



FIRE PROTECTION INDUSTRY (ODS & SGG) BOARD

CODE OF PRACTICE

FOR THE REDUCTION OF EMISSIONS OF OZONE DEPLETING & SYNTHETIC GREENHOUSE GAS FIRE EXTINGUISHING AGENTS

This Code of Practice applies to all fire system practitioners who handle or companies that trade in extinguishing agents described in Schedule One of the Ozone Protection & Synthetic Greenhouse Gas Management Act 1989



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1. FOREWORD

Two issues emerged in the early 1980's that focused the world's attention on the atmosphere. These issues were the ongoing depletion of the stratospheric ozone layer and the enhanced greenhouse effect (leading to global warming).

Both effects are exacerbated by the emissions of vaporising liquids used in fire fighting applications. For example extinguishing agents such as halon have a very high ozone depleting potential, while the release of hydrofluorocarbons such as FM 200 contribute to global warming.

These extinguishing agents are referred to as ozone depleting substances and synthetic greenhouse gases or ODS & SGG. A full list of ODS & SGG substances is contained in Schedule 1 of the *Ozone Protection and Synthetic Greenhouse Gas Management Act 1989*.

The objective of this Code of Practice is to guide practitioners in the fire protection industry in the handling, storage and disposal of ODS & SGG to reduce emissions into the environment and to ensure compliance with the provisions of the legislation.

This Code is not exhaustive, but covers many of the issues associated with managing ODS & SGG extinguishing agents. It should therefore be used as a guide to reducing emissions and complying with Commonwealth legislation.

It is also not a technical design document and must be used with other standards and codes of practice.

Compliance with this Code by those who manufacture, service, install and decommission fire fighting equipment using ODS & SGG is a prerequisite of the Fire Protection Industry (ODS & SGG) Board for any authorisation granted by the Board.

Compliance with this code is also a requirement of any person seeking approval to discharge a scheduled substance, other than where the approval allows for a variation.

The overriding obligation of this code is to prevent the unnecessary discharge of any ODS & SGG extinguishing agent.

2. REFERENCED DOCUMENTS

The applicable standards include those listed below as current at the time of the installation, manufacture or system upgrade.

- AS 1851 - Maintenance of Fire Protection Systems and Equipment
- AS 2030.1 – The Verification, Filling, Inspection, Testing and Maintenance of Cylinders for Storage and Transport of compressed Gas – Cylinders for Compressed Gases other than Acetylene.
- AS 4214 - Gaseous Fire Extinguishing Systems
- AS 4077.1 - Specifications for Halon 1211 and Halon 1301
- AS 4077.2 - Code of Practice for Safe Handling and Transfer Procedures of Halon 1211 and Halon 1301
- AS 4360 – Risk Management
- ISO 14520 – Gaseous Fire Extinguishing Systems – Physical Properties and System Design
- AS 4211.3-1996 – Gas recovery or combined recovery and recycling equipment
- FPI (ODS & SGG) Board Ozone Fact Sheets – issued by the FPI (ODS & SGG) Board

3. DEFINITIONS

The definitions below apply to this Code of Practice.

