



Australian Government

Assessment Requirements for MEM18070 Modify complex electrical circuits and systems

Release: 1

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Modification History

Release 1. Supersedes and is equivalent to MEM18070C Modify complex electrical circuits and systems.

Performance Evidence

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

- following work instructions, standard operating procedures (SOPs) and safe work practices
- identifying and interpreting circuits diagrams, flow charts, specifications, schematics, drawings, engineering data sheets, maintenance records and other relevant data in analysing and determining appropriate system modifications
- checking and clarifying strategies appropriate to the proposed modification with technical advisors using appropriate communication skills
- undertaking calculations and numerical operations associated with modifying complex electrical circuits and systems
- carrying out modifications in accordance with site procedures, legislative, statutory and regulatory requirements on at least two occasions
- testing modifications using appropriate test equipment to ensure compliance with requirements on at least two occasions
- monitoring modifications to assess suitability
- documenting modifications or incorporating modifications in drawing and schematics in accordance with SOPs.

Note: Where a volume and/or frequency is not specified, demonstration must be provided at least once.

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)
- system interrelationship and dynamics
- complex electrical circuits and systems including:
 - industrial control systems
 - automatic process machines
 - material transfer systems
 - distribution systems
- complex control panels incorporating:

- circuit protective devices
- relays
- timers
- transformers
- sensors
- programmable controllers
- operation of complex electrical circuits and systems
- implications of modifications to system including hazards
- operational specifications of the circuit and system
- common electrical test instruments and their application
- appropriate test equipment and their application to the testing of the modified circuit and system
- reporting and recording requirements associated with the modification of complex electrical circuits and systems
- industry standards and guidelines including
 - national and Australian standards
 - Safe Work Australia
 - state/territory regulatory codes of practice and/or standards.
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Assessment Conditions

- Assessors must:
 - have vocational competency in modifying complex electrical circuits and systems 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* or its replacement and comply with the *National Vocational Education and Training Regulator Act 2011*, its replacement or equivalent legislation covering VET regulation in a non-referring state/territory 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 that 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.
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Links

Companion Volume implementation guides are found in VETNet -

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