

ASNT Standard

2011
Edition

For Qualification and
Certification of
Nondestructive
Testing
Personnel



The American Society for
Nondestructive Testing, Inc.

**American National Standard
ASNT Standard for Qualification and
Certification of Nondestructive Testing Personnel**

The American Society for Nondestructive Testing, Inc.

Approved June 1, 2011

American National Standards Institute

Abstract

This standard applies to personnel whose specific tasks or jobs require appropriate knowledge of the technical principles underlying nondestructive testing (NDT) methods for which they have responsibilities within the scope of their employment. These specific tasks or jobs include, but are not limited to, performing, specifying, reviewing, monitoring, supervising, and evaluating NDT work.

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first printing 08/11

Errata, if available for this printing, may be obtained from ASNT's web site, www.asnt.org.

ISBN-13: 978-1-57117-218-1

Printed in the United States of America

Published by: The American Society for Nondestructive Testing, Inc.
1711 Arlingate Lane
Columbus, OH 43228-0518
www.asnt.org

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ASNT Mission Statement:

ASNT exists to create a safer world by promoting the profession and technologies of nondestructive testing.

Foreword

(Not a part of American National Standard CP-189-2011.)

An essential element in the effectiveness of nondestructive testing (NDT) is the qualification of the personnel who are responsible for and who perform nondestructive testing. Formal training and actual experience are important and necessary elements in acquiring the skills necessary to effectively perform nondestructive tests.

The American Society for Nondestructive Testing, Inc. (ASNT) has, therefore, undertaken the preparation and publication of this standard which specifies the procedures, essential factors, and minimum requirements for qualifying and certifying NDT personnel.

The *ASNT Standard for Qualification and Certification of Nondestructive Testing Personnel* (Document No. ASNT-CP-189) was initially processed and approved for submittal to the American National Standards Institute (ANSI) by the ASNT Standards Writing Committee. This revision was processed by the ASNT Standards Development Committee. Committee approval of the standard does not necessarily imply that all committee members voted for its approval. At the time it approved this standard, the Standards Development Committee had the following members:

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Appendices C and D are not part of this American National Standard.

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ASNT Standard for Qualification and Certification of Nondestructive Testing Personnel

1.0 Scope

- 1.1 This standard establishes the minimum requirements for the qualification and certification of nondestructive testing (NDT) and predictive maintenance (PdM) personnel.
- 1.2 This standard details the minimum training, education, and experience requirements for NDT personnel and provides criteria for documenting qualifications and certification.
- 1.3 This standard requires the employer to establish a procedure for the certification of NDT personnel.
- 1.4 This standard requires that the employer incorporate any unique or additional requirements in the certification procedure.

2.0 Definitions

- 2.1 **Purpose.** These definitions are intended to clarify the meanings of terms used in this standard, as they apply to this standard, and only to this standard. No broader application of these definitions is implied. For specific definitions related to NDT see 10.2.

- 2.1.1 **Certification.** Written testimony that an individual has met the applicable requirements of this standard.
- 2.1.2 **Certifying Authority.** The person or persons properly designated in the certification procedure to sign certifications on behalf of the employer.
- 2.1.3 **Closed-book Examination.** An examination administered without access to reference material except that supplied with or in the examination.
- 2.1.4 **Documented.** The condition of being in written form.
- 2.1.5 **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.

- 2.1.6 **Employer.** The corporate, private, or public entity that employs personnel for wages or salary.

- 2.1.7 **Examination.** A formal, controlled, documented test of knowledge or skills conducted in accordance with a procedure.

- 2.1.8 **Experience.** Actual performance of an NDT 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 defined by the employer's certification procedure.

- 2.1.9 **Grading Unit.** A qualification specimen can be divided into sections called grading units, which do not have to be equal length or be equally spaced. Grading units are unflawed or flawed and the percentage of flawed/unflawed grading units required shall be approved by the NDT Level III.

- 2.1.10 **Formal Training.** An organized and documented program of activities designed to impart the knowledge and skills required to be qualified to this standard. Formal training may be a mix of classroom, practical and programmed self-instruction as approved by the responsible NDT Level III.

- 2.1.11 **General Examination.** A written examination addressing the basic principles of the applicable NDT method.

