

Domain	RIGGING	Unit ID: 984
Title:	Demonstrate knowledge of electrical power generation	
Level: 3		Credits: 5

Purpose

This unit standard specifies the competencies required to demonstrate knowledge of electrical power operations. It includes demonstrating knowledge of the principles of power generation and demonstrating knowledge of principles of electrical load control. This unit standard is intended for those who work as general lifting machine operators.

Special Notes

1. Entry information:
Prerequisite:
 - *937 - Apply safety rules and regulations in lifting machine operations or demonstrated equivalent knowledge and skills.*
2. Assessment evidence may be collected from a real workplace, or an appropriate simulated realistic environment in which lifting machine operations are carried out.
3. All inspection, operation and maintenance procedures associated with the use of tools and equipment shall comply with manufacturers' specifications, guidelines and instructions.
4. Regulations and legislation relevant to this unit standard include the following:
 - Labour Act, No. 11, 2007
 - Regulations relating to the Health and Safety of employees at work, 1997 and all subsequent amendment.

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 and the Namibia Training Authority on www.nta.com.na.

Elements and Performance Criteria

Element 1: Demonstrate knowledge of the principles of power generation

Range

Electro-magnetism principles may include but are not limited to flux, magnitude of forces and induction.

Performance Criteria

- 1.1 Generating characteristics of alternating current (AC) are defined.
- 1.2 Frequency relationships between multi-phase systems are explained.
- 1.3 Electro-magnetism principles related to generation of AC are described.
- 1.4 Synchronizing principles of AC generators are described.
- 1.5 Factors influencing AC power generator capability are identified.
- 1.6 Factors influencing AC generator stability are identified.

Element 2: Demonstrate knowledge of principles of electrical load control

Range

Generator transformer working principles may include but not limited to tap changing and flux control.

Generator capability excursions and effects may included but is not limited to pole slip, overheating and over/under excitation.

Performance Criteria

- 2.1 Principles and concepts of active and reactive power control are described.
- 2.2 Generator load control principles are explained.
- 2.3 Generator voltage control methods are described.
- 2.4 Generator transformer working principles are explained.
- 2.5 Influences of power factor on electrical systems are identified.
- 2.6 Generator capability excursions and effects thereof are explained.

Registration Data

Subfield:	Lifting, Shifting and Secure Loads
Date first registered:	27 September 2012
Date this version registered:	27 September 2012
Anticipated review:	2015
Body responsible for review:	Namibia Training Authority