APPENDIX 7-8

MECHANICAL RESTRAINTS FOR GAS BOTTLES AND CYLINDERS

Gas cylinders are normally dispensed as "single gas bottles". All gas cylinders, regardless of the configuration, must be secured against movement as specified in OSHA regulations. Approved and recommended methods (in order of preference) for securing cylinders are as follows:

- Chains (stores item 1268-1000)
- Adjustable straps (stores item 1268-8100)

Rope or wire restraints are not acceptable. A single-type restraint is permitted. Double chains or straps are not required, but may be used for certain applications.

The restraints must be fastened near the upper half of each cylinder (above the center of gravity). The chains or straps must be secured to a restraining structure that must be part of the building or securely attached to the ground. Single gas cylinders that are installed in a multi-cylinder stand must be individually secured to the stand, as well as the stand being restrained.

Gas carts are used to transport individual gas cylinders. Many commercially available gas carts can be used. These carts must be used as suggested by the manufacturer to retain their OSHA approval. These carts are used for portable or temporary storage of gas cylinders and should be replaced whenever possible with permanent structures and restraints.

If operational procedures cannot accommodate the above types of restraints, the welding requester should be contacted.

All gas cylinders, including cylinders considered empty, must be secured and restrained. Gas cylinders not in use or empty must be capped to protect the valves. All gas cylinders must have a status tag or label (empty, full, in use, etc.) attached to the cylinder. Any gas cylinder without a status tag or content label should be reported to supervision.

Gas cylinders stored in racks must contain whatever gas is labeled for that rack. For example; nitrogen can not be stored in a rack labeled for hydrogen. Any gas cylinder improperly stored will be removed if found. Provide adequate access for gas cylinder exchange or delivery. The requester should ensure that cylinders and stands can be safely moved and that ramps or access have been provided.

the GAS SUPPLIER

These procedures are necessary to insure prompt delivery by BSC. If restraints are inappropriate, or labels and tags are inadequate, delivery may be delayed or may not occur.

This notice does not address the chemical safety issues of handling or using gas cylinders.

Fermilab

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