حكومة دبي
GOVERNMENT OF DUBAI

مركز الإمارات العالمي للاعتماد
Emirates International Accreditation Centre

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متطلبات اعتماد جهات التفتيش العاملة في مجال الفحوص اللامتلفة

Accreditation requirements for inspection bodies working in Nondestructive Testing

(All Types of Methods to Evaluate the Properties of a Material, Component or System without Causing Damage)

EIAC-RQ-IB-005

Signatories	
Approved:	Director, Inspection Bodies Accreditation Department

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Contents

1 Scope

1.1 This document covers the field of Non Destructive Testing (NDT), which is very broad and interdisciplinary field that pays a critical role in assuring the structural components and systems perform their function in a reliable and cost effective fashion.

1.2 Duties/ Responsibilities of certified NDT inspectors: The roles and responsibilities of personnel in each level are generally as follows (there are slight differences or variations between different codes and standards):

1.2.1 NDT Level-I:

a) Shall have skill and knowledge to perform specific calibrations, specific tests, specific interpretations and evaluations for determining the acceptance or rejection of tested items in accordance with specific written instructions, through a procedure approved by NDT Level-III.
b) Records test results but does not have authority to sign reports for the purpose of signifying satisfactory completion of NDT operations.
c) Receive the necessary guidance or supervision from a certified NDT-Level-II or NDT Level-III Individual.

1.2.2 NDT Level-II:

a) Be familiar with the scope and limitations of each method for which the individual is certified.
b) Prepare written instructions but not authorize them for use prior to NDT Level-III approval.
c) Set up and calibrate equipment in accordance with approved procedure.
d) Shall have skill and knowledge to interpret, evaluate and document test results in accordance with procedures approved by NDT-Level-III.
e) Organize and report the results of non-destructive tests.Train and guide NDT Level-I and trainee personnel as assigned by immediate supervisor and/or NDT Level-III.

1.2.3 NDT Level-II Limited:

a) Shall have the skills and knowledge to set up and calibrate equipment, to conduct tests, and to interpret, evaluate, and document results in accordance with procedures approved by an NDT Level III in the techniques listed in Table 2.
b) Shall be thoroughly familiar with the scope and limitations of the technique to which certified and should be capable of directing the work of trainees and NDT Level I personnel.
c) Shall be able to organize and report non-destructive test results.

1.2.4 NDT Level-III:

a) Be responsible for NDT operations to which assigned and for which certified.
b) Establish methods and test techniques, verify the adequacy of procedures, and authorize use of all NDT procedures to be used by NDT Level-I and II personnel.
c) Interpret test results in terms of applicable codes, standards, specifications, and procedures.

d) Be sufficiently familiar with applicable materials, fabrication and product technology to establish techniques and assist in establishing acceptance criteria where none are available.

e) Be generally familiar with the appropriate NDT methods for which NDT Level-III is not certified.

f) Be responsible, for training, administration and grading of examinations of NDT Level-I and Level-II personnel for those methods in which the NDT Level-III has a valid ASNT Level-III certificate.

g) ASNT Level-III certificate can only fulfil Basic and Method examinations. Specific examinations shall be conducted by the employer. If documented evidence of experience is existing in writing NDT procedures and interpretation of test results in that method, then specific examination is waived at the discretion of the employer.

1.2.5 Subcontracting:

Where the Inspection Body subcontracts certain specialized activities temporarily for part or all of its inspection activities, the subcontractor shall be accredited by Emirates International Accreditation Centre 'EIAC' for the subcontracted scope, Moreover, the Inspection Body shall have identifiable member(s) of the management personnel, sufficiently qualified and experienced in those technical activities being subcontracted, to be able to:

a) Adequately define the problem to enable the subcontractor to offer appropriate services, personnel and equipment;

b) Choose an appropriate subcontractor and assess its technical competence at least in the particular area of interest (e.g. methods, personnel and facilities);

c) Evaluate the results supplied by the subcontractor and relate those results properly to the service originally requested or problem originally defined.

2 Definitions

2.1 Education: An institutionalized program, prescribed by appropriate authorities, which is offered by schools, institutes, organizations, colleges or universities established for the sole purpose of providing instruction in an orderly, planned and systematic manner.

