:

   _____ REQUESTOR OR EVALUATOR _____ DATE

2. SURVEY / AUDIT OF SUPPLIER'S ACTIVITIES ☐ ACCEPT ☐ REJECT ☐ N.A.

   SR OR AUDIT REPORT NUMBER(S): _____

   COMMENTS:

   _____ REQUESTOR OR EVALUATOR _____ DATE

3. REVIEW OF OBJECTIVE EVIDENCE THAT SHOWS CONFORMANCE TO STATEMENT OF WORK ☐ ACCEPT ☐ REJECT ☐ N.A.

   COMMENTS:

   _____ REQUESTOR OR EVALUATOR _____ DATE

4. CAR IMPLEMENTATION ☐ ACCEPT ☐ REJECT ☐ N.A.

   CAR NUMBER: _____

   COMMENTS:

   _____ REQUESTOR OR EVALUATOR _____ DATE

QUALIFICATION OF SUPPLIERS FOR ENGINEERED ITEMS AND SERVICES

Effective Date 6/27/88

A M Pendergrass
Preparer
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June 27, 1988
Date

H.P. Nunes
QA Project Leader
H. P. Nunes

June 27, 1988
Date

D T Oakley
Technical Project Officer
D. T. Oakley

6/27/88
Date

QUALIFICATION OF SUPPLIERS FOR ENGINEERED ITEMS AND SERVICES

1.0 PURPOSE

This quality procedure (QP) describes the need, methods, and documentation requirements for qualifying suppliers of engineered items and services and for maintaining an Approved Vendors List (AVL) of qualified suppliers.

2.0 SCOPE

This QP applies to suppliers of Quality Assurance (QA) Levels I and II engineered items and services for the Los Alamos National Laboratory (LANL) Nevada Nuclear Waste Storage Investigations (NNWSI) Project. Because LANL's scope of work is for scientific investigations and not for engineered items, these requirements are set forth for use by the LANL subcontractor responsible for procurement of engineered items and for future use by LANL in the event that LANL becomes responsible for engineered items.

3.0 DEFINITIONS

3.1 Approved Vendors List

The AVL documents suppliers who have been qualified to fill QA Levels I and II procurements for engineered items and services.

4.0 RESPONSIBILITIES

4.1 Requester

The requester will specify in the procurement documents a vendor previously qualified to provide engineered items or services, as appropriate.

If no supplier has previously been qualified to provide the items or services being considered, the requester will ensure that options by which suppliers may be qualified are specified in the procurement documents.

The requester will ensure that suppliers are capable of providing the required items or services in accordance with the requirements stated in the applicable procurement documents before the award of the contract.

The requester may prepare supplier qualification plans.

4.2 Quality Assurance Liaison

The Quality Assurance Liaison (QAL) may prepare supplier qualification plans and will ensure that these plans are documented. The QAL will review and concur with the supplier qualification plans prepared by the requester and will obtain concurrence from the Quality Assurance Project Leader (QAPL) before plans are implemented. The QAL will coordinate the implementation of all supplier qualification plans with the Quality Assurance Support (QAS) contractor.

The QAL will attempt to qualify a supplier when requested by LANL NNWSI Project personnel and will prepare a summary report documenting the qualification process and outcome.

4.3 Quality Assurance Support

The QAS will maintain an AVL for suppliers of engineered items and services for the NNWSI Project. Based on information from users of the AVL, the QAS will update and reissue the AVL at least annually.

The QAS will assist the QALs in performing supplier qualification activities, as needed.

4.4 Quality Assurance Project Leader

The QAPL will review and concur with all supplier qualification plans before they are implemented.

4.5 Survey Team Leader

The survey team leader will plan, direct, and report any onsite preaward survey performed to qualify a supplier after a purchase request (PR) has been submitted and before the procurement contract has been awarded. The survey team leader must be a member of the LANL NNWSI Project staff or the QAS organization.

The survey team leader will not have technical responsibility for the items or services that are to be produced by the surveyed organization.

4.6 MAT Division

MAT Division will forward a questionnaire to a potential supplier if asked by a requester and will arrange for an onsite preaward survey team to visit a supplier's facility.

5.0 PROCEDURE

5.1 Supplier Qualification

A requester may ask the QAL to attempt to qualify a supplier at any time.

Supplier qualification activities result in an evaluation of the capability of the supplier to provide engineered items or services in accordance with the technical and QA requirements of the procurement. The qualification process used and the outcome obtained in a summary report will be documented by the QAL.

A supplier may be qualified by the QAL using one (or more) of the following methods:

- in-house quality assurance survey,
- onsite preaward survey,
- letter of recommendation, and
- evidence of prior acceptance.

After evaluating the supplier, the QAL will make one of the following recommendations:

- The supplier is fully qualified.

- The supplier is conditionally qualified; the limitations on procurement will be explicitly indicated, including the additional requirements for full qualification.

- The supplier is not qualified; the reasons for this recommendation, and the corrective actions necessary before this recommendation can be reconsidered, will be indicated.

5.1.1 In-House Quality Assurance Survey

A supplier evaluation will be performed by the appropriate QAL and will begin with an in-house survey. Depending on the significance and complexity of the product, process, or service, an onsite preaward survey may also be required, as described in Subsection 5.1.2 below.

The in-house survey will take into account any letters of recommendation, the supplier's documented history in providing acceptable identical or similar products or services, previous preaward surveys, the supplier's current QA program and records, and/or other pertinent information submitted by the supplier. Letters of recommendation will address the supplier's capabilities to meet the specific technical and/or QA requirements of the applicable procurement documents or the supplier's history of providing identical or similar products or services that have proved satisfactory in actual use. At the direction of the requester and with the QAL's concurrence, a questionnaire may be sent to the supplier by the appropriate Materials Management (MAT) Division representative to elicit specific information. Evaluations performed by other DOE contractors may be accepted if the appropriate codes and standards were used as the basis for qualification.

5.1.2 Onsite Preaward Survey

If a preaward survey is required to approve a supplier after the PR has been submitted, the requester must make arrangements for the survey team to visit the supplier's facility through the appropriate MAT Division representative. The survey team will

- review with the supplier pertinent issues that may include but are not limited to
  - the purpose of the survey,
  - the supplier's organization and facilities,
  - qualifications of special process personnel,
  - the instrument and equipment calibration procedures and certification system,
  - product and service delivery capabilities,
  - design requirements of the products or services,
  - process procedures followed,

- content and implementation of the supplier's QA program, and
- documentation of satisfactory product performance;

- conduct the survey using appropriate checklists to cover the technical and QA requirements of the procurement documents; and
- conduct a postsurvey session with the supplier to summarize and review
  - survey findings and/or observations,
  - the supplier's lack of compliance with specified requirements or lack of capabilities, if any, and
  - any further corrective action necessary to attain full qualification, including required completion dates, in writing, from responsible supplier management.

5.1.3 Evidence of Prior Acceptance

If another branch of the Waste Management Project Office has previously accepted a supplier to provide engineered items or services that meet technical and QA requirements similar to those under consideration, evidence of such acceptance may serve as a recommendation for qualifying the supplier.

5.2 Supplier Disqualification

If a supplier fails to fulfill the technical or QA requirements (as documented by survey reports, audit reports, nonconformance reports, or corrective action reports), a requester will ask the QAS to disqualify the supplier. The QAS will then remove the supplier's name from the AVL. The supplier is eligible for requalification as described in Subsection 5.1.

6.0 QUALITY ASSURANCE REQUIREMENTS

6.1 Supplier Qualification Reports

The survey team leader will report to the QAL the results of a preaward survey, including actions pending and recommendations relating to qualification of the supplier.

The QAL will prepare a summary report for the QAS that documents each qualification process used and outcome obtained, including the recommendations made for qualifying the supplier. Copies will be sent to the requester and the QAPL. A copy will also be sent to the MAT buyer if an onsite survey has been performed after a PR was submitted and before a procurement contract was awarded.

When a supplier is qualified, the QAS will provide written notice to all AVL holders and will update the AVL master listing.

