Title	**Manage continuous supervision inspection associated with explosive atmospheres**		
Level	**6**	**Credits**	**5**

Purpose	People credited with this unit standard are able to: – ascertain the viability of the continuous supervision inspection for a given hazardous area – develop a continuous supervision inspection process for a given hazardous area – implement and manage a continuous supervision process for a given hazardous area.

Classification	Explosive Atmospheres > Electrical Apparatus in Explosive Atmospheres - Compliance

Available grade	Achieved

Guidance Information

1 This unit standard has been designed for training and assessment on-job or off-job in a simulated environment, which includes explosion-protected equipment and wiring systems similar to those encountered in a real workplace. It is recommended candidates achieve Unit 17070, *Develop and manage electrical inspection and maintenance programmes for explosive atmospheres*, or demonstrate equivalent knowledge and skills, prior to enrolment in this unit standard.

2 This unit standard is equivalent to *Manage continuous supervision inspection associated with hazardous areas*, in the Australian/New Zealand Standard AS/NZS 4761.1 (version cited in the Electricity (Safety) Regulations) *Competencies for working with electrical equipment for hazardous areas (EEHA) – Part 1: Competency standards*.

3 Achievement of this unit standard alone does not entitle trainees to legally perform prescribed electrical work without supervision. Until registered and licensed under the Electricity Act 1992, trainees are assisting, and must work under supervision when carrying out prescribed electrical work.

4 References
- AS/NZS 1768:2007, *Lightning protection*
- AS/NZS 3000 (version cited in the Electricity (Safety) Regulations), *Electrical installations (known as the Australian/New Zealand Wiring Rules)*
- AS/NZS 4761.1 (version cited in the Electricity (Safety) Regulations), *Competencies for working with electrical equipment for hazardous areas* (*EEHA*) – *Part 1: Competency Standards*

- AS/NZS 60079.14 (version cited in the Electricity (Safety) Regulations), *Explosive atmospheres – Part 14: Electrical installations design, selection and erection*
- AS/NZS 60079.17 (version cited in the Electricity (Safety) Regulations), *Explosive atmospheres – Part 17: Electrical installations inspection and maintenance*
- Electricity Act 1992
- Electricity (Safety) Regulations 2010
- Health and Safety at Work Act 2015, and associated regulations
- *Workplace Exposure Standards and Biological Exposure Indices Edition 13,* June 2016, available from WorkSafe New Zealand at www.worksafe.govt.nz, and associated regulations

and all subsequent amendments and replacements.

5 Definitions

Continuous supervision – frequent attendance, inspection, service, care, and maintenance of the electrical installation by skilled personnel who have experience in the specific installation and its environment in order to maintain the explosion-protection features of the installation in a satisfactory condition.

Equipment group – Group I is for equipment for underground mines. Group II is for gases and vapours in surface industries, and is divided into Groups IIA, IIB and IIC for substances with increasing ease of ignition. Group III is for dusts in surface industries, and is similarly divided into Groups IIIA, IIIB and IIIC. These are added as roman number suffixes to explosion-protection technique markings on equipment and on Certificates of Compliance.

Explosion-protected equipment – electrical equipment to which one or more explosion-protection techniques are applied to avoid ignition of a surrounding explosive atmosphere.

Explosion-protection techniques – techniques applied to the design of electrical equipment, components, and systems to prevent electrical energy from becoming an ignition source in the presence of a surrounding explosive atmosphere.

Explosive atmosphere – mixture with air, under atmospheric conditions, of flammable substances in the form of gas, vapour, dust, fibres, or flyings which, after ignition, permits self-sustaining propagation.

Hazardous area – a three-dimensional region or space in which an explosive atmosphere is present, or may be expected to be present, in quantities such as to require special precautions for the construction, installation, and use of equipment.

Safe and sound practice – as it relates to the installation of electrical equipment is defined in AS/NZS 3000.

