

## GR No. 23 Personnel Certification for Non-Destructive Testing of Aircraft, Engines, Components and Materials

### I General

- 1.1 This Generic Requirement advises the CAA's requirements for the training and qualification of Non-Destructive Testing (NDT) personnel involved in the manufacture and maintenance of aircraft or aircraft components, which shall be in accordance with the European Standard EN4179 (Notes 1 and 2) and the Approved Organisation's written practice/procedures for the authorisation of NDT personnel.
- 1.2 All examinations shall be conducted by personnel or organisations under the general control of the UK National Aerospace NDT Board (UK NANDTB). Subject to prior notification and with the agreement of the UK CAA, the UK NANDTB may delegate all or part of its responsibility for general control to another UK Nationally Accredited Body.
- 1.3 The term NDT is used throughout this Generic Requirement to include, but not be limited to; all the common methods identified in EN4179 and shall also be applicable to all other NDT methods used by Approved Organisations.
- 1.4 Non Destructive Inspection (NDI) as defined by Part-145, as opposed to EN4179, is not considered by the CAA as NDT and whilst relevant personnel engaged in NDI require appropriate training, they do not require qualification in accordance with EN4179. The UK NANDTB has published policy on the applicable training and qualification required for NDI and NDT methods and techniques ref: NANDTB 18.
- 1.5 The UK NANDTB recognises the PCN/AERO scheme as satisfying the qualification requirements of EN4179 for personnel subject to EC regulation 2042/2003. Personnel holding PCN/AERO certification may be issued an EN4179 authorisation by the organisation subject to any additional formal specific training and examination as determined by the Nominated Level 3 person (see paragraph 4). Additional specific training and examinations shall also be conducted under the control of the UK NANDTB or delegated body. This clause may also be applied to approved maintenance organisations who are also Part 21 approved when agreed by the CAA.
- 1.6 All training and examinations that extend the scope of an individual's authorisation must be conducted under the control of the UK NANDTB or delegated body. Additional training associated with new equipment, new product lines, new operating practices etc. are considered to be on the job training and does not fall under the UK NANDTB remit.

**NOTES:** 1) EN4179 (Aerospace Series – Qualification and Approval of Personnel for Non-Destructive Testing).

2) All references to Standards within this Requirement are to be taken as referring to the latest issue and are available from the British Standards Institute, 389 Chiswick High Road, London. W4 4AL.

## 2 Definitions

**Aerospace Sector:** A particular section of industry or technology where specialised NDT practices are used requiring specific aerospace product related knowledge, skill, equipment or training.

**Authorisation (of NDT personnel/Personnel Approval):** The authority of persons to perform NDT on behalf of an employer based on a written statement issued by the Approved Organisation on the recommendation of the Nominated Level 3 attesting to the individual's competence as specified within the certificate.

**Authorisation (of Certifying Staff):** The authority of NDT personnel to certify the completion of tasks in accordance with approved data using an EASA Form 1, issued with a certifying staff authorisation by the Approved Organisation (see Part 145.A.35 and Part M.A.607). All EASA certifying staff shall be included in the list of certifying staff contained in the in the Exposition, or cross referenced to a recognised register/database for certifying staff, with sample signatures/stamp number.

**Authorisation (of NDT procedures):** The act of signifying approval of NDT procedures by a Level 3 authorised in the method.

**National Aerospace NDT Board (NANDTB):** An independent organisation representing a nation's aerospace industry chartered by the participating prime organisations and recognised by the national regulatory authorities to provide or support NDT qualification services and examinations in accordance with EN4179.

**NDT Instruction:** A written description of the precise steps to be followed in testing to an established standard, code, specification or NDT procedure.

**NDT Method:** One of the disciplines of non-destructive testing (e.g. ultrasonic, radiography, etc.) within which different techniques may exist.

**NDT Procedure:** A written description of all essential parameters and precautions to be observed when applying an NDT technique to a specific test, following an established standard, code or specification.

**NDT Technique:** A category within an NDT method (e.g. ultrasonic immersion or ultrasonic contact testing, etc.). The employer or UK NANDTB may define specific techniques within a method.

**Qualification:** The proven ability of NDT personnel to meet the requirements of a given specification in terms of physical requirements, training, knowledge and experience necessary to perform the applicable NDT method.

**Qualification Examination:** An examination administered by an independent examination body, or by a body authorised within the employer's EN4179 compliant written practice, which demonstrates the general, specific and practical knowledge of the candidate.

