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| <b>INTERNAL SERVICES DIRECTIVE 318-4</b> | In Effect: 2015-01-05      |
|  | Last Review: 2015-01-05    |
|  | Due for Review: 2017-01-05 |

## Environmental Management of Halocarbons

|                                      |   |
|--------------------------------------|---|
| <b>PROGRAM ALIGNMENT</b>             | Internal Services   |
| <b>OFFICE(S) OF PRIMARY INTEREST</b> | Corporate Services Sector   |
| <b>ONLINE @</b>                      | <ul style="list-style-type: none"> <li>• <a href="http://infonet/cds/cds/318-4-isd-eng.pdf">http://infonet/cds/cds/318-4-isd-eng.pdf</a></li> <li>• <a href="http://infonet/cds/cds/318-4-isd-fra.pdf">http://infonet/cds/cds/318-4-isd-fra.pdf</a></li> <li>• <a href="http://www.csc-scc.gc.ca/acts-and-regulations/318-4-isd-eng.shtml">http://www.csc-scc.gc.ca/acts-and-regulations/318-4-isd-eng.shtml</a></li> <li>• <a href="http://www.csc-scc.gc.ca/lois-et-reglements/318-4-isd-fra.shtml">http://www.csc-scc.gc.ca/lois-et-reglements/318-4-isd-fra.shtml</a></li> </ul>                  |
| <b>AUTHORITIES</b>                   | <ul style="list-style-type: none"> <li>• <a href="#"><i>Canadian Environmental Protection Act</i>, 1999</a></li> <li>• <a href="#"><i>Federal Halocarbon Regulations</i>, 2003</a></li> <li>• <a href="#"><i>Ozone-Depleting Substances Regulations</i>, 1998</a></li> <li>• <a href="#"><i>Environmental Code of Practice for Elimination of Fluorocarbon Emissions from Refrigeration and Air Conditioning Systems</i>, 1996</a></li> <li>• <a href="#"><i>Canada’s Strategy to Accelerate the Phase-Out of CFC and Halons Uses and to Dispose of the Surplus Stocks</i>, CCME, 2001</a></li> </ul> |
| <b>PURPOSE</b>                       | <ul style="list-style-type: none"> <li>• To protect the stratospheric ozone layer</li> <li>• To prevent halocarbon emissions originating from federal installations on federal lands</li> <li>• To formalize practices regarding the management of halocarbons in order to ensure compliance with federal and, where applicable, provincial regulatory requirements</li> </ul>  |
| <b>APPLICATION</b>                   | All Correctional Service of Canada (CSC) facilities that manage, internally or through external contractors, chillers, refrigeration and/or air-conditioning systems containing halocarbons   |

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Note: The Environment Canada's [Federal Halocarbon Regulations](#), 2003 (referred to as the "Regulations" henceforward) will in all cases take precedence over this directive. Institutions should always refer to the Regulations for detailed clarification on specific halocarbons management issues pertaining to applicability, scope, and required technical specifications.

## **RESPONSIBILITIES**

1. The Institutional Head and his/her delegates will be accountable to ensure compliance with the provisions of this directive.
2. The Environmental Officer will assist in meeting compliance with the requirements of the Regulations by advising on implementation aspects.

3. The Chief, Facility Management, and his/her delegates will be responsible for informing all external contractors that are hired to work on institutional [chillers](#), [refrigeration systems](#) and [air-conditioning systems](#) of the requirements set out in this directive.

## **PROCEDURES**

### **Prohibitions**

4. No person will release or allow or cause the release of a [halocarbon](#) that is contained in a refrigeration system, an air-conditioning system or any associated container or device (see [section 2.9 of the Refrigerant Code of Practice](#)).
5. No person will store, transport or purchase a halocarbon unless it is in a container designed and manufactured to be refilled and to contain that specific type of halocarbon.
6. As of January 1, 2015, no person will operate or permit the operation of any chiller that contains a halocarbon listed in any of [items 1 to 9 of Schedule 1](#).

