

**Domain**            **ELECTRICAL POWER LINES INSTALLATION**

**Title:**                **Install power lines and cables**

**Level: 3**

**Credits: 8**

### Purpose

This unit standard is intended for those who install power lines and cables. People credited with this unit standard are able to plan and prepare for work; install overhead lines and cables; install underground cables; test distribution lines; and clean-up work area.

This unit standard is intended for those who work as electrician linesman.

### Special notes

1.     Entry information

Prerequisite:

- *Unit 1157 - Demonstrate basic knowledge of workplace health and safety*

2.     To demonstrate competence, at a minimum, evidence is required of the install and test power lines and cables. Performing these tasks requires correct identification of requirements, selection and use of appropriate processes, tools and equipment and completing all work to specification.

3.     This unit standard is to be assessed in the context of electrical transmission line installation and should be assessed in conjunction with other relevant technical unit standards selected from this domain.

4.     Assessment evidence may be collected at a real workplace or a simulated workplace environment in which electrical operations are carried out.

5.     All activities associated with this unit standard shall comply with manufactures' specifications, instructions, procedures, standards and legislation.

6.     Glossary of terms:

- '*Isolation and lockout procedures*' refer to isolating an electrical circuit from the source of supply
- '*Specifications*' refers to any, or all of the following: manufacturers' specifications and recommendations, workplace specific requirements, national and international standards and legislations
- '*ISO*' refers to International Organization for Standards
- '*SANS*' refers South African National Standards.
- '*NESC*' refers to Namibia Electricity Safety Code

7.     Regulations and legislation relevant to this unit standard include the following:

- Labour Act No. 11 of 2007

- Petroleum Products and Energy Amendment Act No. 2 of 2005
- National Energy Fund Act of 2000
- Regulations relating to the health & safety of employees at work under Schedule 1 (2) of the Labour Act No.11 of 2007
- ISO 14001 (Environmental Management Standard)
- Electricity Act No.4 of 2007 - Namibia Electricity Safety Code, 2009
- SANS 10142-1 and SANS 10142-2 electrical wiring codes and all subsequent amendments to any of the above.

### **Quality Assurance Requirements**

This unit standard and others within this subfield may be awarded by institutions which meet the accreditation requirements set by the Namibia Qualifications Authority and the Namibia Training Authority and which comply with the national assessment and moderation requirements. Details of specific accreditation requirements and the national assessment arrangements are available from the Namibia Qualifications Authority on [www.namqa.org](http://www.namqa.org) and the Namibia Training Authority on [www.nta.com.na](http://www.nta.com.na).

## **Elements and Performance Criteria**

### **Element 1: Plan and prepare for work**

#### **Performance criteria**

- 1.1 Work instructions, including plans, specifications, quality requirements and operational details are obtained, confirmed and interpreted.
- 1.2 Signage and barricade requirements are identified and implemented, where necessary.
- 1.3 Personal protective equipment is selected in line with job and safety requirements
- 1.4 Tools and equipment selected to carry out tasks are consistent with job requirements, checked for serviceability, and any faults are rectified or reported prior to commencement.
- 1.5 Material quantity requirements are calculated in line with plans, specifications and quality requirements.
- 1.6 Environmental protection requirements are identified and applied in line with environmental plans and regulatory obligations.

## **Element 2: Install overhead lines and cables**

### **Performance Criteria**

- 2.1 Conductor and cable drums are prepared and mounted according to workplace procedures.
- 2.2 Overhead line is stringed and tensioned according to manufacturer's procedures and safety clearance as per NESC.
- 2.3 Overhead lines and cables are terminated according to manufacturers' procedures.

## **Element 3: Install underground cables**

### **Performance Criteria**

- 3.1 Cable drums are prepared and mounted according to workplace procedures.
- 3.2 Underground cables are laid and buried according to manufacturers' procedures and relevant standards.
- 3.3 Underground cables are terminated according to manufacturers' procedures and relevant standards.

## **Element 4: Test distribution lines**

### **Performance Criteria**

- 4.1 Underground cables are tested and commissioned according to manufacturers' procedures and relevant standards.
- 4.2 Malfunctions and deviation from specifications of underground line are rectified according to workplace procedures.
- 4.3 Overhead line is tested and commissioned according to manufacturers' instructions.
- 4.4 Malfunctions and deviation from specifications of overhead line are rectified according to workplace procedures.

## **Element 5: Clean-up work area**

### **Performance Criteria**

- 5.1 Work area is cleared, cleaned, restored and secured in line with workplace procedures.

- 5.2 Tools and equipment are cleaned, checked and stored in line with manufacturer specifications and workplace procedures.
- 5.3 Materials and wastes are disposed of, reused, or recycled in accordance with legislation, regulations, codes of practice and job specifications.

### **Registration Data**

<b>Subfield:</b>	Electrical Engineering
<b>Date first registered:</b>	24 July 2014
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<b>Body responsible for review:</b>	Namibia Training Authority