



Australian Government

UEEHA0027 Manage continuous supervision inspection of electrical installations for hazardous areas

Release: 1

UEEHA0027 Manage continuous supervision inspection of electrical installations for hazardous areas

Modification History

Release 1. This is the first release of this unit of competency in the Electrotechnology Training Package.

Application

This unit involves the skills and knowledge required to manage and/or coordinate the inspections of hazardous area electrical installations during the maintenance phase of an installation by the ‘continuous supervision by skilled personnel’ maintenance strategy, as described in AS/NZS60079.17:2017.

It includes: understanding the provisions of the hazardous area standards applicable to area classification, electrical installation design, selection and erection, repair and reclamation of electrical equipment; assessing the viability of a continuous supervision process and the frequency and grades of inspections and levels of maintenance required for a given hazardous area installation; ensuring personnel are competent to undertake inspection tasks required; specifying and overseeing the inspection and maintenance processes to be followed; and, maintaining the required documentation.

This unit applies to personnel within technical/engineering management job functions or maintenance departments of companies that have electrical installations within Classified Hazardous Areas, in relation to the strategies for inspection and maintenance of Ex equipment as part of other routine inspection and maintenance activities. This unit is considered to be appropriate for personnel that are required to complete some, or all, of the responsibilities required of ‘The Person with Executive Function’ (TPEF), as described in AS/NZS60079.17:2017.

Site-specific work permits may be required to work in the hazardous environment. In addition, other permits may be required, such as confined space and to operate specific pieces of equipment such as elevated work platforms in various jurisdictions. The continuous supervision inspection strategies adopted need to consider these permit systems and understand the limitations.

Additional and/or other conditions may apply in some jurisdictions subject to regulations related to electrical work. Practice in the workplace and during training is also subject to work health and safety (WHS)/occupational health and safety (OHS) regulations.

This unit of competency and associated assessment requirements is adopted from clause 2.10 of AS/NZS 4761.1:2018 Competencies for working with electrical equipment for hazardous areas (EEHA). There may be differences between the content of this unit and AS/NZS 4761.1:2018, so the Standard must be checked to ensure compliance with it. Clause 2.10 of AS/NZS 4761.1:2018 also includes the following precondition for assessment:

- “A candidate seeking assessment in this unit shall have been deemed competent in engineering management of electrotechnology systems at AQF 6 or NZQF level 7 or

equivalent.”

Pre-requisite Unit

UEEHA0004 Enter a classified hazardous area to undertake work related to electrical equipment and

UEEHA0022 Determine the explosion-protection requirements to meet a specified classified hazardous area

or

UEEHA0023 Develop and manage periodic electrical inspection and maintenance programs for hazardous areas

Competency Field

Hazards

Unit Sector

Electrotechnology

Elements and Performance Criteria

ELEMENTS

Elements describe the essential outcomes.

1 Determine the viability of continuous supervision inspection for a given hazardous area

PERFORMANCE CRITERIA

Performance criteria describe the performance needed to demonstrate achievement of the element.

- 1.1** Continuous supervision inspection to maintain the explosion-protection integrity for a given hazardous area concepts are applied in determining the viability of a continuous supervision process
- 1.2** Applicable hazardous area standards in relation to area classification, EPL's and selection, erection/installation, repair and reclamation of equipment is applied to determining the viability of a continuous supervision process
- 1.3** Availability of personnel and their experience is assessed in relation to the particular hazardous area electrical installation
- 1.4** The scope of equipment to be considered under continuous supervision is evaluated on factors that can

		affect explosion-protection integrity, frequency of attendance, special knowledge, workflow and location of equipment
	1.5	The frequency and grade of inspection and the content of reporting to enable meaningful analysis of equipment performance is determined
2	Develop a continuous supervision inspection process for a given hazardous area	
	2.1	Updated documentation necessary for inspection (and maintenance) are made available in the continuous supervision process
	2.2	Skilled personnel needed to carry out inspections in the continuous supervision process are selected
	2.3	Initial and refresher training, assessment programs and records are established to ensure the appropriate level of knowledge and skills of personnel is maintained
	2.4	A documentation system is developed to provide information of inspection (and maintenance) activities, defects found and remedial action taken, and to verify the effectiveness of the continuous supervision process
3	Implement and manage a continuous supervision process for a given hazardous area	
	3.1	Skilled personnel are provided with adequate time to carry out inspections and provide readily available technical support
	3.2	Supervision documentation is continuously reviewed to verify that a process of continuous supervision is being followed
	3.3	Information from the continuous supervision documentation system is analysed to verify the effectiveness of the continuous supervision process
	3.4	Actions are taken to address any deficiencies found in the continuous supervision process

Foundation Skills

Foundation skills essential to performance are explicit in the performance criteria of this unit of competency.

Range of Conditions

Range is restricted to essential operating conditions and any other variables essential to the work environment.