## **REQUIREMENTS**

### **Installation, Servicing, Leak Testing and Charging**

7. Only a [certified person](#), as defined by the Regulations, may install, [service](#), [leak](#) test or [charge](#) a halocarbon to a refrigeration or air-conditioning system or do any other work on the [system](#) that may result in the release of a halocarbon. A person who does any of the work referred above must do it in accordance with the [Refrigerant Code of Practice](#). When installing a new system, the certified person must complete form [CSC/SCC 1265-01f](#) upon commissioning.
8. Any person who repairs or decommissions an apparatus that contains a halocarbon must be certified, as defined by the Regulations, and properly equipped in case the procedure causes the halocarbon to be released. The certified person must be appropriately equipped in accordance with the [Refrigerant Code of Practice](#) when assigned to leak test, repair, or decommission the parts of any apparatus that contain halocarbons.
9. For each system with a capacity over 19 kilowatts or 5.4 tons (or 64 828 BTU/hr), the Chief, Facility Management, will arrange for a certified person to conduct a leak test at least once every 12 months (on or before the exact date of the previous leak test), of all the components of a refrigeration or air-conditioning system that come into contact with a halocarbon, and confirm that the system meets all current design criteria and that the [installation](#) is equipped with halocarbon leak sensors if required by regulation (see [section 2.6.6 of the Refrigerant Code of Practice](#)).
10. A certified person who repairs and/or conducts a leak test on a refrigeration or air-conditioning system must place a permanent notice (label) on the system containing the information set out in form [CSC/SCC 1265-01c](#). In addition:
  - a. no person will remove this notice except to replace it with another such notice
  - b. the [owner](#) will keep a record of the information contained in the notice in the refrigeration and air-conditioning system [service log](#) (see [section 2.7.4 of the Refrigerant Code of Practice](#)).

11. No person will charge a refrigeration or air-conditioning system unless the system has been leak tested before charging and any leak has been repaired.
12. If a halocarbon leak is detected at any time, the assigned responsible person must, through the service of a certified person:
  - a. immediately repair the leaking portion of the system, or
  - b. if repairs are not likely to be initiated within seven days, immediately isolate the leaking portion of the system and [recover](#) the halocarbons from the leaking portion of the system pending repair of the leak in accordance with approved practices in this field.

### **Recovery**

13. A certified person that installs, services, leak tests or charges a halocarbon to a refrigeration or air-conditioning system, or that does any other work on any of those systems that may result in the release of a halocarbon, must recover, into an [appropriate container](#), any halocarbon that would otherwise be released during those procedures (see [sections 2.10 and 3.5 of the Refrigerant Code of Practice](#)).
14. Before dismantling, [decommissioning](#) or disposing of any system, measures must be taken as listed below:
  - a. recover halocarbons into an appropriate container and dispose of as hazardous waste (see [sections 2.9 and 3.4 to 3.8 of the Refrigerant Code of Practice](#))
  - b. place a notice (label) on the system containing the information set out in form [CSC/SCC 1265-01d](#) (it is prohibited to remove this notice except to replace it with another such notice)
  - c. once the decommissioning is completed, ensure that the dismantled system can never be reused.
15. In case of the dismantling, disposing or decommissioning of any system, a record of the information contained in this notice (label) must be kept on site in the service log (see form [CSC/SCC 1265-01e](#)).

### **Requirements for Small Systems**

16. When dismantling, disposing or decommissioning of equipment that contains a small air-conditioning or refrigeration system (i.e. with a refrigeration capacity of less than 19 kilowatts or 5.4 tons [or 64 828 BTU/hr]), the parts of the apparatus that contain halocarbon must be decommissioned before disposal. However, when selling or transferring used equipment containing a small system that a new owner is expected to continue to operate, it is not necessary to decommission the small system unless it leaks while in CSC custody.

17. The Chief, Facility Management, will arrange for a certified person to recover the halocarbons from any small system in which a halocarbon leak has been discovered, or which is being decommissioned (dismantled or disposed). In this situation, a notice (label) will be placed on the small system containing the information set out in form [CSC/SCC 1265-01d](#). No person will remove this notice except to replace it with another such notice. The information set out in form [CSC/SCC 1265-01e](#) will be recorded when a small system is purged.

### **Phase-Out of Halocarbons Listed in Any Items 1 to 9 of Schedule 1**

18. If any equipment is found containing any halocarbons listed in [items 1 to 9 of Schedule 1 of the Regulations](#), it must be immediately retrofitted or removed from service.

