VOLUME 6 SURVEILLANCE
CHAPTER 11 OTHER SURVEILLANCE

Section 27 Inspect a Nondestructive Inspection Program/Facility

6-2804 PROGRAM TRACKING AND REPORTING SUBSYSTEM (PTRS) ACTIVITY CODES.

A. Maintenance: 4637.

B. Avionics: 6637.

6-2805 OBJECTIVE. This section provides guidance for inspecting a nondestructive inspection (NDI) program and/or facility. This section also provides a link to an online job aid that can assist you, an aviation safety inspector (ASI), in performing a standardized approach for surveillance.

6-2806 GENERAL.

A. Definition of NDIs.

1) NDIs are defined as inspections, tests, or evaluations that may be applied to a structure or component to determine its integrity, composition, electrical or thermal properties, or dimensions without changing any of these characteristics. Qualified personnel are required for reliable NDI performance.

2) Industry often uses the following terms interchangeably. However, for the purpose of this section, we, the Federal Aviation Administration (FAA), will use the term NDI to refer to:

- Nondestructive inspection (NDI);
- Nondestructive Testing (NDT); and
- Nondestructive evaluation.

B. Regulations. While regulations do not specifically define requirements for organizations that accomplish NDIs, multiple regulations (e.g., Title 14 of the Code of Federal Regulations (14 CFR) part 121, § 121.375 and part 145, § 145.163) require certificate holders to have training programs to ensure that employees who perform maintenance are trained and qualified. Additionally, per § 121.367, a certificate holder must ensure that it provides competent personnel and adequate facilities to properly perform maintenance.

6-2807 SURVEILLANCE. Surveilling an NDI facility varies from facility to facility depending on the methods it performs and the equipment it uses. We have developed the Nondestructive Inspection for Aviation Safety Inspectors Online Job Aid, which you can find at http://www.faa.gov/about/office_org/headquarters_offices/avs/offices/avs/afs/afs300. The job aid provides a series of comprehensive questions to assist you when evaluating NDI facilities. This
is not a pass/fail checklist, but rather a series of questions pertaining to the NDI organization and to specific NDI methods or processes utilized.

6-2808 SPECIAL EMPHASIS ITEMS.

A. Training and Qualification. Since the training and qualifications of NDI personnel are critical, NDI organizations should accomplish them in accordance with accepted industry standards. In the United States, there is not a national certification requirement or standard to determine that NDI personnel are qualified to perform NDIs. However, NDI organizations typically use multiple national and international standards to develop a training and qualification program.

NOTE: ASIs must identify the standard used by the organization to determine compliance and then utilize the checklist to demonstrate compliance according to that specific standard for timelines and other qualifications.

B. Examples of Standards. The following are examples of standards for NDIs:

- Military Standard Nondestructive Testing Personnel Qualification and Certification (MIL-STD-410E). (MIL-STD-410E is not current and will not be revised but can be used.)
- Recommended Practice SNT-TC-1A, Personnel Qualifications and Certification in Nondestructive Testing.
- Aerospace Series, Qualification and Approval of Personnel for Non-destructive Testing (prEN 4179). (This document has been harmonized with AIA-NAS-410 and is an equivalent document.)

6-2809 GENERIC ELEMENTS OF INDUSTRY STANDARDS TO CONSIDER. The following information discusses the generic elements of industry standards that we may consider acceptable. You can also use these generic elements as basic requirements to help you ensure that only trained, qualified individuals perform NDIs. Although an NDI organization may develop its own qualification program, any qualification program that it presents for review should, at a minimum, address the following generic elements.

A. Vision Examinations. NDI inspectors should receive documented vision and color blindness testing at reasonable intervals (i.e., not to exceed 1 year). The NDI inspector must have documented evidence of satisfactory vision in accordance with accepted medical standards to be considered a qualified NDI inspector. Vision examinations can either precede or accompany the initial determination of NDI qualifications. Personnel must administer the vision examinations in
accordance with the accepted medical standards noted above. Vision examinations shall be administered by personnel in accordance with the standard to determine qualification.

