

APPROVAL OF NDT PERSONNEL UNDER THE PROVISION OF THE EUROPEAN PRESSURE EQUIPMENT DIRECTIVE 97/23/EC

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Abstract: The Pressure Equipment Directive - 97/23/EC (Reference 1) - was formally adopted by the European Parliament and Council on 29th May 1997, and was published in the Official journal of the European Communities No. L181 of 9th July (ISBN 011 916 0927).

The purpose of Directive 97/23/EC is to harmonize European national laws regarding design, manufacture and conformity assessment of pressure equipment and assemblies (vessels, storage containers, heat exchangers, shell and water tube boilers, industrial pipework, safety devices and pressure accessories) subject to an internal pressure greater than 0.5 bar.

In the Directive, equipment is categorized within four levels (I to VI) according to degree of hazard: category III and IV equipment will require conformity assessment by 'notified bodies' and 'recognised third party organisations' (NDT personnel must be approved by a third party organisation recognized by a member state pursuant to Article 13).

Equipment manufactured to Harmonized European standards developed in support of the directive will be presumed to comply with the essential safety requirements. For example:

EN13445 (Unfired Pressure Vessels) part 5 - Inspection and testing – requires at clause 6.1.3.5.7 (Qualification of NDT personnel) that NDT personnel shall be qualified and certified in accordance with EN 473 except for visual examination and leak testing (for which personnel shall be qualified but not certified).

So, the qualification and certification requirements for NDT personnel as specified in the harmonized standards are clear, but what are the requirements for NDT personnel when a harmonized standard is not invoked?

This paper will discuss the requirements of the Directive in terms of approval of NDT personnel, and explain what those bodies notified as 'Recognised Third Party Organisations' will require in order to award 'Approvals' to personnel that are not certificated by a RTPO in accordance with EN 473 (Reference 3), a harmonized standard.

Introduction: In March 2004, the European Working Group (Pressure) published a guideline 6/13 (Reference 2 and APPENDIX III) covering the 'Approval' of NDT personnel. This guideline states that "NDT personnel certified under standards, other than the harmonized standards, may be approved by a RTPO provided it is satisfied that certification criteria equivalent to the harmonized standards (i.e., EN 473) have been met".

In order to implement this guideline, a *Code of Practice* was approved by the European Notified Bodies Forum at a meeting in Brussels on 23rd June 2004 with the objective of ensuring a uniform approach by RTPOs *approving* NDT personnel.

The Code of Practice recommends that, when assessing personnel that are *not* certified under the harmonized standard EN 473 (Reference 2), the RTPO must directly assess each individual for approval in each of the NDT methods for which approval is sought. The assessment will consist of verifying that qualification examinations satisfying EN 473 criteria have been successfully conducted, and witnessing the application of appropriate NDT procedures (by persons to be approved) to the testing of permanent joints to pressure equipment.

The emphasis is therefore changed from the previous approval process adopted by many RTPOs of a *system audit* against the criteria of, for example, SNT-TC-1A (Reference 6), to an *individual competence based assessment* taking into consideration the criteria of European standard EN 473.

Results: A Code of Practice for the Approval of NDT Personnel by Recognised Third Party Organisations under the Provisions of Directive 97/23/EC has been agreed by the European Notified Bodies Forum

Foreword

According to European Directive 97/23/EC Article 13 clause 1, European Union Member States shall notify the European Commission and the other Member States of the Third Party Organizations (RTPO) which they have recognised for the purposes of the tasks referred to in Annex 1, section 3.1.3, namely the 'Approval' of NDT personnel to test permanent joints of category III and IV pressure systems.

The methodology for approval of NDT personnel is not specified in Directive 97/23/EC, and it has been agreed by the Notified Body (NB) and Recognised Third Party Organisation (RTPO) members of the European Notified Bodies Forum (NBF) that a Code of Practice (CoP) be published for voluntary adoption by RTPOs to ensure a consistent approach in the application of The Directive to the approval of NDT personnel.

