Non Destructive Testing Certification Requirements and Challenges

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SNT-TC-1A

Scope

- It is recognized that the effectiveness of Nondestructive Testing (NDT) applications depends upon the capabilities of the personnel who are responsible for and perform NDT.
- This Recommended Practice has been prepared to establish guidelines for the qualification and certification of NDT personnel whose specific jobs require appropriate knowledge of the technical principles underlying the nondestructive tests they:
  - Perform
  - Witness
  - Monitor
  - Evaluate

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Difference in Certifications

Certified in accordance with SNT-TC-1A or ASNT certifications?

ASNT Recommended Practice No. SNT-TC-1A is an employer-based certification program, meaning that the employer is responsible for the qualification and certification of their own personnel.

ASNT Central Certification Program is administered and maintained by an independent body that provides uniform certification requirements for all certificate holders.

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Certification vs. Qualification

Certification: Written testimony of qualification.

Qualification: Demonstrated skill, demonstrated knowledge, documented experience required for personnel to properly perform the duties of a specific job.

Experience: Work activities accomplished in a specific NDT method under the direction of qualified supervision, including the performance of the NDT method and related activities, but not including time spent in organized training programs.

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Nondestructive Testing Methods

- Acoustic Emission Testing
- Electromagnetic Testing Ground
- Ground Penetrating Radar Guided Wave Testing
- Laser Testing Methods
- Leak Testing
- Liquid Penetrant Testing
- Magnetic Flux Leakage
- Magnetic Particle Testing
- Microwave Technology
- Neutron Radiography Testing
- Radiographic Testing
- Thermal/Infrared Testing
- Ultrasonic Testing
- Visual Testing

Level of Qualification

- **NDT Level I** - An individual should have sufficient technical knowledge and skills to be qualified to properly perform specific calibrations.

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Level of Qualification

- **NDT Level II** - An individual should 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, standard, and specifications.

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Level of Qualification

- **NDT Level III -** An individual should have sufficient technical knowledge and skills to be capable of developing, qualifying, and approving procedures, establishing and approving techniques, interpreting code, standard specifications, and procedures; and designating the particular NDT methods, techniques, and procedures to be used.

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Written Practice

The employer shall establish a written practice for the control and administration of NDT personnel training, examination, and certification.

The employer's written practice:

- should describe the responsibility of each level of certification.
- should describe the training, experience, and examination requirements for each level of certification by method and technique, as applicable.
- should identify the test techniques within each test method applicable to its scope of operations.
- shall be reviewed and approved by the employer's NDT Level III.
- shall be maintained on file.

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Education, Training, and Experience Requirements for Initial Qualification

- Candidates for certification in NDT should have sufficient education, training, and experience to ensure qualification in those NDT methods in which they are being considered for certification.
- Documented training and/or experience gained in positions and activities comparable to those of Levels I, II, and/or III prior to establishment of the employer's written practice may be considered in satisfying the criteria.
- Based on the individual's level of education, the criteria for training varies.

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Table 6.3.1A: Recommended Initial Training and Experience Levels

Examination Method	NDT Level	Technique	Training Hours*	Experience*	Total Hours in NDT*
Liquid Penetrant	I	---	4	70	130
	II	---	8	140	270
Magnetic Particle	I	---	12	70	130
	II	---	8	210	400
Radiological	I	Radiographic	40	210	400
	II		40	630	1200
	I	Digital Radiographic	40	210	400
	II		40	630	1200
Ultrasonic Testing	I	---	40	210	400
	II	---	40	630	1200
	II	Time of Flight Diffraction	40	160	N/A
		Phased Array	80	160	N/A
Visual Testing	I	---	8	70	130
	II	---	16	140	270

** Minimum Hours Required in Method or Technique*

Training Programs

- Personnel being considered for **initial** certification should complete sufficient organized training. The training program should include sufficient examinations to ensure understanding of the necessary information .
- Recommended training course outlines and references for NDT Levels I, II, and III personnel, which may be used as technical source material, are contained in ANSI/ASNT CP-105.

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Minimum Number of Exam Questions

Method	General		Specific	
	Level I	Level II	Level I	Level II
Magnetic Particle Testing	40	40	20	20
Penetrant Testing	40	40	20	20
Radiography Testing	40	40	20	20
Ultrasonic Testing:	40	40	20	20

Review

- **ASNT** - is the worlds largest technical society of non destructive testing professionals.
- **SNT-TC-1A**- Recommended Practice that provides guidelines for employer based certification programs.
- **Written practices** – Is a document that provides information on training and certification of NDT personnel.
- **ANSI/ASNT CP-105-** A Standard of Topical Outlines for Qualification of NDT Personnel.

