Qualification Specification for:

OCN NI Level 3 Diploma in Electrical Power Engineering (Northern Ireland)

- **Qualification No: 610/4242/0**

Qualification Regulation Information

OCN NI Level 3 Diploma in Electrical Power Engineering (Northern Ireland)
Qualification Number: 610/4242/0

Operational start date: 01 June 2024
Operational end date: 31 May 2029
Certification end date: 31 May 2032

Qualification operational start and end dates indicate the lifecycle of a regulated qualification. The operational end date is the last date by which learners can be registered on a qualification and the certification end date is the last date by which learners can claim their certificate.

All OCN NI regulated qualifications are published to the Register of Regulated Qualifications (**http://register.ofqual.gov.uk/**). This site shows the qualifications and awarding organisations regulated by CCEA Regulation and Ofqual.

OCN NI Contact Details

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Foreword

This document explains OCN NI's requirements for the delivery and assessment of the following regulated qualification:

→ **OCN NI Level 3 Diploma in Electrical Power Engineering (Northern Ireland)**

This specification sets out:

- Qualification features
- Centre requirements for delivering and assessing the qualification
- The structure and content of the qualification
- Unit details
- Assessment requirements for the qualification
- OCN NI's quality assurance arrangements for the qualification
- Administration

OCN NI will notify centres in writing of any major changes to this specification. We will also publish changes on our website at **www.ocnni.org.uk**

This specification is provided online, so the version available on our website is the most up to date publication. It is important to note that copies of the specification that have been downloaded and printed may be different from this authoritative online version.

Contents

About Regulation

OCN NI

Open College Network Northern Ireland (OCN NI) is a regulated Awarding Organisation based in Northern Ireland. OCN NI is regulated by CCEA Regulation to develop and award professional and technical (vocational) qualifications from Entry Level up to and including Level 5 across all sector areas. In addition, OCN NI is regulated by Ofqual to award similar qualification types in England.

The Regulated Qualifications Framework: an overview

The Regulated Qualifications Framework (RQF) was introduced on 1st October 2015: the RQF provides a single framework for all regulated qualifications.

Qualification Level
The level indicates the difficulty and complexity of the knowledge and skills associated with any qualification. There are eight levels (Levels 1-8) supported by three 'entry' levels (Entry 1-3).

Qualification Size
Size refers to the estimated total amount of time it could typically take to study and be assessed for a qualification. Size is expressed in terms of Total Qualification Time (TQT), and the part of that time typically spent being taught or supervised, rather than studying alone, is known as Guided Learning Hours (GLH).

Qualification Features

Sector Subject Area
4.1 Engineering

Qualification Aim
The aim of the OCN NI Level 3 Diploma in Electrical Power Engineering (Northern Ireland) is to provide the learner with the skills and knowledge to be able to work safely on electrical power systems and associated infrastructure.

Qualification Objectives
The objectives of the OCN NI Level 3 Diploma in Electrical Power Engineering (Northern Ireland) are to enable the learner to gain the skills and knowledge to be able to work safely on electrical power systems. Learners must comply with statutory regulations and organisational safety requirements and work with electrical power network technical information, and may specialise in one or more of the following areas:

- cable jointing
- overhead power lines
- substation, switchgear and plant

Grading
Grading for this qualification is pass/fail.

Qualification Target Group
The OCN NI Level 3 Diploma in Electrical Power Engineering (Northern Ireland) is targeted at learners who wish to gain employment in the electrical power industry.

Progression Opportunities
The OCN NI Level 3 Diploma in Electrical Power Engineering (Northern Ireland) apprenticeship programme may enable learners to progress to higher level qualifications such as level 4/5 HNC/HND Electrical Engineering programmes.

Entry Requirements
Learners must be at least 16 years of age and have Maths and English GCSE or equivalent and an additional STEM (Science, Technology, Engineering and Mathematics) related subject.

Qualification Support

A Qualification Support pack is available for OCN NI centres within the login area of the OCN NI website (https://www.ocnni.org.uk/my-account/), which includes additional support for teachers, eg planning and assessment templates, guides to best practice, etc.

Delivery Language

This qualification is available in English only at this time. If you wish to offer this qualification in Welsh or Irish (Gaeilge) then please contact OCN NI who will review demand and provide as appropriate.

Centre Requirements for Delivering the Qualification

Centre Recognition and Qualification Approval

New and existing OCN NI recognised centres must apply for and be granted approval to deliver the qualification prior to the commencement of delivery.

Equipment Requirements

Centres offering this qualification must provide learners with access to industry standard equipment and technologies including buildings in order to demonstrate practical elements within each of the units.

Centre Staffing

Centres are required to have the following roles in place as a minimum, although a member of staff may hold more than one role*:

- Centre contact
- Programme Co-ordinator
- Tutor
- Assessor
- Internal Verifier

*Note: A person cannot be an internal verifier for their own assessments.

Tutors

Tutors delivering this qualification should be qualified to at least one level higher than the qualification or have proven industry experience to that level, plus at least three years' relevant industry experience.

Assessors

The qualification is assessed within the centre and is subject to OCN NI's quality assurance processes. Units are achieved through internally set, internally assessed, and internally verified evidence.

Assessors must:

- qualified to at least one level higher than the qualification or have proven industry experience to that level, plus at least three years' relevant industry experience
- have a relevant assessor qualification
- have direct or related relevant experience in assessment
- assess all assessment tasks and activities

Internal Verification

OCN NI qualifications must be scrutinised through the centre's internal quality assurance processes as part of the recognised centre agreement with OCN NI. The centre must appoint an experienced and trained centre internal verifier whose responsibility is to act as the internal quality monitor for the verification of the delivery and assessment of the qualifications.

The centre must agree a working model for internal verification with OCN NI prior to delivery of the qualifications.

Internal Verifiers must:

- qualified to at least one level higher than the qualification or have proven industry experience to that level, plus at least three years' relevant industry experience
- attend OCN NI's internal verifier training if not already completed or have relevant internal verification qualifications

Internal verifiers are required to:

- support tutors and assessors
- sample assessments according to the centre's sampling strategy
- ensure tasks are appropriate to the level being assessed
- maintain up-to-date records supporting the verification of assessment and learner achievement

Structure and Content

OCN NI Level 3 Diploma in Electrical Power Engineering (Northern Ireland)
In order to achieve this qualification learners must complete a minimum of 96 credits – both mandatory units (36 credits) plus a minimum of 60 credits from **only one** of the optional pathways (ie, Overhead Line, Substation or Cable Jointing).

Total Qualification Time (TQT) for this qualification:	960 hours
Minimum Guided Learning Hours (GLH) for this qualification:	684 hours

Unit Reference Number	OCN NI Unit Code	Unit Title	Credit Value	GLH	Level
Mandatory units					
T/651/1642	CBG593	Complying with Statutory Regulations and Organisational Safety Requirements	21	124	Two
Y/651/1643	CBG594	Working with Electrical Power Network Technical Information	15	90	Three
Optional Pathways					
Overhead Line Pathway Options					
D/651/1645	CBG596	Installing Overhead Line Plant and Equipment	16	130	Three
F/651/1646	CBG597	Co-ordinate Work Activities on Plant and Apparatus	17	105	Three
H/651/1647	CBG598	Low Voltage Overhead Line Switching Operations	11	105	Three
J/651/1648	CBG599	Overhead Line Fault Diagnosis	16	130	Three

Substation Pathway Options					
F/651/1646	CBG597	Co-ordinate Work Activities on Plant and Apparatus	17	105	Three
K/651/1649	CBG600	Dismantling Substation Plant and Apparatus	21	180	Three
R/651/1650	CBG601	Maintain Substation Switchgear	22	188	Three
Cable Jointing Pathway Options					
A/651/1644	CBG595	Control of Working Parties	10	55	Three
F/651/1646	CBG597	Co-ordinate Work Activities on Plant and Apparatus	17	105	Three
T/651/1651	CBG602	Low Voltage Distribution Underground Cable Jointing	18	150	Three
Y/651/1652	CBG603	Low Voltage Concentric Neutral Solid Aluminium Conductor Underground Cable Jointing	18	150	Three
A/651/1653	CBG604	High Voltage Distribution Underground Cable Jointing	18	150	Three

Unit Details

Title	Complying with Statutory Regulations and Organisational Safety Requirements
Level	Two
Credit Value	21
Guided Learning Hours (GLH)	124
OCN NI Unit Code	CBG593
Unit Reference No	T/651/1642
Learn Direct Code	XN2
Unit purpose and aim(s): This unit will enable the learner to understand how to ensure compliance with regulations, rules and policies to maintain a safe working environment when working in an electrical power environment.	

Learning Outcomes	Assessment Criteria
1. Understand health and safety statutory regulations and organisational requirements.	1.1. Explain the key aspects of current Health and Safety Legislation in Northern Ireland and how they relate to own role and role of employer. 1.2. Summarise at least two regulations and at least two safe working procedures relating to own role. 1.3. Explain what constitutes a hazard in the workplace. 1.4. Summarise materials and substances potentially hazardous to health that may be encountered in own job role. 1.5. Summarise at least four risks that may be encountered in own role and how these would be controlled. 1.6. Summarise organisational procedures for accidents, incidents and emergencies including: a) fire b) injury to self and others c) external threats d) hazardous occurrences e) near misses 1.7. Summarise the different personal protective equipment (PPE) required for own job role. 1.8. Explain own organisational requirements for the safe and secure storage of tools, equipment and materials. 1.9. Explain the limitations of own job role responsibility and reporting procedures for any work related problems.
2. Be able to plan and prepare control measures to minimise risk to life, property and the environment.	2.1. Identify work location using organisational documentation and work instructions. 2.2. Use work documentation to identify work activity. 2.3. Carry out a site specific risk assessment in accordance with health and safety regulations. 2.4. Plan control measures to minimise risk to: a) life b) property c) the environment 2.5. Select PPE required for job role. 2.6. Inform others who may be affected by the intended work plan. 2.7. Communicate effectively to working party assigned tasks and responsibilities to minimise identified risks.
3. Be able to comply with health and safety statutory regulations and organisational requirements when working.	3.1. Work safely in accordance with statutory regulations and organisational requirements specific to job role including: a) maintaining a tidy workplace, with exits and access and egress free from obstruction

	b) using equipment safely and for the purpose intended c) complying with organisational safety rules, signs and hazard warnings 3.2. Identify at least four warning signs from the main groups of hazardous substances. 3.3. Identify qualified first aiders and the location of first aid facilities. 3.4. Use PPE required for job role correctly. 3.5. Identify and control at least one hazard for each of the following: a) within the working environment b) when using equipment c) when using material and substances
4. Be able to co-ordinate control measures to minimise risk to life, property and the environment.	4.1. Implement the work plan to minimise identified risks. 4.2. Co-ordinate and monitor control measures to ensure risks are minimised. 4.3. Record control measures implemented in accordance with company procedures. 4.4. Update or provide information to others to update safety or asset records accurately. 4.5. Resolve issues as they arise within the limits of own job role responsibility. 4.6. Report issues outside the limits of own responsibility to designated personnel.
5. Be able to leave the work area in a safe condition according to required regulations and legislation.	5.1. Store tools and test equipment safely and securely on completion of work activity in accordance with organisational procedures. 5.2. Illustrate how to dispose of waste materials and hazardous substances safely and in accordance with required regulations, legislation and organisational procedures. 5.3. Check and confirm the safe condition of the work area in accordance with required regulations, legislation and organisational procedures.

Assessment Guidance – This unit maps either partially or completely to the following NOS:	
EUSEPUS001	Replace plant and apparatus in the electricity power utilities environment (ukstandards.org.uk)
EUSEPUS002	Assemble Plant and Apparatus in the Electricity Power Utilities Environment (ukstandards.org.uk)
EUSEPUS003	Install plant and apparatus in the electricity power utilities environment (ukstandards.org.uk)
EUSEPUS005	Dismantle plant and apparatus in the electricity power utilities environment (ukstandards.org.uk)
EUSEPUS006	Maintain plant and apparatus in the electricity power utilities environment (ukstandards.org.uk)
EUSEPUS007	Inspect plant and apparatus in the power utilities environment - National Occupational Standards (ukstandards.org.uk)
EUSEPUS008	Switching operations on plant and apparatus in the electricity power utilities environment (ukstandards.org.uk)
EUSEPUS009	Cable jointing operations in the electricity power utilities environment (ukstandards.org.uk)
EUSEPUS010	Test plant and apparatus in the electricity power utilities environment (ukstandards.org.uk)
EUSEPUS011	Configure equipment for use in the power utilities environment - National Occupational Standards (ukstandards.org.uk)
EUSEPUS012	Access, movement and egress in the electricity power utilities environment (ukstandards.org.uk)

EUSEPUS013	Co-ordinating work activities on plant and apparatus in the electricity power utilities (ukstandards.org.uk)
EUSEPUS014	Fault location and diagnosis on plant and apparatus in the electricity power utilities (ukstandards.org.uk)
EUSEPUS016	Movement of loads in the electricity power utilities environment (ukstandards.org.uk)
EUSEPUS020	Co-ordinate a response to a contingency in the electricity power utilities environment (ukstandards.org.uk)
EUSEPUS035	Restore and reinstate the work area in the electricity power utilities environment (ukstandards.org.uk)
EUSEPUS042	Install underground cables in the electricity power utilities environment (ukstandards.org.uk)
EUSEPUS043	Carry out excavation work on underground cables in the electricity power environment (ukstandards.org.uk)
EUSEPUS044	Location and identification of underground utility services in the electricity power utilities (ukstandards.org.uk)
EUSEPUS045	Control of working parties (ukstandards.org.uk)
EUSEPUS046	Producing Technical Information for Engineering Activities (ukstandards.org.uk)
EUSEPUS047	Obtaining resources for engineering activities (ukstandards.org.uk)
EUSEPUS048	Using and communicating technical information (ukstandards.org.uk)
EUSEPUS049	Working efficiently and effectively in engineering (ukstandards.org.uk)
EUSEPUS050	Working safely in an engineering environment (ukstandards.org.uk)

The following assessment method/s may be used to ensure all learning outcomes and assessment criteria are fully covered.

