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RECORD OF REVISIONS

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 Certification (not ASNT terms). Created a path for a Level III to revert to Level II under certain circumstances.	David Bingham, <i>ES-EPD</i>	Larry Goen, <i>ES-DO</i>
5	11/01/18	Aligned with new 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 since SNT-TC-1A recognizes only ACCP which does have reciprocity with ASNT (6.0.C-E).	David Bingham, <i>ES-EPD</i>	Jim Streit, <i>ES-DO</i>

Contact the Welding Standards POC for upkeep, interpretation, and variance issues.

WIGN 6-02 Att 3	<u>Welding POC and Committee</u>
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1.0 Scope

This Written Practice establishes the minimum requirements for education, training, experience, examination and certification of personnel responsible for conducting nondestructive tests and inspection related to welding at Los Alamos National Laboratory (LANL). It applies to all persons conducting nondestructive tests that are required to be certified to the provisions of *ASNT Recommended Practice No. SNT-TC-1A*.

The methods of nondestructive testing covered by this Written Practice are magnetic particle (MT), liquid penetrant (PT), radiography (RT), ultrasonic(UT), eddy current (ET), visual (VT), and leak testing (LT) as used in accordance with the applicable codes, standards, specifications and regulations referenced below.

2.0 References

A. General

1. ASNT's *Recommended Practice No. SNT-TC-1A, Personnel Qualification and Certification in Nondestructive Testing, 2016 and Addendum 1, Aug 2018*.
2. ASNT-CP-105, *Topical Outlines for Qualification of Nondestructive Testing Personnel*
3. LANL [P330-5](#), *Special Processes*
4. Applicable codes and standards as specified in the LANL Engineering Standards Manual (ESM) and Master Specifications or other specified programmatic requirements, and LANL [NDE procedures](#) (e.g., ITM-1306-NDE series).

3.0 Acronyms & Definitions

Acronym/ Term	Description
ACCP	ASNT Central Certification Program
ASNT	American Society for Nondestructive Testing
certification	written testimony of qualification
certifying authority	the person or persons properly designated in the written practice to sign certifications on behalf of LANL - specifically, the LANL Engineering Services – EPD Welding Program Administrator (WPA) or other Level III designated by the WPA
certifying agency	LANL ES-EPD is the organization certifying NDE personnel for this written practice, as specifically authorized by the LANL WPA or other Level III designated by the WPA.
closed book examination	an examination administered without access to reference material except for materials supplied with or in the examination.
comparable	being at an equivalent or similar level of NDE responsibility and difficulty as determined by the employer
documented	the condition of being in written form
employer	the corporate, private, or public entity which employs personnel for wages, salary, fees or other considerations; for this written practice, this may be LANL or any of its Subcontractors
ET	eddy current testing
ES-EPD	Engineering Services Division-Engineering Project Delivery Group

Acronym/ Term	Description
experience	work activities accomplished in a specific NDE method under the direction of qualified supervision, including the performance of the NDE method and related activities, but not including time spent in organized training programs
Instructor	An individual qualified and designated by the Responsible Level III, in accordance with this procedure, to provide classroom or laboratory training in NDT.
LT	leak testing
MT	magnetic particle testing
NDE	Non-destructive examinations/tests/inspections: An examination process conducted to detect internal or surface defects in materials using techniques that do not damage or destroy the item being tested. The most common types of NDE are ET, LT, MT, PT, RT, and UT methods. Depending on the applicable code, VT may also require control as an NDE process in accordance with this procedure. Throughout this document the term NDE applies equally to the NDE inspection methods used for material inspection, flaw detection or predictive maintenance (PdM) applications.
outside agency	a company or individual who provides Level III services and whose qualifications to provide these services have been reviewed and approved by the LANL WPA or other Level III designated by the WPA engaging the company or individual.
PT	liquid penetrant testing
qualification	Demonstrated skill and knowledge, along with documented training and experience required for personnel to properly perform the duties of a specific job.
Responsible Level III	The individual (who is a currently-certified Level III in at least one method) who, acting on the behalf of LANL, is responsible for the implementation of this Written Practice, and for the overall administration of the qualification and certification program.
Reverted Certification	A Level III certification may be reverted to Level II upon expiration or withdrawal of the Level III certification, if the individual meets the requirements of this Written Practice.
RT	radiographic testing
SME Level III	Level III personnel designated as Subject Matter Experts in designated NDT methods. There may be more than one SME Level III in a given test method or technique.
training	An organized program developed to impart the knowledge and skills necessary for qualification.
UT	ultrasonic testing
VT	visual examination
WPA	Welding Program Administrator (LANL)
written practice	This written procedure which details the requirements for qualification and certification of NDE personnel by LANL specifically.