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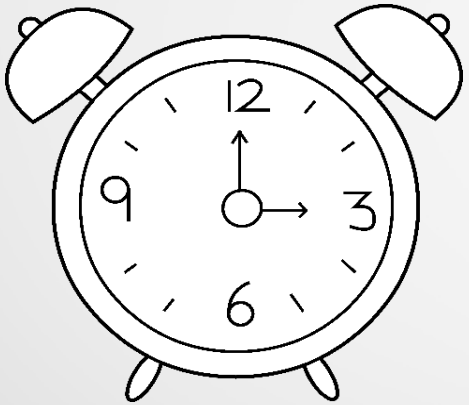
Time and Cost challenges



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** Minimum Hours Required in Method or Technique*

Time and Cost challenges

- UT Level I hours = 40 hours training + 210 hours method
- UT Level II hours = 40 hours training + 630 hours method
- Combined = 80 hours training + 840 hours method = 920 hours
- 920 hours x $30/hour = **$27,600 per person** minimum investment

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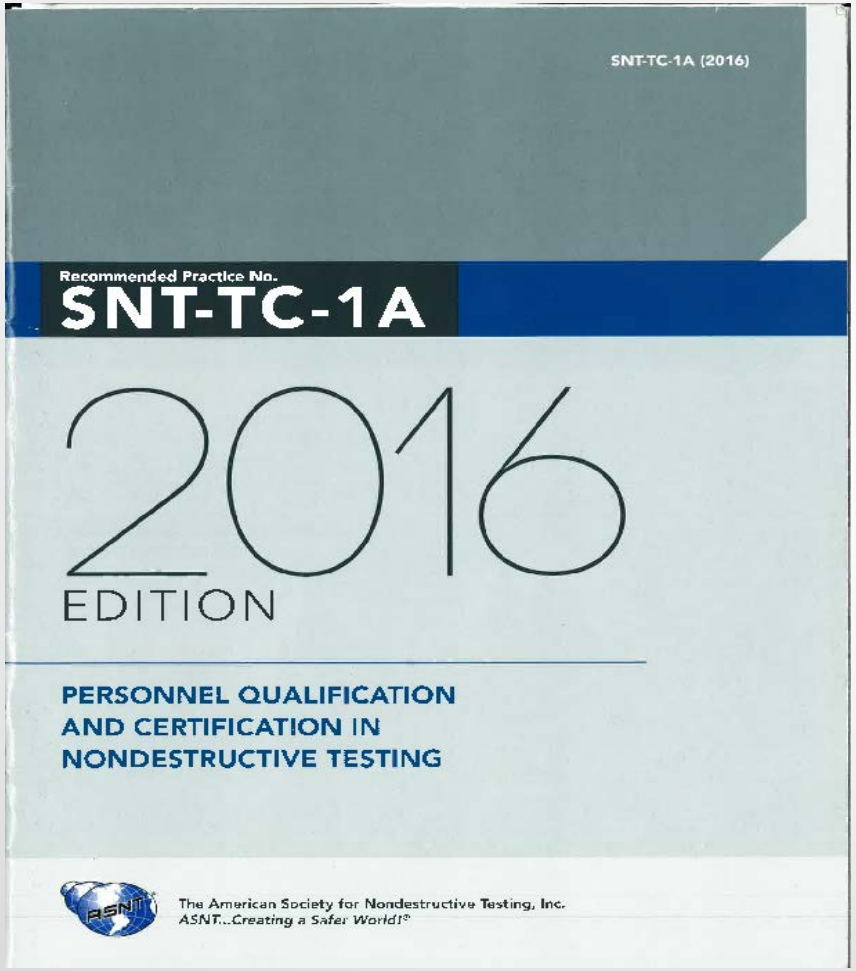