- **(the) Act:** Refers to the *Ozone Protection and Synthetic Greenhouse Gas Management Act 1989*.
- **Bulk containers:** Containers other than fire protection system containers or extinguishers used to store ODS or SGG.
- **Container:** A storage vessel used for the storage and/or transport of controlled substances used in fire protection equipment. It encompasses terms such as bulk agent containers, fixed system containers and fire extinguishers.
- **Destruction:** A process whereby ODS & SGG extinguishing agents are permanently transformed or decomposed into substances which are no longer controlled under the Act.
- **Extinguishing agent handling licence (EAHL):** Means a licence as described in Table 322 of the Regulations permitting a person to handle ODS & SGG extinguishing agents.
- **Extinguishing agent trading authorisation:** Means an authorisation issued under Regulation 331 permitting a person to acquire, store or dispose of an ODS & SGG extinguishing agent in bulk containers that is for use, or has been used, in fire protection equipment.
- **Fire extinguisher:** Means a wheeled or hand carried extinguisher containing an ODS & SGG extinguishing agent.
- **Fire protection equipment:** Means equipment that releases an extinguishing agent to prevent, control or extinguish a fire, or suppress an explosion.
- **Fire Protection Industry (Ozone Depleting Substances & Synthetic Greenhouse Gas) Board (FPI [ODS & SGG] Board):** Means the Board appointed by the Minister under Regulation 311.
- **Fixed fire protection system:** An installed fire protection system where ODS & SGG extinguishing agent is distributed via pipes to discharge nozzles.
- **Halon special permit:** Means a permit issued under the provisions of Regulation 341 permitting a person to possess halon that is for use in fire protection equipment.
- **ODS & SGG extinguishing agent:** Means a substance listed in schedule one of the Act that can be used to prevent, control or extinguish a fire, or suppress an explosion (Note: many substances listed in the Act are both ozone depleting and greenhouse gases. However, this term shall be used to describe those that may only be ozone depleting or greenhouse gases).
- **Reclaim:** Means processing of an ODS & SGG extinguishing agent to make it suitable for reuse.
- **Recover:** Means to remove and store an ODS & SGG extinguishing agent in any condition.
- **Recycle:** To use a recovered or reclaimed ODS & SGG extinguishing agent.
- **Returned agent:** Any ODS & SGG extinguishing agent recovered from equipment and returned to the supplier for reclamation or disposal.
- **(the) Regulations:** Refers to the *Ozone Protection and Synthetic Greenhouse Gas Management Regulations 1995*.

4. OBLIGATIONS UNDER THE OZONE PROTECTION AND SYNTHETIC GREENHOUSE GAS MANAGEMENT ACT 1989

4.1 Handling ODS & SGG Extinguishing Agents

4.1.1 Extinguishing agent handling licence

Individuals who handle or work with any fire protection equipment, where such activities may cause an emission of an ODS & SGG extinguishing agent, must hold an extinguishing agent handling licence (EAHL). This includes handling of halon.

EAHL are issued by the Fire Protection Industry (ODS & SGG) Board.

Activities that may cause an emission include connecting or disconnecting any components of an ODS & SGG extinguishing agent storage container. In particular the regulations state that handling includes:

- Decanting an ODS & SGG extinguishing agent;
- Installing or maintaining fire protection equipment; and
- Decommissioning or disposing of fire protection equipment.

Handling does not include the transport of fire protection equipment or the use of fire protection equipment to prevent, control or extinguish a fire or suppress an explosion.

4.1.2 Responsibility of individuals to hold the appropriate EAHL

EAHL entitle a licence holder to engage in work described in Table 322 of the regulations. A person shall not work in areas outside those for which their EAHL permits.

This table applies to containers which are filled with ODS & SGG extinguishing agents

| Item | Licence | Entitlement of licensee |
|-------------|---|--|
| 1 | Portable Fire Extinguisher Maintenance Licence | To charge and recharge a portable fire extinguisher, and repair the extinguisher valve |
| 2 | Fixed System Installation and Decommissioning Licence | <p>(1) To install and decommission a gaseous fire extinguishing system (fire protection equipment) including:</p> <ul style="list-style-type: none"> (a) to install and disconnect actuation devices (mechanisms) to and from container valves; and (b) to install and disconnect gaseous agent containers; and (c) to install and disconnect any interconnections to other gaseous system containers; and (d) to install and disconnect ancillary equipment connections to manifold and pipework; and (e) to attach and remove transport equipment, such as valve outlet and actuator port caps, plugs and locking devices installed to prevent accidental discharge <p>(2) Commission actuation control devices set to operate and engage safety devices as needed and decommission these devices</p> |