2.2 Qualification: Demonstration of physical attributes, knowledge, skill, documented training and documented experience required to properly perform Non-destructive Testing (NDT) tasks.

2.3 Training: An organized and documented program of activities designed to impart the knowledge and skills required to be qualified to this standard.

2.4 Experience: Work activities accomplished in a specific NDT method under the direction of qualified supervision. Experience includes the performance of the NDT method and related activities but not including time spent in organized training programs.

2.5 Inspection: Procedure used by the inspection body to confirm that the qualification requirements for a method, level and sector have been fulfilled, leading to the issuing of a certificate.

2.6 Limited Certification: Non-destructive test methods may be further subdivided into limited disciplines or techniques to meet specific requirements needs, theses are Level-II certifications, but to a limited scope.

2.7 Re-inspection: When the validity of the certificate is interrupted or expired, where the new certificate to be issued by examination only.

2.8 Examiner: Person certified to Level-III in the method for which is called to examine, monitor and assess the qualification exams in the PND (Particular Non-destructive).

2.9 Candidate: A person who aspires to the qualification and certification, and who works under the supervision of certified personnel, in order to gain the experience required for qualification. Candidates may be self-employed only if they provide documented evidence that the experience was acquired under the supervision of certified personnel.

2.10 NDT Method: One of the disciplines of NDT; for example, ultrasonic testing, within which various test techniques may exist.

2.11 NDT Technique: A specific use of a PND method (e.g. the ultrasonic immersion technique).

2.12 NDT Procedure: Written description of all essential parameters and precautions to be observed in when applying a PND technique to a specific control made in accordance with a standard, a code or a specific date.

2.13 NDT Statement: Written description of several steps to be followed when a control is made in accordance with standards, a code or a PND procedure.

2.14 Qualification Examination: Test organized by Emirates International Accreditation Centre 'EIAC', or authorized Inspection Body, to show the general, specific and practical knowledge, and the skill of candidate.

2.15 General Examination: Test concerning the criterions of PND method.

2.16 Specific Examination: Test concerning the control techniques applied to a particular industry and concerning the knowledge of the product that has to be controlled, standards, rules and acceptance criteria.

2.17 Levels: Levels depends upon the referencing code (e.g. ASNT, PCN,....).

2.18 Practical Examination: Skill test in which the candidate of Level-I or II shows familiarity in using testing equipment, in the recording and analysis of information obtained at the required level. Similarly skill test in which the candidate of Level-III shows the ability to produce one or more PND procedures.

2.19 Basic Examination: Level-III test, which shows:

- Knowledge of technology and materials science relating activities of level-III;
- Knowledge of qualification and certification system;
- Knowledge of basic principles of PND methods as required for level-II.

2.20 Method Examination: Level-III test, which shows general and specific knowledge of PND method by the candidate who aspire to level-III certification; test also shows capacity to read and act a PND procedure.

2.21 Visual and optical testing (VT)

The most basic NDT method is visual examination. Visual examiners follow procedures that range from simply looking at a part to see if surface imperfections are visible, to using computer controlled camera systems to automatically recognize and measure features of a component.

2.22 Radiography testing (RT)

RT involves using penetrating gamma or X-ray radiation on materials and products to look for defects or examine internal or hidden features. An X-ray generator or radioactive isotope is used as the source of radiation. Radiation is directed through a part and onto film or other detector. The resulting shadowgraph shows the internal features and soundness of the part. Material thickness and density changes are indicated as lighter or darker areas on the film or detector.

2.23 Magnetic particle testing (MT)

This NDT method is accomplished by inducing a magnetic field in a ferromagnetic material and then dusting the surface with iron particles (either dry or suspended in liquid). Surface and near-surface flaws disrupt the flow of the magnetic field within the part and force some of the field to leak out at the surface. Iron particles are attracted and concentrated at sites of the magnetic flux leakages. This produces a visible indication of defect on the surface of the material.

