

We Have Liftoff!!!

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What Happened?

A plant was doing a pneumatic pressure test on a pipe connected to a tank. There was no blind flange between the piping being tested and the tank. The tank was isolated from the pressurized piping with a closed block valve. The block valve leaked, allowing the pressure from the pneumatic test to leak into the tank. The tank (which either did not have a pressure relief device installed, or the pressure relief device was too small) was overpressured, and it failed at the bottom. The tank lifted into the air and came to rest on the top of the plant.

What can you do?

- During pressure tests, or any other maintenance or non-routine activities involving pressure, make sure that all equipment is capable of withstanding the test pressure, is positively isolated from the source of pressure, or has adequately sized pressure relief devices for the testing conditions.
- Equipment can be protected from being overpressured more reliably by using blinds, or by physically disconnecting piping, rather than using valves to isolate the equipment from pressure.
- Do a process safety review before starting any non-routine operations to identify potential hazards and required safeguards during the operation.
- Keep workers away from the area where pressure testing operations are being conducted.
- If possible, pressure test lines using liquid pressure (hydrostatic pressure) rather than pneumatic (gas) pressure - the energy which can be released from a liquid overpressure is MUCH LESS than from a gas overpressure.

Isolate equipment from pressure – leave the rockets to the space program!