

CHANGED TO READ:

If a single inspection or test requires implementation by a team or a group, then personnel who do not meet the requirements stated above may be used in data-taking assignments or in repository or equipment operation provided they are supervised or overseen by a qualified individual.

2. Section 2.11.5.5, add new second paragraph:

If during the evaluation, or at any other time, it is determined by YMP Quality Assurance Manager or the Task Leader that the capabilities of an individual are not in accordance with the qualification requirements specified for the job, then that individual is removed from the activity until such time as the required capability has been demonstrated. Any individual who has not performed inspection or NDE activities for a period of one year is reevaluated and a redetermination of their capability is made in accordance with this procedure.

3. Section 2.11.5.6, add new bullets:

- o On-the-job training with emphasis on first-hand experience gained through actual performance of inspections.
- o Training is provided with regard to changes to the QAPP and implementing procedures that affect previous training.

4. Add new Section 2.11.6.1

The qualification of inspection and NDE personnel is certified in writing and includes the following information:

- o Employer's name
- o Identification of person being certified.
- o Activities certified to perform.
- o Basis used for certification, such as:
 - Education, experience, and training (when necessary).
 - Test results (where applicable).
 - Results of capability demonstration.
- o Results of periodic evaluation.
- o Results of physical examinations (when required).
- o Signature of employer's designated representative who is responsible for such certification.
- o Dates of certification and certification expiration.

NUCLEAR WASTE MANAGEMENT PROGRAM
CONTROLLED COPY NO. 0100

No.: 033-YMP-QP 2.11

Revision: 0

Date: FEB 24 1989

Page: 1 of 5

Subject: QUALIFICATION AND CERTIFICATION OF
INSPECTION AND NDE PERSONNEL

Approved:

Approved by: *J. S. Sellen* 2/4/89
YMP Project Leader

Approved by: *R. E. Sellen* 2/1/89
YMP Quality Assurance
Manager

2.11.1 PURPOSE

The purpose of this procedure is to identify the requirements and establish the responsibilities and methods for the qualification and certification of personnel assigned to perform inspection and nondestructive examination of components, items, services and activities that affect the quality of LLNL produced deliverables for the Yucca Mountain Project (YMP). This procedure provides specific supplemental qualification requirements to 033-YMP-QP 2.10, "Qualification of Personnel".

2.11.2 SCOPE

This procedure applies to personnel employed by LLNL and its contractors, both full and part time who plan, direct, manage, perform and/or verify inspection and nondestructive examination activities and results. This procedure may apply to work done in support of YMP by subcontractors to LLNL depending on the subcontract specified QA interface requirements and scope of subcontract work.

2.11.3 DEFINITIONS

Listed below are key terms and phrases used in this procedure.

Authorized Examiner: As used in this procedure, is an Inspection/NDE discipline Level III delegated authority by LLNL-YMP Quality Assurance Manager to conduct qualification examinations and to certify LLNL inspection and NDE personnel.

Inspection: Examination or measurements to verify whether an item or activity conforms to specified requirements.

| No. | Revision. | Date: | Page |
|-----------------|-----------|-------------|--------|
| 033-YMP-QP 2.11 | 0 | FEB 24 1989 | 2 of 5 |

Nondestructive Examination (NDE): Is a specialized technological discipline that develops, qualifies and uses methods of material examination without destroying the material under examination. The American Society of Nondestructive Testing (ASNT) has promulgated a nationally recognized reference standard SNT-TC-1A June 1980 edition as required by NNWSI/88-9 & 88-16 that establishes requirements for the qualification and certification of NDE personnel.

Written Practice: As used in this procedure, it is an implementing procedure manual and/or plan that prescribes the detailed qualification/certification requirements for specific disciplines of NDE and inspection activities and their Level of Proficiency in accordance with the SNT TC.1A, NQA-1, Supplement 2S-1 and other related standards.