Copies of qualification plans of approved suppliers, survey reports, and necessary commitments for corrective action, and closeout documentation will be maintained by the QAS.

6.2 Qualifications of Survey Team Members

The survey team leader will be a member of the LANL NNWSI Project staff or an auditor qualified following the requirements of the LANL NNWSI Project implementing procedures. The survey team need not include an auditor.

The technical expert(s) will have adequate training and/or experience to determine the capability of the surveyed organization to satisfy the technical requirements of the applicable procurement documents.

6.3 Approved Vendors List

The QAS will maintain and keep current an AVL for NNWSI Project activities. The QAS will revise and reissue the AVL at least annually. The AVL will be issued as a controlled distribution document. This list will include

- the supplier's name and address and
- products or services to which the approval applies, including any special processes.

The QAS will maintain additional information, including

- survey date, type, QAL, and survey team leader (if applicable) on which the evaluation is based; and
- results of evaluations--that is, full approval, conditional approval, or disapproval (if approval is conditional, the stipulations will be included).

6.4 Completed Records

Completed records will be forwarded by the QAS to the manager of the Los Alamos Records Center for submission to the NNWSI Project Records Center.

7.0 REFERENCES

None

8.0 ATTACHMENTS

None

RECORDS MANAGEMENT PROCEDURE

Effective Date _____

Gabriel Ortiz
Preparer

2-22-88
Date

Paul Guthals
QA Project Leader

Date

D.T. Oakley
Technical Project Officer

Date

1.0 PURPOSE

The purpose of this procedure is to define the Los Alamos National Laboratory's (LANL) method for managing all Nevada Nuclear Waste Storage Investigations (NNWSI) Project records. This method will provide valid documentary evidence of the quality of research and research-related activities, items, materials, and contractual services associated with the NNWSI. In this procedure, all such documentary evidence will be referred to as "records." This procedure describes the management system for collecting, identifying, and transferring records for permanent storage; the permanent storage of film onsite; and the retrieval of information.

2.0 SCOPE

This quality procedure (QP) applies to all records created by LANL personnel, contractors, and other organizations that provide services or perform work for the NNWSI.

3.0 DEFINITIONS

3.1 One-of-a-Kind Record

One-of-kind records are records that cannot be duplicated or microfilmed. Such records include, but are not limited to, photographic negatives, radiographic films, multicolored maps, and map overlays.

3.2 Central Records Facility

The Central Records Facility (CRF) is the central processing entity and storage and retrieval facility for all completed NNWSI records. The CRF is maintained by the Technical & Management Support Services (T&MSS) contractor.

3.3 Records Processing Center

The Records Processing Center (RPC) is located at LANL and operated by the NNWSI Project Office (N-5). The RPC is responsible for receiving Project-related records from group resident files (RF) and for transmitting them to the CRF. It is equivalent to the local record center of any other NNWSI Project participant.

3.4 Microfilm Archive Storage Service Facility

The Microfilm Archive Storage Service Facility (MASSF) performs any required microfilming services.

3.5 Records

Records include the following:

- individual records that have been executed, completed, and approved and that furnish evidence of the quality and completeness of data (including raw data) and activities affecting quality;

- documents prepared and maintained to demonstrate implementation of QA programs (for example, audit, surveillance, and inspection reports);
- procurement documents;
- documents, such as plans, correspondence, documentation of telecons, specifications, technical data, books, maps, papers, photographs, and data sheets;
- magnetic media; and
- other materials that provide data and demonstrated document quality, regardless of physical form or characteristics.

A completed record is one that will receive no more entries or whose revision will consist of its re-issue; it is signed and dated by the originator and, as applicable, by personnel authorized to approve the record.

3.6 Resident File

Resident Files are project files maintained by each LANL group participating in the NNWSI Project.

3.7 Records Management System

The Records Management System (RMS) is a computerized database and query system that contains information concerning Project-related records.

3.8 QA Level

A QA level is the level applied to an item or activity that is commensurate with the relative importance of the role or function assigned to the item or activity.

3.9 Work Breakdown Structure Number

Work breakdown structure (WBS) is defined as a product-oriented framework for organizing and defining work to be accomplished.

4.0 RESPONSIBILITIES

4.1 The Technical Project Officer (TPO) is responsible for records control in accordance with the LANL NNWSI Quality Assurance Program Plan (QAPP).

4.2 The Quality Assurance Project Leader (QAPL) is responsible for implementing the controls established by this procedure.

4.3 LANL groups, Project Leaders (PLs), Principal Investigators (PIs), and Quality Assurance Liaison (QAL) are responsible for submitting records to the RFC.

4.4 The Records Coordinator (RC) is responsible for managing the NNWSI Project RPC at LANL. Coordination of all LANL NNWSI records activities are delegated to the RC.

4.5 A Record Source (RS) is any individual who receives Project-related records from an entity outside the Project or authors' Project-related records. The RS is also responsible for submitting the records to the RFC.

4.6 The Resident File Custodian (RFC) is designated by the participating group at LANL to receive records from each RS and to maintain the RF. This person must ensure that the files maintained are legible, identifiable, and retrievable.

4.7 The Quality Assurance Support (QAS) group is responsible to the QAPL for audit and surveillance of the RPC.

5.0 PROCEDURE

5.1 Group Resident Files

Below are general guidelines for maintaining RFs and transferring records to the RPC.

5.1.1 An RF will be maintained by each group or contractor performing work for the Project.

5.1.2 Project managers will ensure that all records generated from NNWSI Project activities in their area of interest are transmitted to the RF.

5.1.3 All Project records must be assigned a LANL TWS identification number. Records are identified in accordance with TWS-QAS-QP-03, R7, Document Control.

5.1.4 The responsible RFC must ensure that the mandatory index elements are readily available on the record. If not already on the record, these required index elements must be obtained from the responsible RS and added to the first page of the record.

The mandatory index elements include the following:

- a document date,
- a WBS number,
- a TWS identification number,
- the record title or subject,
- the QA level,
- the document author (originator), and
- the document type.

A stamp has been issued for NNWSI group use in denoting that these mandatory index elements have been included. The stamp shall be applied to the first page of all records packages.

5.1.5 When the record is logged into the RF, two copies must immediately be transferred to the RPC.

5.1.6 Only NNWSI Project records will be kept in RFs. These files will be stored in a standard metal file cabinet or equivalent and will be

locked if necessary to prevent unauthorized access. Keys must either be issued to each individual or to one person who controls the key.

5.1.7 Access to RFs will be limited to personnel who are assigned to the Project or who have authorization on a need-to-know basis.

5.1.8 A list of personnel authorized to have access to the RF will be posted on the outside of the file.

5.1.9 For RF indexing, a log of records for the files will be maintained; indices will be established, where necessary, so that records may be easily identified and retrieved; and document-type codes will be assigned by the RFC.

5.1.10 Transmission and Review of Records to RPC

When records have been completed, they are submitted to the appropriate RFC by the RS. When the records have been received by the RFC, they are reviewed for legibility, completeness, and suitability for microfilming. If the records are correct, they are logged and filed in the RF, and two copies are immediately transferred to the RPC.

5.2 Receipt and Acceptance by the RPC

Records received from the various groups are reviewed to see that they are acceptable for inclusion in the records system. Records are transmitted daily by the RC and are reviewed for legibility, completeness, and suitability for microfilming. If the records are acceptable, they are identified and indexed. If problems are discovered, the problems are resolved with the QAL before the records are accepted for indexing.

5.2.1 Rejection of Records

If a record is illegible, incomplete, or not suitable for microfilming, the record is returned to the NNWSI group with a Rejection Report (Attachment 2) indicating why the record is not acceptable.

The PI or QAL for that activity or task is responsible for resolving any problems pertaining to the transmitted records. Resolution may require the submittal of a better copy of the record or transfer of a complete copy of the record. If no better copy of the record is available, the PI or QAL must indicate "best available copy" on the Rejection Report and return it to the RPC.

