



GUIDANCE

IN-SERVICE INSPECTION PROCEDURES

Number: **NDTC 01**

Prepared by: **NDT Committee (TC5)**

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References: **a) The Pressure Systems Safety Regulations 2000.**
b) HSE, 'Programme for the Assessment of NDT in Industry (PANI)', Dec 1999
c) HSE, 'Best Practice for the Procurement and Conduct of NDT', Nov 2000

SITUATION:

The Competent Person as defined in the Pressure Systems Safety Regulations carries out examinations in accordance with a Written Scheme of Examination and produces the associated report. Additional testing may be required which is contained within the WSE such as a hydraulic tests and/or NDT.

The additional tests are normally carried out by the Competent Person however there are situations where the NDT is undertaken by a third party.

As defined within the PSSR the competent person assumes overall responsibility for the examination, and therefore assumes responsibility for any parts of the examination undertaken by others.

There have been a number of serious incidents experienced involving shell boilers, following ultrasonic testing (UT) by NDT contractors that did not detect defects in them. Furthermore, the PANI project revealed shortcomings in the general application of manual UT in industry.

HSE's best practice document recommends that those carrying out NDT do so within an appropriate quality control system. Additional best practice around the quality issue includes appropriate accreditation of suppliers. For the NDT of pressure equipment, such as shell boilers, an appropriate quality control system is one that is accredited by UKAS.

SAFed member companies adhere to the PSSR and also their UKAS accreditation to BS EN ISO 17020:2012 which means they assume overall responsibility and acceptance of any part of the examination undertaken by a third party.

- *PSSR states: the competent person should accept responsibility for the results of these tests and their interpretation.*
- *BE EN ISO 17020:2012 states: whenever subcontractors carry out work that forms part of an inspection, the responsibility for any determination of conformity of the inspected item with the requirements shall remain with the inspection body.*

The guidance that follows applies where either the owner/operator of a pressure system or the relevant Competent Person intends to use a third-party NDT contractor to carry out NDT of pressure systems.

GUIDANCE:

1. Accreditation/Assessment

The Competent person will have been accredited by UKAS to a standard for the control of the quality of NDT carried out by laboratories and/or inspection bodies. This standard should be adhered to.

Therefore, the NDT contractor should either:

- hold UKAS accreditation (laboratory or inspection body) for NDT, or
- operate a quality control system that, according to an assessment by the Competent Person, meets the requirements of UKAS accreditation, or
- be controlled by the Competent Person's quality system, working to the Competent Person's procedures and perhaps using equipment and consumables provided by the Competent Person.

2. Practitioners

2.1 Qualifications

Practitioners employed or subcontracted by the NDT contractor should as a minimum hold level 2 certification, appropriate for the NDT method and the material/geometry of the components to be tested, issued by either:

- a UKAS accredited certification body, in the case of a 'central' certification scheme such as PCN, and
- the BINDT shell boiler examination qualification, when testing boilers.

2.2 Training

Practitioners or their employers should provide to the Competent Person on request documented evidence of training in the application of NDT to test the relevant pressure system in accordance with the approved NDT procedure (see below).

2.3 Experience

Practitioners or their employers should provide to the Competent Person on request documented evidence of previous recent experience in the application of NDT to test the relevant pressure system in accordance with the approved NDT procedure (see below).

3. NDT Procedure

The practitioner should work to an approved NDT procedure. This procedure should either be:

- provided by the Competent Person, or
- subject to assessment by the Competent Person.

[Note: Any person writing or assessing the NDT procedure should hold Level 3 certification in accordance with an NDT certification scheme: i.e. PCN or ASNT]

4. Site Testing

The Competent Person should verify by whatever means considered by the Competent Person to be necessary that, for each application, the NDT has been carried out without undue commercial pressure.

This may mean that the NDT must be arranged to coincide with a visit to site of the Competent Person's representative (the relevant Engineer Surveyor, for example).

5. Technical Audit

The Competent Person should periodically perform technical audits of the NDT contractor, the scope and frequency of which will be determined by the Competent Person.

As a minimum, the technical audit should involve one of the following:

- Periodically witnessing the application of NDT by the relevant practitioners in accordance with the approved NDT procedure on a relevant pressure system.
- Repeating an application of NDT, in accordance with the approved NDT procedure, to a relevant pressure system (i.e. cross checking).

[Note 1: Any person witnessing or repeating the application of NDT should hold NDT certification to a level at least as high as that held by the NDT practitioner being audited.

Note 2: Member companies may accept the results of periodic technical audits undertaken by other SAFed full members should they so wish.]

6. Pre-examination Documentation

Wherever practicable, the NDT contractor should provide all documentation required by the Competent Person to assess the NDT contractor and the relevant practitioners at least two weeks prior to the NDT being carried out.

In an emergency, only NDT contractors/practitioners that have previously been successfully assessed by the Competent Person should carry out the work.

Post-examination Documentation

Completed reports must be submitted to the competent person for satisfactory review.

7. Costs

The assessment of an NDT contractor and its employees or subcontractors in accordance with this guidance may incur significant cost to the Competent Person.

If the use of a third-party NDT contractor is at the request of the owner/operator of the pressure system, it is reasonable that the Competent Person should only carry out such an assessment subject to payment of a fee to cover it.