

Understanding relief valves: Essential practices for first responders



Relief valves actively regulate pressure within the natural gas pipeline system by opening at a preset pressure to vent excess gas and vapors and then by closing once the pressure is back within a safe range. These mechanical safety devices, though small, play a large role in protecting not only the system but also the community.



Dedicated relief valves are typically present in high-pressure distribution stations and at pressurized storage locations.

The consequences of the system not venting properly could be as minor as a temporary gas outage or as catastrophic as an explosion. This is why first responders should NEVER attempt to operate these valves or restrict the associated vents in any way.

How do you investigate a pressure release?

- **Be proactive** by partnering with National Grid preemptively to learn the location of valves within their facilities.
- **Ask utility personnel questions** to ensure that you understand the basics of relief valve function and behaviors, but most importantly, NEVER operate or restrict pressure relief valves in any situation.
- **Train** to ensure you know how to respond to normal and abnormal pressure release events helps protect not only you and your crew but also your community and the environment.

What do you do when dispatched to investigate a pressure release?

Contact and work with the utility (consequently the onsite SME) to:

- Perform a predictive analysis of prevailing wind patterns and conditions.
- Set up appropriate safety/exclusion zones and monitor critical areas.
- Identify priority risks and target hazards, such as nearby neighborhoods.

Important: NEVER enter control stations, and NEVER operate or change the settings of pipeline, storage or control station valves of any type. Only trained utility operators should open or close these valves. However, if trained to do so, you can stop the flow of gas by closing the aboveground shutoff valve at a service meter or the shutoff valve at an appliance line.

Engage with the community. Even a small release of natural gas through a relief valve will often result in community concern stemming from the sulfur-like or rotten-egg smell of mercaptan, the sight of vapor clouds, or the sound produced as the pressure dissipates. During any pressure release event, you should work with the utility to distinguish between normal and abnormal (emergency) situations.

Once the utility has confirmed that the event is nonthreatening:

- Continue to take public concern seriously and choose a single-source contact for public communication.
- Reassure the community about the behavior of the relief valve as a safety device is operating as designed.

If a relief valve continues to actuate for an extended period, the odorant released will likely heighten community concern. Therefore, consider placing firefighting apparatus and utility resources in the area as a proactive tactic and a demonstration of fire service presence to ease these potential concerns.