2.11.4 RESPONSIBILITIES

The Task Leader is responsible for assuring that personnel assigned to perform NDE or inspection activities within their area of responsibility holds and has on record, appropriate and current qualification certifications in accordance with this procedure and applicable project specified codes and standards.

The LLNL-YMP Quality Assurance Manager or his designee is responsible for preparing a Qualification Plan (Written Practice) for preparing implementing procedures to accomplish the qualification and certification of personnel within the scope of this procedure, and has the authority for Project certification of Level III inspection and NDE disciplines.

The Project Level III (NDE/inspection discipline) designated by the LLNL-YMP Quality Assurance Manager is responsible for the technical review, approval and compliance to recognized standards of discipline qualification requirements. The Level III has approval authority for NDE position descriptions described in Procedure 033-YMP-QP 2.10, "Qualification of Personnel."

Assigned inspection/NDE personnel are responsible for performing and documenting inspection and NDE activities in accordance with project approved procedures, instructions and specifications.

The Project Training Coordinator is responsible for receiving, reviewing, processing and maintaining a copy of the Qualification/Certification records of Project assigned inspection and NDE personnel.

2.11.5 REQUIREMENTS

2.11.5.1

Inspection personnel are certified in accordance with a Qualification Plan (Written Practice) incorporating the requirements of NQA-1, Supplement 2S-1, and establishing minimum requirements appropriate to designated capability level as identified below:

Level I Inspector - capable of following prepared inspection plan and recording inspection data;

| | | | |
|-----------------|-----------|-------------|--------|
| No. | Revision. | Date. | Page |
| 033-YMP-QP 2.11 | 0 | FEB 24 1980 | 3 of 5 |

Level II Inspector - Level I capability plus capable of preparing inspection plans, evaluating results and supervising Level I inspectors and other same level inspectors;

Level III Inspector - Level II capability plus capable of approving inspection plans, and training, qualifying, and certifying lower level inspectors.

2.11.5.2

NDE personnel are certified in accordance with a Qualification Plan incorporating the requirements of ASNT-SNT-TC-1A June 1980 edition and LLNL applicable Position Description for the capability level as follows:

NDE Level I - qualified to perform specific calibrations, specific tests, and specific evaluations according to written instructions and to record the results.

NDE Level II - qualified to set up and calibrate equipment and to interpret and evaluate results with respect to applicable codes, standards, and specifications; thoroughly familiar with the scope and limitation of the method; able to prepare written instructions, and to organize and report nondestructive testing investigations.

NDE Level III - capable of and responsible for establishing techniques; interpreting code standards and specifications; and designating the particular test method and technique to be used. A Level III is responsible for the complete NDE operation disciplines qualified for and assigned to, and is capable of evaluating results in terms of existing codes, standards, and specifications; has sufficient practical background in applicable materials, fabrication, and/or product technology to establish techniques and to assist the scientist/design engineer in establishing acceptance criteria where none are otherwise available; has general familiarity with other commonly used NDE methods; and responsible for the training and certification of NDE Level I and Level II personnel, including personnel described below.

2.11.5.3

NDE personnel who witness, monitor and evaluate nondestructive examinations performed by others on behalf of Project are designated "ADM" (Administration) for the discipline capability level as follows:

NDE Level I (ADM) - demonstrates knowledge of and ability to perform specific calibrations, specific tests, and specific evaluations according to written instructions and to record results. In work practice, witnesses and evaluates the performance of NDE by a qualified Level I Examiner.

