
Minimum Requirements for the Structured Training of Non-Destructive Testing Practitioners

1. Introduction

This document is based upon ISO/TR 25108:2006, which is implemented within the NANDTB Scheme for Training Organizations wishing to provide industry with an assured quality of training in the main Aerospace NDT methods.

2. Scope

This generic Operations Manual establishes the minimum requirements for the structured training of NDT practitioners to ensure eligibility in EN4179/NAS410 NDT personnel qualification examinations.

3. Quality Management System

The Training Organization shall adopt and implement a suitable quality management system. This shall be based upon ISO 9001:2008 or similar, as the training syllabus and methodology is externally imposed. The management system shall be controlled and periodically reviewed according to the stipulations in the quality manual.

All staff within the applicant Training Organization shall be made aware of their specific responsibilities and method of working. These shall be published in a quality manual which includes an organizational chart.

Responsibilities and methods of working shall be defined by job title, and staff shall be allocated job titles in their terms of reference, which in turn refer them to the Quality Manual.

Procedures defined within the quality manual shall encompass all staff functions within the Training Organization and shall include arrangements for control of documentation and calibration of test equipment, together with laboratory instructions to control specified processes.

Training Organization staff shall be conversant with relevant procedures defined in the manual and shall sign a record indicate that they have read and understood the document.

4. Management

4.1 Responsibility

Senior Management shall be involved with, and show commitment to, the successful operation of the Quality Management system.

The Training Organization shall have a coordinator who is responsible for the overall management of the Training Operations, and for setting up and maintaining a Documented Quality Management System satisfying the criteria contained within ISO 9001:2008 and this document.

4.2 Resource Management

Training Organization management shall:

- 4.2.1 Determine the necessary competence for personnel performing work affecting the quality of NDT training;
- 4.2.2 Provide training or take other actions to satisfy these needs;
- 4.2.3 Evaluate the competence of the Trainer (Particularly where the competence of the individual has been achieved by additional appropriate education, training, skills and/or

experience;

- 4.2.4 Ensure the adequacy of equipment and facilities needed by the business to carry out NDT Training;
- 4.2.5 Ensure that the work environment meets Statutory, Regulatory and Customer requirements.

4.3 Service Realization

Training Organization management shall plan service realization from the point where the customer asks for training through to delivery of training. In so doing, management shall identify key processes and how these processes interact with one another.

4.4 Measurement, Analysis and Improvement

Training Organization management shall:

- 4.4.1 Monitor and measure customer satisfaction.
- 4.4.2 Commission internal audits at not less than 12 month intervals.
- 4.4.3 Check processes associated with the delivery of training, ensuring that it is delivered in an effective manner which meets the customer's requirements.
- 4.4.4 Ensure that Non-Conformances are controlled and dealt with appropriately.

The above points will provide data. This data shall be analyzed in order to identify improvements to management systems and processes.

Finally, Training Organizations management shall implement and monitor improvements. This should form the basis of the annual management review meeting.

4.5 Student Induction

A system of student induction shall be in place such that, upon acceptance of an application for enrolment, the Training Organization will issue to the enrolled student, or his sponsor, clear and unambiguous instructions in accordance with the following:

- 4.5.1 Course fees and method of payment which shall show all that is included in the fees. There shall be no *hidden extras* and a schedule of course fees shall be made freely available upon request.
- 4.5.2 Dates and times of attendance for the course, which shall include clear instructions concerning the location of the Training Organization.
- 4.5.3 Transport, accommodation and catering arrangements, where applicable.
- 4.5.4 The relevant safety requirements pertaining to the Training Organization as a whole or the particular course for which the student is enrolled.

NOTE: *Where necessary students attending courses involving practical radiography are to be registered as classified radiation workers prior to the commencement of training and are to wear radiation monitoring devices at all times during the course.*

- 4.5.5 Personal Protective Equipment (PPE) required for students attending the training course, and whether this is provided by the Training Organization, or whether the student must provide his own PPE.
- 4.5.6 NDT equipment provided by the Training Organization for use by students during the training course, and whether the student may optionally provide/use their own NDT equipment.
- 4.5.7 Textbooks essential to the training course, and whether these are provided by the Training Organization or the student.

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- 4.5.8 The name and telephone number of a contact at the Training Organization from whom additional information may be obtained if required.

4.6 Student Assessment

In all cases a system of student assessment shall monitor the progress and learning of individual students on a daily basis.

Where the training course is intended to provide the employer of NDT personnel with essential information required for qualification and certification under, for example, ASNT SNT-TC-1A, students shall undertake written and practical final examinations, and shall be issued with a uniquely numbered certificate (traceable to the student records required in paragraph 7.1) of successful completion of NDT training. See Annex A (page 13).

Whenever end of course examinations are employed, they shall not be set, invigilated or marked by the instructor responsible for the course in which the student is enrolled, and steps shall be taken to prevent collaboration or collusion during examinations. A documented system shall be in place to ensure that specimens used during end of course examinations have not been accessible (or have been used as practical assessment specimens) to the student during the course.

4.7 Counseling

A system of counseling shall be provided for the benefit of students who fail to reach the required minimum standard during daily progress assessments or in the end of course assessment.

4.8 Curriculum

The Training Organization shall publish and make freely available upon request the curriculum upon which each course is based.

The curriculum shall be reviewed annually (as a minimum) and revised, if necessary, in the light of scientific, industrial and technological developments in the NDT method concerned, or where a change occurs in the syllabus of the certification examination with which the course is aligned.

4.9 Course Notes

The Training Organization shall maintain a master set of course notes, reviewed annually and revised if necessary in the light of changes to the curriculum and bearing a revision date, to ensure a consistency between courses in the event of staff changes.