Assessment Method	**Definition**	**Possible Content**
Portfolio of evidence	A collection of documents containing work undertaken to be assessed as evidence to meet required skills outcomes OR A collection of documents containing work that shows the learner's progression through the course	Learner notes/written work Learner log/diary Peer notes Record of observation Record of discussion
Practical demonstration/assignment	A practical demonstration of a skill/situation selected by the tutor or by learners, to enable learners to practise and apply skills and knowledge	Record of observation Learner notes/written work Learner log
Coursework	Research or projects that count towards a learner's final outcome and demonstrate the skills and/or knowledge gained throughout the course	Record of observation Learner notes/written work Tutor notes/record Learner log/diary
E-assessment	The use of information technology to assess learners' work	Electronic portfolio E-tests

Learning Outcome	Unit: Complying with Statutory Regulations and Organisational Safety Requirements - Content

1. Understand health and safety statutory regulations and organisational requirements.	**Scope**
	
	Teaching will cover:
	
	• health and safety legislation relevant to work on electrical network infrastructure including:
	  ○ Health and Safety at Work Order 1978 (NI)
	  ○ Electrical Safety, Quality and Continuity Regulations Management of Health and Safety at Work Regulations
	  ○ Personal Protective Equipment at Work Regulations
	  ○ Manual Handling Operations Regulations
	  ○ Reporting of Injuries, Diseases and Dangerous Occurrences Regulations (Northern Ireland) 2012
	  ○ Work at Heights Regulation (NI) 2005
	  ○ Lifting Operations and Lifting Equipment Regulations 1998 (LOLER)
	  ○ Provision and Use of Work Equipment Regulations 1999 (NI) (PUWER)
	  ○ Control of Substances Hazardous to Health (COSHH)
	• roles and responsibilities of employer and employee in relation to health and safety
	• limits of responsibility of own role and whom and how to refer issues outside of own limits of responsibility
	• electrical hazards to include:
	  ○ lifting
	  ○ working at heights
	  ○ working in excavated areas
	  ○ working in proximity to electrical infrastructure
	  ○ hazardous materials
	• organisational procedures relating to fire exit plan, fire service or vehicle extinguishers, ambulance, First Aid, Control of Substances Hazardous to Health (COSHH), terrorism threat to IT, property, persons, hazardous occurrences
	• electricity network policies and procedural documentation including:
	  ○ safety rules and protocols
	  ○ policy documents relating to
	  ○ structural testing of wood poles prior to climbing or as personal support
	  ○ safe climbing procedures and equipment for wood pole overhead line work
	  ○ working in and around excavated areas
	  ○ procedures for receipt of safety document

2. Be able to plan and prepare control measures to minimise risk to life, property and the environment.	**Scope** Teaching will cover: • how to identify work location and activity in accordance with organisational procedures • organisational requirements for planning of control measures to minimise risk to life, property and the environment including Whole Job Risk Assessment (WJRA) • conducting risk assessments including completing WJRA • electrical plant and equipment relevant to the planned activities • tools and equipment relevant to the planned activities • understanding the range of PPE and selecting appropriate PPE for given activity

	• understanding who is impacted by the work plan and communicated effectively with them including:
	  ○ work team members including traffic management
	  ○ customers
	  ○ public

3. Be able to comply with health and safety statutory regulations and organisational requirements when working.	**Scope**
	
	Teaching will cover:
	
	• health and safety legislation relevant to work on electrical network including:
	  ○ Health and Safety at Work Order 1978 (NI)
	  ○ Electrical Safety, Quality and Continuity Regulations (Northern Ireland) 2012 Management of Health and Safety at Work Regulations
	  ○ Personal Protective Equipment at Work Regulations
	  ○ Manual Handling Operations Regulations
	  ○ Reporting of Injuries, Diseases and Dangerous Occurrences Regulations (RIDDOR)
	  ○ Work at Heights Regulation (NI) 2005
	  ○ Lifting Operations and Lifting Equipment Regulations 1998 (LOLER)
	  ○ Provision and Use of Work Equipment. Regulations 1999 (NI) (PUWER)
	  ○ control of substances hazardous to health (COSHH)
	• organisational policies and procedures relating to working on electrical network infrastructure
	• use of overhead line (OHL)/Jointing/Stations manuals
	• risk assessment method statements (RAMS)
	• use of work plan
	• organisational procedures for monitoring of work and ensuring safety control measures are implemented
	• organisational procedures for instructing work parties
	• organisational standards and procedures for assessing and reporting of work undertaken including updating records
	• limits of responsibility of own role and whom to refer issues outside of own limits of responsibility including incident and near miss reports

4. Be able to co-ordinate control measures to minimise risk to life, property and the environment.	**Scope**
	
	Teaching will cover:
	
	• measures to confirm the system is safe to work on in accordance with organisational procedures including:
	  ○ isolation
	  ○ earthing arrangements
	  ○ drain,
	  ○ vent
	  ○ purge
	• safety rules
	• Permit for Work (PFW)
	• requests for outage - E600 including:
	  ○ request for low voltage (LV) outage and/or live work
	  ○ request for high voltage (HV) outage and/or programmed work
	• use of overhead line (OHL)/Jointing/Stations manuals
	• risk assessment method statements (RAMS)
	• use, co-ordinating and monitoring of work plan

	• organisational procedures for monitoring of work and ensuring safety control measures are implemented • organisational procedures for instructing work parties • organisational standards and procedures for assessing and reporting of work undertaken including updating records • limits of responsibility of own role and whom to refer issues outside of own limits of responsibility including incident and near miss reports
5. Be able to leave the work area in a safe condition according to required regulation and legislation.	**Scope** Teaching will cover: • organisational requirements and procedures for storage of tools and equipment including cleaning and testing • regulations, legislation and organisational procedures for safe disposal and waste materials and hazardous substances • regulations, legislation and organisational procedures relating to ensuring work site is safe

Title	Working with Electrical Power Network Technical Information
Level	Three
Credit Value	15
Guided Learning Hours (GLH)	90
OCN NI Unit Code	CBG594
Unit Reference No	Y/651/1643
Learn Direct Code	XN2
Unit purpose and aim(s): This unit will enable the learner to understand how to review, communicate and record technical information for work on electrical power networks.	

Learning Outcomes	Assessment Criteria
1. Understand the use of technical information when working on electrical power networks.	1.1. Explain employee responsibilities in relation to producing, communicating and recording technical information in line with: a) organisational procedures b) legislative requirements 1.2. Explain the types of technical information used when working on electrical power networks. 1.3. Illustrate the process used to produce, record and communicate technical information used when working on electrical power networks. 1.4. Explain the methods and procedures to be complied with when receiving and issuing safety documents.
2. Be able to review information to enable work activities to be carried out.	2.1. Review information to enable work activities to be carried out by self or others on two or more different occasions for each of the following: a) written or electronic b) diagrammatic or pictorial
3. Be able to communicate technical information to others to carry out work activities.	3.1. Communicate technical information clearly to others to carry out work activities on two or more different occasions. 3.2. Demonstrate how to confirm that technical information has been understood providing further clarification if required on two or more different occasions.
4. Be able to record and report technical information on completed work activities.	4.1. Complete documentation for recording and reporting technical information on work activities completed by self and others in accordance with organisational procedures. 4.2. Explain the process of reporting inconsistencies or inaccuracies in information sources to the appropriate person in line with organisational procedures.

Assessment Guidance -This unit maps to the following NOS:

EUSEPUS011	Configure equipment for use in the power utilities environment - National Occupational Standards (ukstandards.org.uk)

The following assessment method/s may be used to ensure all learning outcomes and assessment criteria are fully covered.

Assessment Method	Definition	Possible Content
Portfolio of evidence	A collection of documents containing work undertaken to be assessed as evidence to meet required skills outcomes OR	Learner notes/written work Learner log/diary Peer notes Record of observation Record of discussion

	A collection of documents containing work that shows the learner's progression through the course	
Practical demonstration/assignment	A practical demonstration of a skill/situation selected by the tutor or by learners, to enable learners to practise and apply skills and knowledge	Record of observation Learner notes/written work Learner log
Coursework	Research or projects that count towards a learner's final outcome and demonstrate the skills and/or knowledge gained throughout the course	Record of observation Learner notes/written work Tutor notes/record Learner log/diary
E-assessment	The use of information technology to assess learners' work	Electronic portfolio E-tests

Learning Outcome	Unit: Working with Electrical Power Network Technical Information - Content

1. Understand the use of technical information when working on electrical power networks.	**Scope**
	
	Teaching will cover:
	
	• relevant health and safety legislation and electrical regulations including:
	  ○ Health and Safety at Work Order 1978 (NI) Management of Health and Safety at Work Regulations
	  ○ Personal Protective Equipment at Work Regulations
	  ○ Manual Handling Operations Regulations
	  ○ Reporting of Injuries, Diseases and Dangerous Occurrences Regulations (RIDDOR)
	  ○ Electrical Safety, Quality and Continuity Regulations (Northern Ireland) 2012
	  ○ Lifting Operations and Lifting Equipment Regulations 1998 (LOLER)
	  ○ Work at Heights Regulation (NI) 2005
	  ○ Provision and Use of Work Equipment Regulations 1999 (NI) (PUWER)
	  ○ Control of Substances Hazardous to Health (COSHH)
	• electrical network policies and procedures
	• ARCC (Asset Record Construction Clearance)
	• organisational field files, maps and diagrams
	• job reports, safety critical information (SCI) and manuals
	• safety rules, authorisation sheets, training reports/plans.
	• near miss forms, customer defect sheets
	• risk assessments
	• fire exit plan, fire service or vehicle extinguishers, ambulance
	• first aid
	• control of substances hazardous to health (COSHH)
	• incident forms
	• security passes
	• permit for work (PFW) / limited work certificate (LWC)
	• safety rules
	• requests for outage – E600

2. Be able to review information to enable work activities to be carried out.	**Scope** Teaching will cover: • risk assessments • method statements • planning documentation • resource ordering documentation • safety documentation • reference table/charts • job instructions • test schedules • site plans/sketches • installation drawings • modification drawings • repair drawings • connection/disconnection drawings • wiring/circuit diagrams • photographic information
3. Be able to communicate technical information to others to carry out work activities.	**Scope** Teaching will cover: • verbal to one person communication • verbal to more than one person communication • written/electronic text communication • diagrammatic/pictorial communication • work instructions • safety documentation • updating plans/drawings • completed testing activities documentation • job reports
4. Be able to record and report technical information on completed work activities.	**Scope** Teaching will cover: • job report • near miss form • safety documentation • updating plans/drawings • completed testing activities documentation • tool calibration and repair documentation • whole job risk assessment (WJRA) • PFW • LWC • ARCC Form

Title	Control of Working Parties
Level	Three
Credit Value	10
Guided Learning Hours (GLH)	55
OCN NI Unit Code	CBG595
Unit Reference No	A/651/1644
Learn Direct Code	XN2
Unit purpose and aim(s): This unit will enable the learner to understand how to organise and control the working activities of other persons working in power utility engineering environments.	

Learning Outcomes	Assessment Criteria
1. Understand the statutory regulations and procedures required for the control of working parties.	1.1. Explain roles and responsibilities of employees and employers in relation to health and safety. 1.2. Explain the organisational procedures and relevant documentation used for the control of working parties. 1.3. Explain the authorisations required for controlling a working party. 1.4. Explain the limitations of own job responsibility and reporting procedures for any work-related problems. 1.5. Summarise the different personal protective equipment (PPE) required for given work parties. 1.6. Explain the processes and procedures that need to be complied with when receiving a safety document.
2. Be able to plan and prepare to control a working party.	2.1. Identify the work location using organisational documentation and work instructions. 2.2. Use organisational work documentation to identify the work activity. 2.3. Carry out a site specific risk assessment in accordance with health and safety regulations. 2.4. Plan control measures to minimise risk to: a) life b) property c) the environment 2.5. Plan and assign tasks and responsibilities to control the working party. 2.6. Select PPE required for the job role. 2.7. Inform others who may be affected by the intended work plan.
3. Be able to control work activities of a working party.	3.1. Confirm the power system is safe to work on in accordance with organisational procedures. 3.2. Implement the work plan in line with organisational procedures to meet safe working requirements. 3.3. Instruct and monitor the working party to ensure the assigned work is conducted in accordance with the work plan and organisational procedures. 3.4. Confirm the finished work meets organisational requirements and quality standards. 3.5. Update or provide information to others to update safety systems records accurately. 3.6. Resolve issues as they arise within the limits of own job role responsibility. 3.7. Report issues outside the limits of own responsibility to designated personnel.

4. Be able to leave the work area in a safe condition according to required regulation and legislation.	4.1. Store tools and test equipment safely and securely on completion of work activity in accordance with organisational procedures. 4.2. Illustrate how to dispose of waste materials and hazardous substances safely and in accordance with required regulations, legislation and organisational procedures. 4.3. Check and confirm the safe condition of the work area in accordance with required regulations, legislation and organisational procedures.