4.0 Levels of Qualification

There are three basic levels of qualification: Level I, Level II, and Level III.

Individuals in the process of becoming qualified and/or certified to Level I are considered trainees. Trainees shall not independently conduct tests or interpret, evaluate, or report test results of any NDE. Trainees shall work under the direct guidance of certified individuals.

These levels may be further subdivided for specific situations where additional or limited levels of skill and responsibility are deemed necessary.

Guidance Note: For example, an individual may receive specific training to perform a specific task and be certified as a Level I or Level II (limited) or as a Level I or Level II (restricted). When such subdivisions are used, the limits or restrictions imposed for each specific certification shall be defined. If individuals are certified to a limited or restricted level, their certification records must reflect the specific conditions.

A. Qualification Requirements for Level I

An NDT Level I individual shall have sufficient technical knowledge and skills to be qualified to properly perform specific calibrations, specific NDT, and specific evaluations for acceptance or rejection determinations according to written inspections and to record results. The NDT Level I shall receive the necessary instruction and supervision from a certified NDT Level II or III individual.

B. Qualification Requirements for Level II

An NDT Level II individual shall have sufficient technical knowledge and skills to be qualified to set up and calibrate equipment and to interpret and evaluate results with respect to applicable codes, standards, and specifications. The NDT Level II shall be thoroughly familiar with the scope and the limitations of the methods for which qualified and shall exercise assigned responsibility for on-the-job training and guidance of trainees and Level I personnel. The NDT Level II should be able to organize and report the results of NDT tests.

C. Qualification Requirements for Level III

An NDT Level III shall have sufficient technical knowledge and skills to be capable of developing, qualifying, and approving procedures, establishing and approving techniques, interpreting codes, standards, specifications and procedures, and designating the particular NDT methods, techniques and procedures to be used. The Level III shall:

- be responsible for the NDT operations for which qualified and assigned and shall be capable of interpreting and evaluation results in terms of existing codes, standards, and specifications,
- have sufficient practical background in applicable materials, fabrication, and product technology to establish techniques and to assist in establishing acceptance criteria when none are otherwise available, and
- have general familiarity with other appropriate NDT methods, as demonstrated by an ASNT Basic examination or other means.

The NDT Level III, in the methods in which certified, shall have sufficient technical knowledge and skills to be capable of training and examining NDT Level I, II, and III personnel for certification in those methods.

5.0 Education, Training and Experience Requirements for Initial Qualification

- A.** Level I and II personnel initially certified to conduct NDE covered by this written practice shall have received at least the minimum classroom training hours shown in appended Table I, "Level I and Level II Initial Training and Experience Levels." The training program shall include sufficient examinations to ensure that the course material has been understood. Educational attainment, completed training and experience shall be documented on the "Application for Nondestructive Examination Certification – Form 1" of this document.