A log of Rejection Reports is maintained by the RPC and checked for unresolved rejections. The PI or QAL is notified by the RPC every 10 working days until the problem is resolved. When the problem has been resolved, the Rejection Report is removed from the log and the records are identified and indexed.

5.3 Identification, Indexing, and Inventory of Records

This section explains the steps necessary for the correct and complete identification and indexing of records before their transmittal to the CRF.

5.3.1 Identification

Each NNWSI record is properly identified for filing, storage, and retrieval purposes with a LANL TWS identification number.

The record is then reviewed and placed with other records of its type. The RPC maintains a Document-Type List, which provides the basis for the records database index. The Document-Type List (Attachment 3) groups records according to similar data elements requiring similar processing and storage.

5.3.2 Indexing

After receipt and acceptance by the RPC, each record is labeled with a unique accession number and stamped "START" to indicate to the camera operator where microfilming should begin. The mandatory index elements are extracted from the record and entered in the RMS computer system.

After the record has been entered in the system, a digital record is created.

5.3.3 Inventories of Records

An inventory report is printed from the RPC RMS database. This list is used to inventory records as they are prepared for transmittal to the CRF. If records are missing, an effort is made to find a copy for transmittal. The RPC organizes the verified Project-related records and packages them for protection during shipment. The inventory report identifies each record by RMS number.

5.4 Storage of Records by RFC and RPC

This section describes the storage and access controls necessary for the protection of records before they are transmitted to the CRF. LANL uses a dual storage method to protect records.

5.4.1 Dual Storage

Each NNWSI group maintains one copy of each record in its RF, which is located away from the RPC. These filing locations are remote from each other to eliminate exposure to hazards that might occur simultaneously. Access to both filing locations is controlled. The RFs must be kept in a locking file cabinet, and an access list must be posted outside the cabinet. After acceptance, a copy is transmitted to the CRF for microfilming, and another is filed at the RPC.

After the microfilm has been received and accepted from the CRF, the NNWSI groups are notified. The copy maintained by the RPC and the copy filed at the Project group RF can be destroyed.

5.4.2 Protection of One-of-a-Kind Items

Each NNWSI group shall maintain and protect one-of-a-kind items in the best available location for its preservation and safekeeping. A slip sheet (Attachment 4), rather than the actual item will be used for processing at the RPC. The LANL groups shall maintain one-of-a-kind items until CRF notification for submission. Storage of one-of-a-kind items is determined on a case-by-case basis.

5.5 Transmittal of Records to the CRF by the RPC

This section describes the steps necessary for transmitting hard copy records to the CRF.

5.5.1 Processing of Records

After a record has been inventoried, it is sent to the CRF.

Before records are shipped, all staples, paper clips, and file folders are removed. The records are reviewed to ensure that all pages and attachments have been included and that "START" has been stamped on the upper right-hand corner of the first page of each record. Torn or damaged pages are repaired, and records on colored paper are copied on white paper for microfilming.

5.5.2 In Process Transmittals

While records are in transit to the CRF, the RPC ensures that a complete reproducible copy of the transmittal report and copies of all the records transmitted to the CRF are available in the event of loss or damage of the original. The RPC ensures that dual storage requirements are met until the records have been microfilmed by the MASSF and received by the RPC.

If the records are lost or damaged during shipping, a duplicate set is made from the copies stored at the RPC. The copies are prepared for transmittal and shipped to the CRF in accordance with this procedure. A log is maintained of records transmitted.

5.6 Receipt and Verification of Microfilm by the RPC

This section describes the steps necessary for the receipt and verification of microfilm records from the MASSF.

5.6.1 Receipt

After return by the CRF, the microfilm is compared with the hard copy (maintained by the RPC) to verify the accuracy, completeness, and quality of the film produced by the MASSF.

5.6.2 Verification

Film verification takes place using a microfilm reader to examine 5% of the pages filmed on a single roll of film. Pages are selected randomly and are checked for skewed images, obscured information, or overlapping images. Only 5% of the pages filmed are checked because the film received at LANL has already been checked and tested according to ANSI microfilm standards at the MASSF. After the film is checked, the index, which has been updated by the CRF with the roll and film number of the record, is added to the local RMS database.

If the quality of the filmed images is unacceptable, the RPC notifies the MASSF and the CRF that microfilming must be redone. A microfilm transmittal form is used to reject or accept the microfilm (Attachment 5). Problems are resolved on a case-by-case basis with CRF. Upon resolution of the problem, hard copies in LANL RPC are destroyed.

5.7 Retrieval of Records

Retrieval of information about records or the records themselves is handled through the RPC. Requests for information or copies of records are directed to the RPC and may be written or verbal.

The RPC database is used to determine the status of the record and whether it is hard copy or microfilm. A copy may be obtained from the RPC.

Searches for retrieval are currently being conducted by the QARMS database, a proprietary indexing software package developed by Effective Solutions, Inc. The package consists of Revelation by Cosmos, Inc.

Until notification by the Waste Management Project Office, the above computer system will be used.

5.8 Retention of Records

All NNWSI Project records are classified as lifetime records and must be retained for the life of the Project.

6.0 QUALITY ASSURANCE REQUIREMENTS

6.1 Records

The following records will be generated through the implementation of the procedure:

- Log of Rejection Reports,
- Log of Records for Files,
- Log of Records Transmittals,
- Document-Type Lists, and
- Inventory Reports.

6.2 Document Control

This QP becomes part of the LANL QA Manual, which is issued and controlled in accordance with LANL document control procedures.

7.0 REFERENCES

TWS-QAS-QP-03, R7, Document Control Procedure

8.0 ATTACHMENTS

Attachment 1 Records Indexing Stamp
Attachment 2 Rejection Report
Attachment 3 Document-Type List
Attachment 4 One-of-a-Kind Item
Attachment 5 Microfilm Transmittal Form

THIS IS AN EXAMPLE OF THE IMPRESSION MADE BY THE RECORD INDEXING STAMP

TWS NO._____ORIGINATOR_____TITLE/SUBJECT_____

WBS NO._____QA LEVEL_____

DOC. TYPE_____DOC. DATE_____

Los Alamos

Los Alamos National Laboratory
Los Alamos, New Mexico 87545

REJECTION REPORT

To	From
Name	Records System Manager
Date	
Mail Stop	
Telephone Number	

Subject: Receipt Inspection of NNWSI Quality Assurance Record(s):

We have inspected the enclosed document and determined that it is not acceptable for further processing and inclusion in the NNWSI Records Management System for the reason(s) marked below:

☐ Incomplete *(pages or attachments missing)*
☐ Not properly authorized *(required signatures, authentication missing)*.
☐ Required transmittal Form 1136*(NNWSI Records Transmittal)* incomplete or missing
☐ Data incomplete for document indexing
☐ Document print quality is poor Will not provide adequate microfilm image.

Please correct the attached document(s) and return to the Records System Manager, Mail Stop F619.

QA DOCUMENT-TYPE LIST FOR LOS ALAMOS

Document Type	Package	Reference	Filed	Indexed
Document Category: Audit Report				
Audit Checklist (internal)	Audit Report QAR1	QAR1	P	I
Audit Closeout Letter (internal)	Audit Report QAR1	QAR1	P	I
Audit Finding Report (internal)	Audit Report QAR1	QAR1	P	I
Audit Report (internal)	Audit Report QAR1	QARA	P	I
Audit Schedule (internal)	Audit Report QAR1	QARB	I	I
Audit Status Report (internal)	Audit Report QAR1	QARB	I	I
External Audit Reports (external)		Audit Reports		
Document Category: M&TE Calibration Record				
Calibration Card	Calibration PKG CAL1	CALA	P	I
Calibration Certificate	Calibration PKG CAL1	CALB	P	I
M&TE Master Lists	Calibration	QARV	P	I
M&TE Recall (calibration due)			P	I
Document Category: CAR				
Corrective Action Reports		QARC	I	I
Document Category: Correspondence				
Letter				
Memo				
Document Category: Design Reviews				
Design Review			P	I
Document Category: NCR				
Nonconformance Report		QARG	I	I
Document Category: Certifications				
Personnel Certifications		QARI	I	I
Training				