| Item | Licence | Entitlement of licensee |
|------|---|---|
| 3 | Fixed System Testing and Maintenance Licence | To test and maintain a gaseous fire extinguishing system (fire protection equipment), including: <ul style="list-style-type: none"> (a) to test actuation release systems; and (b) to disconnect and reconnect actuation devices (mechanisms); and (c) to disconnect and reconnect any interconnections to other gaseous systems containers; and (d) to disconnect and reconnect ancillary equipment connections from containers to manifold and pipework; and (e) to test actuation devices (mechanisms); and (f) to perform any 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; and (g) to perform any tests and maintenance on gaseous agent containers and ancillary equipment connections from containers to manifold and pipework |
| 4 | Recovery, Reclamation, Fill and Recycling Licence | 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 |
| 5 | Warehouse Maintenance Licence | To monitor for leakage stocks of extinguishing agent bulk agent containers in a warehouse and, as needed, to transfer the extinguishing agent from a leaking storage container |
| 6 | Control Systems Installation, Commissioning and Decommissioning Licence | 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 |

Note: an EAHL is not required for activities such as in-situ liquid level testing where there is no risk of an emission.

Table 322 Licence and entitlements (from the Ozone Protection and Synthetic Greenhouse Gas Management Regulations 1995)

4.1.3 Responsibility of individuals to maintain a current EAHL

It is the responsibility of individuals to maintain a current licence.

4.1.4 Responsibilities of EAHL holders and trainees

A person who handles any ODS & SGG extinguishing agent, but is not sufficiently experienced or qualified to obtain a qualified or experienced persons EAHL, must hold an extinguishing agent trainee licence.

It is the responsibility of a person who is not qualified or experienced to obtain an extinguishing agent trainee licence before commencing work with any ODS & SGG extinguishing agents. Applications must be made to the FPI (ODS & SGG) Board on the appropriate forms.

A trainee licence holder shall only work under the supervision of a person with the EAHL appropriate to the work being undertaken.

An EAHL holder must provide an appropriate level of supervision to all trainees they are supervising and must accept a reasonable level of responsibility for the actions of those trainees.

EAHL holders shall ensure that trainees under their supervision hold a current trainee extinguishing agent licence.

4.1.5 Responsibilities of employers

Employers offering services involving ODS & SGG extinguishing agents shall ensure that all relevant employees have and maintain a current and appropriate EAHL.

Where a person holds a trainee licence, employers shall ensure that they are always supervised by the holder of an EAHL appropriate to the work being undertaken.

4.2 Trading in ODS & SGG Extinguishing Agents

4.2.1 Extinguishing agent trading authorisation

A person shall not acquire, store, dispose of or distribute any ODS & SGG extinguishing agent in bulk containers unless authorised by the FPI (ODS & SGG) Board.

Extinguishing agent trading authorisations are generally issued by the FPI (ODS & SGG) Board to companies. However, they may also be issued to individuals where appropriate.

An extinguishing agent trading authorisation is not required for ODS & SGG already contained in fire protection equipment.

An application for a trading authorisation shall be made on the appropriate form provided by the Board.

4.2.2 Responsibility of extinguishing agent trading authorisation holders

Holders of Trading Authorisations are bound by the provisions of the regulations as detailed in Regulation 332 – Conditions on authorisations. They will also adhere to any conditions specified by the FPI (ODS & SGG) Board from time to time.

Trading authorisation holders shall regularly monitor for leakage all stocks of extinguishing agent stored in bulk agent containers. Holders shall also ensure that those staff who monitor stocks and who may transfer extinguishing agent from a leaking storage container shall hold a *Warehouse maintenance licence* (EAHL 5). Transfer of any extinguishing agent will comply with the *Criteria for Certification of ODG & SGG Extinguishing Agent Recovery/ Recycling Equipment (Appendix 1)*.

Trading authorisation holders shall adhere to the commitments and procedures contained within their risk management plans.

Trading authorisation holders shall maintain accurate records in accordance with the provisions of the regulations and will provide that information every quarter to the FPI (ODS & SGG) Board on a form approved by the Board.

