



**Australian Government**

**Department of Education, Employment and Workplace Relations**

# **CPPFES3046A Decommission gaseous agent containers and actuators**

**Release: 1**

## **CPPFES3046A Decommission gaseous agent containers and actuators**

### **Modification History**

Revised unit

Unit updated and equivalent to PRMPFES46A Decommission gaseous agent containers and actuators

### **Unit Descriptor**

This unit of competency specifies the outcomes required to decommission gaseous agent containers and actuators.

### **Application of the Unit**

This unit of competency supports individuals responsible for decommissioning and removing gaseous agent containers and actuators, and preparing containers and components for transport.

### **Licensing/Regulatory Information**

Work in this area must be completed according to relevant legislative, industry, finalised design documentation, installation drawings, customer and organisational requirements, and comply with policies and procedures relating to ozone depleting substances (ODS), synthetic greenhouse gases (SGG) and occupational health and safety (OHS).

Service technicians are not permitted to undertake any installation, replacement, maintenance and repair functions that are restricted to licensed trades or occupations (subject to relevant state and territory regulations).

The unit supports one or more extinguishing agent handling licences prescribed under the Ozone Protection and Synthetic Greenhouse Gas Management Act 1989.

Different states and territories may have regulatory mechanisms that apply to this unit.

Candidates are advised to check for regulatory limitations.

### **Pre-Requisites**

Not applicable.

### **Employability Skills Information**

This unit contains employability skills.

## Elements and Performance Criteria Pre-Content

Elements describe the essential outcomes of a unit of competency.

Performance criteria describe the performance needed to demonstrate achievement of the element. Where bold italicised text is used, further information is detailed in the required skills and knowledge section and the range statement. Assessment of performance is to be consistent with the evidence guide.

## Elements and Performance Criteria

- |   |   |     |   |
|---|---|-----|---|
| 1 | Apply rules and regulations to decommissioning operations.      | 1.1 | Requirements of relevant <b><i>rules and regulations</i></b> are <b><i>confirmed</i></b> and applied to <b><i>work procedures</i></b> , and in particular to reduction of <b><i>ODS and SGG emissions</i></b> .   |
|   |   | 1.2 | <b><i>Compliance requirements are checked</i></b> and <b><i>action</i></b> is taken according to <b><i>organisational policies and procedures</i></b> .   |
| 2 | Prepare to decommission gaseous agent containers and actuators. | 2.1 | <b><i>Work permits</i></b> are organised prior to entering customer premises.   |
|   |   | 2.2 | <b><i>Decommissioning guidelines</i></b> for system are reviewed with relevant persons to satisfy <b><i>customer requirements</i></b> , manufacturers' specifications, and legislative and industry requirements. |
|   |   | 2.3 | <b><i>Safety procedures</i></b> are followed according to organisational, customer and manufacturers' requirements.   |
|   |   | 2.4 | Potential <b><i>hazards</i></b> and risks are identified.   |
|   |   | 2.5 | Required <b><i>tools, equipment and materials</i></b> are identified, selected and checked, and used safely and efficiently.  |
|   |   | 2.6 | <b><i>System components and materials</i></b> are identified.   |
|   |   | 2.7 | Access to system is checked to ensure compliance with decommissioning guidelines and minimal disruption to customer or property.  |

- 3 Decommission gaseous agent containers and actuators.
- 3.1 Gaseous agent containers and *actuators* are decommissioned according to decommissioning guidelines; organisational, customer, legislative and industry requirements; and manufacturers' specifications.
  - 3.2 All interfaced actuators are confirmed as isolated, with signage, documentation and lock-off in place.
  - 3.3 Manual, electrical and mechanical actuators are disconnected.
  - 3.4 Pneumatic actuators, pilot and slave tubes and fittings are disconnected.
  - 3.5 Transport caps, plugs and locking devices are fitted on discharge outlets and actuator ports.
  - 3.6 Container manifold connection components are disconnected.
  - 3.7 Transport caps on valve outlets are connected.
- 4 Complete decommissioning operations.
- 4.1 Removal and transportation of gaseous agent containers to storage or reclaim facility are organised according to legislative requirements and OHS policies and procedures.
  - 4.2 **Documentation** and decommissioning sign-off requirements are completed with relevant persons.
  - 4.3 Decommissioning site is left clean and tidy with materials disposed of or recycled according to state or territory legislative and industry requirements.

## Required Skills and Knowledge

This section describes the skills and knowledge required for this unit.