This CoP, which was approved by the Notified Bodies Forum on 23 June 2004 for submission to WGP, has evolved from an initial draft provided by the European Federation for NDT (EFNDT), which has as members over 30 NDT Societies, including a significant number of accredited NDT personnel certification bodies, many of which are also recognised by EU member states as Third Party Organisations.

Definitions

For the purpose of this Code of Practice, the following definitions apply.

Recognised Third Party Organisation (RTPO)

body recognised by a member state of the European Union for the purposes of the tasks referred to in Directive 97/23/EC, Article 13 clause 1, and in Annex 1, section 3.1.3, namely the 'approval' of NDT personnel to test permanent joints for pressure equipment in category III and IV, and whose recognition has been notified to the European Commission and the other Member States.

Approval of NDT Personnel

documented statement issued by a body, recognised by a member state of the European Union as a RTPO, that a specified person is deemed competent to carry out specific non-destructive tests of permanent joints for pressure equipment in category III and IV (as described within Directive 97/23/EC Annex 1, clause 3.1.3).

Qualification

evidence of training, professional knowledge, skill and experience as well as physical fitness to enable NDT personnel to properly perform NDT tasks

Certification

procedure used to demonstrate the qualification of NDT personnel in a method, level and sector, and leading to the issue of a certificate by a third party.

Relevant Sector (covering permanent joints to pressure equipment)

any product or industrial sector as defined in Annex A of EN473 that includes testing permanent joints, such as 'Welded Products', 'Metal Manufacturing' or 'Pre and In-service Inspection'.

Standard other than harmonized standard EN 473 (Reference 3)

Those NDT personnel qualification and certification standards cited at References 4 and 6

Introduction

Under this Code of Practice it has been established that the basis for a decision by a RTPO to Approve NDT personnel according to Directive 97/23/EC shall be a valid qualification or a certificate of competence, issued under either second or third party arrangements, covering Non-Destructive Testing in a relevant sector. Under this Code of Practice, there are three classifications of NDT personnel qualification/certification and related approval routes (A, B and C):

- A) Certification by RTPO. Individuals who are certified according to the European Harmonized Standard EN 473 in a relevant sector by a certifying body also recognised as a RTPO.
- B) Certification by a body which is not an RTPO. Individuals who are certified according to the European Harmonized Standard EN 473 (Reference 3) or the international standard ISO 9712 (Reference 4) in a relevant sector by a certification body *which is not a RTPO*.
- C) Cases other than routes A and B. Individuals qualified in a relevant sector against criteria that are equivalent to those of the harmonized standard EN473.

1. SCOPE

- 1.1 This Code of Practice is for application by RTPO approving NDT Personnel under the provisions of Directive 97/23/EC, Article 13 and Annex 1, section 3.1.3.
- 1.2 The aim of this Code of Practice is in line with Guideline 6/13 (Appendix III) and is intended to assure a consistent approach and a high level of confidence in the approval of NDT personnel by RTPOs through widespread adoption of the criteria and approval processes detailed herein. A flow diagram illustrating this methodology is at Appendix I.

2. CRITERIA APPLICABLE TO RTPO APPLYING THIS CODE OF PRACTICE

Where on-site audits of certification systems and personnel are required (i.e. when applying Approval Route C), the RTPO shall appoint one or more assessors which, between them, hold NDT Level 3 certification covering those NDT methods and relevant sector(s) applied by the NDT personnel to be approved.

3. APPROVAL REQUIREMENTS

For the approval of NDT personnel by a RTPO, the following shall be fulfilled:

