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Contact the [NDE Standards POC](#) for upkeep, interpretation, and variance issues.

New in this revision (older revisions addressed in Record of Revisions at end of document)

Correction of omission in Table of Contents (Appendix B). Clarified that supplemental staff reporting to LANL (e.g., Triad) supervisors may be qualified and certified under this Procedure in the same manner as employees. Prohibited the use of pharmaceuticals (eye drops) when undergoing visual acuity examination; added that visual acuity examination is required after eye surgery.

1.0 Scope

- 1.1. This Procedure establishes the minimum requirements for qualification and certification of nondestructive examination (NDE) personnel at Los Alamos National Laboratory (LANL). The basis for this Procedure is the ANSI/ASNT Standard CP-189-2020 ("CP-189"), as modified by the ASME Boiler and Pressure Vessel Code, Section V, Article 1, Mandatory Appendix IV, 2021. The methods to which this Procedure applies include:
 - 1.1.1. RT – Radiographic Testing, including Film, DR (panel), CR, and CT techniques.
 - 1.1.2. UT – Ultrasonic Testing, including Conventional and Phased Array Ultrasonic Testing (PAUT), Time of Flight Diffraction (TOFD), and Full Matrix Capture (FMC)
 - 1.1.3. VT – Visual Testing, both Direct and Indirect
 - 1.1.4. MT – Magnetic Particle Inspection, including both visible and fluorescent techniques.
 - 1.1.5. PT – Liquid Penetrant Inspection
 - 1.1.6. LT – Leak Testing, including Bubble Leak Testing, Pressure Change Leak Testing, Halogen Diode Leak Testing, and Mass Spectrometer Leak Testing (MSLT)
 - 1.1.7. ET – Electromagnetic Testing
 - 1.1.8. Other methods as addressed by CP-189, when implemented by LANL and governed by this Procedure. This Procedure will be updated to include training and experience requirements for qualification in the Method as required.
- 1.2. This Procedure details the minimum training, education, and experience requirements for NDE personnel and provides criteria for documenting qualifications and certification.
 - 1.2.1. Unique or additional requirements beyond the minimum established by ANSI/ASNT CP-189 are also addressed in this Procedure.
- 1.3. The Responsible NDE Level III shall maintain this Procedure and associated documents, verify qualifications of all candidates for certification and sign the individual's certification to testify as to qualification, and shall provide guidance to NDE Level III personnel responsible for given methods in examination requirements and development of test parts meeting the requirements of this Procedure. The Responsible Level III is the final authority in its application and interpretation and is responsible for this Procedure's compliance with CP-189. The Responsible Level III is not required to be certified in all methods addressed.
- 1.4. LANL may accept a valid ASNT central certification, e.g., ACCP and ASNT NDT Level II, as meeting the examination requirements of 6.3.1 if the Responsible Level III and SME Level III have determined that the ASNT examinations meet the requirements of this procedure.
- 1.5. Personnel certified in accordance with the previous revision of this document are considered certified in accordance with this document unless the specific method/technique/level was removed from the program. Recertification due to inactivity (revocation/suspension) based on the new intervals in this procedure shall be completed within six months of the issue of this revision. Level III personnel shall complete the noted Specific Examinations and Practical Examinations within six months of issue of this revision, as required.
- 1.6. This document does not apply to subcontract NDE organizations; however, subcontracted personnel hired as staff augmentation or supplemental staff, and who will provide NDE, shall be certified to the qualification and certification requirements of this procedure.

2.0 Definitions

- 2.1. Purpose. These definitions clarify the meanings and terms used in this Procedure, as they apply to this procedure, and only to this procedure. No broader application of these definitions is implied. For basic definitions of terms related to NDE, refer to ASTM E1316, *Standard Terminology for Nondestructive Examinations*.
- 2.1.1. ASNT. American Society for Nondestructive Testing.
- 2.1.2. ACCP. ASNT Central Certification Program.
- 2.1.3. Calibration, Instrument. The comparison of an instrument with, or the adjustment of an instrument to, a known reference(s), often traceable to the National Institute of Standards and Technology (NIST). See also "Standardization, Instrument."
- 2.1.4. Certification. Written testimony that an individual has met the applicable requirements of this Procedure.
- 2.1.5. Certification procedure. A written procedure which details the requirements for qualification and certification of NDE personnel per CP-189. This document is defined as that Procedure.
- 2.1.6. Certifying Authority. On behalf of LANL, the Certifying Authority is the Division Leader, Engineering Services, as delegated. Such delegation shall be documented.
- 2.1.7. Closed-book Examination. An examination administered without access to reference material except that supplied with or in the examination.
- 2.1.8. Documented. The condition of being in written form.
- 2.1.9. Education. An institutionalized program, prescribed by appropriate authorities, that is offered by schools, institutes, organizations, colleges, or universities established for the sole purpose of providing instruction in an orderly, planned, and systematic fashion.
- 2.1.10. Employer. LANL is defined as the employer.
- 2.1.11. Examination. A formal, controlled, documented assessment of knowledge or skills conducted in accordance with a procedure.
- 2.1.12. Experience. Actual performance of an NDE method conducted in the work environment resulting in the acquisition of knowledge and skill. This does not include formal classroom training but may include laboratory and on-the-job training as specifically defined herein.
- 2.1.13. Formal Training. An organized and documented program of activities designed to impart the knowledge and skills required to be qualified to this Procedure. Formal training may be a mix of classroom, practical, and programmed self-instruction as approved by the responsible Level III. Self-study is not considered formal training.
- 2.1.14. General Examination. A written examination addressing the basic principles of the applicable NDE method. Grading Unit. A qualification specimen can be divided into sections called grading units, which do not have to be of equal length or equally spaced. Grading units are unflawed or flawed and the percentage of flawed/unflawed grading units shall be approved by the SME NDE Level III.
- 2.1.15. LANL NDE Level III. An individual qualified and certified by LANL as NDE Level III in accordance with this procedure, also referred to as an NDE Level III in this document.