- 2.1.12 **Method.** One of the disciplines of NDT; for example, ultrasonic testing, within which various test techniques may exist.

- 2.1.13 **NDT Instructor.** An individual qualified and designated in accordance with this standard to train or educate NDT personnel. (See also Section 3.)

- 2.1.14 **Outside Organization.** An agency or individual who provides NDT Level III services. See also 4.5.

- 2.1.15 **Practical Examination.** An examination used to demonstrate an individual's ability in conducting the NDT methods that will be performed for the employer. For practical examinations, questions

and answers need not necessarily be written, but observations and results must be documented.

2.1.16 Predictive Maintenance (PdM).

Evaluates the condition of equipment (typically in service) by performing periodic or continuous (online) equipment condition monitoring. Condition monitoring evaluates leading performance indicators of each item in the PdM program inventory. These leading indicators may be an increase in electrical resistance or increase vibration from rotating equipment. PdM uses principles of statistical process control to determine at what point in the future maintenance activities will be appropriate while focusing on leading indicators that may signify deterioration in performance which can lead to equipment failure. The ultimate goal of PdM is to perform maintenance at a scheduled point in time when the maintenance activity is most cost-effective and before the equipment loses optimum performance or fails.

2.1.17 Procedure. A detailed, written instruction for conducting a nondestructive test or certifying personnel. Method procedures shall be approved by the NDT Level III certified in the applicable method.

2.1.18 Qualification. The education, skills, training, knowledge, and experience required for personnel to properly perform to a specified NDT Level.

2.1.19 Specific Examination. A written examination to determine an individual's understanding of procedures, codes, standards, specifications, and equipment or instrumentation for an NDT method used by the employer.

2.1.20 Test Technique. A category within an NDT method; for example, immersion ultrasonic testing.

2.2 NDT Levels

2.2.1 NDT Level III. An individual possessing a currently valid ASNT NDT or PdM Level III certificate (see 10.1.3) or ACCP Professional Level III certificate (see 10.1.4) and certified in accordance

with this standard. (See also Section 3.) Reference to ASNT Level III throughout this standard implies the individual holds one of these certificates.

Reference to an ASNT Level III certificate throughout this standard refers to one of the above certificates.

2.2.2 NDT Level I, NDT Level II. An individual certified in accordance with this standard. (See also Section 3.)

3.0 Levels of Qualification

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

3.2 NDT Level III. An NDT 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 individual shall also have general familiarity with the NDT methods covered in Appendix A of this standard. The NDT Level III shall be capable of conducting or directing the training and examining of NDT personnel in the methods for which the NDT Level III is qualified.

3.3 NDT Level II. An NDT Level II shall have the skills and knowledge to set up and calibrate equipment, to conduct tests, and to interpret, evaluate, and document results in accordance with procedures approved by an NDT Level III. The NDT Level II shall be thoroughly familiar with the scope and limitations of the method to which certified and should be capable of directing the work of trainees and NDT Level I personnel. The NDT Level II shall be able to organize and report nondestructive test results.

3.4 NDT Level II Limited. An NDT Level II Limited shall have the skills and knowledge to set up and calibrate equipment, to conduct tests, and to interpret, evaluate, and document results in accordance with procedures approved by an NDT Level III in the techniques listed in Appendix B. The NDT 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 NDT Level I personnel. The NDT Level II Limited shall be able to organize and report nondestructive test results.

