



Australian Government

Department of Education, Employment and Workplace Relations

UEPOPS301B Conduct single energy source isolation procedures for permit to work

Release: 1

UEPOPS301B Conduct single energy source isolation procedures for permit to work

Modification History

Not applicable.

Unit Descriptor

Unit Descriptor

1) Scope:

1.1) Descriptor

This unit deals with the skills and knowledge required to apply single energy source isolation procedures of the permit to work procedures at the isolating level. Job requirements including permits are co-ordinated with other personnel involved in, or affected by, the isolation in accordance with enterprise/site requirements.

Application of the Unit

Application of the Unit 2)

This unit is intended to augment formally acquired competencies. It is suitable for employment-based programs under an approved contract of training.

Licensing/Regulatory Information

License to practice 3)

The skills and knowledge described in this unit do not require a licence to practise in the workplace. However, practice in this unit is subject to regulations directly related to Occupational Health and Safety and where applicable contracts of training such as apprenticeships.

Pre-Requisites

Prerequisite Unit(s) 4)

Competencies 4.1)

Granting of competency in this unit shall be made only after competency in the following unit(s) has/have been confirmed.

Where pre-requisite pathways have been identified. All competencies in the Common Unit Group must be have been completed.

Common Unit Group

Unit Code

Unit Title

UEENEEE101A

Apply Occupational Health and Safety regulations, codes and practices in the workplace

Literacy and numeracy skills 4.2)

Participants are best equipped to achieve this unit if they have reading, writing and numeracy skills indicated by the following levels. A description of what each level entails is provided in Section 2.3.1 Language, Literacy and Numeracy.

Reading 3

Writing 3

Numeracy 3

Employability Skills Information

Employability Skills 5)

The required outcomes described in this unit of competency contain applicable facets of Employability Skills. The Employability Skills Summary of the qualification in which this unit of competency is packaged will assist in identifying Employability Skill requirements.

Elements and Performance Criteria Pre-Content

- 6)** Elements describe the essential outcomes of a competency standard unit. Performance Criteria describe the required performance needed to demonstrate achievement of the element. Assessment of performance is to be consistent with the Evidence Guide.

Elements and Performance Criteria

ELEMENT	PERFORMANCE CRITERIA
1 Plan and prepare for isolation, de-isolation and restoration	1.1 Work requirements are identified from request/work orders or equivalent and clarified/confirmed with the appropriate parties or by site inspection
	1.2 Safety issues are identified to comply with statutory, enterprise and site requirements
	1.3 Materials, equipment and resources required to satisfy the job plan are identified, requisitioned, obtained and inspected for compliance with job specifications
	1.4 Work is planned in detail with the responsible issuing officer, including sequencing and prioritising of work, and the maintenance of plant security and capacity in accordance with permit/site requirements
	1.5 Job requirements including permits are co-ordinated with other personnel involved in, or affected by, the isolation in accordance with enterprise/site requirements
	1.6 Where appropriate the teams and individuals roles and responsibilities within the team are identified and, where required, assist in the provision of on-the-job training
2 Perform isolation	2.1 Plant to be isolated is correctly identified
	2.2 Isolation is performed in accordance with enterprise/site permit to work procedures
	2.3 Verify the effectiveness of the isolation, dissipation and restraint of energy sources in

ELEMENT	PERFORMANCE CRITERIA
	accordance with enterprise/site procedures
2.4	Isolations are confirmed with others involved in, or affected by, the work in accordance with enterprise/site procedures
3 Perform de-isolation and restoration	3.1
	De-isolation and restoration of plant is performed in accordance with permit to work procedures
3.2	De-isolations are confirmed with others involved in, or affected by, the work in accordance with enterprise/site procedures
3.3	Work completion details are finalised in accordance with enterprise/site procedures

Required Skills and Knowledge

REQUIRED SKILLS AND KNOWLEDGE

8) This describes the essential skills and knowledge and their level, required for this unit.