- 2.1.16. Limited Certification: Nondestructive test methods may be further subdivided into limited disciplines or techniques. This document recognizes UT thickness measurement and RT Film/Image interpretation techniques as being Limited Certifications. Further description is given in Appendix B.
- 2.1.17. Method. One of the disciplines of NDE; for example, ultrasonic testing, within which various techniques may exist. See 1.1 for a listing of the methods to which this Procedure applies.
- 2.1.18. Nondestructive Examination (NDE): a process that involves the inspection, testing, or evaluation of materials, components, and assemblies for materials' discontinuities, properties, and machine problems without further impairing or destroying the part's serviceability. "NDE" is used interchangeably with NDT (Nondestructive Testing) and NDI (Nondestructive Inspection).
- 2.1.19. NDE Instructor. An individual qualified and designated in accordance with this Procedure to educate NDE personnel.
- 2.1.20. NDE Procedure. A written instruction for conducting a nondestructive test.
- 2.1.21. Outside Organization. An agency or individual who provides NDE Level III services. Depending upon the Contract or governing Specification, additional requirements not addressed by this Procedure may be placed upon an Outside Organization.
- 2.1.22. Personalized Instruction. Personalized instruction may consist of blended classroom, supervised laboratory, and/or hybrid online competency-based course delivery. Modular content is covered through online presentations, in the classroom, and/or in small groups. Personalized instruction also enables students to achieve competency using strategies that align with their knowledge, skills, and learning styles.
- 2.1.23. Practical Examination. An examination used to demonstrate an individual's ability in conducting the NDE method(s) that will be performed at or for LANL. For practical examinations, questions and answers will not necessarily be written, but observations and results shall be documented.
- 2.1.24. Predictive Maintenance. This Procedure does not address the qualification nor certification of predictive maintenance activities at LANL at the time of its publication.
- 2.1.25. Qualification. The education, skills, training, knowledge, and experience required for personnel to properly perform to a specified NDE Level.
- 2.1.26. Responsible Level III. This LANL NDE Level III role is designated by appropriate management as the individual responsible for this Procedure, and the qualification and certification program at LANL.
- 2.1.27. SME Level III. A LANL Level III who is a Subject Matter Expert in a given NDE Method(s)/Technique(s).
- 2.1.28. Specific Examination. A written examination to determine an individual's understanding of procedures, codes, standards, specifications, and equipment or instrumentation used for nondestructive tests at LANL.
- 2.1.29. Standardization, Instrument. The adjustment of an NDE instrument using an appropriate reference standard to obtain or establish a known and reproducible response (this is usually done prior to an examination but can be carried out anytime there is a concern about the examination or instrument response). See also "Calibration, Instrument."

2.1.30. Technique. A category within an NDE method; for example, immersion ultrasonic testing.

2.1.31. Training: an organized program developed to impart the knowledge and skills necessary for qualification.

2.2. LANL NDE Levels

2.2.1. NDE Level III. An individual possessing a currently valid ASNT NDE Level III certificate or ACCP Professional Level III Certificate and who is certified in accordance with this Procedure.

2.2.2. NDE Level I, NDE Level II. An individual certified in accordance with this Procedure.

3.0 Levels of Qualification

3.1. Classification. Six levels of qualification are defined in terms of skills and knowledge required in a given method or methods to perform specified NDE activities.

3.2. NDE Level III. An NDE Level III shall have the skills and knowledge to establish techniques; to interpret codes, standards, and specifications; designate the particular technique to be used; and to verify the adequacy of procedures. The NDE Level III shall also have general familiarity with the NDE methods covered in Appendix A of this Procedure. The NDE Level III shall be capable of conducting or directing the training of NDE personnel in the methods in which the NDE Level III is qualified. For the purposes of this Procedure, there may be multiple NDE Level III personnel in a given method; however, for the purposes of this document, the Level III responsible for this Procedure, in concert with management, will designate a single Level III for each method who is responsible for approving examinations, training, etc.

3.3. NDE Level II. An NDE Level II shall have the skills and knowledge to set up and standardize equipment, to conduct tests, and to interpret, evaluate, and document results in accordance with the procedures approved by a NDE Level III. The NDE Level II shall be thoroughly familiar with the scope and limitations of the method(s) to which he or she is certified and should be capable of directing the work of trainees and NDE Level I personnel. The NDE Level II shall be able to organize and report nondestructive test results.

3.4. NDE Level II Limited. An NDE Level II Limited shall have the skills and knowledge to set up and standardize equipment, to conduct tests, and to interpret, evaluate, and document results in accordance with procedures approved by the NDE Level III in the techniques listed in Appendix B. The NDE Level II Limited shall be thoroughly familiar with the scope and limitations of the technique to which certified and should be capable of directing the work of trainees and NDE Level I personnel. The NDE Level II Limited shall be able to organize and report nondestructive test results.

3.5. NDE Level I. An NDE Level I shall have the skills and knowledge to properly perform specific standardizations of instruments, specific tests, and with prior written approval of the NDE Level III, perform specific interpretations and evaluations for acceptance or rejection and document the results, in accordance with specified approved procedures. The NDE Level I shall be able to follow approved nondestructive test procedures and shall receive the necessary guidance or supervision from a certified NDE Level II Limited, NDE Level II, or NDE Level III.

3.6. Trainee. A person who is not yet certified to any level shall be considered a trainee. Trainees shall work with a certified person, under the direction of an NDE Level II Limited,

NDE Level II, or NDE Level III, and shall not independently conduct any tests or write a report of test results.

- 3.7. NDE Instructor. An NDE Instructor shall have the skills and knowledge to plan, organize, and present classroom, laboratory, demonstration, and/or on the job NDE instruction, training, and/or education programs in accordance with course outlines approved by an NDE Level III. LANL personnel who are providing instruction may have additional requirements imposed regarding course preparation and/or classroom presentation.

4.0 Qualification Requirements

- 4.1. Training. Candidates for certification as NDE Level I or NDE Level II shall complete sufficient organized training to become familiar with the principles of the method and the practices of the applicable test technique. This training shall be conducted in accordance with a course outlined approved by an NDE Level III.
 - 4.1.1. NDE Level I and NDE Level II. The minimum number of training hours required for NDE Level I and NDE Level II candidates is described in Appendices A and B. The course shall include the topics contained in ANSI/ASNT CP-105 for the appropriate NDE method, plus such additional topics as deemed necessary by the SME NDE Level III. The sequence, content, amount of time spent, and depth of coverage for each topic shall be approved by the SME NDE Level III. Training programs shall include sufficient examinations to demonstrate that the necessary information has been comprehended.
 - 4.1.1.1. The organized training may include instructor-led training, personalized instruction, virtual instructor-led training, computer-based training, or web-based training. Computer-based training and web-based training shall track hours and content of training with student examinations in accordance with 4.1.2.
 - 4.1.2. Credit. To receive credit for training hours, the individual shall pass a final examination covering the topics contained in the program.
 - 4.1.3. Presentation of Training. All training shall be presented by an NDE Instructor. However, the NDE Instructor may use personnel with specialized expertise (for example, metallurgists, welding engineers, etc.) who are not qualified in accordance with this Procedure to assist in the presentation of specific information. The SME NDE Level III shall in all cases be responsible for the content of the completed course.
 - 4.1.4. NDE Level III. Training requirements for NDE Level III individuals are satisfied via possession of a current ASNT Level III certificate in the specific NDE method.
 - 4.2. Experience. Candidates for certification shall have acquired the practical experience to ensure that they can perform the duties of the level in which certification is being sought.
 - 4.2.1. NDE Level I and NDE Level II. The minimum number of hours of experience required for NDE Level I and NDE Level II candidates is described in Appendix A.
 - 4.2.2. NDE Level II Limited. The minimum number of hours of experience required for NDE Level II Limited candidates is described in Appendix B.
 - 4.2.3. NDE Level III. Experience requirements for NDE Level III are satisfied as a result of holding a current ASNT Level III certificate in the specific NDE method.
 - 4.3. Previous Training and Experience
 - 4.3.1. NDE Level I and Level II. A candidate's previous experience and training may be accepted by the SME NDE Level III if documented and verified. Any claimed

training or experience which is not documented and cannot be verified shall be considered invalid.

