

Guidelines for Auditing NDE Agencies

These tips will help you conduct more effective audits

BY STEVEN T. SNYDER

The NDE agency technician's inspection report commonly is one of the final pertinent document(s) required to complete fabrication and manufacturing of a component and/or weldment prior to final machining, coatings, other subsequent operation, or shipment. Manufacturers, fabricators, and owners all depend on NDE agencies to provide competently trained, qualified, and certified technicians.

Experience obtained through conducting many NDE agency audits has revealed a consistent breakdown in communication and/or direction from the point where the NDE agency receives the request or purchase order for its services to when instructions are given to the agency's technicians.

If we look closely at this vitally important first step, we see that often only verbal instructions were given as to specifically what type and extent of NDE was required and what acceptance criteria was to be used. This, as one can imagine, can and has resulted in catastrophic results. Purchase orders should be clearly written. At minimum, they should describe the material, type and extent of testing, and acceptance criteria, which preferably are to ASTM, AWS, or other industry-specific designations or approved NDE procedure and which should include revision levels as applicable. Written reports should include, at minimum, the requirements as specified in the related ASTM or AWS standards and/or approved ASNT Level III operating procedure.

Incorrect or missing references to the operating procedures and/or revision level used for the inspection are documentation errors made by many NDE technicians. In addition, it is not uncommon to find NDE reports that contain incomplete acceptance criteria, i.e., all welds met AWS D1.1 or ASME VIII. These errors are often due to the technicians only having received verbal directions.

A common finding during audits of NDE agencies is that they often lack an internal auditing system and fail to have a system in place for reviewing the effectiveness of the required quality system and operating procedures. Clear procedures for auditing of reports by Level III personnel should be required.

Audits of personnel training, qualification, and certification program records should pay particular attention to education and training hours as well as documented inspection reports used for the practical examinations and controlled practical test specimens, as administered and required by the agency's NDE written practice.

Established NDE Auditing Standards

Manufacturers and fabricators can economically establish an independent audit program of NDE service agencies based upon established ASTM standards designed to help auditors and supply chain management personnel keep a record of the NDE agency's capabilities.

ASTM Vol. 03.03, *Nondestructive Testing*, is a mandatory desk reference for every project manager, engineer, or inspector responsible for specifying, witnessing, monitoring, and/or auditing NDE operations.

Within Vol. 03.03, E 543, "Standard Practice for Agencies

Performing Nondestructive Testing" covers minimum requirements for agencies performing nondestructive examination. The practice is applicable wherever systematic assessments of the competence of a nondestructive examination agency by a user or other party is desired. The practice states that "the authority (owner, engineer, architect, contractor, purchaser) may, at its discretion, inspect the procedures, equipment, and personnel program of the agency." In addition, ASTM E 1212 presents a practice for "Establishment and Maintenance of Quality Control Systems for Nondestructive Testing Agencies."

When using these practices to assess the capability of, or to accredit NDE agencies, ASTM Guide E 1359, "Standard Guide for Evaluating Capabilities of Nondestructive Testing Agencies" should be used. This guide establishes areas for review and provides a survey form that can be used in determining the competence of a nondestructive examination agency. Criteria from ASTM practices E543, 1212, and ASNT SNT-TC-1A, CP-189, and ACCP-Rev. 1 were used in the preparation of Guide E 1359.

Use of the survey form provides the auditor with a guide for evaluating an NDE agency. The recommendations set forth in the guide are considered to be the minimum and should be supplemented by the user, as necessary, to meet the specific requirements of the contract. Use of the survey form provides for a permanent record and includes a corrective action request.

The Future of Audits

In recent years, the focus of many oil companies, project management, construction/structural engineering firms, state departments of transportation, and other industries has shifted to include independent auditing and approval of NDE agencies. In addition to this, NDE method performance demonstration and project approval of NDE personnel are being pursued. These will be subjects of much debate in the NDE community for quite a while.

Several organizations are now specifying personnel certified under ASNT's Central Certification Program (ACCP). Consideration, however, must also be given to the fact that initial certification for some personnel was under "grandfather" conditions based upon meeting the ACCP requirements, which from a required personnel certification documentation standpoint seems to be a better controlled system than some NDE agencies' compliance to the intent of ASNT *Recommended Practice No. SNT-TC-1A*. However, it remains to be seen if this will become a cost-effective, value-added, quality certification and general industry-accepted alternative to SNT-TC-1A, which would likely affect the NDE agencies' operational budget costs for personnel certification maintenance.

Increased awareness regarding the capabilities of NDE agencies and personnel certification will continue to be a focus of various industries and a topic of AWS and ASNT conferences. This will facilitate a way for inspection personnel to stay informed and also provide a platform for the desperately needed participation and feedback from industry inspection professionals such as the readers of *Inspection Trends*. ♦

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