- 3.1. Route A. An individual holds certification in a relevant sector, complying with the harmonized standard EN 473 issued by a Certification Body which is also a RTPO. *In this case, the individual is considered to be approved without further action.*
- 3.2. Route B. An individual holds certification complying with the harmonized standard EN 473 or ISO 9712 in a relevant sector issued by a certification body *which is not a RTPO*, but which has a formal contractual arrangement with a RTPO to carry out assessments as a sub-contractor. In this case the individual may be approved by the above mentioned RTPO upon receipt of satisfactory assessment reports and documented evidence of certification provided by the certification body concerned.
- 3.3. Route C. An individual qualified in accordance with standards other than the harmonized standard EN 473 may be approved by a RTPO provided it is satisfied that qualification criteria equivalent to those of the harmonized standard have been met.
 - 3.3.1 In particular, the RTPO shall ascertain during an audit conducted on site that the individual to be approved:
 - 3.3.1.1 has satisfactory vision and colour perception
 - 3.3.1.2 has completed general and job-specific training prior to examination
 - 3.3.1.3 has acquired suitable experience during a defined minimum period in a relevant sector
 - 3.3.1.4 has been successful in written general and relevant specific qualification examinations
 - 3.3.1.5 has been successful in job-specific practical examinations that are relevant to the testing of permanent joints in pressure equipment
 - 3.3.1.6 continues to be qualified, without significant interruption, in the testing of permanent joints to pressure equipment
 - 3.3.1.7 is familiar with and able to satisfactorily implement defined NDT procedures and/or NDT instructions for the testing of permanent joints to pressure equipment.
 - 3.3.2 The RTPO shall assess each of the NDT personnel applying for Approval. The assessment shall involve, as a minimum, a practical examination during which the individual seeking approval shall

be observed, by an authorised agent of the RTPO, satisfactorily applying at least one relevant NDT instruction or procedure covering each of the NDT methods for which Approval is sought.

4. APPROVAL ATTESTATION

NDT Approval(s) issued by the RTPO shall have a period of validity which is relevant to the certification criteria involved. The period of validity shall not be greater than five years.

4.2 When required, i.e., in relation to approval under Routes B and C, the RTPO will issue an attestation of approval. The attestation shall include at least:

- a) the identity of the RTPO
- b) the full name of the approved individual
- c) the name of the qualifying body (in Route C this will be the employer or the PE manufacturer)
- d) the NDT method(s) for which the individual is approved
- e) the scope and limitations of the approval (e.g., whether the individual is approved only to carry out the test without interpreting the results, or applying NDT to specific materials using particular NDT equipment). This could be accomplished by referring to a level as defined in EN 473.
- f) reference to Directive 97/23/EC Annex 1 clause 3.1.3
- g) the conditions for maintaining the validity of the approval
- h) the date of expiry of the approval (this could be in phase with the expiry date of the associated qualification/certification)
- i) the signature of the RTPO's representative.

A model approval attestation is given in APPENDIX II.

5. RENEWAL OF APPROVALS

Upon expiry, an NDT personnel approval may be renewed by the RTPO provided the criteria for initial approval remain fulfilled.

Route A: Approval will be renewed automatically upon EN 473 renewal or recertification.

Route B: Approval may be renewed by the RTPO upon receipt of documentary evidence from the sub-contractor that EN 473 or ISO 9712 renewal or recertification has been completed.

Route C: Approval can be renewed by the RTPO provided the criteria for approval remain fulfilled.

Discussion: What are the criteria to be met by bodies seeking notification as a Recognised Third Party Organisation (RTPO)?

Do NDT 'Approvals' issued by a RTPO equate to EN 473 certificates of competence?

What is a 'Harmonized Standard'?

Do NDT 'Approvals' issued by a RTPO satisfy the provisions of all harmonized standards?

How can employers seek and gain 'Approval' of their NDT personnel?

Conclusions: RTPOs must have as their base and office in a Member State of the European Union, and demonstrate to the government of that state, or an agency appointed by the government, conformity with standards covering the General criteria for bodies operating certification of personnel (e.g., ISO EN 17024 – reference 5).

NDT 'Approvals' issued by a RTPO do not necessarily equate to EN 473 certification since an RTPO may not be a certification body.

