

# CCP-QP-030

Revision 8

## CCP

### Written Practice for the Qualification of CCP Helium Leak Detection Personnel

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APPROVED FOR USE

RECORD OF REVISION

Revision Number	Date Approved	Description of Revision
2	02/25/2002	Replaced NDA with Helium Leak Detection. Removed RTR.
3	10/18/2002	Added steps 2.1, 4.6.2 and 4.6.3 and updated numbers in Attachment 5.
4	01/14/2004	Removed Annual Record of Eye Examination from Attachment 1 and created Attachment 6, <i>CCP Annual Record of Eye Examination</i> . Changed Section 4.7 to reflect addition of Attachment 6. Added (L) to Level designators as needed. Replaced Table C in Attachment 4.
5	05/01/2006	Revised to add procedure steps for clarification of the qualification and re-qualification process. These steps were added as part of the annual procedure review.
6	11/16/2006	Revised to implement the Waste Isolation Pilot Plant Hazardous Waste Facility Permit requirements resulting from the Section 311/Remote-Handled (RH) Permit Modification Request (PMR) and to clarify re-qualification requirements for Helium Leak Detection (HLD) Level III (L).
7	03/05/2008	Revised to clarify eye exam training criteria.
8	08/04/2009	Revised to more clearly define American Society for Nondestructive Testing (ASNT) nomenclature, removal of Leak Testing (LT)-I personnel qualifications, and editorial changes.

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## 1.0 PURPOSE

This written practice procedure defines the qualification/re-qualification of nondestructive examination (NDE) personnel in the method of Helium Leak Detection (HLD) for the Central Characterization Project (CCP).

### 1.1 Scope

Qualification of personnel under this document is limited to those operations specific to CCP. The specific qualification covered by this procedure is HLD using the Mass Spectrometer Leak Test (MSLT) process. These operations are as defined in the applicable CCP and/or Carlsbad Field Office (CBFO) Department of Energy (DOE)/Waste Isolation Pilot Plant (WIPP) packaging procedures.

## 2.0 REQUIREMENTS

### 2.1 References

#### Referenced Documents

- American Society for Nondestructive Testing (ASNT) Recommended Practice No. SNT-TC-1A (June 1980 Edition), *Personnel Qualification and Certification in Nondestructive Testing*
- CCP-QP-002, *CCP Training and Qualification Plan*
- CCP-QP-008, *CCP Records Management*

### 2.2 Training

2.2.1 Personnel implementing this procedure are qualified based upon education, experience, and training. Documentation of training requirements and qualification status for all personnel who perform roles specified in this procedure is maintained by CCP Training.

2.2.2 Personnel performing this procedure will be trained and qualified in accordance with CCP-QP-002, *CCP Training and Qualification Plan*, prior to performing this procedure.

2.2.3 Personnel considered for qualification shall receive, as a minimum, the training as outlined in American Society for Nondestructive Testing (ASNT) Recommended Practice No. SNT-TC-1A (June 1980 Edition), *Personnel Qualification and Certification in Nondestructive Testing*, or as defined in the attachments to this procedure.

2.2.4 The ASNT nomenclature used for training level designations are as follows: Leak Testing (LT), level (II or III) and the Limited (L) qualification designator (i.e., LT-II [L] or LT-III [L]). This procedure specifically addresses the method of HLD. The limitation denotes the process using the MSLT.

2.2.5 Trainees involved with obtaining experience hours for qualification, are supervised by a qualified LT-II (L), LT-III (L) or ASNT LT-III.

### 2.3 Acceptance Criteria

2.3.1 Proper qualification to perform Helium Leak Detection (HLD) provides evidence of satisfactory implementation of this procedure.

### 3.0 RESPONSIBILITIES

#### 3.1 LT-III (L)

3.1.1 Overall responsibility for the administration and grading of examinations, for verifying and documenting physical and technical qualifications, and for the overall qualification of LT-II (L) personnel.