- B.** Educational hours received from college or university courses may be applied to the training hours if the content can be reviewed and approved by the Level III as at least equivalent in content when compared to the training outlines of CP-105 or those established by LANL.
- C.** Documented prior certification may be considered by LANL in determining evidence of qualification for comparable levels of certification.
- D.** When organized NDT training is provided by LANL or by purchasing outside training services, the Responsible Level III shall assure that the training program meet the requirements of this Written Practice.
- E.** On-the-job training shall include procedures, specifications, codes, and test techniques that will be encountered in the candidate's assignments. Experience shall be gained with appropriate supervision by a certified individual or Instructor.
- F.** The training program shall follow the ASNT-CP-105 *Topical Outlines for Qualification of Nondestructive Testing Personnel* for each test method as shown in SNT-TC-1A, 2016 edition or later, unless otherwise modified to meet specific needs.
- G.** Level III: Provided the Level III examination requirements are fulfilled, as set forth below, an individual can qualify as a Level III by satisfying one of the following three (3) criteria:
 - 1. Have a baccalaureate degree (or higher) in engineering or science, plus one additional year of experience beyond the Level II requirements in NDT in an assignment comparable to that of an NDT Level II in the applicable NDT method(s), or
 - 2. Have completed with passing grades at least two years of engineering or science study at a university, college, or technical school, plus two additional years of experience beyond the NDT Level II requirements in NDT in an assignment comparable to that of an NDT Level II in the applicable method(s), or
 - 3. Have four years of experience beyond the NDT Level II requirements in NDT in an assignment at least comparable to that of an NDT Level II in the applicable NDT method(s).

For Level III qualification, required experience shall consist of the sum of the times required for Level I and Level II. The required formal training shall also consist of the training required for Level I and Level II plus any additional formal training as defined in this written practice.

Guidance Note: *The above Level III requirements may be partially replaced by experience as a certified NDE Level II or by assignments at least comparable to NDE Level II when evaluated and authorized by the Responsible Level III.*

6.0 Examinations

A. Vision Examinations

All trainees, Level I, II, and III personnel shall be given an annual vision examination to assure natural or corrected near distance visual acuity such that the individual can read J1 letters on a standard Jaeger chart at a distance of not less than 12 in., or equivalent, in at least one eye. The ability to perceive an Ortho-Rater minimum of 8 or equivalent shall be considered an acceptable Jaeger equivalent.

Where differentiation of colors is critical to job performance, the capability to distinguish and differentiate contrast among colors or shades of gray used in the method shall be demonstrated.

Color discrimination, using the HRR Pseudoisochromatic Plates, shall be used for determination of color discrimination.

Vision examinations are to be administered by LANL Occupational Medicine personnel or as authorized by the LANL WPA or other Level III designated by the WPA. Reference WIGN 6-02 (*Para. 5.2*). Vision examinations, both for acuity and color discrimination, are required upon assignment as a trainee, and annually thereafter. Vision examinations expire on the last day of the month of certification.

If vision correction is necessary to pass the vision acuity examinations, that correction shall be worn during all NDT test/inspection activities.

B. Administration and Grading

1. All qualification examination questions shall be approved by the SME Level III and the Responsible Level III.
2. The Responsible NDT Level III shall be responsible for administration and grading of all examinations. Administration of written examinations may be delegated by the Level III, but administration of practical examinations shall be done by a Level III in the method. Grading of all examinations shall be done by the Responsible Level III or an SME Level in the method.
3. All NDT Level I, II, and III written examinations shall be closed book except that necessary data, such as graphs, tables, specifications, procedures, codes, etc., may be provided with or in the examination. Questions utilizing the reference information shall require an understanding of the material rather than just the ability to locate the appropriate answer.
4. For NDT Level I and II personnel, a composite grade shall be determined by a simple average of the General, Specific, and Practical examinations.
5. For Level III personnel, a composite grade shall be determined by a simple average of the Basic, Method, and Specific examinations.
6. The passing grade for examinations administered by LANL or under contract by an outside agency shall be a minimum of 70% on any single examination, and a minimum of 80% for the composite grade.
7. If the Level II General or the Level III Basic or Method examinations have been administered by ASNT where the grade is pass/fail, the passing grade shall be taken as 80% for that particular examination.
8. The Responsible Level III shall ensure that examination services procured from an outside organization meet the requirements of this Written Practice.
9. In no case shall an examination be administered by one's self or by a subordinate.

