



Australian Government

UEERA0008 Audit HVAC/R control systems for compliance with regulations and standards

Release: 1

UEERA0008 Audit HVAC/R control systems for compliance with regulations and standards

Modification History

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

Application

This unit involves the skills and knowledge required to audit heating, ventilation and air conditioning/refrigeration (HVAC/R) control systems for compliance with regulations and standards.

It includes working safely, setting up and conducting evaluation measurements, evaluating performance from measured parameters, and documenting results and recommending any resulting corrective actions.

No licensing, legislative or certification requirements apply to this unit at the time of publication.

Pre-requisite Unit

UEERA0021 Design control systems for refrigeration or heating, ventilation and air conditioning systems

UEERA0060 Produce HVAC/R control system diagrams

UEERA0001 Analyse the operation of HVAC air and hydronic systems

UEERA0002 Analyse the psychrometric performance of HVAC/R systems
and

UEERA0003 Analyse the thermodynamic performance of HVAC/R systems
or

UEERA0094 Verify functionality and compliance of refrigeration and air conditioning installations

UEECD0007 Apply work health and safety regulations, codes and practices in the workplace

UEECD0019 Fabricate, assemble and dismantle utilities industry components

UEECD0020 Fix and secure electrotechnology equipment

UEECD0051 Use drawings, diagrams, schedules, standards, codes and specifications

UEECD0016 Document and apply measures to control WHS risks associated with electrotechnology work

UEERA0059 Prepare and connect refrigerant tubing and fittings

UEERA0036 Establish the basic operating conditions of vapour compression systems

UEERA0035 Establish the basic operating conditions of air conditioning systems

UEERA0050 Install refrigerant pipe work, flow controls and accessories

UEERA0081 Select refrigerant piping, accessories and associated controls

UEERA0031 Diagnose and rectify faults in air conditioning and refrigeration control systems

UEERA0092 Solve problems in low voltage refrigeration and air conditioning circuits

UEERL0005 Locate and rectify faults in low voltage (LV) electrical equipment using set procedures

Competency Field

Refrigeration and air-conditioning

Unit Sector

Electrotechnology

Elements and Performance Criteria

ELEMENTS

Elements describe the essential outcomes.

1 Prepare to audit HVAC/R control systems

PERFORMANCE CRITERIA

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

- 1.1** Work health and safety (WHS)/occupational health and safety (OHS) requirements and workplace procedures for a given work area are identified, obtained and understood
- 1.2** WHS/OHS risk control measures and workplace procedures are followed in preparation for work
- 1.3** Examination and testing areas are checked for safety hazards and risk control measures implemented in accordance with WHS/OHS requirements and workplace procedures
- 1.4** Relevant documentation is obtained and interpreted to determine the performance/certification requirements of the system to be assessed in accordance with workplace procedures and relevant industry standards
- 1.5** Advice is sought from the work supervisor to ensure the

		work is coordinated effectively with others
	1.6	Tools, testing devices and materials required to carry out work are obtained and checked for correct operation and safety
2	Audit HVAC/R control systems	
	2.1	WHS/OHS risk control measures and workplace procedures for carrying out the work are followed
	2.2	Need to test and measure live work is determined in accordance with WHS/OHS requirements and workplace procedures
	2.3	Circuits/machines/plant are checked and isolated, as required, in accordance with WHS/OHS requirements and workplace procedures
	2.4	Performance and energy efficiency requirements of HVAC/R system and assessment methods are applied to the audit process in accordance with workplace procedures
	2.5	Control system examination and tests for particular parameter/s are conducted in accordance with relevant test methods and workplace procedures
	2.6	Control system examination and tests are carried out methodically and results noted in accordance with workplace procedures
	2.7	Unplanned situations are dealt with safely and with the approval of relevant person/s
	2.8	Audit is carried out without damage to systems, circuits, the surrounding environment or services using sustainable energy practices
3	Complete auditing work and document results	
	3.1	WHS/OHS work completion risk control measures and workplace procedures are followed
	3.2	Worksite is cleaned and made safe in accordance with workplace procedures
	3.3	Examination and test results are evaluated and non-compliance issues identified in accordance with workplace procedures
	3.4	Examination test results and comments on non-compliance issues are documented and reported to relevant person/s in accordance with workplace

procedures

Foundation Skills

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

Range of Conditions

Range is restricted to essential operating conditions and any other variables essential to the work environment.

Non-essential conditions may be found in the UEE Electrotechnology Training Package Companion Volume Implementation Guide.

auditing HVAC/R control systems must include at least the following:

- two different HVAC/R control systems
- four different control scenarios

Unit Mapping Information

This unit replaces and is equivalent to UEENEEJ148A Audit HVAC/R control systems for compliance with regulations and standards.

Links

Companion Volume implementation guides are found in VETNet - -

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

Assessment Requirements for UEERA0008 Audit HVAC/R control systems for compliance with regulations and standards

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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:

- interpreting compliance documents
- setting up and conducting appropriate examinations and tests
- identifying non-compliance defects
- reporting examination and test results and non-compliance issues clearly and accurately
- applying relevant work health and safety (WHS)/occupational health and safety (WHS/OHS) requirements, including using risk control measures
- auditing heating, ventilation and air conditioning/refrigeration (HVAC/R) control systems for compliance with regulations and standards
- completing auditing work and documenting results
- dealing with unplanned situations
- preparing to audit HVAC/R control systems.

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:

- HVAC/R control system audits, safe working practices and relevant standards, codes and regulations, including:
 - review of HVAC/R system components
 - performance requirements of control applications from available system specifications and design briefs
 - descriptions of operation
 - measurements and recordings of system performance, as required to confirm plant control compliance with desired conditions
 - comparison of system specifications, control strategies, design briefs and recorded test results with current HVAC/R energy management principles to establish the economy of operation of HVAC/R plant
 - preparation a detailed report outlining the results of investigation and stating suggested

control system adjustments, alterations and modifications to improve the performance of the plant

- relevant job safety assessments or risk mitigation processes
- relevant manufacturer specifications
- relevant systems for compliance with regulations and relevant industry standards
- relevant WHS/OHS legislated requirements
- 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 suitable workplace operational situations where it is appropriate to do so; where this is not appropriate, assessment must occur in simulated suitable 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 simulations
- relevant and appropriate materials, tools, facilities and equipment currently used in industry
- applicable documentation, including workplace procedures, equipment specifications, regulations, codes of practice and operation manuals.

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