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RADIOGRAPHIC TESTING OF AEROSPACE MATERIALS, COMPONENTS AND STRUCTURE

This Appendix to PCN Aerospace Specific Requirements for Qualification and Certification of NDT Personnel covers the specific requirements for PCN certification of personnel engaged in Radiographic Non-Destructive Testing of Aerospace products.

Certification issued as a result of success in an examination defined herein complies with European standard EN ISO 9712:2012, and may be used by employers of NDT personnel to satisfy the qualification requirements of EN 4179 (Aerospace series -- qualification and approval of personnel for non-destructive testing).

Any person requiring information concerning the content of PCN documents should address queries to the PCN Scheme Manager at the above address.

EXAMINATION CONTENT

1. Level 2

1.1 PCN aerospace RT certification is presently available at Level 2 and Level 3 to cover aerospace products. Except where exemptions apply (refer to A0 – PCN Aerospace specific requirements), all Level 2 candidates will be required to attempt an examination comprised of the following parts:

1.1.2 General knowledge of the Radiographic NDT method. Forty multiple choice questions. Time allowed: 80 minutes; pass mark 70%.

1.1.3 Sector specific application of the Radiographic NDT method to aerospace products. The examination will comprise of thirty multiple choice questions covering standards, codes and specifications, safety precautions in the aerospace environment, basic production processes and associated defects, and defects occurring in service. Thirty multiple choice questions. Time allowed: 60 minutes; pass mark 70%.

1.1.4 Sector Specific Practical examination comprising:

i) system controls and functional checking of radiographic test equipment. Time allowed: 1 hour.

ii) preparation of a detailed NDT instruction providing written step by step information on the testing of one of the samples (selected by the examiner for part (iii)) to a provided procedure, code, standard or specification, and subsequently proving the instruction by application. Time allowed: 1 hour.

iii) practical radiography of three samples appropriate to the category of certification sought, processing the resulting radiographs, commenting upon their suitability for interpretation, and reporting significant areas for further investigation in accordance with the code, specification or standard provided (this will include any calculations necessary for inspection sensitivities). Time allowed: 8 hours.

iv) interpret and report on a total of 16 radiographs. Time allowed: 4 hours.

1.2 The total time allowed for the practical part is 14 hours and the pass mark is 70% per sample tested and 70% for the NDT instruction (failure to detect and report a reportable discontinuity in any one sample, or failure to produce an acceptable NDT instruction, will result in failure of this examination part).

2. Level 3

2.1 Except where exemptions apply (refer to PCN Aerospace specific requirements), all Level 3 candidates will be required to attempt an examination comprised of the following parts:

2.1.1 Basic Examination (described in PCN Aerospace specific requirements).

2.1.2 Main Method Examination

D) Forty multiple choice questions covering the general theory of the Radiographic testing method.

E) Thirty multiple choice questions covering the application of the Radiographic NDT method in the aerospace industry sector, including the applicable codes, standards and specifications (the candidate will be provided with any relevant code, standard or specification).

F) An open book examination in which the candidate will be required to produce a comprehensive Radiographic test procedure embodying an NDT instruction for a specific aerospace product to a provided specification, standard or code.

2.1.3 Level 2 Sector Specific Practical. Applicable to Level 3 candidates who do not hold Level 2 certification acceptable to PCN for Radiographic testing of aerospace products. Such candidates will be required to successfully complete the Level 2 practical examination described at 1.1.4 above before proceeding to the Level 3 main method examination parts.

CERTIFICATION AVAILABLE

Level 2 Radiographic Testing (Aerospace materials and components).

Level 2 Radiographic Testing (Aerospace materials, components and structures).

Level 3 Radiographic Testing (Aerospace materials, components and structures).

PCN certification in the radiographic method is valid only so long as the certificate holder also holds certification for either basic radiation safety or radiation protection. In the United Kingdom, this requirement is satisfied by holding PCN valid certification for radiation safety. PCN provides guidance for radiographic certificate holders and candidates based in countries other than the UK.

If current radiation safety certification is not held, the candidate for radiographic certification will attempt the PCN basic radiation safety examination module at the time of the radiography examination. Details of the PCN radiation safety examinations are in Appendix E3.1 to the current edition of PCN/GEN.