C. General Examination for Level I and Level II

Each Level I and II candidate shall be administered a General Examination which addresses the basic principles of the applicable method.

The general examination questions shall be approved by the Responsible Level III and the SME Level III. All examination questions shall be objective, either multiple-choice or True-False in

structure (the total number of True-False questions cannot exceed 10% of the total General examination questions presented to the examinee).

Candidates shall have access to questions only at the time of the examination.

A valid endorsement on an ASNT Central Certification Program (ACCP) Level I or Level II certificate fulfills the criteria for Level I or Level II General examinations for each applicable NDE method.

D. Specific Examination for Level I and Level II

Each Level I and II candidate shall be given a Specific examination addressing the equipment, operating procedures, test techniques and product forms that the personnel may encounter in their specific job assignments.

The general examination questions shall be approved by the Responsible Level III and the SME Level III. All examination questions shall be objective, multiple-choice in structure.

The examination shall be approved by the Responsible Level III and shall address the specifications, codes and acceptance criteria as listed in the references, to the extent they are in routine use and apply to the particular method(s) for which the candidate is being examined. The content of the specific examination shall be constructed to evaluate the ability of the candidate to effectively use the applicable specifications, codes, etc., to perform the required tests and/or evaluate the results to the degree necessitated by the anticipated qualification level.

ASNT ACCP Level I/II certifications do not fulfill the requirements of this document for a LANL Specific Examination, written and administered to address the specifics of the NDT method/technique as applied at LANL, with the exception of ACCP Level II certifications obtained in the Visual method based on a valid AWS CWI or SCWI.

E. Practical Examination for Level I and Level II

Level I: Each Level I candidate shall be given a Practical examination that demonstrates the candidate's proficiency to perform specific calibrations, specific tests using the equipment normally available on the job, and specific evaluations for acceptance or rejection determinations in accordance with detailed instructions and procedures as listed in the references. At least one flawed specimen shall be tested and the results analyzed by the examinee. Selection of the specimen(s) shall be made by the Responsible Level III and SME Level III and performance shall be measured based on at least 10 performance checkpoints selected to demonstrate understanding of test variables and procedural requirements.

Level II: Each Level II candidate shall be given a practical examination that demonstrates the candidate's ability to select and perform the applicable NDE technique, set up and perform calibrations using equipment normally available on the job, interpret and evaluate results in accordance with applicable specifications, codes, standards, etc., as listed in the references, and organize and report the results of the test. At least one flawed specimen shall be tested, and the results analyzed by the examinee. Selection of the specimens shall be made by the Responsible Level III and SME Level III, and performance shall be measured based on at least 10 performance checkpoints selected to demonstrate understanding of test variables and procedural requirements.

Test props shall not be made available to individuals for “practice” or other purposes, but shall be secured and under the control of the Responsible Level III.

ASNT ACCP Level I/II certifications do not fulfill the requirements of this document for a LANL Practical Examination, written and administered to address the specifics of the NDT method/technique as applied at LANL, with the exception of ACCP Level II certifications obtained in the Visual method based on a valid AWS CWI or SCWI.

F. Number of Questions for Level I and II Examinations

The minimum number of examination questions for each applicable method is given in Table II.

G. Level I and Level II Reexamination

Level I or Level II candidates failing to attain a composite score of 80 percent or higher, or a score of 70 percent or higher in any individual examination, shall be prohibited from being reexamined for 30 calendar days from the time of the failed examination. The 30-day period may be reduced based upon the completion of suitable additional training as determined and assigned by the Level III. Reexamination shall be conducted using an examination with no more than 25% of the questions being in common with the original examination.