### Required skills

- customer service skills
- language, literacy and numeracy skills to:
  - communicate with others clearly and concisely, verbally and in writing
  - read and comply with work instructions and specifications
  - read and interpret decommissioning guidelines
  - read and record measurements
  - record and report information neatly and legibly
- planning and organising skills to:
  - estimate time to complete activities
  - organise safe transport of gaseous agent containers to storage or reclaim facility
  - prioritise tasks
- interpersonal skills to relate to people from a range of social and cultural backgrounds
- skills to work safely when:
  - applying workplace housekeeping procedures
  - removing debris in the work area caused by decommissioning operations
  - selecting and using tools, equipment and materials for specific tasks
- technical skills to:
  - connect transport caps, plugs and locking devices
  - convert basic units of measurement and pressure
  - disconnect:
    - gaseous agent container bank manifold and components
    - manual, mechanical, pneumatic and electrical actuators
  - identify hazards in the work area in preparation for decommissioning operations
  - isolate interfaced actuators

### Required knowledge

- action to take when a breach of OHS, ODS and SGG or other policy occurs
- awareness of on-site work permit requirements
- intent of Australian standards, particularly AS 1851 in relation to decommissioning gaseous agent containers and actuators
- key features of legislation, regulations and codes applicable to fire protection equipment decommissioning procedures, including:
  - extinguishing agent handling licences (EAHL) requirements

- implications of not applying legislative requirements to job functions
- purpose of the Building Code of Australia (BCA)
- records and documentation required to decommission gaseous agent containers and actuators
- maintenance requirements for relevant hand and power tools
- methods for converting basic units of measurement and pressure
- operation of discharge valve assembly and manifold connection components
- relevant federal, state or territory legislation that affects organisational operations, including:
  - anti-discrimination and diversity
  - equal employment opportunity
- safety requirements for using tools, equipment and materials
- tools, equipment and materials for decommissioning procedures
- types and operation of actuators and activating mechanisms
- types and purposes of relevant hardware items
- types of electrical safeguards used to protect persons and property

## Evidence Guide

The evidence guide provides advice on assessment and must be read in conjunction with the performance criteria, required skills and knowledge, range statement and the Assessment Guidelines for the Training Package.

Overview of assessment	This unit of competency could be assessed by observation of practical demonstration of decommissioning operations for gaseous agent containers and actuators at customers' premises or in a simulated workplace.
Critical aspects for assessment and evidence required to demonstrate competency in this unit	<p>A person who demonstrates competency in this unit must be able to provide evidence of the required skills and knowledge specified in this unit.</p> <p>In particular the person should demonstrate the ability to:</p> <ul style="list-style-type: none"> <li>• communicate and work effectively and safely with others</li> <li>• comply with organisational policies and procedures, including quality requirements</li> <li>• comply with site safety plan, OHS regulations and ODS and SGG regulations (where required) and state and territory legislation applicable to workplace operations</li> <li>• decommission gaseous agent containers and actuators in a minimum of two different settings, including:             <ul style="list-style-type: none"> <li>• identifying risk reduction measures</li> <li>• identifying system components and materials</li> <li>• identifying, selecting and using tools, equipment and materials to perform decommissioning procedures on installed gaseous agent containers and actuators</li> <li>• identifying potential hazards and risks</li> <li>• reviewing decommissioning guidelines with relevant persons</li> <li>• adhering to safety procedures during decommissioning procedures</li> <li>• decommissioning installed gaseous agent containers and actuators using decommissioning guidelines</li> <li>• creating records and documentation</li> <li>• completing workplace housekeeping requirements</li> </ul> </li> <li>• locate, interpret and apply relevant information, standards and specifications.</li> </ul>
Context of and specific resources for assessment	<p>Assessment of essential underpinning knowledge may be conducted in an off-site context. It is to comply with relevant regulatory or Australian standards' requirements.</p> <p>Resource implications for assessment include:</p>

