

Domain	POWER PLANT OPERATIONS
Title:	Demonstrate knowledge of gas fired power plant
Level: 4	Credits: 6

Purpose

This unit standard is intended for those demonstrate knowledge of gas fired power plant. People credited with this unit standard are able to explain operation principles of a gas fired power plant; describe the operation process of gas fired power station; and describe operation of power plant auxiliary equipment

This unit standard is intended for those who work as power station operators.

Special Notes

1. Entry information:

Prerequisite

- *None*

2. This unit standard is to be delivered and assessed in the context of electrical power plant operation and should be assessed in conjunction with other relevant technical units selected from this domain.
3. To demonstrate competence, at a minimum, evidence is required of describing gas fired plant generation process.
4. Assessment evidence may be collected from a real workplace or a simulated workplace environment in which gas fired plant generation.
5. Glossary of terms:
 - '*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.
6. 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
 - DRAFT No.2 b (29 June 2001)
 - 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
- 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 and the Namibia Training Authority on www.nta.com.na.

Elements and Performance Criteria

Element 1: Explain operation principles of a gas fired power plant

Performance Criteria

- 1.1 Properties of gas fuel are identified and described.
- 1.2 Precautions of using gas are identified and explained.
- 1.3 Thermodynamics principles are described.
- 1.4 Conversion of energy from heat is described.

Element 2: Describe the operation process of gas fired power station

Performance Criteria

- 2.1 Generation principles, processes and precautions are explained.
- 2.2 Generation of steam and energy recovery is explained.
- 2.3 Procedures for plant start-up and shut-down are explained.
- 2.4 Procedure for monitoring gas fired power plant is explained.
- 2.5 Operation of safety equipment and alarms is explained.
- 2.6 Documentation of operating gas fired power plant is explained.

Element 3: Describe operation of power plant auxiliary equipment

Performance Criteria

- 3.1 Auxiliary power plant equipment are identified and explained.
- 3.2 Operation principles of auxiliary power plant equipment are explained.

Registration Data

Subfield:	Electrical Engineering
Date first registered:	24 July 2014
Date this version registered:	23 November 2023
Anticipated review:	23 November 2028
Body responsible for review:	Namibia Training Authority