

Domain

POWER PLANT OPERATIONS

Title:

**Demonstrate knowledge of photovoltaic (PV)
power plant**

Level: 4

Credits: 6

Purpose

This unit standard is intended for those who demonstrate knowledge of photovoltaic (PV) power plant. People credited with this unit standard are able to explain energy conversion from solar energy; and describe the operation of photo voltaic power plant.

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 photo voltaic power plant operation.

4. Assessment evidence may be collected from a real workplace or a simulated workplace environment in which generation of power is through photo voltaic power plant.

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:

- National Energy Fund Act of 2000
- 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 energy conversion from solar energy

Performance Criteria

- 1.1 Properties of solar energy are identified and described.
- 1.2 Photo voltaic principle is described.
- 1.3 Conversion of energy from solar energy (both visible and other) is described.

Element 2: Describe the operation of photo voltaic power plant

Performance Criteria

- 2.1 Generation principles and processes are explained.
- 2.2 Photo voltaic power station sub-systems are identified and their operation explained.
- 2.3 Monitoring of power generation is explained.
- 2.4 Optimization of power generation is explained.

Registration Data

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