## **REPORTING**

### **Records**

19. Whenever a refrigeration or air-conditioning system is decommissioned, the Chief, Facility Management, will arrange for a written record containing the information set out in form [CSC/SCC 1265-01d](#) to be kept on site in the service log.
20. Whenever a refrigeration or air-conditioning system is installed, serviced, leak tested, repaired or charged, a written record containing the information set out in form [CSC/SCC 1265-01e](#) must be kept on site.
21. All the documents required in this directive must be kept on site in the form of a central register of halocarbons or integrated in the Environmental Information System, for a period of at least five years beginning on the date of their issuance (see [section 2.11 of the Refrigerant Code of Practice](#)).

### **Release Reports**

22. In the event of an accidental release of 100 kg or more of any halocarbon, the following reports must be submitted to:

- the appropriate regional division of Environment Canada (in priority)
  - the Regional Coordinator, Environmental Programs
  - the Environmental Protection Programs at CSC National Headquarters
- a. within 24 hours after the day on which the release is detected, a verbal or written report that indicates the type of halocarbon released and the type of system from which it was released
- b. within 14 days after the day on which the release is detected, a written report that indicates the information set out in form [CSC/SCC 1265-01a](#).

23. If more than 10 kg but less than 100 kg of a halocarbon is released, the Chief, Facility Management, will write a report that contains the information set out in form [CSC/SCC 1265-01a](#) and submit it twice a year (mid-July and mid-January) to the Regional Coordinator, Environmental Programs. The Regional Coordinator will forward this report to the Environmental Programs Section at CSC National Headquarters to allow National Headquarters to submit semi-annual corporate reports to the appropriate regional division of Environment Canada.

### **Inventory**

24. Each institution must keep an up-to-date inventory of all refrigeration and air-conditioning systems and chillers containing halocarbons that have a refrigeration capacity over 19 kilowatts or 5.4 tons. To the extent possible, the inventory will also include small refrigeration and air-conditioning systems.
25. The institutional inventory will clarify and formalize the custody and maintenance arrangements for each system with a capacity over 19 kilowatts or 5.4 tons (or 64 828 BTU/hr). Among other things, the inventory must uniquely identify and characterize each system, name its custodian, list the amount and type of halocarbon it contains, and describe its maintenance and inspection arrangements. For each of these systems, the inventory will at least contain the information set out in [Annex C – Inventory Information for Chillers, Refrigeration and Air-conditioning Systems](#).

### **TRAINING**

26. Staff with responsibilities within this ISD must complete environmental awareness training covering all aspects of the Regulations as provided by Environment Canada. Note that this training does not replace provincial or territorial trade qualifications and certifications.

### **ENQUIRIES**

27. Environmental Protection Program  
National Headquarters  
Email: [GEN-NHQ-ENV@csc-scc.gc.ca](mailto:GEN-NHQ-ENV@csc-scc.gc.ca)

Assistant Commissioner,  
Corporate Services

Original Signed by:  
Liette Dumas-Sluyter

## ANNEX A

### CROSS-REFERENCES AND DEFINITIONS

#### CROSS-REFERENCES

[Canada's Strategy to Accelerate the Phase-Out of CFC and Halons Uses and to Dispose of the Surplus Stocks](#), CCME, May 2001

[Environmental Code of Practice for Elimination of Fluorocarbon Emissions from Refrigeration and Air Conditioning Systems](#), Report EPS 1/RA/2, Environment Canada, March 1996. ISBN 0-660-95256-4. Cat. No. En49-26/1-2E

[Federal Halocarbon Regulations](#), 2003

[Halocarbon regulations and compliance guides](#)

<http://www.ec.gc.ca/ozone/> (for more information on issues related to halocarbons)

[Ozone-Depleting Substances Regulations](#), 1998

[Canadian Environmental Protection Act](#), 1999

#### DEFINITIONS

**Air-conditioning system:** an air-conditioning system, including any associated equipment, that contains or is designed to contain a halocarbon refrigerant.

**Appropriate container:** in respect of halocarbon management, a container that is designed and manufactured to be refilled and to contain a specific type of halocarbon.