- 4.3.2. NDE Level III. LANL shall verify and document the current validity of a candidate's ASNT Level III certificate.

4.4. NDE Instructor

- 4.4.1. Criteria. The NDE Instructor shall meet at least one of the following criteria. LANL may flow down or impose additional requirements for Instructors.

- 4.4.1.1. Possess a current ASNT Level III certificate in the NDE method to be taught; or

- 4.4.1.2. Have academic credentials at least equivalent to a BS in engineering, physical science, or technology, and possess adequate knowledge in the NDE method to be taught; or

- 4.4.1.3. Be a graduate of a two-year school of science, engineering, or NDE and have five or more years of experience as an NDE Level II, or equivalent, in the NDE method to be taught; or

- 4.4.1.4. Have 10 or more years of NDE experience as an NDE Level II, or equivalent, in the NDE method to be taught.

- 4.4.2. Designation. The NDE instructor shall be designated by a SME NDE Level III in the Method/Technique. The designation shall become part of the individual's qualification records.

4.5. Outside Services

- 4.5.1. At LANL's option, an outside organization may be engaged to perform the duties of an NDE Level III. For organizations other than ASNT, LANL shall be responsible for evaluating the organization to ensure the services are in accordance with this Procedure and CP-189, and so documented. An NDE Level III of the engaged outside organization shall be responsible for the services provided. Depending upon flow-down requirements or the governing specification, additional requirements may be imposed upon the outside organization by LANL.

5.0 Qualification and Certification

- 5.1. Certification Procedure. LANL has developed this Procedure to detail the program used for qualification and certification of NDE personnel in accordance with CP-189.
- 5.2. Certification Program Requirements. This Procedure details the minimum requirements for certifying personnel in each NDE method used, and the qualification levels required. This Procedure satisfies the requirements of CP-189. The minimum requirements are addressed in this Procedure as follows:
 - 5.2.1. Personnel duties and responsibilities. NDE Level I, NDE Level II, and NDE Level III duties and responsibilities are as described herein.
 - 5.2.2. Training requirements are in accordance with CP-189 and CP-105, with additional requirements as determined for the specific tasks by the Level III in that specific method.
 - 5.2.3. Experience requirements meet the minimum requirements of CP-189.
 - 5.2.4. The examination requirements meet the minimum requirements of CP-189.
 - 5.2.5. Records and documentation meet the requirements of CP-189, maintained by the LANL Building Official or designee.

5.2.6. Recertification requirements are outlined herein and meet the requirements of CP-189.

5.3. Approval. This Procedure is approved by the Responsible Level III, designated by the LANL Engineering Services Division Director. This designation shall be documented.

6.0 Examinations

6.1. Vision

6.1.1. Near Distance. Prior to certification, NDE personnel shall be examined to ensure that they have natural or corrected near-distance acuity in at least one eye such that they are capable of reading the Jaeger Number 1 Test Chart, or the below-listed equivalent, at a distance of not less than 12 inches. Eye drops to enhance visual acuity are not permitted.

6.1.1.1. Snellen 20/22

6.1.1.2. Times Roman 3.5-point text

6.1.1.3. OrthoRater #9

6.1.1.4. Titmus (SAB-1, SAL-1, or SAR-1) #10

6.1.2. Color Vision. NDE personnel for all methods shall demonstrate the ability to differentiate between the colors used in the method.

6.1.2.1. Color vision shall be verified using the Ishihara or HRR Pseudoisochromatic Plates; alternately, for methods such as PT or MT, demonstration of performance during a practical examination can be accepted as adequate differentiation.

6.1.2.2. For RT, including digital methods, the ability of distinguishing shades of grey or contrast shall be assessed by the Level III responsible for RT per this Procedure.

6.1.3. Frequency. Vision examinations shall be administered annually, except that color vision shall be assessed at each recertification (color vision may, if desired by the Level III, be performed annually). Vision examinations expire on the one-year anniversary of the date of the last examination. Vision examinations are required prior to return to NDE activities if the individual has had eye surgery.

6.1.4. Administration. Vision examinations shall be administered per a written procedure. Examinations may be administered by a Level III, or by medical personnel at LANL Occupational Medicine. If specifically approved by the Level III responsible for this Procedure, the examination may be performed using the LANL procedure by a licensed ophthalmologist or optometrist.

6.2. NDE Level III Examinations

6.2.1. Initial Requirement. Prior to LANL certification examinations, the candidate shall hold a current ASNT Level III certificate with a currently valid endorsement for each method for which LANL certification is sought. Verification using the ASNT website is acceptable documentation, by using a printed copy of the information displayed by ASNT.

6.2.2. Specific Examination (for each method). LANL shall administer a written examination consisting of at least 30 questions related to the comprehension of the NDE-related requirements of specifications or standards used by LANL. Copies of the applicable specifications or standards shall be available as reference material during the examination.

6.2.3. Practical Examination. The candidate shall prepare an NDE procedure appropriate to LANL’s needs; however, if documented experience demonstrates that the candidate has previously prepared acceptable NDE procedures in the method using specifications, codes, and standards that are applicable to LANL, a written practical examination (preparation of a procedure) is not required. If experience is substituted for the written practical, LANL shall document the pertinent practical experience of the NDE Level III candidate.

6.2.3.1. If the NDE Level III will be required to perform tests or evaluate test results, the practical examination shall include the same demonstrations of the candidate’s ability to perform the required activity(ies) as required for a Level II in the same method/technique.

6.3. NDE Level I and NDE Level II Examinations

6.3.1. General. A general examination shall be approved by the SME NDE Level III. Administration of the examination shall be in accordance with paragraph 6.6 of this Procedure and shall be closed book. Reference material, such as charts, formulas, tables, and graphs may be provided by the NDE Level III responsible for the examination. Examination questions shall represent the body of knowledge contained in CP-105, applicable to each method and NDE level. The minimum number of questions required for each method and level is listed in Table 1 of this Procedure.

6.3.1.1. Questions used in general examinations for NDE Level I and NDE Level II individuals shall be similar in type and difficulty as those published by ASNT. Those questions published by ASNT shall not be used verbatim but shall be used as a guide in question development.

