Australian Government

Assessment Requirements for PMAOPS341 Operate and troubleshoot cryogenic processes

Release: 1

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Modification History

Release 1. Unit code and title changed. Application and Performance Criteria changed. Range of Conditions removed. Assessment Requirements changed. Supersedes and is equivalent to PMAOPS340 Operate cryogenic processes.

Performance Evidence

There must be evidence the candidate has completed the tasks outlined in the elements and performance criteria of this unit:

- at least 2 times, each in a separate work context, for a complex refrigeration or cryogenic system.

Knowledge Evidence

There must be evidence the candidate has knowledge of:

- all items on a schematic of the cryogenic system, including:
  - principles of operation of items of equipment in the system, and the basis of cryogenic operations
  - type of cryogenic plant, the component plant items and their functions
  - operating parameters and integrity limits, and product specifications and tolerances including temperature, pressure and flow
  - procedures for starting, stopping, operating, controlling and isolating the system
  - process control philosophies and strategies, and methods of controlling refrigeration systems (including pressure regulation)
  - functions of major components and troubleshooting techniques
- physics to the level of being able to provide an overview of the science of the cryogenic process
- types of industrial refrigerants and their applications, including self-refrigerants, brittle fracture, stress limits and the effects of thermal shock on materials of construction, vaporisation, condensation and impact on process
- cryogenic process abnormal situations and required action, including but not limited to:
  - operating temperatures not maintained
  - unstable or suboptimal operation (icing, moisture and fouling)
  - critical variables and outputs out of range
- hierarchy of control
- refrigeration and cryogenic system hazards:
  - possible causes
  - potential consequences

- appropriate risk controls
- escalation and reporting procedures.

Assessment Conditions

Skills must have been demonstrated in the workplace or in a simulated environment that reflects workplace conditions and contingencies. The following conditions must be met for this unit:

- use of suitable facilities, equipment and resources, including:
  - industrial cryogenic system
  - operating procedures
- abnormal situations must be relevant to cryogenic systems.

Assessors must satisfy the NVR/AQTF mandatory competency requirements for assessors.

Links

Companion Volume implementation guides are found in VETNet - https://vetnet.gov.au/Pages/TrainingDocs.aspx?q=9fc2cf53-e570-4e9f-ad6a-b228ffdb6875