

Unit ID: 1405

Domain **HYDROMETALLURGICAL PROCESSING**
Title: **Demonstrate mechanical awareness and**
 plant appreciation as part of
 hydrometallurgy operations

Level: 2

Credits: 20

Purpose

This unit standard is intended for those who carry out metallurgical processing operations. People holding credit for this unit standard are able to: Identify and describe major components and equipment of plant systems; identify and describe functions of instruments and controls; apply the principles for inspecting, recording and reporting operational fitness of plant components; demonstrate knowledge of plant and equipment operation; and apply knowledge of operator maintenance.

Special Notes

1. Assessment evidence may be collected from a real workplace or a simulated workplace in which processing operations are carried out. This unit standard should be assessed in conjunction with other relevant technical unit standards selected from the hydrometallurgical processing domain.
2. The assessment of this unit standard requires the candidate to demonstrate competence, at a minimum, by:
 - Practical demonstration of identifying and describing major components and equipment of any three (3) systems used in hydrometallurgy operations;
 - Practical demonstration of identifying and describing instruments and controls of any three (3) systems used in hydrometallurgy operations;
 - Practical demonstration of inspecting, recording, and reporting operational fitness of any three (3) systems used in hydrometallurgy operations;
 - Practical demonstration of operator maintenance procedures of any one (1) systems used in hydrometallurgy operations;
 - Demonstrating knowledge in form of a Portfolio of Evidence (PoE). Authentic evidence must be provided by describing mayor components and equipment; instruments and controls; pre-operational checks; and plant and equipment operation of the overall hydrometallurgy section at the candidate's workplace. The number of systems to be covered will depend on the broadness and/or complexity of the hydrometallurgy section at the candidate's workplace.
3. 'System' may include but is not limited to systems being implemented in hydrometallurgy operations such as Feed systems; Extraction systems; Purification systems; Solid from liquid separation systems; Recovery systems; Pumps systems; Reagent systems; Cooling system; and Heating systems.
4. Performance of all elements in this unit standard must comply with relevant regulatory, legislative, workplace requirements and/or manufacturers' specifications.
5. Regulations and legislation, including subsequent amendments, relevant to this unit standard may include but are not limited to the following:
 - Labour Act, No. 11, 2007

- Mineral Act, No. 33, 1992
- Mine Health and Safety Regulations, 1999
- Regulations relating to the Health and Safety of employees at work, 1997 and all industry specific regulations, legislations, code of practice, or code of conduct.

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. All approved unit standards, qualifications and national assessment arrangements are available on the Namibia Training Authority website www.nta.com.na.

Elements and Performance Criteria

Element 1: Identify and describe major components and equipment of plant systems

Performance Criteria

- 1.1 Major components and equipment of plant systems are identified and their basic functions described.

Element 2: Identify and describe functions of instruments and controls

Performance Criteria

- 2.1 Plant instrumentation is identified and their basic functions described.
- 2.2 Plant controls are identified and their basic functions described.
- 2.3 Warnings from machine indicators and gauges are interpreted in accordance with manufacturer's specifications.
- 2.4 All safety features and warning devices on the machine are identified, and their purposes described in accordance with manufacturer's specifications.

Element 3: Apply the principles for inspecting, recording and reporting operational fitness of plant components

Performance Criteria

- 3.1 Workplace hazards and associated risks are described.
- 3.2 Principles of pre-operational and post-operational checks are explained.
- 3.3 Procedures for pre-operational and post-operational checks are demonstrated.
- 3.4 Checklist is completed according to workplace procedures.

- 3.5 Start-up and shutdown procedures are demonstrated in line with site procedures and manufacturer's specifications.
- 3.6 Results of pre-operational and post-operational checks are reported in line with workplace procedures.

Element 4: Demonstrate knowledge of plant and equipment operation

Performance Criteria

- 4.1 Reasons for monitoring the operation and/or performance of plant and equipment are explained.
- 4.2 Knowledge of corrective and/or reporting actions with regard to abnormal situations encountered are described in accordance with workplace procedures.

Element 5: Apply knowledge of operator maintenance

Performance Criteria

- 5.1 Workplace hazards and associated risks are described.
- 5.2 Knowledge of procedures for isolation and lock-out according to level of responsibility are described.
- 5.3 Operator maintenance is carried out in line with workplace procedures.
- 5.4 Documents, checklists, and reporting lines relevant to operator maintenance are described in accordance with workplace procedures.

Registration Data

Subfield:	Metallurgy
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