U.S. DEPARTMENT OF ENERGY

OFFICE OF CIVILIAN RADIOACTIVE WASTE MANAGEMENT

OFFICE OF QUALITY ASSURANCE

AUDIT REPORT

OF

LAWRENCE LIVERMORE NATIONAL LABORATORY

AUDIT NO. YMP-91-01

JUNE 3 THROUGH JUNE 7, 1991

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ENCLOSURE

EXECUTIVE SUMMARY

Overall, Lawrence Livermore National Laboratory (LLNL) is satisfactorily implementing an effective quality assurance (QA) program in accordance with the LLNL Quality Assurance Program Plan and implementing procedures with two exceptions. The evaluation of Criteria 2, Quality Assurance Program and 18, Audits, indicated that the two program elements at LLNL were ineffective and resulted in the generation of seven Corrective Action Requests.

In addition, the effectiveness of the LLNL Software Quality Plan could not be evaluated since the program is not yet fully implemented.

Of the four technical areas that were reviewed, two were considered effective from a QA perspective (WBS 1.2.2.3.1.1 - Waste Form Testing - Spent Fuel and WBS 1.2.2.3.4.2 Thermodynamic Data Base). Two others were considered indeterminate from a QA perspective since no quality affecting work was being performed (WBS 1.2.1.4.5 Geochemical Modeling and Data Base Development and WBS 1.2.2.2.2 Hydrologic Properties of Waste Package Environment).

1.0 INTRODUCTION

This report contains the results of the Office of Civilian Radioactive Waste Management (OCRWM) Audit No. YMP-91-01 of Lawrence Livermore National Laboratory (LLNL), conducted at Livermore, California, on June 3 through 7, 1991. This audit was conducted by an Audit Team from the Yucca Mountain Quality Assurance Division (YMQAD) of the Office of Quality Assurance (OQA) in accordance with the approved Audit Plan. (Reference correspondence YMQAD:JB-3537, dated May 3, 1991.)

2.0 AUDIT SCOPE

This audit evaluated the LLNL Yucca Mountain Site Characterization Project (YMP) quality assurance (QA) program to determine whether it met the requirements and commitments imposed by OCRWM as reflected in the LLNL YMP Quality Assurance Program Plan (QAPP). This was done by verifying implementation and effectiveness of the system in place, as well as verifying adequate compliance with requirements.

A representative sample of discrepancies/observations identified during the previous QA audit and surveillances of the LLNL YMP organization were included in the scope of this audit to determine the effectiveness of LLNL YMP corrective actions.

The programmatic elements and technical areas audited, as well as those programmatic elements that were not included in this audit, are identified below:

Programmatic Elements

1.0 Organization
2.0 Quality Assurance Program
3.0 Scientific Investigation and Design Control
4.0 Procurement Document Control
5.0 Instructions, Procedures, Plans, and Drawings
6.0 Document Control
7.0 Control of Purchased Items and Services
8.0 Identification and Control of Items, Samples, and Data
12.0 Control of Measuring and Test Equipment
13.0 Handling, Shipping, and Storage
15.0 Control of Non-Conforming Items
16.0 Corrective Action
17.0 Quality Assurance Records
18.0 Audits

The following QA Program Elements, with no activity since the last audit or no applicability to the LLNL scope of work, were not reviewed during the audit:

9.0 Control of Processes
10.0 Inspection
11.0 Test Control
14.0 Inspection, Test, and Operating Status

Technical Areas

Technical Specialists reviewed and evaluated the following technical activities (keyed to Work Breakdown Structure (WBS) numbers):

WBS Number	Title
1.2.1.4.5	Geochemical Modeling and Data Base Development
1.2.2.2.2	Hydrologic Properties of Waste Package Environment
1.2.2.3.1.1	Waste Form Testing - Spent Fuel
1.2.2.3.4.2	Thermodynamic Data Determination

In addition, the above technical activities were evaluated to determine adequacy in the following areas:

1. Technical qualifications of scientific investigation personnel.
2. Understanding of procedural requirements as they pertain to scientific investigation activities.
3. Adequacy of technical procedures.
4. Development of study plans, work supporting the Site Characterization Plan, and any related work.

3.0 AUDIT TEAM AND OBSERVERS

The list of audit team members and observers can be found in Enclosure 1.

4.0 SUMMARY OF AUDIT RESULTS

4.1 Program Effectiveness

Overall, LLNL is satisfactorily implementing an effective QA Program in accordance with the LLNL Quality Assurance Program Plan and implementing procedures with two exceptions. The evaluation of Criteria 2, "Quality Assurance Program," and 18, "Audits," indicated that the two program elements at LLNL were ineffective and resulted in the generation of seven Corrective Action Requests (CARs).

In addition, the effectiveness of the LLNL Software Quality Plan could not be evaluated since the program is not yet fully implemented.

4.2 Programmatic Audit Activities

Details of programmatic audit activities are documented in Enclosure 2.

4.3 Technical Activities

The following is the results of the technical evaluation indicated by WBS number:

1. WBS No. 1.2.1.4.5, "Geochemical Modeling and Date Base Development"

   This activity primarily involves development of the EQ3/6 code. The work is described in a Scientific Investigation Plan (SIP) that was last revised in 1986. LLNL has no current plans to revise it unless funding is available to perform new work. Some enhancements to the EQ3/6 code have been made and the latest release of the code was October 1990 (release 3245.1090). However, the EQ 3/6 code has not been verified and validated, and is therefore not qualified for use on quality affecting activities. Also, development and issuance of the user's manual for the 1990 version has been delayed. The LLNL staff were knowledgeable regarding the geochemical basis of the code. However, although the records indicated that the staff had received training regarding Software Quality Assurance Program (SQAP) requirements, interviews revealed the staff could be better informed about the SQAP requirements. The adequacy of this activity is considered indeterminate due to the lack of quality-affecting work.

2. WBS No. 1.2.2.2.2, "Hydrologic Properties of Waste Package Environment"

This activity involves the determination and modeling of the hydrologic properties of tuff rock. The work will be described in a study plan that is being reviewed. The task structure was revised to separate prototype (scoping) work from quality affecting work. Work to date has been scoping only. The work involves investigation into the nature of flow in an unsaturated medium. The V-TOUGH code is also utilized. This is an updated version of the TOUGH code developed in 1984 at Lawrence Berkley Laboratory. This code will have to be qualified for use in quality-affecting areas. However, procedures appeared to be in place as if the code was currently qualified, i.e., the SQAP procedures were being followed. Code changes and different versions were being tracked by the use of a computerized log book which appeared to be in order. The laboratory facilities where permeability experiments had been performed was examined. The equipment and the log books reviewed during this tour were in order. Two papers (UCRL-JC-104765 and UCRL-JC-104933) that were presented at the April 1991 International High-Level Radioactive Waste Conference were examined and found to be in order. The adequacy of this activity is considered indeterminate due the lack of quality-affecting work.