Evidence must show that knowledge has been acquired of safe working practices and conduct single energy source isolation procedures.

All knowledge and skills detailed in this unit should be contextualised to current industry practices and technologies.

KS01-PO301B Conduct Single Energy Source Isolation Procedures for Permit to Work

Evidence shall show an understanding of how to isolate a single energy source as required before a Permit-to-Work can be issued, to an extent indicated by the following aspects:

T1 Knowledge of the local enterprise-based –‘Permit to Work’ (PTW) system.

T2 Interpret plant and equipment diagrams.

- Electrical schematic diagrams
- Piping and Instrument Drawings

T3 Properties of matter and energy

- Phases of matter
- Units of measurement:
 - volume,
 - density,
 - specific gravity.
- Pressure:
 - measurement of pressure,
 - negative pressure
 - head pressure
 - density of water.
- Energy:
 - Laws of Thermodynamics
 - Mechanical/kinetic energy
 - Electrical energy
 - Chemical energy
 - Solar energy
 - Potential energy
- Temperature scales.
- Latent heat
- Enthalpy.

T4 Valves actuators:

- Pneumatic

REQUIRED SKILLS AND KNOWLEDGE

- Hydraulic
- Electrical

T5 Mechanical isolations, de-isolations and restorations

- Fuel-fired generator
- Hydro generator
- Wind generator
- Solar generator

T6 DC Electrical Fundamentals

- Atomic structure.
- Ohm law.
- Calculating series and circuits.
- Calculating parallel circuits.
- Calculating power.

T7 AC Electrical Principles

- Magnetism.
- Electromagnetism.
- Generating AC electricity.
- AC capacitance.
- AC Inductance.
- AC phaser diagrams.
- Introduction to electric motors

T8 LV switching

- Knowledge of LV protection;
- Types of LV switchgear.

T9 Lock-and-tag systems

- Types of lock out devices and systems
- Placement of electrical isolations
- Removal of stored energy from electrical isolation systems
- Placement of mechanical isolations
- Removal of stored energy from mechanical isolation systems

T10 Switching sequence instructions

- Interpret and apply switching sequence instructions;
- Confirmation of correct sequencing before commencing work.

T11 Completion of documentation

- Enterprise-based record keeping procedures.

T12 Emergency Procedures

REQUIRED SKILLS AND KNOWLEDGE

- Declaration of emergency procedure;
- Fire suppression procedure and implementation;
- Emergency generator equipment shutdown procedure.

Evidence Guide

EVIDENCE GUIDE

9) This provides essential advice for assessment of the unit of competency and must be read in conjunction with the Performance Criteria and the Range Statement of the unit and the Training Package Assessment Guidelines.

The Evidence Guide forms an integral part of this Competency Standard Unit and shall be used in conjunction with all components parts of this unit and, performed in accordance with the Assessment Guidelines of this Training Package.

Overview of Assessment

9.1)

Longitude competency development approaches to assessment, such as Profiling, require data to be reliably gathered in a form that can be consistently interpreted over time. This approach is best utilised in Apprenticeship programs and reduces assessment intervention. It is the Industry's preferred model for apprenticeships. However, where summative (or final) assessment is used it is to include the application of the competency in the normal work environment or, at a minimum, the application of the competency in a realistically simulated work environment. It is recognised that, in some circumstances, assessment in part or full can occur outside the workplace. However, it must be in accord with Industry and, Regulatory policy in this regard.

Methods chosen for a particular assessment will be influenced by various factors. These include the extent of the assessment, the most effective locations for the assessment activities to take place, access to physical resources, additional safety measures that may be required and the critical nature of the competencies being assessed.