- 3.5 NDT Level I.** An NDT Level I shall have the skills and knowledge to properly perform specific calibrations, specific tests, and with prior written approval of the NDT Level III, perform specific interpretations and evaluations for acceptance or rejection and document the results, in accordance with specific approved procedures. The NDT Level I shall be able to follow approved nondestructive testing procedures and shall receive the necessary guidance or supervision from a certified NDT Level II or NDT Level III individual.
- 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 NDT Level II or NDT Level III and shall not independently conduct any tests or write a report of test results.
- 3.7 NDT Instructor.** An NDT instructor shall have the skills and knowledge to plan, organize, and present classroom, laboratory, demonstration, and/or on-the-job NDT instruction, training, and/or education programs in accordance with course outlines approved by an NDT Level III.
- 4.0 Qualification Requirements**
- 4.1 Training.** Candidates for certification as NDT Level I or 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 outline approved by an NDT Level III.
- 4.1.1 NDT Level I and Level II.** The minimum number of training hours required for NDT Level I and 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 NDT method, plus such additional topics as deemed necessary by the NDT Level III. The sequence, content, amount of time spent, and depth of coverage for each topic shall be approved by the NDT 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, self-study, 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 that program.
- 4.1.3 Presentation of Training.** All training shall be presented by an NDT instructor. However, the NDT instructor may use personnel with specialized expertise (for example, metallurgists, welding engineers, etc.) who are not qualified in accordance with this standard to assist in presentation of specific information. The NDT Level III shall in all cases be responsible for the content of the completed course.
- 4.1.4 NDT Level III.** Training requirements for NDT Level III are satisfied as a result of holding a current ASNT Level III certificate in the specific NDT method.
- 4.2 Experience.** Candidates for certification shall have acquired the practical experience to ensure they are capable of performing the duties of the level in which certification is being sought.
- 4.2.1 NDT Level I and Level II.** The minimum number of hours of experience required for NDT Level I and Level II candidates is described in Appendix A.
- 4.2.2 NDT Level II Limited.** The minimum number of hours of experience required for NDT Level II Limited candidates is described in Appendix B.
- 4.2.3 NDT Level III.** Experience requirements for NDT Level III are satisfied as a result of holding a current ASNT Level III certificate in the specific NDT method.
- 4.3 Previous Training and Experience.**
- 4.3.1 NDT Level I and Level II.** A candidate's previous training and experience may be accepted by the employer's NDT 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 NDT Level III.** The employer shall verify and document the current validity of a candidate's ASNT Level III certificate.

4.4 NDT Instructor.

- 4.4.1 Criteria.** An NDT instructor shall meet at least one of the following criteria:

4.4.1.1 possess a current ASNT Level III certificate in the NDT method to be taught;

4.4.1.2 have academic credentials at least equivalent to a B.S. in engineering, physical science, or technology, and possess adequate knowledge in the NDT method to be taught; or

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

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

- 4.4.2 Designation.** The NDT instructor shall be designated by an NDT Level III individual. The designation shall become part of the individual's qualification records.

- 4.5 Outside Services.** At the option of the employer, an outside organization may be engaged to perform the duties of an NDT Level III. For organizations other than ASNT, the employer shall be responsible for evaluating the organization to ensure the services are in accordance with the employer's certification procedure and this standard, and so documented. An NDT Level III of the engaged outside organization shall be responsible for the services provided.

5.0 Qualification and Certification

- 5.1 Procedure.** The employer shall develop and maintain a procedure detailing the program that

will be used for qualification and certification of NDT personnel in accordance with this standard.

- 5.2 Procedure Requirements.** The procedure shall describe the minimum requirements for certifying personnel in each NDT method and the levels of qualification desired. The procedure shall satisfy the requirements of this standard. The procedure shall include, as a minimum, the following:

5.2.1 personnel duties and responsibilities;

5.2.2 training requirements;

5.2.3 experience requirements;

5.2.4 examination requirements;

5.2.5 records and documentation requirements, including control, responsibility, and retention period; and

5.2.6 recertification requirements.

- 5.3 Approval.** The employer's certification procedure shall be approved by an NDT Level III designated by the employer.

6.0 Examinations

6.1 Vision.

- 6.1.1 Near Distance*.** Prior to certification, NDT personnel shall be examined to ensure that they have natural or corrected near-distance acuity in at least one eye such that each individual is capable of reading Jaeger Number I test chart or equivalent at a distance of not less than 12 in.

* Equivalent eye examination results for Jaeger J-1 visual acuity are: Snellen 20/22; Times Roman 3.5 point text; OrthoRater #9; or Titmus (SAB-1, SAL-1 or SAR-1) #10.

- 6.1.2 Color Vision.** NDT personnel for all methods shall demonstrate the ability to differentiate among the colors used in the method.

- 6.1.3 Frequency.** Vision examinations shall be administered annually, except that color differentiation examinations need be repeated only at each recertification

and shall expire on the last day of the month of expiration.