6.3.1.2. Questions for general examinations shall be multiple-choice. Essay-type questions are not permitted. Questions shall consist of a stem and four possible answers. Answers such as “both a and b”, “all the above”, “none of the above”, and similar are discouraged.

6.3.2. Specific. A specific examination shall be approved by the SME NDE Level III. Administration of the examination shall be in accordance with Paragraph 6.6 of this Procedure. The SME NDE Level III responsible for the examination shall determine whether appropriate procedures, specifications, or code sections will be provided (under normal circumstances, these documents will be provided). The examination shall address various examples of equipment, procedures, and test techniques that the candidate may use in performance of assigned duties.

6.3.2.1. The minimum number of questions required for each method and level is listed in Table 1 of this Procedure.

6.3.2.2. Table 1 describes the minimum number of questions. If, in the judgment of the NDE Level III, the knowledge of the essential information required to perform the assigned duties cannot be assessed using only the minimum number of questions, additional questions may be included in the examination.

Table 1: Minimum Number of Examination Questions

Method	General		Specific	
	Level I	Level II	Level I	Level II
Electromagnetic Testing				
Alternating Current Field Measurement	40	40	20	20
Eddy Current	40	40	20	20
Remote Field Measurement	30	30	20	20
Leak Testing				
Bubble Test	20	20	15	15
Absolute Pressure Leak Test (Pressure Test)	20	20	15	15
Halogen Diode Leak Test	20	20	15	15
Mass Spectrometer Leak Test	20	20	20	40
Magnetic Particle Testing	40	40	20	20
Penetrant Testing	40	40	20	20
Radiographic Testing				
Radiography Testing (Film Radiography)	40	40	20	20
Radiographic Film Interpretation – Non-Radiographer		40		20
Radiographic Film Interpretation – Radiographer (Certified Level II)		20		15
Computed Radiography Testing	40	40	20	20
Computed Tomography Testing	40	40	20	20
Digital Radiography Testing	40	40	20	20
Ultrasonic Testing	40	40	20	20
Time of Flight Diffraction		40		30
Phased Array		40		30
Full Matrix Capture		40		30
Ultrasonic Digital Thickness Measurement (Numeric Output Only)		20		10
Ultrasonic Straight Beam (A-Scan) Measurement		30		15
Visual Testing	40	40	20	20

6.3.3. Practical. A practical examination shall be approved by an SME NDE Level III. Administration shall be in accordance with paragraph 6.6 of this Procedure. The practical examination shall consist of the following:

6.3.3.1. NDE Level I. The candidate shall demonstrate proficiency using the applicable nondestructive test method to examine at least one test sample for each technique to be used in the candidate’s job and by documenting the results of the test. The test samples shall be representative of the items that the candidate will encounter in performing the job function.

6.3.3.2. NDE Level II. The candidate shall demonstrate proficiency by performing the applicable nondestructive test method in examining at least one test sample for each technique and a minimum of two test samples per method, and interpreting, evaluating, and documenting the results of the examination. The test samples shall be representative of the items that the candidate will encounter in performing the job function.

6.3.3.3. Test samples may be purchased from the manufacturer of test samples or props; samples of product retained that contain indications, either natural or induced, and evaluated by the Level III; production or experimental product that has been previously examined and evaluated by the Level III and documented.

6.4. Administration and Grading

6.4.1. Responsibilities

6.4.1.1. NDE Level I and Level II Examinations. An NDE Level III shall be responsible for the development, administration, and grading of examinations for NDE Level I and Level II personnel for those methods in which the NDE Level III has a valid ASNT Level III certificate. For the practical examination, the individual administering the examination shall be an NDE Level III in the respective test method.

6.4.1.2. NDE Level III Examinations. LANL shall be responsible to have an individual with a current ASNT Level III certificate (either a LANL employee or outside agency), in the respective method, develop, administer, and grade NDE specific and practical examinations.

6.4.1.3. The administration of the general and specific examinations, and grading of multiple-choice examinations, may be delegated at the discretion of the Level III responsible for the examination. Such delegation shall be documented by the Level III responsible for the examination.

6.4.2. LANL Examinations. For each LANL (employer)-administered certification examination, each candidate shall achieve a grade of at least 70% on the general and specific, at least 80% on the practical, and have an unweighted average of 80% or more to be eligible for certification.

6.4.3. Practical Examinations.

6.4.3.1. For all practical examinations, all applicable discontinuities and/or conditions which the candidate is expected to find and/or evaluate must be specified and documented by the NDE Level III prior to administration of the examination.

6.4.3.2. A requirement for passing the NDE Level I, II, or III practical examination shall be the detection of discontinuities and/or conditions previously specified by the NDE Level III responsible for preparing that examination.

6.4.4. NDE Level I Practical Examinations. The NDE Level III shall use a written checklist in administering and grading NDE Level I practical examinations. This checklist shall address at least the following items:

6.4.4.1. Proficiency in use of the equipment and technique

6.4.4.2. Proper adherence to the:

6.4.4.2.1. Procedure

6.4.4.2.2. Sequence

6.4.4.2.3. Standardization

6.4.4.2.4. Materials

6.4.4.3. Satisfactory detection and location of discontinuities

- 6.4.4.4. Proper documentation of the activities and test results
- 6.4.5. NDE Level II Practical Examinations. The NDE Level III shall use a written checklist in administering and grading NDE Level II practical examinations. The checklist shall address at least the following items:
 - 6.4.5.1. Proficiency in use of the equipment and technique
 - 6.4.5.2. Proper adherence to
 - 6.4.5.2.1. Procedure
 - 6.4.5.2.2. Sequence
 - 6.4.5.2.3. Standardization
 - 6.4.5.2.4. Materials
 - 6.4.5.3. Satisfactory detection and location of discontinuities
 - 6.4.5.4. Proper extent of examination
 - 6.4.5.5. Accuracy and completeness of interpretations and evaluations
 - 6.4.5.6. Documentation of the activities and test results
- 6.4.6. NDE Level II Film Interpretation Limited Certification. The practical examination shall consist of a sufficient number of radiographs to demonstrate satisfactory performance to the satisfaction of the Level III. No less than 20 radiographic images shall be utilized for this demonstration.
- 6.4.7. NDE Level II Phased Array and Time of Flight Diffraction. Flawed samples used for practical examinations should be representative of the components and/or configurations that the candidates would be testing under this endorsement and approved by the NDE Level III.
- 6.4.8. NDE Level III Practical Examinations. Person administering Level III practical examinations shall use a written checklist. The checklist shall address items relating to the technical and practical adequacy of the NDE procedure(s) prepared by the candidate. When applicable to the candidate's job responsibilities, the checklist shall also address the items listed in 6.4.5.
- 6.5. Reexamination. Candidates who fail to attain the required passing grade must receive additional documented training or wait 30 days for reexamination. The training shall address the deficiencies which caused failure. A candidate shall not be reexamined using the same examination or specimen previously failed, or both.
- 6.6. Administration of Examinations. In no case shall an examination be prepared or administered by the individual being examined or by a subordinate.
- 6.7. Administration of NDE Level III Examinations. The LANL representative who administers the NDE Level III specific and practical examinations shall possess a current ASNT Level III certification in the method for which the examination is administered and shall be knowledgeable and familiar with the specifications, and items inspected at LANL.