3. WBS No. 1.2.2.3.1.1, "Waste Form Testing - Spent Fuel"

This activity includes model development and flow through testing of UO_2 and spent fuel. The effort is described in a new SIP that has been approved for interim use by LLNL. (Refer to CAR No. YM-91-056, issued as a result of this audit, which deals with a programmatic problem concerning interim use of SIPs). Only scoping work has been performed at LLNL; however, this effort involves quality-affecting activities. The spent fuel work is performed at Pacific Northwest Laboratory using a test matrix that is essentially the same as that for UO_2. The UO_2 test apparatus was set up in an argon-filled dry box. Several runs, which are considered scoping, have been run but are not fully analyzed. A uranium sample traceable to National Institute of Standards in Technology is being obtained. Laboratory records were in good shape and the technical staff appeared to understand and meet QA requirements. Hence, this activity is considered effective from a QA perspective.

4. WBS No. 1.2.2.3.4.2, "Thermodynamic Date Base"

This activity includes method development and the measurement of thermodynamic properties of actinides and technetium (Tc). As part of an OCRWM effort, it also reviews Nuclear Energy Agency (NEA) data using an NEA procedure. The major thrust is on formation constants at 25°C-125°C. Other work, such as with the variable temperature titrating calorimeter, have been discontinued. The staff was extremely knowledgeable about technical equipment as well as QA requirements. The laboratory and laboratory books were in good order. The ongoing work on americium is quality affecting. Reports on Tc and other actinides have been produced. One paper, UCRL-JC-106032, which deals with Standard Gibbs Free Energy of Formation for Uranyl Silicates was examined and found acceptable. This activity is effective from a QA perspective.

4.4 Summary of Deficiencies

The YMQAD Audit Team identified 17 deficiencies during the audit and all but eight were resolved prior to the post-audit conference. Of the eight deficiencies written as Corrective Action Requests (CARs), one was written on the timeliness of the completion of training assignments, one was written for procedures and QAPP not agreeing, and six were written against the audit program. A synopsis of the CARs and the nine deficiencies corrected during the audit are presented in Section 6.0 of this report. An information copy of the CARs can be found in Enclosure 5.

5.0 AUDIT MEETINGS AND PERSONNEL CONTACTED

The pre-audit conference was held at LLNL facilities on June 3, 1991. Daily coordination meetings were held with LLNL management and staff. The audit was concluded with a post-audit conference held at LLNL facilities on June 7, 1991. A list of auditors, observers, and personnel contacted during the audit is included in Enclosure 3. The list includes an indication of those who attended the pre- and post-audit conferences.

6.0 SYNOPSIS OF CORRECTIVE ACTION REQUEST AND DEFICIENCIES CORRECTED DURING THE AUDIT

6.1 Corrective Action Request (CAR)

YM-91-055 Training/Retraining to required procedures specified in the training matrix is exceeding the time limitation requirements of the pertinent procedure.

YM-91-056 LLNL YMP procedures have been issued that do not include some QAPP requirements.

YM-91-057 There is no procedure or instructions for implementing the Adverse Finding Report (AFR) reporting system.

YM-91-058 A lead auditor certification exhibited shortcomings.

YM-91-059 Objective evidence of the qualification of a technical specialist was not available.

YM-91-060 No CARs generated from significant audit findings. Audit findings reported as observations/comments.

YM-91-061 Criteria 5 and 13 not included in scope of FY 90 audits.

YM-91-062 Lead auditor examination not maintained by LLNL YMP. Examination does not meet requirements of QAPP Appendix F.

6.2 Deficiencies Corrected During the Audit

Deficiencies corrected during the audit which were considered isolated in nature and only required remedial corrective action were:

1. A document was issued on June 6, 1991, by the LLNL QA Manager addressing the adverse conditions (and their status) detected by the Management Assessment. The document was transmitted as LLYMP9106066 on June 7, 1991.

2. A letter (QA:91:113) was issued by LLNL, transmitting copies of purchase orders B156347, B156346, B1600242, and B150396 to the Yucca Mountain Site Characterization Project Office (YMPO) which had not been done previously.

   Change notices were issued by LLNL deleting the requirement of sending purchase orders for quality-affecting items and services to Technical and Management Support Services QA Department.

3. It was identified during the audit, that the effective dates of the Technical Implementinmg Procedures (TIPs) were prior to the approval of the TIPs. LLNL investigated the problem and identified a total of 27 controlled documents (25 TIPs and 2 Activity Plans) having the same problem. Twenty-seven change notices were issued prior to the end of the audit to resolve the deficiency.

4. It was identified during the audit that the Quality Assurance Requirement Specifications QARS-003, Revision 0 record package was not transmitted to the Local Records Center. This was resolved by transmitting the record package prior to the end of the audit.

5. Twelve LLNL personnel with assigned controlled documents were verified to have the correct control number on their controlled documents except for one which was corrected during the audit.

6. An examination of calibration records identified records that were incomplete. The deficient conditions included: missing signatures, blanks not marked N/A, and missing revision numbers of procedures used to conduct calibration. The LLNL calibration coordinator reviewed all calibration records and corrected all deficiencies during the audit.

7. Mass standards, which are identified on the Measuring and Test Equipment (M&TE) Master Status List as 3412ABCDEF were not labeled with a unique identification number as required. This deficient condition was corrected and verification of correction was made during the audit. The unique identification number was changed to WN251ABCDEF. The M&TE Master Status List was updated to reflect the change in unique identification number.

8. Quality Procedure 033-YMP-QP 12.0, Revision 2, Section 12.0.4, Paragraph 4 requires that a M&TE Waiver Tag Notice be placed on or near equipment for which the date of calibration has been extended. The following instruments, Strain Gauge No. 4769017 and Transducer No. 5067198, which appear on the M&TE Master Status List dated May 31, 1991, as having waiver calibration tags, were not labeled with Waiver Tags as required. This condition was immediately corrected. The reason for not being tagged was that identical instruments in an adjoining room were mistakenly tagged.

9. 033-YMP-QP 18.0 requires that audit reports be transmitted within 30 calendar days of the closing meeting. Two audit reports, 90-02 and 90-12, had not been issued within the 30 calendar day period. Furthermore, there was no evidence that two audit reports had been distributed to LLNL Management.

   LLNL had previously written (and closed by the audit) an AFR documenting the deficiency and a distribution list for audit reports showed that LLNL Management had received copies.

7.0 REQUIRED ACTIONS AND RECOMMENDATIONS

Responses to the CARs (delineated in Section 6.0) are due within the time frame stated in block 10 of the CAR, as detailed in the CAR transmittal letter. Upon receipt of an acceptable response and satisfactory verification of all corrective actions, the CAR will be closed and LLNL will be notified (by letter) of the closure.

During the audit, several areas were identified within the LLNL QA Program where there were opportunities for improvement. The following recommendations are offered for LLNL management consideration:

1. By integrating the "scoping calculations" with the Test, Debug, and Verification part of the lifecycle, SQAP, Section 6.3.4 the process for software certification could be more efficient.

2. Administrative Procedure AP-5.28Q, Revision 2, "Quality Assurance Grading," Attachment 5, Paragraph 4, "Guidance for Determining the Level at Which Grading is Accomplished," states in part:

   > "...Further QA grading at a level below that assigned in the QAG Report may be performed at the Participant level under the controls of its QA program as long as such grading maintains the desired level of quality and does not contradict the requirements established by the Project QARD and the governing QAG Report."