Assessment Guidance – This unit maps either partially or completely to the following NOS:

EUSEPUS030	NOS Finder - National Occupational Standards (ukstandards.org.uk)
EUSEPUS012	Access, movement and egress in the electricity power utilities environment (ukstandards.org.uk)
EUSEPUS013	Co-ordinating work activities on plant and apparatus in the electricity power utilities (ukstandards.org.uk)
EUSEPUS016	Movement of loads in the electricity power utilities environment (ukstandards.org.uk)
EUSEPUS020	Co-ordinate a response to a contingency in the electricity power utilities environment (ukstandards.org.uk)
EUSEPUS035	Restore and reinstate the work area in the electricity power utilities environment (ukstandards.org.uk)
EUSEPUS045	Control of working parties (ukstandards.org.uk)
EUSEPUS046	Producing Technical Information for Engineering Activities (ukstandards.org.uk)
EUSEPUS047	Obtaining resources for engineering activities (ukstandards.org.uk)
EUSEPUS048	Using and communicating technical information (ukstandards.org.uk)
EUSEPUS049	Working efficiently and effectively in engineering (ukstandards.org.uk)
EUSEPUS050	Working safely in an engineering environment (ukstandards.org.uk)

Additional assessment requirement: Learning outcome 2 must be assessed in relation to at least two different types of jobs, with one being a high voltage job on at least two separate occasions for each type of job.

The following assessment method/s may be used to ensure all learning outcomes and assessment criteria are fully covered.

Assessment Method	Definition	Possible Content
Portfolio of evidence	A collection of documents containing work undertaken to be assessed as evidence to meet required skills outcomes OR A collection of documents containing work that shows the learner's progression through the course	Learner notes/written work Learner log/diary Peer notes Record of observation Record of discussion
Practical demonstration/assignment	A practical demonstration of a skill/situation selected by the tutor or by learners, to enable learners to practise and apply skills and knowledge	Record of observation Learner notes/written work Learner log
Coursework	Research or projects that count towards a learner's final outcome and demonstrate the skills and/or knowledge gained throughout the course	Record of observation Learner notes/written work Tutor notes/record Learner log/diary

E-assessment	The use of information technology to assess learners' work	Electronic portfolio E-tests
Multiple choice examinations	An assessment where there are a number of questions and the learner is asked to select the best possible answer (or answers) to each question from a list of choices	Paper and/or electronic based tests

Learning Outcome	Unit: Control of Working Parties - Content
1. Understand the statutory regulations and procedures required for the control of working parties.	**Scope** Teaching will cover: • health and safety legislation relevant to control of working parties operating around electricity network infrastructure including: o Health and Safety at Work Order 1978 (NI) Management of Health and Safety at Work Regulations o Personal Protective Equipment at Work Regulations o Manual Handling Operations Regulations o Reporting of Injuries, Diseases and Dangerous Occurrences Regulations (RIDDOR) o Electrical Safety, Quality and Continuity Regulations (Northern Ireland) 2012 o Lifting Operations and Lifting Equipment Regulations 1998 (LOLER) o Work at Heights Regulation (NI) 2005 o Provision and Use of Work Equipment Regulations 1999 (NI) (PUWER) o Control of Substances Hazardous to Health (COSHH) • electrical network policies and procedures • roles and responsibilities of employer and employee in relation to health and safety • electricity network policies and procedural documentation including: o authorisation categories o authorisation certificates o safety rules o risk assessment method statements (RAMS) o whole job risk assessment (WJRA). o permit for work (PFW) o requests for outage – E600 • reporting procedures including: o near miss o incident reports • PPE both specific to particular network infrastructure activities and general mandatory • limitations of job responsibility including: o authorisation o skills / training o reporting procedures
2. Be able to plan and prepare to control a working party.	**Scope** Teaching will cover: • how to identify work location and activity in accordance with organisational procedures and use of following: o field file o job card o verbal instruction o geographic names information service (GNIS) maps • requests for outage - E600 including: o request for low voltage (LV) outage and/or live work o request for high voltage (HV) outage and/or programmed work o permit for work (PFW) • organisational requirements for planning of control measures to minimise risk to life, property and the environment including WJRA and job report

	• conducting risk assessments including completing WJRA
	• understanding the range of PPE and selecting appropriate PPE for given activity
	• understanding who is impacted by the control plan and communicated effectively with them including:
	  ○ team members
	  ○ customers
	  ○ public

3. Be able to control work activities of a working party.	**Scope**
	
	Teaching will cover:
	
	• measures to confirm the system is safe to work on in accordance with organisational procedures including:
	  ○ isolation
	  ○ earthing arrangements
	  ○ drain
	  ○ vent
	  ○ purge
	• Safety rules
	• PFW
	• requests for outage - E600 including:
	  ○ request for low voltage (LV) outage and/or live work
	  ○ request for high voltage (HV) outage and/or programmed work
	• use of overhead line (OHL)/Jointing/Stations manuals
	• risk assessment method statements (RAMS)
	• use of work plan
	• organisational procedures for monitoring of work and ensuring safety control measures are implemented
	• organisational procedures for instructing work parties
	• organisational standards and procedures for assessing and reporting of work undertaken including updating records
	• limits of responsibility of own role and whom to refer issues outside of own limits of responsibility including incident and near miss reports

4. Be able to leave the work area in a safe condition according to required regulation and legislation.	**Scope** Teaching will cover: • organisational requirements and procedures for storage of tools and equipment including cleaning and testing • regulations, legislation and organisational procedures for safe disposal and waste materials and hazardous substances • regulations, legislation and organisational procedures relating to ensuring work site is safe

Title	Installing Overhead Line Plant and Equipment
Level	Three
Credit Value	16
Guided Learning Hours (GLH)	130
OCN NI Unit Code	CBG596
Unit Reference No	D/651/1645
Learner Direct Code	XN2
Unit purpose and aim(s): This unit will enable the learner to understand how to install overhead line plant and apparatus in an electrical power engineering environment.	

Learning Outcomes	Assessment Criteria
1. Understand organisational procedures and legislative requirements for the installation of overhead power line plant and equipment.	1.1. Explain the key aspects of health and safety legislation in NI and regulations applicable to working on power networks. 1.2. Explain roles and responsibilities of employees and employers in relation to organisational procedures and legislative requirements relating to the installation of overhead line plant and equipment. 1.3. Explain the limitations of own job responsibility and reporting procedures for any work related problems associated with the installation of overhead line plant and equipment. 1.4. Summarise at least four hazards to be considered when planning the installation of overhead line plant and equipment. 1.5. Summarise organisational procedures for accidents, incidents and emergencies including: a) fire b) injury to self and others c) external threats d) hazardous occurrences e) near misses 1.6. Explain organisational procedures that need to be complied with when working on or near overhead power line networks. 1.7. Explain the processes and procedures that need to be complied with when receiving a safety document.
2. Be able to plan and prepare to install overhead power line plant and equipment.	2.1. Identify work location using organisational documentation and work instructions. 2.2. Use organisational work documentation to identify work activity. 2.3. Carry out a site specific risk assessment in accordance with health and safety regulations. 2.4. Select personal protective equipment (PPE) required for the job role. 2.5. Plan activities and identify the power equipment to be installed in line with organisational procedures. 2.6. Select appropriate tools and equipment required to install the overhead power line plant and equipment. 2.7. Inform others who may be affected by the intended work plan.
3. Be able to carry out the installation of overhead line plant and equipment.	3.1. Confirm the power system is safe to work on in accordance with organisational procedures. 3.2. Implement the work plan in line with organisational procedures to meet safe working requirements.

	3.3. Carry out the installation work in line with work plan and organisational procedures. 3.4. Confirm the finished work meets organisational requirements and quality standards. 3.5. Update or provide information to others to update safety and asset records accurately. 3.6. Resolve issues as they arise within the limits of own job role responsibility. 3.7. Report issues outside the limits of own responsibility to designated personnel.
4. Be able to leave the work area in a safe condition according to required regulation and legislation.	4.1. Store tools and equipment safely and securely on completion of work activity in accordance with organisational procedures. 4.2. Illustrate how to dispose of waste materials and hazardous substances safely and in accordance with required regulations, legislation and organisational procedures. 4.1. Check and confirm the safe condition of the work area in accordance with required regulations, legislation and organisational procedures.

Assessment Guidance – This unit maps either partially or completely to the following NOS:

EUSEPUS001	Replace plant and apparatus in the electricity power utilities environment (ukstandards.org.uk)
EUSEPUS002	Assemble Plant and Apparatus in the Electricity Power Utilities Environment (ukstandards.org.uk)
EUSEPUS003	Install plant and apparatus in the electricity power utilities environment (ukstandards.org.uk)
EUSEPUS011	Configure equipment for use in the power utilities environment - National Occupational Standards (ukstandards.org.uk)
EUSEPUS012	Access, movement and egress in the electricity power utilities environment (ukstandards.org.uk)
EUSEPUS016	Movement of loads in the electricity power utilities environment (ukstandards.org.uk)
EUSEPUS035	Restore and reinstate the work area in the electricity power utilities environment (ukstandards.org.uk)
EUSEPUS049	Working efficiently and effectively in engineering (ukstandards.org.uk)
EUSEPUS050	Working safely in an engineering environment (ukstandards.org.uk)

Additional assessment requirement: Evidence for learning outcome 3 must be from at least two different work jobs on two different occasions each; one work job must be a on either a single phase or 3-phase transformer.

The following assessment method/s may be used to ensure all learning outcomes and assessment criteria are fully covered.

Assessment Method	Definition	Possible Content
Portfolio of evidence	A collection of documents containing work undertaken to be assessed as evidence to meet required skills outcomes OR A collection of documents containing work that shows the learner's progression through the course	Learner notes/written work Learner log/diary Peer notes Record of observation Record of discussion

Practical demonstration/assignment	A practical demonstration of a skill/situation selected by the tutor or by learners, to enable learners to practise and apply skills and knowledge	Record of observation Learner notes/written work Learner log
Coursework	Research or projects that count towards a learner's final outcome and demonstrate the skills and/or knowledge gained throughout the course	Record of observation Learner notes/written work Tutor notes/record Learner log/diary
E-assessment	The use of information technology to assess learners' work	Electronic portfolio E-tests

Learning Outcome	Unit: Installing Overhead Line Plant and Equipment - Content
1. Understand organisational procedures and legislative requirements for the installation of overhead power line plant and equipment.	**Scope** Teaching will cover: • health and safety legislation relevant to control of working parties operating around electricity network infrastructure including: o Health and Safety at Work Order 1978 (NI) Management of Health and Safety at Work Regulations o Personal Protective Equipment at Work Regulations o Manual Handling Operations Regulations o Reporting of Injuries, Diseases and Dangerous Occurrences Regulations (RIDDOR) o Electrical Safety, Quality and Continuity Regulations (Northern Ireland) 2012 o Lifting Operations and Lifting Equipment Regulations 1998 (LOLER) o Work at Heights Regulation (NI) 2005 o Provision and Use of Work Equipment Regulations 1999 (NI) (PUWER) o Control of Substances Hazardous to Health (COSHH) • roles and responsibilities of employer and employee in relation to health and safety • limits of responsibility of own role and whom and how to refer issues outside of own limits of responsibility • hazards to include: o lifting o working at heights o working in proximity to electrical infrastructure o hazardous materials • organisational procedures relating to fire exit plan, fire service or vehicle extinguishers, ambulance, first aid, control of substances hazardous to health (COSHH), terrorism threat to IT, property, persons, hazardous occurrences • electricity network policies and procedural documentation including: o safety rules and protocols • policy documents relating to: o structural testing of wood poles prior to climbing or as personal support o safe climbing procedures and equipment for wood pole overhead line work • procedures for receipt of safety document • requests for outage – E600
2. Be able to plan and prepare to install overhead power line plant and equipment.	**Scope** Teaching will cover: • how to identify work location and activity in accordance with organisational procedures • organisational requirements for planning of control measures to minimise risk to life, property and the environment including whole job risk assessment (WJRA). • conducting risk assessments including completing WJRA including stability and condition of structure to be accessed, condition of the conductors and environmental conditions

	• overhead line plant to include:
	  ○ conductors, insulators, steelwork fittings, tower furniture, power plant / apparatus
	  ○ air break switch disconnector (ABSD), auto recloser, high voltage (HV) fuses, cable termination, sectionaliser, single and three phase pole mounted transformers
	  ○ tools and equipment required for overhead line plant and equipment installation including winches and other lifting equipment
	  ○ understanding the range of PPE and selecting appropriate PPE for given activity
	  ○ understanding who is impacted by the work plan and communicated effectively with them including:
	  ○ work team members including traffic management
	  ○ customers
	  ○ public

3. Be able to carry out the installation of overhead line plant and equipment.	**Scope**
	
	Teaching will cover:
	
	• measures to confirm the system is safe to work on in accordance with organisational procedures including:
	  ○ isolation
	  ○ earthing arrangements
	  ○ drain
	  ○ vent
	  ○ purge
	• permit for work (PFW)
	• use of overhead line manual
	• use of work plan and organisational procedures to ensure work is carried out appropriately
	• electricity safety, quality and continuity regulations (Northern Ireland) 2012
	• organisational standards and procedures for assessing and reporting of work undertaken including updating records
	• limits of responsibility of own role and whom to refer issues outside of own limits of responsibility including incident and near miss reports

4. Be able to leave the work area in a safe condition according to required regulation and legislation.	**Scope** Teaching will cover: • organisational requirements and procedures for storage of tools and equipment including cleaning and testing • regulations, legislation and organisational procedures for safe disposal and waste materials and hazardous substances • regulations, legislation and organisational procedures relating to ensuring work site is safe

Title	Low Voltage Distribution Underground Cable Jointing
Level	Three
Credit Value	18
Guided Learning Hours (GLH)	150
OCN NI Unit Code	CBG602
Unit Reference No	T/651/1651
Learn Direct Code	XN2
Unit purpose and aim(s): This unit will enable the learner to understand how to carry out the jointing of low voltage underground cables in an electrical power engineering environment.	

