Employer's Unit of Competence – **Quality assurance, audit and surveillance of NDT and related activities**

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Overview

This unit relates to the apprentice's ability and understanding of the principles and complexities of quality assurance, audit and surveillance. Within the quality assurance role, the apprentice will be expected to have the ability to extract the relevant and necessary data from standards, specifications, technical drawings, reference tables and manuals, which will enable them to make valid decisions on the information extracted. They will need to understand and comply with company policies and procedures and report any problems in their use. The quality assurance role will be carried out with minimal supervision, with the apprentice taking personal responsibility for their activities. Within the audit and surveillance role, they will learn to monitor NDT activities in accordance with approved procedures. The monitoring will be on two levels:

- Audit – checks on the systems and processes
- Surveillance – a hands-on check that inspections have been applied correctly.

Performance Criteria

The apprentice must be able to:

P1 Work safely at all times, complying with health & safety and other relevant regulations and guidelines, including site-specific rules

P2 Liaise with relevant personnel to plan and undertake an audit

P3 Liaise with relevant personnel to plan and undertake a surveillance inspection

P3 Identify the different constituent parts of their company's quality management system

P4 Produce a quality plan for an inspection task

P5 Collate the quality records for an inspection task.

Knowledge and Understanding

The apprentice must be able to:

K1 Understand the need for quality management

K2 Understand the definitions of common quality terminology

K3 Know what a quality management system is and what the scope of it is

K4 Know the different levels of quality documentation in a quality management system

K5 Be aware of other management systems, such as health & safety and environmental

K6 Understand the contents of the ISO 9000 series

K7 Understand the principles of auditing covering:

- The purpose and types of auditing
- The audit process
- Review of documentation
- Development of checklists
- Opening and closing meetings
- Conduct of the auditing
- Reporting and follow up

K8 Understand the difference between audit and surveillance

K9 Understand the surveillance process

K10 Understand how to assess the extent of surveillance that is required.

Skills

The apprentice must be able to:

Quality Assurance

*1. Carry out **all** of the following:*

- Obtain the relevant technical drawings and understand the end product
- Obtain the standards and specifications relevant to the technical details
- Understand the technical details and their importance
- Create the quality plans associated with the project
- Obtain any relevant equipment, for example micrometers, material analysis equpiment, etc
- Collate and control documentation relevant to the project.

Audit

*2. Carry out **all** of the following:*

- Obtain the relevant technical drawings and understand the end product
- Obtain the relevant procedures/techniques and other relevant documentation
- Create a checklist to enable a baseline check for the audit
- Request information relevant to the audit
- Make observations and non-conformance
- Report observations and non-conformance
- Suggest corrective actions and formulate a follow-up audit
- Sign off the audit.

Surveillance

*3. Carry out **all** of the following:*

- Surveillance of NDT operators carrying out inspections. Be able to make comment against the relevant procedures and techniques about the operator's ability to adhere to the procedural and technique methods of testing. For example:
  - Is the appropriate scanning procedure and technique being used?
  - Are the specified probes being used (correct type, size and frequency)?
  - Is the correct flaw size measurement technique being used?
  - Is a correct datum being used?
- Perform the inspection on a sample of the component(s) and compare results
- Assess an NDT report, for **all** of the following:
  - Product identification
  - Geometry, thickness and surface condition of identified test areas where defect indications were found
  - Test information (specified flaw detector, probe data, scan type and procedure, size measurement technique, sensitivity and other parameters relevant to the test)

- Test indications and interpretation
- Comparison of flaw data with acceptance criteria
- Conclusions and recommendations.

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