QA DOCUMENT-TYPE LIST FOR LOS ALAMOS
(continued)

Document Type	Package	Reference	Filed	Indexed
Document Category: Procurement				
Procurement Specifications	Procurement Package	PROC	P	I
Purchase Orders	Procurement Package	PROB	P	I
Purchase Requests	Procurement Package	PROD	P	I
Receiving Reports	Procurement Package	PRO1	P	I
Shipping Requests	Procurement Package	PRO1	P	I
Approved Supplier List	Procurement	1		
Receiving Inspection Report				
Document Category: Technical Publication Appraisal				
Policy Reviews	Publish REP Package	REPE	P	I
Technical Reviews	Publish REP Package	REPC	P	I
Document Category: Published Report				
Peer Review	Publish REP Package	REP1	P	I
Technical Publication Transmittal Letter	Publish REP Package	REPD	P	I
WMPO Approval				
Document Category: QA Procedure				
Quality Assurance Procedure	QAPP Package	QARM	I	I
Technical Procedure		QARP	I	I
Document Category: QAPP				
Quality Assurance Program Plan	QAPP Package	QARM	I	I
Document Category: QL Assign				
Quality Level Assignment Sheet		QARF	I	I

QA DOCUMENT-TYPE LIST FOR LOS ALAMOS
(concluded)

Document Type	Package	Reference	Filed	Indexed
Document Category: One-of-a-Kind				
Computer Software	Raw Data Package	REPR	I	I
Drawings	Raw Data Package	RDPK	P	I
Field Notebook	Raw Data Package	RDPC	I	I
Laboratory Notebooks	Raw Data Package	RDPN	I	I
Document Category: Scientific Investigation Plan				
Scientific Investigation Plan	Investigation Plan SIP	SIPD	I	I
Document Category: UOR				
Unusual Occurrence Report		?	I	I

ONE-OF-A-KIND ITEM

IDENTIFICATION _____

_____

_____

DESCRIPTION _____

_____

_____

_____

LOCATION (Bldg., Room, File)

_____

_____

_____

_____

QUALITY LEVEL _____

RMS NUMBER (Assigned by RPC) _____

SIGNATURE _____ DATE _____

ORGANIZATION _____

The item is not suitable for microfilming and has been stored in its original state or format at this facility. See data base for physical location of this item.

MICROFILM TRANSMITTAL

N-QA-037
8/86

Microfilm Transmittal Number 001 Page 1 of 1

Date DECEMBER 19, 1986

From: MASSF

To: Gabriel Ortiz, Los Alamos National Labs

TRANSMITTAL CONTENTS

FILM FORMAT	MICROFILM IDENTIFICATION
Cartridge	LA 10001, 10002, 10003, & 10004
Microfiche	----------
Aperture Cards	----------

Microfilm Acceptance Certificate

☐ I have reviewed the microfilm listed above and accept the microfilm images as true reproduction of the QA records this organization transmitted to the MASSF for microfilming. My signature releases the hard copy records for further appropriate disposition by the MASSF.

☐ I have reviewed the microfilm listed above and the following discrepancies are noted:

Name	Title	Date

cc:
NNWSI Project Records Administrator
NNWSI Project Records Coordinator

Los Alamos National Laboratory
Quality Assurance Documents
for the
Nevada Nuclear Waste Storage Investigations

VOLUME I

CONTENTS

QUALITY ASSURANCE PROCEDURES (QP)

NOTE: Please note that the table of contents now reflects new procedural alpha numeric designators. As each procedure is revised, the new designator will be used and ultimately the old designator will be completely removed.

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VOLUME I

QUALITY ASSURANCE PROCEDURES (QP) - Concluded

Present Designations	Title	New Designations
TWS-QAS-QP-12.1, R1	NNWSI Instrument Calibrations	
TWS-QAS-QP-13.1, R0	Handling, Storage, and Shipping Procedure	
TWS-MSTQA-QP-14, R1	Research and Development (Experimental) Procedure	TWS-QAS-QP-03.X, R0
TWS-MSTQA-QP-16, R0	NNWSI Control of Nonconformances	TWS-QAS-QP-15.X, R0
TWS-QAS-QP-17, R0	NNWSI QA Audits	TWS-QAS-QP-18.1, R0
TWS-QAS-QP-17.1, R0	Records Management Procedure (Draft)	
TWS-MSTQA-QP-18, R1	Assignment of Quality Levels for Los Alamos NNWSI Activities and Items	TWS-QAS-QP-02.X, R0
TWS-MSTQA-QP-19, R0	NNWSI Change Requests	TWS-QAS-QP-06.X, R0
TWS-QAS-QP-21, R0	Corrective Action	TWS-QAS-QP-16.X, R0
TWS-QAS-QP-22, R0	NNWSI Supplier Qualification	TWS-QAS-QP-07.X, R0

CHANGE REQUESTS (CR)

CR No. 008	Modifies QP-06, R2 (CR in front of QP)
CR No. 009	Modifies QP-18, R1 (CR in front of QP)
CR No. 012	Modifies QP alpha numeric code (CR in front of Volume I Table of Contents)
CR No. 013	Modifies QP-16, R0 (CR in front of QP)
CR No. 017	Modifies QP-07, R2 (CR in front of QP)
CR no. 032	Modifies QP-17, R0 (CR in front of QP)
CR No. 019	Modifies QP-14, R1 (CR in front of QP)
CR No. 024	Modifies QP-16, R1 (CR in front of QP-16, R1)
CR No. 026	Modifies QP-19,R0 (CR in front of QP)

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DETAILED PROCEDURES (DP)

Isotopic Nuclear Chemistry DPs

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VOLUME II

DETAILED PROCEDURES (DP) - Continued

Health, Safety, and Environmental Division DPs

WX-Design Engineering Division DPs

CHANGE REQUESTS (CR)

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VOLUME III

CONTENTS

Los Alamos National Laboratory
Quality Assurance Documents
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VOLUME III

Earth and Space Sciences DPs - Concluded

Environmental Science DPs

CHANGE REQUESTS (CR)

QUALITY ASSURANCE PROGRAM INDEX OF PROCEDURES FOR LOS ALAMOS NNWSI PROJECT

This index is prepared and maintained in accordance with TWS-MSTQA-QP-02.

Section No.	Title	NNWSI Procedure Reference
1.	Organization	
2.	Quality Assurance Program	LANL-NNWSI-QAPP Sections 1 and 2. TWS-QAS-QP-02.1 TWS-MSTQA-QP-18
3.	Design Control	LANL-NNWSI-QAPP Section 3. TWS-WX-DP-59
4.	Procurement Document Control	LANL-NNWSI-QAPP Section 4. TWS-QAS-QP-04.1 TWS-QAS-QP-04.2 TWS-QAS-QP-04.3 TWS-QAS-QP-22
5.	Instructions, Procedures, and Drawings	LANL-NNWSI-QAPP Section 5. TWS-QAS-QP-03 TWS-QAS-QP-05.1 TWS-QAS-QP-05.2 TWS-MSTQA-QP-07 TWS-MSTQA-QP-11 TWS-QAS-QP-12.1 TWS-QAS-QP-13.1 TWS-MSTQA-QP-14 TWS-MSTQA-QP-15 TWS-QAS-QP-17.1 TWS-INC-WP-12 TWS-ESS-DP-01 TWS-INC-DP-02 TWS-ESS-DP-03 TWS-ESS-DP-04 TWS-CNC-DP-05

* Procedures affected by this issue have been underscored.