	<ul style="list-style-type: none"> <li>• actual or simulated work environment and installed gaseous agent containers and actuators</li> <li>• decommissioning guidelines and procedures</li> <li>• assessment documentation, including training and assessment record books</li> <li>• necessary tools, specialist equipment, materials and spare parts</li> <li>• relevant manuals and other documentation, including Australian standards.</li> </ul>
Method of assessment	<p>Assessment methods must:</p> <ul style="list-style-type: none"> <li>• satisfy the endorsed Assessment Guidelines of the Property Services Training Package</li> <li>• include direct observation of tasks in real or simulated work conditions, with questioning to confirm the ability to consistently identify and correctly interpret the essential underpinning knowledge required for practical application</li> <li>• reinforce the integration of employability skills with workplace tasks and job roles</li> <li>• confirm that competency is verified and able to be transferred to other circumstances and environments.</li> </ul>
Guidance information for assessment	<p>Reasonable adjustments for people with disabilities must be made to assessment processes where required. This could include access to modified equipment and other physical resources, and the provision of appropriate assessment support.</p> <p>Assessment processes and techniques should as far as is practical take into account the language, literacy and numeracy capacity of the candidate in relation to the competency being assessed.</p> <p>This unit could be assessed on its own or in combination with other units relevant to the job function.</p>

## Range Statement

The range statement relates to the unit of competency as a whole. It allows for different work environments and situations that may affect performance. Bold italicised wording, if used in the performance criteria, is detailed below. Essential operating conditions that may be present with training and assessment (depending on the work situation, needs of the candidate, accessibility of the item, and local industry and regional contexts) may also be included.

<b><i>Rules and regulations</i></b> may include:	<ul style="list-style-type: none"> <li>• building surveyor requirements</li> <li>• dangerous goods regulations</li> <li>• environmental regulations, including ODS and SGG codes and</li> </ul>
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	<p>regulations</p> <ul style="list-style-type: none"> <li>• licensing arrangements</li> <li>• OHS legislation, codes and regulations</li> <li>• relevant Australian and international standards, such as: <ul style="list-style-type: none"> <li>• AS 4214 Gaseous fire extinguishing systems</li> <li>• ISO 14520 Gaseous fire-extinguishing systems – Physical properties and system design</li> <li>• NFPA 12 Standard on Carbon Dioxide Extinguishing Systems (US)</li> <li>• NFPA 12A Standard on Halon 1301 Fire Extinguishing Systems (US)</li> <li>• NFPA 2001 Standard on Clean Agent Fire Extinguishing Systems (US)</li> <li>• note: Australian standards are frequently revised and users must always check for currency and amendments</li> </ul> </li> <li>• relevant federal, state and territory building Acts, regulations and codes, such as: <ul style="list-style-type: none"> <li>• Ozone Protection and Synthetic Greenhouse Gas Management Act 1989</li> <li>• BCA</li> </ul> </li> <li>• other relevant legislation relating to fire protection equipment, including: <ul style="list-style-type: none"> <li>• international shipping codes</li> <li>• marine codes for different Australian States.</li> </ul> </li> </ul>
Requirements may be <i>confirmed</i> with:	<ul style="list-style-type: none"> <li>• colleagues</li> <li>• managers</li> <li>• supervisors</li> <li>• team leaders.</li> </ul>
<i>Work procedures</i> may include:	<ul style="list-style-type: none"> <li>• assignment instructions</li> <li>• equipment manufacturers' requirements</li> <li>• instructions from colleagues, supervisors and managers</li> <li>• ODS, SGG and OHS requirements</li> <li>• personal protective equipment requirements</li> <li>• reporting and documentation requirements</li> <li>• specific customer requirements.</li> </ul>
<p><i>ODS and SGG</i> extinguishing agents may include:</p> <p>Note list format: product name (other</p>	<ul style="list-style-type: none"> <li>• ODS and SGG extinguishing agents <b>commonly</b> used in Australia: <ul style="list-style-type: none"> <li>• FM200 (FE-227 Heptafluoropropane, HFC-227ea) used as a total flooding extinguishing agent and as a replacement for Halon 1301</li> <li>• Halon 1211 (BCF, Halon 1211 BCF, Bromochlorodifluoromethane) used as a streaming agent –</li> </ul> </li> </ul>