7.0 Expiration, Suspension, Revocation, and Reinstatement of Employer Certification

- 7.1. Expiration. Individual certifications shall expire:
 - 7.1.1. When employment with LANL is terminated, or

- 7.1.2. Five years from the day of the first examination for each method for NDE Level I, Level II, and Level III individuals.
- 7.2. Suspension. LANL will suspend an individual's certification if:
 - 7.2.1. The vision examination interval exceeds one year. Certification is reinstated concurrently with passing the vision reexamination; or,
 - 7.2.2. The individual has not performed duties in the method(s) for which certified during any consecutive 12-month period; or
 - 7.2.3. The individual's performance is determined to be deficient in the required method or technique for specific, documented reasons; or
 - 7.2.4. For NDE Level III personnel, when the ASNT Level III certificate has not been renewed.
- 7.3. Revocation: LANL will revoke an individual's certification when:
 - 7.3.1. The individual has not performed the duties in the method(s) for which certified during any 24-month period, or
 - 7.3.2. For NDE Level III personnel, the ASNT Level III certificate has been revoked, or
 - 7.3.3. An individual's conduct is deemed by the employer to be unethical or incompetent.
- 7.4. Reinstatement.
 - 7.4.1. Suspended Certifications. Reinstatement of suspended certifications for NDE Level I and NDE Level II shall be determined by the Responsible Level III. Reinstatement of suspended NDE Level III certifications shall be determined by LANL, except that the requirement for ASNT Level III certification shall not be waived.
 - 7.4.2. Expired or Revoked Certifications. Certifications which have expired or have been revoked may only be reinstated by complying with Section 6.0, with 7.4.3, or 8.1.2. Reinstatement per 7.4.3 is only allowed when the employee's certification expired due to termination of employment at LANL. Such reinstatement of certification shall only be for the time period remaining on the original certification.
 - 7.4.3. Expired for Termination of Employment. An NDE Level I, Level II, or Level III whose certification has expired due to termination of employment with LANL may be reinstated to the former NDE Level, without a new examination, providing all the following conditions are met:
 - 7.4.3.1. LANL has maintained all personnel certification records required in Section 9.
 - 7.4.3.2. The employee certification did not expire during termination.
 - 7.4.3.3. The employee is being reinstated within 12 months of termination.

8.0 Employer Recertification

- 8.1. NDE Level I and NDE Level II. NDE Level I and NDE Level II personnel shall be recertified by reexamination in accordance with Section 6.0 or by meeting the requirements of 8.1.1, when applicable.
 - 8.1.1. Every five years, the individual may be recertified if the individual has at least 350 hours of documented experience using the applicable method over the five-year certification interval and has successfully passed a specific examination which complies with 6.3.2.

- 8.1.2. At least every ten years, the individual must repeat the general, specific, and practical examinations described in Section 6.0.
- 8.2. NDE Level III. NDE Level III personnel shall be recertified every five years by verifying that the individual's ASNT Level III certificate is current in each method for which recertification is sought.

9.0 Records

- 9.1. Responsibility for Documentation. LANL shall document certifications in accordance with this standard. Documentation shall be maintained by LANL, administered by the Division Director, Engineering Services, as delegated to the Welding Program Administrator.
- 9.2. Contents of Documentation. Documentation shall include at least a training record, certification record, a record of previous experience (if applicable), current LANL examinations, and a vision examination record.
 - 9.2.1. Certification record. The certification record shall include at least the following information.
 - 9.2.1.1. Level of certification and NDE method, including the test technique covered;
 - 9.2.1.2. Results of current LANL examinations that the individual has taken;
 - 9.2.1.3. For Level III personnel, a copy of the individual's ASNT Level III certificate;
 - 9.2.1.4. Dates of certification, expiration, suspension, revocation, and reinstatement; and
 - 9.2.1.5. The signature, printed name, and title of both the designated NDE Level III that verified the qualifications of the candidate for certification and the signature of the LANL Welding Program Administrator (representative of the Division Director, Engineering Services).
 - 9.2.2. NDE Training Record. A documented history of the employee's training shall be maintained that identifies:
 - 9.2.2.1. NDE training received by the individual,
 - 9.2.2.2. Organization providing NDE training,
 - 9.2.2.3. Dates of NDE training,
 - 9.2.2.4. Hours of NDE training,
 - 9.2.2.5. Evidence of satisfactory completion, and
 - 9.2.2.6. Instructor's name.
 - 9.2.3. NDE Experience Record. A record which identifies the individual's experience performing various nondestructive tests shall be maintained for purposes of verifying initial certification experience and continuing experience.
 - 9.2.4. Record of Previous Experience. Documented evidence of the individual's previous NDE training and experience shall be maintained if previous training and experience are used to satisfy any part of the requirements of this Procedure.
 - 9.2.5. Visual Examination Records. Current records of vision examinations required by 6.1 shall be maintained.

- 9.2.6. Certification Statements. Certification statements issued by LANL shall meet the following requirements:
 - 9.2.6.1. The ASNT logo shall not be used on the certification statement.
 - 9.2.6.2. The certification statement shall reference this Procedure and shall make direct reference to LANL.
 - 9.2.6.3. The certificate shall include reference to “CP-189” and the four-digit edition year of CP-189.
 - 9.2.6.4. The full legal name of the certified individual shall be indicated in Latin script.
 - 9.2.6.5. The level of certification and any techniques or limitations shall be noted on the certification statement.
 - 9.2.6.6. The signature of the certifying authority and the Responsible Level III shall be included on the face of the document.
 - 9.2.6.7. The full legal name of the certifying authority and the NDE Level III shall be indicated in Latin print on the face of the certification statement.
 - 9.2.6.8. The certification statement shall indicate both the certification date and the expiration date of the certification.

10.0 References

- A. ANSI/ASNT CP-189, *ASNT Standard for Qualification and Certification of Nondestructive Testing Personnel*, 2020 Edition.
- B. ANSI/ASNT CP-105, *ASNT Standard Topical Outlines for Qualification of Nondestructive Testing Personnel*, 2020 Edition.
- C. ASTM E1316, *Standard Terminology for Nondestructive Examinations*, current edition.
- D. ASME Boiler and Pressure Vessel Code, Section V, Article 1, Mandatory Appendix IV, 2021.
- E. ASNT ACCP Level II Certification Program, asntcertification.org.

