



**Australian Government**

**Department of Education, Employment and Workplace Relations**

# **UEPOPS328B Undertake dam safety surveillance**

**Release: 1**

## **UEPOPS328B Undertake dam safety surveillance**

### **Modification History**

Not applicable.

### **Unit Descriptor**

#### **Unit Descriptor**

#### **1) Scope:**

##### **1.1) Descriptor**

This unit deals with the skills and knowledge required to conduct ongoing surveillance of water storage facilities to ensure structural integrity and water quality is maintained.

### **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.

There are no pre-requisite units.

**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 the Work     | 1.1 Occupational Health and Safety standards, statutory requirements, relevant Australian standards, codes of practice, manufacturer specifications, environmental requirements and enterprise procedures are identified, applied and monitored throughout the work procedure. |
|                                     | 1.2 Work requirements are identified from request/works orders or equivalent and clarified/confirmed with appropriate parties or by site inspection.                                                                                                                           |
|                                     | 1.3 Resources required to satisfy the work are identified, obtained and inspected for compliance in accordance with enterprise procedures.                                                                                                                                     |
|                                     | 1.4 Potential hazards are identified and prevention and/or control measures are selected in accordance with the work plan and site procedures.                                                                                                                                 |
|                                     | 1.5 Work is planned in detail including sequencing and prioritising and considerations made, where appropriate, for maintenance of plant security and capacity in accordance with system/site requirements.                                                                    |
|                                     | 1.6 Co-ordination requirements, including requests for isolations where appropriate, are resolved with others involved, affected or required by the work.                                                                                                                      |
| 2 Undertake dam safety surveillance | 2.1 Surveillance of dam structures is undertaken in accordance with site/enterprise procedures and guidelines.                                                                                                                                                                 |
|                                     | 2.2 Recordings of leakage are reported to appropriate authorities in accordance with site/enterprise procedures.                                                                                                                                                               |
|                                     | 2.3 Special inspections are undertaken following abnormal events in accordance with enterprise procedures.                                                                                                                                                                     |

| ELEMENT                           | PERFORMANCE CRITERIA                                                                                                                          |
|-----------------------------------|-----------------------------------------------------------------------------------------------------------------------------------------------|
| 3 Sample and record water quality | 3.1 Water samples are collected using appropriate equipment and techniques in accordance with site/enterprise procedures.                     |
|                                   | 3.2 Perform basic testing using laboratory and/or field equipment in accordance with enterprise/site requirements.                            |
|                                   | 3.3 Test results are recorded and abnormal results are communicated to appropriate personnel in accordance with site/enterprise requirements. |
| 4 Complete the work               | 4.1 Documentation is updated in accordance with enterprise procedures.                                                                        |
|                                   | 4.2 Test equipment/tools is/are maintained and stored in accordance with enterprise 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 shall show that knowledge has been acquired of undertaking dam safety surveillance.

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

The extent of the Essential Knowledge and Associated Skills required follows:

KS01-PO328B Dam safety surveillance

Evidence shall show that knowledge has been acquired for safe working practices of:

T1 Relevant Environmental, Occupational Health and Safety legislation and regulations

T2 Enterprise procedures

T3 Plant drawings and manufacturers manuals

T4 Introduction to and typical arrangements of hydroelectric generation plant

T5 General layout of work site and associated equipment

T6 Early warning signs and causes of dam failures

T7 Dams, types and characteristics

T8 Water chemistry

T9 Water sampling procedures, recording procedures

T10 Communication equipment and principles.

KS02-PO328B Dam safety surveillance

Specific skills needed to achieve the Performance Criteria:

T1 Interpret plant drawings and manufacturers manuals

T2 Select and utilise equipment and materials required to perform the work

T3 Recognise work site and relevant associated equipment

T4 Identify early warning signs and causes of dam failures

T5 Undertake water sampling and recording procedures

T6 Communicate effectively.

## 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
  - Preparation of planning of work
  - Surveillance of hydro electric dams and associated equipment
  - Basic testing and taking of water samples.
  - Completion of work 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 unit of competency 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.

Work in this unit is typically carried out under general guidance.

Surveillance sites may include earthen walls, concrete walls, spillways, reservoir perimeter, weirs, tunnels and galleries.

Samples may be taken from dams, rivers, weirs and water conveyance assets and equipment, and testing may be pollution, pH, turbidity.

Recordings may be in the form of log sheets or through electronic media.

Dam safety surveillance will mostly be of a visual nature but not necessarily limited to such.

Appropriate personnel may include hydro station operating staff, local councils, irrigation concerns, control centres, maintenance staff, emergency services personnel, downstream landowners.

Abnormal events may include floods, landslides and earthquakes.

Communication may be by means of telephone/fax, two way radio, logs, verbal.

Extreme weather conditions may be encountered over varied terrain requiring the use of 4WD vehicles.

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.