NDE Level II (ADM) - demonstrates knowledge of and ability to perform NDE method for which qualified: set up and calibrate equipment; interpret and evaluate results with applicable codes, standards, and specifications; prepare written instructions and report NDE results. In work practice, witnesses and evaluates the performance of NDE methods by qualified Level II or Level I Examiner; exercises supervision and direction of other Level II (ADM) personnel; reviews NDE instructions and procedures, test results and reports for completeness, accuracy, and acceptability.

| | | | |
|-----------------|-----------|-------------|--------|
| No. | Revision. | Date. | Page |
| 033-YMP-QP 2.11 | 0 | FEB 24 1989 | 4 of 5 |

2.11.5.4

Inspectors meet appropriate qualification plan criteria for the capability level consistent with the requirements of the Project Quality Assurance Plan requirements, and work planning document requirements for the Activity. In lieu of other specified requirements, inspectors meet qualification plan criteria of ANSI N45.2.6 - 1978 as applied to the specific identified inspection discipline.

2.11.5.5

Inspectors are physically able to perform the inspection activity to which assigned; they have corrected near vision acuity and color perception capability consistent with the inspection activity to which assigned; and as measured by annual examination.

2.11.5.6

Inspectors successfully complete prescribed training through the implementation of 033-YMP-QP 2.9, "Indoctrination and Training", including:

- o Orientation to the Project Quality Assurance Program;
- o Indoctrination to quality requirements, quality assurance program manuals, inspection plans and procedures, applicable codes, industry standards, regulations and quality criteria.
- o Basic inspector training, as necessary, in the inspection principles, methods and techniques, and accepted practice for the inspection discipline to which assigned.
- o Inspectors exhibit competence for the discipline inspection activity by passing examination(s) and/or demonstration(s) prepared and administered by the Authorized Examiner.

2.11.6 INSPECTOR CERTIFICATION

Level I and Level II discipline inspectors are certified by a designated discipline Level III inspector; Level III inspectors are certified by the LLNL-YMP Quality Assurance Manager or designee.

Certifications are valid for a period of three years and renewable based on continued, satisfactory annually evaluated and documented performance.

2.11.7 NDE QUALIFICATION REQUIREMENTS

NDE personnel have the physical ability to perform NDE activity to which assigned and have the necessary corrected near sight and color perception established by ASNT, SNT-TC-1A which is verified by an annual medical examination.

| | | | |
|-----------------|-----------|-------------|--------|
| No. | Revision: | Date | Page |
| 033-YMP-QP 2.11 | 0 | FEB 24 1999 | 5 of 5 |

NDE personnel successfully complete training appropriate to the level and discipline method to which assigned including:

- o Orientation to the Quality Assurance Program;
- o Indoctrination to quality requirements, quality assurance program manuals and procedures, NDE application for appropriate code requirements, industry standards and accepted practice;
- o Basic NDE training in the methods, techniques, and practice for the test method for which certified; applicable minimum training hours for level and NDE method established by SNT-TC-1A shall apply.
- o NDE personnel shall exhibit competence for the activity by successful completion of an examination(s) and/or demonstrations prepared and administered by the Authorized Examiner.

2.11.8 CERTIFICATION OF NDE PERSONNEL

Level I and Level II personnel are certified by a designated Level III in the appropriate examination technique.

All Level III NDE personnel are certified by a Project Level III under cognizance of the LLNL-YMP Quality Assurance Manager.

Certifications are for a period of three years and renewable based on continued, annually evaluated satisfactory performance.

2.11.9 PROCEDURE

Procedural details for the qualification and certification of Inspection and NDE personnel are covered in the Qualification Plan or Written Practice prepared for each identified inspection or NDE discipline position description as specifies by the Project work planning documents and this procedure.

2.11.10 RETAINED DOCUMENTATION

Quality Assurance records that result from the implementation and execution of this procedure are collected, stored and maintained in accordance with Procedure 033-YMP-QP 17.0, "Quality Assurance Records."

Quality assurance records required to be prepared, processed and retained for each include, but are not limited to, those identified in Procedure 033-YMP-QP 2.9, "Indoctrination and Training", Procedure 033-YMP-QP 2.10, "Qualification of Personnel" and records required by approved Qualification Plan or Written Practice for the applicable inspection/NDE discipline.

Qualification and Certification records are submitted to and maintained by the "Training Coordinator" and LLNL-YMP Records Manager.