Unit title	Install Equipment for Working Safely on the Highway for Utilities Network Construction
SQA code	H8MK 04
SCQF level	5
SCQF credit points	4
SSC ref	EUS SD10

History of changes

Publication date: Feb 2015

Version: completed by SQA

Version number	Date	Description	Authorised by

Title	Install Equipment for Working Safely on the Highway for Utilities Network Construction

Learning Outcomes **The learner will:**	**Assessment Criteria** **The learner can:**
1 Be able to set out temporary signing, lighting and guarding traffic control equipment in line with industry Codes of Practice and current legislation.	1.1 Locate the area for highway works and determine the **characteristics and conditions** of the carriageway. 1.2 Plan the works for minimum disruption and inconvenience to others in accordance with **approved procedures and practices**. 1.3 Carry out a site-specific risk assessment to identify **hazards.** 1.4 Determine the range of **control signs and protection equipment** necessary for the works based on the risk assessment. 1.5 Select and wear specified personal Protective equipment (PPE). 1.6 Set out **control signs and protection equipment** safely, according to: (a) The risk assessment. (b) Industry **codes of practice.** (c) Current legislation. 1.7 Remove all control equipment on completion of the works. 1.8 Store and maintain control equipment in accordance with operational and organisational requirements. 1.9 Work to **approved procedures and practices** and in compliance with statutory requirements. 1.10 Maintain the security of the site where work is not completed.

2	Be able to prepare and maintain resources for highway works in line with industry Codes of Practice and current legislation.	2.1	Select **materials and equipment** for the planned works in accordance with the work instructions and specifications.
		2.2	Confirm **materials and equipment** supplies are correct for the work requirement.
		2.3	Confirm **materials and equipment** are of the quality and quantity required.
		2.4	Maintain in accordance with operational and organisational requirements: (a) **Materials and equipment** in storage. (b) Security of **materials and equipment**.
		2.5	Use **approved procedures and practices** throughout the work activity to ensure the work complies with statutory requirements.
3	Be able to use and communicate data and information in accordance with approved procedures and practices.	3.1	Use **information and data** to: (a) Determine the safety and security requirements for the area of the highways works. (b) Ensure compliance with current legislation.
		3.2	Check with designated personnel any circumstances where information appears incorrect.
		3.3	Use organisational information systems to record and store data and information.
4	Be able to respond to problems which could arise from work on the highway.	4.1	Resolve **problems** which arise from work on the highway, including: (a) Record defects. (b) Replacements. (c) Additional equipment required. and report to the designated person.

		4.2	Refer **problems** and conditions outside own responsibility to the designated person using approved procedures.
5	Understand the safe working methods in utilities network construction operations.	5.1	Explain the main responsibilities of the employer and employee under the Health and Safety at Work Act.
		5.2	Explain the health and safety guidance governing work in excavations.
		5.3	Describe the safe procedures for handling hazardous materials.
		5.4	Explain organisational accident recording and reporting procedures.
6	Know the temporary signing, lighting and guarding traffic control equipment in line with industry Codes of Practice and current legislation.	6.1	Describe the main sources of information on statutory requirements for the control of highways works.
		6.2	Explain different types of signs, lights, and guarding equipment.
		6.3	Explain different types of traffic control equipment.
		6.4	Explain the implications of incorrect signing, lighting, guarding and traffic control.
		6.5	Describe the design and the purpose of signs used for protecting highways works.
		6.6	List the main **approved procedures and practices** for determining site and resource requirements, within own job role.
7	Understand how to safely install temporary signing, lighting and guarding traffic control equipment in line with industry Codes of Practice and current legislation.	7.1	Explain the importance of: (a) Checking and reporting defects in signs, guards, lighting, and traffic control systems. (b) Checking that defective equipment is taken out of use. (c) Checking and reporting defects in personal protective equipment.

	7.2 Explain the statutory positioning requirements for protection equipment relative to different highways environments and conditions, to cover: (a) Signs. (b) Lights. (c) Guards. (d) Traffic controls. 7.3 Describe guarding arrangements for highways works, including: (a) Different types of guards used to protect highways works. (b) Positioning requirements of guards relative to the work. 7.4 Explain different types and positioning of lighting required for highways works. 7.5 Explain the main road classifications, including single and dual carriageways. 7.6 Describe the design, operation, and maintenance requirements for traffic controls including: (a) Warning signs. (b) Priority signs. (c) Stop/ go boards. (d) Portable traffic signals. 7.7 Explain types of traffic control requirements for highways works in different road conditions. 7.8 Explain the correct procedures and sequences for the following: (a) Implementing traffic control equipment in different work locations. (b) Moving traffic controls as work progresses. 7.9 Explain the importance of the following: (a) Signing, lighting, guarding, and traffic control arrangements are checked and updated regularly as work progresses.

