

Sudden Uncontrolled Pressure Release Precautions

for Oil and Gas Industry

Between
2016 and 2018**15**
FATALITIES**54**
hospitalizations**PRESSURE can KILL!**

Increased pressure released during the commissioning/decommissioning, maintenance, and repair of pressurized lines and equipment such as gases (well, natural, liquefied), steam, crude oil, petroleum products, slurry, chemicals, water, hydraulic, and air can be fatal.

When uncontrolled pressure is released, workers are also at risk of being struck by projectile materials such as valves, metal fragments, plugs, pipes, shock-waves, and hoses.

Conducting assessments to ensure controls are in place and proper safe work procedures or effective mechanical integrity programs are established and followed can keep workers safe.

Causes and Triggers

Equipment, valves, and/or pipe failures:

- Improper equipment (e.g., inadequate anchors) or tools for the task
- Degraded integrity of equipment, valves, or pipes
- Mismatched pipes, hammer unions, or valve connections

Changing conditions:

- Change in work process, leading to unidentified hazards or unknown pressure
- Severe weather (e.g., freezing and ice plugs)
- Abnormal operating conditions (AOCs)

Improper work practices:

- Working on live lines without lockout/tagout (LOTO) or isolation protocol
- Relieving trapped pressure
- Improper or no installation of pipe restraints or anchors
- Entering restricted (no-go/danger) zones
- Insufficient inspection or maintenance
- Lines incorrectly rigged up, marked, or identified

Employer Responsibilities

Conduct exposure and hazard assessments at the worksite and review with workers, including:

- Risk Assessment
- Hazard Assessment

- Job Safety Analysis (JSA)
- Personal Protective Equipment (PPE) Hazard Assessment

Establish safe work practices and procedures and provide specific training to workers for:

- Operating procedures
- LOTO work (plan, prepare, lock, tag, verify, reinstate)
- Energy isolation (e.g., blind, double block and bleed)
- Mechanical integrity
- Inspection and testing
- Proper equipment design, maintenance (able to relieve trapped pressure)

- Blow-down/bleed-off procedures
- Equipment function and drawings
- Hot work procedures
- Established restricted (no-go/danger) zones
- PPE
- Emergency procedures
- Other applicable safe work procedures

Worker Responsibilities

- Participate in Hazard Assessments
- Follow safe operating procedures (SOPs) and JSAs
- Understand and practice energy isolation and pressure release principles
- Stand clear of the "line of fire" - watch body position relative to potential pressure release
- Follow blow-down/bleed-off procedures

- Attend job-specific training
- Use required PPE
- Focus on job tasks (think before you act, don't skip safety procedures, and avoid complacency)
- Stop work and reassess (e.g., any components difficult to open or remove because of pressure, job scope or individual task assignments changed after the hazard assessment/JSA)

If you're uncertain about potential risks or have questions,
STOP THE JOB AND ASK — IT COULD SAVE YOUR LIFE!