Australian Government

PMAOPS312 Undertake ship loading/unloading operations

Release: 1

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Modification History

Release 1. Supersedes and is equivalent to PMAOPS312B Undertake ship loading/unloading operations

Application

This unit of competency covers the skills and knowledge required to undertake ship loading/unloading operations for products such as liquefied natural gas (LNG), liquefied petroleum gas (LPG), oil, chemicals and particulates. It applies to loading areas including:

- terminal facilities
- jetties
- production platforms
- floating storage and offtake (FSO)/floating production storage and offtake (FPSO).

This unit of competency applies to operations technicians who are required to demonstrate a significant understanding of the process and the equipment operation in order to prepare for and control the cargo transfer rate within safe limits, communicate with the loading master and terminal operator, complete all necessary documentation for the control and calculation of product volumes, and identify and solve operational problems.

This unit of competency 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.

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

Pre-requisite Unit

Nil

Competency Field

Operations

Unit Sector

Elements and Performance Criteria

Elements describe the essential outcomes.		Performance criteria describe the performance needed to demonstrate achievement of the element.	
1	**Prepare for work**	1.1	Receive and give shift handover
		1.2	Identify work requirements
		1.3	Identify and control hazards
		1.4	Coordinate with appropriate personnel
		1.5	Check for recent work undertaken on ship loading/unloading equipment
		1.6	Note any outstanding/incomplete work
		1.7	Check operational status of ship loading/unloading equipment
2	**Prepare for ship transfer**	2.1	Check that the vessel is moored and secured in accordance with procedures and the transfer points aligned ready for product transfer
		2.2	Activate/bring on line all safety systems
		2.3	Ensure all arms/hoses and related equipment connections, are in place and operational conditions for transfer of product are satisfied
		2.4	Ensure safety check documentation is completed
3	**Transfer product to/from ship in accordance with procedures**	3.1	Check transfer advice/documentation and complete required records
		3.2	Engage fire and deluge protection systems
		3.3	Launch and retrieve batching pigs
		3.4	Commence the transfer process of the specified product
		3.5	Monitor transfer equipment, its component items and levels frequently and critically throughout transfer using

			measured/indicated data and senses
		3.6	Take action specified in procedures
		3.7	Identify vapour or product leakages/spills and take specified action
		3.8	Apply emergency procedures, as required
4	**Complete transfer process**	4.1	Achieve or satisfy capacities and transfer requirements within the allowable timeframes and schedules
		4.2	Retrieve batching pigs, as required
		4.3	Decommission, isolate and disengage transfer systems from or to the vessel, as required
		4.4	Continue to monitor and control fire, deluge and safety systems during the finalization of the loading process and let-go of the vessel, as required
		4.5	Complete all required logs and documentation and communicate the results of the transfer to the appropriate personnel
		4.6	Shut down and bring transfer facilities off line, ensuring that the area has been made safe after the transfer has been completed
5	**Isolate and de-isolate plant**	5.1	Isolate transfer plant
		5.2	Make safe for required work/storage
		5.3	Check plant is ready to be returned to service
		5.4	De-isolate and prepare plant for return to service

Foundation Skills

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

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

Range of Conditions

This field allows for different work environments and conditions that may affect performance. Essential operating conditions that may be present (depending on the work situation, needs of the candidate, accessibility of the item, and local industry and regional contexts) are included.

Regulatory framework

The latest version of all legislation, regulations, industry codes of practice and Australian/international standards, or the version specified by the local regulatory authority, must be used, and include one or more of the following:

- legislative requirements, including work health and safety (WHS)
- industry codes of practice and guidelines
- environmental regulations and guidelines
- Australian and other standards
- licence and certification requirements

All operations to which this unit applies are subject to stringent health, safety and environment (HSE) requirements, which may be imposed through state/territory or federal legislation, and these must not be compromised at any time. Where there is an apparent conflict between performance criteria and HSE requirements, the HSE requirements take precedence.

Hazards

Hazards include one or more of the following:

- electricity
- gas
- gases and liquids under pressure
- liquefied gases
- structural hazards
- structural collapse
- equipment failures
- industrial (machinery, equipment and product)
- equipment or product mass
- noise, rotational equipment or vibration
- plant services (steam, condensate and cooling water)
- working at heights, in restricted or confined spaces, or in environments subjected to heat, noise, dusts or vapours or in darkness
- flammability and explosivity

- hazardous products and materials
- unauthorised personnel
- sharp edges, protrusions or obstructions
- slippery surfaces, spills or leaks
- extreme weather
- other hazards that might arise

Non-routine problems

Non-routine problems are unexpected problems, or variations of previous problems and must be resolved by applying operational knowledge to develop new solutions, either individually or in collaboration with relevant experts, to:

- determine problems needing action
- determine possible fault causes
- develop solutions to problems which do not have a known solution
- follow through items initiated until final resolution has occurred
- report problems outside area of responsibility to designated person

Operational knowledge includes one or more of the following:

- procedures
- training
- technical information such as journals, engineering specifications
- remembered experience
- relevant knowledge obtained from appropriate people

Start up/shut down

Start up/shut down includes the following:

- start up and shut down to/from normal operating conditions
- start up and shut down to/from isolated, cold or empty
- start up and shut down to/from other conditions/situations experienced on the plant

Procedures

All operations must be performed in accordance with relevant procedures.

Procedures are written, verbal, visual, computer-based or in some other form, include one or more of the following:

- emergency procedures
- work instructions
- standard operating procedures (SOPs)

- safe work method statements (SWMS)
- formulas/recipes
- batch sheets
- temporary instructions
- any similar instructions provided for the smooth running of the plant

Operate

Operate is to monitor, adjust/make change to the production unit and/or its component items to meet specifications, by one or both of the following:

- manually in the plant
- using local controller in the plant

This competency does not require the operation of a central control panel.

Ship loading/unloading system

This unit of competency includes all items of equipment and unit operations which form part of the ship loading/unloading system.

A unit comprises two or more components of plant/equipment that are operated together to achieve the outcome, including, as appropriate to the facility, one or more of the following:

- loading/unloading systems
- loading arms
- gantries
- gas and other hazard monitoring systems
- compressors
- storage tanks
- pipelines, trunklines and conveyors
- pig launcher, pig trap and batching pigs
- measurement systems

Ancillary equipment includes one or more of the following:

- fire-extinguishers, hoses and jets
- mooring lines
- fire protection system
- deluge system

Unit Mapping Information

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Links

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