A Harmonized Standard is one that has an Informative Annex ZA that refers to clauses of the European Standard addressing essential requirements or other provisions of EU Directives. The Annex ZA will state:

This European Standard has been prepared under a mandate given to CEN by the European Commission and the European Free Trade Association and supports essential requirements or provisions of EU Directive 97/23/EC of the European Parliament and of the Council of 29 May 1997 on the approximation of the laws of the Members State concerning pressure equipment. WARNING: other requirements or other EU Directives may be applicable to the product(s) falling within the scope of this standard. The following clauses of this standard are likely to support requirements of Directive 97/23/EC. Compliance with the text describes in this Standard provides, for the fabricant of pressure equipment, one means to demonstrate that the equipment is conforming with the following Essential Requirements or provisions of the Directive concerned. Table ZA 1 will indicate correspondance between this European Standard and Pressure Equipment Directive (PED) [in which specific clauses are referred to].

NDT 'Approvals' issued by a RTPO do not necessarily satisfy the provisions of all harmonized standards, some of which specifically require EN 473 certification. A link to the full list of Harmonized standards is published at: <http://ped.eurodyn.com/>

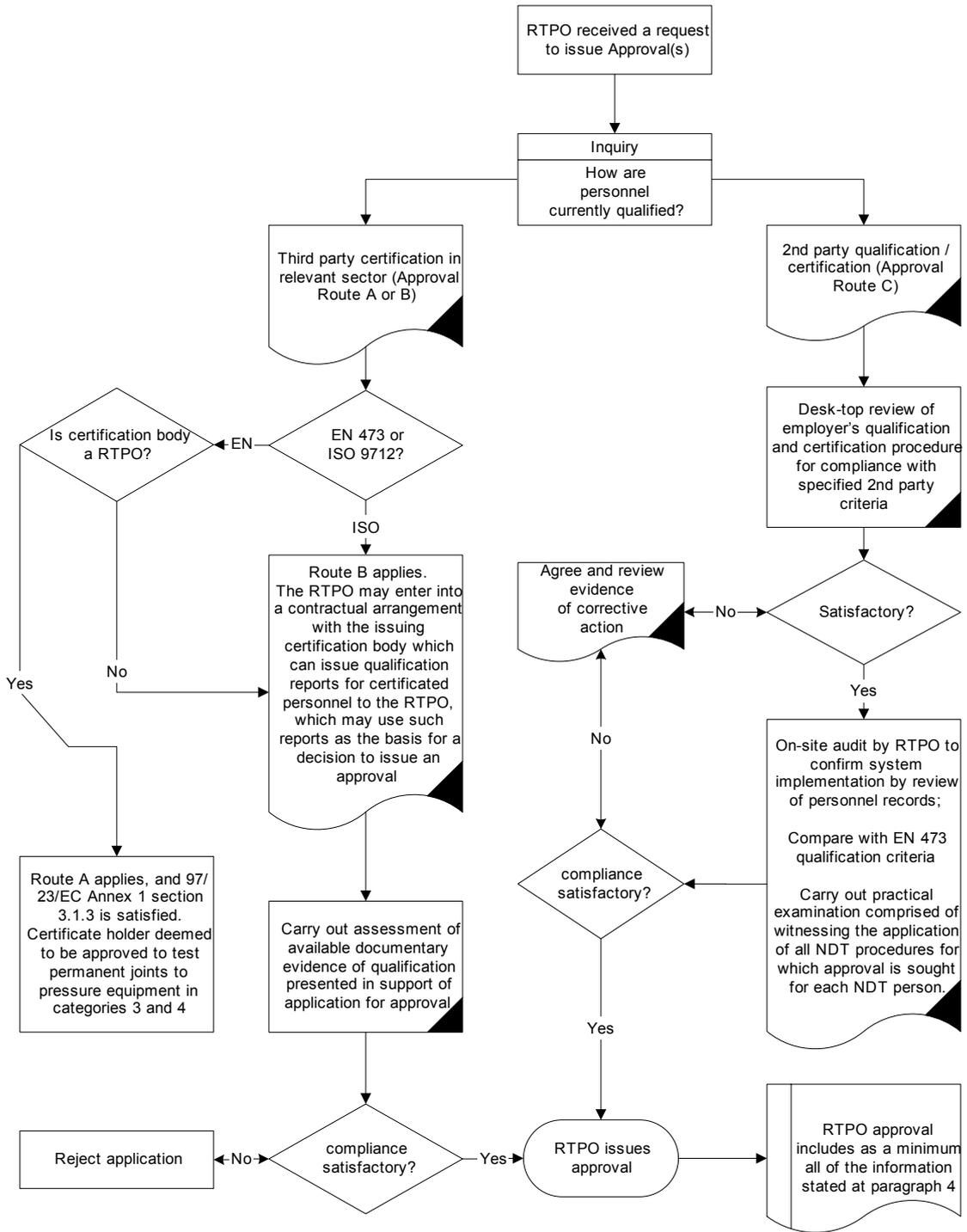
Employers of personnel seeking to gain NDT 'Approvals' satisfying the Directive 97/23/EC should visit <http://europa.eu.int/comm/enterprise/newapproach/legislation/nb/en97-23-ec.pdf> for a full list of RTPOs.

