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GOVERNMENT OF INDIA
CIVIL AVIATION DEPARTMENT
DIRECTOR GENERAL OF CIVIL AVIATION

AIRWORTHINESS ADVISORY CIRCULAR

Subject: Standard and Procedure for Issuance/ Extension/ Renewal of Certification Authorisation for specialized processes, such as Non Destructive Testing by Approved Organisation.

1. INTRODUCTION:

- 1.1 Approved organisation that carries out specialized processes, such as Non Destructive Testing (NDT) of aircraft, engines, components and materials, should establish specialized processes qualification procedures. Further, approved organisation should also have policy and procedures detailed in their organisation exposition pertaining to age, knowledge, qualification, experience, medical standards and skill for issue, extension and renewal of certification authorisation.
- 1.2. This Airworthiness advisory circular details guidelines and procedures to be adopted by the approved maintenance organisation in respect of qualification, training, experience, skill and competency assessment of their personal engaged to carry out NDT.
- 1.3. It is important to note that this circular on its own does not change, create, amend or permit deviations from regulatory requirements, nor does it establish minimum standards.
- 1.4 As regards to issuance/ extension/ renewal of certification authorisation in respect of personnel carryout specialised processes such as welding, the approved organisation should establish qualification procedures in accordance with the standards and process defined by IS:5922-1970 (Indian Standard)- Qualifying Test for Welders Engaged in Aircraft Welding or any other relevant international aviation standard. Any special instructions issued by TC holder/ manufacturer for welding should be followed.

2. STANDARD

The following standard for the qualification and certification of personnel performing non-destructive testing (NDT), non-destructive inspection (NDI), or non-destructive evaluation (NDE) in the aerospace manufacturing, service, maintenance and overhaul

industries shall be followed. For the purposes of this standard, the term NDT is used and is considered equivalent to NDI and NDE.

- i) NAS 410- Certification and qualification of Non –destructive – Test Personnel (Latest Revision)
- ii) EN 4179, Aerospace Series – Qualification and approval of Personnel for Non-destructive testing (Latest Revision).

The term NDT is used throughout this circular to include, but not limited to, liquid penetrant, magnetic particle, eddy current, ultrasonic, radiographic, thermographic and other recognised methods as identified in the above referenced standards and shall be applicable to all NDT methods used by Approved Organisations.

3. LEVELS OF COMPETENCE FOR NDT

Three levels of competence for NDT personnel have been prescribed as per NAS 410/ EN 4179. Though for issue of Certification Authorisation, the minimum competency level is “LEVEL-II “, the competency of other levels are given for the sake of comparison.

LEVEL I – defines the level of competency required by the applicant to have the skills and knowledge to process parts, any necessary preparation of parts before or after inspection and perform equipment standardization in accordance with written instruction approved by the appropriate level 3.

Note: Level-I qualification does not entitle a person for issue of certification authorisation.

LEVEL-II - defines the level of competency required by the applicant for certification of NDT. Level-II calls for in-depth training, experience, and basic knowledge of aircraft product manufacturing and inspection technology. He will be capable of setting up and calibrate test equipment, make decision and judgment, evaluate, interpret and certify inspection result in technique in which he is qualified. Have the skills and knowledge to set up and standardize equipment, process parts, interpret and evaluate for acceptance or rejection, and document results.

LEVEL- III defines the level of competency required by the applicant for certification of NDT Level-III should have the skills and knowledge to interpret codes, standards and other contractual documents that control the NDT method(s) as utilized by the employer. He will be capable of selecting, preparing and verifying the adequacy of procedures in the method certified and technique for a specific inspection. He will also be capable of providing or directing training, examination and certification of personnel in the method in which he is certified.

4. QUALIFICATION PROCESS AND PROCEDURES FOR ISSUANCE/ EXTENSION/ RENEWAL OF CERTIFICATION AUTHORISATION:

4.1 All Approved Organisations involved in any aspect of NDT will develop and maintain procedures for the qualification and authorisation of their NDT personnel in accordance with NAS 410 or EN4179 standard. Following aspects of qualification process should be detailed in the exposition.

4.2 Qualification:

The applicant should have passed at least:

- a) Class 10+2 examination with Physics, Chemistry and Mathematics; or
- b) Diploma in engineering/ any other equivalent qualification acceptable to DGCA;

4.3 Training:

Persons having undergone training in any organization / institute recognized by responsible authority, professional bodies or examinations conducted by such bodies, i.e. the diploma issued by the industrial training institutes, certificate issued by Society of Non-destructive Engineers etc. will automatically be recognized for entering into aviation industry and also will be a substitute for general industrial experience.

The training standard followed by the above organisation (s) should meet the standards as defined in NAS-410/ EN-4179 (Latest revision).

