



**National Certificate in Electricity Supply (Sub Station Maintainer)**

level of qualification: 4

credit total: 140

**Purpose and content of the National Certificate**

**Purpose:**

This National Certificate caters for trainees within this industry whose primary role is carrying out maintenance activities on the primary plant and equipment installed in high voltage electricity sub stations. The skills covered include, amongst others; jointing electricity network overhead conductors; installing sub station earthing and bonding system; and carrying out routine inspections and servicing on sub station emergency and security services.

**Content:**

**Compulsory unit standards**

**core skills**

		level	credit
17027	Demonstrate the requirements for holding access permits on high voltage electrical lines	3	2
17028	Demonstrate the requirements for holding permits on high voltage electrical equipment	3	2
19323	Demonstrate knowledge of single and three phase transformers used in the electricity supply industry	3	2
19950	Demonstrate knowledge of electrical testing and test instruments in the electricity supply industry	3	3

**distribution networks**

10512	Joint electricity network overhead conductors	3	4
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**power system maintenance**

14328	Carry out in service visual inspections on Substation equipment for safe operation	3	4
14329	Carry out routine inspection and servicing on distribution power transformers 33kV to 11kV	4	8
14330	Install substation earthing and bonding system	3	3
14331	Carry out in-service visual inspection checks on substation auxiliary plant and equipment	3	4
14332	Carry out routine inspection and service on oil filled distribution power transformers 11kV to 400V	4	8



		level	credit
14333	Carry out routine inspection and servicing on transmission power transformers above 33kV	4	8
14334	Carry out routine service on transmission instrument transformers 33kV and above	4	7
14335	Service and repair high voltage disconnectors, earth switches and other bus structure equipment	3	6
14336	Carry out routine inspection and servicing on distribution instrument transformers below 33kV	4	7
14337	Carry out routine inspection and servicing on high voltage minimum oil circuit breakers	4	6
14338	Carry out routine inspection and servicing on high voltage bulk oil circuit breakers	4	6
14339	Carry out routine inspection and servicing on 11kV and 33kV pole mounted re-closer circuit breakers	3	3
14341	Carry out routine inspection and service on high voltage indoor metal clad circuit breakers and bus	4	4
14342	Carry out routine inspection and minor servicing on high voltage SF6 outdoor circuit breakers	4	5
14344	Carry out routine inspection and servicing on substation emergency services	3	4
14346	Carry out routine inspection and servicing on security services at substations	3	4
14700	Apply and remove safety measures in an electricity supply environment	3	3

**power system management**

16285	Plan for scheduled work on electricity supply power system equipment	4	10
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**testing**

14287	Use and maintain test instruments used within the high voltage electrical industry	3	4
14294	Carry out insulating oil sampling and voltage breakdown tests	3	3

**Elective**

A minimum of 20 credits is required from unit standards at level 3 or above, chosen from any of the following domains and/or specified unit standards.

**power system maintenance**

14340	Carry out routine inspection and servicing on high voltage air blast circuit breakers	4	4
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		level	credit
14343	Carry out routine inspection and servicing on high voltage gas insulated switchgear	4	5
14345	Carry out routine inspection and servicing on substation air compressor systems	3	4
14347	Carry out routine inspection and service of high voltage capacitor banks and signal injection plant	3	3

**Domain**  
**core skills**  
**power system management**  
**testing**