1) **Requirements for Near-Distance Vision.** The NDI inspector must have natural or corrected near-distance acuity in at least one eye that is capable of reading the Jaeger Number 1 Test Chart, or equivalent, at a distance of no less than 30 centimeters (i.e., 12 inches).

2) **Requirements for Color Vision.** The NDI inspector must differentiate the colors used in the NDI method(s) for which he or she is qualified.

   NOTE: Color vision testing need only be done one time, at the initial vision examination. Any limitations in color perception must be evaluated prior to certification and must be documented.

3) **Requirements for Vision Examination Documents.** Following the initial qualification, the documented examinations for near distance and color vision must be administered as required above. The NDI organization that employs the NDI inspector must then retain those records.

B. **Levels of Qualification.** There are different levels of competence for NDI personnel (e.g., trainee, limited, Level 1, 2, 3, etc.). They can also be categorized for different functional areas (e.g., inspector, trainer, or auditor). NDI personnel should perform only at the level(s) or function(s) in accordance to their qualifications.

C. **Training.** NDI personnel should receive documented initial and recurrent training in the standards, methods, and levels they utilize. This training should be a combination of classroom, practical, and on-the-job training (OJT). The standards under which the NDI inspector was qualified will specify the frequency and content of recurrent training.

D. **Testing.** NDI personnel should demonstrate documented proficiency in both classroom knowledge and the practical application of test method(s). The qualification standards will determine the combination of education, training, and experience for the NDI inspector. NDI personnel must understand the principles and procedures of applicable NDI methods. The NDI inspector must document personal information (including education, training, and experience) and validate it against the qualification standards for NDI personnel.

E. **Experience.** Before NDI personnel are qualified to perform a test method, they must have experience in that test method. In order to maintain that qualified status, NDI inspectors must have recent experience (e.g., within the last 6 to 12 months, but shorter intervals are preferred) with the inspection method they perform. Those who do not have recent experience must undergo requalification.

F. **Disqualification.** An NDI organization should have a procedure in place that allows it to disqualify an NDI inspector who does not meet current standards.

G. **Requalification/Recurrent Training.** Requalification examinations should consist of a demonstration of proficiency in the procedure for which the applicant is being examined.
Requalification should occur, at a minimum, every 3 years. Personnel should be required to be retrained or reexamined and their qualification certification continued or revoked in accordance with the organization’s written program and at the discretion of the organization when:

1) An individual demonstrates unsatisfactory performance, or where data indicates that performance of an individual is unsatisfactory. Unsatisfactory performance may be determined by the responsible person from the organization who originally qualified the individual or by some other documented method approved by the organization.

2) And individual has been inactive in the method for a 6-month period or other, shorter interval, as provided in the organization’s written program.

3) And individual fails to be evaluated for compliance with performance standards by a Level III or other designated individual at an interval not to exceed 3 years.

4) The vision examination time limits have expired.

H. Documentation. An NDI organization must retain and make available sufficient documentation that demonstrates that only qualified personnel engage in NDIs. They must also maintain the records for each qualified individual as well as for each individual who has been disqualified to perform NDIs. Records must include all education, experience, vision examination, and training information.

I. Calibration of NDI Instruments and Standards. The repair station or air carrier must have a program defining how and when they will calibrate NDI instruments. It should base this program on manufacturers’ recommendations and/or engineering judgment. However, the certificate holder may state in its program that it calibrates the entire system to a specific, written procedure prior to each use. This procedure would include the instrument, probe, specific reference standard, and a procedure detailing at what point the instrument meets the reference standard before it is used. Some NDI instrument manufacturers state in their manual that their instrument is a continuously self-calibrating instrument and that it is up to the customer to determine regulatory calibration requirements. Reference standards typically do not require recertification if they are properly stored, cleaned, and traceable to an airframe, engine, or component.

6-2810 REFERENCES, FORMS, AND JOB AIDS.


B. Forms. None.

C. Job Aids. Nondestructive Inspection for Aviation Safety Inspectors Online Job Aid.

RESERVED. Paragraphs 6-2811 through 6-2824.