



Australian Government

MEM10022 Commission and decommission high and low voltage equipment or installations

Release: 2

MEM10022 Commission and decommission high and low voltage equipment or installations

Modification History

Release 2. Minor adjustments to reflect ERAC requirements for electrician licensing and revision of Essential Performance Capabilities.

Release 1. New unit

Application

This unit of competency has been developed for Engineering Tradesperson –industrial electrician apprenticeship training and the recognition of trade-level skills in switching, isolating, commissioning and decommissioning high voltage and low voltage electrical equipment or installations and seeking appropriate assistance.

It covers the knowledge of isolating and earthing arrangements, permit requirements for switching high voltage, appropriate assistance where required, commissioning and decommissioning procedures and safety measures.

This unit covers the skills and knowledge required to meet the Electrical Regulatory Authorities Council (ERAC).

Essential Performance Capabilities (EPCs):

- EPC 29 – Knowledge of the AS/NZS 3000 requirements for safety services and issues relevant to HV installations. Standards referenced for electrical installations related to transportable structures and vehicles, shows and carnivals, patient areas, marinas and boats, and construction/demolition sites.
- EPC 49 – Describe the types of potential operational situations that may be encountered in various areas of industry and the type of assistance that may be needed from more experienced industry personnel.

And

Essential Performance Capability (EPC) classified as ‘critical’:

- EPC 50 – Describe the methods of commissioning and/or decommissioning electrical equipment or an installation, using a systems approach.

Some jurisdictions require the holder of this unit to be licensed or certified and users should check with the relevant authorities.

Band: A

Unit Weight: 2

Pre-requisite Unit

Nil

Competency Field

Installation and commissioning

Unit Sector

Elements and Performance Criteria

Elements describe the essential outcomes.

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

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| 1. Determine job requirements | 1.1. Follow standard operating procedures (SOPs) |
| | 1.2. Comply with work health and safety (WHS) requirements at all times, including appropriate risk control measures |
| | 1.3. Use appropriate personal protective equipment (PPE) in accordance with SOPs |
| | 1.4. Consult and obtain approval from authorised personnel the need to commission or decommission electrical equipment or installation |
| | 1.5. Analyse and confirm commissioning, switching and work schedules, including drawings, plans and regulatory requirements |
| 2. Prepare to commission or decommission electrical equipment or installation | 2.1. Inspect or confirm suitability and safety of electrical equipment or installation site for required commissioning or decommissioning |
| | 2.2. Identify and obtain WHS policies and procedures related to the requirements for commissioning or decommissioning electrical equipment or installation |
| | 2.3. Obtain necessary tools, equipment and testing devices needed for commissioning or decommissioning electrical equipment or installation |
| | 2.4. Brief others participating in or affected by the work on commissioning or decommissioning of electrical equipment or installation |
| | 2.5. Prepare the site according to the work schedule to minimise risk, disruption and damage to property, |

operations and individuals

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|----|--|------|---|
| 3. | Commission or decommission electrical equipment or installation | 3.1. | Commission electrical equipment or installation using a systems approach, including the use of appropriate test equipment, in accordance with the approved commissioning schedule |
| | | 3.2. | Verify that the performance of the installed equipment/installation through a series of tests is consistent with the customer requirements/specified design intent |
| | | 3.3. | Capture and record performance data of the whole installation as the baseline for future operation and maintenance |
| | | 3.4. | Decommission electrical equipment or installation using an approved decommissioning schedule, including the use of appropriate test equipment, according to requirements and established procedures |
| | | 3.5. | Shut down and isolate sequentially electrical equipment or installation in preparation for repair or maintenance work using safe working practices |
| | | 3.6. | Deal safely with unexpected situations during the isolation process, including, where required, the approval of an authorised person |
| 4. | Complete commission or decommission electrical equipment or installation | 4.1. | Check work undertaken against work schedules for conformance with requirements and report anomalies in accordance with established procedures |
| | | 4.2. | Document completion of commissioning or decommissioning of electrical equipment or installation in accordance with established procedures |

Foundation Skills

This section describes those required skills (reading, writing, oral communication and numeracy) that are essential to workplace performance in this unit of competency.

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

Range of Conditions

This field allows for different work environments and conditions that may affect performance. Essential operating conditions that may be present (depending on the work situation, needs of the candidate, accessibility of the item, and local industry and regional contexts) are included.

