



Australian Government

Department of Education, Employment and Workplace Relations

CPPFES2043A Prevent ozone depleting substance and synthetic greenhouse gas emissions

Release: 1

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Modification History

Revised unit

Unit updated and equivalent to PRMPFES43A Prevent ozone depleting substance and synthetic greenhouse gas emissions

Unit Descriptor

This unit of competency specifies the outcomes required to identify and describe agreements, protocols, legislation, regulations, codes of practice and handling licences developed to reduce ozone layer depletion and global warming.

Application of the Unit

This unit of competency supports individuals responsible for:

- complying with legal, industry, regulatory and licensing requirements relating to ozone depleting substance (ODS) and synthetic greenhouse gas (SGG) extinguishing agents used in fire protection
- considering the impact of work practices in the fire protection industry on ozone layer depletion and global warming
- proposing changes to reduce the risk of accidental emissions that contribute to ozone layer depletion and global warming.

Licensing/Regulatory Information

The unit supports one or more fire protection industry extinguishing agent handling licences (EAHL) 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 the use of ODS and SGG extinguishing agents.	1.1	Requirements of relevant <i>rules and regulations</i> are <i>confirmed</i> and applied to <i>work procedures</i> to prevent ODS and SGG emissions.
		1.2	<i>Compliance requirements are checked</i> and <i>action</i> is taken according to organisational policies and procedures, ODS and SGG policies and procedures, and best practice requirements.
2	Identify ODS and SGG handling licences, trading authorisations and usage permits.	2.1	Types of ODS and SGG <i>extinguishing agent handling licences</i> , licence requirements and <i>entitlements of licensees</i> are identified.
		2.2	Extinguishant trading authorisations are identified.
		2.3	Halon special permit usage requirements are identified.
3	Apply an understanding of ozone layer depletion and global warming.	3.1	Role and functions of <i>ozone layer</i> are identified and explained.
		3.2	Factors involved with, and effects of, <i>global warming</i> are identified and described.
		3.3	<i>ODS and SGG extinguishing agents</i> used in fire protection industry are identified by type.
		3.4	<i>Effect of ozone depletion and global warming</i> on human health, environment and fire protection industry work practices is described.
		3.5	Relevant fire protection industry ODS and SGG work practices are identified.

- 3.6 Improvements to ODS and SGG work practices are identified and proposed to reduce the risk of accidental emissions.

Required Skills and Knowledge

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

Required skills

- language, literacy and numeracy skills to:
 - communicate with others clearly and concisely, verbally and in writing
 - read and comply with work industry regulations and codes of practice
 - interpret information
- initiative and enterprise skills to:
 - seek advice on license requirements
 - apply understanding of ozone layer depletion and global warming to change and improve fire protection industry work practices
 - identify and act upon learning opportunities
- technology skills to use technology to access information

Required knowledge

- effect of ozone layer
- actions to take where a breach of ODS and SGG policies and procedures occurs
- effect of:
 - ODS and SGG emissions on ozone depletion and global warming
 - ozone depletion and global warming on environment and human health
- factors involved in global warming
- implications of not applying ODS and SGG legislative requirements to the workplace
- key features of:
 - legislation, regulations and standards applicable to ozone protection in the fire protection industry
 - fire protection industry codes of practice
- ODS and SGG substances used in the fire protection industry
- ODS and SGG EAHF features and requirements, authorisations and permit requirements
- relevant federal, state or territory legislation that affects organisational operations