2.24 Ultrasonic testing (UT)

In ultrasonic testing, high-frequency sound waves are transmitted into a material to detect imperfections or to locate changes in material properties. The most commonly used ultrasonic testing technique is pulse echo, whereby sound is introduced into a test object and reflections (echoes) from internal imperfections or the part's geometrical surfaces are returned to a receiver. Flaw detection, corrosion mapping including thickness measurement by A-Scan as well as digital display may be carried out depending upon the requirement of the inspection of the equipment.

2.25 Penetrant testing (PT)

With this testing method, the test object is coated with a solution that contains a visible or fluorescent dye. Excess solution is then removed from the surface of the object but is left in surface breaking defects. A developer is then applied to draw the penetrant out of the defects. With fluorescent dyes, ultraviolet light is used to make the bleed-out fluoresce brightly, thus allowing imperfections to be readily seen. With visible dyes, a vivid colour contrast between the penetrant and developer makes the bleed-out easy to see.

2.26 Electromagnetic testing (ET)

There are a number of electromagnetic testing methods but the focus here will be on eddy current testing. In eddy current testing, electrical currents (eddy currents) are generated in a conductive material by a changing magnetic field. The strength of these eddy currents can be measured. Material defects cause interruptions in the flow of the eddy currents which alerts the inspector to the presence of a defect or other change in the material. Eddy currents are also affected by the electrical conductivity and magnetic permeability of a material, which makes it possible to sort some materials based on these properties.

2.27 Leak testing (LT)

Several techniques are used to detect and locate leaks in pressure containment parts, pressure vessels, and structures. Leaks can be detected by using electronic listening devices, pressure gauge measurements, liquid and gas penetrant techniques, or simple soap-bubble tests.

2.28 Acoustic Emission Testing (AE)

When a solid material is stressed, imperfections within the material emit short bursts of acoustic energy called "emissions". As in ultrasonic testing, acoustic emissions can be detected by special receivers. Emission sources can be evaluated through the study of their intensity and arrival time to collect information (such as their location) about the sources of the energy.

2.29 Shall: The word “Shall” is used when stating a mandatory requirement.

2.30 Should: The word “Should” is used when the statement is advisory.

2.31 May: The word “may” is used when the statement is permissive, not required or a means to accomplish the specified task.

3 General Requirements

3.1 The Inspection Body applying for accreditation as per this program shall have a management system, which includes at least the following:

3.1.1 Proper Documentation & operation of its policies, procedures and operations starting from receiving the request for an NDT evaluation, carrying out contract review, preparing for inspection, performing inspections, recording results and up to the issuance of the final report/certificate in accordance with the documentation requirements of ISO/ IEC 17020 and any additional requirements set by Emirates International Accreditation Centre 'EIAC' here within this document and other related documents;

3.1.2 Proper Documentation & operation of its policies, procedures and operations starting from receiving the request for an NDT evaluation, carrying out contract review, preparing for inspection, performing inspections, recording results and up to the issuance of the final report/certificate in accordance with the documentation requirements of ISO/ IEC 17020 and any additional requirements set by Emirates International Accreditation Centre 'EIAC' here within this document and other related documents;

3.1.3 Facilities properly equipped with the equipment and instruments appropriate for the type and range of inspections under accreditation as minimum; and,

3.1.4 Employ the suitable and qualified technical and administrative staff in the Inspection Body (also see 4.1).

3.1.5 Legal Identification for commercial private Inspection Bodies shall be clearly identified (for the emirates of Dubai, see the Regulation No. 2:2010 "Concerning Regulation of Conformity Assessment Bodies Works in the Emirate of Dubai").

3.2 The Inspection Methods within accreditation program shall be included in the official list of tests submitted by the Inspection Body (see Regulation No. 2: 2010).

3.3 The Inspection Body shall prepare work program for its activities with a frequency suitable to its nature of work.

3.4 The Inspection Body shall have clear rules for the fees charged for the NDT evaluation and for the issuance of the Certificate and the terms of payments for each. Fees charged by Inspection Body shall be for the Inspection Services and not for the sake of issuing a Certificate; the fee shall be chargeable even if a certificate is withheld.

