



Australian Government

PMAOPS346 Operate and troubleshoot liquefaction process

Release: 1

PMAOPS346 Operate and troubleshoot liquefaction process

Modification History

Release 1. This version was released with PMA Chemical, Hydrocarbons and Refining Training Package, Release 2.0.

Application

This unit of competency describes the skills and knowledge required to operate liquefaction process.

This unit applies to autonomous operators who are required to demonstrate a significant understanding of the process and the equipment operation in a plant with local control, or in liaison with the control-room operator in a plant with a centralised control panel.

This unit applies to an individual working alone or as part of a team or group, and working in liaison with other shift team members and the control-room operator, as appropriate. In the case of a large, complex plant, the operations technician would be part of a team during startup and shutdown procedures. It does not require the operation of a central control panel.

No licensing or certification requirements exist at the time of publication. Relevant legislation, industry standards and codes of practice within Australia must be applied.

Pre-requisite Unit

Nil

Competency Field

Operations

Elements and Performance Criteria

Elements	Performance Criteria
<i>Elements describe the essential outcomes.</i>	<i>Performance criteria describe the performance needed to demonstrate achievement of the element.</i>
1. Operate liquefaction process in according to procedures	1.1 Receive and give shift handover 1.2 Communicate with personnel to identify and coordinate work requirements 1.3 Identify, control and report process system hazards 1.4 Check for recent work undertaken on liquefaction process system and address outstanding and incomplete work 1.5 Check operational status of process system

Elements	Performance Criteria
<i>Elements describe the essential outcomes.</i>	<i>Performance criteria describe the performance needed to demonstrate achievement of the element.</i>
	1.6 Perform routine checks and complete logs and paperwork, taking action on unexpected readings 1.7 Adjust liquefaction process system according to operational parameters
2. Identify and respond to abnormal situations	2.1 Monitor liquefaction process system frequently and critically throughout shift using own senses, and measured and indicated data 2.2 Monitor field data and instrumentation to ensure that product remains on specification 2.3 Identify impacts of changes upstream and downstream 2.4 Identify actual and developing situations that may require action 2.5 Take action to remedy abnormal situations according to operating procedures 2.6 Complete required documents outlining abnormal situation management and corrective action taken
3. Shutdown and prepare liquefaction process for maintenance	3.1 Shut down liquefaction process system according to operating procedures 3.2 Identify, control and report shutdown hazards 3.3 Monitor shutdown and identify situations that may require action 3.4 Take action to remedy situations according to operating procedures 3.5 Shut down and changeover duty and standby equipment according to operating procedures 3.6 Isolate plant and utilities from energy sources
4. Prepare and start-up liquefaction process	4.1 De-isolate and prepare liquefaction process system to be returned to standby or service 4.2 Complete pre-start checks according to operating procedures 4.3 Startup liquefaction process system according to operating procedures 4.4 Identify, control and report startup hazards 4.5 Monitor startup and identify situations that may require action 4.6 Take action to remedy situations according to operating procedures

Foundation Skills

This section describes those language, literacy, numeracy and employment skills that are essential to performance.

- Learning skills to follow instructions, monitor process and select appropriate procedure.
- Reading skills to follow written procedures and documentation.
- Writing skills to complete workplace documentation.
- Oral communication skills to liaise and coordinate with team members and the control-room operator.
- Numeracy skills to monitor field data, instrumentation and process parameters.

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

Unit Mapping Information

Release 1. New unit.

Links

Companion Volume implementation guides are found in VETNet -

<https://vetnet.gov.au/Pages/TrainingDocs.aspx?q=9fc2cf53-e570-4e9f-ad6a-b228ffdb6875>

Assessment Requirements for PMAOPS346 Operate and troubleshoot liquefaction process

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Performance Evidence

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

- at least 2 times, each in a separate work context.

Knowledge Evidence

There must be evidence the candidate has knowledge of:

- all items on liquefaction system schematics including:
 - liquefaction process system item types, functions and troubleshooting techniques
 - principles of liquefaction system operation to meet company requirements
 - operating parameters and integrity limits, and product specifications and tolerances including temperature, pressure, flow and pH
 - procedures for starting, stopping, operating, controlling and isolating the system
 - emergency shutdown procedures
 - process control philosophies and strategies
 - interactions between plant items and processes
- basic physics and chemistry to the level of being able to provide an overview of the science of the liquefaction process
- liquefaction system abnormal situations and required action, including but not limited to:
 - variation or loss of feed
 - unstable control of pressure, temperature level and flows
 - control equipment failure
 - process plant trips
 - change in atmospheric conditions (including rain, temperature, wind and lightning, still conditions)
 - poor quality indicated in test results
 - analyser inaccuracy or malfunction
- hierarchy of controls
- liquefaction process hazards:
 - possible causes
 - potential consequences

- appropriate risk control
- reporting and escalation 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:
 - liquefaction system
 - operating procedures
- abnormal situations must be relevant to liquefaction operations.

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

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