11.0 Revision Record

Rev	Date	Description	POC	RM
0	10/01/09	Initial issue based on 2006 editions of ASNT documents.	Kelly Bingham, <i>ES-DE</i>	Larry Goen, <i>CENG</i>
1	02/06/13	Paragraph 7.B.1 changed “five” to “three” to meet SNT-TC-1A.	David Bingham, <i>ES-DE</i>	Larry Goen, <i>ES-DO</i>
2	11/21/13	Added AWS-CWI & AWS-SCWI = VT Level II; added VT hours of training to Table I, and VT examination questions to Table II.	David Bingham, <i>ES-EPD</i>	Larry Goen, <i>ES-DO</i>
3	12/15/16	Para 7.B.1 changed from “three” to “five” and updated Table I, both to meet current (2016) ASNT SNT-TC-1A recommendations; replaced P330-8 with P330-5; admin changes.	David Bingham, <i>ES-EPD</i>	Larry Goen, <i>ES-DO</i>
4	01/24/17	Fully aligned with ASNT SNT-TC-1A-2016. Defined Responsible Level III, SME Level III, and Reverted	David Bingham, <i>ES-EPD</i>	Larry Goen, <i>ES-DO</i>

		Certification (not ASNT terms). Created a path for a Level III to revert to Level II under certain circumstances.		
5	11/01/18	Aligned with 2018 addendum to ASNT SNT-TC-1A- 2016 (7.0.H.3), clarified requirements to obtain experience (5.0.E).	David Bingham, <i>ES-EPD</i>	Larry Goen, <i>ES-DO</i>
6	12/10/19	Changed vision expiry to last day of the expiration month per SNT-TC-1A 8.2.3 (6.0.A); removed direct reciprocity with AWS for CWI/Visual; SNT-TC-1A only recognizes ACCP which does have reciprocity with ASNT (6.0.C–E).	David Bingham, <i>ES-EPD</i>	Jim Streit, <i>ES-DO</i>
7	4/11/22	Added need to meet additional requirements such as coming from ASME B&PVC and Phased Array Ultrasonic Testing (PAUT) and UT Thickness Level II Limited requirements.	David Bingham, <i>ES-EPD</i>	Jason Apperson, <i>ES-DO</i>
8	12/19/22	Completely revised to adopt ASNT CP-189-2020 in lieu of SNT-TC-1A-2016/18.	David Harvey, <i>ES-FE</i>	Michael Richardson, <i>ES-DO</i>
9	06/14/2023	Correction of omission in Table of Contents (Appendix B). Clarified that supplemental staff reporting to LANL (e.g., Triad) supervisors may be qualified and certified under this Procedure in the same manner as employees. Prohibited the use of pharmaceuticals (eye drops) when undergoing visual acuity examination; added that visual acuity examination is required after eye surgery.	David Harvey <i>ES-FE</i>	Michael Richardson, <i>ES-DO</i>

12.0 Appendices

- Appendix A. Initial Training and Experience Requirements for NDE Level I and Level II (see App B for L-II Limited)
- Appendix B. Initial Training and Experience Requirements for NDE Level II Limited Certification
- Appendix C. Training of NDE Personnel
- Appendix D. Procedures for Writing Examinations
- Appendix E. Certificate of Qualification Requirements
- Appendix F. NDE Qualification Verification
- Appendix G. Example Template of Practical Examination Checklist and Scoresheet

Appendix A: Initial Training and Experience Requirements for NDE Level I and Level II (see App B for L-II Limited)

Evaluation Method	Level	Technique	Required Training (Hours)	Required Experience	
				Minimum Hours in Method or Technique	Total Hours in NDE
Electromagnetic Testing (ET)	I	ECT	40	210	400
	II		40	630	1200
Leak Testing (LT)	I	BT	2	3	15
	II		4	35	80
	I	PCT	24	105	200
	II		16	280	530
	I	HDLT	12	105	200
	II		8	280	530
I	MSLT	40	280	530	
II		24	420	800	
Magnetic Particle Testing (MT)	I		12	70	130
	II		8	210	400
Penetrant Testing (PT)	I		4	70	130
	II		8	140	270
Radiographic Testing (RT)	I	RT	40	210	400
	II		40	630	1200
	I	CR	40	210	400
	II		40	630	1200
	I	CT	40	210	400
	II		40	630	1200
	I	DR	40	210	400
	II		40	630	1200
Ultrasonic Testing (UT)	I		40	210	400
	II		40	630	1200
	II	TOFD	40	320	n/a
	II	PA	80	320	n/a
	II	FMC	80	320	n/a
Visual Testing	I		8	70	130
	II		16	140	270

- | | |
|-----------------------------------|---------------------------------------|
| BT = Bubble Testing | HDLT = Halogen Diode Leak Testing |
| CR = Computed Radiography Testing | MSLT = Mass Spectrometer Leak Testing |
| CT = Computed Tomography Testing | PA = Phased Array |
| DR = Digital Radiography Testing | PCT = Pressure Change Testing |
| ECT = Eddy Current Testing | RT = Radiographic Testing |
| FMC = Full Matrix Capture | TOFD = Time of Flight Diffraction |

NOTES:

- A: Experience shall be based on the actual hours worked in the specific method.
- B: A person may be qualified directly to NDE Level II with no time as a certified NDE Level I, providing the required training and experience consists of the sum of the hours required for NDE Level I and NDE Level II.
- C: The required minimum experience shall be documented by method and by hour with supervisor or NDE Level III approval.
- D: While fulfilling total NDE experience requirement, experience may be gained in more than one (1) method.
- E: To qualify in a single method, the hours in the Total Hours column must be satisfied.
- F: If an individual is certified in one ET technique, the minimum experience to qualify in another technique at the same level or to the next level may be reduced by up to 50% by the NDE Level III responsible for the method

(the default reduction is 50%, though additional hours may be required and documented by the NDE Level III responsible for the method).

- G: If an individual is currently certified in a Radiographic technique and a full-course format was used to meet the initial qualifications in that technique, the minimum training hours to qualify in another technique at the same level shall be 24 hours (of which at least 16 hours shall be in equipment familiarization). If an individual is certified in a technique, the minimum additional experience to qualify for another technique at the same level may be reduced up to 50% by the NDE Level III responsible for the method (the default reduction is 50%, though additional hours may be required and documented by the NDE Level III responsible for the method).
- H: FMC, TOFD, and PAUT require Ultrasonic Level II certification as a prerequisite.
- I: Independent of the RT, CR, CT, DR, or NR training required for NDE Level I or Level II certification, a trainee is required to receive radiation safety training as required by LANL.
- J: In addition to the training requirements in this table for Full Matrix Capture, Time of Flight Diffraction, and Phased Array, supplemental specific hardware and software training is required for automated or semiautomated technique applications. Specific equipment and software training may be included in the classroom session (preferred), but in the case of hardware and software system changes (e.g., to a different manufacturer as opposed to a software or hardware update, unless the NDE Level III determines the update to be a significant change). Qualification of the individual on the new hardware and/or software shall be demonstrated via a practical examination using the new system.