4.3 Possessing Halon

4.3.1 Halon

A person or company shall not possess halon for use in fire protection equipment unless:

- authorised to do so by a halon special permit,
- authorised to do so by a special circumstances exemption
- the company is an approved extinguishing agent destruction facility, or
- the halon is located in equipment that is approved by regulation 304(4).

Where a company or individual holds any halon other than where permitted, they shall as soon as practicable apply for a halon special permit or dispose of that halon in accordance with Regulation 304(2).

4.3.2 Application for a halon special permit

Individuals or companies seeking a halon special permit shall ensure that there is no alternative to the halon's use, in accordance with the provisions of Regulation 341. Applicants shall provide information to support that conclusion to the FPI (ODS & SGG) Board along with their application.

An application for a halon special permit shall include a risk management plan. This plan shall be prepared in accordance with AS 4360:2004 and must include information about how the following matters will be addressed:

- emissions from leaks in, or the failure of, storage containers;
- damage by intruders;
- the transfer of extinguishing agents from a leaking storage containers; and
- show how the premises will be operated in a way that is consistent with Australia's obligations under the Montreal Protocol.

Applications shall be made on the appropriate form provided by the FPI (ODS & SGG) Board.

4.3.3 Responsibility of halon special permit holders

Holders of halon special permits shall comply with the conditions attached to their permit and to the commitments and procedures contained within their risk management plans.

Permit holders shall maintain accurate records in accordance with the provisions of the regulations and will provide that information every quarter to the FPI (ODS & SGG) Board on a form approved by the Board.

Permit holders shall ensure that the use of the halon remains for a purpose that is necessary to protect human life or operate equipment critical to the community and that there is no alternative to halon. Should alternatives become available, the holder shall take action to replace the halon with that alternative within a reasonable time.

Holders of halon special permits shall ensure that all personnel handling halon hold the appropriate EAHL.

4.4 Discharges of ODS & SGG Extinguishing Agents

4.4.1 Approval to discharge an ODS & SGG extinguishing agent

With the exception of discharges for the purpose of suppressing a fire, a person shall not discharge or allow a discharge of an ODS & SGG extinguishing agent unless a permit to discharge has been granted by the FPI (ODS & SGG) Board.

In accordance with regulation 305 a permit to discharge an ODS & SGG extinguishing agent may only be granted to:

- Test the design of a fire extinguishing system or a fire extinguisher; or
- Calibrate equipment.

A permit to discharge shall only be applied for where the applicant has determined that there is no reasonable alternative.

An application for a permit to discharge shall be made on a form approved by the FPI (ODS & SGG) Board and shall detail the reasons for the discharge and actions being taken to minimise the amount of discharge. It shall also detail the alternatives considered and the reasons for their rejection.

A person granted a permit shall only allow a discharge to occur in accordance with the permit. The permit holder shall also do everything reasonably practical to minimise the amount of ODS & SGG extinguishing agent discharged.

4.4.2 Notification of a discharge

Trading Authorisation Holders that have filling stations should record the reason for filling ODS & SGG fire suppression system containers using the following classifications:

- Initial system fill,
- Container hydrostatic test,
- Repair and top up of a leaking container, and,
- Refill following discharge.

Where possible, information on the cause of discharges should also be recorded.

5 FIRE EXTINGUISHERS CONTAINING ODS & SGG AGENTS

5.1 Use of Fire Extinguishers Containing ODS & SGG Agents

A person shall not discharge a fire extinguisher containing ODS & SGG extinguishing agent other than for the purpose of extinguishing a fire, or with the prior written approval of the Fire Protection Industry (ODS & SGG) Board. (Refer section 4.4 of this code).

An application for a permit to discharge must be made on the appropriate form (refer section 4.4.1).

5.2 Sale, Distribution & Possession

A person or a company does not need an approval to sell or distribute a fire extinguisher already containing an ODS & SGG extinguishing agent, with the exception of those containing Halon. (Refer section 4.2 of this code).