- 6.1.4 Administration.** Vision examinations shall be administered in accordance with a procedure, and by personnel, approved by an NDT Level III designated by the employer.

6.2 NDT Level III Examinations.

- 6.2.1 Initial Requirement.** Prior to the employer's certification examinations, the candidate shall hold a current ASNT Level III certificate with a currently valid endorsement for each method for which employer certification is sought.

- 6.2.2 Specific Examination** (for each method). The employer shall administer a written examination consisting of at least 30 questions relating to the comprehension of the NDT-related requirements of specifications or standards used by the employer. 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 NDT procedure appropriate to the employer's needs; however, if documented experience demonstrates that the candidate has previously prepared acceptable NDT procedures in the method using the specifications, codes, and standards that are applicable to that employer, a written practical examination (for example, preparation of a procedure) is not required. If experience is substituted for the written practical examination, the employer shall document the pertinent practical experience of the NDT Level III candidate.

- 6.2.3.1** If the NDT 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 in 6.3.3.2.

6.3 NDT Level I and Level II Examinations.

- 6.3.1 General.** A general examination shall be approved by an NDT Level III. Administration of the examination shall be in accordance with paragraph 6.4 of this standard and shall be closed book. Reference material, such as charts, formulas, tables, and graphs may be provided by the NDT Level III. Questions shall be developed which represent a cross section of the body of knowledge, contained in *ANSI/ASNT CP-105* applicable to each method and NDT level. The minimum number of questions required for each method and level is listed in Table I. Questions used in general examinations for NDT Level I and Level II personnel shall be similar in type and difficulty to those published by ASNT.

- 6.3.2 Specific.** A specific examination shall be approved by an NDT Level III. Administration shall be in accordance with paragraph 6.4 of this standard. The NDT Level III shall determine whether appropriate procedures, specifications, standards, or code sections will be provided. The examination shall address various examples of equipment, procedures, and test techniques that the candidate may use in the performance of assigned duties. The minimum number of questions required for each method and level is listed in Table I.

- 6.3.3 Practical.** A practical examination shall be approved by an NDT Level III. Administration shall be in accordance with paragraph 6.4 of this standard. The practical examination shall consist of the following:

- 6.3.3.1 NDT 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 products that the candidate will encounter in performing the job functions.

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

For purposes of the practical examinations described in paragraph 6.3.3 the techniques required to be demonstrated are in Appendix A. Where no techniques are listed in Appendix A the employer must determine the techniques required for their particular needs in that method and specify those techniques required for certification in their qualification and certification procedure.

6.4 Administration and Grading.

6.4.1 Responsibilities.

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

6.4.1.2 NDT Level III Examinations. The employer shall be responsible for having an individual possessing a current ASNT Level III certificate develop, administer, and grade NDT Level III specific and practical examinations.

6.4.1.3 The administration and grading of multiple-choice questions may be delegated by the NDT Level III, if so documented.

6.4.2 Employer Examinations. For each employer-administered certification examination, each candidate shall achieve a grade of at least 70% and an average grade of 80% to be eligible for certification. All certification examinations shall have equal weight in determining the average grade.

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 NDT Level III prior to administration of the examination.

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

6.4.4 NDT Level I Practical Examinations. The NDT Level III shall use a written checklist in administering and grading NDT Level I practical examinations. This checklist shall address at least the following items: proficiency in use of equipment and technique, proper adherence to procedure, test sequence, calibrations, materials, documentation and extent of examinations. If the NDT Level I will interpret or evaluate results, the checklist shall include these item(s).

6.4.5 NDT Level II Practical Examinations. The NDT Level III shall use a written checklist in administering and grading NDT Level II practical examinations. The checklist shall address at least the following items: proficiency in use of techniques and equipment; proper adherence to procedure, test sequence, calibration, and materials; satisfactory detection and location of discontinuities; proper extent of examination; and the accuracy and completeness of interpretations, evaluations, and documentation of the activities and test results.

6.4.5.1 Film Interpretation Limited Certification. The Practical examination should consist of review and grading of at least 20 images.

6.4.5.2 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 NDT Level III.