3.5 The Inspection Body shall have minimum one level II inspector as a permanent staff within the organization.

3.6 Emirates International Accreditation Centre 'EIAC' recognizes certificates of Level I & II & III provided by world reputable organizations.

3.7 Experience for NDT-Level-I, II: The minimum initial experience requirements for NDT Level-I and II personnel are summarized in Annexes A and B.

Notes:

a) Experience shall be based on the actual hours worked in the specific method.

b) A person may be qualified directly to NDT Level-II with no time as a certified NDT Level-I, providing the required training and experience consists of the sum of the hours required for NDT Level-I and NDT Level-II.

c) The required minimum experience shall be documented by method and by hour with supervisor of NDT Level-III approval.

d) While fulfilling total NDT experience requirement, experience may be gained in more than one (1) method. Minimum experience hours shall be met for each method.

e) Level of education for NDT Level-I & II shall be Holding Diploma in engineering/Science or graduated in high school grammar or science.

f) NDT Level-II: Shall have min. 3 years inspection experience in pressure vessels, piping fabrication or petroleum plant or oil refineries.

4 Specific Criteria of Competence

4.1 Requirements for Technical Competence of Staff

4.1.1 The Inspection Body shall use personnel to carry out NDT evaluation who have the qualifications, training, experience and knowledge of the requirements of the inspections to be carried out. The Inspection Body shall maintain records of such documented qualifications, training and experience, and records to show how and when, each personnel was authorized to perform specific inspection activities, the scope for which he is authorized and the sample of his signature.

4.1.2 The Inspection Body shall only authorize personnel to carry out NDT evaluation if the inspections are within the designated competence of those personnel and if that personnel holds the Level of qualification and experience necessary to inspect the equipment, as shown in clause 2.2.

4.1.3 Where the personnel of the Inspection Body carry out in-house calibrations of inspection, measuring and test equipment, the records of their training, qualifications and experience shall be maintained together with details of those authorized to perform specific calibrations.

4.1.4 Levels of Supervision and Requirements for Technical Support:

a) The extent and frequency of supervision and technical support exerted by the Inspection Body management over its staff shall be proportional to the volume of work taken by the Inspection Body, the level of experience and training of the technical staff, the criticality of equipment under inspection and existence of regulatory requirements for the concerned field of inspection. No under-training-inspector shall be allowed to perform inspection activities independently under any circumstances. Following are the classified levels of supervision that shall be exerted by the Inspection Bodies and circumstances under which they shall be exerted:

b) Occasional (on certified person of Level-II)

c) Formal, direct contact to review work with certified person of Level-III at least every six months. If the senior inspector is the highest level of competence in the IB then he is responsible for holding sufficient records that review of his work has been done as per this requirement either by him or by any of his peers. More frequent direct contact with Supervisor may be necessary Technical support from persons qualified to peer senior inspector to be readily available.

d) Frequent (on certified person of Level-I)

e) Direct contact with Supervisor at least weekly. Technical support from persons qualified to senior inspector.

4.1.5 Training and further development

4.1.5.1 The training program shall include at least the body of knowledge shown in ASNT CP-105 for appropriate test method and of this document. The test questions shall be similar to those recommended by the appropriate ASNT CP-105. Where a method supplement does not exist, another method having a similar degree of technical difficulty shall be used as a guide for developing the training outline. Procedures and test techniques that individuals will encounter in their specific assignments, and the applicable instructions, specifications and codes use by Inspection

Body shall be part of each candidate's informal on-the-job training under the coordination of the NDT Level-III individual(s). The NDT-Level-III shall in all cases be responsible for the content of the completed course.

4.1.5.2 The training shall include the safe conduct of the inspectors' duties, in particular applicable safe practices, risk assessment, knowledge of applicable statutory requirements, codes of practice and standards.