3.1.2 The actual administration and grading of examinations may be delegated to a designee of the LT-III (L) and so recorded. All questions used for LT- II (L) examinations shall be approved and documented by the responsible LT-III (L).

3.1.3 Provides supporting documentation and technical endorsements for other LT-III (L) candidates to CCP Training for initial qualifications per the requirements of this procedure.

3.1.4 Transmits records identified by this procedure to CCP Training in accordance with CCP-QP-008, *CCP Records Management*.

#### 3.2 CCP Quality Assurance (QA)

3.2.1 Reviews supporting documentation and technical endorsements for LT-III (L) initial qualification.

3.2.2 Reviews applicable letters, certificates and any supporting documentation for LT-III (L) re-qualification.

3.2.3 Provides qualification letter for LT-III (L).

#### 3.3 NDE Instructor

3.3.1 Plans, organizes, and presents classroom, laboratory, demonstration and/or on-the-job training (OJT) in accordance with course outlines approved by the responsible LT-III (L).

#### 3.4 CCP Training

3.4.1 Provides letter of technical endorsement, letter of performance and support documentation to CCP QA for qualification and re-qualification of LT-III (L) personnel.

#### 4.0 PROCEDURE

##### 4.1 Levels of Qualification Used for CCP NDE Personnel:

###### 4.1.1 LT-II (L)

- [A] Shall be qualified to set up and calibrate equipment, perform inspections, and interpret and evaluate results with respect to the applicable codes, standards, and specifications.
- [B] Shall be thoroughly familiar with the scope and limitations of the applicable equipment.
- [C] Shall exercise assigned responsibility for OJT and guidance of trainees.
- [D] Shall be capable to prepare written instructions, and organize and report HLD Test Results.

###### 4.1.2 LT-III (L)

- [A] Shall be capable of writing, reviewing, and/or approving procedures, interpreting specifications and codes for testing, and interpreting test results.
- [B] Shall be capable of evaluating results to existing codes or specifications.
- [C] Shall have sufficient practical background in the applicable material technology to assist in establishing tests and acceptance criteria where none are available.
- [D] Shall be capable of administering personnel qualification examinations and be capable of conducting those training programs necessary for qualification.

##### 4.2 Personnel considered for HLD qualification shall have sufficient training and experience to ensure understanding of the principles and procedures. Previous training and experience shall be documented.

- 4.2.1 To be considered for qualification as a LT-II (L), a candidate shall satisfy the training and experience requirements, as stated in Attachment 2, Minimum Training and Experience Requirements for LT-II (L) Qualification.

- 4.2.2 To be considered for qualification as a LT-III (L), a candidate shall satisfy the training and experience requirements, as stated in Attachment 3, Minimum Training and Experience Requirements for LT-III (L) Qualification.

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**NOTE**

Should an outside agency or consultant be utilized for the training, testing, and/or qualification of HLD personnel, they shall first be approved by CCP QA and responsible LT-III (L) for compliance with this procedure.

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- 4.2.3 To be considered for qualification as an NDE Instructor, a candidate shall satisfy at least one of the following criteria:

- [A] Possess a current ASNT LT-III certificate.
- [B] Possess academic credentials equivalent to a B.S. in engineering, physical science or technology, and possess adequate knowledge in the method being taught.
- [C] Graduate of a two-year school of science or engineering, with five or more years experience as a LT-II in the method being taught.
- [D] Eight or more years experience as a LT-II in the method being taught.

- 4.3 The LT-III (L) may designate other individuals to assist in the administration of LT-II (L) examinations and tests. This designation shall be documented in a designation letter submitted to CCP Training.

- 4.4 To be qualified for LT-II (L) or LT-III (L), a candidate shall have:

- 4.4.1 Completed the required training specified in Attachments 2 or 3. (Training shall be conducted in accordance with this procedure, unless prior training was received. All previous training shall be documented and objective evidence shall be obtained when used to waive any new training).
- 4.4.2 Completed the required work experience specified in Attachments 2 or 3 (Work experience shall be documented. Previous qualification to ASNT Recommended Practice No.SNT-TC-1A shall satisfy the work experience requirements. Objective evidence of previous qualification shall be maintained on file).