   LLNL procedure 033-YMP-QP-2.8, Revision 1, "Quality Assurance Grading," addresses how LLNL QA grading below that assigned in the Quality Assurance Grading (QAG) Report is performed and this LLNL procedure refers to the YMPO procedure (AP-5.28Q) for QA grading at the forth level WBS; however, the LLNL procedure does not specifically address ensuring that "...grading maintains the desired level of quality and does not contradict the requirements established by the Project QARD and the governing QAG Report."

   Although no adverse quality conditions regarding QA grading were identified during the audit LLNL could improve their QA program by revising QP 2.8 to clarify the need to use the forth level QAG Report as a refer baseline when preparing internal QAG Reports, i.e., the internal LLNL QAG Report must not contradict the forth level QAG Report.

3. The following LLNL SIPs were last revised in 1987. Consideration should be given to updating and maintaining them current.

   SIP-2 (10/17/86) Geochemical Modeling and Data Base Development
   SIP-7 (11/07/87) Hydrologic Properties of Waste Package Environment
   SIP-6 (11/06/87) Waste Form Testing - Spent Fuel

4. The LLNL SQAP has been released for implementation since December 1989. LLNL management should ensure that it is implemented, especially for important codes such as EQ 3/6.

5. LLNL does not require calibration labels to include the calibration due date. It is recommended that this requirement be changed and that the calibration due date be written on the label. Having this date readily available to instrument users will help prevent inadvertent use of an instrument that has exceeded its calibration due date.

8.0 LIST OF ENCLOSURES

Enclosure 1: Audit Team Members and Observers
Enclosure 2: Audit Details
Enclosure 3: Personnel Contacted During the Audit
Enclosure 4: List of Objective Evidence Reviewed During the Audit
Enclosure 5: Information Copy of CARs

ENCLOSURE 1

AUDIT TEAM MEMBERS AND OBSERVERS

Responsibility	Individual
Audit Team Leader	Frank J. Kratzinger
Auditors	Amelia I. Arceo
	James Blaylock
	A. Edward Cocoros
	Neil D. Cox
	Mario R. Diaz
	Kenneth T. McFall
	Richard L. Weeks
Auditor-In-Training	Cynthia H. Prater
Lead Technical Specialist	Richard E. Powe
Technical Specialist	David Stahl
Observers	William L. Belke (Lead) U.S. Nuclear Regulatory Commission (NRC)
	Robert D. Brient Southwest Research Institute/NRC
	Susan W. Zimmerman Nevada Waste Project Office

ENCLOSURE 2

AUDIT DETAILS

The following is a summary of programmatic activity covered during the audit. A list of objective evidence reviewed during this audit is shown in Enclosure 4. The full document identification number, revision status, and title for Quality Procedures (QPs) referenced below can be found in Enclosure 4.

1. 1.0, "Organization"

Implementation appears to be satisfactory. The area of Stop Work could not be audited due to lack of implementation since the last audit.

Reviewed the following documents and areas to determine if they were acceptable:

- o The current organization chart,
- o QPs to determine if the QAPP requirements were included in the scope of work for the procedure,
- o Monthly reports for management commitments,
- o Action item list to verify its use and distribution,
- o The position description and resume of the current QA Manager,
- o The availability of dedicated QA personnel as of the time of the audit.

The results of the above reviews were acceptable and this criterion appears to be effectively implemented.

2. 2.0, "Quality Assurance Program"

The areas of Readiness Reviews and Peer Reviews could not be audited due to lack of implementation.

Management Assessment was reviewed, however, the QA record package was not available. This was corrected during the audit and is addressed in Section 6.2 of this report.

The indoctrination/training and qualification records of 19 individuals were reviewed for compliance to procedural requirements. Deficiencies found in this area are documented in CAR YM-91-055.

Reviewed position descriptions/resumes/training matrix for 19 individuals.

Reviewed the temporary storage of indoctrination/training/qualification record files for the 19 individuals.

Criterion 2 is considered ineffective due to the lack of missing QA records for the Management Assessment and the failure of the QA Manager to follow-up on the adverse conditions reported in the Management Assessment and that training appeared to be inadequate based on statements made by LLNL personnel that were in conflict with LLNL YMP QAPP and procedural requirements plus the lack of enforcement for training/retraining within time limitations specified.

3. 3.0, "Scientific Investigation and Design Control"

Four Scientific Investigation Plans (SIPs) were examined during the course of the audit. Overall, the SIPs were found to be in compliance with the requirements of the appropriate implementing procedures to the extent of quality affecting work done to date. One exception being the omission of the LLNL QAPP requirement in the QPs that technical review of a planning document performed by the originator's supervisor must be documented and approved in advance by the LLNL QA Manager. Activity Plan D-20-53b, which is a part of WBS Element 1.2.2.3.1.1, Waste Form Testing - Spent Fuel, showed no evidence of the required advance approval. This finding is reported as CAR YM-91-056.

The Software Quality Assurance Program is not yet completed. The Software Quality Assurance Plan was effective in December 1989; however, just two of seven planned Technical Implementing Procedures are in effect. Consequently, the quality of software is indeterminate as of this audit.

4. 4.0, "Procurement Document Control"

Two procedures (QP 4.0 and QP 4.1) are used by LLNL to implement the requirements of this element of the QA Program. Four procurement packages had been developed to QP 4.0 since the last audit. These were audited and except for two deficiencies, the development met the requirements of the implementing procedure. The deficiencies dealt with the failure of forwarding copies of procurement documents to the YMQAD and the existence of an outdated requirement in procedure QP 4.0. These items were corrected during the audit and are discussed in Section 6.2 of this report. The procurement documents contained the required references to: scope of work, technical, quality assurance, administrative and documenting requirements. The required reviews and approvals were performed by the required personnel.

Verified that source evaluations were performed and that a LLNL-YMP Qualified Supplier List was maintained.

In auditing the implementation of QP 4.1, it was verified that a Generic QA Requirements Specification and Subcontractors QA Requirements Specification had been developed.

Based on the results of this audit and to the extent of the audit, it was concluded that this element of the QA Program is being effectively implemented.

5. 5.0, "Instructions, Procedures, Plans, and Drawings"

Record packages of three controlled documents were reviewed for compliance with procedure 033-YMP-QP 2.1.

Three Technical Implementing Procedures (TIPs) record packages were reviewed for compliance with 033-YMP-QP 5.0.

The reviews indicated that the required reviews and approvals to assure that technical adequacy and inclusion of quality requirements were met was satisfactory and effectively implemented.

6. 6.0, "Document Control"

The master distribution list for controlled documents was reviewed and found to be satisfactory. The controlled distribution of three SIPs was selected for five controlled document holders. The receipt acknowledgment forms for the SIPs were properly signed and dated by the recipients.

Twelve LLNL personnel with assigned controlled documents were verified to have the correct control number on their controlled documents except for one that was corrected during the audit. The controlled documents were found to be current and no obsolete nor superseded procedures were found. This criterion appears to be satisfactorily and effectively implemented.

7. 7.0, "Control of Purchased Items and Services"

LLNL implementation of this program element is accomplished using the same QPs as Program Element 4.0, "Procurement Document Control."

8. 8.0, "Identification and Control of Items, Samples, and Data"

The evaluation of the implementation of procedure QP 8.0 was limited due to the availability of only two sample types. The identification and control of 20 electrochemical specimens and 30 Yucca Mountain Core Samples were audited and found to be properly identified and located as noted in logs.