4.1.6 Examination

Vision Examination: Inspectors shall be given an annual vision examination, to assure natural or corrected near-distance acuity exists in at least one (1) eye. The individual shall be capable of reading a Jaeger Number 2 or equivalent type as per SNTC-TC-IA or Jaeger Number 1 or equivalent type as per CP 189 and size letters at a distance of not less than 12 inches (30.48 cm) and recorded / certified depending up on referencing code. The color vision examination shall demonstrate the capability of distinguishing and differentiating contrast among colors used in the method. This shall be conducted every five years upon initial certification or renewal /recertification and recorded Vision examinations shall be administered in accordance with Jaeger reading card and Ishihara eye chart of 24 tablet or shades of gray and approved by an NDT Level-III designated by the employer. Or Registered Medical practitioner –Ophthalmologist may administer visual examination for acuity and color differentiation and contrast using Jaeger card and Ishihara chart respectively as per written practice and recorded / certified The gray shades may be used to assess to distinguish and differentiate density from identifying box numbers of same shades of gray. There are 8 gray shades of percentages in the order of 10, 20, 30, 40, 50, 60, 70 and 80 in 2 boxes each. In place of gray shades films of varying density may be used. The minimum No. of five (5) films of different density will be given to candidates to distinguish and differentiate density. If the candidate is able to arrange in ascending or descending order of density, he may be concluded as having normal color vision for shades of gray and recorded / certified.

4.1.7 Records

4.1.7.1 The Inspection Bodies shall ensure the availability of the qualification records at least a certification record, an experience record, training record, a record of previous experience (if applicable), and a vision examination record.

4.1.7.2 Certification record: the certification record shall include at least the following information:

a) Level of certification and NDT method, including the test technique covered;
b) Results of all, and copies of the most recent, employer examinations that the individual has taken;
c) for NDT Level-III personnel, a copy of the candidate's ASNT Level-III certificate plus documented evidence of experience is existing in writing NDT procedures and interpretation of test results in that method, then specific examination is waived at the discretion of the employer;
d) Dates of certification, expiration, suspension, revocation and reinstatement; and,
e) Signature, printed name, and title of the IB's certifying representative.

4.1.7.3 NDT Training Record: A documented history of the candidates training shall be maintained which identifies: NDT training received by the individual, the organization providing the training, dates of the training, hours of training, evidence of satisfactory completion, and the instructor's name.

4.1.7.4 NDT Experience Record: A record which identifies the individual's experience performing various non-destructive tests shall be maintained for purpose of verifying initial certification experience and continuing experience.

4.1.7.5 Visual Examination Records: Current records of vision examinations shall be maintained.

4.2 Requirements for Site[1] Work

4.2.1 Preparation for Site work:

a) Prior to going to site, the Inspection Body shall ensure that all needed Personnel Protective Equipment that ensures safety of personnel on site is taken to site;

b) The Inspection Body shall allocate inspection activities based from the work program for each inspector in the form of Work Orders. Work Orders to be used by inspectors on site shall contain the following information as minimum:

- Identifiable number traceable to the client request/contract;
- Type of the equipment and related information about critical items to be inspected;
- Site Location (site map is recommended to be provided)
- Instructions for inspections
- Contact person on behalf of the IB's client.

c) Upon arriving at any inspection site, there shall also be an obligation from the IB for the inspector to enquire the following information:

- Information about previous inspections.
- If the Inspector cannot obtain sufficient information, the inspection shall be treated like a first inspection and therefore proceed with the 'normal' inspections.
- Manufacturing Operations Manual, Operator or Maintenance Manuals of the equipment, safe working limits indication in English and/or Arabic language, and in case not available and not possible to provide, the IB shall ensure that an independent competent person be engaged by the owner to provide advice and documentation to support the continued use of the equipment.

4.2.2 Reporting Discontinuity/ Defects in equipment under inspection

Inspectors are required to be capable of making identification of all types of Discontinuity/Defects found in the equipment under inspection; if the equipment is found unsafe and represents an imminent danger, the IB shall

[1] Site: Place at which inspection is being undertaken

advise the owner to cease use of the equipment and report this incident immediately to the relevant authority in Dubai.

4.3 Inspection Methods and Procedures

4.3.1 Methods and Procedures to be used:

The Inspection Body shall use the relevant up-to-date Standards in the field of NDT evaluation for performing inspection, as detailed in Annex D[2] to this document.