If recertification is being completed based upon examination, failure to pass the entire examination battery shall cause revocation of the individual's certification.

H. Level III Qualification and Examination Requirements

Level III Qualification and Examination requirements are as given below.

1. Level III Examination Requirements

There shall be three separate examinations administered to Level III candidates:

- a. Basic Examination (required only once when more than one method examination is taken). The minimum number of questions shall be as follows:
 - i. Fifteen (15) questions related to understanding *SNT-TC-1A*, 2016 edition or later edition;
 - ii. Twenty (20) questions relating to applicable materials, fabrication, and product technology, and;
 - iii. Twenty (20) questions similar to those used for Level II examinations relating to applicable NDE methods.
- b. Method Examination (required for each different method). The minimum number of questions shall be as follows:
 - i. Thirty (30) questions relating to fundamentals and principles that are similar to published ASNT NDE Level III questions;
 - ii. Fifteen (15) questions relating to application and establishment of techniques that are similar to published ASNT NDE Level III questions, and;

- iii. Twenty (20) questions relating to capability for interpreting codes, standards and specifications relating to the method.
 - c. Specific Examination (required for each different method). The minimum number of questions shall be as follows:
 - i. Twenty (20) questions relating to specifications, equipment, techniques and procedures applicable to LANL applications and NDE methods used, and to the administration of this written practice.
- 2. Except as provided below in Paragraphs 6 and 7 of this subsection, a Level III candidate must pass a Basic, Method, and Specific Level III examination, to be administered and scored by the LANL WPA or other Level III designated by the WPA.
- 3. The results of each Level III candidate's three examinations (Basic, Method, and Specific) are to be combined into a composite score for which a score of 80 percent is the minimum required for qualification. The composite score is obtained by simple averaging of the scores achieved in each of the three examinations. In addition, the score for each of the individual examinations shall be 70 percent or higher.
- 4. The Level III Basic and Method Examinations are not required if the candidate has a current, valid ASNT NDE Level III certificate and endorsements in the method(s) for which certification is sought. A valid endorsement on an ACCP Professional Level III certificate fulfills the criteria for Level III Basic and Methods Examinations.
- 5. The Level III Specific Examination is not required if the candidate has a current valid ASNT NDE Level III certificate or a valid endorsement on an ACCP Professional Level III certificate in the method(s) for which certification is sought. However, the candidate must also produce documented evidence of experience, including the preparation of NDE procedures related to codes, standards, and/or specifications, and evidence of evaluation of test results in accordance with codes, standards and/or specifications.

I. Level III Reexamination

Level III candidates failing to attain a composite score of 80 percent or higher, or a score of 70 percent or higher in any individual examination, shall be prohibited from being reexamined for 30 calendar days from the time of the failed examination, unless evidence of having received suitable additional training is presented, as determined by the Responsible Level III, or the LANL WPA or other Level III designated by the WPA (in the event the Responsible Level III is the candidate).

7.0 Certification

- A.** Level III individuals employed at LANL are certified by the LANL Engineering Services Welding Program Administrator (WPA) upon satisfactory presentation of documentation by the Responsible Level III showing evidence of qualification in accordance with this written practice, in the method(s) for which certification is being sought.
- B.** When outside agencies supply Level III services, the responsibility for ensuring that these organizations or individuals satisfy the requirements of this written practice on a continuing basis remains with the designated staff employee official of LANL.
- C.** If outside agencies are used for examination of candidates for certification, the responsibility for certification shall be retained by LANL WPA.

- D.** The LANL WPA or other Level III designated by the WPA shall certify Level I and Level II individuals, upon their satisfactory completion of the training, experience and examinations required by this written practice as documented and presented by the Responsible Level III.
- E.** Personnel certification records shall be maintained in active files by LANL WPA during the employment of certified individuals. These records may be issued and tracked in an electronic database file. Following separation of employment, the affected personnel certification records shall be removed from active records, but maintained for at least 12 months following separation.