5.3 Inspection

All fire extinguishers containing an ODS & SGG extinguishing agent shall be inspected and tested at the frequencies set out in the applicable schedules of AS 1851.

Personnel carrying out 6-monthly and yearly maintenance, as defined in AS 1851, of fire extinguishers containing ODS & SGG extinguishing agents are not required to hold an EAHL. However, employers should ensure that these personnel are aware of the environmental effects of the emission of these substances into the atmosphere. These unlicensed personnel shall not carry out any activities that carry the risk of accidental discharge, such as the removal of a safety pin or any components associated with discharging the extinguisher.

Any defects identified during inspection which could result in release of an ODS & SGG extinguishing agent shall be immediately reported to the client and that advice will be recorded.

5.4 Maintenance

Personnel carrying out 5 yearly/6 yearly maintenance as defined in AS1851, or the recharging of fire extinguishers containing ODS & SGG extinguishing agents, shall hold a *Portable fire extinguisher maintenance licence* (EAHL 1). Where reclamation or recovery is undertaken a person shall hold a *Recovery, reclamation, fill and recycling licence* (EAHL 4).

Any defects identified which may result in the release of an ODS & SGG extinguishing agent shall be immediately reported to the client and remedial action taken to prevent any emission.

Where onsite rectification of an extinguisher is not practicable, the extinguisher shall be immediately removed from service. It shall also have the safety pin wired in place, cleared labelled as defective and taken to a workshop for rectification.

Prior to undertaking maintenance of a halon fire extinguisher, the EAHL holder shall ensure that the extinguisher is intended to be used for a permitted use (Refer section 4.3 of this code). If it is not, the EAHL licence holder and their employer (if any) shall refuse to service that extinguisher and advise the owner that disposal of the extinguisher is required in accordance with regulation 304.

6 FIXED ODS & SGG FIRE PROTECTION SYSTEMS

6.1 Installation and Decommissioning of Fixed Systems

In accordance with the regulations (see table 322) installation and decommissioning shall mean:

- to install and disconnect actuation devices (mechanisms) to and from container valves; and
- to install and disconnect gaseous agent containers; and
- to install and disconnect any interconnections to other gaseous system containers; and
- to install and disconnect ancillary equipment connections to manifold and pipework; and
- to attach and remove transport equipment, such as valve outlet and actuator port caps, plugs and locking devices installed to prevent accidental discharge

It shall also mean to commission actuation devices set to operate and engage safety devices as needed and decommission these devices.

6.2 Installation

Installation of new or modifications/additions to existing fixed fire suppression systems containing ODS & SGG extinguishing agents shall only be completed by persons holding a *Fixed system installation and decommissioning licence* (EAHL 2).

An EAHL is not required to install pipework other than that which directly attaches to actuating devices or ODS & SGG extinguishing agent container valves.

EAHL holders shall ensure that all installations comply with AS 4214 or appropriate international standard.

Note: the installation of a fixed halon system is not permitted other than in a place permitted by regulation 304 (4) or the person for which the system is to be fitted has a halon special permit.

6.3 Commissioning

A fixed fire suppression system using an ODS & SGG extinguishing agent shall be commissioned by a person holding either a *Fixed system installation and decommissioning licence* (EAHL 2) or a *Fixed system testing and maintenance licence* (EAHL 3).

Prior to commissioning a system, a person holding either an EAHL 2 or EAHL 3 shall inspect all actuation systems and container valves to ensure that there will be no unnecessary discharge of any ODS & SGG extinguishing agent. These activities shall be completed only after a person holding a *Control systems installation, commissioning and decommissioning licence* (EAHL 6) has completed their commissioning activities and all actuation devices have been reset (refer section 7.2).

Where a discharge of the system is necessary for the purpose of testing, this may only be done with the prior written approval of the FPI (ODS & SGG) Board. An application for a permit to discharge must be made on the appropriate form (refer section 4.4.1).