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 oral or written questioning covering: • underpinning knowledge of the effects of ODS and SGG emissions and current arrangements • workplace examples of action taken to reduce risk of emissions and responses to potential or actual breaches of legislation.
Critical aspects for assessment and evidence required to demonstrate competency in this unit	A person who demonstrates competency in this unit must be able to provide evidence of the required skills and knowledge specified in this unit. In particular the person should demonstrate the ability to: • apply understanding of ozone layer depletion and global warming for: • discussing the effect of ODS and SGG emissions on the ozone layer and global warming • describing the impact of ozone depletion and global warming on human health and the environment • assessing impact on fire protection industry work practices • proposing changes to fire protection industry work practices to meet ODS and SGG legal requirements • taking action to respond to potential and actual breaches of ODS and SGG regulations • locate, interpret and explain: • ODS and SGG legal requirements for handling extinguishing agents in the fire protection industry • EAHL types, associated responsibilities, usage permits and trading authorisations • agreements, protocols, regulatory requirements, fire protection industry code of practice, and Australian standards relevant to EAHL.
Context of and specific resources for assessment	Assessment of essential underpinning knowledge may be conducted in an off-site context. It is to comply with relevant regulatory or Australian standards' requirements. Resource implications for assessment include: • assessment documentation • necessary legislation and regulatory documents, manuals, textbooks and other relevant documentation • training and assessment record books.

Method of assessment	Assessment methods must: • satisfy the endorsed Assessment Guidelines of the Property Services Training Package • 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 • reinforce the integration of employability skills with workplace tasks and job roles • confirm that competency is verified and able to be transferred to other circumstances and environments.
Guidance information for assessment	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. 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. This unit could be assessed on its own or in combination with other units relevant to the job function.

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.

<i>Rules and regulations</i> may include:	• dangerous goods regulations • environmental regulations • fire protection industry codes of practice • licensing arrangements, such as EAHL • manufacturers' system manuals • ODS and SGG legislation, codes and regulations, including penalties and policing • OHS legislation, regulations and codes • other relevant legislation relating to fire protection equipment, including: • international shipping codes • marine codes for different Australian States • requirements of Australian petroleum industry
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	• relevant agreements and protocols • relevant Australian standards, such as: • AS 1851 Maintenance of fire protection systems and equipment • note: Australian standards are frequently revised and users must always check for currency and amendments • relevant federal, state and territory Acts, regulations and codes.
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Requirements may be confirmed with:	• colleagues • managers • supervisors • team leaders.
Work procedures may include:	• assignment instructions • equipment manufacturers' requirements • instructions from colleagues, supervisor or manager • personal protective equipment requirements • reporting and documentation requirements • specific customer requirements.
Checking compliance requirements may include ensuring that:	• persons trading in ODS and SGG hold the appropriate trading authorisation or ODS and SGG permit • scope of work to be undertaken is covered by the appropriate license.
Action may include:	• advising customer • documenting non-compliance • making equipment safe • reporting, as required.
Types of extinguishing agent handling licence include:	• control systems installation, commissioning and decommissioning • fixed system installation and decommissioning • fixed system testing and maintenance • portable fire extinguisher maintenance • recovery, reclamation, fill and recycling • warehouse maintenance.
Entitlements of licensees include:	• portable fire extinguisher maintenance licence entitles holder: • to charge and recharge a portable fire extinguisher with non-ODS and SGG agent • note: a reclaim and refill licence is required to charge or recharge a portable extinguisher with ODS or SGG • repair the extinguisher valve • fixed system installation and decommissioning licence entitles holder to: • install and decommission a gaseous fire-extinguishing system (fire protection equipment) including to: • install and disconnect actuation devices (mechanisms) to and from container valves • install and disconnect gaseous agent containers • install and disconnect interconnections to other gaseous system containers • install and disconnect ancillary equipment connections to manifold and pipework