- 4.5 Each LT-II (L) examination shall consist of a physical (except as noted below), general, specific, and practical exam, all approved by a LT-III (L) or designated ASNT LT-III.

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**NOTE**

The physical exam does **NOT** have to be approved by the LT-III (L). The candidate/CCP Training is to notify the responsible LT-III (L) in the event of failing the annual eye examination.

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4.5.1 Physical Examination

[A] Visual Acuity Examination

[A.1] Shall be administered to the candidate by a professional optometrist, medical doctor, nurse, or any other qualified designee prior to the initial qualification and thereafter on an annual basis, or at more frequent intervals, if required.

[A.2] Candidate shall have natural or corrected near distance acuity in at least one eye, and the capacity to read J-2 letters on a standard Jaeger test chart at a distance of not less than 30.5 cm (12 in.).

[A.3] Candidate shall receive a color vision examination to verify the capability of distinguishing color and differentiating contrast between colors normally used.

[A.4] Results of the visual acuity examination shall be recorded on Attachment 4, CCP Annual Record of Eye Examination.

4.5.2 General Examination

[A] Shall be a closed book examination consisting of at least the number of questions indicated in Table 1, Minimum Number of Test Questions.

[B] Shall cover theory and principles.

[C] Shall be completed within a period of two hours and shall have a percentile weight of 0.33.

4.5.3 Specific Examination

- [A] Shall be a closed book examination, with necessary data, such as graphs, tables, specifications, and procedures provided.
- [B] Shall consist of at least the number of questions indicated in Table 1.
- [C] Shall cover the operating procedures, examination techniques, specifications, and acceptance criteria that may be encountered in a specific assignment.
- [D] Shall consist of a review of the applicable procedures, codes, and/or specifications.
- [E] Shall be completed within a period of two hours and shall have a percentile weight of 0.34.

4.5.4 Practical Examination

- [A] Candidate shall show familiarity with equipment and related components.
- [B] Candidate shall evaluate and provide 10 different checkpoints requiring an understanding of the test variables and procedural requirements.
- [C] Shall be completed within a reasonable amount of time.
- [D] The description of test specimen, test procedure, and test results shall be documented on a test report.
- [E] Shall have a percentile weight of 0.33.

Table 1. Minimum Number of Test Questions

Method	General Examination	Specific Examination
HLD LEVEL II	20	40

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**NOTE**

If the prospective candidate for LT-III (L) does **NOT** meet the degree and/or work experience requirements, or equivalencies described in Attachment 3, then CCP QA will require that the prospective candidate must be qualified by examination. This exam is developed and administered by an ASNT LT-III.

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4.6 When a LT-III (L) is to be qualified by examination, the individual must satisfactorily complete the following:

4.6.1 Basic Examination (required only once)

- [A] Consisting of 20 questions relative to understanding the ASNT Recommended Practice No. SNT-TC-1A document.
- [B] Twenty questions relating to applicable materials, fabrication, and product technology.
- [C] Twenty questions, which are selected from or are similar to published Level II questions for other appropriate NDE methods.

4.6.2 Method Examination

- [A] Thirty questions relating to fundamentals and principles, which are selected from or are similar to published ASNT LT-III questions.
- [B] Fifteen questions relating to applicable establishment of techniques and procedures selected from, or are similar to, published ASNT LT-III questions.
- [C] Twenty questions related to capability of interpreting codes, standards, and specifications.

4.6.3 Specific Examination

- [A] Twenty questions relating to specifications, equipment, techniques, and procedures applicable to the employer's program and written practice.

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**NOTE**

Candidates failing an examination or test for any level must wait 30-days for re-examination. The 30-day waiting period may be waived by the LT-III (L) if the candidate can show evidence of completion of additional training or study.

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- 4.7 After the candidate has completed all required examinations in the allotted time, the LT-III (L) or designated ASNT LT-III shall grade and sign the examinations and/or checklists.
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**NOTE**

If the qualification is disapproved, the LT-III (L) SHALL promptly notify the candidate.