4.4 Experience:

- i) The applicant should have minimum of six months experience in aviation industry in relevant NDT technique; of which three months must be recent experience under the supervision of a person holding appropriate Certification Authorisation (Level-II) covering relevant NDT technique in an approved organization.
- ii) For extension of Certification Authorisation to cover additional technique the person should have acquired at least 3 months recent experience in respective NDT technique under the supervision of a person holding appropriate Certification Authorisation (Level-II) covering relevant NDT technique in an approved organization.
- iii) The experience gained in Defence /Space organizations approved by Ministry of Defence / Space will be considered equivalent to the experience gained in DGCA approved organizations.

4.5 Medical & Vision Standards:

The certification authorisation holder should not have any physical disability and meet the vision standards as defined in NAS-410/ EN-4179 (Latest revision).

4.6 Competency Assessment:

On being satisfied that the candidate meets the standards with regard to age, qualification, experience and medical, the competency assessment of the candidate should be carried out by the quality manager of the organisation following a documented procedure. One of the member for assessment should be a person holding level-III qualification on the specific NDT technique or a person holding level-II certification authorisation with at least five years experience on the specific NDT technique. After satisfactory assessment, the candidate may be issued with a certification authorisation covering the relevant NDT technique with appropriate level, by the Quality Manager.

4.7. Renewal and Validity of Certification Authorisation:

The certification authorisation will be a valid for a maximum period of one year.

The Certification Authorisation may be renewed by the Quality Manager for a maximum period of one year or till the validity of the continuation training, subject to the following conditions:

- i) Minimum of three months experience in preceding one year.
- ii) Meets the medical standard for renewal of certification authorisation.
- iii) Has undergone a refresher course at least once in 24 months.
- iv) Continues to remain in the employment or employment contract of the organization.

Note: Personnel holding a current Certificate of Competency which was issued by DGCA may continue to undertake inspections till expiry of the same. The fresh certification authorisation may be issued to such personnel following the above procedure.

5. PROCEDURE FOR CERTIFICATION OF SPECIALISED PROCESS

5.1 NDT inspections will be carried out by personnel authorised in accordance with the Organisation's approved procedures. Where NDT procedures are specified by the organisation responsible for the design and/ or manufacture of the aircraft, material, structure or component, then these must be used, except where change is permitted and authorised by the TC holder/ manufacturer.

5.2 Where non-mandatory inspections are to be undertaken, for which the responsible design/ manufacturing organisation has not specified NDT procedures, then the NDT method, technique, procedure and instruction should be prepared in accordance with the methods defined in NAS-410/ EN 4197 and approved by a Level-III holder qualified in the applicable method.

6. SUPPLIERS AND SUB - CONTRACTORS TO APPROVED ORGANISATIONS:

An Organisation utilising suppliers and sub-contractors where NDT processes are employed, should detail in the exposition, how the organisation ensures that training and approval of NDT personnel in such suppliers or sub-contractors is controlled and required standards are met.

7. SUSPENSION/ CANCELLATION OF CERTIFICATION AUTHORISATION:

7.1 A Certification Authorization may be withdrawn where an enquiry conducted by the approved organization or DGCA establishes that:-

- i) the holder of such an authorization has performed work or granted a certificate in respect of work which has not been performed in a careful and competent manner, or
- ii) the holder of such an authorization has signed a certificate in respect of any matter which he is not authorized to deal with.
- iii) it is undesirable for any other reason that the holder of such authorization should continue to exercise the functions of an authorisation holder.
- iv) Authorization of a person withdrawn as a result of an enquiry shall not be restored without approval of the DGCA (Regional Airworthiness Office). Such person shall

also not be granted other Authorization without the concurrence of the DGCA (Regional Airworthiness Office).

v) Any other reason that is considered by the approved organisation.

7.2 All disciplinary actions taken against holder of certification authorisation shall immediately be intimated to the Regional/ Sub Regional Airworthiness Office) in writing. Copies of warnings/ memorandum issued to the holder of certification authorisation shall also be forwarded to the DGCA (Regional Airworthiness Office/ Sub Regional Airworthiness Office).

8. RECORDS:

The approved organisation should maintain records of holder of certification authorisation.

The records shall include, as a minimum:

- i) Name of the Certification Authorisation holder;
- ii) Records pertaining to qualification(s)
- iii) Certification Authorisation issued;
- iv) Date and expiration of current certification(s);
- v) Assessment records.
- vi) A summary of all previous NDT certifications with current and previous (if applicable) employer;
- vii) Training history which identifies source, type of training, dates of training and course hours;
- viii) Experience history, including any previous certifications, both with current and previous employers sufficient to justify satisfaction of experience requirements for certification;
- ix) Medical reports;
- x) The name and signature of the employer's representative authorizing the certification.

9. The above procedures and its amendments shall be approved by DGCA.

Sd/-
(K P Srivastava)
Deputy Director General of Civil Aviation
For Director General of Civil Aviation