The Training Organization shall provide each enrolled student with a comprehensive set of appropriate course notes, these being hard copies of the master, the cost of which shall be included in the course fees.

NOTE: *Externally published and controlled classroom training handbooks may supplement but not be a substitute for the Training Organization's own course notes.*

5. Facilities

The facilities within the Training Organization shall meet the minimum requirements defined in this section.

5.1 The Training Environment

The premises used for training shall comply with the latest issue of all relevant legislation, e.g. in The Netherlands and where applicable, Ionizing Radiation Regulations.

Appropriate safety notices shall be displayed in a location accessible to all students. Relevant safety data sheets shall be on hand at the point of use of potentially hazardous equipment or

processes.

5.2 Resources

Classrooms and practical facilities shall be well lit and ventilated and there shall be adequate provision of teaching aids such as blackboards/whiteboards, digital boards or flip charts, overhead and/or slide projectors, computer generated presentations and video equipment appropriate to the course.

5.3 Equipment

Sufficient NDT equipment, such as instruments, accessories and calibration blocks, shall be available to cover the full range of NDT techniques within each of the NDT methods being taught (except where the range of NDT techniques is limited by industry or product sector applications), and to occupy all of the students on the course concerned (Appendix 1 refers).

Adequate Personal Protective Equipment such as protective eye glasses, gloves, coveralls, etc., should also be available to students.

5.4 Specimens

Training specimens shall be available in sufficient quantity and complexity to cover the full range of applications encompassed by the course curriculum (Appendix 2 refers). Specimens should also be available containing real defects representative of those found in industry. Separate specimens shall be used for training and examinations and there shall be provision for secure storage of examination specimens.

5.5 Library

The Training Organization shall maintain an up to date library of NDT Standards relevant to the method being taught. Students shall be made aware of the existence of these Standards and educated in their use.

Relevant certification scheme documents shall be made available for the use of students.

6. Training Staff

The Training Organization's management structure shall include a Course Coordinator (however named) with overall responsibility for the technical operation of the training facilities and for ensuring that the EN4179/NAS410 requirements are met.

The training facility shall have sufficient instructors to ensure that as a minimum, one tutor is present throughout each per course in line with the specific approved documentation requirements.

6.1 Certification

A key member of staff who has involvement in the day to day running of the training Organization shall have overall responsibility for each training discipline and is required to hold equal or higher level certification than that to which the course is aligned.

6.2 Qualifications

Training Organization shall employ a minimum of one staff member formally trained in instructional techniques. This employee should then disseminate this training to all training staff.

6.3 Experience

Training Instructors shall have knowledge of materials science and product technology, and have documented experience of current industrial applications of the NDT methods that they are

authorized to teach.

6.4 Updating

Training Organizations staff shall be kept up to date with current industrial procedures and practices, and the Organization shall document how this is achieved.

7. Records (general)

There shall be a system for maintaining and reviewing the current state of all records held within the Training Organization. Such records are to be kept in a secure location and treated with confidentiality.

7.1 Student records

Records shall be raised and maintained for each enrolled student for a period of not less than seven years and shall include, as a minimum;

- 7.1.1 Date(s) of enrolment and completion of training;
- 7.1.2 Course on which enrolled;
- 7.1.3 Instructors involved;
- 7.1.4 Final examination result(s) attained (where appropriate), including a copy of the completed examination paper(s);
- 7.1.5 Details of specimens (including identification numbers) and equipment used by the student in any final examination;
- 7.1.6 A certificate of successful training course completion, including a data sheet necessary for employers implementing a second party qualification system such as ASNT SNT-TC-1A (details of the content of certificates and data sheets is provided at Annex A, page 13 to this manual).

7.2 Staff

Records shall be raised, updated and maintained for not less than six years concerning staff:

- 7.2.1 Experience;
- 7.2.2 Qualifications;
- 7.2.3 Certification;
- 7.2.4 Formal training and updating.

7.3 NDT Equipment

The Training Organization shall maintain a fully documented system for the maintenance and calibration of NDT Equipment.

NOTE: *Calibration of equipment used solely for training purposes is not required by this scheme, except where personal safety is affected.*

7.4 Specimens

The Training Organization shall maintain a fully documented system for the unique identification of each training and examination specimen. This shall include a master record of the position and extent of all defects relevant to the NDT technique for which it is to be used.

7.5 Control of Substances Hazardous to Health

Disposal of chemicals used in the operation of training courses shall be carried out in accordance with applicable national regulations (see clause 5.1).

Annex A – Training Certificates and Data Sheets

This annex provides guidance on the data to be provided by the Training Organization

Data relating to qualification examinations	Data relating to training provided
Training Organization name and address	Training Organization name and address
Training Organization status with respect to Other NDT approving organizations	Training Organization status with respect to other NDT training approving organizations
Candidate's full name	Trainee's full name
Employer's name and address	Employer's name and address
NDT method	NDT method
NDT Level	NDT Level
Specific NDT technique(s) used in practical examination(s)	Duration of training in hours
	Training syllabus covered by course (e.g. reference to syllabus, or to employer's written practice)
Applicable standard(s), e.g. EN 4179: 2009	
Unique number of datasheet	
Date of issue of datasheet	Date of issue of datasheet
Date of completion of examination	Date of completion of training course
Reference to specifications(s) covered by specific examination	Reference to specifications covered in specific elements of training
Examination part(s) set	
Individual grades obtained (General, Specific & Practical)	
Overall grade awarded (and weighting applied, if appropriate), including Pass or Fail	Assessment results
Statement of limitations (where appropriate)	
Name of examiner	Name and signature of tutor
Signature of examiner	
Document control of sheet/report/certificate	Document control of sheet/report/certificate