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**NOTE**

Qualifications may be questioned or revoked at any time by the LT-III (L) or CCP management.

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- 4.8 When the following requirements are met, the LT-III (L) SHALL review and sign Attachment 1, CCP HLD Qualification Card.

4.8.1 For qualification, a composite grade of 80 percent or greater is required.

4.8.2 Each individual grade for the general, specific, and practical examinations shall be 70 percent or greater.

4.8.3 Experience and formal training requirements have been met, per the requirements found on applicable attachment.

- 4.9 For initial qualification of a LT-III (L) candidate, a qualified LT-III (L) reviews the documented evidence of education, experience, and training.

4.9.1 Once the qualified LT-III (L) verifies the education, experience, and training requirements of this procedure are met, then the qualified LT-III (L) generates a letter of technical endorsement and provides the letter to CCP Training.

4.9.2 CCP Training provides CCP QA with letter of technical endorsement and supporting documentation.

4.10 For initial qualification of a LT-III (L) candidate, CCP QA verifies the qualification requirements of this procedure are completed by review of the supporting documentation and technical endorsement.

4.10.1 CCP QA generates a Qualification Letter for LT-III (L).

4.11 Re-qualifications of LT-II (L) personnel will be completed as follows:

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**NOTE**

Re-qualification of LT-II personnel is performed by the LT-III (L) and documented on Attachment 1.

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4.11.1 LT-II (L) personnel shall be re-qualified by re-examination at intervals **NOT** to exceed two years.

4.11.2 Re-examination and re-qualification may be required at any time the LT-III (L) deems necessary.

4.11.3 Re-qualification may also be accomplished without re-examination, based on continued satisfactory performance.

4.12 Re-qualifications of LT-III (L) personnel will be completed as follows:

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**NOTE**

Re-qualification of LT-III (L) personnel is performed by CCP QA and documented on a qualification letter.

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4.12.1 LT-III (L) personnel shall be re-qualified not to exceed three years based on evidence of continued satisfactory performance or re-examination.

4.12.2 LT-III (L) provides one of the following to CCP Training:

[A] A letter of performance describing activities (related to items listed in step 4.1.2) performed during the LT-III (L) tenure (previous 3-year period) to satisfy requirements for re-qualification.

[B] ASNT Certificate.

4.12.3 CCP training provides CCP QA with letter of performance or ASNT certificate and any supporting documentation.

- 4.12.4 CCP QA verifies the qualification requirements of this procedure are completed by review of the applicable letters, certificates, and any supporting documentation.
- 4.12.5 CCP QA generates a re-qualification letter for LT-III (L).
- 4.13 Re-qualification of personnel with interruption of service
  - 4.13.1 Personnel with an interruption of service of less than six-months in the method qualified to may be re-qualified without re-examination.
  - 4.13.2 Personnel with an interruption of service of 6 to 12-months may be re-qualified by passing a practical exam, thereby demonstrating adequate proficiency.
  - 4.13.3 Personnel with an interruption of service of over 12-months shall be re-qualified in full accordance with this procedure.
  - 4.13.4 Personnel may be re-examined any time at the discretion of the LT-III (L) or CCP Manager.
- 4.14 All qualifications shall be automatically terminated when the individual permanently leaves the employment of CCP.
- 4.15 A new or rehired employee previously qualified to a LT- II or LT-III may be re-qualified to the previously held level of qualification provided the candidate can meet the following requirements:
  - 4.15.1 Provide proof of previous qualification.
  - 4.15.2 Worked in that capacity within six-months before termination of previous employment.
  - 4.15.3 Successfully completed all required examinations and tests.
  - 4.15.4 Re-qualified within six months after termination of previous employment.
- 4.16 A new or rehired employee previously qualified to a LT- II or LT-III, but who does **NOT** satisfy the requirements of this procedure, shall be provided refresher training prior to taking the required examinations and tests for re-qualification.
- 4.17 Submit all records generated by this procedure to CCP Training in accordance with CCP-QP-008.