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| Electrical equipment and installations include: | <ul style="list-style-type: none">• new, replaced, or extensively modified equipment or installation in one or more of the following industrial environments:<ul style="list-style-type: none">• factory• building• off shore platform• mine site processing• oil and gas installation• processing plant• workshop• underground installation |
| Test equipment includes one or more of the following: | <ul style="list-style-type: none">• multimeters• ammeters• tong testers• voltmeters• continuity testers• insulation resistance testers• appropriate proving dead meters• high potential testers |
| Regulatory requirements include: | <ul style="list-style-type: none">• AS/NZS 3000:2007 Electrical Installations (known as the Australian/New Zealand Wiring Rules) |
| Safe working practices include: | <ul style="list-style-type: none">• demonstration of safe working practices and installation in accordance with industry established safe and sound practices |

Unit Mapping Information

Release 2. Equivalent. Minor adjustments to reflect ERAC requirements for electrician licensing and revision of Essential Performance Capabilities.

Links

Companion Volume implementation guides are found in VETNet - <https://vetnet.gov.au/Pages/TrainingDocs.aspx?q=b7050d37-5fd0-4740-8f7d-3b7a49c10bb2>

Assessment Requirements for MEM10022 Commission and decommission high and low voltage equipment or installations

Modification History

Release 2. Minor adjustments to reflect ERAC requirements for electrician licensing and revision of Essential Performance Capabilities

Release 1. New unit

Performance Evidence

Evidence required to demonstrate competence in this unit must be relevant to and satisfy the requirements of the elements and performance criteria on at least two (2) occasions and include:

- following work instructions, standard operating procedures (SOPs) and safe work practices
- identifying and interpreting circuits, drawings, specifications, commissioning, decommissioning switching schedules and instructions relevant to the work to be undertaken
- preparing and following work plans associated with commissioning and decommissioning electrical equipment or installation in accordance with legislative and regulatory requirements, hazard and safety requirements
- complying with the Australian/New Zealand Wiring Rules and regulatory requirements for high voltage and low voltage electrical equipment and installations
- selecting the appropriate measuring and testing devices
- conducting briefing sessions to all personnel participating in or affected by the work
- preparing the site, including signage, barriers and warning devices
- commissioning electrical equipment or installation using a systems approach
- verifying the performance of the installed equipment/system to meet the design requirements through a series of tests/measurements
- making adjustments, where necessary, to ensure conformance with the specified design intent
- capturing and recording performance data of the whole installation as the baseline for future operation and maintenance
- decommissioning electrical equipment or installation
- shutting down and isolating electrical equipment sequentially in preparation for maintenance or repair using lock out and tag procedures and safe working practices
- seeking assistance from authorised personnel for site specific commissioning and decommissioning of electrical equipment and installations including the need for high voltage switching
- documenting completion of commissioning/decommissioning process in accordance with SOPs.

Knowledge Evidence

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

- safe work practices and procedures and use of personal protective equipment (PPE)
- Australian/New Zealand Wiring Rules and regulatory requirements for high voltage and low voltage electrical installations
- industry personnel to be consulted for advice on commissioning or decommissioning procedures
- test and commissioning, including:
 - procedures required for a particular electrical equipment or installation
 - objectives to be achieved, including:
 - to verify proper functioning of the equipment/system after installation
 - to verify that the performance of the installed equipment/systems meet with the specified design intent through a series of tests and adjustments
 - to capture and record performance data of the whole installation as a baseline for future operation and maintenance
 - using a systems approach, including:
 - performance tests appropriate to equipment/installation to be commissioned
 - measurements required to ensure conformance to specifications
 - adjustments to be made to meet specified design and operational requirements
 - the use of appropriate test equipment
- decommissioning of electrical equipment or installation, including:
 - procedures required for a particular electrical equipment or installation
 - a working knowledge of the electrical equipment or installation in order to sequentially shut down and isolate for the purposes of repair and maintenance including using lock out and tag procedures to enable safe removal of equipment/conductors
 - types of operational forms, access authorities, permits and requirements associated with high voltage switching
- reporting requirements relevant to the electrical equipment or installation being commissioned.

Assessment Conditions

- Assessors must:
 - have vocational competency in commissioning and decommissioning high and low voltage equipment or installations at least to the level being assessed with relevant industry knowledge and experience
 - satisfy the assessor requirements in the *Standards for Registered Training Organisations 2015* and comply with the *National Vocational Education and Training Regulator Act 2011* or equivalent legislation covering VET regulation in a non-referring State as the case requires.

- Where possible assessment must occur in operational workplace situations. Where this is not possible or where personal safety or environmental damage are limiting factors, assessment must occur in a sufficiently rigorous simulated environment that reflects realistic operational workplace conditions. This must cover all aspects of workplace performance, including environment, task skills, task management skills, contingency management skills and job role environment skills.
- Conditions for assessment must include access to all tools, equipment, materials and documentation required, including relevant workplace procedures, product and manufacturing specifications.
- 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.

Links

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<https://vetnet.gov.au/Pages/TrainingDocs.aspx?q=b7050d37-5fd0-4740-8f7d-3b7a49c10bb2>