6.4 Maintenance

All fixed fire suppression systems, containing any ODS & SGG extinguishing agent shall be inspected, tested and maintained in accordance with AS 1851.

Before any maintenance is carried out, actuation devices must be removed from the container valves or physically disconnected by the holder of an EAHL 2 or EAHL 3 to prevent discharge of the system. Operation of an electrical isolation device or switch does not satisfy this requirement.

Prior to re-instating actuation devices the EAHL holder shall reset each device in accordance with the manufacturer's requirements.

A person holding an EAHL 3 is permitted to undertake electrical and mechanical maintenance activities associated with fire protection systems containing ODS & SGG extinguishing agents.

A person holding an EAHL 2 is permitted to undertake mechanical maintenance activities involving the installation or disconnection of actuation devices, agent containers or interconnection within a gaseous system.

Once an ODS & SGG extinguishing agent container has been disconnected and fitted with caps, plugs, locking devices, etc, to prevent accidental discharge, an EAHL is not required to complete other maintenance activities. Refitting these devices may only be undertaken by a person holding an EAHL 2 or EAHL 3.

6.5 Decommissioning

The decommissioning of a fixed fire suppression system which contains any ODS & SGG extinguishing agent shall only be carried out by persons holding a *Fixed system installation and decommissioning licence* (EAHL 2).

Decommissioning shall be in accordance with the following procedure:

- All container initiating/actuation devices shall be disconnected and rendered inoperative.
- All container discharge outlets shall be capped providing this does not obstruct the safety/pressure relief valve.
- Caps must be rated to one and a half times the working pressure of the container and must enable the controlled substance to vent in the event of accidental discharge.
- The container must be handled and stored in a safe and secure manner that will not cause or permit its contents to be released to the atmosphere.

Once the ODS & SGG extinguishing agent container has been disconnected from the fire suppression system, dismantling of the pipe-work etc may be undertaken by a person who does not hold an EAHL.

ODS & SGG extinguishing agent containers from decommissioned systems must be returned to a company holding an extinguishing agent trading authorisation or to an extinguishing agent destruction facility.

7 FIRE DETECTION, ACTUATION & CONTROL SYSTEMS

7.1 Installation

Installation of new or modifications/additions to existing detection, actuation and control systems, associated with a fixed ODS & SGG extinguishing agent fire protection system shall only be completed by a person holding a *Control systems installation, commissioning and decommissioning licence* (EAHL 6). This includes panel configuration and programming changes.

The electronic detection, actuation and control systems associated with new fixed fire suppression installations containing any ODS & SGG extinguishing agent shall comply with the respective parts of AS 4214 or appropriate international standard.

Note, an EAHL 6 is not required for installation activities prior to connection or commissioning of detection and control systems. However, an EAHL 6 holder shall inspect a system before connecting or commissioning the detection and control systems.

7.2 Commissioning

The detection, actuation and control systems associated with a fixed fire suppression installation containing an ODS & SGG extinguishing agent shall be commissioned by a person holding a *Control systems installation, commissioning and decommissioning licence* (EAHL 6).

Commissioning activities shall be completed before actuating devices are connected to the container valves by an EAHL 2 or EAHL 3 holder (refer section 6.2).

Prior to commissioning a system, an EAHL 2 or EAHL 3 holder shall inspect the control system and reset all actuation devices to ensure that no unnecessary discharge of an ODS & SGG extinguishing agent occurs.

Where discharge of a system is necessary for the purpose of testing, this may only occur with the prior written approval of the FPI (ODS & SGG) Board. An application for a permit to discharge must be made on the appropriate form (refer section 4.4.1).

7.3 Maintenance

All fixed fire suppression systems, containing ODS & SGG extinguishing agents shall be inspected, tested and maintained in accordance with AS 1851.

Before any maintenance is carried out, actuation devices must be removed from container valves or physically disconnected by the holder of an EAHL 2 or EAHL 3. Operation of an electrical isolation device or switch does not satisfy this requirement.

