



Australian Government

Assessment Requirements for UEERA0057 Operate ammonia refrigeration plant

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 legislative, industry standards and practices
- applying relevant work health and safety (WHS)/occupational health and safety (WHS/OHS) requirements and workplace procedures and practices, including using risk control measures
- applying sustainable energy principles and practices
- completing necessary service documentation
- conducting servicing procedures in accordance with the schedule
- dealing with unplanned events/situations in accordance with workplace procedures in a manner that minimises risk to personnel and equipment
- determining plant operating condition, rectifying faults and defective components in accordance within workplace procedures and guidelines
- documenting operating conditions correctly
- identifying anhydrous ammonia (R717) refrigerant safety data sheets (SDS)/material safety data sheets (MSDS) and workplace emergency response procedures
- identifying the conditions of the refrigerant at various locations in the vapour compression and liquid recirculation system
- operating an industrial refrigeration plant using ammonia as the refrigerant
- recording measurements
- selecting and using appropriate measuring devices correctly
- shutting down ammonia refrigerant plant
- starting up ammonia refrigerant plant
- taking remedial action within workplace emergency response procedures and job role
- using calculation methods accurately.

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:

- adding refrigerant, draining/adding oil and purging non-condensables
- ammonia refrigeration system operation
- hazardous goods, segregation, storage and handling
- refrigeration plant start-up, shutdown and emergency procedures
- refrigeration systems, including:
 - ammonia refrigeration system types, operating principles, major components, flow controls and ancillary components
 - operating conditions of ammonia refrigeration systems
- refrigeration vapour compression system principles, including:
 - heat, heat energy (definition and unit of measurement), enthalpy (definition and unit of measurement) and heat transfer
 - pressure, scale types (imperial, metric and absolute) and their units of measurement, vacuum scales (Pascals and microns), and conversion to/from absolute values and gas laws (Boyles, Charles and Daltons)
 - refrigerant conditions, saturation temperature, saturated liquid saturated vapour, superheated vapour, sub-cooled liquid and pressure temperature relationships
 - sensible and latent heat, definition of latent heat and sensible heat (including units of measurement) and measurement devices
 - temperature and relative humidity, scale types (imperial, metric and absolute) and units of measurement and measurement devices
 - vapour compression cycle, primary system components, and high and low pressure sides
- relevant job safety assessments or risk mitigation processes, including ammonia (R717) refrigerant SDS/MSDS
- relevant manufacturer specifications
- relevant WHS/OHS legislated requirements
- relevant workplace documentation
- relevant workplace policies and procedures, including workplace emergency response plan
- vapour compression system, including operation and major components.

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, emergency response plan, 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>