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I. Purpose

The purpose of this program is to prevent injury from failing or failure of compressed gas cylinders and to establish requirements for handling, lifting and storing compressed gas cylinders safely.

II. Scope

This program covers all Gallant Builders (Gallant) employees and contractors who handle, transport and/or use compressed gas cylinders.

III. Key Responsibilities

Managers/Supervisors

- Shall ensure that all employees are aware of the proper handling, storage and use requirements for compressed gas cylinders.
- Shall ensure that initial training is conducted for all new employees and that retraining is conducted when employee behaviors suggest that retraining is warranted.

Employees

- Shall follow all requirements regarding the safe handling, storage and use of compressed gas cylinders.
- Shall be trained on the proper use, handling, storage of compressed gas cylinders and the requirements of this program.

IV. Procedures

General

Cylinders shall not be accepted, stored or used if evidence of denting, bulging, pitting, cuts, neck or valve damage is observed. If damage is observed:

- The cylinder must be taken out of service.
- The cylinder's owner shall be notified to remove the cylinder from the premises.
- If owned, the cylinder shall be de-pressured and inspected as required by this program.

V. Cylinder Identification

Gas identification shall be stenciled or stamped on the cylinder or a label used. No compressed gas cylinder shall be accepted for use that does not legibly identify its content by name.

VI. Handling

Valve caps must be secured onto each cylinder before moving or storage.

Secure the cylinder in a blanket when being lifted by mechanical means. Slings, ropes or electromagnets are prohibited to be used for lifting compressed gas cylinders.

The preferred means to move compressed gas cylinders is with a cart, carrier or with a helper.

Compressed gas cylinders must not be allowed to strike each other.

When a cylinder cap cannot be removed by hand the cylinder shall be tagged "Do Not Use" and returned to the designated storage area for return to vendor.

Storing
All cylinders must be secured upright in a safe, dry, well-ventilated area that limits corrosion and deterioration.

- Cylinders must be secured by means that will prevent the cylinder from falling.
- When securing the cylinder, the restraints shall not be attached to electrical conduit or process piping.

Empty and non-empty cylinders shall be stored separately. All stored cylinders shall be capped.

Oxygen cylinders must be stored a minimum of 20 feet from combustible gas cylinders or areas where there may be open flame or arcing. Cylinders may also be stored where the oxygen is separated from combustible gas cylinders by a 5 foot or higher wall with a fire resistance rating of 30 minutes.

Storage areas for full and empty cylinders must be designated and labeled. Cylinders should be stored in definitely assigned places away from elevators, stairs or gangways.

Use
Cylinders must be equipped with the correct regulators. Regulators and cylinder valves shall be inspected for grease, oil, dirt and solvents. Only tools provided by the supplier shall be used to open and close cylinder valves.

Never force or modify connections.

Only regulators and gauges shall be used within their designated ratings.

The use of a pressure-reducing regulator is required at the cylinder, unless the total system is designed for the maximum cylinder pressure.

Valves must be closed when cylinders are not in use.

Cylinders shall not be used as rollers or supports.

Cylinders shall not be placed where they can come in contact with electrical circuits.

Cylinders must be protected from sparks, slag or flame from welding, burning or cutting operations.

Empty cylinders shall be returned to designated storage areas as soon as possible after use.

Cylinders that are no longer needed shall be marked appropriately, removed from service and safely secured in an approved location away from the work area.

Inspection of Compressed Gas Cylinders
The subcontractor shall determine that compressed gas cylinders under its control are in a safe condition to the extent that this can be determined by visual inspection. Visual and other inspections shall be conducted as prescribed in the Hazardous Materials Regulations of the Department of Transportation (49 CFR parts 171-179 and 14 CFR part 103). Where those regulations are not applicable, visual and other inspections shall be conducted in accordance with Compressed Gas Association Pamphlets C-6-1968 and C-8-1962. Some elements include, but are not limited to:

- Regulators and other connections shall be inspected regularly for damage.
- Hoses and connections shall be inspected regularly for damage. Hoses should be stored in cool areas and protected from damage.
- These owned cylinders shall be visually inspected prior to charging, before each use and at least annually.
- All inspections and testing must be documented.

High Pressure Cylinders are those cylinders marked for service pressures of 900 psi and greater.

- High pressure cylinders shall be taken out of service and submitted for re-qualification testing when any of the following conditions are identified by visual inspection.
- Cuts, dings, gouges, dents bulges, pitting, neck damage or evidence of exposure to fire.
- The cylinders shall be inspected and retested according to the requirements stated in 49 CFR 180.205 and .209.
- Re-qualification of non-damaged cylinders shall be conducted per the schedule in 49 CFR 180.209.

Low Pressure Cylinders are those cylinders marked for service pressures of less than 900 psi.

- Low pressure cylinders fall into two categories, those requiring requalification and those that do not require re-qualification.

- Low pressure cylinders that do not require re-qualification shall be taken out of service and condemned when any of the following conditions are identified during inspection:
- The tare weight of the cylinder is less than 90% of the stamped on weight of the cylinder.
- Observed pitting, dents, cuts, bulging, gouges or evidence of exposure to fire.
- Low pressure cylinders subject to re-qualification shall be taken out of service, inspected and retested when visual inspection identifies any of the following conditions; dents, bulges, pitting or neck damage.
- Re-qualification of non-damaged cylinders shall be conducted per the schedule in 49 CFR 180.209.

VII. Leaking Cylinders

Leaking cylinders shall be moved promptly to an isolated, well-ventilated area, away from ignition sources. Soapy water should be used to detect leaks. If the leak is at the junction of the cylinder valve and cylinder, do not try to repair it. Contact the supplier and ask for response instructions.

Transportation

Cylinders must be transported in a vertical secured position using a cylinder basket or cart and must not be rolled. Regulators should be removed and cylinders capped before movement. Cylinders shall not be dropped or permitted to strike violently and protective caps are not used to lift cylinders.

VIII. Empty Cylinder Marking

Cylinders shall be marked as "MT" and dated when empty. Never mix gases in a cylinder and only professionals should refill cylinders. Empty cylinders must be handled as carefully as when filled.

IX. Engineering Controls

Engineering controls such as emergency shutoff switches, gas cabinets and flow restrictors should be used wherever possible to control hazards. Emergency eyewash facilities shall be present where corrosive gases or materials are used.