5.0 RECORDS

5.1 Records generated during the performance of this procedure are maintained as QA records in accordance with CCP-QP-008. The records are the following:

5.1.1 QA/Nonpermanent

- [A] CCP HLD Qualification Card (Attachment 1)
- [B] CCP Annual Record of Eye Examination (Attachment 4)
- [C] Qualification Letter(s) (includes initial and requalification)
- [D] Designation Letter(s) (to assist in administering lists)
- [E] LT-III (L) Letter of Performance or ASNT Certificate
- [F] LT-III (L) Letter of Technical Endorsement
- [G] Examinations for LT-II (L)
  - [G.1] General Exam
  - [G.2] Specific Exam
  - [G.3] Practical Exam
- [H] Examinations for LT-III (L)
  - [H.1] Basic Exam
  - [H.2] Method Exam
  - [H.3] Specific Exam

Attachment 1 – CCP HLD Qualification Card

Page 1 of 1

Date: \_\_\_\_\_

This certifies that \_\_\_\_\_  
has been evaluated in accordance with the current revisions of the CCP written practice  
for qualification of NDE personnel, which meets the guidelines of SNT-TC-1A  
(June 1980 Edition) for the following methods and levels.

NDE Method	Levels
HLD	

Limitations \_\_\_\_\_ Mass Spectrometer Leak Test (MSLT) \_\_\_\_\_

Expiration Date \_\_\_\_\_

LT-III (L)

Print: Name/Sign / Date

THIS CERTIFICATE WILL BE SURRENDERED WHEN (A) LEAVING EMPLOYMENT  
OF THE ABOVE FACILITY, (B) TRANSFERRED TO A POSITION WHERE THE  
CERTIFICATE IS NOT REQUIRED, (C) REFUSED RENEWAL OF CERTIFICATE AT  
PERIODIC EXAMINATION, (D) WHEN CERTIFICATE IS REVOKED.

Attachment 2 – Minimum Training and Experience Requirements for LT-II (L)  
Qualification

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**TABLE B**

<b>HLD Process</b>	<b>Experience Requirements</b>	<b>Formal Training</b>
MSLT	100 hours	40 hours

**NOTES:**

1. An individual may be qualified directly to LT-II by satisfying requirements of Table B.
2. The experience factor in months is based on a normal forty (40)-hour workweek (175 hours per month). When work is performed in excess of the 40-hour workweek, credit may be based upon total hours. Records substantiating experience shall be kept on either a monthly or hourly basis.

Attachment 3 – Minimum Training and Experience Requirements for LT-III (L)  
Qualification

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**Condition 1**

4 year degree in Engineering or Science

HLD Process	Experience	Formal Training
MSLT	1 year equivalent to a LT-II	40 hours

**Condition 2**

2 years of Engineering or Science

HLD Process	Experience	Formal Training
MSLT	2 years equivalent to a LT-II	40 hours

**Condition 3**

No Engineering or Science

HLD Process	Experience	Formal Training
MSLT	4 years equivalent to a LT-II	40 hours

Attachment 4 – CCP Annual Record of Eye Examination

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**Name** \_\_\_\_\_ **LT Level** \_\_\_\_\_

Date Examined	Examined By (Print & Sign Name)	Results (Circle One)	
		PASS	FAIL

**Candidate/ CCP Training: Please notify the LT-III (L) if this exam is failed.**

**NOTE:**

1. A visual acuity examination shall be administered to the candidate prior to the initial qualification and thereafter on an annual basis or at more frequent intervals, if required. A professional optometrist, medical doctor, nurse, or any other qualified designee shall administer this examination. The candidate shall have natural or corrected near distance acuity in at least one eye, capable of reading J-2 (at a minimum) letters on a standard Jaeger test chart at a distance of not less than 30.5 cm (12 in). The individual shall receive a color vision examination to verify the capability of distinguishing color and differentiating contrast between colors normally used.