



Australian Government

PMASUP244 Prepare and isolate plant

Release: 1

PMASUP244 Prepare and isolate plant

Modification History

Release 1. Supersedes and is equivalent to PMASUP244A Prepare and isolate plant

Application

This unit of competency covers the skills and knowledge required to isolate and prepare plant for maintenance work and return to service.

This unit of competency applies to operators, maintainers, maintenance personnel, and those in similar roles who are required to execute the authorised isolation and preparation plan, hand over plant for work and accept handover after work, execute authorised return to service plan and complete required paperwork.

The person will have detailed operational and process knowledge but is not required to demonstrate 'hands on' operation of equipment as part of this competency.

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, the control room operator, relevant experts and stakeholders as appropriate. They would be part of a team during start-up and shutdown procedures.

This unit of competency applies to preparation and isolation of hazardous plant, such as a major hazard facility. However, it can also be applied with appropriate contextualisation to the preparation and isolation of lower hazard plants and mobile plant.

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

Pre-requisite Unit

Nil

Competency Field

Support

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 | Perform the isolations | 1.1 | Communicate with panel operator and other stakeholders |
|---|-------------------------------|-----|--|

- 1.2 Execute authorised isolation plan
 - 1.3 Remove materials and energy, as required
 - 1.4 Control any releases to the environment in accordance with plant procedures
 - 1.5 Prove the effectiveness of the isolation
 - 1.6 Decontaminate plant and equipment, as required
 - 1.7 Recognise and take action on any inconsistencies
 - 1.8 Test for residual hazards
 - 1.9 Complete required paperwork
 - 1.10 Sign-off isolations, as required
 - 1.11 Hand over to/from shift, as required
- 2 **Prepare plant for the work**
- 2.1 Execute authorised preparation plan
 - 2.2 Recognise and take action on any inconsistencies
 - 2.3 Confirm plant is ready for the work
 - 2.4 Hand over plant to the work party
 - 2.5 Monitor work and plant, as required
- 3 **Prepare plant for return to service**
- 3.1 Confirm work is complete and site/plant has been left in acceptable condition
 - 3.2 Accept handover from work party
 - 3.3 Obtain authority to de-isolate
 - 3.4 Execute authorised de-isolation plan
 - 3.5 Sign off the de-isolation, as required
 - 3.6 Reverse purge as required by plan for return to service
 - 3.7 Execute authorised plan for return to service

- 3.8 Test readiness for return to service
- 3.9 Advise plant is ready for service
- 3.10 Complete 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.

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

Hazards

Hazards include one or more of the following:

- electricity
- gases and liquids under pressure
- 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)
- limited head spaces or overhangs
- working at heights, in restricted or confined spaces, or in environments subjected to heat, dusts or vapours
- 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

Isolation

Isolation is a process for ensuring no energy or material can enter the isolated area.

Plant energy sources

Plant energy sources include, as appropriate to the plant, one or more of the following:

- electricity (mains, solar and by generator)
- chemicals and fuels
- heat and steam
- pressure, such as compressed air and water, hydraulic oil and other

fluids under pressure

- energy storing devices, such as batteries, springs, flywheels, accumulators and capacitors
- gravity (and its ability to cause items to fall)
- radiation

Control release procedures

Control release procedures will define the release action to be taken for the plant and/or any specified conditions, including one or more of the following:

- preventing any release
- containing any release
- recovery and reuse or disposal of any release

Preparation plan

Preparation plan will define processes to ensure plant and equipment is in a safe and appropriate condition for the required work, including as appropriate to the plant:

- draining
- purging
- inerting
- ventilating
- controlling atmosphere (e.g. to ensure it is breathable and is not within the flammable range)
- adjusting temperature to make a workable environment
- adjusting pressure (usually to atmospheric)
- ensuring adequate access and egress

Isolation plan

Execution of the isolation plan includes, as appropriate to the plant:

- confirming availability of plant, equipment and/or systems
- verifying plant, equipment and/or systems
- verifying isolation location
- securing and identifying isolation points
- labelling isolation points
- doing the isolations
- managing the isolations
- managing lock out/tag out to procedure
- cross checking isolations
- undertaking self-isolation, where appropriate

Remove materials and energy	Removing materials and energy includes, as appropriate to the plant: <ul style="list-style-type: none">• draining, purging and venting of process materials• mitigation of stored energy• appropriately catching and disposing of any removed materials
Effectiveness of isolation	Proving the effectiveness of the isolation includes, as appropriate to the plant: <ul style="list-style-type: none">• checking that any leaks are acceptable• proving depressuring• proving purging• checking bleed from double block and bleed, where appropriate• proving the atmosphere is as required• using gas detectors/meters• proving the isolation is effective• surveillance of isolations
Test readiness for return to service	Testing readiness for return to service includes, as appropriate to the plant: <ul style="list-style-type: none">• pressure and leak testing• atmosphere/gas testing• testing the restoration of utilities and services
Required paperwork	Required paperwork will conform to site requirements and document control systems and are paper, electronic or other approved format. Paperwork must include: <ul style="list-style-type: none">• isolation register• lock out/tag out register• sign-offs• any reports, permits/work packs, documentation required by the job/organisation• filing of documentation

Unit Mapping Information

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Links

Companion Volume implementation guides are found in VETNet -

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