	• attach and remove transport equipment, such as valve outlet and actuator port caps, plugs and locking devices installed to prevent accidental discharge • commission actuation control devices set to operate and engage safety devices as needed and decommission these devices • fixed system testing and maintenance licence entitles holder to: • test and maintain a gaseous fire-extinguishing system (fire protection equipment), including to: • test actuation release systems • disconnect and reconnect actuation devices (mechanisms) • disconnect and reconnect interconnections to other gaseous system containers • disconnect and reconnect ancillary equipment connections from containers to manifold and pipework • test actuation devices (mechanisms) • perform tests and maintenance on any fire detection and alarm system, including any remote operation panel and actuation and control system that interfaces with or forms part of a gaseous fire-extinguishing system • perform tests and maintenance on gaseous agent containers and ancillary equipment connections from containers to manifold and pipework • recovery, reclamation, fill and recycling licence entitles holder to: • recover, reclaim, fill and recycle an extinguishing agent into and from a fire extinguisher and gaseous fire-extinguishing system container, from and to a bulk agent container • warehouse maintenance licence entitles holder to: • monitor for leakage stocks of extinguishing agent bulk agent containers in a warehouse and, as needed, to transfer extinguishing agent from a leaking storage container • control systems installation, commissioning and decommissioning licence entitles holder to: • install, commission and decommission a fire detection and alarm system, including any remote operation panel and actuation and control system that interfaces with or forms part of a gaseous fire-extinguishing system.
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Ozone layer facts include:	• composed of ozone (O₃), which is a form of oxygen in which the oxygen molecule contains three atoms of oxygen instead of the usual two • ozone forms less than 0.4 parts per million of the atmosphere • about 90% of ozone is in upper part of atmosphere (stratosphere) • most ozone is in the layer from 20 to 25 km above the earth's surface.
Global warming involves:	• carbon dioxide found in small quantities (about 350 parts per million) in the atmosphere • carbon dioxide trapping infra red (heat) radiation and warming the atmosphere – the greenhouse effect.
ODS and SGG extinguishing agents may include: Note list format: product name (other names) use Check the latest amendments to the Ozone Protection and Synthetic Greenhouse Gas Management Act for the current list of ODS and SGG extinguishing agents.	• ODS and SGG extinguishing agents commonly used in Australia: • FM200 (FE-227 Heptafluoropropane, HFC-227ea) used as a total flooding extinguishing agent and as a replacement for Halon 1301 • Halon 1211 (BCF, Halon 1211 BCF, Bromochlorodifluoromethane) used as a streaming agent – requires a special permit in Australia • Halon 1301 (BTM, Halon 1301 BTM, Bromotrifluoromethane) used as a total flooding agent – requires a special permit in Australia • NAF-P-III (HCFC Blend C) used as a streaming agent • NAF-P-IV (HCFC Blend E) used as a streaming agent • NAF-S-III (HCFC Blend A) used as a total flooding agent • SF₆ (Sulfurhexafluoride) used as an inerting agent in sealed high voltage switchgear • ODS and SGG extinguishing agents not commonly used in Australia: • Blitz III (HCFC Blend D) used in flooding systems • 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) • FC-2-1-8 (CEA-308) used in flooding systems • FC-3-1-10 (CEA-410) used in flooding systems • FC-5-1-14 (CEA-614) used as a streaming agent • FE-13 (Trifluoromethane, HFC-23) used as a total flooding agent • FE-241 (Chlorotetrafluoroethane, HCFC-124) used as a total flooding agent for non-occupied spaces and as a streaming agent • FE-25 (Pentafluoroethane, HFC-125) used in inerting and

	explosion suppression applications • FE-36 (Hexafluoropropane, HFC-236fa) used in portable fire extinguishers – is a replacement for Halon 1211 and Halon 1301 • FM100 (HBFC-22B1) used in portable fire extinguishers • Halon 2402 (Dibromotetrafluoroethane) limited use in military systems – requires a special permit in Australia • Halotron I (HCFC Blend B or HCFC-123) used as a total flooding agent and streaming agent • Halotron II (blend of HFC-143a and HFC-125) used as a total flooding agent and as a replacement for Halon 1301 • 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) • HFC-134a (Unsymmetric tetrafluoroethane) used as a propellant in some powder fire extinguishers.
<i>Effect of ozone depletion and global warming</i> on human health and the environment may include:	• changes to work practices, including those in the fire protection industry • constraints on: • aquatic ecosystems • human immune system • increased: • incidence of photochemical smog • risk of: • cataracts • skin cancer • inhibited growth of plants • reduced production of agriculture.

Unit Sector(s)

Fire protection equipment

Custom Content Section

Not applicable.