Based on this, it was determined that the requirements of the procedure to the extent audited was effectively implemented.

9. 12.0, "Control of Measuring and Test Equipment"

Twenty items of measuring and test equipment (M&TE) were selected for review. An examination of the M&TE and M&TE records identified some deficient conditions which were corrected during the audit.

During the audit, the Mechanical Engineering Calibration Laboratory was examined for compliance to procedural requirements. The Mechanical Engineering Calibration Laboratory and the Electrical Engineering Calibration Laboratory are both considered vendors and beyond the scope of a participant audit.

10. 13.0, "Handling, Shipping, and Storage"

The auditing of this element of the QA Program consisted of the verification that two TIPs (YM-3 and CM-6) had to be developed as required and the samples referred to in the report of Criterion 8 were properly packaged and stored. To the extent audited, the implementation of procedure QP 13.0 can be considered to be effective.

11. 15.0, "Control of Non-Conforming Items"

A review of the QA Action Item Lists, indicated that the last NCR was closed out on January 18, 1991. No new NCRs have been issued since that time.

Ten NCR packages were examined and found to meet the procedural requirements of 033-YMP-QP 15.0, Revision 1.

12. 16.0, "Corrective Action"

No new Corrective Action Reports have been issued since the last audit of LLNL YMP activities, hence, this criterion was not audited.

13. 17.0, "Quality Assurance Records"

Records reviewed were legible, identifiable, complete, suitable for microfilming, and were authenticated. Corrections to records were done in accordance with requirements and no information had been obliterated.

The authentication list was available and the access lists in the Local Records Center (LRC) were posted.

Records were stored in locked one-hour fire rated cabinets at the LRC upon receipt from records sources and prior to processing to the Central Records Facility. There were no one-of-a-kind records.

The data base record log listed YMP Number, Transmittal/Document Number, File Location, Document Date, Receipt Date, Document Title, Issuing Organization, and Authors. It was verified that records were easily retrievable.

CAR YM-91-056 was issued to identify that the implementing procedure 033-YMP-QP 17.0, Revision 2, was not in compliance with the two-hour fire rated file container requirement of the QAPP.

14. 18.0, "Audits"

Reviewed the audit reports and checked the scope of eight internal audits performed in FY 90 and 91. This resulted in the issuance of CAR YM-91-061.

Reviewed the audit schedules for FY 90 and 91.

Reviewed the certification/qualification records for seven individuals for lead auditor/auditor/technical specialist qualification. This resulted in the issuance of CARs YM-91-058, YM-91-059, and YM-91-062.

Reviewed audit record packages to determine if audit plans and completed checklists were used and to determine the distribution of the reports.

A review of past audit reports resulted in the issuance of CARs YM-91-057 and YM-91-060 for not reporting adverse conditions as audit findings.

Reviewed the weekly QA Action Item Lists of adverse findings to ascertain management involvement in statusing and closing adverse findings.

Based on the objective evidence examined during the audit, Criterion 18 has been found to be ineffective in its implementation

ENCLOSURE 3

LAWRENCE LIVERMORE NATIONAL LABORATORY
YMP-91-01 AUDIT ROSTER

NAME	ORGANIZATION	TITLE	PRE-AUDIT	CONTACTED DURING AUDIT	POST-AUDIT
B. Alegre	LLNL	Admin. Support Records		X	
A. I. Arceo	SAIC/YMQAD	Auditor	X	X	X
L. Ballou	LLNL	Assoc. Proj. Ldr.	X		X
K. R. Baumgarten	KEL	QA Lead Auditor			X
W. L. Belke	NRC	Observer	X	X	X
S. Blair	LLNL	TL	X		X
James Blaylock	DOE/YMQAD	Auditor	X	X	X
J. A. Blink	LLNL	Asst. Project Leader	X	X	X
R. D. Brient	SWRI	Observer	X	X	X
C. J. Bruton	LLNL	PI Geochemical Modeling		X	
B. Bryan	LLNL	Project Administrator	X	X	
W. L. Bourcier	LLNL	TL	X		X
T. A. Buscheck	LLNL	TL	X	X	X
E. Cambbell	LLNL	Administrator	X		
J. Clark	LLNL	QA	X	X	X
W. L. Clarke	LLNL	TAL	X	X	
A. E. Cocoros	MACTEC/YMQAD	Auditor	X	X	X
P. Comstock	LLNL	Resource Mgr.		X	
N. D. Cox	SAIC/YMQAD	Auditor	X	X	X
R. K. Dann	LLNL	QA Manager	X	X	X
R. Day	LLNL	QA Eng.	X	X	X
M. R. Diaz	DOE/YMQAD	Auditor	X	X	X
C. Dobson	LLNL	Deputy Manager	X		X
R. Engle	LLNL	Calibration Lab		X	
D. Good	LLNL	Training Coordinator		X	
R. Hamati	KEL	QA Eng.	X	X	X
W. G. Halsey	LLNL	TAL Perf. Assess.	X	X	X
L. J. Jardine	LLNL	TPO	X	X	X
J. W. Johnson	LLNL	TL	X	X	X
F. J. Kratzinger	SAIC/YMQAD	Audit Team Leader	X	X	X
H. R. Leider	LLNL	TL	X	X	
W. Lin	LLNL	PI Hydrologic Properties		X	
R. D. McCright	LLNL	TL			X
K. T. McFall	SAIC/YMQAD	Auditor	X	X	X
J. R. Merrigan	LLNL	Technical Staff		X	X
R. Newton	LLNL	Staff Analysis		X	
S. Nguyen	LLNL	PI Waste Form		X	
W. O'Connell	LLNL	Task Leader	X		
C. Palmer	LLNL	TDD		X	X
R. Pletcher	LLNL	Technician		X	

LAWRENCE LIVERMORE NATIONAL LABORATORY
YMP-91-01 AUDIT ROSTER

NAME	ORGANIZATION	TITLE	PRE-AUDIT	CONTACTED DURING AUDIT	POST-AUDIT
J. Podobnik	LLNL	Resource Control	X		X
R. E. Powe	SAIC/YMQAD	Lead Tech. Specialist	X	X	X
C. H. Prater	SAIC/YMQAD	Auditor-In-Training	X	X	X
T. Quinn	LLNL	Lead Software Eng.		X	
M. A. Revelli	LLNL	TL	X		X
D. J. Ruffner	LLNL	TAL	X		X
D. W. Short	LLNL	Asst. Project Leader	X	X	X
R. J. Silva	LLNL	TL	X	X	
D. Stahl	SAIC	Technical Specialist	X	X	X
R. B. Stout	LLNL	TAL	X	X	X
P. Van Lehn	LLNL	Calibration Coordinator		X	
P. Walden	LLNL	QA Staff	X		
H. C. Weed	LLNL	PI Waste Form		X	
R. L. Weeks	SAIC/YMQAD	Auditor	X	X	X
D. G. Wilder	LLNL	TAL	X	X	X
T. J. Wolery	LLNL	TL	X	X	
L. W. Younker	LLNL	Dept. Head	X		X
S. W. Zimmerman	State of NV	Observer	X	X	X

ENCLOSURE 4

OBJECTIVE EVIDENCE REVIEWED DURING AUDIT
(Examples of)