Learning Outcomes	Assessment Criteria
1. Understand organisational procedures and legislative requirements for low voltage distribution underground cable jointing.	1.1. Explain the key aspects of health and safety legislation in Northern Ireland and regulations relating to working on low voltage distribution underground cables. 1.2. Explain roles and responsibilities of employees and employers in relation to organisational procedures and legislative requirements relating to working on low voltage distribution underground cables. 1.3. Explain the limitations of own job responsibility and reporting procedures for work related problems procedures associated with low voltage distribution underground cable jointing. 1.4. Summarise at least four hazards to be considered when working on low voltage underground cables and the control measures used to control them including: a) at least two related to excavations b) at least two other than those related to excavations 1.5. Summarise materials and substances are hazardous to health in relation to job role. 1.6. Explain organisational procedures for accidents, incidents and emergencies including: a) fire b) injury to self and others c) external threats d) hazardous occurrences e) near misses 1.7. Explain organisational procedures that need to be complied with when carrying out the jointing of low voltage underground cables.
2. Be able to plan and prepare for low voltage distribution cable jointing.	2.1. Identify the work location using organisational documentation and work instructions. 2.2. Use organisational work documentation to identify the work activity. 2.3. Plan the activities required for working on low voltage underground cables. 2.4. Carry out a site specific risk assessment in accordance with health and safety regulations. 2.5. Select personal protective equipment (PPE) required for the job role. 2.6. Select and carry out pre-use checks on tools and equipment required for working on low voltage underground cables. 2.7. Carry out pre work inspection of the underground cable or cables to be worked on in accordance with company procedures. 2.8. Inform others who may be affected by the intended work plan.

3. Be able to carry out low voltage underground cable jointing.	3.1. Implement control measures in line with organisational procedures to meet safe working requirements. 3.2. Carry out testing operations on low voltage underground cables in accordance with organisational procedures. 3.3. Carry out low voltage jointing operations in line with work plan and organisational procedures. 3.4. Monitor control measures to ensure risks are minimised. 3.5. Confirm finished work meets organisational requirements and quality standards. 3.6. Update or provide information to others to update safety or asset records accurately. 3.7. Resolve issues as they arise within the limits of own job responsibility. 3.8. Report issues outside the limits of own responsibility to designated personnel.
4. Be able to leave the work area in a safe condition according to required regulation and legislation.	4.1. Store tools and test equipment on completion of work activity in accordance with organisational procedures. 4.2. Illustrate how to dispose of waste materials and hazardous substances safely and in accordance with required regulations, legislation and organisational procedures. 4.3. Check and confirm the safe condition of the work area in accordance with required regulations, legislation and organisational procedures.

Assessment Guidance – This unit maps either partially or completely to the following NOS:	
EUSEPUS002	Assemble Plant and Apparatus in the Electricity Power Utilities Environment (ukstandards.org.uk)
EUSEPUS003	Install plant and apparatus in the electricity power utilities environment (ukstandards.org.uk)
EUSEPUS009	Cable jointing operations in the electricity power utilities environment (ukstandards.org.uk)
EUSEPUS010	Test plant and apparatus in the electricity power utilities environment (ukstandards.org.uk)
EUSEPUS012	Access, movement and egress in the electricity power utilities environment (ukstandards.org.uk)
EUSEPUS016	Movement of loads in the electricity power utilities environment (ukstandards.org.uk)
EUSEPUS035	Restore and reinstate the work area in the electricity power utilities environment (ukstandards.org.uk)
EUSEPUS042	Install underground cables in the electricity power utilities environment (ukstandards.org.uk)
EUSEPUS043	Carry out excavation work on underground cables in the electricity power environment (ukstandards.org.uk)
EUSEPUS044	Location and identification of underground utility services in the electricity power utilities (ukstandards.org.uk)
EUSEPUS049	Working efficiently and effectively in engineering (ukstandards.org.uk)
EUSEPUS050	Working safely in an engineering environment (ukstandards.org.uk)

Additional assessment requirement: For learning outcome evidence should be from at least 2 jobs on 2 separate occasions.		
The following assessment method/s may be used to ensure all learning outcomes and assessment criteria are fully covered.		
Assessment Method	**Definition**	**Possible Content**
Portfolio of evidence	A collection of documents containing work undertaken to be assessed as evidence to meet required skills outcomes OR A collection of documents containing work that shows the learner's progression through the course	Learner notes/written work Learner log/diary Peer notes Record of observation Record of discussion
Practical demonstration/assignment	A practical demonstration of a skill/situation selected by the tutor or by learners, to enable learners to practise and apply skills and knowledge	Record of observation Learner notes/written work Learner log
Coursework	Research or projects that count towards a learner's final outcome and demonstrate the skills and/or knowledge gained throughout the course	Record of observation Learner notes/written work Tutor notes/record Learner log/diary
E-assessment	The use of information technology to assess learners' work	Electronic portfolio E-tests

Learning Outcome	Unit: Low Voltage Distribution Underground Cable Jointing - Content

1. Understand organisational procedures and legislative requirements for low voltage distribution underground cable jointing.	**Scope**
	
	Teaching will cover:
	
	• health and safety legislation relevant to control of working parties operating around electricity network infrastructure including:
	  ○ Health and Safety at Work Order 1978 (NI) Management of Health and Safety at Work Regulations
	  ○ Personal Protective Equipment at Work Regulations
	  ○ Manual Handling Operations Regulations
	  ○ Reporting of Injuries, Diseases and Dangerous Occurrences Regulations (RIDDOR)
	  ○ Electrical Safety, Quality and Continuity Regulations (Northern Ireland) 2012
	  ○ Lifting Operations and Lifting Equipment Regulations 1998 (LOLER)
	  ○ Work at Heights Regulation (NI) 2005
	  ○ Provision and Use of Work Equipment Regulations 1999 (NI) (PUWER)
	  ○ Control of Substances Hazardous to Health (COSHH)
	• roles and responsibilities of employer and employee in relation to health and safety
	• limits of responsibility of own role and whom and how to refer issues outside of own limits of responsibility
	• hazards to include:
	  ○ excavation hazards
	  ○ Non excavation hazards
	  ○ working in proximity to electrical infrastructure
	  ○ hazardous materials
	• whole job risk assessment (WJRA)
	• cable laying manual
	• jointing manuals
	• gas monitor guidance
	• waste matrix
	• organisational procedures relating to fire exit plan, fire service or vehicle extinguishers, ambulance, first aid, control of substances hazardous to health (COSHH), terrorism threat to IT, property, persons, hazardous occurrences
	• electricity network policies and procedural documentation including:
	  ○ safety rules and protocols
	  ○ authorisation sheet
	  ○ training reports / plans
	  ○ procedures for receipt of safety document
	  ○ requests for outage – E600
	• safety rule instructions (SRI)s
	• safety rule guidance (SRG 3)

2. Be able to plan and prepare for low voltage distribution cable jointing.	**Scope** Teaching will cover: • how to identify work location and activity in accordance with organisational procedures, field file, job report, request for low voltage (LV) outage and/or live work (E 600) • organisational requirements for planning of control measures to minimise risk to life, property and the environment including whole job risk assessment WJRA • conducting risk assessments including completing WJRA

	• low voltage service joints to include:
	  ○ service to polymeric
	  ○ service to paper main
	  ○ service transition straight
	• low voltage mains cable joints to include:
	  ○ polymeric branch
	  ○ transition straight
	  ○ transition branch
	  ○ link box
	  ○ low voltage termination
	• tools and equipment required for work on low voltage underground cables
	• visual inspection and calibration processes for tools and equipment including insulation and condition
	• pre work underground cable inspection processes
	• understanding the range of PPE and selecting appropriate PPE for given activity
	• understanding who is impacted by the work plan and communicated effectively with them including:
	  ○ work team members including traffic management
	  ○ customers
	  ○ public

3. Be able to carry out low voltage underground cable jointing.	**Scope**
	
	Teaching will cover:
	
	• measures to confirm the system is safe to work on in accordance with organisational procedures
	• control measures including:
	  ○ identification of correct cable
	  ○ signs/barriers
	  ○ control/removal of hazards
	  ○ person in attendance
	  ○ traffic control
	  ○ excavation shuttering
	• use of jointing manual
	• low voltage underground cable testing
	• use of work plan and organisational procedures to ensure work is carried out appropriately
	• organisational standards and procedures for assessing and reporting of work undertaken including updating records, test reports and cable record drawings
	• limits of responsibility of own role and whom to refer issues outside of own limits of responsibility including incident and near miss reports

4. Be able to leave the work area in a safe condition according to required regulation and legislation.	**Scope** Teaching will cover: • organisational requirements and procedures for storage of tools and equipment including cleaning and testing • regulations, legislation and organisational procedures for safe disposal and waste materials and hazardous substances • regulations, legislation and organisational procedures relating to ensuring work site is safe

Title	Low Voltage Concentric Neutral Solid Aluminium Conductor Underground Cable Jointing
Level	Three
Credit Value	18
Guided Learning Hours (GLH)	150
OCN NI Unit Code	CBG603
Unit Reference No	Y/651/1652
Learn Direct Code	XN2
Unit purpose and aim(s): This unit will enable the learner to understand how to carry out the jointing of low voltage Concentric Neutral Solid Aluminium Conductor (CONSAC) underground cables in an electrical power engineering environment.	

Learning Outcomes	Assessment Criteria
1. Understand organisational procedures and legislative requirements for low voltage CONSAC underground cable jointing.	1.1. Explain the main principles of health and safety legislation and regulations relating to work on low voltage CONSAC underground cables. 1.2. Explain roles and responsibilities of employees and employers in relation to organisational procedures and legislative requirements. 1.3. Explain the limitations of own job responsibility and reporting procedures for work related problems. 1.4. Explain the hazards of working on low voltage CONSAC underground cables and the control measures used to control them. 1.5. Summarise materials and substances hazardous to health in relation to job role. 1.6. Explain the hazards of working in and around excavations and the measures used to control them. 1.7. Explain organisational procedures for accidents, incidents and emergencies including: a) fire b) injury to self and others c) hazardous occurrences and near misses 1.8. Explain the organisational procedures that need to be complied with when carrying out the jointing of low voltage CONSAC underground cables.
2. Be able to plan and prepare for low voltage CONSAC underground cable jointing.	2.1. Identify work location using organisational documentation and work instructions. 2.2. Use organisational work documentation to identify the work activity. 2.3. Plan the activities required for low voltage CONSAC underground cable jointing. 2.4. Complete and review a site specific risk assessment in accordance with health and safety regulations. 2.5. Select and wear personal protective equipment (PPE) required for the job role. 2.6. Select and carry out pre-use checks on tools and equipment required for work on low voltage CONSAC underground cables. 2.7. Carry out pre work inspection of the underground cable/s to be worked on in accordance with organisational procedures.
3. Be able to carry out low voltage CONSAC underground cable jointing.	3.1. Implement control measures in line with organisational procedures to meet safe control systems requirements. 3.2. Carry out testing operations on low voltage CONSAC underground cables as required.

	3.3. Carry out low voltage CONSAC jointing operations in line with work plan and organisational procedures. 3.4. Monitor control measures to ensure risks are minimised. 3.5. Confirm finished work meets organisational requirements and method statements. 3.6. Update or provide information to others to update safety systems records accurately. 3.7. Resolve problems as they arise within the limits of own job responsibility. 3.8. Report issues outside the limits of own responsibility to designated personnel.
4. Be able to leave the work area in a safe condition according to required regulation and legislation.	4.1. Store tools and test equipment safely and securely on completion of work activity in accordance with organisational procedures. 4.2. Illustrate how to dispose of waste materials and hazardous substances safely and in accordance with required regulations, legislation and organisational procedures. 4.3. Check and confirm the safe condition of the work area in accordance with required regulations, legislation and organisational procedures.

Assessment Guidance – This unit maps either partially or completely to the following NOS:	
EUSEPUS001	Replace plant and apparatus in the electricity power utilities environment (ukstandards.org.uk)
EUSEPUS002	Assemble Plant and Apparatus in the Electricity Power Utilities Environment (ukstandards.org.uk)
EUSEPUS003	Install plant and apparatus in the electricity power utilities environment (ukstandards.org.uk)
EUSEPUS009	Cable jointing operations in the electricity power utilities environment (ukstandards.org.uk)
EUSEPUS010	Test plant and apparatus in the electricity power utilities environment (ukstandards.org.uk)
EUSEPUS011	Configure equipment for use in the power utilities environment - National Occupational Standards (ukstandards.org.uk)
EUSEPUS012	Access, movement and egress in the electricity power utilities environment (ukstandards.org.uk)
EUSEPUS016	Movement of loads in the electricity power utilities environment (ukstandards.org.uk)
EUSEPUS035	Restore and reinstate the work area in the electricity power utilities environment (ukstandards.org.uk)
EUSEPUS042	Install underground cables in the electricity power utilities environment (ukstandards.org.uk)
EUSEPUS043	Carry out excavation work on underground cables in the electricity power environment (ukstandards.org.uk)
EUSEPUS044	Location and identification of underground utility services in the electricity power utilities (ukstandards.org.uk)
EUSEPUS049	Working efficiently and effectively in engineering (ukstandards.org.uk)
EUSEPUS050	Working safely in an engineering environment (ukstandards.org.uk)

The following assessment method/s may be used to ensure all learning outcomes and assessment criteria are fully covered.

