



Australian Government

Assessment Requirements for UEEEL0055 Overhaul and repair major switchgear and control gear

Release: 1

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Modification History

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

Performance Evidence

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

- applying relevant work health and safety (WHS)/occupational health and safety (OHS) requirements and workplace procedures and practices, including using of risk control measures
- applying sustainable energy principles and practices
- documenting overhaul/repair work
- overhauling and repairing major switchgear/control gear, including:
 - completing service documentation correctly
 - dealing with unplanned events in accordance with workplace procedures in a manner that minimises risk to personnel and equipment
 - determining the state/serviceability of switchgear/control gear correctly
 - interpreting service and repair documentation correctly
 - repairing switchgear/control gear in accordance with relevant industry standards
- preparing for overhaul/repair of switchgear/control gear.

Knowledge Evidence

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

- types and applications of switchgear and control gear
- operating principles of switchgear and control gear
- interlocking systems, including:
 - external interlocking systems such as Castell key systems
 - internal interlocking systems for either safety or that operate in conjunction with Castell key systems
- control and protection of switchgear and control gear
- installation requirements, including:

- operating specifications for equipment
- areas requiring repairs and maintenance
- determining if repairs/maintenance are to be carried in situ or in workshop environment
- relevant legislation and standards applicable to the installation
- WHS/OHS issues with regard to removing/re-installing heavy equipment
- electrical safety issues with regard to removing/re-installing equipment
- understanding of CFC units
- electrical switchgear and control gear protection methods, including:
 - the operation of switchgear when it opens under load
 - the settings and operation required for both magnetic short circuit and thermal overload with equipment
 - determining the earth fault-loop impedance requirements required to keep touch voltage values within requirements
 - thermal imaging techniques
 - time/current curves from manufacturer specifications
 - equipment to safely test switchgear after repairs or maintenance
 - effectiveness of arc suppression installed within the equipment
 - modern types of switchgear that are computer controlled and programmed
 - modern types of switchgear that are interconnected to other protective devices
 - certification process for any repair or maintenance work performed
 - phase-failure systems
 - verifying the correct fault-level for the installation is consistent with the kiloamp (kA) rating of the equipment
 - x-ray and ultrasonic detection systems with regard to metallurgy
 - different types of lubricants required for different locations, temperatures and humidity
- electrical safe working practices of working safely on or around electrical equipment, including:
 - determining safe working standards and codes of practice for equipment and installations over 20 kA
 - WHS/OHS requirements for equipment and installations over 20 kA
 - working knowledge of operating within the vicinity of live conductors, such as barriers
 - procedures for working on switchgear over 20 kA
 - risks and control measures associated with harmful dusts and airborne contaminants, including thermal insulation, fibrous cement materials and asbestos, and other fibre-reinforced switchboard materials
 - checks and storage methods for maintaining the safety of testing devices.

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 suitable workplace operational situations where it is appropriate to do so; where this is not appropriate, assessment must occur in suitable 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 materials, tools, facilities, equipment and personal protective equipment (PPE) currently used in industry
- resources used reflect current industry practices in relation to overhauling and repairing major switchgear and control gear
- applicable documentation, including workplace procedures, equipment specifications, regulations, relevant industry standards, codes of practice and operation manuals.

Links

Companion Volume implementation guides are found in VETNet - -

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