Pressure Vessels Demand Respect

WHAT’S AT STAKE

Pressure vessels are closed containers designed to hold gases or liquids under pressure. They’re found in a variety of industries and include everything from diving tanks, to distillation towers, to propane tanks.

If pressure vessels are improperly operated or improperly maintained, they can fail catastrophically, potentially flattening buildings and killing workers and people
living in the area. If a tank containing hazardous chemicals explodes, a toxic chemical cloud released into the air could kill many more people than what occurred
during the initial blast.

WHAT’S THE DANGER

Designed, constructed, operated, maintained, repaired, inspected or tested are at risk of failing, causing traumatic injuries, explosions, fires, toxic releases and millions of dollars worth of damage.

Operating a vessel above its maximum allowable working pressure is a major cause of pressure vessel failures.

EXAMPLE
In Louisville, Kentucky, a tank used for heating sugar caramel exploded after a vent line became blocked. An operator died and an evacuation of nearby esidents was ordered after large amounts of ammonia were released into the atmosphere. It was determined that no pressure relief system was in place to prevent such an explosion.

HOW TO PROTECT YOURSELF

Unless you were specially trained, you're not involved in maintaining or repairing these vessels. But that doesn't mean that there aren't things that you need to watch out for and report before a serious event occurs. Here are some examples:

- Use extreme care and caution when you are handling cylinders, being especially careful to not drop them or allow them to strike one another. If a cylinder falls and strikes a hard surface, its safety valve can break off, turning the cylinder into a missile capable of killing people in its path.
- Always store cylinders in an upright position, otherwise they could leak gas, leading to possible poisoning/ suffocation or explosions if an ignition source is present in the area.
- Many workers have died attempting to weld or cut open tanks that contain flammable liquids or vapors. This is a particular hazard if the tank is unlabeled. If you don't know what the tank contains, don't place a flame near it.
- Don't attempt maintenance or repairs on pressure vessels if you're not qualified to do so. If repairs are made by an untrained person, the vessel may fail months or years afterwards, with catastrophic results.
- Never pressurize a container that is not approved as a pressure vessel.
- Approved vessels will be marked with the date of manufacture and the maximum allowable working pressure. Never exceed that pressure.
- If you encounter a pressure vessel that appears to have been modified, is corroded or shows other signs of damage, report it to your supervisor.
- Ensure you are properly trained to work with pressure vessels. If you have concerns, talk to your supervisor.

FINAL WORD

Even small vessels under pressure can cause incredible damage to property and workers if they explode or release contents that either ignite or overcome workers and others nearby. You need to know what you’re working with and ensure that you have been adequately trained to avoid hazards.