The critical safety nature of working with electricity, electrical equipment, gas or any other hazardous substance/material carries risk in deeming a person competent. Hence, sources of evidence need to be 'rich' in nature so as to minimise error in judgment. Activities associated with normal every day work have a bearing on the decision as to how much and how detailed the data gathered will contribute to its 'richness'. Some skills are more critical to

safety and operational requirements while the same skills may be more or less frequently practised. These points are raised for the assessors to consider when choosing an assessment method and developing assessment instruments. Sample assessment instruments are included for Assessors in the Assessment Guidelines of this Training Package.

**Critical aspects
of evidence
required to
demonstrate
competency in
this unit** **9.2)**

Before the critical aspects of evidence are considered all pre-requisites shall be met.

Evidence for competence in this unit shall be considered holistically. Each element and associated Performance Criteria shall be demonstrated on at least two occasions in accordance with the “Assessment Guidelines – UEP12”. Evidence shall also comprise:

- A representative body of work performance demonstrated within the timeframes typically expected of the discipline, work function and industrial environment. In particular this shall incorporate evidence that shows a candidate is able to:
 - Implement Occupational Health and Safety workplace procedures and practices including the use of risk control measures as specified in the Performance Criteria and Range Statement
 - Apply sustainable energy principles and practices as specified in the Performance Criteria and Range Statement
 - Demonstrate an understanding of the essential knowledge and associated skills as described in 6) Essential Knowledge and Associated Skills of this unit
 - Demonstrate an appropriate level of employability skills
 - Conduct work observing the relevant Anti Discrimination legislation, regulations, policies and workplace procedures
- Demonstrated performance across a representative range of contexts from the prescribed items below:
 - Knowledge and application of relevant sections of: Occupational Health and Safety legislation; Statutory legislation; Enterprise/site safety procedures; Enterprise/site emergency procedures
 - Dealing with an unplanned event by drawing on essential knowledge and skills to provide appropriate solutions

incorporated in the holistic assessment with the above listed items.

Context of and specific resources for assessment **9.3)**

This unit should be assessed as it relates to normal work practice using procedures, information and resources typical of a workplace. This should include:

- OHS policy and work procedures and instructions.
- Suitable work environment, facilities, equipment and materials to undertake actual work as prescribed by this unit.

Competency Standards should be assessed in the workplace or simulated workplace and under the normal range of workplace conditions.

Assessment of this unit will be supported with documentary evidence, by means of endorsement stating type and application of work.

In addition to the resources listed above in Context of assessment', evidence should show competency working, in limited spaces, with different types of plant and equipment as well as different structural/construction types and methods and in a variety of environments.

Method of assessment **9.4)**

This unit shall be assessed by methods given in Section 1.3.00 Assessment Guidelines.

Note: Competent performance with inherent safe working practices is expected in the Industry to which this unit applies. This requires that the specified essential knowledge and associated skills are assessed in a structured environment which is primarily intended for learning/assessment and incorporates all necessary equipment and facilities for learners to develop and demonstrate the essential knowledge and skills described in this unit.

**Concurrent
assessment and
relationship with
other units****9.5)**

There are no recommended concurrent assessments with this unit, however in some cases efficiencies may be gained in terms of learning and assessment effort being concurrently managed with allied competency standard units where listed.

Nil

Range Statement**RANGE STATEMENT**

10) This relates to the competency standard unit as a whole providing the range of contexts and conditions to which the Performance Criteria apply. It allows for different work environments and situations that will affect performance.

Other personnel involved may include issuing officer, isolating officers, recipient in charge and testing officer or their equivalent.

Communications may be by means of telephone, two way radio, pager, public address system, computer and operating log (written or verbal)

Safety standards may include relevant sections of enterprise safety rules, relevant state and federal legislation and national standards for plants

Permits may include any documentation/forms approved for use by the enterprise safety rules and permit to work procedures.

Work completion details may include log books, computer input.

Generic terms are used throughout this Training Package for vocational standard shall be regarded as part of the Range Statement in which competency is demonstrated. The definition of these and other terms are given in Section 2.1 Preliminary Information and Glossaries.

Unit Sector(s)

Not applicable.

Competency Field

Competency Field **11)**
Operations.