



Australian Government

Assessment Requirements for UEERA0013 Commission refrigeration/air conditioning hydronic systems

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 one occasion and include:

- identifying system operating parameters
- measuring and adjusting system components and controls to provide optimum system performance
- ensuring system operates within regulatory requirements
- documenting adjustment settings with established procedures
- dealing with unplanned events
- applying relevant legislation, industry standards, codes of practice and regulations
- applying relevant work health and safety (WHS)/occupational health and safety (OHS) requirements, including:
 - applying safe working practices
 - applying sustainable energy principles and practices
 - hazard identification and reporting
 - implementing risk control measures
- commissioning hydronic systems for refrigeration and/or air conditioning systems
- completing and reporting commissioning activities
- determining need to test or measure live work
- isolating circuits
- preparing to commission hydronic systems for refrigeration/air conditioning
- using relevant tools, equipment and testing devices.

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:

- hydronic system commissioning, safe working practices and relevant standards, codes and regulations, including:
 - commissioning fundamentals:

- building specifications/requirements/responsibilities
- design and 'as-installed' drawings
- building codes
- local government regulations
- design conditions
- pre- commissioning checks
- calibration of instruments
- commissioning procedures
- data collection, recording and documentation
- reporting procedures
- hydronic systems operation:
 - closed/open systems
 - pump head/lift and static head (high-rise building)
 - system friction losses
 - nett positive suction head
 - system curves
- pumps:
 - types
 - selection criteria
 - performance characteristics
 - pump curves and system curves
 - pump testing
 - capacity calculations
 - bladder tanks
 - coil characteristics
 - heat exchangers: plate, shell and tube, and tube in tube
 - flow measurements: types
 - flow switchers
 - cooling towers: elementary cooling thermodynamics and types
- valves - flow control devices:
 - types and applications
 - balancing valves
 - throttling characteristics
 - flow measurements
 - selection and applications
- piping systems:
 - balancing and commissioning
 - air venting
 - water treatment

- vacuum breaking and air breaks
- relevant manufacturer specifications
- relevant safe work method statements (SWMS)/job safety assessments or risk mitigation processes
- relevant tools, equipment and testing devices
- relevant WHS/OHS legislated requirements, including:
 - environmental and sustainable energy principles and practices
 - risk control measures
- relevant workplace documentation
- relevant workplace policies and procedures.

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 materials, tools, equipment and personal protective equipment (PPE) currently used in industry
- applicable documentation, including workplace procedures, equipment specifications, regulations, 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>