Assessment Method	**Definition**	**Possible Content**
Portfolio of evidence	A collection of documents containing work undertaken to be assessed as evidence	Learner notes/written work Learner log/diary Peer notes Record of observation

	to meet required skills outcomes OR A collection of documents containing work that shows the learner's progression through the course	Record of discussion
Practical demonstration/assignment	A practical demonstration of a skill/situation selected by the tutor or by learners, to enable learners to practise and apply skills and knowledge	Record of observation Learner notes/written work Learner log
Coursework	Research or projects that count towards a learner's final outcome and demonstrate the skills and/or knowledge gained throughout the course	Record of observation Learner notes/written work Tutor notes/record Learner log/diary
E-assessment	The use of information technology to assess learners' work	Electronic portfolio E-tests

Learning Outcome	Unit: Low Voltage Concentric Neutral Solid Aluminium Conductor Underground Cable Jointing - Content

1. Understand organisational procedures and legislative requirements for low voltage CONSAC underground cable jointing.	**Scope**
	
	Teaching will cover:
	
	• health and safety legislation relevant to work on low voltage CONSAC underground cable systems:
	  ○ Health and Safety at Work Order 1978 (NI) Management of Health and Safety at Work Regulations
	  ○ Personal Protective Equipment at Work Regulations
	  ○ Manual Handling Operations Regulations
	  ○ Reporting of Injuries, Diseases and Dangerous Occurrences Regulations (RIDDOR)
	  ○ Electrical Safety, Quality and Continuity Regulations (Northern Ireland) 2012
	  ○ Lifting Operations and Lifting Equipment Regulations 1998 (LOLER)
	  ○ Provision and Use of Work Equipment. Regulations 1999 (NI) (PUWER)
	  ○ Control of Substances Hazardous to Health (COSHH)
	• roles and responsibilities of employer and employee in relation to health and safety
	• limits of responsibility of own role and whom and how to refer issues outside of own limits of responsibility
	• hazards to include:
	  ○ excavation hazards
	  ○ Non excavation hazards
	  ○ working in proximity to electrical infrastructure
	  ○ hazardous materials
	• whole job risk assessment (WJRA)
	• cable laying manual
	• traffic safety measures and signs for road works and temporary situations
	• jointing manuals
	• gas monitor guidance
	• waste matrix
	• organisational procedures relating to fire exit plan, fire service or vehicle extinguishers, ambulance, first aid control of substances hazardous to health (COSHH), terrorism threat to IT, property, persons, hazardous occurrences
	• electricity network policies and procedural documentation including:
	  ○ safety rules and protocols
	  ○ authorisation sheet
	  ○ training reports / plans
	  ○ procedures for receipt of safety document
	  ○ requests for outage – E600
	• safety rule instructions (SRI)s
	• safety rule guidance (SRG 3)

2. Be able to plan and prepare for low voltage CONSAC underground cable jointing.	**Scope** Teaching will cover: • how to identify work location and activity in accordance with organisational procedures, field file, job report, request for low voltage (LV) outage and/or live work (E 600) • organisational requirements for planning of control measures to minimise risk to life, property and the environment including WJRA

	• conducting risk assessments including completing WJRA
	• low voltage CONSAC underground cable jointing to include:
	  ○ multi service
	  ○ mains transition straight
	  ○ mains transition branch
	  ○ end termination
	• tools and equipment required for work on low voltage CONSAC underground cables
	• visual inspection and calibration processes for tools and equipment including insulation and condition
	• pre work underground cable inspection processes
	• understanding the range of PPE and selecting appropriate PPE for given activity
	• understanding who is impacted by the work plan and communicated effectively with them including:
	  ○ work team members including traffic management
	  ○ customers
	  ○ public

3. Be able to carry out low voltage CONSAC underground cable jointing.	**Scope** Teaching will cover: • measures to confirm the system is safe to work on in accordance with organisational procedures • control measures including - identification of correct cable, signs/barriers, control/removal of hazards, person in attendance, traffic control, excavation shuttering • use of jointing manual • low voltage CONSAC underground cable testing • use of work plan and organisational procedures to ensure work is carried out appropriately • organisational standards and procedures for assessing and reporting of work undertaken including updating records, test reports and cable record drawings • limits of responsibility of own role and to whom to refer issues outside of own limits of responsibility including incident and near miss reports
4. Be able to leave the work area in a safe condition according to required regulation and legislation.	**Scope** Teaching will cover: • organisational requirements and procedures for storage of tools and equipment including cleaning and testing • regulations, legislation and organisational procedures for safe disposal and waste materials and hazardous substances • regulations, legislation and organisational procedures relating to ensuring work site is safe

Title	High Voltage Distribution Underground Cable Jointing
Level	Three
Credit Value	18
Guided Learning Hours (GLH)	150
OCN NI Unit Code	CBG604
Unit Reference No	A/651/1653
Learn Direct Code	XN2
Unit purpose and aim(s): This unit will enable the learner to understand about carrying out the jointing of high voltage underground cables in an electrical power engineering environment.	

Learning Outcomes	Assessment Criteria
1. Understand organisational procedures and legislative requirements for high voltage underground cable jointing.	1.1. Explain the main principles of health and safety legislation and regulations relating to work on high voltage underground cables. 1.2. Explain roles and responsibilities of employees and employers in relation to organisational procedures and legislative requirements. 1.3. Summarise the limitations of own job responsibility and reporting procedures for any work related problems. 1.4. Explain the hazards of working on high voltage underground cables and the control measures used to control them. 1.5. Summarise materials and substances hazardous to health in relation to job role. 1.6. Explain the hazards of working in and around excavations and the measures used to control them. 1.7. Explain organisational procedures for accidents, incidents and emergencies including: a) fire b) injury to self and others c) hazardous occurrences and near misses 1.8. Explain the organisational procedures that need to be complied with when carrying out the jointing of high voltage underground cables. 1.9. Explain the procedures that need to be complied with when receiving a safety document.
2. Be able to plan and prepare for high voltage underground cable jointing.	2.1. Identify work location using organisational documentation and work instructions. 2.2. Use organisational work documentation to identify work activity. 2.3. Plan the activities required for work on high voltage distribution underground cables. 2.4. Complete and review a site specific risk assessment in accordance with health and safety regulations. 2.5. Select and wear personal protective equipment (PPE) required for the job role. 2.6. Select and carry out pre-use checks on tools and equipment required for work on high voltage underground cables. 2.7. Carry out pre work inspection of the underground cable/s to be worked on in accordance with organisational procedures.
3. Be able to carry out high voltage underground cable jointing.	3.1. Implement control measures in line with organisational procedures to meet safe control system requirements. 3.2. Carry out phasing out tests on high voltage underground cables in accordance with organisational procedures.

	3.3. Carry out high voltage jointing operations in line with work plan and organisational procedures. 3.4. Monitor control measures to ensure risks are minimised. 3.5. Confirm the finished work meets organisational requirements and quality standards. 3.6. Update or provide information to others to update safety systems records accurately. 3.7. Resolve problems within the limits of own job responsibility. 3.8. Report issues outside the limits of own responsibility to designated personnel.
4. Be able to leave the work area in a safe condition according to required regulation and legislation.	4.1. Store tools and test equipment safely and securely on completion of work activity in accordance with organisational procedures. 4.2. Illustrate how to dispose of waste materials and hazardous substances safely and in accordance with required regulations, legislation and organisational procedures. 4.3. Check and confirm the safe condition of the work area in accordance with required regulations, legislation and organisational procedures.

Assessment Guidance – This unit maps either partially or completely to the following NOS:	
EUSEPUS001	Replace plant and apparatus in the electricity power utilities environment (ukstandards.org.uk)
EUSEPUS002	Assemble Plant and Apparatus in the Electricity Power Utilities Environment (ukstandards.org.uk)
EUSEPUS003	Install plant and apparatus in the electricity power utilities environment (ukstandards.org.uk)
EUSEPUS009	Cable jointing operations in the electricity power utilities environment (ukstandards.org.uk)
EUSEPUS010	Test plant and apparatus in the electricity power utilities environment (ukstandards.org.uk)
EUSEPUS011	Configure equipment for use in the power utilities environment - National Occupational Standards (ukstandards.org.uk)
EUSEPUS012	Access, movement and egress in the electricity power utilities environment (ukstandards.org.uk)
EUSEPUS016	Movement of loads in the electricity power utilities environment (ukstandards.org.uk)
EUSEPUS035	Restore and reinstate the work area in the electricity power utilities environment (ukstandards.org.uk)
EUSEPUS042	Install underground cables in the electricity power utilities environment (ukstandards.org.uk)
EUSEPUS043	Carry out excavation work on underground cables in the electricity power environment (ukstandards.org.uk)
EUSEPUS044	Location and identification of underground utility services in the electricity power utilities (ukstandards.org.uk)
EUSEPUS049	Working efficiently and effectively in engineering (ukstandards.org.uk)
EUSEPUS050	Working safely in an engineering environment (ukstandards.org.uk)

The following assessment method/s may be used to ensure all learning outcomes and assessment criteria are fully covered.

Assessment Method	**Definition**	**Possible Content**
Portfolio of evidence	A collection of documents containing work undertaken to be assessed as evidence to meet required skills outcomes OR	Learner notes/written work Learner log/diary Peer notes Record of observation Record of discussion

	A collection of documents containing work that shows the learner's progression through the course	
Practical demonstration/assignment	A practical demonstration of a skill/situation selected by the tutor or by learners, to enable learners to practise and apply skills and knowledge	Record of observation Learner notes/written work Learner log
Coursework	Research or projects that count towards a learner's final outcome and demonstrate the skills and/or knowledge gained throughout the course	Record of observation Learner notes/written work Tutor notes/record Learner log/diary
E-assessment	The use of information technology to assess learners' work	Electronic portfolio E-tests

Learning Outcome	Unit: High Voltage Distribution Underground Cable Jointing - Content

1. Understand organisational procedures and legislative requirements for high voltage underground cable jointing.	**Scope**
	
	Teaching will cover:
	
	• health and safety legislation relevant to work on high voltage distribution underground cable systems including:
	  ○ Health and Safety at Work Order 1978 (NI) Management of Health and Safety at Work Regulations
	  ○ Personal Protective Equipment at Work Regulations
	  ○ Manual Handling Operations Regulations
	  ○ Reporting of Injuries, Diseases and Dangerous Occurrences Regulations (RIDDOR)
	  ○ Electrical Safety, Quality and Continuity Regulations (Northern Ireland) 2012
	  ○ Lifting Operations and Lifting Equipment Regulations 1998 (LOLER)
	  ○ Provision and Use of Work Equipment. Regulations 1999 (NI) (PUWER)
	  ○ Control of Substances Hazardous to Health (COSHH)
	• roles and responsibilities of employer and employee in relation to health and safety
	• limits of responsibility of own role and whom and how to refer issues outside of own limits of responsibility
	• hazards to include:
	  ○ excavation hazards
	  ○ non excavation hazards
	  ○ working in proximity to electrical infrastructure
	  ○ hazardous materials
	• whole job risk assessment (WJRA)
	• cable laying manual
	• traffic safety measures and signs for road works and temporary situations
	• jointing manuals
	• gas monitor guidance
	• waste matrix
	• organisational procedures relating to fire exit plan, fire service or vehicle extinguishers, ambulance, first aid control of substances hazardous to health (COSHH), terrorism threat to IT, property, persons, hazardous occurrences
	• electricity network policies and procedural documentation including:
	  ○ safety rules and protocols
	  ○ authorisation sheet
	  ○ training reports / plans
	  ○ procedures for receipt of safety document
	  ○ requests for outage – E600
	• safety rule instructions (SRI)s
	• safety rule guidance (SRG 3)

2. Be able to plan and prepare for high voltage underground cable jointing.	**Scope**
	
	Teaching will cover:
	
	• how to identify work location and activity in accordance with organisational procedures, field file, job report, request for high voltage (HV) outage and/or live work (E600)
	• organisational requirements for planning of control measures to minimise risk to life, property and the environment including WJRA
	• conducting risk assessments including completing WJRA
	• high voltage underground cable jointing to include:
	  ○ termination and straight joints of polymeric cables
	  ○ jointing of paper insulated cables
	• tools and equipment required for work on high voltage underground cables
	• visual inspection and calibration processes for tools and equipment including insulation and condition
	• pre work underground cable inspection processes
	• understanding the range of PPE and selecting appropriate PPE for given activity
	• understanding who is impacted by the work plan and communicated effectively with them including:
	  ○ work team members including traffic management
	  ○ customers
	  ○ public

3. Be able to carry out high voltage underground cable jointing.	**Scope** Teaching will cover: • measures to confirm the system is safe to work on in accordance with organisational procedures • control measures including - identification of correct cable, signs/barriers, control/removal of hazards, person in attendance, traffic control, excavation shuttering • use of jointing manual • high voltage underground cable testing • use of work plan and organisational procedures to ensure work is carried out appropriately • organisational standards and procedures for assessing and reporting of work undertaken including updating records, test reports and cable record drawings • limits of responsibility of own role and to whom to refer issues outside of own limits of responsibility including incident and near miss reports
4. Be able to leave the work area in a safe condition according to required regulation and legislation.	**Scope** Teaching will cover: • organisational requirements and procedures for storage of tools and equipment including cleaning and testing • regulations, legislation and organisational procedures for safe disposal and waste materials and hazardous substances • regulations, legislation and organisational procedures relating to ensuring work site is safe

Title	Dismantling Substation Plant and Apparatus
Level	Three
Credit Value	21
Guided Learning Hours (GLH)	180
OCN NI Unit Code	CBG600
Unit Reference No	K/651/1649
Learn Direct Code	XN2
Unit purpose and aim(s): This unit will enable the learner to understand how to dismantle substation plant and apparatus in an electrical power engineering environment.	