<p>names) use</p> <p>Check the latest amendments to the Ozone Protection and Synthetic Greenhouse Gas Management Act for the current list of ODS and SGG extinguishing agents.</p>	<p>requires a special permit in Australia</p> <ul style="list-style-type: none"> <li>• Halon 1301 (BTM, Halon 1301 BTM, Bromotrifluoromethane) used as a total flooding agent – requires a special permit in Australia</li> <li>• NAF-P-III (HCFC Blend C) used as a streaming agent</li> <li>• NAF-P-IV (HCFC Blend E) used as a streaming agent</li> <li>• NAF-S-III (HCFC Blend A) used as a total flooding agent</li> <li>• SF6 (Sulfurhexafluoride) used as an inerting agent in sealed high voltage switchgear</li> <li>• ODS and SGG extinguishing agents <b>not commonly</b> used in Australia: <ul style="list-style-type: none"> <li>• Blitz III (HCFC Blend D) used in flooding systems</li> <li>• CFC-11 (Trichlorofluoromethane) may be found as a propellant in some powder fire extinguishers (this product is banned in Australia but may be found on incoming foreign vessels)</li> <li>• FC-2-1-8 (CEA-308) used in flooding systems</li> <li>• FC-3-1-10 (CEA-410) used in flooding systems</li> <li>• FC-5-1-14 (CEA-614) used as a streaming agent</li> <li>• FE-13 (Trifluoromethane, HFC-23) used as a total flooding agent</li> <li>• FE-241 (Chlorotetrafluoroethane, HCFC-124) used as a total flooding agent for non-occupied spaces and as a streaming agent</li> <li>• FE-25 (Pentafluoroethane, HFC-125) used in inerting and explosion suppression applications</li> <li>• FE-36 (Hexafluoropropane, HFC-236fa) used in portable fire extinguishers – is a replacement for Halon 1211 and Halon 1301</li> <li>• FM100 (HBFC-22B1) used in portable fire extinguishers</li> <li>• Halon 2402 (Dibromotetrafluoroethane) limited use in military systems – requires a special permit in Australia</li> <li>• Halotron I (HCFC Blend B or HCFC-123) used as a total flooding agent and streaming agent</li> <li>• Halotron II (blend of HFC-143a and HFC-125) used as a total flooding agent and as a replacement for Halon 1301</li> <li>• HCFC-22 (Chlorodifluoromethane) used as a propellant in some powder fire extinguishers (this product is banned in Australia but may be found on incoming foreign vessels)</li> <li>• HFC-134a (Unsymmetric tetrafluoroethane) used as a propellant in some powder fire extinguishers.</li> </ul> </li> </ul>
<p><b>Checking compliance requirements</b> may</p>	<ul style="list-style-type: none"> <li>• applying inspection, test and survey requirements according to Australian standards</li> </ul>

include:	<ul style="list-style-type: none"> <li>• undertaking checks to ensure procedures are followed according to codes of practice relating to decommissioning.</li> </ul>
<b>Action</b> may include:	<ul style="list-style-type: none"> <li>• advising customer</li> <li>• documenting non-compliance</li> <li>• making equipment safe</li> <li>• reporting, as required.</li> </ul>
<b>Organisational policies and procedures</b> may include:	<ul style="list-style-type: none"> <li>• job scheduling systems and communication devices</li> <li>• personnel practices and guidelines outlining work roles, responsibilities and delegations</li> <li>• procedures and work instructions to prevent the emission of ODS and SGG in the workplace</li> <li>• recording and reporting documentation and systems</li> <li>• relevant OHS policies, procedures and programs</li> <li>• relevant rules and regulations</li> <li>• standard operating procedures, work instructions and manuals.</li> </ul>
<b>Work permits</b> may include permits to:	<ul style="list-style-type: none"> <li>• enter a work site</li> <li>• enter a work site at specific times</li> <li>• enter a restricted area within a work site</li> <li>• ensure that specific OHS requirements are met before entering a work site.</li> </ul>
<b>Decommissioning guidelines</b> may include:	<ul style="list-style-type: none"> <li>• electrical system</li> <li>• inhibit switch</li> <li>• lock-off valve</li> <li>• manifolds and valves, including: <ul style="list-style-type: none"> <li>• check valves</li> <li>• directional valves</li> <li>• discharged indicators</li> <li>• joints and fastenings</li> <li>• pressure reduction devices</li> </ul> </li> <li>• manual release devices</li> <li>• nozzles</li> <li>• pneumatic equipment</li> <li>• release mechanisms, including: <ul style="list-style-type: none"> <li>• actuating pressure lines</li> <li>• connections</li> <li>• location</li> <li>• mechanical release</li> </ul> </li> <li>• remarks</li> <li>• system configuration</li> <li>• types and features of gaseous agent containers, such as: <ul style="list-style-type: none"> <li>• charge quantity</li> </ul> </li> </ul>