Prior to re-instating actuation devices an EAHL 2 or EAHL 3 holder shall reset each device in accordance with the manufacturer's requirements.

A person holding an EAHL 3 is permitted to undertake electrical and mechanical maintenance activities associated with fire protection systems containing ODS & SGG extinguishing agents.

A person holding an EAHL 6 is permitted to undertake electrical maintenance activities provided the actuating devices have been removed from the ODS & SGG extinguishing

agent containers by a person holding an EAHL 2 or EAHL 3. Refitting these devices may only be undertaken by a person holding an EAHL 2 or EAHL 3.

Any modifications required as a result of maintenance may only be done by a person holding an EAHL 6.

7.4 Decommissioning

Prior to the decommissioning of detection, actuation and control systems associated with a fixed ODS & SGG extinguishing agent fire suppression system, all actuation devices shall be disconnected by a person holding EAHL 2 or EAHL 3.

An EAHL is not required for subsequent decommissioning/dismantling of a detection, actuation, control and discharge system.

8 RECOVERY AND RECLAMATION OF ODS & SGG FIRE EXTINGUISHING AGENTS

The recovery, recharge and transfer of ODS & SGG extinguishing agents shall only be carried out by a person holding a *Recovery, reclamation, fill and recycling licence* (EAHL 4)

To avoid contamination, operations involving the recovery and recycling of ODG & SGG extinguishing agents shall be kept separate from initial filling bulk extinguishing agent containers.

The equipment used for the recovery, recharge or transfer of ODG & SGG extinguishing agents shall comply with the requirements detailed in the appendix 1 - **Criteria for Certification ODG & SGG Recovery/Recycling Equipment**.

Containers used for the storage of ODS & SGG extinguishing agents that have been recovered shall be stored in a manner that will not cause or permit the release of any agent to the atmosphere. Containers shall be regularly monitored to ensure that should any release occur it is quickly detected and stopped.

Different types of recovered ODS & SGG fire extinguishing agents shall not be mixed.

Where an agent is being decanted into or out of bulk containers a extinguishing agent trading authorisation is required (see section 4.2).

The minimum quality requirements for recovered agents are dependant upon the intended use of the recovered agent:

- Extinguishing agents recovered as part of service and testing of containers, which are to be returned to the system from which they were recovered shall have all particulates & moisture removed.
- Extinguishing agents recovered and intended for resale shall be returned to the original manufacturer purity specifications as detailed in AS 4214 or AS 4077.1.
- Extinguishing agents recovered for disposal do not require cleaning.

9 HANDLING AND STORAGE OF ODS & SGG EXTINGUISHING AGENTS

ODS & SGG extinguishing agents stored in bulk containers shall be stored in a warehouse under the supervision of a person holding a *Warehouse maintenance licence* (EAHL 5). Staff within that warehouse who handle these agents may also require an EAHL or Trainee licence.

The procedural requirements of AS 4077.2 shall be the basis for the handling and storage of all ODS & SGG extinguishing agents.

Transferring ODS & SGG extinguishing agents from one container to another shall be carried out in accordance with the guidelines in AS 4077.2.

Containers holding ODS & SGG extinguishing agents shall be labelled to provide ready identification by emergency teams. Appropriate signage may also be a requirement under the relevant dangerous goods storage legislation.

Service personnel should make reference to the relevant Material Safety Data Sheets when handling ODS & SGG extinguishing agents.

Containers and valves shall be handled with care to avoid any damage that could lead to a discharge.

When a container is not in use, or is being transported, its valve shall be closed, valve actuation devices removed, the valve outlet sealing cap put in place and the valve protected by a transport cap or shroud.

Bulk containers shall be regularly leak-tested and leaking containers rectified or returned to the supplier.

10 DISPOSAL

Disposal of an ODS & SGG extinguishing agent shall be completed in a way that prevents emissions to atmosphere.