Learning Outcomes	Assessment Criteria
1. Understand organisational procedures and legislative requirements for dismantling substation plant and apparatus.	1.1. Explain the key aspects of health and safety legislation and regulations applicable to dismantling substation plant and apparatus. 1.2. Summarise at least two regulations and at least two safe working procedures relating to own role. 1.3. Explain the limitations of own job responsibility and reporting procedures for any work related problems. 1.4. Explain what materials and substances are hazardous to health in relation to job role. 1.5. Summarise at least four hazards to be considered when planning to dismantle substation plant and apparatus. 1.6. Summarise the organisational procedures to be undertaken for accidents, incidents and emergencies including: a) fire b) injury to self and others c) threat of terrorism d) hazardous occurrences and near misses 1.7. Summarise the organisational procedures that need to be complied with when dismantling plant and substation apparatus. 1.8. Explain the processes and procedures that need to be complied with when receiving a safety document.
2. Be able to plan and prepare for dismantling plant and substation apparatus.	2.1. Identify the work location using organisational documentation and work instructions. 2.2. Use organisational work documentation to identify the work activity. 2.3. Plan the activities required for dismantling substation plant and apparatus. 2.4. Carry out a site specific risk assessment in accordance with health and safety regulations. 2.5. Select personal protective equipment (PPE) required for the job role. 2.6. Identify the apparatus to be dismantled in line with organisational procedures. 2.7. Select and carry out pre-use checks on tools and equipment required to dismantle the substation apparatus. 2.8. Inform those who may be affected by the intended work plan.

3. Be able to dismantle substation plant and apparatus.	3.1. Implement control measures in line with organisational procedures to meet safe working requirements. 3.2. Dismantle plant and apparatus in line with work plan and organisational procedures. 3.3. Monitor control measures to ensure risks are minimised. 3.4. Confirm the finished work meets organisational requirements and quality standards. 3.5. Record the results of the work implemented in accordance with organisational procedures. 3.6. Update or provide information to others to update safety or asset systems records. 3.7. Resolve issues within the limits of own job responsibility. 3.8. Report issues outside the limits of own responsibility to designated personnel.
4. Be able to leave the work area in a safe condition according to required regulation and legislation.	4.1. Store tools and test equipment safely and securely on completion of work activity in accordance with organisational procedures. 4.2. Illustrate how to dispose of waste materials and hazardous substances safely and in accordance with required regulations, legislation and organisational procedures. 4.3. Check and confirm the safe condition of the work area in accordance with required regulations, legislation and organisational procedures.

Assessment Guidance – This unit maps either partially or completely to the following NOS:	
EUSEPUS005	Dismantle plant and apparatus in the electricity power utilities environment (ukstandards.org.uk)
EUSEPUS012	Access, movement and egress in the electricity power utilities environment (ukstandards.org.uk)
EUSEPUS016	Movement of loads in the electricity power utilities environment (ukstandards.org.uk)
EUSEPUS035	Restore and reinstate the work area in the electricity power utilities environment (ukstandards.org.uk)
EUSEPUS049	Working efficiently and effectively in engineering (ukstandards.org.uk)
EUSEPUS050	Working safely in an engineering environment (ukstandards.org.uk)

The following assessment method/s may be used to ensure all learning outcomes and assessment criteria are fully covered.

Assessment Method	**Definition**	**Possible Content**
Portfolio of evidence	A collection of documents containing work undertaken to be assessed as evidence to meet required skills outcomes OR A collection of documents containing work that shows the learner's progression through the course	Learner notes/written work Learner log/diary Peer notes Record of observation Record of discussion
Practical demonstration/assignment	A practical demonstration of a skill/situation selected by the tutor or by learners, to enable learners to practise and apply skills and knowledge	Record of observation Learner notes/written work Learner log

Coursework	Research or projects that count towards a learner's final outcome and demonstrate the skills and/or knowledge gained throughout the course	Record of observation Learner notes/written work Tutor notes/record Learner log/diary
E-assessment	The use of information technology to assess learners' work	Electronic portfolio E-tests

Learning Outcome	Unit: Dismantling Substation Plant and Apparatus - Content

1. Understand organisational procedures and legislative requirements for dismantling substation plant and apparatus.	**Scope**
	
	Teaching will cover:
	
	• health and safety legislation relevant to work on dismantling substation plant and apparatus including:
	  ○ Health and Safety at Work Order 1978 (NI) Management of Health and Safety at Work Regulations
	  ○ Personal Protective Equipment at Work Regulations
	  ○ Manual Handling Operations Regulations
	  ○ Reporting of Injuries, Diseases and Dangerous Occurrences Regulations (RIDDOR)
	  ○ Electrical Safety, Quality and Continuity Regulations (Northern Ireland) 2012
	  ○ Work at Heights Regulation (NI) 2005
	  ○ Lifting Operations and Lifting Equipment Regulations 1998 (LOLER)
	  ○ Provision and Use of Work Equipment. Regulations 1999 (NI) (PUWER)
	  ○ Control of Substances Hazardous to Health (COSHH)
	• roles and responsibilities of employer and employee in relation to health and safety
	• limits of responsibility of own role and to whom and how to refer issues outside of own limits of responsibility
	• hazards to include:
	  ○ lifting
	  ○ working at heights
	  ○ working in proximity to electrical infrastructure
	  ○ hazardous materials
	• whole job risk assessment (WJRA)
	• cable laying manual
	• traffic safety measures and signs for road works and temporary situations
	• jointing manuals
	• gas monitor guidance
	• waste matrix
	• organisational procedures relating to fire exit plan, fire service or vehicle extinguishers, ambulance, first aid, control of substances hazardous to health (COSHH), terrorism threat to IT, property, persons, hazardous occurrences
	• electricity network policies and procedural documentation including:
	  ○ safety rules and protocols
	  ○ policy documents relating to:
	  ▪ structural testing of wood poles prior to climbing or as personal support
	  ▪ safe climbing procedures and equipment for wood pole overhead line work
	  ○ procedures for receipt of safety document
	  ○ requests for outage – E600

2. Be able to plan and prepare for dismantling plant and substation apparatus.	**Scope** Teaching will cover: • how to identify work location and activity in accordance with organisational procedures • organisational requirements for planning of control measures to minimise risk to life, property and the environment including whole job risk assessment (WJRA). • conducting risk assessments including completing WJRA • substation plant and apparatus plant to include: o transformers o switchgear o package sub-station o low voltage frames o panel wiring o batteries and chargers o cable installations o low voltage apparatus o automation equipment o switchgear housing o busbar installations o compressed air equipment • tools and equipment required for dismantling substation plant and apparatus including inspection prior to use • understanding the range of PPE and selecting appropriate PPE for given activity • understanding who is impacted by the work plan and communicated effectively with them including: o work team members including traffic management o customers o public
3. Be able to dismantle substation plant and apparatus.	**Scope** Teaching will cover: • measures to confirm the system is safe to work on in accordance with organisational procedures including: o isolation o earthing arrangements o drain o vent o purge • permit for work (PRW) • use of plant and equipment manuals • use of work plan and organisational procedures to ensure work is carried out appropriately • organisational standards and procedures for assessing and reporting of work undertaken including updating records • limits of responsibility of own role and whom to refer issues outside of own limits of responsibility including incident and near miss reports

4. Be able to leave the work area in a safe condition according to required regulation and legislation.	**Scope** Teaching will cover: • organisational requirements and procedures for storage of tools and equipment including cleaning and testing • regulations, legislation and organisational procedures for safe disposal and waste materials and hazardous substances • regulations, legislation and organisational procedures relating to ensuring work site is safe

Title	Maintain Substation Switchgear
Level	Three
Credit Value	22
Guided Learning Hours (GLH)	188
OCN NI Unit Code	CBG601
Unit Reference No	R/651/1650
Learn Direct Code	XN2
Unit purpose and aim(s): This unit will enable the learner to understand how to carry out maintenance operations on substation switchgear in an electrical power engineering environment.	

Learning Outcomes	Assessment Criteria
1. Understand organisational procedures and legislative requirements for work on substation switchgear.	1.1. Explain the key aspects of health and safety legislation and regulations relating to work on substation plant and apparatus. 1.2. Summarise at least two regulations and at least two safe working procedures relating to your own role. 1.3. Explain the limitations of own job responsibility and reporting procedures for any work related problems. 1.4. Explain the hazards to be considered when planning to maintain substation switchgear. 1.5. Summarise materials and substances hazardous to health in relation to job role 1.6. Explain the organisational procedures for accidents, incidents and emergencies including: a) fire b) injury to self and others c) threat of terrorism d) hazardous occurrences and near misses 1.7. Explain the organisational procedures that need to be complied with when maintaining substation switchgear. 1.8. Describe the processes and procedures that need to be complied with when receiving a safety document.
2. Be able to plan and prepare to maintain substation switchgear.	2.1. Identify work location using organisational documentation and work instructions. 2.2. Use organisational work documentation to identify the work activity. 2.3. Plan the activities required for the maintenance of substation switchgear. 2.4. Carry out a site specific risk assessment in accordance with health and safety regulations. 2.5. Select personal protective equipment (PPE) required for the job role. 2.6. Identify and carry out a pre work inspection of the switchgear to be maintained in line with organisational procedures. 2.7. Select and carry out pre-use checks on equipment required to maintain the substation apparatus. 2.8. Inform those who may be affected by the intended work plan.
3. Be able to maintain substation switchgear.	3.1. Implement control measures in line with organisational procedures to meet safe working requirements. 3.2. Maintain substation switchgear in line with work plan and organisational procedures. 3.3. Monitor control measures to ensure risks are minimised.

	3.4. Confirm the finished work meets organisational requirements and quality standards. 3.5. Update or provide information to others to update safety systems records accurately. 3.6. Resolve issues that may arise within the limits of own job responsibility. 3.7. Report problems outside the limits of own responsibility to designated personnel.
4. Be able to leave the work area in a safe condition according to required regulation and legislation.	4.1. Store tools and test equipment safely and securely on completion of work activity in accordance with organisational procedures. 4.2. Illustrate how to dispose of waste materials and hazardous substances safely and in accordance with required regulations, legislation and organisational procedures. 4.3. Check and confirm the safe condition of the work area in accordance with required regulations, legislation and organisational procedures.

Assessment Guidance – This unit maps either partially or completely to the following NOS:	
EUSEPUS001	Replace plant and apparatus in the electricity power utilities environment (ukstandards.org.uk)
EUSEPUS002	Assemble Plant and Apparatus in the Electricity Power Utilities Environment (ukstandards.org.uk)
EUSEPUS003	Install plant and apparatus in the electricity power utilities environment (ukstandards.org.uk)
EUSEPUS006	Maintain plant and apparatus in the electricity power utilities environment (ukstandards.org.uk)
EUSEPUS011	Configure equipment for use in the power utilities environment - National Occupational Standards (ukstandards.org.uk)
EUSEPUS012	Access, movement and egress in the electricity power utilities environment (ukstandards.org.uk)
EUSEPUS016	Movement of loads in the electricity power utilities environment (ukstandards.org.uk)
EUSEPUS035	Restore and reinstate the work area in the electricity power utilities environment (ukstandards.org.uk)
EUSEPUS049	Working efficiently and effectively in engineering (ukstandards.org.uk)
EUSEPUS050	Working safely in an engineering environment (ukstandards.org.uk)

The following assessment method/s may be used to ensure all learning outcomes and assessment criteria are fully covered.

Assessment Method	**Definition**	**Possible Content**
Portfolio of evidence	A collection of documents containing work undertaken to be assessed as evidence to meet required skills outcomes OR A collection of documents containing work that shows the learner's progression through the course	Learner notes/written work Learner log/diary Peer notes Record of observation Record of discussion
Practical demonstration/assignment	A practical demonstration of a skill/situation selected by the tutor or by learners, to enable learners to practise and apply skills and knowledge	Record of observation Learner notes/written work Learner log

Coursework	Research or projects that count towards a learner's final outcome and demonstrate the skills and/or knowledge gained throughout the course	Record of observation Learner notes/written work Tutor notes/record Learner log/diary
E-assessment	The use of information technology to assess learners' work	Electronic portfolio E-tests

Learning Outcome	Unit: Maintain Substation Switchgear - Content

1. Understand organisational procedures and legislative requirements for work on substation switchgear.	**Scope**
	
	Teaching will cover:
	
	• health and safety legislation relevant to work on substation switchgear including:
	  ○ Health and Safety at Work Order 1978 (NI) Management of Health and Safety at Work Regulations
	  ○ Personal Protective Equipment at Work Regulations
	  ○ Manual Handling Operations Regulations
	  ○ Reporting of Injuries, Diseases and Dangerous Occurrences Regulations (RIDDOR)
	  ○ Electrical Safety, Quality and Continuity Regulations (Northern Ireland) 2012
	  ○ Work at Heights Regulation (NI) 2005
	  ○ Lifting Operations and Lifting Equipment Regulations 1998 (LOLER)
	  ○ Provision and Use of Work Equipment. Regulations 1999 (NI) (PUWER)
	  ○ Control of Substances Hazardous to Health (COSHH)
	• roles and responsibilities of employer and employee in relation to health and safety
	• limits of responsibility of own role and to whom and how to refer issues outside of own limits of responsibility
	• hazards to include:
	  ○ lifting
	  ○ working at heights
	  ○ working in proximity to electrical infrastructure
	  ○ hazardous materials
	• organisational procedures relating to fire exit plan, fire service or vehicle extinguishers, ambulance, first aid, control of substances hazardous to health (COSHH), terrorism threat to IT, property, persons, hazardous occurrences
	• electricity network policies and procedural documentation including:
	  ○ safety rules and protocols
	  ○ policy documents relating to:
	  ○ structural testing of wood poles prior to climbing or as personal support
	  ○ safe climbing procedures and equipment for wood pole overhead line work
	  ○ procedures for receipt of safety document
	  ○ requests for outage – E600

2. Be able to plan and prepare to maintain substation switchgear.	**Scope**
	
	Teaching will cover:
	
	• how to identify work location and activity in accordance with organisational procedures
	• organisational requirements for planning of control measures to minimise risk to life, property and the environment including whole job risk assessment (WJRA).
	• conducting risk assessments including completing WJRA
	• substation switchgear to include:
	  ○ oil filled circuit breakers
	  ○ oil filled switchgear
	  ○ sulphur hexafluoride (SF6) switchgear
	  ○ vacuum switchgear
	  ○ air blast circuit breakers

	○ low voltage switchgear • tools and equipment required for maintaining substation switchgear including inspection of condition and insultation prior to use • understanding the range of PPE and selecting appropriate PPE for given activity • understanding who is impacted by the work plan and communicated effectively with them including: ○ work team members including traffic management ○ customers ○ public
3. Be able to maintain substation switchgear.	**Scope** Teaching will cover: • measures to confirm the system is safe to work on in accordance with organisational procedures including: ○ isolation ○ earthing arrangements ○ drain ○ vent ○ purge • permit for work (PRW) • use of plant and equipment manuals • use of work plan and organisational procedures to ensure work is carried out appropriately • organisational standards and procedures for assessing and reporting of work undertaken including updating records • limits of responsibility of own role and to whom to refer issues outside of own limits of responsibility including incident and near miss reports
4. Be able to leave the work area in a safe condition according to required regulation and legislation.	**Scope** Teaching will cover: • organisational requirements and procedures for storage of tools and equipment including cleaning and testing • regulations, legislation and organisational procedures for safe disposal and waste materials and hazardous substances • regulations, legislation and organisational procedures relating to ensuring work site is safe

Title	Co-ordinate Work Activities on Plant and Apparatus
Level	Three
Credit Value	17
Guided Learning Hours (GLH)	105
OCN NI Unit Code	CBG597
Unit Reference No	F/651/1646
Learn Direct Code	XN2
Unit purpose and aim(s): This unit will enable the learner to understand how to co-ordinate work activities of others when working in an electrical power engineering environment.	

