

	<p align="center">Accreditation Criteria for In-service Inspection of Power Presses and other specified machines and their safeguarding systems</p>	<p>G-24/05 Issue Date: 08/07/08 Rev No: 00</p>
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1 INTRODUCTION

- 1.1 This document has been produced by the Pakistan National Accreditation Council (PNAC) in harmony 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 carrying out in-service inspection of power presses and other specified machines and their safeguarding systems. 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.
- 1.2 The field of inspection covered by this document is power presses and other specified machines and their safeguarding systems; the type of inspection is in-service inspection.
- 1.3 For the purposes of this document the term Inspection Body shall be taken to mean an accredited inspection body.

2. INSPECTION SERVICES, PLANT, EQUIPMENT AND SYSTEMS COVERED BY (ISO/IEC 17020 CLAUSE 3.3)

- 2.1 This document details the requirements for the inspection of plant, equipment and systems undertaken with the aim of detecting potential and actual defects, particularly those which may be a cause of danger to persons, and to ascertain if equipment meets relevant statutory requirements, national or international standards, Codes of Practice and similar documents. The plant, equipment and systems covered are:
- Power presses i.e. a press or a press brake for the working of metal by means of tools, or for die proving, which is power driven and which embodies a flywheel and clutch. These machines are subject to thorough examination.
 - Those power presses listed in Table 1 or 2 of this document. These machines are subject to inspection.
 - Other specified machines in the engineering industry which are included in Table 1 or 2 of this document, i.e. machines not already included in 2 a) or 2 b) above. These machines are subject to inspection.
 - Safeguarding systems associated with 2 a), 2 b) and 2 c) above.

3. INDEPENDENCE, IMPARTIALITY AND INTEGRITY, (ISO/IEC 17020, CLAUSE 4)

- 3.1 Inspection Bodies operating as Type A, B or C bodies as defined in ISO/IEC 17020 may be accredited for in service thorough examination of power presses covered by paragraph 2 a), in service inspection of power presses covered by paragraph 2 b) and other specified machines covered by paragraph 2 c) including associated safeguarding systems of these machines

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4. ORGANISATION AND MANAGEMENT - SUPERVISION, (ISO/IEC 17020, CLAUSE 6.4)

4.1 For the inspection of power presses and other specified machines and their safeguarding systems the requirements for supervision shown in Tables 1 and 2 in this document shall be met.

5. INTERNAL AUDIT (ISO/IEC 17020, CLAUSE 7.7 AND 7.8)

5.1 The internal audit programme shall include provision to include the on-site witnessing of inspections. Sections 6.4d and 6.4e of IAF/ILAC-A4: 2004 are referred.

6. PERSONNEL (ISO/IEC 17020, CLAUSE 8)

6.1 Qualifications

6.1.1 The Inspection Body shall ensure that the staff used to supervise inspectors and to resolve technical issues and the staff used to perform inspections defined in 6.3 of this document.

6.1.2 Where it is not practical to employ a qualified engineer trained and experienced in the electrical and electronic systems associated with power presses on a full-time basis, the Inspection Body shall ensure that its records show that any personnel employed for this purpose are competent and have been formally contracted. Their role may include provision of expert technical advice to staff supervising inspectors and performing inspections as indicated in 6.1.1 and inspection of specialist equipment.

6.1.3 If staff are used to perform non-destructive testing in support of the inspection of power presses and other specified machines and their safeguarding systems they shall be able to demonstrate that personnel engaged in NDT of power presses and other specified machines and their safeguarding systems have been trained and examined in accordance with a documented programme.

6.2 Competence (ISO/IEC 17020 Clauses 8.2, 8.3, and 8.4)

6.2.1 Records of competence shall indicate the class of plant, equipment and systems as defined in Tables 1 and 2 of this document and other specialized activities such as calibration or NDT testing considered being within the competence of each inspector together with details of authorizations given.

6.3 Qualification Categories

Category 1. Graduate Engineer holding membership of Pakistan Engineering Council (PEC) with at least 4 years experience in a relevant engineering discipline of which at least two years shall have been spent working in an engineering discipline associated with the inspection of power presses and other specified machines and their safeguarding systems.

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Category 2.

Bachelor of technology from respective Board of Technical Education with at least 5 years experience in a relevant engineering discipline of which at least two years shall have been spent working in an engineering discipline associated with the inspection of power presses and other specified machines and their safeguarding systems.

Category 3.

Person having three years diploma of Associate Engineers as defined by PEC with at least 6 years of experience in a relevant engineering discipline of which at least three years shall have been spent working in an engineering discipline associated with the inspection of power presses and other specified machines and their safeguarding systems.

Category 4.

Person having two years vocational technical training as defined by PEC with at least 7 years of experience in a relevant engineering discipline of which at least three years shall have been spent working in an engineering discipline associated with the inspection of power presses and other specified machines and their safeguarding systems.

Category 5.

Person having three years apprenticeship training as defined by PEC with at least 9 years of experience in a relevant engineering discipline of which at least 5 years shall have been spent working in an engineering discipline associated with the inspection of power presses and other specified machines and their safeguarding systems.

Category 6.