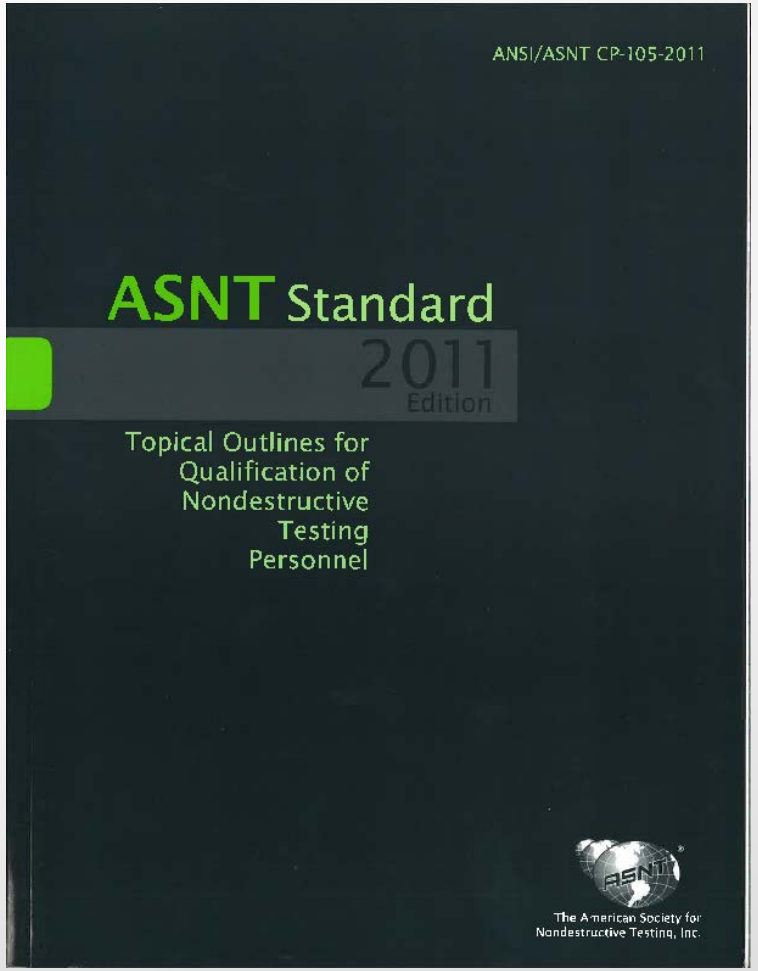

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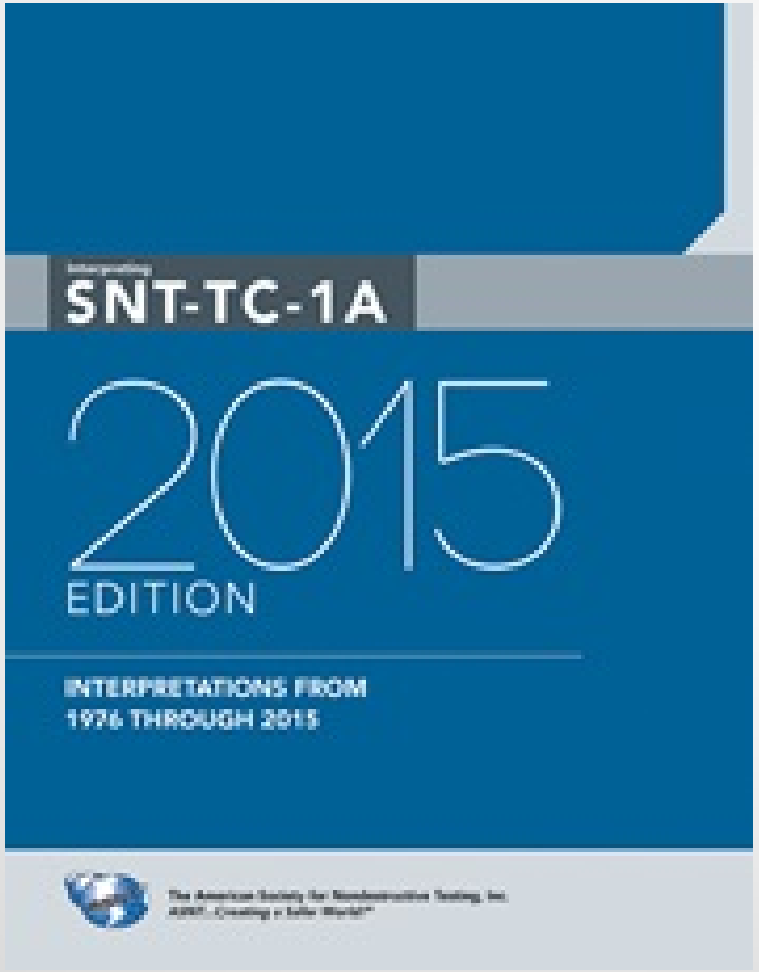

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Questions?

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