Learning Outcomes	Assessment Criteria
1. Understand organisational procedures and legislative requirements for co-ordinating work activities on power plant and apparatus.	1.1. Explain the main principles of health and safety legislation in Northern Ireland and regulations applicable to work on power plant and apparatus. 1.2. Explain roles and responsibilities of employees and employers in relation to organisational procedures and legislative requirements. 1.3. Explain the limitations of own job responsibility and reporting procedures for work related problems. 1.4. Summarise at least four hazards to be considered when planning to co- ordinate work on power plant and apparatus. 1.5. Explain the different personal protective equipment (PPE) required for different work activities on power plant and apparatus. 1.6. Explain organisational requirements for the safe and secure storage of tools, equipment and materials. 1.7. Explain at least two organisational procedures that need to be complied with when coordinating work on power plant and apparatus. 1.8. Explain the processes and procedures that need to be complied with when receiving a safety document.
2. Be able to plan and prepare to co-ordinate work activities on power plant and apparatus.	2.1. Identify the work location using organisational documentation and work instructions. 2.2. Use organisational work documentation to identify the work activity. 2.3. Carry out a site-specific risk assessment in accordance with health and safety regulations. 2.4. Plan control measures to minimise risk to: a) life b) property c) the environment 2.5. Plan, assign tasks and responsibilities to co-ordinate work on power plant and apparatus to group members. 2.6. Select PPE required for the job role. 2.7. Inform those who may be affected by the intended work plan.
3. Be able to co-ordinate work activities on power plant and apparatus.	3.1. Implement the work plan in line with organisational procedures to meet safe working requirements. 3.2. Instruct and monitor the working party to ensure the assigned work is conducted in accordance with the work plan and organisational procedures. 3.3. Confirm the finished work meets organisational requirements and quality standards.

	3.4. Update or provide information to others to update safety or asset records accurately. 3.5. Resolve issues within the limits of own job role responsibility. 3.6. Report issues outside the limits of own responsibility to designated personnel.
4. Be able to co-ordinate the leaving of the work area in a safe condition according to required regulation and legislation.	4.1. Store tools and test equipment safely and securely on completion of work activity in accordance with organisational procedures. 4.2. Illustrate how to dispose of waste materials and hazardous substances safely and in accordance with required regulations, legislation and organisational procedures. 4.3. Check and confirm the safe condition of the work area in accordance with required regulations, legislation and organisational procedures.

Assessment Guidance – This unit maps either partially or completely to the following NOS:	
EUSEPUS030	NOS Finder - National Occupational Standards (ukstandards.org.uk)
EUSEPUS012	Access, movement and egress in the electricity power utilities environment (ukstandards.org.uk)
EUSEPUS013	Co-ordinating work activities on plant and apparatus in the electricity power utilities (ukstandards.org.uk)
EUSEPUS016	Movement of loads in the electricity power utilities environment (ukstandards.org.uk)
EUSEPUS020	Co-ordinate a response to a contingency in the electricity power utilities environment (ukstandards.org.uk)
EUSEPUS035	Restore and reinstate the work area in the electricity power utilities environment (ukstandards.org.uk)
EUSEPUS045	Control of working parties (ukstandards.org.uk)
EUSEPUS046	Producing Technical Information for Engineering Activities (ukstandards.org.uk)
EUSEPUS047	Obtaining resources for engineering activities (ukstandards.org.uk)
EUSEPUS048	Using and communicating technical information (ukstandards.org.uk)
EUSEPUS049	Working efficiently and effectively in engineering (ukstandards.org.uk)
EUSEPUS050	Working safely in an engineering environment (ukstandards.org.uk)

Additional assessment requirement: Assessment of practical activities must include at least two separate jobs on at least two separate occasions.

The following assessment method/s may be used to ensure all learning outcomes and assessment criteria are fully covered.

Assessment Method	Definition	Possible Content
Portfolio of evidence	A collection of documents containing work undertaken to be assessed as evidence to meet required skills outcomes OR A collection of documents containing work that shows the learner's progression through the course	Learner notes/written work Learner log/diary Peer notes Record of observation Record of discussion
Practical demonstration/assignment	A practical demonstration of a skill/situation selected by the tutor or by learners, to enable learners to practise and apply skills and knowledge	Record of observation Learner notes/written work Learner log

Coursework	Research or projects that count towards a learner's final outcome and demonstrate the skills and/or knowledge gained throughout the course	Record of observation Learner notes/written work Tutor notes/record Learner log/diary
E-assessment	The use of information technology to assess learners' work	Electronic portfolio E-tests

Learning Outcome	Unit: Co-ordinate Work Activities on Plant and Apparatus - Content
1. Understand organisational procedures and legislative requirements for co-ordinating work activities on power plant and apparatus.	**Scope** Teaching will cover: • health and safety legislation relevant to work on electrical plant and apparatus including: o Health and Safety at Work Order 1978 (NI) Management of Health and Safety at Work Regulations o Personal Protective Equipment at Work Regulations o Manual Handling Operations Regulations o Reporting of Injuries, Diseases and Dangerous Occurrences Regulations (RIDDOR) o Electrical Safety, Quality and Continuity Regulations (Northern Ireland) 2012 o Work at Heights Regulation (NI) 2005 o Lifting Operations and Lifting Equipment Regulations 1998 (LOLER) o Provision and Use of Work Equipment. Regulations 1999 (NI) (PUWER) o Control of Substances Hazardous to Health (COSHH) • roles and responsibilities of employer and employee in relation to health and safety • electricity network policies and procedural documentation including: o authorisation categories o authorisation certificates o safety rules o risk assessment method statements (RAMS) o whole job risk assessment (WJRA) o permit for work (PFW) o equipment maintenance logs and storage requirements o requests for outage – E600 • reporting procedures including: o near miss o incident reports • PPE both specific to particular network infrastructure activities and general mandatory • limitations of job responsibility including: o authorisation o skills / training o reporting procedures o supervision levels
2. Be able to plan and prepare to co-ordinate work activities on power plant and apparatus.	**Scope** Teaching will cover: • how to identify work location and activity in accordance with organisational procedures and use of following: o field file o job card o verbal instruction o geographic names information service (GNIS) maps • requests for outage - E600 including: o request for low voltage (LV) outage and/or live work o request for high voltage (HV) outage and/or programmed work • permit for work (PFW)

	• limited work certificate (LWC)
	• organisational requirements for planning of control measures to minimise risk to life, property and the environment including WJRA and job report.
	• conducting risk assessments including completing WJRA
	• understanding the range of PPE and selecting appropriate PPE for given activity
	• understanding who is impacted by the control plan and communicated effectively with them including:
	  ○ work team members including traffic management
	  ○ customers
	  ○ public

3. Be able to co-ordinate work activities on power plant and apparatus.	**Scope**
	
	Teaching will cover:
	
	• measures to confirm the system is safe to work on in accordance with organisational procedures including:
	  ○ isolation
	  ○ earthing arrangements
	  ○ drain
	  ○ vent
	  ○ purge
	• permit for work (PRW)
	• use of overhead line (OHL) / jointing / stations manuals
	• RAMS
	• use of work plan
	• organisational procedures for monitoring of work and ensuring safety control measures are implemented
	• organisational procedures for instructing work parties
	• organisational standards and procedures for assessing and reporting of work undertaken including updating records
	• limits of responsibility of own role and whom to refer issues outside of own limits of responsibility including incident and near miss reports

4. Be able to co-ordinate the leaving of the work area in a safe condition according to required regulation and legislation.	**Scope** Teaching will cover: • organisational requirements and procedures for storage of tools and equipment including cleaning and testing • regulations, legislation and organisational procedures for safe disposal and waste materials and hazardous substances • regulations, legislation and organisational procedures relating to ensuring work site is safe

Title	Low Voltage Overhead Line Switching Operations
Level	Three
Credit Value	11
Guided Learning Hours (GLH)	105
OCN NI Unit Code	CBG598
Unit Reference No	H/651/1647
Learn Direct Code	XN2
Unit purpose and aim(s): This unit will enable the learner to understand low voltage overhead line switching operations in an electrical power engineering environment.	

Learning Outcomes	Assessment Criteria
1. Understand organisational procedures and legislative requirements for low voltage switching operations.	1.1. Explain the main principles of health and safety legislation and regulations applicable to low voltage switching operations. 1.2. Explain roles and responsibilities of employees and employers in relation to organisational procedures and legislative requirements. 1.3. Explain the limitations of own job responsibility and reporting procedures for any work related issues. 1.4. Summarise at least four hazards to be considered when planning low voltage switching operations. 1.5. Explain organisational procedures for accidents, incidents and emergencies including: a) fire b) injury to self and others c) external threats d) hazardous occurrences e) near misses 1.6. Explain the organisational procedures that need to be complied with when carrying out low voltage switching operations.
2. Be able to plan and prepare to carry out low voltage switching operations.	2.1. Identify work location using organisational documentation and work instructions. 2.2. Use organisational work documentation to identify operational requirements. 2.3. Plan activities required to carry out low voltage switching operations. 2.4. Carry out a site specific risk assessment in accordance with health and safety regulations. 2.5. Select and wear personal protective equipment (PPE) required for the job role. 2.6. Select and carry out pre-use checks on tools and equipment required to carry out low voltage switching operations. 2.7. Inspect apparatus on which switching operations are to be conducted in accordance with organisational procedures. 2.8. Inform others who may be affected by the intended work plan.
3. Be able to carry out low voltage switching operations.	3.1. Confirm the power system is safe to be operated on in accordance with organisational procedures. 3.2. Implement the work plan and carry out low voltage switching operations in accordance with organisational procedures to meet safe working requirements. 3.3. Confirm the low voltage switching operation achieves the isolation necessary to allow the work to be completed safely.

	3.4. Record the results of the work implemented in accordance with organisational procedures. 3.5. Resolve issues that may arise within the limits of own job role responsibility. 3.6. Report issues outside the limits of own responsibility to designated personnel.
4. Be able to leave the work area in a safe condition according to required regulation and legislation.	4.1. Store tools and test equipment safely and securely on completion of work activity in accordance with organisational procedures. 4.2. Check and confirm the safe condition of the work area in accordance with required regulations, legislation and organisational procedures.

Assessment Guidance – This unit maps either partially or completely to the following NOS:	
EUSEPUS012	Access, movement and egress in the electricity power utilities environment (ukstandards.org.uk)
EUSEPUS016	Movement of loads in the electricity power utilities environment (ukstandards.org.uk)
EUSEPUS020	Co-ordinate a response to a contingency in the electricity power utilities environment (ukstandards.org.uk)
EUSEPUS035	Restore and reinstate the work area in the electricity power utilities environment (ukstandards.org.uk)
EUSEPUS049	Working efficiently and effectively in engineering (ukstandards.org.uk)
EUSEPUS050	Working safely in an engineering environment (ukstandards.org.uk)

Additional assessment requirement: Low voltage switching operations should include two different jobs, each on two separate occasions; with one job using jumpers.

The following assessment method/s may be used to ensure all learning outcomes and assessment criteria are fully covered.

