THE CITY OF DULUTH MINNESOTA Policy & Procedure	**COMPRESSED GAS SAFETY POLICY**	
	Supercedes: Date **Date Approved:** May 16, 2014	
	Approved: David Montgomery, CAO	Page 1 of 3

POLICY

All compressed gas cylinders (CGC) used by City employees, and all related employee activities, shall comply with both federal and state regulations, as well as the City's policy outlined herein.

I. PROGRAM ADMINISTRATION

Managers and Supervisors

- Are responsible for ensuring that all requirements listed in the written program for CGC are met.
- Are responsible for ensuring that new and existing employees are familiar with the CGC program as applicable to their job duties.
- With the assistance of the City's Safety Staff, are responsible for identifying CGC hazards.
- Are responsible for arranging required training.

Employees

- Employees whose duties involve working with CGC are required to comply with both applicable federal and state regulations as well as the City's CGC Policy.

City Safety Professional(s)

- Are responsible for conducting periodic inspections where CGC are used.
- Are responsible for general oversight of this program.

II. HAZARD IDENTIFICATION

Compressed gases may pose the following types of hazards to users and bystanders:

- Decompression
- Flammability and Explosion
- Asphyxiation
- Toxicity
- Cryohazard
- Physical hazard

No employee shall use any compressed gas cylinder without training in their safe use.

III. COMPRESSED GAS CYLINDER CARE POLICY

1. **Identification**
   All CGC shall be legibly labeled with their contents. Color-coding is not a reliable means of identification. If the labeling on a cylinder becomes unclear and contents are unknown, the cylinder should be marked "contents unknown" and returned directly to the manufacturer.
2. **Caps**
   To protect the valve during transportation, the cover cap should be screwed on. The cap shall remain on until the cylinder is in place and ready for use. The valve cap shall be removed only after the cylinder has been safely installed.
3. **Transport**
   CGC should not be subjected to rough handling or abuse. CGC should not be dropped or otherwise allowed to strike one another. Such misuse can seriously weaken a cylinder and render it unfit for further use. Serious damage can transform a CGC into a missile. Cylinders should never be rolled or dragged. During on-site transport, cylinders should be strapped to

their transport device (hand truck, wheeled cart, etc.) to ensure stability. Always protect the valve during transport by replacing the valve cover. Only one cylinder should be handled at a time.

4. **Restraint, Storage & Maintenance**
Since most gas cylinders are tall and narrow, they should be secured in an upright position at all times to prevent tipping. Fire Department SCBA cylinders may be stored on their sides if placed in specially designed honeycomb shelving, or if otherwise secured to prevent rolling and external damage. Cylinders containing flammable gases shall not be stored in close proximity to open flames, areas where electrical sparks are generated, or where other sources of ignition may be present. An open flame shall never be used to detect leaks of flammable gases. All cylinders containing flammable gases should be stored in a well-ventilated area. Oxidizing gases should either be stored at least 20 feet away from fuel gases or other combustible materials, or separated from them by a 2-hour firewall (the use of specially designed welding carts is an exception to this rule). All storage requirements outlined on the SDS should be adhered to.

   The main cylinder valve should be closed as soon as gas use is no longer necessary, such as when the cylinder is unattended. This prevents corrosion and contamination resulting from diffusion of air and moisture into the cylinder.

   If compressed gas cylinders are stored outside, they should be stored in a well-drained, securely fenced area. CGC should be kept on a level, raised concrete pad or non-combustible rack. To prevent excessive pressure buildup, never expose cylinders to temperatures above 52°C (125°F). Do not subject them to temperatures below -29°C (-20°F), unless they are designed for this. Cylinders that become frozen to a surface can be freed by using warm water (less than 52°C). Never apply direct heat to a cylinder.

   Do not lubricate any cylinder valves, fittings, or regulator threads, or apply jointing compounds and tape. Use only lubricants and sealants recommended by the gas supplier. After the regulator is attached, the cylinder valve should be opened just enough to indicate pressure on the regulator gauge, and then all connections should be checked with a soap solution for leaks. Never use oil or grease on the regulator of a cylinder valve. Carefully check all cylinder-to-equipment connections before use, and periodically during use, to be sure they are tight, clean, in good condition, and not leaking. When opening valves, do so carefully and slowly, using the proper tools. Always ensure that valves are pointed away from you and others when opening. Close all valves when cylinders are not in use. Never tamper with safety-relief devices in cylinders, valves or equipment. Grit, insects, dirt, oil, or dirty water can cause gas leaks if they get into the cylinder valve or gas connection. Use a lint-free tissue to remove any dirt or rust. Never open a damaged valve.

5. **Tubing**
Instrument connecting tubing and fittings must also be rated to the gas used. They must be able to withstand the highest possible pressure to which they could be subjected in the event of pressure regulator failure.

6. **General**
   Read the SDS and labels for all of the materials in the work area. Always use safety glasses (preferably a face shield) when handling and using compressed gases, especially when connecting and disconnecting compressed gas regulators and lines.

   Handle "empty" cylinders safely as you would full cylinders. When a cylinder needs to be removed or is empty, close all cylinder valves, bleed remaining gas from the system (when it is safe to do so), disassemble equipment properly and replace cylinder protection caps. Mark cylinders "empty" or "MT," and store them separately from full cylinders until they are picked up by the supplier.

   In the event of an emergency involving a compressed gas cylinder, immediately evacuate the affected areas of the building, including adjacent areas. Contact the applicable managers and emergency personnel.

TRAINING & DOCUMENTATION

Reporting Requirements

- Supervisors may counsel or take corrective action to address failure to adhere to the guidelines of this program.
- Employees shall report any safety concerns to their supervisor and/or the City's Safety Staff.

Employees shall not work with compressed gas cylinders until they have been trained in the safe use of these devices. This includes all new employees regardless of previous experience. The training program shall include but is not limited to:

- Information on the different types of compressed gas cylinders.
- How hazards are to be controlled – engineering controls, administrative controls (use of caps, restraints, regulators), Personal Protective Equipment (PPE), etc.
- Policies and procedures for working around compressed gas cylinders.

PROGRAM EVALUATION

The City's Safety Staff will evaluate the written CGC Program annually.

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