

CCP-QP-032

Revision 1

CCP

Written Practice for the Qualification of CCP Pressure Change Leak Testing Personnel

EFFECTIVE DATE: 05/14/2010

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PRINTED NAME

APPROVED FOR USE

RECORD OF REVISION

Revision Number	Date Approved	Description of Revision
0	04/22/2009	Initial Issue.
1	05/14/2010	Revised to clarify Visual Eye exam documentation.

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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 Pressure Change Leak Testing (PCLT) 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 PCLT using the Rate of Rise Leak Test System (RoRLTS). These operations are defined in the applicable CCP and/or Carlsbad Field Office (CBFO) U.S. 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*
- CCP-QP-030, *CCP Written Practice for the Qualification of CCP Helium Leak Detection Personnel*

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 PCLT. The limitation denotes the process using the RoRLTS.
 - 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 (L).
- 2.3 Acceptance Criteria
- 2.3.1 Proper qualification to perform PCLT using the RoRLTS provides evidence of satisfactory implementation of this procedure.

3.0 RESPONSIBILITIES

NOTE

Until such time that a CCP LT-III (L) is qualified, an approved ASNT LT-III will administer the program requirements contained in this procedure.

3.1 ASNT LT-III or 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 all LT-II (L) personnel.
- 3.1.2 The actual administration and grading of examinations may be delegated to a designee of the ASNT LT-III or LT-III (L) and so recorded. All questions used for LT-II (L) examinations shall be approved and documented by the responsible ASNT LT-III or 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 letters for LT-III (L).
- 3.2.4 Reviews certificates and supporting documentation provided by ASNT LT-III, for qualification as the interim CCP LT-III and NDE instructor.
- 3.2.5 Transmits records identified by this procedure to CCP Training in accordance with CCP-QP-008, *CCP Records Management*.

- 3.3 Nondestructive Examination (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 ASNT LT-III or LT-III (L).

- 3.4 CCP Training
 - 3.4.1 Provides letter of technical endorsement, letter of performance, and supporting 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 be capable of preparing written instructions, and organize and report PCLT 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 of conducting those training programs necessary for qualification.

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

NOTE

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

- 4.2.1 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 Bachelor of Science 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 ASNT LT-III or 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 Possess the current qualifications for Helium Leak Detection (HLD) LT-II (L) or HLD LT-III (L) per the requirements found in CCP-QP-030, *CCP Written Practice for the Qualification of CCP Helium Leak Detection Personnel*.
 - 4.4.2 For LT-II (L), the following table contains the required experience and training requirements. (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).

Table 1. LT-II (L)

PCLT Methods	Experience Requirements	Formal Training
RoRLTS	30 hours	8 hours

- 4.4.3 For LT-III (L) the following table contains the required experience and training requirements. (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).

Table 2. LT-III (L) Condition 1

4 year degree in Engineering or Science

PCLT Method	Experience	Formal Training
RoRLTS	30 hours PCLT LT-II (L) AND 1 year as HLD LT-III (L)	8 hours

Table 3. LT-III (L) Condition 2

2 years of Engineering or Science

PCLT Method	Experience	Formal Training
RoRLTS	30 hours PCLT LT-II (L) AND 2 years as HLD LT-III (L)	8 hours

Table 4. LT-III (L) Condition 3

No Engineering or Science

PCLT Method	Experience	Formal Training
RoRLTS	30 hours PCLT LT-II (L) AND 4 years as HLD LT-III (L)	8 hours

- 4.5 Each LT-II (L) examination shall consist of a physical (except as noted below), General, Specific, and Practical exam, all approved by an ASNT LT-III or LT-III (L).

NOTE

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

NOTE

The Visual Eye exam form (Attachment 4, CCP-QP-030) may be used in lieu of the Visual eye exam listed on Attachment 2 of this procedure. The form Attachment 4, CCP-QP-030, satisfy's the documentation requirements found in this procedure.

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 2, CCP Annual Record of Eye Examination.

NOTE

For the General, Specific and Practical examinations, the candidate must score a minimum of 80% on the average of the three examinations with no single examination score less than 70%.

4.5.2 General Examination

[A] Shall be a closed book examination consisting of at least 20 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 20 questions.
- [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.

NOTE

If the prospective candidate for LT-III (L) does **NOT** meet the degree and/or work experience requirements, or equivalencies described in Table 2, LT-III (L) Condition 1, Table 3, LT-III (L) Condition 2, or Table 4, LT-III (L) Condition 3, as applicable, then CCP QA shall require that the prospective candidate must be qualified by examination. This exam is developed and administered by an ASNT LT-III.

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] Twenty 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 ASNT 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.

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 ASNT LT-III or LT-III (L) if the candidate can show evidence of completion of additional training or study.

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

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

NOTE

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

- 4.8 For LT-II (L) qualification, when the following requirements are met, the ASNT LT-III or LT-III (L) shall initiate, complete, and sign Attachment 1, CCP PCLT 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, an ASNT LT-III or LT-III (L) reviews the documented evidence of education, experience, and training.
- 4.9.1 Once the ASNT LT-III or LT-III (L) verifies the education, experience, and training requirements of this procedure are met, then the qualified ASNT LT-III or 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).
 - 4.10.2 Submit Qualification Letter to CCP Training in accordance with CCP-QP-008.
- 4.11 Re-qualifications of LT-II (L) personnel will be completed as follows:

NOTE

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

- 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 ASNT LT-III or 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:

NOTE

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

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

4.12.2 ASNT LT-III or 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).

4.12.6 Submit re-qualification letter to CCP Training in accordance with CCP-QP-008.

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 ASNT LT-III, 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 (L) or LT-III (L) 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 (L) or LT-III (L), 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 PCLT Qualification Card (Attachment 1)
- [B] CCP Annual Record of Eye Examination (Attachment 2)
- [C] Qualification Letter(s) (includes initial and re-qualification)
- [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 PCLT Qualification Card

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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
Pressure Change Leak Test (PCLT)	

Limitations Rate of Rise Leak Test System (RoRLTS)

Expiration Date _____

ASNT LT-III or 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 – 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 ASNT LT-III or 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"). The individual shall receive a color vision examination to verify the capability of distinguishing color and differentiating contrast between colors normally used.