	(b) Regular maintenance and cleaning of signs and lights throughout highways works. 7.10 Describe the statutory requirements and recommendations for signing, lighting and guarding highways works on single and dual carriageways. 7.11 Explain the range and purpose of personal protective equipment (PPE) used during highways works. 7.12 Explain the steps that must be taken in the event of an accident or emergency on the highway. 7.13 Explain the persons and organisations with whom it is necessary to liaise on highways operations.

Additional information about the Unit

Unit purpose and aim(s)

This unit allows learners to show that they have the skills and knowledge to install equipment for safe working on the highway during utilities network construction operations.

The learner must select appropriate signing, lighting, guarding and traffic control equipment for the site, according to current Codes of Practice and legislation. They must prepare the appropriate types and quantities of materials and equipment for the works and maintain their safety and security. They must also show that they can communicate information to the relevant people and organisations throughout the operation, and must resolve or refer problems that arise during highways works in line with their job responsibility.

Details of the relationship between the Unit and relevant national occupational standards (if appropriate)

Energy & Utility Skills Suite: Multi-Utility Network Construction Unit: 019N MUNC04 Install equipment for safe working on the highway for utilities network construction.

Details of the relationship between the Unit and other standards or curricula (if appropriate)

Assessment requirements specified by a sector or regulatory body (if appropriate)

Some terms, used in the assessment criteria, cover a range of situations, as follows:

1. **Characteristics and conditions of carriageway** include:
   - (a) Speed and volume of traffic.
   - (b) Volume of pedestrian traffic.
   - (c) Number and directions of lanes.
   - (d) Proximity of other features such as junctions, railway crossings, pedestrian crossings, roundabouts, traffic lights etc.
2. **Codes of Practice** are:
   - (a) Statutory.
   - (b) Regulatory, including New Roads and Street Works Act.
3. **Hazards** include:
   - (a) Traffic.
   - (b) Weather.
   - (c) Other activities.
4. **Control signs and protection equipment** include:
   - (a) Traffic signs.
   - (b) Cones.
   - (c) Lights.
   - (d) Barriers.

(e) Traffic lights.
(f) Stop and go boards.

5. **Approved procedures and practices** are:
(a) Environmental.
(b) Statutory.
(c) Regulatory.
(d) Emergency.
(e) Operational.
(f) Health and safety.
(g) Organisational and company procedures.
(h) Risk assessments.

6. **Materials and equipment** include:
(a) Backfill and reinstatement materials.
(b) Spoil.
(c) Digging and hand tools.
(d) Road breaking and cutting equipment.
(e) Compaction equipment.

7. **Problems** arise from:
(a) Traffic control.
(b) Pedestrians.
(c) Access to premises.
(d) Equipment failure.
(e) Materials shortage.

Some terms in the assessment criteria cover a range of situations. Refer to the full assessment requirements and guidance for this unit for a detailed list of terms and definitions, agreed with Energy & Utility Skills.

This unit must be assessed in line with the Energy & Utility Skills assessment strategy for vocational qualifications based on its NOS for Multi-Utility Network Construction.

The learner must either be observed by an assessor on at least one occasion, or must provide an observation report or witness testimony from their line manager as part of the evidence for this unit.

All evidence produced for this unit must come from real work activities undertaken by the learner in their workplace. Simulated activities or assessment in a realistic working environment may not be used for assessment of the unit.

Assessment (evidence) Requirements

Workplace evidence

The majority of the evidence used for this Unit must come from the learner's own work activities, both in their own 'reporting base' and carrying out network construction operations on site.

Knowledge and understanding

The knowledge and understanding requirements for this Unit must be covered in full. The learner may demonstrate considerable knowledge through their workplace performance and during observed assessments, but it is likely that some assessor questioning will be needed to confirm that all knowledge requirements are met.

Guidance on Instruments of Assessment

The evidence for this Unit is likely to be generated through a mixture of observation reports, assessor-guided discussions and questioning, and workplace records, reports, or documentation.