Active records shall include:

1. this written practice;
 2. names and certification records of NDE personnel, including:
 - a. applicable NDE experience, status of current and past level(s) of certification and methods in which certified, results of examinations (including vision), and training received, during employment at LANL;
 - b. documentary evidence of training and experience in NDE during prior employment, as applicable;
 - c. documentary evidence of educational attainment, as applicable;
 - d. documentary evidence of satisfactory qualifications when such qualifications are used in lieu of any specific examination(s);
 - e. copies of current examinations;
 - f. authorizations for designating and certifying Level III individual(s);
 - g. authorizations for certifying Level I and II individual(s); and
 - h. authorizations designating outside agencies providing Level III services.
- F.** For the case where a new employee who held an equivalent certification with a previous employer is a candidate for certification in any NDE method by LANL, such certification shall be granted:
1. Upon presentation to, and acceptance by, the Level III of documentation verifying the scope of the prior certification;
 2. Upon presentation of evidence that the candidate was working in the capacity to which certified, prior to separation, within six months of separation; and,
 3. Provided the candidate is being recertified within six months of separation.
 4. If a new employee does not meet the above requirements, additional training, experience and examination(s) shall be required as deemed appropriate by the Level III.
- G. Technical Performance Evaluation**
1. At the discretion of the Responsible Level III or SME Level III, any NDE personnel may be reexamined at any time during the stated period of certification in any or all of the examination parts and have their certifications extended or revoked. Supplemental training may also be required.

2. At least once every three years, the technical performance of Level I and II personnel shall be evaluated and documented by the appropriate Level III. This evaluation shall be conducted using the procedures for the practical examinations for Level I and Level II or production NDE of similar examinations. This evaluation should typically be performed in the third year of the five year certification cycle.

H. Recertification

1. Level I and Level II NDE personnel shall be recertified every five years based upon one of the following:
 - a. Evidence of continuing satisfactory technical performance as judged and documented by the Level III, or
 - b. By reexamination in any or all parts of the examinations for the applicable method(s) as deemed necessary by the applicable Level III.
2. Level III personnel shall be recertified every five years based upon one of the following:
 - a. Evidence of continuing satisfactory technical performance as judged by the Responsible Level III, or
 - b. By reexamination in any or all parts of the examinations for the applicable method(s) as deemed necessary by the Responsible Level III.
3. When new techniques are added to this written practice, Level III personnel utilizing that technique shall receive applicable training, take applicable examinations, and obtain the necessary experience such that the Level III meets the requirements of the new technique for full Level II certification prior to the next recertification date.

I. Reverted Certification, Level III to Level II

In special cases, an individual who holds or held a LANL Level III may revert to a Level II certification upon expiration or withdrawal of the LANL Level III. In order to be certified as a Level II upon expiration or withdrawal of the following conditions must be met:

1. The individual must have held a Level II certification prior to obtaining a Level III examination.
2. The individual must have documented, hands-on testing experience in the applicable method during the two years immediately preceding expiration or withdrawal of the Level III certification.
3. An evaluation of performance must be performed to attest to Level II competency. This may be a Practical Examination, or an Observation by the applicable Level III, or testimony of performance by immediate supervision as relates to 7.I.2, above.

8.0 Termination of Certification

A. Suspension, Revocation, and Termination

1. Certifications are suspended when
 - a. The vision examination has expired

- b. Individual does not perform in the method certified for at least 12 consecutive months, or for does not perform for a total of 3 months in any 24 month period.
 - c. The individual's performance is found to be deficient in any manner
2. Certification(s) shall be revoked if a certified individual fails to qualify for recertification.
3. Certification shall be terminated upon leaving employment at LANL.