Plans

LLNL-YMP-QAPP, Revision 8	LLNL Quality Assurance Program Plan
LLNL-YMP-SQAP, Revision 0	LLNL Software Quality Assurance Plan

Quality Procedures

033-YMP-QP 1.0, Revision 1	Organization
CN 1.0-1-3	
CN 1.0-1-2	
CN 1.0-1-1	
033-YMP-QP 2.1, Revision 2	Preparation, Approval & Revision of Procedures, Requirements, Plans, & the Quality Assurance Program Description
CN 2.1-2-4	
CN 2.1-2-3	
CN 2.1-2-2	
CN 2.1-2-1	
033-YMP-QP 2.2, Revision 0	Peer Review
CN 2.2-0-1	
033-YMP-QP 2.3, Revision 0	Management Assessments
CN 2.3-0-2	
CN 2.3-0-1	
033-YMP-QP 2.6, Revision 1	Readiness Reviews
CN 2.6-1-1	
033-YMP-QP 2.7, Revision 1	Stop Work Order
033-YMO-QP 2.9, Revision 2	Indoctrination & Training
CN 2.9-2-1	
033-YMP-QP 2.10, Revision 2	Qualification of Personnel
033-YMP-QP 2.11, Revision 0	Qualification and Certification
CN 2.11-0-1	
033-YMP-QP 3.0, Revision 2	Scientific Investigation Control
033-YMP-QP 3.1, Revision 0	Design Control
033-YMP-QP 3.3, Revision 1	Review of Technical Publications
033-YMP-QP 3.4, Revision 2	Scientific Notebooks
033-YMP-QP 3.5, Revision 0	Control of Internal Technical Interfaces
033-YMP-QP 4.0, Revision 1	Procurement Control & Documentation
CN 4.0-1-2	
CN 4.0-1-1	
033-YMP-QP 4.1, Revision 1	Preparation of QA Requirements Specifications and Approval of Subcontractor QA Programs
CN 4.1-1-3	
CN 4.1-1-2	
CN 4.1-1-1	

033-YMP-QP 5.0, Revision 1	Technical Implementing Procedures
CN 5.0-1-1	
033-YMP-QP 6.0, Revision 1	Document Control
CN 6.0-1-4	
CN 6.0-1-3	
CN 6.0-1-2	
CN 6.0-1-1	
033-YMP-QP 7.0, Revision 0	Control of Purchased Items
033-YMP-QP 8.0, Revision 0	Identification & Control of Items, Samples, &
CN 8.0-1-1	Data
033-YMP-QP 12.0, Revision 2	Control of Measuring and Test Equipment
033-YMP-QP 13.0, Revision 0	Handling, Storage, and Shipping
033-YMP-QP 15.0, Revision 2	Nonconforming Items
CN 15.0-2-1	
033-YMP-QP 16.0, Revision 2	Corrective Action
033-YMP-QP 17.0, Revision 2	Quality Assurance Records
CN 17.0-2-1	
033-YMP-QP 18.0, Revision 2	Audits

Quality Assurance Requirements Specifications

QARS-003, Revision 2

Technical Implementing Procedures

TIP-CM-06, Revision 0	Identification and Control of Metal Specimens
TIP-GM-01, Revision 0	Calibration of the Ultraviolet/Visible (UV/VAS) Spectrophotometer
TIP-GM-02, Revision 0	Calibration of the Quartz Thermometer and Probe
TIP-GM-03, Revision 0	Calibration of pH Meters and Probe
TIP-GM-04, Revision 0	Calibration of the Liquid Scintillation Counter
TIP-GM-05, Revision 0	Calibration & Performance Verification of Guided Wave Model 200 (OWSA)
TIP-GM-06, Revision 0	The Performance Verification of the Heating Block Thermocouples in the DRI-Box Solubility System
TIP-GM-07, Revision o	Calibration of the Pulsed Nd:YAG Dye Laser/Spectrometer System
TIP-GM-08, Revision 0	Calibration of pH Converters and Electrodes in the Dri-Box Solubility System
TIP-GM-09, Revision 0	Calibration of the Variable Temperature Calorimeter (VTC) System
TIP-GM-10, Revision 0	Verification of Data Within the Thermodynamic Database

TIP-GM-11, Revision 0	Calibration of Nicolet Model 60SX Infrared Spectrometer
TIP-GM-12, Revision 0	Review & Approval of Thermodynamic Database Changes
TIP-GM-13, Revision 0	Inputting Changes to the Thermodynamic Database
TIP-GM-15, Revision 0	Recalibration of the National Institute of Standards & Technology (NIST) Calibrated Liquid-in-Glass Thermometers
TIP-NF-16, Revision 0	Prepare Core Wafer Samples
TIP-NF-17, Revision 0	Carbonate Analysis with the OIC Model 524D Carbon Analyzer
TIP-NF-18, Revision 0	Testing Rock-Water Interactions Using a Rocking Autoclave
TIP-NF-23, Revision 0	Autoclave Temperature & Pressure System Calibration
TIP-NF-28, Revision 0	Solids Analysis: Scanning Electron Microscope
TIP-NF-30, Revision 0	Solids Analysis: Microprobe Microanalysis
TIP-YM-02, Revision 0	Collect, Store & Distribute Water from Well J-13
TIP-YM-03, Revision 0	Labeling, Tracking, and Shipping of Samples
TIP-YM-04, Revision 0	Preparation of Standards for the Determination of Trace Elements in J-13 Well Water
TIP-YM-06, Revision 0	Measurement of the pH of Aqueous Solutions with the Glass Electrode
TIP-YM-07, Revision 0	Operation of the Jarrel Ash 975 Atom Comp ICP-OES
TIP-YM-10, Revision 0	Documentation and Coding Standards for Fortran Programs
TIP-YM-11, Revision 0	Software Configuration Management System

Technical Documents

Thermochemical Data Base	TDB-0
Thermochemical Data Base	TDB-1
Thermochemical Data Base	TDB-2.1
Thermochemical Data Base	TDB-3
Thermochemical Data Base	TDB-5.1

Scientific Investigation Plans

Geochemical Modeling and Data Base Development, WBS 1.2.1.4.5
Hydrologic Properties of Waste Package Environment, WBS 1.2.2.2.2
Waste Form Testing - Spent Fuel, WBS 1.2.2.3.1.1
Thermodynamic Data Determination, WBS 1.2.2.3.4.2

QA Grading Reports

LLNL-QAG-007.5	WBS 1.2.2.2; 1.2.2.3, WP Environment; Waste form/Mtls Testing, excluding preliminary/admin., 12/28/90
LLNL-QAG-008.6	WBS 1.2.1.4; 1.2.2.2; 1.2.2.4, preliminary technical activities, 1/11/91
LLNL-QAG-011.5	WBS 1.2.1.4, Performance Assessment excl. prelim. and admin, 1/7/91

Activity Plans

D-20-44, Revision 0 CN 1 CN 2	Thermogravimetric Analysis for Spent Fuel (SF) Oxidation Testing
D-20-45, Revision 0 CN 1	Low-Temp Oven Method for SF Oxidation Testing (PNL)
D-20-53a, Revision 1	Flow-Through Dissolution Tests on UO2-LLNL
D-20-53b, Revision 0	Flow-Through Dissolution Tests on Spent Fuel-PNL
J-20-8.1, Revision 0 CN 1	Actinide & Tc Thermodynamic Measurements
E-20-15	Establishment of Selection Criteria
E-20-18a	Parametric Studies: Use of Linear-Sweep Polarization to Determine Pitting Potentials

