



## **1 INTRODUCTION**

- 1.1 This document has been produced by the Pakistan National Accreditation Council (PNAC) in conjunction with the PNAC Sectoral Committee for Inspection Bodies. It provides guidance to those requirements in ISO/IEC 17020 and Agreement between PNAC & IBs (F-01/13) that need interpretation when applied by Inspection Bodies performing Non Destructive Testing (NDT). It does not cover all of the requirements of ISO/IEC 17020-General criteria for the operation of various types of bodies performing inspection and Agreement between PNAC & IBs (F-01/13). Inspection Bodies are reminded of the need to comply with all of the requirements in these documents. Appeals concerning interpretation will be considered in accordance with the PNAC Appeals Procedure. Other PNAC documents may be referred to where relevant.
- 1.4 For the purposes of this document the term Inspection Body shall be taken to mean an accredited Inspection Body.

## **2 Accreditation for Non -Destructive Testing Laboratories**

### **3. Inspection services (ISO/IEC 17020:2012)**

- 3.1 This document covers the inspection of equipment using the following NDT methods.
1. Radiographic testing
  2. Ultrasonic testing
  3. Magnetic particle testing
  4. Liquid penetrant testing
  5. Eddy current testing
  6. Leak testing
- 3.2 An inspection body accredited for performing NDT under ISO/IEC 17020, may perform and report on the following activities;
- a. Testing to appropriately defined standards and procedures, interpretation of test results against the agreed acceptance standards and determination of conformity.
  - b. Determination of significance of defects found, based on test results
- 3.3 The PNAC accreditation schedule will reflect the scope of activity for which the inspection body is accredited. The content of this accreditation schedule should be included in the inspection body's quality manual so that the accredited scope can be clearly distinguishable from other activities that are outside the scope of an inspection body's accreditation.

### **4.0 Independence, impartiality and integrity (ISO/IEC 17020, Clause 4 and Annex A - normative)**

- 4.1 Inspection bodies operating as Type A, B or C bodies as defined in ISO/IEC 17020 may be accredited for inspection using the NDT methods covered in this publication.
- 5.0 **On- site assessments of personnel by the inspection body (ISO/IEC 17020:2012 Clause 6.1.9)**
- 5.1 ILAC P15:05/2020 refer to the requirement for on-site assessment/witnessing of inspection personnel by the Inspection Body. The on-site assessment of personnel will

assist the Inspection Body in establishing whether the inspectors' knowledge of the plant they are examining and the environment in which they are working is sufficient to perform their inspection activities effectively and safely. The on-site assessment of personnel will also assist the inspection body to establish that personnel are working to procedures and agreed client requirements.

## 6.0 Personnel (ISO/IEC 17020:2012, Clause 6.0)

- 6.1 In all instances the Inspection body is required to demonstrate that the personnel qualifications specified in the standard / customer specification / applicable regulations are met.
- 6.2 The inspection body is required to demonstrate that NDT personnel used for examination have the knowledge and experience in the type of defects, which may occur during manufacture, and / or use of the plant examined.
- 6.3 The personnel responsible for determination of significance of defects found, based on test results (i.e. Inspection Bodies accredited to the scope defined in 3.2 (b) of this document) should, in addition to the appropriate qualifications, experience, training and satisfactory knowledge of the examinations carried out, also have;
- Relevant knowledge of the technology used for the manufacturing of the items tested (materials, products etc,) or the way they are used or intended to be used and of the defects or degradations which may occur during use.
  - Knowledge of the general requirements expressed in the legislation and standards;
  - An understanding of the significance of defects found with regard to the normal use of the items, material, product, etc concerned.
- 6.4 The documented guidance for the conduct of NDT personnel as required by clause 8.5 of ISO/IEC 17020 should cover aspects such as; impartiality, safety, protective clothing, ethics relating to work, human factors, eye sight checks and other such issues.
- 6.5 The person shall have minimum ASNT level -1 qualification to conduct the inspection services mentioned in section 3 of this document.
- 6.6 **The person (Evaluator/Monitor/Supervisor) shall have minimum ASNT level III in the respective field of NDT.**

## 7.0 Inspection methods and procedures (ISO/IEC 17020:2012, Clause 7.1)

- 7.1 The inspection body should be aware of any limitations of general procedures based on national standards. Inspection Body should declare and / or report such limitations to the customer if the specified procedures have not been demonstrated to be able to achieve the required level of reliability expected by the customer.
- 7.2 The inspection body should check that the qualification and experience of NDT personnel is appropriate to the inspection to be carried out. This should include checking any limitations in the scope of competence certified and the resulting need for job specific training and authorization.
- 7.3 Contractual arrangements should reflect the roles & responsibilities of the purchaser of NDT services and the NDT service provider.

## 8 Records (ISO/IEC 17020:2012, Clause 7.3)

- 8.1 The retention period for records should be determined and documented to ensure that

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customer and regulatory requirements are met.

## 10 References

- ISO/IEC 17020:2012 General Criteria for the Operation of Various Types of Bodies Performing Inspection
- ILAC P15:05/2020 Application of ISO/IEC 17020:2012 for the Accreditation of Inspection Bodies
- ISO / IEC 17025:2017, *General Requirements for the Competence of Testing and Calibration Laboratories*