In accordance with the regulations ODS & SGG extinguishing agents may be delivered to the following for re-use or disposal:

- the operator of an approved extinguishing agent destruction facility; or
- the holder of an extinguishing agent trading authorisation; or
- the holder of a special circumstances exemption that is appropriate for the acquisition, possession or disposition of the agent; or
- the officer in charge of a fire station.

Transport of extinguishing agents for disposal shall be done in a manner that minimises the risk of any discharge. This shall include ensuring all safety devices are fitted, activating mechanisms are made inoperative, the valve outlet sealing cap put in place and the valve protected by a transport cap or shroud.

Destruction of a ODS & SGG extinguishing agent shall only be undertaken by an approved extinguishing agent destruction facility.

Appendix 1 – Criteria for Certification of ODG & SGG Extinguishing Agent Recovery/ Recycling Equipment

The requirements for certification of ODG & SGG Extinguishing Agent Recovery/Recycling Equipment are detailed below. Compliance with AS 4211.3-1996 should be achieved without negating any or all of these requirements.

| | Assessment Criteria | Certification activity |
|----|--|---|
| 1 | Any equipment which is used to recover ODG or SGG extinguishing agent, whether for recycling or storage must have the capability of a minimum rate of 95% recovery from the container. | Audit – Check records of transfers for quantities recovered (by weight), alternatively, witness transfer and record quantities. |
| 2 | If the ODG or SGG extinguishing agent is being recovered as part of hydro-testing or routine service requirements and is to be returned to the system from which it is recovered, it shall be cleaned or particulates and moisture prior to refilling into the system containers. If the extinguishing agent is being recovered for recycling/resale in another system, then the recovered agent shall conform to the purity requirements of the original manufacturers' specification. In the case of Halon 1211, purity shall conform to AS4077.1 | Audit – inspect transfer rig and identify particulate and moisture filter. Where ODG or SGG is being recovered for recycling/resale check for records of chemical analysis. |
| 3 | All equipment shall be leak free and a leak detector shall be used in conjunction with the system to ensure this. | Test – undertake leak test on equipment during actual transfer. |
| 4 | An emergency shut off procedure must be provided. | Audit – check operating procedure. |
| 5 | Safety and isolation equipment must be provided to prevent loss of product to atmosphere in the case of a malfunction. | Inspection – check isolations valves are fitted in transfer lines. |
| 6 | The operating procedures shall ensure that the maximum fill of each container does not exceed the limited specified in AS2030.1. | Audit – There should be a record for every transfer. |
| 7 | Personnel who use the equipment shall be fully trained in its operation, including emergency shut off procedures. | Audit – Evidence of appropriate EAHL for operators, operators manual for rig and training records. |
| 8 | Personnel who test and/or maintain the equipment must have a full knowledge of the equipment and associated regulatory requirements. | Audit – Evidence of appropriate EAHL, and technical knowledge of transfer rig. |
| 9 | All containers used in recovery and storage process shall comply with AS2030.1 requirements. This is applicable to both temporary storage containers used during transfer of product and bulk long term storage containers. | Audit – inspect containers for compliance to AS2030.1 |
| 10 | All hardware within the transfer equipment shall be compatible to the pressure and temperature requirements of the material to be recovered. This includes, but is not restricted to, filters and valves. | Audit – inspect transfer equipment |
| 11 | If the transfer equipment uses a pump, this pump shall be able to handle both liquid and vapour. | Audit – inspect transfer equipment and witness transfer of both liquid and vapour. |
| 13 | Transfer equipment shall withstand, without leakage or permanent deformation, a test pressure of not less than 1.5 times the anticipated normal working pressure. Pipe runs should be as short as possible. Hose, having a pressure rating at least twice the anticipated working pressure, may be used to make any necessary flexible connections. The filling hose should be provided with a valve at the outlet end. | Audit – view hydro-testing records or conduct pressure test. Verify pressure ratings of hose and that a valve is installed on the outlet of the filling hose. |
| 14 | Equipment shall be tested periodically (at least after every 100 hours of operation) to ensure no system fault. | Audit – periodic test and maintenance records. |

