



## Introduction

This is the fourth article in the series started in January 2002. The first item to report is that all certification documents referenced in January 2002 are still valid although you should be aware that meetings are under way to consider a merging of NAS410 and EN4179. In this month's article we review the Levels of Qualification remembering that I have argued the case that as the Employer is responsible for the Certification of his NDT personnel – then he should have a Written Practice which clearly defines the parameters within which the authority to carry out NDT are made.

## Written Practice

In Article 2 I argued the need for a Written Practice. This Article now moves onto elements of the Written Practice and develops a number of themes in subsequent months. For completeness, the elements of the Written Practice are as follows:

- a. Scope
- b. Definitions
- c. Methods
- d. Levels of Qualification
- e. Education, Training and Experience
- f. Examinations (Physical, General, Specific, Practical)
- g. Certification
- h. Expiration

## Detail

- a. *Scope* – this defines the purpose of the Written Practice and the reference documents.
- b. *Definitions* – self-explanatory.
- c. *Methods* – here the Employer defines the methods to be covered by the Written Practice, for example, Magnetic Testing, Ultrasonic Testing etc. – an employer-based programme allows these methods to be subdivided as necessary to totally suit the Company's requirements; a Central Certification programme is confined to the programmes and sectors as defined by that Certification System.
- d. *Levels of Qualification*

An over-riding principle to be aware of here is that Central Certification programmes (PCN/EN473/ISO9712) have set definitions which cannot be changed by the Employer; whereas the Employer based programmes (SNT-TC-1A) can through the Employer's Written Practice subdivide these levels for situations where additional levels are deemed necessary for specific skills and responsibilities.

All systems agree on three basic levels – Level 1, Level 2 and Level 3 although some sectors in PCN – aerospace for instance – only have Levels 2 and 3 – i.e. no Level 1 qualification.

Generally speaking all systems tend to agree on what competence will have been achieved by each level and here is a resume of these:

### *Trainee (not a level of qualification)*

Whilst in the process of being initially trained, qualified, and certified, an individual should be considered a trainee. A trainee should work with a certified individual. The trainee shall not independently conduct, interpret, evaluate, or report the results of any NDT.

### NDT Level 1

An NDT Level 1 individual should:

- i. be qualified to properly perform specific calibrations;
- ii. be qualified to carry out specific NDT and specific evaluations for acceptance or rejection determinations according to written instructions and to record results;
- iii. receive the necessary instruction or supervision from a certified NDT Level 2 or 3 individual;

### NDT Level 2

An NDT Level 2 individual should:

- i. be qualified to set up and calibrate equipment;
- ii. be qualified to interpret and evaluate results with respect to applicable codes, standards, and specifications;
- iii. be thoroughly familiar with the scope and limitations of the methods for which qualified and should exercise assigned responsibility for on-the-job training and guidance of trainees and NDT Level 1 personnel;
- iv. be able to organise and report the results of NDT.

### NDT Level 3

An NDT Level 3 individual should:

- i. be qualified to establish techniques and procedures;
- ii. be qualified to interpret codes, standards, specifications, and procedures;
- iii. be qualified to designate the particular NDT methods, techniques and procedures to be used;
- iv. be responsible for the NDT operations for which qualified and assigned and should be capable of interpreting and evaluating results in terms of existing codes, standards, and specifications;
- v. 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;
- vi. have general familiarity with other appropriate NDT methods, as demonstrated by the Level 3 Basic examination or other means;
- vii. in the methods for which certified, be capable of training and examining NDT Level 1 and 2 personnel for certification in those methods.

## **A Note on Nomenclature**

### *i. Central Certification*

Where Central Certification exams have been carried out then it is acceptable to use PCN Level 1 or EN473 or ISO9712 Level 2 as appropriate to the exams.

It is also common practice for those NDT personnel who have been examined by the ASNT NDT Level 3 programme to call themselves ASNT Level 3s. There are a small number of ASNT NDT Level 3s who were originally grand fathered into the scheme in 1976-1977 without examination – ASNT views these people as being exactly equal with those who subsequently passed the exams.

### *ii. Employer Based Certification*

It is my consideration that to use the term ASNT Level 1 or 2 is misleading and constitutes a misunderstanding of the system. The reason for this is that it implies examination by ASNT – which in terms of employer certification is incorrect. The current term would be Company X NDT Level 2. This then follows through that when the employee leaves Company X his certificate becomes invalid. This will be covered in a later article.

Here is an example of how the Employer may use the Written Practice and, ultimately, the whole certification process, to precisely define his needs. Take, for example, an operator who carries out Magnetic Particle Testing using only a bench unit to test 30 mm diameter 300 mm long forged bars with fluorescent ink.

PCN can only offer MT Level 2 Wrought Products, whilst the Employer's Written Practice to SNT-TC-1A could define the operator's certification precisely

A final point to note – which will be discussed later in the series – is that the operator holding a PCN Certificate for MT Wrought Products could in fact move to another employer and begin work with the approval of the Employer's Certifying Authority, whereas the SNT operator will lose his certification upon leaving the Company as it was only valid whilst in the employ of that company.

## **Conclusions**

- a. For Central Certification systems the levels of qualification are clearly defined and cannot be changed.
- b. Employer based programmes allow the employer the flexibility of precisely determining specific operator roles within the Written Practice
- c. As in all systems where the employer is responsible for giving the NDT operator the authority to work, it is most important that the employer appreciates the responsibility and scope given to each level of NDT technician.

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Note: items e., f., g., and h. under Written Practice will be covered during the series published during 2002