Scanstar Inspection Technology Private Limited

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NDT Certification

Non Destructive Testing personnel are often certified by their employer or other agency to meet certain qualifications, which are established by industry.

Certification is basically a process of providing written testimony that an individual is qualified to do certain work.

The qualifications of an individual are based on education, level of training, work experience, and the ability to pass a vision test.

In the field of NDT, certification is very important because NDT personnel are often making critical judgments that can have safety and/or significant financial consequences.

NDT personnel must have a great deal of confidence in the results of their work. Since many of the NDT methods do not produce a record of the inspection results, certification presents objective evidence of the knowledge and skill level of the individual performing an inspection.

The procedure used to assure that NDT personnel possess the qualifications necessary to do competent work includes:

- training to gain the necessary knowledge
- experience under the guidance of knowledgeable people
- qualification examinations to demonstrate that competency has been achieved
- Certification to document successful demonstration of competency.

NDT Methods

Certification can be obtained in number of NDT methods, which are listed in the table below.

Acoustic Emission Testing	AE
Electromagnetic Testing	ET
Leak Testing	LT
Liquid Penetrant Testing	PT
Magnetic Particle Testing	MT
Neutron Radiographic Testing	NRT
Radiographic Testing	RT
Thermal/Infrared Testing	TIR
Ultrasonic Testing	UT
Magnetic Flux Leakage Testing	MFL
Visual Testing	VT

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NDT Certification Levels

NDT personnel are generally certified to several different levels of competence within each of the NDT methods they are working. The levels are **Level I Limited, Level I, Level II, and Level III.**

Level I technicians are only qualified to perform specific calibrations and tests, and acceptance or rejection determinations allow little or no deviation from the procedure. Level I technicians are under close supervision and direction of a higher level tester. The level I position is not the trainee level, but the first level a trainee reaches upon demonstrating ability in specific tests. Level I Limited personnel are restricted even more in what they can do. They are usually trained to a specific procedure and can perform only certain types of inspections on a certain set of components.

Level II technicians are able to set up and calibrate equipment, conduct the inspection according to procedures, interpret, evaluate and document results in all the testing method(s) utilized by the certificate holder. The technician can provide on the job training for Level I and Level I Limited and act as a supervisor. The technician can also organize and document the results of the inspection. They must be familiar with all applicable codes, standards, and other documents that control the NDT method being utilized.

Level III technicians are capable of establishing techniques and procedures; interpreting codes, standards, and specifications; and designating the particular nondestructive testing methods, techniques, and procedures to be used. They must also have knowledge of materials, fabrication, and product technology. Level III technicians are responsible for training and examining Level I and Level II's. Usually Level III technicians are in administration, supervision, or management positions, or are owners of a testing laboratory. Some Level III technicians also become consultants.

Certification Requirements

There are a number of organizations that have produced documents that recommended or specify the minimum qualifications for certification. The following is a partial list of documents pertaining to the certification of NDT personnel in the US.

- SNT-TC-1A, The American Society for Nondestructive Testing, Recommended Practice, Personnel Qualification and Certification in Nondestructive Testing.
- ATA-105 Aviation Transport Association, Guidelines for Training and Qualifying Personnel in Nondestructive Testing Methods.
- AIA-NAS-410, Aerospace Industries Association, National Aerospace Standard, NAS Certification and Qualification of Nondestructive Test Personnel.
- ISO 9712, International Organization for Standards, Nondestructive testing -- Qualification and
  certification of personnel.

The education and work experience requirements for the various specification are common or similar. Typical requirements are summarized in the table below for qualification levels I and II. Please consult the certification documents to assure that information is correct for your situation.

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Examination Method	Level	Required Hours of NDT Training		Minimum hours of work experience in a method	Permitted time frame to obtain required work experience in a method (Months)
		For those with high school diploma or equivalent	For those with at least 2 years of engineering or science study at a college or technical school		
Acoustic Emission	I	40	32	210	1.5-9
	II	40	40	630	4.5-27
Electromagnetic	I	40	24	400	1.5-9
	II	80	40	1600	4.5-27
Liquid Penetrant	I	16	4	130	0.5-3
	II	32	4	400	1-6
Magnetic Particle	I	16	8	130	0.5-3
	II	32	4	530	1.5-9
Neutron Radiography	I	28	20	420	3-18
	II	40	40	1680	12-72
Radiography	I	40	30	400	1.5-9
	II	80	35	1600	4.5-27
Thermal/Infrared	I	32	30	210	1.5-9
	II	34	32	1260	9-27
Ultrasonic	I	40	30	400	1.5-9
	II	80	40	1600	4.5-27
Magnetic Flux Leakage	I	16	12	210	1
	II	12	8	630	3
Visual	I	8	4	70	0.5-3
	II	16	8	140	1-6

NDT training can be obtained at colleges, vocational-technical schools, the Armed To be considered for certification as a Level III an individual must meet one of the following requirements:

1. Have graduated from a university or college with a degree in engineering or science, and have at least one year of experience comparable to that of a Level II in the applicable NDT method(s).
2. Have completed with passing grades at least two years of engineering or science study at a university, college or technical school and have two years of experience comparable to that of a Level II in the applicable NDT method(s).
3. Have four years of experience comparable to that of a Level II in the applicable NDT method(s).

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Certification Examinations

Once the education, training and work experience requirements have been met and documented, a certification examination must be taken. The examination process actually includes several exams. For certification to Levels I and II a general, a specific, and a practical, exam must be completed with a passing grade of 70 percent for each exam and a composite grade of 80 percent (determined by averaging the results of the three exams). The Level III exam process includes completion of a basic, a method, and a specific examination with a passing grade of 70 percent for each exam and a composite grade of 80 percent. Level I and II exams must be administered by an NDT Level III and this is often done within a particular company. Level I, II and III exams can also be taken through a central agency such as ASNT. Central certification provides technicians with documentation of qualification that is recognized nationally.

Visual Examination

It is important that NDT personnel have good near visual acuity and color vision. Therefore, an eye test must be taken to insure that natural or corrected near distance acuity is acceptable. Depending on which specification the company uses for certification, an individual must be able to read a Jaeger Number 1 (or equivalent) type and size letter at no less than 12 inches (for one eye).Determining contrast of color or shades of gray is also generally required.