Australian Government

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.

Application

This unit involves the skills and knowledge required to operate ammonia (R717) refrigerant refrigeration plants.

It includes operating an industrial refrigeration plant using ammonia as the refrigerant. It also includes applying specialised refrigeration principles that apply to ammonia, specifying the normal operating parameters for the plant, rectifying faults and defective components within organisational guidelines, and completing the necessary service documentation.

The skills and knowledge in this unit will be applied by ammonia refrigeration plant operators during the start-up, operation and shutdown of ammonia refrigeration plants.

The skills and knowledge described in this unit require a licence or permit to practice in the workplace where work is carried out on electrical installations which are designed to operate at voltages greater than 50 volt (V) alternating current (a.c.) or 120 V direct current (d.c).

Competency development activities in this unit are subject to regulations directly related to licensing. Where a licence or permit to practice is not held, skills and knowledge described in this unit require a relevant contract of training, such as an Australian Apprenticeship.

Additional and/or other conditions may apply in some jurisdictions subject to regulations related to refrigeration, air conditioning or electrical work. Practice in the workplace and during training is also subject to work health and safety (WHS)/occupational health and safety (OHS) regulations

Permits may also be required for some work environments, such as confined spaces, working aloft, near live electrical apparatus and site rehabilitation.

Pre-requisite Unit

UEERA0005 Apply safety awareness and legal requirements for ammonia refrigerant

Competency Field

Refrigeration and air-conditioning

Unit Sector

Electrotechnology

Elements and Performance Criteria

ELEMENTS	PERFORMANCE CRITERIA
Elements describe the essential outcomes.	Performance criteria describe the performance needed to demonstrate achievement of the element.
1 Prepare to operate ammonia refrigerant plant	**1.1** WHS/OHS hazards, risk control methods, relevant standards, codes and legislation are obtained and applied
	1.2 Ammonia refrigerant, refrigeration system and components on which the work is to be carried out are identified
	1.3 WHS/OHS risk control measures, safety data sheets (SDS)/material safety data sheets (MSDS) and workplace procedures are followed in preparation for refrigeration work
	1.4 Safety hazards not previously identified are reported and advice on risk control measures is sought from work supervisor
	1.5 Nature of work is obtained from documentation or work supervisor to determine the scope of work to be undertaken
	1.6 Advice is sought from work supervisor to ensure the work is coordinated effectively with others
	1.7 Sources of materials required for refrigeration work are accessed in accordance with workplace procedures
	1.8 Tools, equipment and testing devices needed to carry out refrigeration work are obtained and checked for correct operation and safety
	1.9 Refrigeration system operating conditions are established from service documentation, supervisor and the application of refrigeration fundamentals
2 Operate ammonia refrigeration plant	**2.1** Refrigeration plant is started up in accordance with workplace procedures, industry standards, codes of

		practice and regulations
	2.2	Measurement of refrigeration system operating parameters is conducted in accordance with WHS/OHS requirements and workplace safety procedures
	2.3	Supervisor or person in charge is advised of system and components performing outside their operating parameters to facilitate remedial action
	2.4	Refrigeration plant remedial action is determined and implemented, as required, in accordance with workplace procedures
	2.5	Refrigeration service procedures are completed in accordance with workplace procedures
	2.6	Daily processing requirements are calculated to predict demand on refrigeration plant
	2.7	Oral and written information on the performance of the refrigeration plant is exchanged formally and informally between the operator and supervisor/production team
	2.8	Equipment controls are adjusted to prepare refrigeration plant to meet the load
	2.9	Action is taken in a proactive way to maintain the performance of the plant
	2.10	Demands on plant consumables are calculated to facilitate the ordering of replacements
	2.11	Strategies are developed to meet demand in the event of refrigeration plant equipment malfunction or breakdown
3 Complete work and report on ammonia refrigeration plant operations	**3.1**	Worksite is cleaned and made safe in accordance with workplace procedures
	3.2	Refrigeration plant performance records are maintained and distributed 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.

Operating ammonia refrigeration system conditions must include at least the following:

- starting up
- determining operating conditions using measurement and calculation methods
- repairing components
- shutting down the system
- checking:
  - suction
  - inter-stage and discharge pressures
  - ambient, evaporator, inter-stage and condensing temperatures
  - evaporator and condenser temperature differences

Unit Mapping Information

This unit replaces and is equivalent to UEENEEJ196A Operate Ammonia Refrigeration Plant.

Links

Companion Volume implementation guides are found in VETNet - - https://vetnet.gov.au/Pages/TrainingDocs.aspx?q=b8a8f136-5421-4ce1-92e0-2b50341431b6