Section No.	Title	NNWSI Procedure Reference
5.	Instruction, Procedures, and Drawings (continued)	TWS-ESS-DP-06
		TWS-ESS-DP-07
		TWS-ESS-DP-09
		TWS-ESS-DP-10
		TWS-ESS-DP-11
		TWS-CNC-DP-14
		TWS-CNC-DP-15
		TWS-ESS-DP-16
		TWS-CNC-DP-17
		TWS-CNC-DP-18
		TWS-ESS-DP-20
		TWS-CNC-DP-22
		TWS-CNC-DP-23
		TWS-ESS-DP-24
		TWS-ESS-DP-25
		TWS-INC-DP-26
		TWS-INC-DP-27
		TWS-ESS-DP-28
		TWS-INC-DP-30
		TWS-INC-DP-34
		TWS-INC-DP-35
		TWS-INC-DP-36
		TWS-INC-DP-37
		TWS-INC-DP-38
		TWS-INC-DP-39
		TWS-INC-DP-40
		TWS-INC-DP-41
		TWS-INC-DP-42
		TWS-INC-DP-43
		TWS-INC-DP-44
		TWS-INC-DP-45
		TWS-ESS-DP-50
		TWS-ESS-DP-51
		TWS-ESS-DP-52
		TWS-ESS-DP-53
		TWS-ESS-DP-54
		TWS-ESS-DP-55
		TWS-ESS-DP-56
		TWS-WX-DP-59
		TWS-INC-DP-60
		TWS-INC-DP-61
		TWS-INC-DP-62
		TWS-INC-DP-63
		TWS-INC-DP-65
		TWS-INC-DP-101
		TWS-ESS-DP-102
		TWS-ESS-DP-103
		TWS-ESS-DP-105
		TWS-ESS-DP-106

* Procedures affected by this issue have been underscored.

Section No.	Title	NNWSI Procedure Reference
5.	Instruction, Procedures, and Drawings (concluded)	TWS-ESS-DP-107 TWS-ESS-DP-110 TWS-ESS-DP-111 TWS-ESS-DP-112 TWS-ESS-DP-113 TWS-INC-DP-114 TWS-ESS-DP-115 TWS-ESS-DP-116 TWS-HSE5-DP-201 TWS-HSE5-DP-202 TWS-HSE-5-DP-206 TWS-HSE5-DP-211 TWS-HSE5-DP-212 TWS-HSE5-DP-213 TWS-HSE5-DP-214 TWS-HSE5-DP-215 TWS-HSE12-DP-301 TWS-HSE12-DP-307 TWS-HSE12-DP-310 TWS-HSE12-DP-311 TWS-HSE12-DP-312 TWS-HSE12-DP-313 TWS-HSE12-DP-316 TWS-HSE12-DP-317 TWS-HSE12-DP-318
6.	Document Control	LANL-NNWSI-QAPP Section 6. TWS-MSTQA-QP-03 TWS-QAS-QP-07 TWS-MSTQA-QP-10 TWS-MSTQA-QP-19
7.	Control of Purchased Items and Services	LANL-NNWSI-QAPP Section 7. TWS-QAS-QP-04.1 TWS-QAS-QP-04.2 TWS-QAS-QP-04.3
8.	Identification and Control of Items	LANL-NNWSI-QAPP Section 8.
9.	Control of Processes	LANL-NNWSI-QAPP Section 9. TWS-MSTQA-QP-14

* Procedures affected by this issue have been underscored.

Section No.	Title	NNWSI Procedure Reference
10. & 11.	Inspection and Test and Control	LANL-NNWSI-QAPP Sections 10 & 11. TWS-MSTQA-QP-11 TWS-MSTQA-QP-14
12.	Control of Measuring and Test Equipment	LANL-NNWSI-QAPP Section 12. TWS-QAS-QP-12.1, R1
13.	Handling, Storage, and Shipping	LANL-NNWSI-QAPP Section 13. TWS-QAS-QP-13.1
14.	Inspection, Test, and Operating Status	LANL-NNWSI-QAPP Section 14.
15.	Control of Nonconforming Items	LANL-NNWSI-QAPP Section 15. TWS-MSTQA-QP-16
16.	Corrective Action	LANL-NNWSI-QAPP Section 16. TWS-QAS-QP-21
17.	Quality Assurance Records	LANL-NNWSI-QAPP Section 17. TWS-MSTQA-QP-03 TWS-QAS-QP-17.1
18.	Audits	LANL-NNWSI-QAPP Section 18. TWS-QAS-QP-17

* Procedures affected by this issue have been underscored.

LOS ALAMOS NATIONAL LABORATORY
NNWSI
CHANGE REQUEST

Change Request No. 033
Date June 22, 1988

Procedure No. TWS-HSE5-DP-211, R0

Change Requested:

Page 5 of 19, Initiating Collection
ADD ... approximate before ...start time... on last sentence.
Page 6 of 19, 1st para.
ADD period (.) after ...sampling form (61B-02)
DELETE ...with the core hole depth corresponding to the termination of the collection time.
Page 6 of 19, 3rd para.
REPLACE ...day (last word) with ...session
Page 12 of 19, 1st para
REPLACE ...ultrasonically cleaned with ... clean
Page 15 of 19, 2nd para.
DELETE ...prepared samples (SEM, PIXE, and PCM)...
Page 16 of 19, 1st para.
REPLACE ..., the samples with ...all stored materials...

Reason for Change: Procedure clarification and update.

Change Requested By [signature] Date 6-22-88
Reviewed By [signature] Date 6-23-88
QAPL Approval [signature] Date 6/23/88
TPO Approval [signature] Date 6/24/88
Effective Date June 24, 1988

LOS ALAMOS NATIONAL LABORATORY
NNWSI
CHANGE REQUEST

Change Request No. 034

Date June 22, 1988

Procedure No. TWS-HSE5-DP-212, R0

Change Requested:

Page 4 of 14, 1st para., 1st sentence.
REPLACE ...stages 1 and 2...with stages 0 and 1
Page 4 of 14, 1st para., 2nd sentence
REPLACE ...pencil...with ink.
Page 5 of 14, 1st para., last sentence.
REPLACE ...Freon gun ...with pressurized cleaning agent
Page 8 of 14, 1st para., 4rd sentence
REPLACE ...3-minute...with 4-minute
Page 8 of 14, 1st para. 5th sentence
REPLACE...(100 L)...with (112 L)
Page 8 of 14, 1st para., last sentence.
REPLACE ... 3-minutes...with 4-minutes
ADD ...In addition, an orifice was used to obtain a differential pressure reading for that flow rate and noted in the NNWSI notebook.
(Continued on attached sheet)

Reason for Change: Procedure clarification and update

Change Requested By Barbara Jon Staggs **Date** 6-23-88

Reviewed By Marvin Tilley **Date** 6-23-88

QAPL Approval Henry Paul Ames **Date** 6/23/88

TPO Approval D T Oakley **Date** 6/24/88

Effective Date June 24, 1988

Change Requested: (Cont'd)

Page 9 of 14, para 3 and 4
COMBINE PARA 3 AND 4.
DELETE...and repacked for transportation to Los Alamos. At Los Alamos,...
CAPITALIZE ...The
DELETE ...and the impactor will be cleaned. The collected PM filter set will be...
ADD ...and...

Page 10 of 14, 1st para., after 1st sentence
ADD...(See 4.3 for impactor cleaning.) ...

Page 10 of 14, 1st para., last sentence
REPLACE ...storage ...with...other possible analysis. Note: the collected air-particulate material originally collected on the filters could have been disturbed during weighing process so these filters should not be used for confirmatory data at a future date.

Page 10 of 14, 2nd para., 1st sentence.
ADD after...15-17[4]...or an equivalent computer program.

LOS ALAMOS NATIONAL LABORATORY
NNWSI
CHANGE REQUEST

Change Request No. 035
Date June 22, 1988

Procedure No. TWS-HSE5-DP-213, R0

Change Requested:

Page 4 of 11, 2nd para., 2nd sentence
DELETE for after ...Allow the pump to run...
REPLACE...5-10 with ...1-2 minutes
Page 4 of 11, airflow list:
REPLACE
Total Dust (PVC) ...2.0 l/min with...1.5-2.5 l/min
Page 4 of 11, last para, 1st sentence
ADD ...at least before ...10 times...
Page 4 of 11, last para, last sentence
REPLACE sentence with ...Place the pump calibration printout in the Printout Envelope.
Page 5 of 11, last para, last sentence
ADD approximate before ...start time...
Page 7 of 11, 2nd para, 1st sentence
(Continued on attached sheet)

Reason for Change: Procedure clarification and update.

