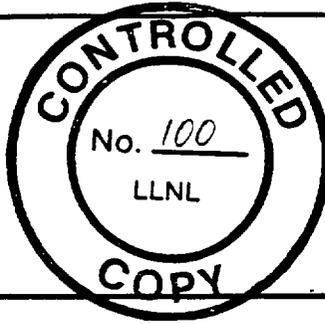


University of California

Lawrence Livermore  
National Laboratory

JCCA MOUNTAIN PROJECT  
Quality Procedures



No.: 033-YMP-QP 18.2  
Revision: 2  
Effective Date: 8/5/92  
Page: 1 of 8

Subject:  
QUALIFICATION OF QUALITY ASSURANCE AUDIT PERSONNEL

AUTHOR:  
See Change Notices

Reason for change:  
  
To Incorporate Change Notices 1 through 4.

Training Required: Yes  No   
Comment:  
Training Completed via Change  
Notices.

Approved by: W. L. Helms 8/5/92  
Yucca Mountain Project Leader Date

Approved by: Den Wolfe 8/5/92  
YMP Quality Assurance Manager Date

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### 18.2.1 PURPOSE

This procedure provides requirements for the qualification of Auditors and certification of Lead Auditors for LLNL's Yucca Mountain Project (YMP).

This procedure also provides requirements for individuals having special expertise who may be members of an audit team, such as technical experts and management representatives.

### 18.2.2 SCOPE

This procedure applies to individuals who are selected to be members of teams assigned to conduct audits and surveillances as described in the scope of Procedure 033-YMP-QP 18.0, Audits and Procedure 033-YMP-QP 18.1, Surveillances.

### 18.2.3 RESPONSIBILITY

Overall responsibility for assuring implementation of this procedure is assigned to the YMP Quality Assurance Manager.

### 18.2.4 PROCEDURE

Quality assurance audits and surveillances are performed by one or more auditors. The audit is led by a Lead Auditor certified by the YMP QA Manager. Other audit participants have either experience or training in performing audits or technical knowledge commensurate with the scope, complexity, and nature of the activities to be audited.

#### 18.2.4.1 Qualification of Auditors and Technical Specialists

The YMP QA Manager (QAM) is responsible for training auditors to perform the various audit functions by one or both of the methods given below:

- a. Orientation and training in audit performance. Training topics include fundamentals, objectives, characteristics, organization, performance, and results of quality assurance auditing. A commercially available training program may be used if approved by the QAM. Training also covers the content of 10CFR60, the LLNL-YMP Project QA Program Plan, and applicable codes, standards and guides.
- b. On-the-job training and guidance under the direct supervision of a Lead Auditor. Such training includes planning, performing and reporting of audits.

The Lead Auditor is responsible for indoctrinating technical specialists and other non-auditor personnel in audit techniques (as a minimum) and for documenting the indoctrination.

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The QAM maintains a file for each auditor to document training and audit participation. Audit participation is documented on the "Auditor Participation Form", Exhibit A, and is included as part of each Auditor's file.

The QAM maintains a file for each technical specialists or other non-auditor team member to document qualifications, indoctrination, and audit participation. Applicable technical knowledge is documented on a resume or by reference to a YMP Personnel Qualification Record. The YMP Leader and QAM review and accept the technical qualifications of technical specialists and other non-auditor team members (Exhibit C). Audit participation is documented on the auditor participation form, Exhibit A.

#### 18.2.4.2 Lead Auditor Evaluation

Each candidate for YMP Lead Auditor is evaluated by the YMP QA Manager in accordance with criteria described below. The evaluation for each candidate is documented on the Lead Auditor Certification Worksheet, Exhibit B.

##### a. Communication Skills

The prospective Lead Auditor demonstrates effective oral and written communication skills as determined by the YMP QA Manager.

##### b. Training

The prospective Lead Auditor is trained to the extent necessary to assure competence in auditing skills. Training in the following areas is based upon evaluation of the particular skills of each prospective Lead Auditor:

- Knowledge and understanding of the YMP QAPP documents, 10 CFR Part 60, and other nuclear and/or DOE related codes, standards, regulations and regulatory guides, as applicable to the YMP.
- General structure of Quality Assurance programs and applicable elements as defined in the YMP Quality Assurance Program documents.
- Auditing techniques of examining, questioning, evaluating, and reporting; methods of identifying and following up on corrective action items; and closure of audit findings.
- Audit planning in the functions related to quality for the following activities: site characterization (scientific investigations), design, purchasing, fabrication, handling, shipping, storage, cleaning, erection, installation, inspection, testing, statistics, nondestructive examination, maintenance, repair, operation, modification of nuclear facilities or associated components, and safety aspects of the nuclear facility.
- On the job training to include applicable elements of the audit program.

##### c. Evaluation of Education/Training and General Auditing Experience

The prospective Lead Auditor possesses verifiable evidence that a minimum of ten (10) credits under the following scoring system have been accumulated.

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(1) Education (4 Credits Maximum)

Associate degree from an accredited institution: score one (1) credit or, if the degree is in engineering, physical sciences, mathematics, or quality assurance, score two (2) credits; or

A bachelor's degree from an accredited institution: score two (2) credits or, if the degree is in engineering, physical sciences, mathematics, or quality assurance, score three (3) credits; in addition, score one (1) credit for a masters degree in engineering, physical sciences, business management, or quality assurance from an accredited institution.

(2) Experience (9 Credits Maximum)

Technical experience in engineering, manufacturing, construction, operation, or maintenance: score one (1) credit for each full year with a maximum of five (5) credits for this aspect of experience.

