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Title <i>COMPRESSED GAS CYLINDERS</i>	Effective Date 05/26/2021

1. Purpose

University of Alaska Anchorage (UAA) employees, student workers, faculty, staff, and outside contractors who use compressed gas cylinders in the course of their work functions, risk injury if improperly managed. The hazards associated with compressed gas cylinders can be substantially reduced by using the equipment properly and taking precautions. This program for compressed gas cylinders is intended to ensure workers are knowledgeable in the hazards when using compressed gas cylinders and the steps to be taken to protect themselves and others.

2. Objective

UAA, in its continuing effort to provide employees with safe, healthful working conditions, and to comply with the Occupational Safety and Health Act is implementing the following program for compressed gas cylinders to protect people working at the University, by helping employees, student workers, faculty, staff, and outside contractors better understand general procedures for safe handling of compressed gas cylinders.

3. Scope

This policy applies to UAA employees, student employees, faculty, staff, and outside contractors working on UAA equipment who work with or around compressed gas cylinders.

4. Definitions

Compressed gas - A gas or mixture of gases having an absolute pressure exceeding 40 psi at 70 degrees F (21.1 degrees C); or, a gas or mixture of gases having an absolute pressure exceeding 104 psi at 130 degrees F (54.4 degrees C) regardless of the pressure at 70 degrees F; or, a liquid having a vapor pressure exceeding 40 psi at 100 degrees F (37.8 degrees C)

Compressed gas cylinder handling - moving, connecting or disconnecting a compressed or liquefied gas container under normal conditions of use

Cylinder - compressed gas container having a maximum water capacity of 1,000 or less pounds or approximately equivalent to 120 gallons.

Pressure Regulator - A device used to prevent the pressure from rising above a predetermined maximum, thereby, preventing rupture of a normally charged cylinder when subjected to a standard fire test

Valve Protection Cap - rigid removable cover provided for container valve protection during handling, transportation and storage

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6. Hazards Associated with Compressed Gas Cylinders

The following hazards associated with compressed gas cylinders can lead to personal injury or death:

- Gas leaks causing:
- Oxygen displacement and asphyxiation
- Fires, explosions
- Toxic gas exposure
- Physical hazards associated with damage to the gas cylinder and rapid release of ~~high pressure~~high-pressure gasses
- Ergonomic hazards while moving cylinders
- Cold stress/ rapid release of high-pressure gasses

7. Engineering Controls

Engineering controls are design plans or changes to the working environment to prevent or reduce employee exposure to hazards associated with compressed gas cylinders. The following example of engineering controls should be considered in area design to reduce the risks of handling compressed gas cylinders.

- Proper storage areas for unused gasses
- Proper storage and stabilization support for cylinders while in use
- Proper equipment for transportation of cylinders
- Proper regulators and piping for gasses

8. Administrative Controls

Administrative controls are safe work practices and procedures designed to reduce the risks associated with working with compressed gas cylinders. Examples of administrative controls include the following:

- Train employees who work with compressed gas cylinders
- Routine inspections of compressed gas cylinders

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can be hazardous if not performed properly. The following must be considered when handling compressed gas cylinders:

- Always use a properly designed hand truck or cart when moving cylinders
 - The cylinder must be securely chained or strapped to the cart
 - Inspect the cylinder cart and wheels for wear and tear before each use.
 - Carts are for transporting cylinders, not for storage
 - Hand truck and carts must have a means to secure the cylinder to the cart
 - Cylinders should be placed on the cart as close to the storage area as possible and transported using the cart to the closest location to the work space
 - Cylinders must be transported with the cylinder upright (valve up)
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necessary.

The program shall enable each employee to recognize hazards related compressed gas cylinders and shall train each employee in the procedures to be followed to minimize these hazards.

The employer shall ensure that each employee has been trained by a competent person in the following areas, as applicable:

- The nature of compressed gas cylinder hazards in the work area
- The correct procedures proper handling techniques and equipment use
- The proper storage methods
- The chemical hazards of gasses used in the work area

Retraining shall be provided for each employee as necessary if an accident occurs, new workplace hazards are identified, a near loss incident has occurred, or there is a change in the type of cylinder, storage and handling methods, or chemical used, so that the employee maintains the understanding and knowledge acquired through compliance with this section.

12. Program Evaluation

The Compressed Gas Cylinder Program shall be evaluated on an annual basis utilizing the protocols set forth by EHS/RM. Annually, supervisors will inspect compressed gas cylinder areas with assistance from the EHS/RM Department upon request, utilizing the UAA Compressed Gas

Cylinder Inspection Checklist (Attachment 1 72.027Gr-hmen 1 7(rson) pyhmen 1r ton hecklist dhmen 1 byee n