Change Requested By Barbara Jan-S Raggs **Date** 6-22-88
Reviewed By R Wicks **Date** 6-23-88

QAPL Approval Henry Paul Nunes **Date** 6/23/88
TPO Approval D R Kelly **Date** 6/24/88
Effective Date June 24, 1988

Change Requested: (Cont'd)

REPLACE ...day with ...session.
Page 8 of 11, 3rd para., 1st sentence.
REPLACE ...day... with ...session.
Page 8 of 11, last para, 1st sentence
DELETE ...daily

LOS ALAMOS NATIONAL LABORATORY
NNWSI
CHANGE REQUEST

Change Request No. 036
Date June 22, 1988

Procedure No. TWS-HSE5-DP-214,R0

Change Requested:

Page 4 of 12, 1st para, 2nd sentence.
DELETE ...for after ...Allow the pump to run...
REPLACE ...5 - 10 with ...1-2 minutes
Page 4 of 12, In airflow list:
REPLACE
Total Dust (PVC)...2.0 l/min with...1.5-2.5 l/min
Page 4 of 12, last para, 3rd sentence
ADD ...at least before ... 10 times...
Page 4 of 12, last para, last sentence
REPLACE sentence with ...Place the pump calibration printout in the Printout Envelope.
Page 6 of 12, 1st para, 1st sentence
ADD approximate before ...start time...
(Continued on attached sheet)

Reason for Change: Procedure clarification and update

Change Requested By Barbara Jan Skaggs **Date** 6-22-88
Reviewed By R. Weeks **Date** 6-23-88

QAPL Approval Henry Paul Nunes **Date** 6/23/88
TPO Approval D. T. Vollmer **Date** 6/24/88
Effective Date June 24, 1988

Change Requested: (Cont'd)

Page 7 of 12, 3rd para., 1st sentence.
REPLACE ...day... with ...session.
Page 8 of 12, last para., 1st sentence
REPLACE ...day... with ...session.
Page 9 of 12, 1st para., 1 sentence
DELETE ...daily

LOS ALAMOS NATIONAL LABORATORY
NNWSI
CHANGE REQUEST

Change Request No. 037

Date June 22, 1988

Procedure No. TWS-HSE5-DP-201,R0

Change Requested:

Page 4 of 16, Para. 4
DELETE ...entire para.
Page 4 of 16 following Sec. 4.1.2
INSERT ... 4.1.3 (below)
4.1.3 PROCEDURE FOR GOLD COATING NUCLEPORE FILTER AIR SAMPLES

1) Cut a 5-6 mm square of double-sided tape, then place in center of a clean SEM mounting stub. Press firmly and then remove Teflon coating.

2) Carefully remove membrane filter from holder and place on a sheet of any clean filter paper. Cut a 5-6 mm square from filter and place filter section directly on the adhesive double-sided tape atop the stub. No pressure is needed.

(Continued on attached sheet)

Reason for Change: Faster preparation and better resolution allowing for more rapid search.

Change Requested By Barbara Jan Skaggs Date 6/23/88

Reviewed By Joseph M. Ortega Date 6/23/88

QAPL Approval Henry Paul Nunes Date 6/23/88

TPO Approval D F Kelly Date 6/24/88

Effective Date June 24, 1988

Change Requested: (Cont'd)

3) With a clean dissecting needle, cover the edges of the filter and tape sections with silver paint being careful to completely cover the edges of the filter section and spread paint onto the stub.

4) When silver paint is dry the samples are ready for gold sputtering. Unit controls are set to apply 300-400Å of gold coating to the filter section. This step serves to make stub/filter electrically conductive and samples are ready for examination in the SEM. If fibers are observed on any filter then another section of that filter will be prepared with carbon coating, examined in the SEM and an EDX spectrum obtained from the fibers.

Page 14 of 16, Sec. 7.5, last sentence

DELETE ...and prepared samples (PIXE, SEM, and PCM)

Note: Prepared samples have finite lifetimes.

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Nevada Nuclear Waste Storage Investigations

VOLUME I

CONTENTS

QUALITY ASSURANCE PROCEDURES (QP)

NOTE: Please note that the table of contents now reflects new procedural alpha numeric designators. As each procedure is revised, the new designator will be used and ultimately the old designator will be completely removed.

Los Alamos National Laboratory
Quality Assurance Documents
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VOLUME I

QUALITY ASSURANCE PROCEDURES (QP) - Concluded

Present Designations	Title	New Designations
TWS-QAS-QP-12.1, R1	NNWSI Instrument Calibrations	
TWS-QAS-QP-13.1, R0	Handling, Storage, and Shipping Procedure	
TWS-MSTQA-QP-14, R1	Research and Development (Experimental) Procedure	TWS-QAS-QP-03.X, R0
TWS-MSTQA-QP-16, R0	NNWSI Control of Nonconformances	TWS-QAS-QP-15.X, R0
TWS-QAS-QP-17, R0	NNWSI QA Audits	TWS-QAS-QP-18.1, R0
TWS-QAS-QP-17.1, R0	Records Management Procedure (Draft)	
TWS-MSTQA-QP-18, R1	Assignment of Quality Levels for Los Alamos NNWSI Activities and Items	TWS-QAS-QP-02.X, R0
TWS-MSTQA-QP-19, R0	NNWSI Change Requests	TWS-QAS-QP-06.X, R0
TWS-QAS-QP-21, R0	Corrective Action	TWS-QAS-QP-16.X, R0
TWS-QAS-QP-22, R0	NNWSI Supplier Qualification	TWS-QAS-QP-07.X, R0

CHANGE REQUESTS (CR)

CR No. 008	Modifies QP-06, R2 (CR in front of QP)
CR No. 009	Modifies QP-18, R1 (CR in front of QP)
CR No. 012	Modifies QP alpha numeric code (CR in front of Volume I Table of Contents)
CR No. 013	Modifies QP-16, R0 (CR in front of QP)
CR No. 017	Modifies QP-07, R2 (CR in front of QP)
CR no. 032	Modifies QP-17, R0 (CR in front of QP)
CR No. 019	Modifies QP-14, R1 (CR in front of QP)
CR No. 024	Modifies QP-16, R1 (CR in front of QP-16, R1)
CR No. 026	Modifies QP-19,R0 (CR in front of QP)

Los Alamos National Laboratory
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VOLUME II

CONTENTS

DETAILED PROCEDURES (DP)

Isotopic Nuclear Chemistry DPs

Los Alamos National Laboratory
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VOLUME II

DETAILED PROCEDURES (DP) - Continued

TWS-INC-DP-62, R1	Bulk NTS Well Water Samples
TWS-INC-DP-63, R0	Preparation of NTS Core Samples for NNWSI Crushed Rock Experiments
TWS-INC-DP-65, R0	Procedure for Volcanism Field Studies

Health, Safety, and Environmental Division DPs

TWS-HSE5-DP-201, R0	Air Particulate Sample Preparation Procedure for SEM Evaluation
TWS-HSE5-DP-202, R0	Operating Instructions for Amray Model 1000 Scanning Electron Microscope and Kevex Model 7000 Energy Dispersive X-Ray Analyzer for Evaluation of Air Samples Collected on Nuclepore Filters
TWS-HSE5-DP-206	Fiber Counting Procedure
TWS-HSE5-DP-211, R0	Preparation and use of Air Particulate Filter Sampling Devices
TWS-HSE5-DP-212, R0	Preparation, Calibration, and use of Cascade Impactors
TWS-HSE5-DP-213, R0	Procedure For The Calibration and Use of SKC Personal Sampling Pumps
TWS-HSE5-DP-214, R0	Procedures For The Calibration and Use of Alpha-1 Personal Sampling Pumps
TWS-HSE5-DP-215, R0	Procedures For The Calibration of The Singer Dry Gas Meter

WX-Design Engineering Division DPs

TWS-WX-DP-59, R0	NNWSI Exploratory Shaft Facility Design Control Procedure

CHANGE REQUESTS (CR)