Assessment Method	**Definition**	**Possible Content**
Portfolio of evidence	A collection of documents containing work undertaken to be assessed as evidence to meet required skills outcomes OR A collection of documents containing work that shows the learner's progression through the course	Learner notes/written work Learner log/diary Peer notes Record of observation Record of discussion
Practical demonstration/assignment	A practical demonstration of a skill/situation selected by the tutor or by learners, to enable learners to practise and apply skills and knowledge	Record of observation Learner notes/written work Learner log
Coursework	Research or projects that count towards a learner's final outcome and demonstrate the skills and/or knowledge gained throughout the course	Record of observation Learner notes/written work Tutor notes/record Learner log/diary
E-assessment	The use of information technology to assess learners' work	Electronic portfolio E-tests

Learning Outcome	Unit: Low Voltage Overhead Line Switching Operations - Content

1. Understand organisational procedures and legislative requirements for low voltage switching operations.	**Scope**
	
	Teaching will cover:
	
	• health and safety legislation relevant to work on electrical plant and apparatus including:
	  ○ Health and Safety at Work Order 1978 (NI) Management of Health and Safety at Work Regulations
	  ○ Personal Protective Equipment at Work Regulations
	  ○ Manual Handling Operations Regulations
	  ○ Reporting of Injuries, Diseases and Dangerous Occurrences Regulations (RIDDOR)
	  ○ Electrical Safety, Quality and Continuity Regulations (Northern Ireland) 2012
	  ○ Work at Heights Regulation (NI) 2005
	  ○ Lifting Operations and Lifting Equipment Regulations 1998 (LOLER)
	  ○ Provision and Use of Work Equipment. Regulations 1999 (NI) (PUWER)
	  ○ Control of Substances Hazardous to Health (COSHH)
	• roles and responsibilities of employer and employee in relation to health and safety
	• limits of responsibility of own role and whom and how to refer issues outside of own limits of responsibility
	• hazards to include:
	  ○ lifting
	  ○ working at heights
	  ○ working in proximity to electrical infrastructure
	  ○ hazardous materials
	• organisational procedures relating to fire exit plan, fire service or vehicle extinguishers, ambulance, first aid, control of substances hazardous to health (COSHH), terrorism threat to IT, property, persons, hazardous occurrences
	• electricity network policies and procedural documentation including:
	  ○ safety rules and protocols
	  ○ request for low voltage (LV) outage and/or live work (E 600)
	  ○ procedures for receipt of safety document
	  ○ limited work certificate (LWC)
	• job report, safety rules, safety rule instructions (SCI)s, relevant manuals

2. Be able to plan and prepare to carry out low voltage switching operations.	**Scope**
	
	Teaching will cover:
	
	• how to identify work location and activity in accordance with organisational procedures including where fuses / jumpers are located for operations to take place
	• relevant documentation including field file, request for low voltage (LV) outage and/or live work (E 600) and job report
	• organisational requirements for planning of control measures to minimise risk to life, property and the environment including whole job risk assessment (WJRA).
	• conducting risk assessments including completing WJRA including stability and condition of structure to be accessed, condition of the conductors and environmental conditions
	• overhead switching operations to include:
	  ○ pole mounted low voltage mains fuses
	  ○ overhead line jumpers

	○ overhead line isolators ○ ground mounted low voltage mains fuses/links ○ transformer links • tools and equipment required for low voltage switching operations including: ○ switching rods ○ insulated tools ○ rubber gloves • understanding the range of PPE and selecting appropriate PPE for given activity • understanding who is impacted by the work plan and communicated effectively with them including: ○ work team members including traffic management ○ customers ○ public
3. Be able to carry out low voltage switching operations.	**Scope** Teaching will cover: • measures to confirm the line is safe to switch in accordance with organisational procedures including: ○ testing ○ isolation ○ earthing arrangements • use of switching log • use of work plan and organisational procedures to ensure work is carried out appropriately including isolation and caution band fitted • organisational standards and procedures for assessing and reporting of work undertaken including updating records • limits of responsibility of own role and whom to refer issues outside of own limits of responsibility including incident and near miss reports
4. Be able to leave the work area in a safe condition according to required regulation and legislation.	**Scope** Teaching will cover: • organisational requirements and procedures for storage of tools and equipment including cleaning and testing • regulations, legislation and organisational procedures for safe disposal and waste materials and hazardous substances • regulations, legislation and organisational procedures relating to ensuring work site is safe

Title	Overhead Line Fault Diagnosis
Level	Three
Credit Value	16
Guided Learning Hours (GLH)	130
OCN NI Unit Code	CBG599
Unit Reference No	J/651/1648
Learn Direct Code	XN2
Unit purpose and aim(s): This unit will enable the learner to understand overhead line fault diagnosis in an electrical power engineering environment.	

Learning Outcomes	Assessment Criteria
1. Understand organisational procedures and legislative requirements for overhead line fault diagnosis.	1.1. Explain the main principles of health and safety legislation and regulations applicable to work on overhead line networks. 1.2. Explain roles and responsibilities of employees and employers in relation to organisational procedures and legislative requirements. 1.3. Explain the limitations of own job responsibility and reporting procedures for any work related problems. 1.4. Summarise at least four hazards to be considered when carrying out overhead line fault diagnosis. 1.5. Explain organisational procedures that need to be complied with when carrying out overhead line fault diagnosis.
2. Be able to plan and prepare to diagnose faults on overhead line networks.	2.1. Identify work location using organisational documentation and work instructions. 2.2. Use organisational work documentation to identify the operational requirements. 2.3. Plan the activities required to carry out overhead line fault diagnosis operations. 2.4. Carry out a site specific risk assessment in accordance with health and safety regulations. 2.5. Select and wear personal protective equipment (PPE) required for the job role. 2.6. Identify the faulted apparatus to be diagnosed, including points of isolation in accordance with organisational procedures. 2.7. Select the appropriate tools and equipment required to carry out overhead line fault diagnosis operations. 2.8. Inform those who may be directly and indirectly affected by the intended work plan.
3. Be able to carry out overhead line fault diagnosis.	3.1. Identify overhead line fault and recommend actions needed to effect a repair. 3.2. Confirm the system is safe to work on in accordance with organisational procedures. 3.3. Implement the work plan in line with organisational procedures to meet safe control system requirements. 3.4. Confirm the finished work meets organisational requirements and quality standards. 3.5. Record the results of fault diagnosis in accordance with organisational procedures. 3.6. Resolve problems that may arise within the limits of own job role responsibility. 3.7. Report problems outside the limits of own responsibility to designated personnel.

4. Be able to leave the work area in a safe condition according to required regulation and legislation.	4.1. Store tools and test equipment safely and securely on completion of work activity in accordance with organisational procedures. 4.2. Check and confirm the safe condition of the work area in accordance with required regulations, legislation and organisational procedures.

Assessment Guidance – This unit maps either partially or completely to the following NOS:	
EUSEPUS007	Inspect plant and apparatus in the power utilities environment - National Occupational Standards (ukstandards.org.uk)
EUSEPUS012	Access, movement and egress in the electricity power utilities environment (ukstandards.org.uk)
EUSEPUS014	Fault location and diagnosis on plant and apparatus in the electricity power utilities (ukstandards.org.uk)
EUSEPUS035	Restore and reinstate the work area in the electricity power utilities environment (ukstandards.org.uk)
EUSEPUS049	Working efficiently and effectively in engineering (ukstandards.org.uk)
EUSEPUS050	Working safely in an engineering environment (ukstandards.org.uk)

The following assessment method/s may be used to ensure all learning outcomes and assessment criteria are fully covered.

Assessment Method	**Definition**	**Possible Content**
Portfolio of evidence	A collection of documents containing work undertaken to be assessed as evidence to meet required skills outcomes OR A collection of documents containing work that shows the learner's progression through the course	Learner notes/written work Learner log/diary Peer notes Record of observation Record of discussion
Practical demonstration/assignment	A practical demonstration of a skill/situation selected by the tutor or by learners, to enable learners to practise and apply skills and knowledge	Record of observation Learner notes/written work Learner log
Coursework	Research or projects that count towards a learner's final outcome and demonstrate the skills and/or knowledge gained throughout the course	Record of observation Learner notes/written work Tutor notes/record Learner log/diary
E-assessment	The use of information technology to assess learners' work	Electronic portfolio E-tests

Learning Outcome	Unit: Overhead Line Fault Diagnosis - Content

1. Understand organisational procedures and legislative requirements for overhead line fault diagnosis.	**Scope**
	
	Teaching will cover:
	
	• health and safety legislation relevant to work on the overhead powerline system including:
	  ○ Health and Safety at Work Order 1978 (NI) Management of Health and Safety at Work Regulations
	  ○ Personal Protective Equipment at Work Regulations
	  ○ Manual Handling Operations Regulations
	  ○ Reporting of Injuries, Diseases and Dangerous Occurrences Regulations (RIDDOR)
	  ○ Electrical Safety, Quality and Continuity Regulations (Northern Ireland) 2012
	  ○ Work at Heights Regulation (NI) 2005
	  ○ Lifting Operations and Lifting Equipment Regulations 1998 (LOLER)
	  ○ Provision and Use of Work Equipment. Regulations 1999 (NI) (PUWER)
	  ○ Control of Substances Hazardous to Health (COSHH)
	• roles and responsibilities of employer and employee in relation to health and safety
	• limits of responsibility of own role and to whom and how to refer issues outside of own limits of responsibility
	• hazards to include:
	  ○ lifting
	  ○ working at heights
	  ○ working in proximity to electrical infrastructure
	  ○ hazardous materials
	• organisational procedures relating to fire exit plan, fire service or vehicle extinguishers, ambulance, first aid, control of substances hazardous to health (COSHH), terrorism threat to IT, property, persons, hazardous occurrences
	• electricity network policies and procedural documentation including:
	  ○ safety rules and protocols
	  ○ policy documents relating to:
	  ○ structural testing of wood poles prior to climbing or as personal support
	  ○ safe climbing procedures and equipment for wood pole overhead line work
	  ○ procedures for receipt of safety document
	  ○ requests for outage – E600

2. Be able to plan and prepare to diagnose faults on overhead line networks.	**Scope** Teaching will cover: • how to identify work location and activity in accordance with organisational procedures • organisational requirements for planning of control measures to minimise risk to life, property and the environment including whole job risk assessment (WJRA). • conducting risk assessments including completing WJRA including stability and condition of structure to be accessed, condition of the conductors and environmental conditions • overhead line plant to include both high and low voltage • tools and equipment required for overhead line fault diagnosis

	• fault finding diagnostic techniques to include:
	  ○ visual examination
	  ○ physical examination
	  ○ electrical testing
	  ○ interpretation of information from plans and diagrams
	• understanding the range of PPE and selecting appropriate PPE for given activity
	• understanding who is impacted by the work plan and communicated effectively with them including:
	  ○ work team members including traffic management
	  ○ customers
	  ○ public

3. Be able to carry out overhead line fault diagnosis.	**Scope**
	
	Teaching will cover:
	
	• measures to confirm the system is safe to work on in accordance with organisational procedures including:
	  ○ isolation
	  ○ earthing arrangements
	• permit for work (PFW)
	• limited work certificate (LWC)
	• use of relevant manuals
	• use of work plan and organisational procedures to ensure work is carried out appropriately
	• fault finding to include the following diagnostic techniques:
	  ○ visual examination
	  ○ physical examination
	  ○ electrical testing
	  ○ interpretation of information from plans
	• electricity safety, quality and continuity regulations (Northern Ireland) 2012
	• organisational standards and procedures for assessing and reporting of work undertaken including updating records
	• limits of responsibility of own role and whom to refer issues outside of own limits of responsibility including incident and near miss reports

4. Be able to leave the work area in a safe condition according to required regulation and legislation.	**Scope** Teaching will cover: • organisational requirements and procedures for storage of tools and equipment including cleaning and testing • regulations, legislation and organisational procedures for safe disposal and waste materials and hazardous substances • regulations, legislation and organisational procedures relating to ensuring work site is safe

Quality Assurance of Centre Performance

External Verification

All OCN NI recognised centres are subject to External Verification. External verification visits and monitoring activities will be conducted annually to confirm continued compliance with the conditions of recognition, review the centre's risk rating for the qualifications and to assure OCN NI of the maintenance of the integrity of the qualifications.

The External Verifier will review the delivery and assessment of the qualifications. This will include the review of a sample of assessment evidence and evidence of the internal verification of assessment and assessment decisions. This will form the basis of the EV report and will inform OCN NI's annual assessment of centre compliance and risk. The External Verifier is appointed by OCN NI.

Standardisation

As a process, standardisation is designed to ensure consistency and promote good practice in understanding and application of standards. Standardisation events:

- make qualified statements about the level of consistency in assessment across centres delivering a qualification
- make statements on the standard of evidence that is required to meet the assessment criteria for units in a qualification
- make recommendations on assessment practice
- produce advice and guidance for the assessment of units
- identify good practice in assessment and internal verification

Centres offering units of an OCN NI qualification must attend and contribute assessment materials and learner evidence for standardisation events if requested.

OCN NI will notify centres of the nature of sample evidence required for standardisation events (this will include assessment materials, learner evidence and relevant assessor and internal verifier documentation). OCN NI will make standardisation summary reports available and correspond directly with centres regarding event outcomes.

Administration

Registration

A centre must register learners within 20 working days of commencement of a qualification.

Certification

Certificates will be issued to centres within 20 working days of receipt of correctly completed results marksheets. It is the responsibility of the centre to ensure that certificates received from OCN NI are held securely and distributed to learners promptly and securely.

Charges

OCN NI publishes all up to date qualification fees in its Fees and Invoicing Policy document. Further information can be found on the centre login area of the OCN NI website.

Equality, Fairness and Inclusion

OCN NI has considered the requirements of equalities legislation in developing the specification for these qualifications. For further information and guidance relating to access to fair assessment and the OCN NI Reasonable Adjustments and Special Considerations policies, centres should refer to the OCN NI website.

Retention of Evidence

OCN NI has published guidance for centres on the retention of evidence. Details are provided in the OCN NI Centre Handbook and can be accessed via the OCN NI website.

OCN NI Level 3 Diploma in Electrical Power Engineering (Northern Ireland)
Qualification Number: 610/4242/0

Operational start date: 01 June 2024
Operational end date: 31 May 2029
Certification end date: 31 May 2032

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