In addition to the relevant Standards, the manufacturer's technical literature applicable to the equipment shall also be part of the inspection methods. It is the responsibility of the Inspection Body to ensure that these requirements and relevant Standards detailed in Annex D are available at their offices. A quick summary of the most commonly used methods is provided below.

4.3.2 Intensification of controls

If the tests have detected Discontinuity/Defects may be necessary to strengthen controls working in progress depending on the type of Discontinuity/Defects detected, the extent of control shall be increased as appropriate to detect, leaving unchanged the extension of the remaining controls.

4.4 Internal Quality Audits

4.4.1 The internal quality audit program shall include the on-site assessment of inspection personnel carrying out inspections.

4.4.2 On-site internal audit shall be carried out by personnel with the relevant technical qualifications and experience, who have been trained in internal auditing and who are sufficiently independent to carry out the audit objectively.

4.4.3 The Inspection Body's internal quality audit program for on-site audit of inspectors shall be designed so that within each cycle of the program at least one inspector is assessed thoroughly on site. The program shall also ensure that each of the inspectors engaged in inspection is assessed at least once within a period of 3 years for each of the fields in which they are active.

4.4.4 The audit program shall ensure that where inspections are managed from locations other than a central location e.g. Branch Offices, including those located overseas, the audit program encompasses these different locations in a systematic way over the 3 year period of validity of the accreditation certificate.

2 Annex D is subject to review depending on the expansion scope of services.

4.5 NDT Final Report

4.5.1 After having completed NDT evaluation and found no significant issues, the Inspection Body shall issue an Inspection certificate.

4.5.2 The Inspection Body shall produce an Inspection Certificate on the inspection to fulfill the client's needs, the related authority requirements and the applicable clauses of relevant Codes and standards (e.g BS/ BS EN standards). The certificate shall include the following information as a minimum; the elements of inspection certificates/reports that are considered to be mandatory for compliance with ISO/IEC 17020 are marked with an asterisk (*):

1* Designation of the document (i.e. as an inspection report or an inspection certificate, as appropriate);
2* Identification of the document (i.e. date of issue and document control number);
3* Identification of the issuing Inspection Body - name and address of the IB issuing/ endorsing the certificate;
4* Identification of equipment(s) Owner's/ Contractor's name and address;
5* Description of the inspection work ordered;
6* Date(s) of inspection and type of inspection;
7 Information on where the inspection was carried out (address of the premises at which the Inspection was made);
8 Manufacturer or supplier of equipment name and address;
9* Identification of the object(s) inspected and, where applicable, identification of the specific components that have been inspected;
10 Unique identification numbers (i.e. certificate/report number);
11* Identification or brief description of the inspection method(s) and procedure(s) used, mentioning the deviations from, additions to or exclusions from the agreed methods and procedures;
12 Identification of equipment(s)/tool(s) used for measuring / testing;
13 Applicable Reference Standard(s)/ Code(s);
14 Details of any major repairs/alterations carried out on the equipment, provided that the clients inform IB's inspector of any modifications or structural repairs;
15 Details of latest Inspection/Tests previously performed, including any NDT if possible;
16 Measuring units (for Capacity/Volume) shall be in either/both Metric System (m3) or Imperial System (gallon);
17 Information on environmental conditions during the inspection, if relevant;
18* The results of the inspection including a declaration of conformity and any defects or other non-compliances found (results can be supported by tables, graphs, sketches and photographs);
19 A statement that the inspection results relate exclusively to the work ordered or the object(s) or the lot inspected;
20 A statement that the inspection certificate/report shall not be reproduced except in full without the approval of the Inspection Body and the client;

21 The inspector's mark or seal, if any;

22* Names (or unique identification) of the staff members who have performed the inspection and, in cases when secure electronic authentication is not undertaken, their signature (see also clause 13.3 of ISO/IEC 17020);

23 Name, Signature and Designation of signing Authority of IB (if different from the inspector who performed the test);

24 Clearly defined Liability Clause of the IB.

Certificates issued by third party IB that fail to give any of the above details will be liable to rejection by the relevant authority in Dubai.

4.5.3 Professional Judgment that is included in the certificate will form part of the assessment and will be subject to accreditation.