Publications

UCRL-JC-106694	Role of Steam in Fracture Healing...
UCRL-JC-104765	Variation of Permeability with Temperature...
UCRL-JC-104933	Theory of Matrix and Fracture Flow...
UCRL-JC-104931	
UCRL-JC-106010	
UCRL-JC-107084	
UCRL-JC-102127	Laboratory Determined Suction Potential...
UCRL-JC-106032	Standard Gibbs Free Energies of Formation...
PNL-SA-18263	

Notebooks

00144	00021	00090
00143	00018	00047
00141	00019	00063
00142		

Purchase Requisitions

B156345	Quality Affecting Services
B156347	Quality Affecting Services
B160242	Quality Affecting Services
B150396	Quality Affecting Services

Samples

Yucca Mountain Core Samples	# 016247-016377
Electrochemical Specimens	# 825-E20-18A1 through 20

Measuring and Test Equipment

Balance - 5263187
Balance - 5276477
Mass Standards - S/N 3411
Mass Standards - WN251ABCDEF
pH Meter - 3763795
pH Meter - 3788699
Buffer Solutions for pH 7 and pH 4
Spectrometer - 4260941
Spectrometer - 4911843
Scintillometer - 4161323
Spectrophotometer - 920268
Laser System - 999GM07
Power Meter Head - 4728038
Strain Gauge - 4769017
Transducer - 5067198
PRT - 4773649
HP Data ACQ System - 456183
DH Instrument - 40210001
DH Instrument - S/N 2850
King Nutronics - 40210003

Nonconformance Reports Reviewed

NCR - 030	NCR - 054	NCR - 058
NCR - 048	NCR - 056	NCR - 060
NCR - 050	NCR - 057	NCR - 061
NCR - 051		

Controlled Document Book Holder's Reviewed
Measuring and Test Equipment

L. Ballou	J. Blink
J. Clark	W. Clarke
R. Dann	R. Day
R. Hamati	L. Jardine
D. Short	R. Silva
R. Stout	P. Van Lehn

QA Record Retrievability Sample

LLYMP9008111	Acceptance of Responses to Observation Resulting From Yucca Mountain Project Office...Audit 90-02...(LLNL)
LLYMP9005140	Request for Approval...Change Notice 2.0-0-2...and... Change Notice 3.0-0-2...
LLYMP9004118	Transmittal of LLNL-YMP Quality Assurance Program Plan Change Notice 1.0-0-2
LLYMP9105269	Activity Plan D-20-53b, Flow-Through Dissolution on Spent Fuel Record Package
LLYMP9103194	Request for Approval of LLNL-YMP Quality Assurance Program Plan Change Notice
LLYMP9103139	Yucca Mountain Quality Assurance...Review and Approval ...LLNL...QAPP
LLYMP9105250	SIP-NF-1, Engineered Barrier System Field Tests - Prototype Tests Record Package
LLYMP9105003	Local Records Center Record Transmittal Form (transmitting records to CRF)
LLYMP9103070	LLNL-YMP FY 1991 Quality Assurance Audit Schedules, Rev. 1
LLYMP9106050	QA Audit 91-03/Materials Testing and Characterization Record Package
LLYMP9106060	Local Records Center Record Transmittal Form (transmitting supplemental records to CRF)

Audit Reports Reviewed

90-01	90-02
90-03	90-04
90-05	90-06
90-07	90-08
90-11	90-12
90-14	90-15
91-03	91-08
91-09	

Certification/Qualification for the Following Individuals

R. Dann, LLNL	Lead Auditor
R. Hamati, KEL	Lead Auditor
K. Baumgarten, KEL	Lead Auditor
R. Monk, KEL	Lead Auditor
J. Harar, LLNL	Technical Specialist
A. Sickerman, LLNL	Technical Specialist
C. Colmenares, LLNL	Technical Specialist

Miscellaneous

LLNL-YMP Organization Charts Dated May 16, 1991
Training Matrices for 19 individuals
Surveillance Schedules for FY '90 and '91
Internal and External Audit Schedules for FY '90 and '91
LLNL QAO Lead Auditor Examination
Draft Individual Software Plan/Acquisition Plan, "Vtough", 5/31/91
Monthly Management Reports
Action Item List
M&TE Master Status List
LLNL-YMP Qualified Suppliers List dated 4/19/91

ENCLOSURE 5
CORRECTIVE ACTION REQUESTS

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OFFICE OF CIVILIAN RADIOACTIVE WASTE MANAGEMENT U.S. DEPARTMENT OF ENERGY WASHINGTON, D.C.

14CAR NO.: YM-91-055
DATE: 06/07/91
SHEET: 1 OF 2
QA
WBS No.: 1.2.9.3

CORRECTIVE ACTION REQUEST

1 Controlling Document	2 Related Report No.
LLNL 033-YMP-QP 2.9, Revision 2	Audit YMP-91-01

3 Responsible Organization	4 Discussed With
LLNL	B. Bryan, D. Good

10 Response Due	11 Responsibility for Corrective Action	12 Stop Work Order Y or N
20 days after issue	LLNL	N

5 Requirement:

QP 2.9, paragraph 2.9.5, states in part "The participant will be required to complete all training identified in the training matrix for the category that fits the participant's position. Quality Procedures training, as specified, must be completed within 60 days from date of certification."

Paragraph 2.9.7 states in part "Quality Procedures retraining is required for project personnel who perform work affected by revised Quality Procedures prior to the implementation of those procedures. If retraining is required to revised procedures or change notices, it is given to those who received initial training to those specific procedures according to the training matrix maintained by the TC."

6 Adverse Condition:

Training/Retraining to required procedures specified in the training matrix is exceeding the time limitation requirements of the pertinent procedure. Examples of these deficiencies are as follows:

Name	Procedure	Revision	Date	Date of Training
T. Quinn	QP 3.4	2	02/25/91	05/20/91
D. Wilder	QP 2.7	1	08/30/90	12/14/90
J. Nitao	QP 2.1	2	10/17/90	01/14/91
	QP 3.4	2	02/25/91	05/21/91
	QP 15.0	2	09/13/90	01/14/91
R. Dann	QP 2.7	1	08/30/90	12/18/90
	QP 3.4	2	02/25/91	05/15/91
J. Clark	QP 3.4	2	02/25/91	05/03/91

7 Recommended Action(s):

Identify the remedial action to be taken to correct the deficiency noted in block 6. Identify the cause of the condition and the planned corrective action to prevent recurrence.

8 Initiator	Date:	9 Severity Level -	13 Approved By:	Date:
M. Diaz	6/12/91	1☐ 2☒ 3☐	OQA	6/13/91

15 Verification of Corrective Action:

16 Corrective Action Completed and Accepted:	17 Closure Approved By:
QAR _____ Date _____	OQA _____

ENCLOSURE 5

OFFICE OF CIVILIAN RADIOACTIVE WASTE MANAGEMENT U.S. DEPARTMENT OF ENERGY WASHINGTON, D.C.

