QUALITY FACTORS AFFECTING THE NDT PERSONNEL QUALIFICATION AND CERTIFICATION PROCESS

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The role of qualification process

QUALIFICATION PROCESS
THE GOAL OF QUALIFICATION PROCESS

To prepare a conscious NDT inspector/operator, that is able to do his work correctly and responsibly, understanding his delegated power, roles, and responsibilities derived from them and behaving in accordance with that
THE ROLE OF QUALIFICATION PROCESS

Training (the TUTOR)
- Teaching the personnel being qualified how to perform his work
- Informing the personnel about his roles and responsibilities

Examination (the VERIFICATOR)
- Verifying success of the training process
  - The personnel understands how to perform his work
  - The personnel understands his roles and responsibilities

Certification (the GUARANTOR)
- Guarantee that the personnel is able to perform his work (understands it, have enough experience and has physical predispositions to do it)
- Guarantee that the personnel is performing his job responsibly
INDEPENDENT AND EMPLOYER SYSTEMS

Independent qualification system
- The certification body takes responsibility for issuing the certificates and thus verifying that all criteria were satisfied
- The certification body decides about the requirements on contents and extent of the course and criteria for lecturer and examiner
- Rigid system with standardized level, that however doesn’t reflect the requirements of the employer or customer

Employer qualification system
- The employer takes full responsibility for everything, thus also qualification and certification of his staff
- Non-standardized system reflecting fully the requirements of the employer, but with centrally uncontrollable outcomes
Objectives of the high quality training

TRAINING PROCESS
OBJECTIVES FOR CORRECT TRAINING

In order to prepare the trainee for his future industrial practice as much as possible, the training center needs to satisfy all of the following objectives

- Have experienced and skilled lecturers
- Design carefully the courses
- Provide good training materials
- Dispose of variety of representative samples
- Dispose of wide range of standard equipment

These objectives needs to be satisfied together and are not mutually replaceable or interchangeable
TRAITS OF THE LECTURERS

Good lecturer means a person that dispose of the following traits:

- Deep understanding of the topic, not just know the physics behind
- Long-time real-life experience from his own industrial practice in NDT
- Good teaching skills to be able to transfer the knowledge to trainees
- Good people skills to assess the situation and drive trainees in to topics

Lecturer must be capable of delivering only the right content, in the given limited time, such a way the trainee will understands it and be able to replicate it successfully in the future
THE COURSE STRUCTURE

Training consists of the three inseparable parts:

- Relevant physics background
- Relevant norms, standards, specifications, manuals etc.
- Appropriate practice assessment

None of the parts can be omitted or privileged. The goal is NOT to make a physics guru unable to hold a device, simple operator unable to think about implications, or personnel unaware of rules to follow.
Handbook is the tangible goods trainee brings home from the training, therefore it should be:

- Relevant to the topic
- Simple to read
- Extensive in provided information
- Guidebook not just a handbook
- From global to specific

The handbook should always follow the course content and structure. Too complicated handbook with too much unassociated topics will make trainees only confused.
OTHER TRAINING MATERIALS

Correct understanding of standards, specifications, manuals reports and other documents is necessary to ensure correct performance of NDT:

- Relevant to the topic
- Explained not read by the lecturer
- Extensive in selection
- From methodology to acceptance
- Including qualification standard

Specific documentation is a guideline for the operator to perform the NDT process correctly. It must be explained how to follow and utilize it, reading ability is already confirmed by passing an elementary school
DATABASE OF TRAINING SAMPLES

Samples need to provide enough space for the trainee to verify he/she understands how the device is utilized, how the various defects look like and how to find them, therefore samples:

- Needs to be in sufficient amount
- Relevant to the industrial application/sector and NDT technique
- With variety of defects to find
- Not easy yet not tough

Practical part on samples is a key part to learn how execute testing correctly. Trainee assess the theoretical knowledge in practice.
TRAINING EQUIPMENT

The equipment needs to be similar to the equipment used in the trainees facility, therefore:

- Variety of equipment is needed
- Simple to use
- Both modern and standard equipment is favorable
- For all trained techniques

Techniques may be very different in utilization of the equipment and therefore it is necessary to provide such training the techniques are thoroughly explained
How ATG assess the quality of provided courses

THE ATG APPROACH
LECTURERS

The lecturers in ATG:

- Participate in long-time projects as well as small NDT tasks at the Level 2 as well as consulting activities of Level 3 regularly throughout their employment period
- Have extensive experience with teaching in various conditions and various mentalities including foreign students
- Provide a personal approach to the training, focusing on individuals
The training materials are always relevant to the content:

- The course structure is clear ahead by following precise syllabuses
- ATG handbooks are tailored to the course structures and reflect experience of ATG’s best lecturers
- Speeches are followed by presentations demonstrating the utilization already during the theoretical part
- Standards and specifications for training are carefully chosen to represent the best mix for understanding the process and the role of this documentation
SAMPLES

- There is 1107 samples in ATG database (January 2017)
- Industrial sectors include automotive, railways, oil&gas, aerospace etc.
- Sample materials include various grade steels, aluminum, titanium, composites, honeycombs, plastics
- Majority of the samples are real samples with real defects, provided by our partners worldwide, not artificial samples

www.atg.cz
NDT EQUIPMENT

- ATG dispose of most modern equipment as well as standard equipment
- The practical training in Prague is held in modern practical premises in ATG Special Process House
- The practical training done on hand-held instruments as well as industrial lines, benches and manipulators
- Equipment of the Special Process House allows a demonstration of the most progressive applications as for e.g. automotive, aerospace etc.
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