Non-essential conditions may be found in the UEE Electrotechnology Training Package Companion Volume Implementation Guide.

Essential operating conditions include:

- area classification documents
- plant design specifications and as-installed electrical equipment location and distribution drawings, process diagrams, certification documents for all installed equipment, relevant technical standards, inspection reports and maintenance records
- other plant management and maintenance persons, plant operatives and training provider

Unit Mapping Information

This is a new unit.

Links

Companion Volume Implementation Guides are found in VETNet -

<https://vetnet.gov.au/Pages/TrainingDocs.aspx?q=b8a8f136-5421-4ce1-92e0-2b50341431b6>

Assessment Requirements for UEEHA0027 Manage continuous supervision inspection of electrical installations for hazardous areas

Modification History

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Performance Evidence

Evidence required to demonstrate competence in this unit must be relevant to and satisfy all of the requirements of the elements and performance criteria on at least two separate occasions and include:

- determining the viability of the continuous supervision inspection for a given hazardous area including:
 - assessing the availability of experienced personnel in relation to the particular hazardous area electrical installation
 - evaluating the scope of equipment to be considered under continuous supervision based on factors that can affect explosion-protection integrity, frequency of attendance, specialist knowledge, workflow and location of equipment
 - determining the frequency and grade of inspection and the content of reporting to enable meaningful analysis of equipment performance
- developing a continuous supervision inspection process for a given hazardous area including:
 - making available updated documentation necessary for inspection (and maintenance) in the continuous process including:
 - zone classification and, where included, equipment protection levels
 - equipment group and temperature class or maximum surface temperature
 - equipment characteristics
 - records to enable the explosion-protected equipment to be maintained in accordance with its type of protection
 - copies of previous inspection records
 - selecting skilled personnel to carry out inspection in the continuous supervision process based on job and regulatory requirements to undertake the extent of inspection work and the candidate's:
 - understanding of the concept of continuous supervision and the need for any reporting or analysis function
 - knowledge of the explosion-protected equipment within their area of responsibility
 - previous experience in hazardous area inspection and maintenance
 - establishing the initial and refresher training and assessment program and records to ensure the appropriate level of knowledge and skills of personnel undertaking

- inspections is maintained
- developing a document system to provide information of inspection (and maintenance) activities
- implementing and managing a continuous supervision process for a given hazardous area including:
 - providing adequate time and readily available technical support for inspections to be carried out
 - reviewing and analysing documentation to verify that the process is being followed and to ascertain its effectiveness
 - taking action to address any deficiencies found.

Knowledge Evidence

Evidence required to demonstrate competence in this unit must be relevant to and satisfy all of the requirements of the elements and performance criteria and include knowledge of:

- area classification including:
 - general principles and objectives
 - area classification procedures including:
 - sources and grades of release
 - type and extent of zones
 - dust layer hazards
 - application of equipment protection levels (EPL)
- electrical installation requirements associated with explosive atmospheres including:
 - design, selection and erection including:
 - documentation
 - selection of equipment
 - protection from dangerous (incendive) sparking
 - electrical protection
 - emergency switch-off and electrical isolation
 - wiring systems
 - additional requirements for each protection type
 - inspection requirements including:
 - documentation
 - applicable standards
 - competency of personnel
 - frequency of inspections—initial and periodic schedules
 - grades of inspection—visual, close, and detailed
 - additional inspection schedules for specific types of equipment
 - maintenance requirements including:
 - documentation

- remedial measures and alterations to equipment
- flexible cables
- withdrawal from service
- fastenings and tools
- environmental conditions
- isolation of equipment
- earthing and equipotential bonding
- concept, role and responsibilities of the technical person managing continuous supervision including:
 - concept of continuous supervision
 - objective of continuous supervision
 - factors to be considered in assessing the viability of inspection by continuous supervision
 - documentation
 - training of skilled personnel.

Assessment Conditions

Assessors must hold credentials specified within the Standards for Registered Training Organisations current at the time of assessment.

Assessment must satisfy the Principles of Assessment and Rules of Evidence and all regulatory requirements included within the Standards for Registered Training Organisations current at the time of assessment.

Assessment must occur in workplace operational situations where it is appropriate to do so; where this is not appropriate, assessment must occur in simulated workplace operational situations that replicate workplace conditions.

Assessment processes and techniques must be appropriate to the language, literacy and numeracy requirements of the work being performed and the needs of the candidate.

Resources for assessment must include access to:

- a range of relevant exercises, case studies and/or other simulations
- relevant and appropriate tools and testing devices and PPE currently used in industry
- applicable documentation including:
 - available personnel WHS policy and procedures for the site
 - verification dossier for the site that includes the following:
 - area classification documents
 - plant design specifications
 - as-installed electrical equipment location and distribution drawing
 - process diagrams
 - certification documents for all installed equipment
 - relevant technical standards
 - inspection reports and maintenance records

- other plant management and maintenance persons, plant operatives and a training provider.

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