B. Reinstatement

1. Suspended certifications may be reinstated upon correction of the condition causing the suspension. Except in the case of an expired vision examination, restoration of a suspended certification requires, at minimum, a Practical examination.
2. A Revoked certification may be restored by successful completion of the required examinations.
3. A previously certified individual whose certification has been terminated may be reinstated to the former Level without further examinations provided:
 - a. The certification records have been maintained in accordance with this written practice, and
 - b. The employee's certification did not expire during the period of termination, and
 - c. The employee's certification is reinstated within six months of certification termination.
 - d. If the individual is rehired after six months and before 24 months has elapsed since termination, the certification can be considered as having been suspended.

Table I
Level I and Level II Initial Training and Experience Levels

NDT METHOD	TECHNIQUE	INITIAL TRAINING HOURS		EXPERIENCE LEVEL (Hours)	
		NDT LEVEL	Training Hours	Min. Hours in Method or Technique	Total Hours in NDT
Eddy Current		I	40	210	400
		II	40	630	1200
Leak Testing	Bubble Testing	I	2	3	15
		II	4	35	80
	Pressure Change	I	24	105	200
		II	16	280	530
	Halogen Diode	I	12	105	200
		II	8	280	530
	Mass Spectrometer	I	40	280	530
		II	24	420	800
Liquid Penetrant		I	4	70	130
		II	8	140	270
Magnetic Particle		I	12	70	130
		II	8	210	400
Radiography		I	40	210	400
		II	40	630	1200
Ultrasonic		I	40	210	400
		II	40	630	1200
Visual		I	8	70	130
		II	16	140	270

Notes:

- 1.0 A person may be qualified directly to NDT Level II with no time as a certified Level I, provided the training and experience consists of the sum of the hours for both Level I and Level II in the given method(s).
- 2.0 Independent of the training received in Level I and Level II for Radiography, the trainee shall receive radiation safety training as required by LANL.

Table II
Minimum Number of
Level I and Level II Written Examination Questions

NDT METHOD	TECHNIQUE	GENERAL EXAMINATION		SPECIFIC EXAMINATION	
		LEVEL I	LEVEL II	LEVEL I	LEVEL II
Eddy Current		40	40	20	20
Leak Testing					
	Bubble Testing	20	20	15	15
	Pressure Change	20	20	15	15
	Halogen Diode	20	20	15	15
	Mass Spectrometer	20	20	20	20
Liquid Penetrant		40	40	20	20
Magnetic Particle		40	40	20	20
Radiography		40	40	20	20
Ultrasonic		40	40	20	20
Visual		40	40	20	20

**NDE Certification Application
(Sample, actual on website)**

NAME:	Z No.:
ADDRESS:	PHONE:

METHOD AND LEVEL APPLYING FOR

Magnetic Particle (MT)	<input type="checkbox"/>	Level	<input type="checkbox"/>
Liquid Penetrant (PT)	<input type="checkbox"/>	Level	<input type="checkbox"/>
Radiography (RT)	<input type="checkbox"/>	Level	<input type="checkbox"/>
Leak Test (LT)	<input type="checkbox"/>	Level	<input type="checkbox"/>

Ultrasonic (UT)	<input type="checkbox"/>	Level	<input type="checkbox"/>
Eddy Current (EC)	<input type="checkbox"/>	Level	<input type="checkbox"/>
Emissions (ET)	<input type="checkbox"/>	Level	<input type="checkbox"/>
Visual (VT)	<input type="checkbox"/>	Level	<input type="checkbox"/>
Other ()	<input type="checkbox"/>	Level	<input type="checkbox"/>

EDUCATIONAL BACKGROUND

Grade School:	1	2	3	4	5	6	7	8
High School:	1	2	3	4				
Technical School:	1	2	3	4	5			
College:	1	2	3	4				
Correspondence School:	1	2	3	4				

(Circle highest level attained)

Addresses

NDE EXPERIENCE

From:	To:	Employer:
Job Description:		
From:	To:	Employer:
Job Description:		

I hereby certify that the above statements are true and correct to the best of my knowledge.

Signature	Date