Further information and advice on the approval of NDT personnel for compliance with the Directive 97/23/EC can be obtained by email to john.thompson@bindt.org

References:

1. DIRECTIVE 97/23/EC. European Pressure Equipment Directive (PED).
 2. Working Group Pressure Guideline 6/13, adopted 17th March 2004.
 3. EN 473 - Qualification and Certification of NDT Personnel – General Principles.
 4. ISO 9712 - Non Destructive Testing - Qualification and Certification of Personnel.
 5. ISO EN 17024 - Conformity assessment — General requirements for bodies operating certification of persons
 6. SNT-TC-1A – Recommended practice for the qualification and certification of NDT personnel
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APPENDIX I – FLOW DIAGRAM



APPENDIX II – MODEL APPROVAL ATTESTATION

Issue date:
Issue number:
Expiry date:



TO WHOM IT MAY CONCERN

[Insert Name of RTPO], which is a Recognised Third Party Organisation as described within the European Pressure Equipment Directive at Article 13, has approved the following NDT personnel to carry out the specified non destructive tests on permanent joints to pressure equipment in category III and IV (PED Annex I, section 3.1.3 refers).

Full name of Approved NDT Person	NDT method(s) covered by approval	Scope of Approval or level of certification and any applicable limitations	Qualification body

The RTPO has approved the named NDT personnel to carry out the specified non-destructive tests on the basis of:

Specify the route or process leading to Approval, and state the conditions of validity of the approval:

Route B conditions of validity: The validity of the approval is conditional upon the associated third party certificate remaining valid.

Route C conditions of validity: The validity of the approval is conditional upon the second party certification of the named NDT personnel being maintained up to date in accordance with internal procedure(s) or a written practice satisfying the criteria of an accepted standard.

Signature of the RTPO representative

APPENDIX III

Guideline 6/13, Accepted by on: Working Party "Guidelines": 2003-12-17

Final version adopted on 2004-03-17 by the Commission's Working Group "Pressure"

Guideline related to: Pressure Equipment Directive 97/23/EC, Annex I section 3.1.3:

Question: For pressure equipment in categories III and IV, can Non-Destructive Testing personnel holding qualifications other than those satisfying criteria of the harmonised standards (e.g. EN 473:2000 General principles for qualification and certification of NDT personnel) be approved by Recognised Third Party Organisations (RTPO) notified by a member state under Article 13 paragraph 1?

Answer: Yes.

NDT personnel certified under standards, other than the harmonised standards, may be approved by a RTPO provided it is satisfied that certification criteria equivalent to the harmonised standards have been met, and that the scope of certification is relevant to the testing of permanent joints in pressure equipment.

A RTPO may sub-contract part of its work, within the provisions of the New Approach guide, but shall keep the full responsibility and issue the approval. The approval of the personnel shall be done by a RTPO on an individual basis.

Note: Approval of an individual solely on the basis of a certificate issued by another body where no contractual arrangement exists with the RTPO does not fulfil the requirement of the Pressure Equipment Directive.
