



Australian Government

PMAOPS600 Modify plant

Release: 1

PMAOPS600 Modify plant

Modification History

Release 1. Supersedes and is equivalent to PMAOPS600C Modify plant

Application

This unit of competency covers the skills and knowledge required to modify plant hardware.

This unit of competency applies to senior technicians or those in similar roles who are required to apply in-depth technical knowledge of process and plant operation in order to determine operational and technical requirements, develop technical specifications, evaluate options against specifications, select the most appropriate option, and coordinate and supervise the installation and commissioning of the modified equipment.

This unit does not apply to:

- identification of the need for modification; the need for the modification may arise from a continuous improvement project, as a result of an analysis of plant performance or from any other source
- design of equipment; this would typically be an engineering role
- work requiring special certification (e.g. registered structural engineer)

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.

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|---|--|-----|--|
| 1 | Confirm required outcomes from modification | 1.1 | Communicate with relevant technical, operational and other key personnel to determine operational and technical requirements of the plant modification |
|---|--|-----|--|

- 1.2 Determine regulatory/industry code requirements
 - 1.3 Obtain relevant drawings of existing plant
 - 1.4 Develop modification brief, including relevant plant schematic sketch, to meet needs
 - 1.5 Establish required performance measures to indicate success of project
 - 1.6 Obtain sign-off on modification brief from all relevant persons
- 2 **Short list possible modifications to meet brief**
- 2.1 Investigate the range of available equipment/plant units
 - 2.2 Determine relative advantages and disadvantages between of each class of equipment/type of modification which may provide a solution
 - 2.3 Compile a shortlist of modification types/equipment classes which will best meet the modification brief
 - 2.4 Discuss shortlist alternatives with relevant stakeholders and obtain sign-off for the chosen approach
- 3 **Select technically best equipment/unit/ modification**
- 3.1 Complete technical specification for required modification incorporating feedback received
 - 3.2 Compare specification with that of 'off the shelf' equipment, where appropriate
 - 3.3 Arrange for equipment suppliers to tender to the specification, where necessary, following company procedures
 - 3.4 Rank competing items by their compliance with the technical specification
- 4 **Compare hazard profile of possible modifications**
- 4.1 Organise a hazard analysis (e.g. hazard and operability study (HAZOP)) for the modification according to company procedures
 - 4.2 Ensure that all stakeholders are represented on the hazard analysis team

- 4.3 Brief the hazard analysis team on the modification and the alternatives under evaluation
 - 4.4 Eliminate alternatives which do not meet hazard requirements.
 - 4.5 Rank remaining competing items by safety performance.
- 5 **Make final choice of solution**
 - 5.1 Evaluate competing items by their economic performance (e.g. life, maintenance and running costs) and rank by total lifetime cost
 - 5.2 Seek further information where necessary to allow a rational selection to be made
 - 5.3 Choose the modification which meets all required minimum standards (regulatory, enterprise, output and economic) and will provide the best solution
 - 5.4 Verify choice in discussion with production and engineering managers and other key stakeholders
 - 5.5 Arrange for order to be placed, following company procedures
- 6 **Check and commission modification**
 - 6.1 Undertake pre-commissioning activities
 - 6.2 Complete safety acceptance documentation
 - 6.3 Identify, record and report problems or non-conformances
 - 6.4 Conduct trials/test runs
 - 6.5 Record and report performance data
 - 6.6 Bring the plant/plant systems/pipeline on line
- 7 **Complete modification**
 - 7.1 Evaluate performance of modification
 - 7.2 Make adjustments as required
 - 7.3 Accept (or otherwise) the equipment/unit (and ensure payment flows)

- 7.4 Ensure plant procedures and training material updated
- 7.5 Ensure plant drawings and engineering specifications are updated
- 7.6 Complete all other required paperwork

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
- flow/pressure
- gas
- equipment failures
- noise, rotational equipment or vibration

- plant services (steam, condensate and cooling water)
- flammability and explosivity
- hazardous products and materials
- other hazards that might arise

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

Unit Mapping Information

Release 1. Supersedes and is equivalent to PMAOPS600C Modify plant

Links

Companion Volume implementation guides are found in VETNet -

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