4.5.4 If the NDT evaluation commissioned by the client could not be carried out in full or in part, a written notification to that effect shall be given to the client.

4.5.5 In the case of an accident involving an equipment inspected by accredited Inspection Body and as a result of the official investigation it was determined that the accredited IB was responsible, Emirates International Accreditation Center 'EIAC' shall immediately suspend the IB's Accredited related scope and exclude the inspector who performed the concerned inspection from the authorization list of approved inspectors. An immediate detailed special assessment will be carried out by Emirates International Accreditation Center 'EIAC' related to Quality Management System and technical competence of the Inspection Body under suspension and subsequently relevant clauses of Emirates International Accreditation Center 'EIAC'-REQ-01 related to suspension & withdrawal of accreditation will be applicable.

4.5.6 In case the accident involved serious injuries or was fatal, yje Head of Inspection Bodies Accreditation Department in Emirates International Accreditation Center 'EIAC' reserves the right to withdraw the accreditation for the related scope with immediate effect.

4.6 Currency of Certificates of Safety.

4.6.1 Each Inspection Certificate may be subject to evaluation as determined by the relevant authority and whenever the equipment is involved in an accident.

4.6.2 A designated signatory shall have carried out a minimum of inspections for each type of NDT methods under competent supervision before being authorized to undertake NDT evaluations alone. Each Inspection Body shall at the early stage of the implementation process designate appropriately qualified persons to perform the required inspections and that the Approved Signatories provisions of ISO/IEC 17020 and this document shall be adopted.

5 References

5.1 Regulation No. 2/ 2010 regarding arranging the operation of conformity assessment bodies operating in the Emirates of Dubai

5.2 ISO/IEC 17020 Conformity assessment - Requirements for the operation of various types of bodies performing inspection

5.3 UKAS RG 0 Accreditation for Inspection.

5.4 UKAS RG 7 Accreditation for Inspection Bodies Performing Non-Destructive Testing

5.5 EIAC –RQ-GEN-001 General Accreditation Requirements.

5.6 EIAC –RQ-GEN-002 The condition for the use of Accreditation symbol and ILAC MRA/IAF MLA Marks.

5.7 EIAC –RQ-GEN-003 Emirates International Accreditation Centre Fees Structure.

5.8 ASME approved Code, API and BS EN Standards mentioned in Annex 1 of this document and all relevant standards referred to by them.

6 Annex A

Table 1: Initial Training and Experience Requirements for Level-I and Level-II

EVALUATION METHOD	Level	Technique	Required Training (Hrs)	Required Experience		Refresher Course For Level-II training hours				
				Minimum Hrs. in method	Total Hrs. in NDT	Recertification				Every year after vacation may be followed by general & specific exam. As per table 3
						Experience in Years				
						< 5	6-10	11-15	16>	
Electromagnetic Testing(ET)	I	ACFMT	40	210	400	24	20	16	8	8
	II		40	630	1200					
	I	ECT	40	210	400	24	20	16	8	8
	II		40	630	1200					
	I	FLT	40	210	400	24	20	16	8	8
	II		40	630	1200					
	I	RFT	40	210	400	24	20	16	8	8
	II		40	630	1200					
Magnetic Particle Testing(MT)	I	-	12	70	130	16	16	8	8	8
	II		8	210	400					
Penetrant Testing(PT)	I	-	4	70	130	16	16	8	8	8
	II		8	140	270					
Radiological Testing(RT)	I	Radiographic	40	210	400	32	---	----	---	16
	II		40	630	1200		32	32	28	
	I	Computed Radiography	40	210	400	32	---	----	---	16
	II		40	630	1200		32	32	28	
	I	Computed Tomography	40	210	400	32	---	----	---	16
	II		40	630	1200		32	32	28	
	I	Digital Radiography	40	210	400	32				16
	II		40	630	1200		32	32	28	
Ultrasonics Testing(UT)	I	Ultrasonic Testing(UT)	40	210	400	24	24	20	16	16
	II		40	630	1200					
	II	TOFD	40	160	1200	24	24	20	16	16
	II	PAUT	80	160	1200	24	24	20	16	16