6.4.6 NDT Level III Practical Examinations. Persons administering NDT Level III practical examinations shall use a written checklist. The checklist shall address items relating to the technical and practical adequacy of the NDT 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 at least 30 days for reexamination. This training shall address the deficiencies which caused failure. A candidate shall not be reexamined using the 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 NDT Level III Examinations. The employer's representative who administers the NDT Level III Specific and Practical examinations shall possess a current ASNT Level III certificate in the method for which the examination is administered and shall be knowledgeable and familiar with the standards, specifications, and products used or made by the employer.

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

7.1 Expiration. Individual certifications shall expire:

7.1.1 when employment with the employer is terminated;

7.1.2 on the last day of the month of expiration at the end of five years for NDT Level I and NDT Level II individuals;

7.1.3 for NDT Level III individuals, when the ASNT Level III certificate has expired.

7.2 Suspension. The employer shall 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 the 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 NDT Level III personnel, when the ASNT Level III certificate has not been renewed.

7.3 Revocation. The employer shall 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 consecutive 24-month period; or

7.3.2 for NDT 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 or have been unethical or incompetent.

7.4 Reinstatement.

7.4.1 Suspended Certifications.

Reinstatement of suspended certifications for NDT Level I or NDT Level II shall be determined by the NDT Level III. Reinstatement of suspended NDT Level III certifications shall be determined by the employer, except that the requirement for ASNT Level III certification may 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, 7.4.3, or 8.1. Recertification per 7.4.3 is only allowed when the employee's certification expired due to termination of employment. Such reinstatement of certification shall only be for the period of time remaining on the original certification.

7.4.3 Expired for Termination of Employment. An NDT Level I, Level II or Level III whose certification has expired due to termination of employment may be reinstated to the former NDT level, without a new examination, providing all of the following conditions are met:

7.4.3.1 The employer has maintained the 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 NDT Level I and NDT Level II. NDT Level I and NDT Level II personnel shall be recertified by re-examination in accordance with Section 6 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 two months (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 6.2.2.

8.1.2 At least every 10 years, the individual must repeat the examinations in Section 6.

8.2 NDT Level III. NDT Level III personnel shall be recertified by the employer 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. The employer shall document certifications in accordance with this standard.

9.2 Contents of Documentation. The employer's certification documentation shall include at least a training record, certification record, an experience record, a record of previous experience (if applicable), employee's current 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 NDT method, including the test technique covered;

9.2.1.2 results of current employer examinations that the individual has taken;

9.2.1.3 for Level III personnel, a copy of the candidate'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 the employer's certifying authority.

9.2.2 NDT Training Record. A documented history of the employee's training shall be maintained which identifies: NDT training received by the individual, the organization providing the training, dates of the training, hours of training, evidence of satisfactory completion, and the instructor's name.

9.2.3 NDT 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 NDT training and experience shall be maintained if previous training and experience are used to

satisfy any part of the requirements of this standard.

- 9.2.5 Visual Examination Records.** Current records of vision examinations required by 6.1 shall be maintained.

10.0 Referenced Publications

- 10.1** The following documents contain provisions which, through reference in this text, constitute provisions of this standard. Copies may be obtained from the American Society for Nondestructive Testing, Inc., 1711 Arlingate Lane, PO Box 28518, Columbus, OH 43228-0518, USA.

- 10.1.1** *Recommended Practice No. SNT-TC-1A, Personnel Qualification and Certification in Nondestructive Testing*, latest edition.

- 10.1.2** *ANSI/ASNT CP-105, ASNT Standard Topical Outlines for Qualification of Nondestructive Testing Personnel*, latest edition.

- 10.1.3** ASNT application package for certification of nondestructive testing personnel.

- 10.1.4** *ASNT Central Certification Program, ASNT Document CP-1*, latest edition.

- 10.2** The following document contains specific NDT terms which, though referenced in this text, constitute provisions of this standard. Copies may be obtained from ASTM International, 100 Barr Harbor Drive, PO Box C700, West Conshohocken, PA 19428-2959, USA.