CR No. 006	Modifies TWS-INC-DP-35,R0 (CR in front of DP)
CR No. 025	Modifies TWS-INC-DP-35, R0 (CR in front of DP-35, R0)
CR No. 033	Modifies TWS-HSE5-DP-211, R0 (CR in front of DP)
CR No. 034	Modifies TWS-HSE5-DP-212, R0 (CR in front of DP)
CR No. 035	Modifies TWS-HSE5-DP-213, R0 (CR in front of DP)
CR No. 036	Modifies TWS-HSE5-DP-214, R0 (CR in front of DP)
CR No. 037	Modifies TWS-HSE5-DP-201, R0 (CR in front of DP)

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VOLUME III

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VOLUME III

Earth and Space Sciences DPs - Concluded

TWS-ESS-DP-112, R0	Operating Instructions for International Scientific Instruments Model DS-130 Scanning Electron Microscope and Tracor Northern Series II X-Ray Analyzer
TWS-ESS-DP-113, R0	Procedure: Temperature Determinations From Fluid Inclusion Studies
TWS-ESS-DP-114, R0	Sample Collection Procedure for Rock Varnish Studies
TWS-ESS-DP-115, R0	Vaisala HMI-32 Humidity and Temperature Probe Procedure
TWS-ESS-DP-116, R0	Quantitative X-Ray Diffraction Procedure

Environmental Science DPs

TWS-HSE12-DP-301, R0	Field Collection of Experimental Materials
TWS-HSE12-DP-307, R0	Sample Identification and Control
TWS-HSE12-DP-310, R0	Calibration and Use of the Phototachometer
TWS-HSE12-DP-311, R0	Sample Preparation
TWS-HSE12-DP-312, R0	Particle Size Reduction of Geologic Media
TWS-HSE12-DP-313, R0	Calibration and Use of Centrifuges
TWS-HSE12-DP-316, R0	Preparation of Standard and Reagent Solutions
TWS-HSE12-DP-317, R0	Calibration and Use of Analytical and TOP-Loading Balances
TWS-HSE12-DP-318, R0	pH Measurement, Acid-Base Solution Standardization, and Total Alkalinity Procedure

CHANGE REQUESTS (CR)

CR No. 022	Modifies TWS-ESS-DP-28, R0 (CR in front of DP)
CR No. 028	Modifies TWS-ESS-DP-04, R4 (CR in front of DP)
CR No. 029	Modifies TWS-ESS-DP-114, R0 (CR in front of DP)
CR No. 030	Modifies TWS-ESS-DP-53, R0 (CR in front of DP)

QUALITY ASSURANCE PROGRAM INDEX OF PROCEDURES FOR LOS ALAMOS NNWSI PROJECT

This index is prepared and maintained in accordance with TWS-MSTQA-QP-02.

Section No.	Title	NNWSI Procedure Reference
1.	Organization	
2.	Quality Assurance Program	LANL-NNWSI-QAPP Sections 1 and 2. TWS-QAS-QP-02.1 TWS-MSTQA-QP-18
3.	Design Control	LANL-NNWSI-QAPP Section 3. TWS-WX-DP-59
4.	Procurement Document Control	LANL-NNWSI-QAPP Section 4. TWS-QAS-QP-04.1 TWS-QAS-QP-04.2 TWS-QAS-QP-04.3 TWS-QAS-QP-22
5.	Instructions, Procedures, and Drawings	LANL-NNWSI-QAPP Section 5. TWS-QAS-QP-03 TWS-QAS-QP-05.1 TWS-QAS-QP-05.2 TWS-MSTQA-QP-07 TWS-MSTQA-QP-11 TWS-QAS-QP-12.1 TWS-QAS-QP-13.1 TWS-MSTQA-QP-14 TWS-MSTQA-QP-15 TWS-QAS-QP-17.1 TWS-INC-WP-12 TWS-ESS-DP-01 TWS-INC-DP-02 TWS-ESS-DP-03 TWS-ESS-DP-04 TWS-CNC-DP-05

* Procedures affected by this issue have been underscored.

Section No.	Title	NNWSI Procedure Reference
5.	Instruction, Procedures, and Drawings (continued)	TWS-ESS-DP-06
		TWS-ESS-DP-07
		TWS-ESS-DP-09
		TWS-ESS-DP-10
		TWS-ESS-DP-11
		TWS-CNC-DP-14
		TWS-CNC-DP-15
		TWS-ESS-DP-16
		TWS-CNC-DP-17
		TWS-CNC-DP-18
		TWS-ESS-DP-20
		TWS-CNC-DP-22
		TWS-CNC-DP-23
		TWS-ESS-DP-24
		TWS-ESS-DP-25
		TWS-INC-DP-26
		TWS-INC-DP-27
		TWS-ESS-DP-28
		TWS-INC-DP-30
		TWS-INC-DP-34
		TWS-INC-DP-35
		TWS-INC-DP-36
		TWS-INC-DP-37
		TWS-INC-DP-38
		TWS-INC-DP-39
		TWS-INC-DP-40
		TWS-INC-DP-41
		TWS-INC-DP-42
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		TWS-INC-DP-44
		TWS-INC-DP-45
		TWS-ESS-DP-50
		TWS-ESS-DP-51
		TWS-ESS-DP-52
		TWS-ESS-DP-53
		TWS-ESS-DP-54
		TWS-ESS-DP-55
		TWS-ESS-DP-56
		TWS-WX-DP-59
		TWS-INC-DP-60
		TWS-INC-DP-61
		TWS-INC-DP-62
		TWS-INC-DP-63
		TWS-INC-DP-65
		TWS-INC-DP-101
		TWS-ESS-DP-102
		TWS-ESS-DP-103
		TWS-ESS-DP-105
		TWS-ESS-DP-106

* Procedures affected by this issue have been underscored.

Section No.	Title	NNWSI Procedure Reference
5.	Instruction, Procedures, and Drawings (concluded)	TWS-ESS-DP-107 TWS-ESS-DP-110 TWS-ESS-DP-111 TWS-ESS-DP-112 TWS-ESS-DP-113 TWS-INC-DP-114 TWS-ESS-DP-115 TWS-ESS-DP-116 TWS-HSE5-DP-201 TWS-HSE5-DP-202 TWS-HSE-5-DP-206 TWS-HSE5-DP-211 TWS-HSE5-DP-212 TWS-HSE5-DP-213 TWS-HSE5-DP-214 TWS-HSE5-DP-215 TWS-HSE12-DP-301 TWS-HSE12-DP-307 TWS-HSE12-DP-310 TWS-HSE12-DP-311 TWS-HSE12-DP-312 TWS-HSE12-DP-313 TWS-HSE12-DP-316 TWS-HSE12-DP-317 TWS-HSE12-DP-318
6.	Document Control	LANL-NNWSI-QAPP Section 6. TWS-MSTQA-QP-03 TWS-QAS-QP-07 TWS-MSTQA-QP-10 TWS-MSTQA-QP-19
7.	Control of Purchased Items and Services	LANL-NNWSI-QAPP Section 7. TWS-QAS-QP-04.1 TWS-QAS-QP-04.2 TWS-QAS-QP-04.3
8.	Identification and Control of Items	LANL-NNWSI-QAPP Section 8.
9.	Control of Processes	LANL-NNWSI-QAPP Section 9. TWS-MSTQA-QP-14

* Procedures affected by this issue have been underscored.

Section No.	Title	NNWSI Procedure Reference
10. & 11.	Inspection and Test and Control	LANL-NNWSI-QAPP Sections 10 & 11. TWS-MSTQA-QP-11 TWS-MSTQA-QP-14
12.	Control of Measuring and Test Equipment	LANL-NNWSI-QAPP Section 12. TWS-QAS-QP-12.1, R1
13.	Handling, Storage, and Shipping	LANL-NNWSI-QAPP Section 13. TWS-QAS-QP-13.1
14.	Inspection, Test, and Operating Status	LANL-NNWSI-QAPP Section 14.
15.	Control of Nonconforming Items	LANL-NNWSI-QAPP Section 15. TWS-MSTQA-QP-16
16.	Corrective Action	LANL-NNWSI-QAPP Section 16. TWS-QAS-QP-21
17.	Quality Assurance Records	LANL-NNWSI-QAPP Section 17. TWS-MSTQA-QP-03 TWS-QAS-QP-17.1
18.	Audits	LANL-NNWSI-QAPP Section 18. TWS-QAS-QP-17

* Procedures affected by this issue have been underscored.

