

Employer's Unit of Competence – Management of human factors (behaviours)

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APPRENTICESHIPS

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THE BRITISH INSTITUTE OF
NON-DESTRUCTIVE TESTING



Overview

This unit identifies the competencies required in human factors. The unit is designed to give the employer guidance and advice to define and develop generic behaviours, such as:

- Those expected of any employee
- Those required by the British Institute of NDT's Code of Conduct
- Specific knowledge of the application of human factors, which can positively or negatively impact on the reliability of the NDT performed
- Those required by the Company Code of Conduct.

The behaviours are to be monitored throughout the apprenticeship and discussed and appraised at the regular reviews held between the apprentices and their supervisors through actual learning experiences and/or case studies.

The behaviours fall into the following headings:

- Courage
- Common sense
- Breadth
- Influence
- Delivery
- Teamwork
- Ethics and the environment.

The unit consists of four elements:

- Basic human factors and terminology
- The impact of the NDT task
- The impact of the individual
- The influence of the organisation.

Performance Criteria

The apprentice must be able to:

Behaviours

- P1 When appropriate, effectively manage a team in the performance of a task
- P2 Support others where appropriate
- P3 Be willing to make independent decisions and ensure that the reasons for doing so are understood
- P4 Consistently manage tasks through to timely completion
- P5 Apply knowledge and experience with balance as an example to others
- P6 Have a positive impact and be able to proactively influence others in multiple contexts
- P7 Be business and environmentally aware and apply insights and guidance to others
- P8 Behave in a way that is consistent with company values and standards
- P9 Deal with colleagues in an open and honest way
- P10 Admit to mistakes
- P11 Respect confidential information.

Human Factors

- P12 Understand the terminology and principles of basic human factors
- P13 Demonstrate how the NDT task could influence the outcome and identify mitigations to reduce the impact
- P14 Demonstrate the ability to take actions to reduce their own impact on the NDT task
- P15 Demonstrate the ability to undertake the necessary steps to prepare for an inspection, including undertaking a point of work risk assessment
- P16 Demonstrate good communication throughout the implementation of an inspection.

Knowledge and Understanding

The apprentice must know and understand:

Basic Human Factors & Terminology

- K1 Human factors terminology
- K2 Basic human factors principles.

The Impact of the NDT task

- K3 The nature of the work, including the physical characteristics
- K4 The impact of the workplace and working environment on the performance of the task
- K5 The information to be assessed and decision-making requirements
- K6 Factors that could influence the decision-making process
- K7 The perception of risk.

The Impact of the Individual

- K8 How to identify factors that could affect personal performance, such as stress, low motivation and low esteem
- K9 The principles of workload management to reduce fatigue and maintain vigilance
- K10 The importance of maintaining and updating skills
- K11 The impact of habits and personalities.

The Influence of the Organisation

Planning & Safety

- K12 How the NDT fits into the overall work/outage plan and the necessary pre-job requirements
- K13 The company's safety requirements and client's safety requirements
- K14 Point of work risk assessments
- K15 The company's procedures and practices
- K16 The company's emergency procedures
- K17 Interfaces with other personnel within the company, with clients or with other contractors.

Communication & Management

- K18 Reporting routes
- K19 The importance of the inspection procedure and the use of check lists
- K20 The importance of obtaining a proper briefing and asking questions to gain a full understanding

- K21 The use of brief-backs to confirm correct communication
- K22 The importance of communicating shortcomings in the application of NDT
- K23 How to get help from colleagues and management.

Skills

The apprentice must be able to:

Courage

- S1 Show integrity and trust
- S2 Take responsibility for and stand by his/her decisions
- S3 Take the initiative during a task and at other times
- S4 Encourage debate about issues with colleagues
- S5 Demonstrate a positive approach and be able to look to the future
- S6 Be aware of one's own limitations.

Common Sense

- S7 Make good decisions
- S8 Analyse all the factors and identify effective solutions to problems
- S9 Be creative and see how ideas could be implemented
- S10 Handle risk and uncertainty.

Breadth

- S11 Show knowledge of how the business works and about competitors and trends in technology
- S12 See ahead and anticipate future consequences and trends
- S13 Learn quickly when faced with problems and be open to change
- S14 Take a broad view and have an interest in business, cultural and social issues.

Influence

- S15 Establish and maintain effective relationships with both internal and external customers
- S16 Build constructive and effective relationships with people at all levels of the organisation
- S17 Influence and persuade others to achieve an outcome or solution
- S18 Show understanding of how both teams and organisations work.

Delivery

- S19 Exceed goals, delivering tasks and projects on time and to the required quality
- S20 Set objectives and goals for a task or project, anticipate problems and measure performance
- S21 Prioritise work, concentrating on what is important
- S22 Understand the importance of maintaining business systems.

Teamwork

- S23 Work constructively as a member of a team, building trust and mutual respect
- S24 Provide timely information to individuals
- S25 Create a strong morale and a sense of belonging within the team
- S26 Motivate and empower others
- S27 Share knowledge and expertise with others to help them improve.

Ethical Principles

The following are four fundamental principles to guide engineers and technicians in achieving the high ideals of professional life:

- Accuracy and rigour
- Honesty and integrity
- Respect for life, law and the public good
- Responsible leadership: listening and informing.

These express the beliefs and values of the profession and are amplified in the Statement of Ethical Principles: www.engc.org.uk/professional-ethics

Environmental Awareness

Engineers and technicians demonstrate a personal and professional commitment to society, their profession and the environment. They should:

- Organise and use resources effectively to complete tasks, with consideration for cost, quality, safety, security and environmental impact
- Operate and act responsibly, taking account of the need to progress environmental, social and economic outcomes simultaneously
- Carry out methodical assessment of risk in specific projects and take actions to minimise risk to society or the environment
- Provide products and services that maintain and enhance the quality of the environment
- Carry out/contribute to environmental impact assessments
- Carry out/contribute to environmental risk assessments. Adopt sustainable practices. Contribute to social, economic and environmental outcomes.

