

TRANSPORTING GASES IN BUILDING ELEVATORS

INTRODUCTION

Transporting cryogenic dewars and room temperature gas cylinders in enclosed building elevators could be hazardous to passengers under certain conditions. This chapter defines procedures to be used for this operation at Fermilab.

DEFINITIONS

A building elevator is an enclosed car which has only a fan for ventilation when the door is closed.

Platform lifts with no sides or roof are not included in this chapter.

Empty dewars being transported are not included in this chapter.

RESPONSIBILITIES

The division/section head who controls the operation using the dewar is responsible for carrying out the requirements of this chapter. The Cryogenic Safety Subcommittee will serve the division/section head as consultant in all matters concerning this chapter. The ES&H Section shall audit divisions/sections for compliance to this chapter.

PROCEDURE FOR CRYOGENIC DEWARS

1. *Scope:* This procedure is to be followed when transporting dewars not clearly empty, whether open or closed mouthed dewars, in enclosed elevators.

Open wide mouth (a.k.a. open-flask style) dewars are not to be used for transporting liquid in elevators.

A closed dewar is considered empty when the liquid withdrawal valve produces gas only, no liquid.

2. *Inspection:* Before a dewar is placed on the elevator, it is to be inspected for the following:
 - a. No frost, sweating, or venting of dewar contents may be present to transport a dewar.
 - b. The pressure building valve must be closed on any dewar transported in an elevator.

- c. The pressure of any dewar to be loaded into an elevator must be less than 1/2 of the pressure setting of the dewar's main relief valve.

Dewar Type	Typical Main Relief Setting	Max Pressure Allowed In Elevator
Nitrogen L160	20-22 psig	10-11 psig
Argon L160	20-22 psig	10-11 psig
Argon GP45	285 psig	142 psig
Helium 500L	10 psig	5 psig

3. *Moving the dewar:* The dewar must be moved according to the following:

- Only personnel trained in this procedure may accompany dewars in elevators.
- Not more than two persons will be allowed on the elevator with the dewar.
- In Wilson Hall elevators, the operator will use a lockout key obtained from the Communications Center to prevent the elevator from stopping except on the desired floor.
- Not more than two dewars containing liquid may be moved on an elevator at a time.

4. *Additional precautions for open dewars:* When transporting an open dewar in an elevator, any person who rides in the elevator with the dewar shall be ODH qualified and shall carry an escape pack.

PROCEDURES FOR GAS CYLINDERS

1 *Scope:* This procedure is to be used for moving all gas cylinders in enclosed elevators.

2. *Moving the cylinders:*

- Gas cylinders to be moved must have the valve cap securely in place.
- Gas cylinders must be moved on a cylinder cart. The cylinders shall be belted or chained to the cylinder cart.



Fermilab
ES&H Section

PR

*Liz -
Looks good
to me.
Diane*

REQUEST

Employee Name _____ ID# _____

Division/Section _____ Mail Station _____ Ext. _____

The employee's work activities require that he/she wear safety glasses. Fermilab will provide 1 pair of prescription safety eyewear in accordance with ANSI Z87.1 as indicated below.

Please obtain the signature of your supervisor to order prescription safety eyewear having the options in the box below. All lenses will be polycarbonate.

- | | | | | | |
|-------------------------------|--------------------------|---------------------------|--------------------------|-------------------------------|--------------------------|
| Basic Eyewear | <input type="checkbox"/> | Brow Guards | <input type="checkbox"/> | Polarized Lenses | <input type="checkbox"/> |
| Side Shields (Permanent) | <input type="checkbox"/> | Side Shields (Detachable) | <input type="checkbox"/> | Sunglasses | <input type="checkbox"/> |
| Torch Braze Solder Cut Lenses | <input type="checkbox"/> | Transitional Lenses | <input type="checkbox"/> | Video Display Terminal Lenses | <input type="checkbox"/> |

Approval:

Supervisor _____ Date _____

Glass lens are **strongly discouraged** since its use presents an unacceptable risk of injury in some work situations. Therefore, this option may only be ordered after evaluation, and signature approval, of ALL the persons indicated.

- Glass Lenses** - Although glass lenses meet safety design specifications, they may shatter on severe impact. Plastic safety lenses will not shatter.

Approvals:

Supervisor	_____	Date	_____
D/S Safety Officer	_____	Date	_____