**Type Certificate:** For the purposes of this Generic Requirement, Type Certificate includes Type Certificates, Supplementary Type Certificates, European Parts Approval (EPA) Authorisations or European Technical Standard Orders (ETSO) Authorisations.

**Written Practice:** The procedure that describes an employer's requirements and methodology for controlling and administering the NDT personnel qualification and authorisation/approval process.

### **3 Procedures for the Qualification of NDT Personnel**

- 3.1 All Approved Organisations involved in any aspect of NDT shall develop and maintain procedures for the qualification and authorisation of their NDT personnel in accordance with EN4179. The Organisation's procedures and written practice as defined by EN4179 shall be approved by the Nominated Level 3. The procedures/written practice may be published as a separate document and shall be cross-referenced in the appropriate Exposition.
- 3.2 Training and examination of all NDT personnel working in UK based Organisations shall be under the control of the UK NANDTB or delegated body.
- 3.3 NDT Personnel Certification does not relieve an Organisation of its responsibility to authorise staff to perform and certify work. Such Authorisations are to be granted in accordance with the Organisation's Quality Procedures and be subject to audit.
- 3.4 In all cases the Organisation's procedures for the training, examination and certification of NDT personnel should be subject to independent audit and review.
- 3.5 Organisations responsible for administration of NDT personnel training and/or examination, shall be subject to audit by the UK NANDTB or delegated body agreed by the CAA.

### **4 Nominated Level 3 Personnel**

- 4.1 Approved Part 145, Part M Subpart F and Part 21 organisations shall nominate in writing using an EASA Form 4 and BCAR organisations using an AD458, supported with evidence of independent qualification, an individual who is responsible to the Accountable Manager, for the technical supervision of NDT. This individual must hold NDT qualification at NDT Level 3 in the Aerospace Sector and will be referred to as the Nominated Level 3. This position shall be identified within the Organisation's Exposition, and any change in this position advised to the CAA.
- 4.2 The CAA recognises the following independent qualifications as appropriate for the position of Nominated Level 3:
- EN4179 Level 3 as administered by a BINDT accredited Outside Agency
  - PCN/AERO Level 3
  - ASNT Level 3
- Nominated personnel must also demonstrate evidence of specific knowledge and experience appropriate to the Organisation's scope of work.
- 4.3 Where the Nominated Level 3 is not qualified in all NDT methods used by the Organisation, then additional personnel necessary to provide coverage shall be named in the exposition or quality manual and shall hold NDT Level 3 certification issued under those schemes detailed in paragraph 4.2.
- 4.4 The CAA may accept person's external to the Organisation as the Nominated Level 3 provided:
- a) A written agreement exists between the individual and the Organisation setting out the individual's responsibilities within the Organisation including those specified in paragraph 4.6.

- b) An agreement is in place to ensure the external Level 3 commits sufficient time and on site presence to discharge their responsibilities for the technical supervision of NDT.

**NOTES:** 1) Where an individual is employed by another organisation, the agreement should include the consent of the external organisation contracting out the services of the particular Level 3 person.

2) A contracted-in Nominated Level 3 shall visit the organisation as a minimum once per 12 months. Additional visits may be required depending on the size, complexity, stability of the organisation and the scope of NDT activities carried out.

4.5 As a nominated individual, the Nominated Level 3 must be provided with the necessary co-operation (access to facilities, company procedures, training records, audits and inspection reports etc) to allow that person to carry out their function under the Approval.

4.6 The Terms of Reference for the Nominated Level 3 to discharge his/her responsibilities shall include:

- a) Identify any additional NDT qualified Level 3 personnel necessary for coverage when the Nominated Level 3 is not qualified in all NDT methods used by the Organisation;
- b) Identify any additional Level 3 personnel necessary to provide adequate day-to-day coverage depending on the size/facilities of the Organisation;
- c) Approve the Organisation's NDT procedures;
- d) Approve the Organisation's written practice for the training and qualification of NDT personnel in accordance with EN4179 and this Generic Requirement;
- e) Review the Organisation's written practice every 12 months to ensure that any changes in the regulations, applicable standards and the Organisation itself are reflected;
- f) Ensure that NDT procedures are reviewed every 12 months;
- g) Ensure that technical audits (both system and product) are carried out or supported by appropriately qualified personnel every 12 months.