Temperature class – classification system of electrical equipment, based on its maximum surface temperature, related to the specific explosive atmosphere for which it is intended to be used.

Verification dossier – a set of documents showing the complete compliance history of electrical equipment and installations within explosive atmospheres, as defined in Standards.

Wiring system – permitted wiring and accessories for power, measurement, control or communications purposes.

6 Assessment is to take account of variations between the industry sectors and enterprises. For example, equipment used in dust-explosive atmospheres will be different in some respects from that used in a petrochemical plant.

7 Assessment

For assessment each candidate shall have access to:

a Workplace health and safety policy and procedures for the site.

b Verification dossier for the site that includes

i area classification documents

ii plant design specifications

iii as-built electrical equipment location and distribution drawing

iv process diagrams

v certification documents for all installed equipment

vi relevant technical standards

vii inspection reports and maintenance records.

c An assessor.

8 Range

a Established maintenance procedures must be followed.

b Candidates must refer to current legislation and Standards during assessment.

c Demonstration of safe working practices and installation in accordance with *safe and sound practice* are essential components of assessment of this unit standard.

d All activities and evidence presented for all outcomes and performance criteria in this unit standard must be in accordance with:

i legislation

ii workplace policies and procedures

iii Standards – may include but are not limited to those listed in Schedule 2 of the Electricity (Safety) Regulations 2010

iv applicable site, enterprise, and industry practice

v manufacturers' instructions, specifications, and data sheets.

Outcomes and performance criteria

Outcome 1

Ascertain the viability of the continuous supervision inspection for a given hazardous area.

Performance criteria

1.1 Apply the concept of continuous supervision inspection to maintain the explosion protection integrity for a given hazardous area to ascertain the viability of a continuous supervision process and develop a report.

1.2 Explain the provisions of the applicable hazardous area Standards to determine the viability of a continuous supervision process.

Range area classification, equipment protection levels and equipment selection, erection, installation, repair and reclamation of equipment.

1.3 Assess the availability of personnel and their experience in relation to the particular hazardous area electrical installation.

1.4 Evaluate the scope of equipment to be considered under continuous supervision based on factors that can affect explosion protection integrity, frequency of attendance, special knowledge, workflow, and location of equipment.

1.5 Determine the frequency and grade of inspection and the content of reporting to enable meaningful analysis of equipment performance.

Outcome 2

Develop a continuous supervision inspection process for a given hazardous area.

Performance criteria

2.1 Confirm up-to-date documentation necessary for inspection and maintenance is available for the continuous supervision process.

Range zone classification, equipment protection levels, equipment group, temperature class, maximum surface temperature, equipment characteristics, previous inspection records.

2.2 Select skilled personnel needed to carryout inspections.

2.3 Establish initial and refresher training and assessment programmes and records to ensure that the appropriate level of knowledge and skills of personnel is maintained.

2.4 Develop a documentation system to provide information of inspection and maintenance activities, defects found, and remedial action taken and to verify the effectiveness of the continuous supervision process.

Outcome 3

Implement and manage a continuous supervision process for a given hazardous area.

Performance criteria

3.1 Schedule adequate time for the skilled personnel to carry out inspections and ensure technical support is readily available.

3.2 Review and analyse the continuous supervision documentation in order to verify that the continuous supervision process is being followed and to verify the effectiveness of the process.

3.3 Take actions to address any deficiencies found in the continuous supervision process.

Planned review date	31 December 2027

Status information and last date for assessment for superseded versions

Process	Version	Date	Last Date for Assessment
Registration	1	16 March 2017	31 December 2025
Review	2	2 March 2023	N/A

Consent and Moderation Requirements (CMR) reference	0003

This CMR can be accessed at http://www.nzqa.govt.nz/framework/search/index.do.

Comments on this unit standard

Please contact Waihanga Ara Rau Construction and Infrastructure Workforce Development Council qualifications@WaihangaAraRau.nz if you wish to suggest changes to the content of this unit standard.