EVALUATION METHOD	Level	Technique	Required Training (Hrs)	Required Experience		Refresher Course For Level-II training hours				
				Minimum Hrs. in method	Total Hrs. in NDT	Recertification				Every year after vacation may be followed by general & specific exam. As per table 3
						Experience in Years				
						< 5	6-10	11-15	16>	
Visual Testing(VT)	I II	-	8 16	70 140	130 270	32	32	32	28	16
Thermal\ Infrared	I II	-	32 34	210 1260	400 800	32	32	32	28	16
Vibration Analysis	I II	-	8 16	420 1680	800 2400	32	32	32	28	16
Magnetic Flux Leakage	I II	-	8 16	70 210	130 400	32	32	32	28	16

7 Annex B

Table 2: Initial Training and Experience Requirements for Limited Certifications

Evaluation Technique	Required Training (Hours)	Required Experience Minimum Hours in Method	Refresher Course				
			Recertification				Every year after vacation may be followed by general & specific exam. As per table 3
			Experience in Years & Hours of training				
			<5	06-10	11-15	16>	
Radiographic Film Interpretation - Non Radiographer	40	2100*	32	32	32	28	16
Radiographic Film Interpretation - Radiographer (Certified Level-I)	24	2100*	32	32	32	28	16
Digital Radioscopy	32	175	32	32	32	28	16
Ultrasonic Digital Thickness Measurement (numeric output only)	8	40	16	16	8	8	8
Ultrasonic Straight Beam (A-scan) Measurement	24	175	16	16	8	8	8

Notes:

A: Experience shall be based on the actual hours worked in the specific method.

B: The required minimum experience shall be documented by method and by hour with supervisor of NDT Level-III approval.

C: While fulfilling total NDT experience requirement, experience may be gained in more than one (1) method

8 Annex C

Table 3: Minimum Number of Examination Questions

Method	General		Specific	
	Level-I	Level-II	Level-I	Level-II
Electromagnetic Testing:				
Alternating Current Field Measurement	40	40	20	20
Eddy Current Testing	40	40	20	20
Flux Leakage Testing	40	40	20	20
Remote Field Testing	40	40	30	30
Magnetic Particle Testing	40	40	20	20
Penetrant Testing	40	40	20	20
|Radiography Testing	40	40	20	20
Radiographic Film Interpretation - Non- Radiographer		40		20
Radiographic Film Interpretation - Radiographer (Certified Level-I)		20		15
Digital Radioscopy		30		20
Ulrasonic Testing	40	40	20	20
Ultrasonic Digital Thickness Measurement (numeric output only)		20		10
Ultrasonic Straight Beam (A-Scan) Measurement		30		15
Visual Testing	40	40	20	40
Thermal\ Infrared	40	40	20	40
Vibration Analysis	40	40	20	40
Magnetic Flux Leakage	40	40	20	40

9 Annex D

Table 4: List of BS EN-ASME Code Standards

MATERIALS/PRODUCTS	TASK NAME	STANDARD METHOD
NON DESTRUCTIVE TESTING	Non destructive testing - Qualification and certification of NDT personnel - General principles	BS EN 473 / BS EN ISO 9712-2012
	ASNT Recommended Practice SNT-TC-IA Personnel Qualification and certification in Non-destructive Testing	SNT-TC-1A
	Topical Outlines for Qualification of Non-Destructive Testing Personnel	ANSI/ASNT-CP105
	Qualification and certification of Non-destructive Testing Personnel	ANSI/ASNT-CP189
	Standard guide for evaluating capabilities of NDT Agencies	ASTM E 1359-02
	Practice for Quality Control Systems for NDT Agencies	ASTM E 1212
	Standard Practice for Agencies Performing Non destructive Testing	ASTM E 543-02
	Section V Nondestructive Examination	ASME BPVC

- The ASME Code standards contains radiographic, ultrasonic and liquid penetrant methods required by other Code Sections, which detect discontinuities in materials, welds, and fabricated parts and components
- Acceptance is based on approved written procedures for the methods/techniques from corresponding reference codes/standards