Person employed prior to the date of application for accreditation in the inspection of pressure systems with less than tradesman's apprenticeship but having minimum Matriculation qualification with a minimum of 10 years spent working with an industry associated with relevant inspection field and has general knowledge of relevant inspection field and its operating environment.

Note 1: All qualifications shall be from Higher Education Commission (HEC), Inter Board Committee Chairman (IBCC) & Board of Technical Education approved Universities, Colleges & Institutes.

Note 2: The persons from category 1-6 shall have training on relevant standard including the ISO/IEC 17020.

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Table 1

Classification of Plant, Equipment and Systems


Class A

<p>Machines and/or Safety devices (excluding those defined in Class B in Table 2) such as :</p>	<p>Mechanical, hydraulic, pneumatic presses having a total related capacity in excess of 10 tons Mechanical, hydraulic, pneumatic presses having a total rated capacity up to 10 tons which are not guarded exclusively by fixed guards and/or closed tools Power press for the working of hot metal Mechanical press brakes Hydraulic press brakes Friction screw presses Die presses Powder compacting presses Turret punch presses Universal metal workers Metal cutting guillotines All forms of interlocking guards Automatic sweep away guards Electro sensitive safety systems Early rising press brake/inter-locking guards Distance bar trip guards or similar devices Perimeter fencing Pressure sensitive mats</p>
<p>Qualification Category</p>	<p>1,2,3 or 4 only</p>
<p>Level of Supervision required</p>	<p>Occasional: Regular documented meetings shall take place during the year between inspection personnel and senior engineers competent in the relevant field(s) of inspection to discuss technical and quality issues. Ready access shall be available to authoritative technical support from personnel qualified to Category 1, 2 or 3.</p>
<p>Conditions of Authorization (Inspection personnel are not permitted to perform inspections covered by accreditation unless the inspections are within their designated competence)</p>	<p>Category 4 staff shall only be authorized to undertake approval of non routine repairs, modifications to plant, changes to plant operating parameters or changes in inspection procedures involving considerations or calculations not defined within the relevant national or international code or standard if they have the specific documented approval of a member of staff authorized and qualified in such matters</p>

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Table 2
Classification of Plant, Equipment and Services
Class B

Machines with basic controls and safety devices such as :	Mechanical, hydraulic and pneumatic presses up to 10 tons total rated capacity, guarded exclusively by means of fixed guards and/or closed tools Riveting machines Folders Non powered machines
Qualification Category	1, 2, 3, 4, 5 and 6
Level of Supervision required : Categories 1, 2, 3 and 4 Categories 5 and 6	<p>Occasional: Regular documented meetings shall take place during the year between inspection personnel and senior/supervisory engineers competent in the relevant field(s) of inspection to discuss technical and quality issues. Ready access shall be available to technical support from personnel qualified to Category 1, 2 or 3 Frequent: Supervision at least once a week by a senior/supervisory engineer technically competent in the relevant field of inspection. Ready access to authoritative technical support from personnel qualified to Category 1, 2 or 3.</p> <p><i>Supervision requirements may be modified provided that there is documented evidence of ongoing satisfactory performance.</i></p>
Conditions of Authorization (Inspection personnel are not permitted to perform inspections covered by accreditation unless they are within their designated competence)	<p>Category 3 and Category 4 staff shall only be authorized to undertake approval of non routine repairs, modifications to plant, changes to plant operating parameters or changes in inspection procedures involving considerations or calculations not defined within the relevant national or international code or standard if they have the specific documented approval of a member of staff authorized and qualified in such matters. Category 5 and Category 6 staff shall not be authorized to undertake any activities other than inspection and testing to identify faults and weaknesses within limits defined by persons qualified to Category 1 or 2. The documented approval of an authorized person qualified to Category 1 or 2 shall be obtained before making decisions involving limits of acceptability, repairs or modifications.</p>

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7. TRAINING, (ISO/IEC 17020, CLAUSE 8.2)

7.1 The training provided by the Inspection Body shall provide a working knowledge of the plant, equipment and systems including design, construction, operation, maintenance, significance of defects, typical problem areas, associated methods of rectification and safeguarding systems.

8 INSPECTION METHODS AND PROCEDURES, (ISO/IEC 17020, CLAUSE 10)

8.1 The procedure used to inspect power presses and other specified machines and their safeguarding systems shall detail how the inspection body interprets and applies guidance included in any requirement documents such as statutory regulations, standard specifications and codes of practice or guidance notes.

9 SUB-CONTRACTING, (ISO/IEC 17020, CLAUSE 14)

9.1 Inspection bodies shall endeavor to use subcontractors that hold PNAC accreditation or accreditation from a body recognized by PNAC for Non-Destructive Testing (NDT). If a subcontractor is used that is not accredited for NDT the inspection body shall ensure that it has records to show that the NDT operators used by the sub-contractor hold the appropriate level of personnel certification or equivalent for the NDT method to be used.

10. REFERENCES

1. ISO/IEC 17020-*General Criteria for the Operation of Various Types of Bodies Performing Inspection*
2. IAF/ILAC-A4:2004 – *Guidance on the Application of ISO/IEC 17020*