- 10.2.1** *ASTM E 1316 (latest edition) - Standard Terminology for Nondestructive Examinations, Section A - Common NDT Terms.*

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Table 1: Minimum Number of Examination Questions

Method	General		Specific	
	Level I	Level II	Level I	Level II
Acoustic Emission Testing	40	40	20	20
Electromagnetic Testing:				
Alternating Current Field Measurement	40	40	20	20
Eddy Current	40	40	20	20
Remote Field Testing	30	30	20	20
Leak Testing:				
Bubble Test	20	20	15	15
Absolute Pressure Leak Test (Pressure Change)	20	20	15	15
Halogen Diode Leak Test	20	20	15	15
Mass Spectrometer Leak Test	20	20	20	40
Magnetic Flux Leakage	20	20	20	15
Magnetic Particle Testing	40	40	20	20
Neutron Radiography Testing	40	40	20	20
Penetrant Testing	40	40	20	20
Radiological:				
Radiography Testing	40	40	20	20
Radiographic Film Interpretation – Non-Radiographer		40		20
Radiographic Film Interpretation - Radiographer (Certified NDT Level I)		20		15
Computed Radiography Testing	40	40	20	20
Computed Tomography Testing	40	40	20	20
Digital Radiography Testing	40	40	20	20
Thermal/Infrared Testing	40	40	20	20
Ultrasonic Testing	40	40	20	20
Time of Flight Diffraction				30
Phased Array				30
Ultrasonic Digital Thickness Measurement (Numeric Output Only)		20		10
Ultrasonic Straight Beam (A-scan) Measurement		30		15
Vibration Analysis	40	40	20	60
Visual Testing	40	40	20	20

Appendix A: Initial Training and Experience Requirements for Level I and Level II

Evaluation Method	Level	Technique	Required Training (Hours)	Required Experience	
				Minimum Hours in Method	Total Hours in NDT
Acoustic Emission (AE)	I		40	210	400
	II		40	630	1200
Electromagnetic Testing (ET)	I	ACFMT	40	210	400
	II		40	630	1200
	I	ECT	40	210	400
	II		40	630	1200
	I	RFT	40	210	400
	II		40	630	1200
Leak Testing (LT)	I	BT	2	3	15
	II	BT	4	35	80
	I	PCT	24	105	200
	II	PCT	16	280	530
	I	HDLT	12	105	200
	II	HDLT	8	280	530
	I	MSLT	40	280	530
	II	MSLT	24	280	800
Magnetic Flux Leakage (MFL)	I		16	70	130
	II		12	210	400
Magnetic Particle Testing (MT)	I		12	70	130
	II		8	210	400
Neutron Radiographic Testing (NR)	I		28	420	800
	II		40	1680	2400
Penetrant Testing (PT)	I		4	70	130
	II		8	140	270
Radiological	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
Thermal/Infrared Testing (TIR)	I		32	210	400
	II		34	1260	1800
Ultrasonic Testing (UT)	I		40	210	400
	II		40	630	1200
	II	TOFD	40	160	n/a
	II	PA	80	160	n/a
Vibration Analysis (VA)	I		24	420	800
	II		72	1680	2400
Visual Testing (VT)	I		8	70	130
	II		16	140	270

ACFMT = Alternating Current Field Measurement Testing
 BT = Bubble Testing
 CR = Computed Radiography Testing
 CT = Computed Tomography Testing
 DR = Digital Radiography Testing
 ECT = Eddy Current Testing

HDLT = Halogen Diode Leak Testing
 MSLT = Mass Spectrometer Leak Testing
 PA = Phased Array
 PCT = Pressure Change Testing
 RFT = Remote Field Testing
 RT = Radiographic Testing
 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 NDT Level II with no time as a certified NDT Level I, providing the required training and experience consists of the sum of the hours required for NDT Level I and NDT Level II.

C: The required minimum experience shall be documented by method and by hour with supervisor or NDT Level III approval.

(Continued.)

- D: While fulfilling total NDT experience requirement, experience may be gained in more than one (1) method, however, the minimum hours must be met for each 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 ET technique at the same level or to the next level may be reduced by up to 50%.
- G: If an individual is currently certified in a Radiological 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 should be 24 hours (of which at least 16 hours should be equipment familiarization) as defined in the employer's written practice. If an individual is certified in a technique, the minimum additional experience to qualify for another technique at the same level should be 24 hours, as defined in the employer's written practice.
- H: Time of Flight Diffraction and Phased Array require completion of Level I and II Ultrasonic Testing training and experience as a prerequisite.

