

# LESSONS LEARNED

## Unsecured Compressed Gas Cylinders

### What Happened:

On March 24th during an after-quake inspection of a research laboratory, several gas cylinders were found to be improperly stored. The identified issues are listed below:

- Cylinders stored with regulator attached instead of protective cap
- Use of improper strap to secure cylinders. Strap too weak to hold cylinders in place
- Cylinders not secured at all or loosely secured with chain

### What went right:

The unsafe conditions were found during a post-quake inspection by the Safety Committee and corrected immediately.

### Lessons learned:

This incident emphasizes the importance of securing gas cylinders properly in the event of an earthquake. Gases under high pressure pose a physical threat to life and property if not properly secured. This incident could have resulted in severe injuries or a fire. Luckily, in this case it did not; however, these types of safety issues must be prevented by:

- Replacing regulator with a safety cap when cylinder is not in use
- Securing cylinders with a strong strap or chain
- Ensuring strap or chain is tightly secured around cylinders

In addition, the following safety guidelines will help ensure your safety when using compressed gas cylinders:

- Never force the safety cap or regulator when installing. The cap should only be hand tight
- Do not expose cylinders to excessive dampness or corrosive chemicals
- During storage, separate oxygen cylinders from fuel-gas cylinders or combustible materials by at least 25 feet. A non-combustible barrier may be used if it is at least 5 feet high and has a fire-resistance rating of at least 30 minutes
- Secure cylinder with straps or chains on transportation cart when transporting
- Do not drag, slide or roll cylinders
- Move gas cylinders with the safety cap in place
- Avoid dropping and striking the cylinders together
- Do not lift the cylinders by holding the cap