QUANTITATIVE X-RAY DIFFRACTION PROCEDURE

Effective Date June 3, 1988

Steven J. Chipera
PREPARED BY
S. J. Chipera

May 16th 1988
DATE

David L. Bish
TECHNICAL REVIEWER
D. L. Bish

May 23, 1988
DATE

D T Oakley
TECHNICAL PROJECT OFFICER
D. T. Oakley

6-3-88
DATE

H P Nunes
QUALITY ASSURANCE PROJECT LEADER
H. P. Nunes

June 1, 1988
DATE

QUANTITATIVE X-RAY DIFFRACTION PROCEDURE

1.0 PURPOSE

The purpose of this procedure is to describe the methods, procedures, and documentation used when performing Quantitative X-Ray Diffraction (QXRD) analyses.

2.0 SCOPE

This procedure applies to all QXRD analyses conducted for the NNWSI project.

3.0 PRINCIPLES (Not Applicable)

4.0 DEFINITIONS (Not Applicable)

5.0 RESPONSIBILITIES

The principal investigator (PI) has the responsibility to assure correct implementation of this procedure. The PI may delegate performance of the procedure to any duly certified individual.

6. PROCEDURE

6.1 Sample Preparation

6.1.1 Sample Crushing and/or Shatterboxing

These operations, if necessary, will be conducted in accordance with the applicable detailed procedures, TWS-ESS-DP-53, TWS-ESS-DP-54, or TWS-ESS-DP-55.

6.1.2 Sample Grinding

This operation will be conducted in accordance with TWS-ESS-DP-56.

6.1.3 Mixing In an Internal Standard

A known weight of metallurgical grade 1.0μm alumina powder will be mixed into a sample (by weight) if an internal standard is desired. This operation will be documented in a TWS numbered laboratory logbook and will include the following information: date, full sample identification, weight of sample, weight of alumina powder, and the signature of the person conducting this operation. Vessels containing a sample with an internal standard shall be labeled as such.

6.2 X-raying the Sample

The sample mount is prepared, x-rayed, and the data obtained in accordance with TWS-ESS-DP-16.

6.3 Phase Identification

The phases in the sample are identified by comparing the peaks of the sample run to matched peaks in the Powder Diffraction File Search Manual, the Joint Committee on Powder Diffraction Standards files, or the patterns of calculated or pure mineral standards.

6.4 Quantitative Analysis

6.4.1 Calculations

All QXRD calculations will be conducted using the most current version of the computer program QUANT in accordance to the most current corresponding instruction manual for QUANT.

6.4.2 Data Output

Output from the program includes the date of analysis, sample identification, analyst's name, the quantitative method being used (internal or external standard method), the version of QUANT being used, and the actual analysis: (the mineral phases identified, their weight percent, and error bars for weight percent).

7.0 QUALITY ASSURANCE

7.1 Personnel

Only those persons certified for this procedure will perform NNWSI related QXRD analyses on this equipment. This certification will be performed and documented in accordance with the TWS-QAS-QP-02.1, R0 NNWSI Personnel Selection, Training, and Certification Procedure.

7.2 Calibration

Calibration of the Siemens X-Ray Diffractometer will be conducted in accordance to TWS-ESS-DP-24. The computer program QUANT will be verified using known mixtures of mineral standards in accordance to the QUANT instruction manual.

7.3 Documentation

7.3.1 Documentation for the sample preparation will be conducted in accordance with TWS-QAS-QP-03 Document Control Procedures. The mixing of an internal standard into the sample will be documented as stated in Section 6.1.3. All x-ray runs will be recorded in the Siemens X-Ray Diffractometer logbook. All x-ray data will be stored on magnetic or optical disk and will be periodically backed up onto magnetic tape and stored in a fireproof safe. Computer program QUANT verification and validation will be documented in a laboratory notebook.

7.4 Accept/Reject Criteria

Accept/Reject criteria for an individual analysis are stated in the QUANT instruction manual.

8.0 REFERENCES

TWS-ESS-DP-16 Siemens X-Ray Diffraction Procedure.

TWS-ESS-DP-24 Alignment of the Siemens Diffractometer.

TWS-ESS-DP-53 Pulverizing Using the Spec 8500 Shatterbox.

TWS-ESS-DP-54 Crushing: Operation of 50 Ton Hydraulic Press.

TWS-ESS-DP-55 Rock Splitting: Operation of a 50 Ton Hydraulic Press.

TWS-ESS-DP-56 Brinkmann Automated Grinder Procedure.

Powder Diffraction File, Search Manual, Fink Method, Inorganic, Publication SMF-26 (Joint Committee on Powder Diffraction Standards, Swarthmore, Pennsylvania, 1976) 1017 pp.

Mineral Powder Diffraction File, Data Book (Joint Committee on Powder Diffraction Standards, Swarthmore, Pennsylvania, 1980) 1168 pp.

QUANT -- Quantitative X-Ray Diffraction Analysis Program, Los Alamos National Laboratory, Users Manual.

9.0 ATTACHMENTS

None

TO: K. L. Foster
Los Alamos National Laboratory
LATA QAS, MS-M321
Los Alamos, NM 87545

FROM: _____ Book Number: _____
(Please Print)

SUBJECT: ACKNOWLEDGEMENT OF RECEIPT TO THE LANL NNWSI QA MANUAL ADDITIONS AND/OR REVISIONS.

Enclosures:
Table of Contents (June 30, 1988)
Program Index (June 30, 1988)
TWS-QAS-QP-04.2, R0
TWS-QAS-QP-04.3, R0
TWS-QAS-QP-17.1, R0 (draft)
CR No. 033
CR No. 034
CR No. 035
CR No. 036
CR No. 037
TWS-ESS-DP-116, R0

I have received and made the revisions/additions to my assigned copy of the LANL NNWSI QA Manual as outlined below.

VOLUME I

Replace	Procedure No.	With	Procedure No.
	Table of Contents (June 6, 1988)		Table of Contents (June 30, 1988)
	QA Program Index (June 6, 1988)		QA Program Index (June 30, 1988)

Add	Procedure No.	After	Procedure No.
	TWS-QAS-QP-04.2, R0		TWS-QAS-QP-04.1, R0
	TWS-QAS-QP-04.3, R0		TWS-QAS-QP-04.2, R0
	TWS-QAS-QP-17.1, R0 (draft)		TWS-QAS-17, R0

Remove	Procedure No.
	TWS-QAS-QP-09, R0

VOLUME II

Replace	Procedure No.	With	Procedure No.
	Table of Contents (June 6, 1988)		Table of Contents (June 30, 1988)
	QA Program Index (June 6, 1988)		QA Program Index (June 30, 1988)

Add	Procedure No.	Before	Procedure No.
	CR No. 033		TWS-HSE5-DP-211, R0
	CR No. 034		TWS-HSE5-DP-212, R0
	CR No. 035		TWS-HSE5-DP-213, R0
	CR No. 036		TWS-HSE5-DP-214, R0
	CR No. 037		TWS-HSE5-DP-201, R0

VOLUME III

Replace	Procedure No.	With	Procedure No.
	Table of Contents (June 6, 1988)		Table of Contents (June 30, 1988)
	QA Program Index (June 6, 1988)		QA Program Index (June 30, 1988)

Add	Procedure No.	After	Procedure No.
	TWS-ESS-DP-116, R0		TWS-ESS-DP-115, R0

Signature _____ Date _____

NOTE: TWS-QAS-QP-17.1, R0, Records Management Procedure, replaces TWS-QAS-QP-09, R0, Records Control Procedure.