**Appendix B. Initial Training and Experience Requirements
for NDE LEVEL II Limited Certification**

Method	Evaluation Technique	Technician's Starting Point	Required Training (Hours)	Required Experience Minimum Hours in Technique^{A,B}
Radiographic Testing	Film Interpretation	Non-Radiographer	40	220 ^C
	Film Interpretation	RT Level I	24	220 ^C
	CR Image Interpretation	Non-Radiographer	40	220 ^C
	CR Image Interpretation	CR Level I	24	220 ^C
	DR Image Interpretation	Non-Radiographer	40	220 ^C
	DR Image Interpretation	DR Level I	24	220 ^C
	CT Image Interpretation	Non-Radiographer	40	220 ^C
	CT Image Interpretation	CT Level I	24	220 ^C
Ultrasonic Testing	Ultrasonic Digital Thickness Measurement (Numeric Output Only)	Trainee	8	40
	Ultrasonic Straight Beam (A-Scan) Thickness Measurement	Trainee	24	175

NOTES:

- A: Experience shall be based upon the actual hours worked in the specific method.
- B: The required minimum experience shall be documented by method and by hour with supervisor or NDE Level III approval.
- C: While fulfilling total NDE experience requirement, experience may be gained in more than one method, however the minimum hours must be met for each Technique.

Appendix C. Training of NDE Personnel

1. All training programs for qualification of NDE personnel shall be conducted in accordance with an outline.
2. ANSI/ASNT CP-105-2020 provides topical outlines for qualification training of NDE personnel. These outlines are considered the minimum training course content for qualification to the various Levels of NDE.
3. Deviation from CP-105 is permitted, if approved by the Responsible Level III and the SME Level III.
4. All training provided at LANL or by LANL personnel for purposes of training per this Procedure shall have an outline prepared prior to commencement of the training session.
5. As stated in paragraph 7.4, it is the responsibility of the Responsible Level III and the SME Level III to ensure that training to be offered meets the requirements of this Procedure. The Responsible Level III shall post a listing of Approved Training Providers.
6. It is the responsibility of the line management of a candidate for training to verify with the Responsible Level III or SME Level III that the training provider meets the requirements of this Procedure.

Appendix D. Procedures for Writing Examinations

This appendix provides guidance for creation of examinations for Level I, Level II, and Level III qualification exams.

D.1 Written Examinations – Basic Format

Questions for written examinations shall take the form of multiple-choice questions. The questions shall consist of the 'stem' and for possible answers. There shall be only one correct answer, so there will be three 'distractors.' For example:

Q1. Stem

- A. Distractor (wrong answer)
- B. Correct Answer
- C. Distractor
- D. Distractor

Distractors, to the extent practicable, should be plausible answers. The correct answer shall be unambiguous.

There shall be no "True or False" questions, or questions such as "Both A and B", "All of the above", or "None of the above".

D.2 General Examinations

General examination questions are intended to address the general theory and practice of the method/technique for which the candidate is being examined.

Supplemental materials such as graphs and figures, and a listing of formulae, shall be attached as deemed appropriate by the Level III.

D.3 Specific Examinations

Specific examinations are intended to ascertain the understanding of the procedures used at LANL and are not intended to address general method/technique concepts.

- Level I examinations should concentrate on the operation of the instrumentation or equipment, the performance of the examination process, and reporting within the bounds of procedural instructions.
- Level II examinations should emphasize origin of defects, evaluation of discontinuities for acceptance or rejection, and advanced concepts of performance of the examination procedures.
- Level III examinations should emphasize the understanding and application of relevant Codes and Standards.

Codes, Standards, procedures, IWDs, charts and graphs shall be supplied with the Specific examination as appropriate for each Level.

D.4 Practical Examinations

Practical examinations are required for all Levels of Certification and must be performed on test props/samples or production materials. In all cases, all indications present shall have been evaluated by the Level III prior to the examination being administered.

It is acceptable to have test props with no discontinuities, but there must be sufficient test props or grading units that the minimum required number of flawed samples are examined.

Practical examination test prop/sample items or sets used shall contain "critical flaws", where failure to detect and properly categorize is direct cause for failure.

All practical examinations shall be scored using a 10-point (minimum) checklist, with appropriate scores for the items evaluated.

D.5 Review of Examinations

The examinations shall be reviewed with the Candidate, pass or fail.

Missed questions on written examinations shall be reviewed with the examinee in detail.

Practical examinations cannot be discussed in detail, due to the need to keep the nature of the test prop/sample confidential. General discussion of the examination is encouraged, but detail must be avoided.


Appendix E. Certificate of Qualification Requirements

The certificate for qualified and certified personnel shall contain the following information:

- A.4.1 "Los Alamos National Laboratory"
- A.4.2 This Procedure's Document Number and Revision
- A.4.3 "ANSI/ASNT CP-189" and the year of the revision used in the Procedure
- A.4.4 Full legal name of the certified individual
- A.4.5 Level of Certification, NDE Method(s) and/or Technique(s), and any applicable restrictions or limitations
- A.4.6 Full legal name of the SME Level III and Certifying Authority. ASNT Level III Certificate numbers as applicable.
- A.4.7 Dates of Certification and Expiration

Although all the above information is electronically recorded in the Welding Program Database, the signed certificate shall be uploaded with the individual's other records.

Sample:

<h1 style="margin: 0;">NDE Certification</h1>					
This is to certify that the individual named below has successfully completed the experience, training, and examination requirements in accordance with the provision of ANSI/ASNT CP-189 2020, as given in Los Alamos National Laboratory NDE Procedure WIGN 06-02 Attachment 3, Revision 9.					
<i>Insert Name Here</i>					
<i>is hereby certified to perform the following Nondestructive Examination methods and techniques</i>					
NDE Method	NDE Level	NDE Techniques	Restrictions (if any)	Date of Certification	Date of Certification Expiration

Printed name here
 Responsible Level III

Printed name here
 Certifying Authority

Appendix F. NDE Qualification Verification

Following is a sample form for verification of qualification for both initial and recertification. Instructions follow the sample.

NDE Qualification Verification

NOTE: Section 1 is required for all initial NDE Method and/or Technique Certifications, Section 2 is required for recertification or certification to a higher level. This information is required prior to designation of an individual as a Trainee. All Trainees MUST have current eye examinations on record to accrue experience hours. Refer to detailed instructions.