	<ul style="list-style-type: none"> <li>• label</li> <li>• location</li> <li>• marking</li> <li>• mounting</li> <li>• number</li> <li>• orientation</li> <li>• size</li> <li>• warning signs and notices.</li> </ul>
<b><i>Customer requirements</i></b> may include:	<ul style="list-style-type: none"> <li>• confirming or varying decommissioning instructions</li> <li>• following sign-in and sign-out procedures for entry to or exit from premises</li> <li>• providing non-routine or urgent services</li> <li>• providing routine services</li> <li>• sighting work permits</li> <li>• written or verbal confirmation of services provided and future services, such as maintenance.</li> </ul>
<b><i>Safety procedures</i></b> may include:	<ul style="list-style-type: none"> <li>• confirmed acceptable floor loading</li> <li>• job safety analysis (JSA) performed for decommissioning, in particular, manual-handling tasks.</li> </ul>
<b><i>Hazards</i></b> may include:	<ul style="list-style-type: none"> <li>• environmental, including: <ul style="list-style-type: none"> <li>• improper use of hazardous material and other chemicals</li> <li>• improper use or emission of ODS and SGG; emissions may be caused by: <ul style="list-style-type: none"> <li>• transporting, storing and manually handling containers containing ODS and SGG agents</li> <li>• removing gaseous agent container valve assembly, manifold connection components and actuators</li> <li>• conducting interface tests during decommissioning procedures between container activating mechanisms and control and indicating equipment (CIE) and fire alarm system</li> </ul> </li> </ul> </li> <li>• ergonomic, such as incorrect manual-handling methods</li> <li>• any source of potential harm</li> <li>• equipment in a work site</li> <li>• hazards associated with electrical or mechanical faults</li> <li>• obstructive, such as blocked access to emergency entry or exit points</li> <li>• people in a work site</li> <li>• transport caps and safety devices</li> <li>• work methods, plans and procedures.</li> </ul>
<b><i>Tools, equipment and</i></b>	<ul style="list-style-type: none"> <li>• hand tools, including: <ul style="list-style-type: none"> <li>• hammers</li> </ul> </li> </ul>

<b>materials</b> may include:	<ul style="list-style-type: none"> <li>• pliers</li> <li>• power tools, including battery drills</li> <li>• screwdrivers</li> <li>• spanners</li> <li>• manual-handling aids, including: <ul style="list-style-type: none"> <li>• hand trucks</li> <li>• hooks</li> <li>• lifting magnets</li> <li>• lifting straps</li> <li>• suction grips</li> <li>• trolleys</li> <li>• wheelbarrows</li> </ul> </li> <li>• fire equipment spare parts, including: <ul style="list-style-type: none"> <li>• anti-tamper seals</li> <li>• hoses</li> <li>• labels</li> <li>• nozzles</li> <li>• pressure indicators</li> <li>• seals</li> <li>• service tags</li> <li>• valves</li> </ul> </li> <li>• non-licensed mechanical-handling aids, including: <ul style="list-style-type: none"> <li>• cranes</li> <li>• hoists</li> <li>• manually-operated forklifts and pallet trucks.</li> </ul> </li> </ul>
<b>System components and materials</b> may include:	<ul style="list-style-type: none"> <li>• actuators</li> <li>• agent discharge nozzles</li> <li>• agent distribution pipework and hose networks</li> <li>• control equipment</li> <li>• detection devices</li> <li>• fittings between container valves</li> <li>• flexible discharge hose and fittings, including hose check valve connected between container valve and fixed pipework manifold arrangement</li> <li>• gaseous agent container bank manifold connections</li> <li>• gaseous agent container discharge valves</li> <li>• gaseous agent containers, such as tanks and cylinders</li> <li>• pilot and slave tubes.</li> </ul>
<b>Actuators</b> (also known as actuation control devices)	<ul style="list-style-type: none"> <li>• electrical operation: signal generated from CIE panel as part of a fire alarm detection system</li> </ul>

may include:	<ul style="list-style-type: none"><li>• manual operation: by direct push lever or pull cable system</li><li>• mechanical operation</li><li>• pneumatic operation.</li></ul>
<b>Documentation</b> may include:	<ul style="list-style-type: none"><li>• corrective action reports</li><li>• customer recommendation forms</li><li>• equipment recommendation forms</li><li>• expense claims</li><li>• job cards</li><li>• maintenance record system</li><li>• manufacturers' system documentation</li><li>• product documentation</li><li>• service agreements</li><li>• test results and test reports.</li></ul>

## Unit Sector(s)

Fire protection equipment

## Custom Content Section

Not applicable.