CAR NO.: YM-91-[illegible]
DATE: 06/0[illegible]/91
SHEET: 2 OF 2

CORRECTIVE ACTION REQUEST (continuation sheet)

6 Adverse Condition (continued)

H. Tewes	QP 2.7	1	08/30/90	12/18/90
	QP 3.4	2	02/25/91	Not Done
T. Wolery	QP 2.4	0	04/03/90	03/15/91
R. Stout	QP 3.4	2	02/25/91	05/24/91
	QP 16.0	2	09/04/90	11/30/90
S. Moore	QP 2.1	2	10/17/90	01/15/91
	QP 3.4	2	02/25/91	Not Done
	QP 15.0	2	09/13/90	01/15/91
K. Baumgarten	QP 2.8	1	10/15/90	03/22/91
	QP 3.4	2	02/25/91	04/15/91
D. McCright	QP 3.4	2	02/25/91	05/07/91
	QP 15.0	2	09/13/90	12/03/90
	QP 16.0	2	09/04/90	03/26/91
	QP 16.1	2	09/05/90	03/26/91

NOTE: LLNL training personnel considered this CAR to be significant and decided to initiate immediate corrective action to control it. Therefore, a change notice to the affected procedure was processed and issued during the audit. CN No. 2.9-2-2 modified paragraph 2.9.7 which could eliminate this type of adverse condition if it is adequately implemented and monitored. The change notice was effective as of June 7, 1991.

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14CAR NO.: YM-91-056
DATE: 06/07/91
SHEET: 1 OF 2
QA
WBS No.: 1.2.9.3

CORRECTIVE ACTION REQUEST

1 Controlling Document	2 Related Report No.
LLNL YMP QAPP 033-YMP-R5, Revision 0	Audit YMP-91-01

3 Responsible Organization	4 Discussed With
LLNL	J. Blink

10 Response Due	11 Responsibility for Corrective Action	12 Stop Work Order Y or N
20 days after issue	LLNL	N

5 Requirement:

LLNL YMP QAPP 033-YMP-R5, Revision 0, paragraph 2.0, states in part: "Independent review of all instructions, procedures, plans, and drawings are performed by the LLNL-YMP to assure technical adequacy and inclusion of appropriate quality requirements."

6 Adverse Condition:

LLNL YMP procedures have been issued that do not include some QAPP requirements.

Examples are:

1. Procedure 033-YMP-QP-2.1, Revision 2, paragraph 2.1.4.5, states in part, "After LLNL approval, Document Control transmits the QAPP,SP's, SIP's, and SQAP's to the DOE Project Office for approval. These documents will be identified by Document Control as "Approved for Interim Use" until DOE Project Office approval is obtained. Documents issued as "Approved for Interim Use" may be used as though they had been approved by the DOE Project Office.", which allows SIP's to be implemented prior to DOE Project Office approval.

   This is contrary to LLNL QAPP 033-YMP-R 3, Revision 0, paragraph 1.3.2, which states in part, "The DOE Project Quality Assurance Manager and the appropriate DOE Project Office Branch Chief review and approve the scientific investigation planning document prior to implementation."

7 Recommended Action(s):

1. Correct the examples identified.
2. Screen other procedures to determine the extent of the problem.
3. Matrix the QAPP requirements to the implementing procedures.

8 Initiator Date:	9 Severity Level -	13 Approved By: Date:
Richard E. Powe R E Powe 6/12/91 A. I. Arceo Amelia I. Arceo 6/12/91	1☐ 2☒ 3☐	OQA Catherine Langenfeld 6/13/91

15 Verification of Corrective Action:

16 Corrective Action Completed and Accepted:	17 Closure Approved By:
QAR _____ Date _____	OQA _____

OFFICE OF CIVILIAN RADIOACTIVE WASTE MANAGEMENT U.S. DEPARTMENT OF ENERGY WASHINGTON, D.C.

CAR NO.: YM-91-056
DATE: 06/07/91
SHEET: 2 OF 2

CORRECTIVE ACTION REQUEST (continuation sheet)

6 Adverse Condition (continued)

SIP 6, Revision 0.6 Draft, dated 5/31/89, was issued for use without Project Office approval and quality affecting activity has begun. This deficiency was corrected during the audit by revising the QAPP via CN R 3-0-5.

2. LLNL QAPP 033-YMP-R 3, Revision 0, paragraph 1.3.1 states in part, "The LLNL-YMP conducts a technical review of the scientific investigation planning document. This review is performed by any qualified individual(s) other than those who developed the original planning document. In exceptional cases, the originator's immediate supervisor can perform the review if the supervisor is the only technically qualified individual, and if the need is individually documented and approved in advance with the concurrence of the LLNL-YMP QA Manager..."

   No LLNL YMP procedure could be found that implements the requirement for individual advanced QA Manager approval to use the supervisor as a technical reviewer. In at least one instance, a scientific investigation planning document was technically reviewed by the supervisor with no individual advanced documented QA Manager approval. (Refer to Activity Plan DM-20-53b)

3. LLNL QAPP, 033-YMP-R 17, Revision 0, paragraph 10.2.2, Alternate Storage Facilities, states in part, "The following are acceptable alternatives to the criteria for a single storage facility:
   o Two-hour fire rated vault that meets National Fire Protection Association (NFPA) 232-1975.
   o Two-hour fire rated Class B file containers that meet the requirements of NFPA 232-1975.
   o Two-hour fire rated file room that meets the requirements of NFPA 232-1975..."

   Contrary to the above, procedure 033-YMP-QP 17.0, Revision 2, paragraph 17.0.5.6(i), states that "Facilities in which records are stored are constructed and maintained by LLNL in accordance with LLNL policies and procedures. Records are stored in locked, one-hour fire resistant containers as deemed appropriate for fire protection by the LLNL Fire Chief."

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14CAR NO.: YM-91-[illegible]
DATE: 06/[illegible]/91
SHEET: 1 OF 1
QA
WBS No.: 1.2.9.3

CORRECTIVE ACTION REQUEST

1 Controlling Document	2 Related Report No.
LLNL 033-YMP-QP 18.0, Revision 2	Audit YMP-91-01

3 Responsible Organization	4 Discussed With
LLNL	R. Hamati, R. Dann

10 Response Due	11 Responsibility for Corrective Action	12 Stop Work Order Y or N
20 days after issue	LLNL	N

5 Requirement:

QP 18.0, paragraph 18.0.5.6, states that an Adverse Finding Report (AFR) is the result of a procedural deficiency or noncompliance and the AFR is processed through Exhibit D.

6 Adverse Condition:

There is no procedure or instructions for implementing the AFR reporting system.

7 Recommended Action(s):

Identify the remedial action to be taken to correct the deficiency noted in block 6. Identify the cause of the condition and the planned corrective action to prevent recurrence.

8 Initiator	Date:	9 Severity Level -	13 Approved By:	Date:
James Blaylock James Blaylock	6/13/91	1☐ 2☒ 3☐	OQA Catherine Hampton	10/2/91

15 Verification of Corrective Action:

16 Corrective Action Completed and Accepted:	17 Closure Approved By:
QAR _____ Date _____	OQA _____

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U.S. DEPARTMENT OF ENERGY
WASHINGTON, D.C.