**Certified person:** in respect of a refrigeration system or an air-conditioning system, a service technician who holds a certificate.

**Charging:** adding a halocarbon to a system (includes recharging or refilling).

**Chiller:** an air-conditioning system or a refrigeration system that has a compressor, an evaporator and a secondary refrigerant.

**Decommissioning:** the process of withdrawing an air-conditioning or refrigeration system to an inactive status. If the system is leaking, recover (the recovery should be done by a certified technician) the remaining halocarbon, place a notice (label) on the system, dismantle the system, dispose of the halocarbon as hazardous waste and properly dispose of the system. If the system is intended to be reused, recover halocarbon (the recovery will be done by a certified technician), place notice (label) on the system and relocate/transfer.

**Halocarbon:** a substance set out in Schedule 1, whether existing alone or in a mixture, and includes isomers of any such substance. Halocarbons consist of a group of ozone depleting substances (mainly CFCs, halons and HCFCs) largely used in refrigeration and air-conditioning systems, some fire extinguishing systems and solvent systems.

**Installation:** does not include the reactivation of a system by the same owner at the same site.

**Leak:** the release of a halocarbon from a system.

**Owner:** to hold a right in or to have possession, control or custody of, to be responsible for the maintenance, operation or management of, or to have the power to dispose of a system.

**Recovery:** in respect of a halocarbon:

- a. collection after it has been used, or
- b. collection from machinery, equipment, a system or a container during servicing or before dismantling, decommissioning or destruction of the machinery, equipment, system or container.

**Refrigeration system:** a refrigeration system, including any associated equipment, that contains or is designed to contain a halocarbon refrigerant.

**Service:** includes any modification, charging, maintenance, repair, moving, dismantling, decommissioning, destruction, start-up and testing of the system, but does not include testing related to the manufacture and production of the system.

**Service log:** in respect of halocarbon management, the institutional service log book or maintenance records of refrigeration or air-conditioning system(s) in which the information concerning the work conducted on the system(s) is entered as it is being done.

**System:** unless the context requires otherwise, an air-conditioning system, a fire extinguishing system, a refrigeration system or a solvent system.

**ANNEX B****LIST OF HALOCARBONS**

Extract from Schedule 1 of the [Federal Halocarbon Regulations](#), 2003

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1. Tetrachloromethane (carbon tetrachloride)
  2. 1,1,1-trichloroethane (methyl chloroform), not including 1,1,2-trichloroethane
  3. Chlorofluorocarbons (CFC)
  4. Bromochlorodifluoromethane (Halon 1211)
  5. Bromotrifluoromethane (Halon 1301)
  6. Dibromotetrafluoroethane (Halon 2402)
  7. Bromofluorocarbons other than those set out in items 4 to 6
  8. Bromochloromethane (Halon 1011)
  9. Hydrobromofluorocarbons (HBFC)
  10. Hydrochlorofluorocarbons (HCFC)
  11. Hydrofluorocarbons (HFC)
  12. Perfluorocarbons (PFC)
- 

**Note:** As prescribed in the present document, the requirements affecting the items in the yellow shaded area are more restrictive because of the important ozone layer depletion potential of these halocarbons.

**ANNEX C**

**INVENTORY INFORMATION FOR CHILLERS, REFRIGERATION AND AIR-CONDITIONING SYSTEMS**

**Institution**

| Inventory of chillers, refrigeration and air-conditioning systems | System Identification Code |            |            |            |
|---|----------------------------|------------|------------|------------|
|   | Serial no.                 | Serial no. | Serial no. | Serial no. |
| Building no. where the system is located                          |                            |            |            |            |
| Location (name and/or room no.)                                   |                            |            |            |            |
| System make   |                            |            |            |            |
| System model  |                            |            |            |            |
| Date of manufacture of system                                     |                            |            |            |            |
| Description of system (type of system)                            |                            |            |            |            |
| Capacity of system (kW or tons or BTUs)                           |                            |            |            |            |
| Type of halocarbon  |                            |            |            |            |
| Quantity of halocarbon (kg or lbs)                                |                            |            |            |            |
| Remarks   |                            |            |            |            |