Appendix B: Initial Training and Experience Requirements for NDT Level II Limited Certifications

Evaluation Technique	Required Training (Hours)	Required Experience Minimum Hours in Method
Radiographic Film Interpretation – Non-Radiographer	40	220 ¹
Radiographic Film Interpretation - Radiographer (Certified NDT Level I)	24	220 ¹
Ultrasonic Digital Thickness Measurement (Numeric Output Only)	8	40
Ultrasonic Straight Beam (A-scan) Thickness Measurement	24	175

NOTES:

- A: Experience shall be based on the actual hours worked in the specific method.
- B: The required minimum experience shall be documented by method and by hour with supervisor or NDT Level III approval.
- C: While fulfilling total NDT experience requirement, experience may be gained in more than one (1) method, however, the minimum hours must be met for each method.
- 1 – Requires practical review of 1000 radiographs

Appendix C: Sample Certification Form

Note: The form below is an example and may be revised to meet the employer's requirements.

(COMPANY NAME)

NONDESTRUCTIVE TESTING PERSONNEL CERTIFICATION RECORD

Name:	I.D. Number:
Current Certification Status: ☐ Trainee ☐ Level I ☐ Limited ☐ Level II ☐ Level III	
Method:	Recertification Due Date:
Recertified by Continuing Satisfactory Experience: Date _____ By _____	

Education

HS or Equivalent: _____ Advanced: _____

Certificate(s) and/or Degree(s) Obtained/Date(s): _____

Verified: ☐ Yes ☐ No By: _____

NDT Training

Course	Date	Hours	Instructor

Experience

Employer	Method(s)	Dates (from/to)	Months or Hours

Qualification Examination Results

General	Specific	Practical	Composite Score	Date	Administered By

The above named employee has satisfactorily met the qualification requirements of the [INSERT COMPANY NAME] certification procedure in accordance with the 2011 edition of CP-189. Other details of qualification, if any, are maintained on file and are available for audit upon request.

Printed Name: _____ Title: _____

Signed: _____ Date: _____

Appendix D: Interpretation Policy

(Not a part of American National Standard ANSI/ASNT CP-189)

- D.1 Purpose.** It is the responsibility of the ASNT Standards Development Committee (SDC) to issue interpretations of standards it has developed where questions regarding the proper way to comply with such standards have arisen. This appendix establishes the procedures the ASNT SDC and those inquiring shall use to make such interpretations.
- D.2 Inquiries.** The following guidelines for preparing an inquiry will expedite consideration and response to the inquirer.
- D.2.1** Each inquiry should be limited to a single aspect of the standard or previous interpretation of the standard. Inquiries concerning multiple inquiries or unrelated subjects may be returned for further clarification.
 - D.2.2** The specific question to be answered by SDC should be distinctly set apart from the body of the letter and must be in condensed, precise question format, omitting superfluous background information and if possible, asked in such a manner that a "yes" or "no" (perhaps with a short explanation) would be an acceptable reply.
 - D.2.3** The inquiry should state the purpose of the question, which could be to obtain a clarification of the standard's mandates or the intent of the committee as it developed the standard.
 - D.2.4** The inquiry should contain the needed information for SDC's understanding of the question.
 - D.2.5** The inquiry should include references to the applicable paragraph(s) of the standard or previous interpretation of the standard.
 - D.2.6** Inquiries must be in writing and addressed to the Secretary of the Standards Development Committee at ASNT headquarters in Columbus, Ohio.

CP-189 Inquiry Form

(Not a part of American National Standard ANSI/ASNT CP-189.)

Name:	Date:
Address:	
Phone:	CP-189 Edition:
Email:	Paragraph(s):

State the *Purpose* of the Inquiry

☐ Revision of present requirement(s) ☐ New or additional requirement(s) ☐ Request for interpretation

(a) Proposed Revision(s), Addition(s) or Inquiry

(b) Statement of Need or Reply

(c) Background Information

Return completed form to:
Secretary, ASNT Standards Development Committee
1711 Arlingate Lane
Columbus, OH 43228-0518