Initial Certification

Recertification

Name		Z#	
Location		Mail Stop	
Phone		Email	

Section 1 – Initial Certification

Educational background	
Highest level attained	
School name	
School city, state	
Technical school, college, or university relevant course emphasis (e.g., NDE, General Science, Engineering, etc.)	

Name _____ **Z#** _____

NDE Experience (most recent first)

Position 1	From		To	
Employer Name				
Employer Address and Phone				
Certifications Held				

Verified by Level III Initial/Date:

Remarks:

Position 2	From		To	
Employer Name				
Employer Address and Phone				
Certifications Held				

Verified by Level III Initial/Date:

Remarks:

Name _____ **Z#** _____

Position 3	From		To	
Employer Name				
Employer Address and Phone				
Certifications Held				

Verified by Level III Initial/Date:

Remarks:

Position 4	From		To	
Employer Name				
Employer Address and Phone				
Certifications Held				

Verified by Level III Initial/Date:

Remarks:

The above information is true and correct to the best of my knowledge:

Printed Name

_____ *Candidate's Full Name*

Signature/Date

Name _____ **Z#** _____

Section 2 – Documentation

Training		
Objective Evidence Attached	<input type="checkbox"/> Yes	<input type="checkbox"/> No
If "No" explain the basis of acceptance		
Experience		
Objective Evidence Attached	<input type="checkbox"/> Yes	<input type="checkbox"/> No
If "No" explain the basis of acceptance		
Certification Statement(s) from previous employer		
Objective Evidence Attached	<input type="checkbox"/> Yes	<input type="checkbox"/> No
If "No" explain the basis of acceptance		

Method		Level	
---------------	--	--------------	--

Examination	Score %
General	
Specific	
Practical	
Average	

Passes Fails

Continued Satisfactory Performance Verified

Date of Technical Performance Evaluation _____

Required Training Completed and Documented

Required Experience Hours Completed and Documented

Vision Examination Current

Verified: Level III _____ **Date** _____

Accepted: Responsible Level III _____ **Date** _____

Instructions for NDE Qualification Verification Record

This document provides the Level III and the Responsible Level III with a record of verification of qualification of a candidate for certification or recertification in NDE. This document becomes a record when complete and is to be stored electronically with the individual's documentation of qualification.

1. Check the appropriate box, "Initial Certification" or "Recertification."
2. Complete the identifying information required.
3. Section 1 is for initial certification. If the individual has already been certified at LANL, this information is not required if verified to be on file.
4. For new-hires, or those claiming experience from other employers, the Level III must verify the prior certification, whether or not the individual can present documents such as certificates or logbook entries.
5. The candidate for initial certification must sign and date this information and certify it to be true and correct.
6. Section 2 is for all personnel.
7. Is objective evidence of training attached? Objective evidence consists of certificates of completion or a letter (on Company letterhead) from the training provider stating the dates of training and that the candidate did in fact attend and successfully complete the course. If objective evidence is not attached or on file, explain the basis for acceptance.
8. Is objective evidence of experience (hands-on experience or OJT) attached? Objective evidence consists of reports, logbook entries, etc. A memorandum from a supervisor stating that an individual has XXX hours of experience is not acceptable as objective evidence. If objective evidence is not attached or on file, explain the basis for acceptance.
9. For individuals claiming NDE experience from previous employment, objective evidence is required and verification of the validity of that documentation must be obtained by the Level III. If not, explain the basis for acceptance.
10. The score sheet must be completed for each Method and/or Technique. Continued Satisfactory Performance, Required Training, Experience Hours, and a Current Vision Examination must be verified prior to certifying a candidate. For initial certification in a Method and/or Technique, a Technical Performance Evaluation is not required.
11. The LANL NDE Level III performing the verification of qualification signs this document. If there is not another Level III to perform the verification, the Responsible Level III may sign both "verified" and "accepted."
12. The LANL Responsible NDE Level III signs as a "checker."

Appendix G. Example Template of Practical Examination Checklist and Scoresheet

This is an example of the checklist and scoresheet for the Level I, Level II, and Level III Practical Examinations. The precise checklist will be developed by the SME Level III for the Method and/or Technique.

Name _____ Z# _____
 Date _____ NTD Method _____
 Procedure _____
 Specimen(s) Description _____
 Time Allotted: _____ Time Started: _____ Time Completed: _____

No.	Checkpoint	Points	Score	Remarks
1	Knowledge of NDT Procedure <ul style="list-style-type: none"> • Familiarity, Utilization, Consideration of Limitations. • Adherence to details of procedure 	10		Record the presence or absence of actions that support the score.
2	Equipment and Material <ul style="list-style-type: none"> • As stated in Procedure • Proficiency in all required facets of use • Proficiency in technique and standardization 	5		Record the presence or absence of actions that support the score.
3	Test Specimen Care and Custody <ul style="list-style-type: none"> • Appropriate surface preparation • Maintenance and control • Appropriate post-cleaning 	5		Record the presence or absence of actions that support the score.
4	Operations – Performance of the Procedure <ul style="list-style-type: none"> • Calibration verification • Adherence to procedure and sequence of steps • Utilize appropriate testing media • Inspect designated areas of interest 	10		Record the presence or absence of actions that support the score.
5	Detection of Indications ¹ <ul style="list-style-type: none"> • Adherence to procedure • Accuracy (detects critical defects)² • Finding detectable indications 	15		Record the presence or absence of actions that support the score.
6	Interpretation of Indications <ul style="list-style-type: none"> • Adherence to procedure • Accuracy in evaluation of critical defects • Interpreting relevant v nonrelevant/false 	15		Record the presence or absence of actions that support the score.
7	Evaluation of Indications ³ <ul style="list-style-type: none"> • Adherence to procedure • Accuracy in evaluation of critical defects • Interpreting relevant indications 	20 ⁴		Record the presence or absence of actions that support the score.
8	Documentation and Records <ul style="list-style-type: none"> • Accurate documentation and data processing • Appropriate control of records • Compliance with procedure routing 	10		Record the presence or absence of actions that support the score.
9	General Health and Safety – Policy and Procedure Compliance <ul style="list-style-type: none"> • Understanding of H&S requirements • Compliance with site-specific requirements 	5		Record the presence or absence of actions that support the score.
10	General Observable Conduct <ul style="list-style-type: none"> • Knowledge of method • Proficient application • Proficient in determination of results • Professional manner 	5		Record the presence or absence of actions that support the score.

¹ The candidate shall detect all discontinuities and conditions specified by the Level III in the exam instructions.

² Critical defects are those which, if missed, result in failure regardless of score.

³ No more than 10% false calls ("false positives") allowed.

⁴ 80% of the designated defects correctly classified (16 points required to pass)

Level III Name: _____ Level III Signature: _____ Date: _____