If 2 years of this experience have been in the nuclear field, score one (1) additional credit; or

If 2 years of this experience have been in quality assurance, score two (2) additional credits; or

If 2 years of this experience have been in auditing score three (3) additional credits; or

If 2 years of this experience have been in nuclear quality assurance, score three (3) additional credits; or

If 2 years of this experience have been in nuclear quality assurance auditing, score four (4) additional credits.

(3) Other Credentials of Professional Competence (2 Credits Maximum)

For certification of competency in engineering, science, or quality assurances specialties issued and approved by a State Agency or National Professional or Technical Society: score two (2) credits.

(4) Rights of Management (2 Credits Maximum)

The Lead Auditor's employer may grant up to two (2) credits for other performance factors applicable to auditing. Examples of these factors are leadership, sound judgment, maturity, analytical ability, tenacity, past performance, and quality assurance training courses.

d. Nuclear Auditing Experience

The Prospective Lead Auditor has participated in at least five quality assurance audits within the three years prior to the date of certification, one audit of which is a nuclear quality assurance audit conducted within the year prior to certification.

e. Lead Auditor Examination

The Prospective Lead Auditor successfully completes an examination that evaluates comprehension and ability to apply the body of knowledge identified in this procedure. The examination may be oral, written, performance evaluation, or any combination thereof.

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The QAM is responsible for the development and administration of this examination. An exam question data base is maintained by the QAM who will review the data base as necessary to assure it reflects current YMP requirements. When individuals who are previously certified as Lead Auditors by another organization are assigned to LLNL-YMP, the QAM may review and accept the examinations used by the other organizations. The QAM will administer a supplementary examination to test areas not covered in the original examination. The QAM will certify the successful completion of the examination requirement and will document the certification in the individual's certification file.

#### 18.2.4.3 Lead Auditor Certification

An Auditor is certified by the YMP QA Manager as a Lead Auditor when the criteria in Section 18.2.4.2. are met. The certification, which is valid for one year, is documented on the Record of Lead Auditor Qualification, Exhibit B.

Lead Auditors who are certified by organizations external to YMP may be certified as YMP Lead Auditors by the QAM. Such YMP QA Manager certifications are to be in writing and are to include documentation pertaining to the individual's certification and a completed Record of Lead Auditor Qualification, Exhibit B. The prospective YMP Lead Auditor will be required to complete a supplemental examination on YMP-specific subjects prior to LLNL-YMP certification.

#### 18.2.4.4 Maintenance of Certification

Lead Auditors retain their certification by maintaining their proficiency by regular participation in the audit process, keeping abreast of regulatory quality assurance requirements, and keeping informed of developments in the field of quality audits. The YMP QA Manager reviews the certification for each Lead Auditor annually and either extends or cancels the certification. These reviews are documented.

Lead Auditors who fail to maintain their proficiency for a period of two years or more must requalify in accordance with Section 18.2.4.2.

#### 18.2.5 QUALITY ASSURANCE RECORDS

Quality assurance records resulting from the implementation of this procedure are collected, handled, stored, and maintained in accordance with procedure 033-YMP-QP 17.0, Quality Assurance Records.

Quality assurance records include the following:

- Auditor training records,
- Audit participation records,
- Lead Auditor Certification Worksheets and supporting documents.
- Evaluation memorandum of adequacy of Lead Auditor examination and added supplemental documents if examination is determined to be inadequate.



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<b>YMP LEAD AUDITOR QUALIFICATION WORKSHEET</b>			
RECORD OF LEAD AUDITOR QUALIFICATION		Name: _____	Date: _____
EMPLOYER: Lawrence Livermore National Laboratory/Yucca Mountain Project			
QUALIFICATION POINT REQUIREMENTS			CREDITS
Education - University/Degree Date		4 Credits Max.	
1. Undergraduate Level 2. Graduate Level		<div style="font-size: 4em; margin: 0;">E</div>	
Experience - Company/Dates			
Technical (0 - 5 credits) and Nuclear Industry (0 - 1 credit), or Quality Assurance (0 - 2 credits), or Auditing (0 - 4 credits)		<div style="font-size: 4em; margin: 0;">P</div>	
Professional Accomplishment - Certificate/Date			
1. P.E. 2. Society		<div style="font-size: 4em; margin: 0;">M</div>	
Management - Justification - LLNL-YMP QA Manager			
Explain: _____			
Evaluated By: (Name) _____		Date _____	
Total Credits: _____			
AUDIT COMMUNICATION SKILLS - LLNL-YMP QA Manager			
Evaluated By: (Name) _____		Date _____	
AUDIT TRAINING COURSES			
Course Title or Topic:			Date
1. _____			
2. _____			
AUDIT PARTICIPATION			
	LOCATION	AUDIT	DATE
1.			
2.			
3.			
4.			
5.			
EXAMINATION:		PASSED:	DATE:
AUDITOR QUALIFICATION CERTIFIED BY LLNL-YMP QA Manager		Date Certified:	
(Signature) _____			
ANNUAL EVALUATION			
(Signature and Date)			

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<b>TECHNICAL SPECIALIST CERTIFICATION/Audits and Surveillances</b>		
Individual's Name:	Evaluation Period:	
	to	
<p style="font-size: 48px; margin: 0;">L</p> <p style="font-size: 48px; margin: 0;">P</p> <p style="font-size: 24px; margin: 0;">I have reviewed and accepted the individual's technical qualifications. This individual may serve as a technical specialist in LLNL-YMP audits and surveillances during the period shown.</p> <p style="font-size: 48px; margin: 0;">M</p> <p style="font-size: 48px; margin: 0;">A</p> <p style="font-size: 48px; margin: 0;">S</p>		
YMP Leader:	Date:	
QA Manager:	Date:	

YMP 101, Rev. 0