## 5 Inspections and Certification of Inspections

5.1 NDT inspections shall be carried out by personnel approved in accordance with the Organisation's written practice and procedures. Where NDT procedures and part specific instructions are specified by the organisation responsible for the design and/or manufacture of the aircraft, material, structure or component, then these shall be used except where change is permitted and authorised as defined in paragraph 6 of this Generic Requirement.

5.2 Where non-mandatory inspections are to be undertaken, for which the responsible design/manufacturing organisation has not specified part specific NDT procedures, then the NDT method, technique, procedure and instruction shall be prepared in accordance with paragraph 6 of this Requirement and approved by a Level 3 holder qualified in the applicable method.

5.3 Normally, certification of inspections will be made by authorised persons who hold NDT Level 2 or Level 3 NDT qualification. Inspections may also be certified by authorised personnel who hold NDT Level 2 Limited qualification as defined by the UK NANDTB per NANDTB 17. However, where an inspection task is determined by the Nominated

Level 3 to have clearly defined acceptability and rejection criteria requiring no interpretation, then the task may be certified by an authorised NDT Level 1 as detailed within the written practice.

- 5.4 Where a Level 3 is required to carry out and certify an NDT inspection they shall either hold a current Level 2 NDT qualification in the relevant method(s), or alternatively be able to provide evidence that they have successfully completed an appropriate Level 2 practical examination and have maintained continuity in the application of practical testing as defined by EN4179 and detailed in the written practice before the issuance of an authorisation.
- 5.5 The term certification as defined by EN4179 is used to denote 'operating authorisation/approval' and does not automatically permit an individual who meets the requirements of EN4179 to certify an EASA Form 1. An organisation must authorise a suitably qualified person before that person can certify NDT inspections.

## **6 NDT Techniques and Instructions and their Approval**

- 6.1 NDT techniques, procedures and instructions, published and specified by the applicable Design Approval Holder in NDT Manuals, Service Bulletins and approved Repair Drawings etc. constitute airworthiness data.
- 6.2 Where the continued airworthiness data published by the Design Approval Holder permits changes (e.g. selection of equipment model, probe type etc.) then such changes must be authorised in writing by a Level 3 qualified in the appropriate method.
- 6.3 Any other change to the Design Approval Holder's airworthiness data requires the written agreement of the Design Approval Holder responsible for the design of the product/structure before such a change is implemented.
- 6.4 NDT Instructions prepared by a NDT Level 2 shall be approved by a NDT Level 3 qualified in the applicable method. Co-ordination between the NDT Level 3 and responsible Design Approval Holder must be maintained to ensure that the selected NDT inspection provides an appropriate level of defect sensitivity and probability of detection to the intended application.
- 6.5 The procedure for the control of all NDT techniques, procedures and instructions, including their preparation and authorisation shall be detailed in the Organisation's Exposition.

## **7 Suppliers and Sub-Contractors**

- 7.1 For a Part 145 Organisation performing maintenance on any aircraft or component for which it is approved, where NDT inspections are required, they may on occasions be granted the privilege within their scope of work to utilise sub-contractors working under the quality system of the Part 145 Organisation. Where sub-contracting includes NDT processes, the Exposition and Quality Management System shall define how the Organisation ensures that the training and authorisation of the sub-contractors NDT personnel is controlled in accordance with this Generic Requirement and how it satisfies the requirements of Part 145.A.30(f). (See Part 145.A.75(b) and the associated AMC and guidance material.)

- 7.2 Design and Production Organisations utilising suppliers and sub-contractors where NDT processes are employed shall detail within their Quality Management System how the Approved Organisation ensures that training and authorisation of NDT personnel in suppliers and sub-contractors is controlled in accordance with this Generic Requirement. Organisations should refer to Part 21 Subpart G and applicable BCAR A8 requirements regarding the surveillance of sub-contractors.

## **8 National Aerospace NDT Board**

- 8.1 The UK NANDTB is responsible for the general control of training and examinations applicable to UK NDT personnel.
- 8.2 The UK NANDTB policies and procedures can be found on the following website:  
<http://www.bindt.org/NANDTB/NANDTB.html>.

## **9 Recognition of Approvals**

- 9.1 Training and/or examination organisations under the control of a NANDTB, that comply with EN4179, ANDTBF/08 who are a member of the Aerospace NDT Board Forum (ANDTBF) may be recognised by the UK NANDTB.
- 9.2 The ANDTBF policies and procedure can be found on the following website:  
<http://www.efndt.org/Services/Document-Store>.