14 CAR NO.: YM-91-058
DATE: 06/07/91
SHEET: 1 OF 1
QA
WBS No.: 1.2.9.3

CORRECTIVE ACTION REQUEST

1 Controlling Document	2 Related Report No.
LLNL 033-YMP-QP 18.2, Revision 1	Audit YMP-91-01

3 Responsible Organization	4 Discussed With
LLNL	R. Hamati

10 Response Due	11 Responsibility for Corrective Action	12 Stop Work Order Y or N
20 days after issue	LLNL	N

5 Requirement:

QP 18.2, Revision 1, paragraph 18.2.4.2, establishes the basis for lead auditor qualification.

6 Adverse Condition:

Contrary to the requirements of paragraph 18.2.4.2, a lead auditor certification exhibited the following shortcomings:

1. The certification worksheet showed five (5) QA audits within three years prior to the date of certification - one audit was changed to a pre-award survey. Hence, only four (4) audits are valid.
2. The perspective lead auditor participated in those audits as an auditor-in-training; a designation that is not reflected in the QP.
3. The examination given as part of the lead auditor certification did not meet all the program requirements per CAR YM-91-062.

7 Recommended Action(s):

Identify the remedial actions to be taken to correct the deficiencies noted in block 6. Identify the cause of the conditions and the planned corrective actions to prevent recurrence.

8 Initiator	Date:	9 Severity Level -	13 Approved By:	Date:
James Blaylock James Blaylock	6/13/91	1☐ 2☒ 3☐	OQA Arthur Hampton	6/13/91

15 Verification of Corrective Action:

16 Corrective Action Completed and Accepted:	17 Closure Approved By:
QAR _____ Date _____	OQA _____

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U.S. DEPARTMENT OF ENERGY
WASHINGTON, D.C.

14 CAR NO.: YM-91-059
DATE: 06/07/91
SHEET: 1 OF 1
QA
WBS No.: 1.2.9.3

CORRECTIVE ACTION REQUEST

1 Controlling Document LLNL 033-YMP-QP 18.2, Revision 1	2 Related Report No. Audit YMP-91-01
3 Responsible Organization LLNL	4 Discussed With R. Hamati

10 Response Due 20 days after issue	11 Responsibility for Corrective Action LLNL	12 Stop Work Order Y or N N

5 Requirement:

QP 18.2, paragraph 18.2.4.1 requires the YMP QA Manager to qualify auditors and technical specialists.

6 Adverse Condition:

Objective evidence of this qualification of technical specialist was not available.

7 Recommended Action(s):

Identify the remedial action to be taken to correct the deficiency noted in block 6. Identify the cause of the condition and the planned corrective action to prevent recurrence.

8 Initiator Date: James Blaylock James Blaylock 6/13/91	9 Severity Level - 1☐ 2☒ 3☐	13 Approved By: Date: OQA [signature] 6/13/91

15 Verification of Corrective Action:

16 Corrective Action Completed and Accepted: QAR _____ Date _____	17 Closure Approved By: OQA _____

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14CAR NO.: YM-91-060
DATE: 06/17/91
SHEET: 1 OF 1
QA
WBS No.: 1.2.3.3

CORRECTIVE ACTION REQUEST

1 Controlling Document	2 Related Report No.
LLNL 033-YMP-QP 18.0, Revision 2	Audit YMP-91-01

3 Responsible Organization	4 Discussed With
LLNL	K. Baumgarten, R. Hamati

10 Response Due	11 Responsibility for Corrective Action	12 Stop Work Order Y or N
20 days after issue	LLNL	N

5 Requirement:

QP 18.0, paragraph 18.0.5.6, requires audit findings be identified and processed as a Nonconformance Report or an Adverse Finding Report. Furthermore, if an Audit Finding Report is assessed to be a significant condition adverse to quality, the QA Manager initiates a Corrective Action Report in addition to the NCR or AFR.

6 Adverse Condition:

Audit reports 91-03, 91-08, and 91-09 identify audit findings deemed to be significant, yet no CARs were initiated per paragraph 18.0.5.6 of procedure QP 18.0. Futhermore, audit reports contain numerous examples of findings which are written as observations and comments, e.g. Audit 90-04, Audit 90-06, and Audit 90-15.

7 Recommended Action(s):

Identify the remedial action to be taken to correct the deficiency noted in block 6. Identify the cause of the condition and the planned corrective action to prevent recurrence.

8 Initiator	Date:	9 Severity Level -	13 Approved By:	Date:
James Blaylock James Blaylock	6/13/91	1☐ 2☒ 3☐	OQA Catherine Thompson for	6/13/91

15 Verification of Corrective Action:

16 Corrective Action Completed and Accepted:	17 Closure Approved By:
QAR _____ Date _____	OQA _____

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14CAR NO.: YM-91-06
DATE: 06/07/91
SHEET: 1 OF 1
QA
WBS No.: 1.2.9.3

CORRECTIVE ACTION REQUEST

1 Controlling Document	2 Related Report No.
LLNL 033-YMP-QP 18.0, Revision 2	Audit YMP-91-01

3 Responsible Organization	4 Discussed With
LLNL	R. Hamati, R. Dann, K. Baumgarten

10 Response Due	11 Responsibility for Corrective Action	12 Stop Work Order Y or N
20 days after issue	LLNL	N

5 Requirement:

QP 18.0, paragraph 18.0.5.1, states in part "...all activities, however, are audited at least annually,..."

6 Adverse Condition:

A review of the scope of internal audits for FY 90 fails to identify Criteria 5 and 13 as elements in any of the audits.

7 Recommended Action(s):

Identify the remedial action to be taken to correct the deficiency noted in block 6. Identify the cause of the condition and the planned corrective action to prevent recurrence.

8 Initiator	Date:	9 Severity Level -	13 Approved By:	Date:
James Blaylock James Blaylock	6/13/91	1☐ 2☒ 3☐	OQA Cathleen Hampton for	6/13/91

15 Verification of Corrective Action:

16 Corrective Action Completed and Accepted:	17 Closure Approved By:
QAR _____ Date _____	OQA _____

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14CAR NO.: YN-91-062
DATE: 06/07/91
SHEET: 1 OF 1
QA
WBS No.: 1.2.9.3

CORRECTIVE ACTION REQUEST

1 Controlling Document	2 Related Report No.
LLNL 033-YMP-R Appendix F, Revision 0	Audit YMP-91-01

3 Responsible Organization	4 Discussed With
LLNL	R. Dann

10 Response Due	11 Responsibility for Corrective Action	12 Stop Work Order Y or N
20 days after issue	LLNL	N

5 Requirement:

033-YMP-R Appendix F requires the LLNL-YMP to retain copies of the objective evidence regarding the type or types and content of the lead auditor examination.

6 Adverse Condition:

Objective evidence of the lead auditor examination is not maintained by LLNL-YMP. Futhermore, the written examination actually in use does not meet the requirements of 033-YMP-R Appendix F paragraph 1.2.4 and 1.4.2.

7 Recommended Action(s):

Identify the remedial action to be taken to correct the deficiency noted in block 6. Identify the cause of the condition and the planned corrective action to prevent recurrence.

8 Initiator	Date:	9 Severity Level -	13 Approved By:	Date:
James Blaylock James Blaylock	6/13/91	1☐ 2☒ 3☐	OQA	6/13/91

15 Verification of Corrective Action:

16 Corrective Action Completed and Accepted:	17 Closure Approved By:
QAR _____ Date _____	OQA _____