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Process Safety Beacon
10 YEAR ANNIVERSARY

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January 2013

Some Answers to the November 2012 Beacon Find-the-Problem Contest

First of all, thank you to everybody who participated in the November 2012 Find-the-Problem contest. Thank you for your interest, and, to those of you who also participated in the survey, for your valuable feedback on the Beacon. This Beacon had to be prepared for publication and translation before the contest deadline, so we were not able to include additional problems and hazards that have been undoubtedly identified by our tens of thousands of readers. Be assured that we were quite liberal in determining "correct" answers and accepted many other real problems beyond the ones listed here. Here are some of the issues we identified:

1. This is an easy one. Piping support is extremely poor.

2. The pressure between the rupture disk and the relief valve compromises the integrity of the emergency pressure-relief system. Rupture disks burst when the difference between the upstream pressure and the downstream pressure exceeds the rupture pressure. If there is pressure downstream of the disk, it will not burst at the intended process pressure.

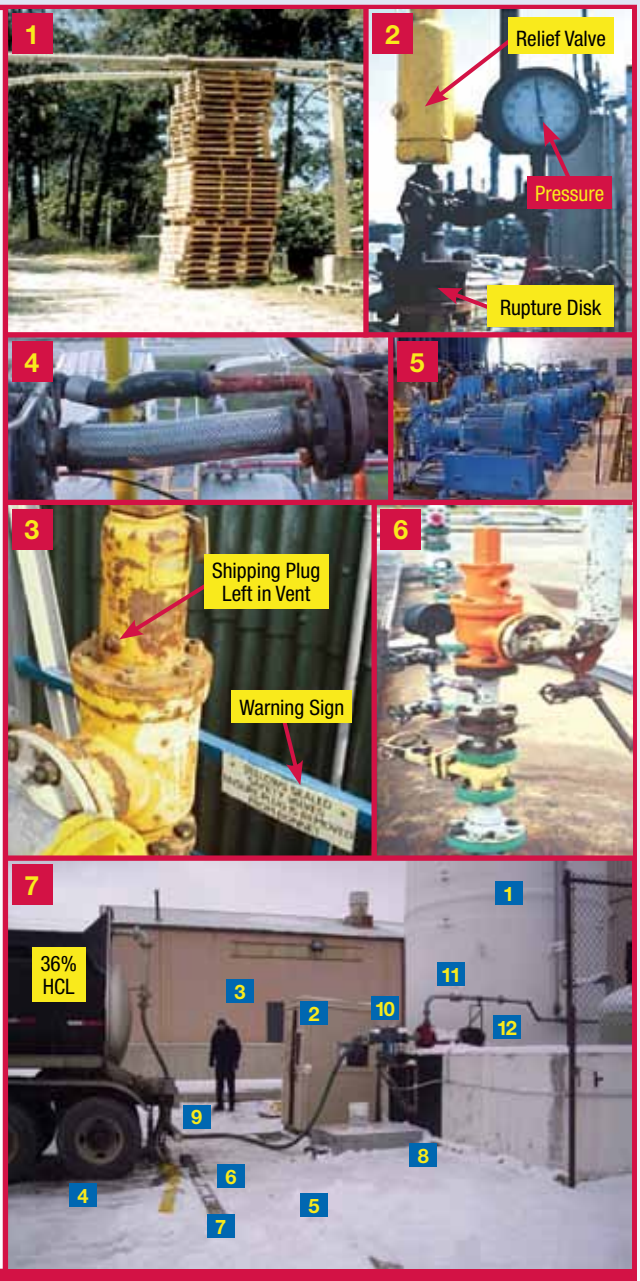
3. Despite the warning sign, the plug in the bonnet of this bellows-sealed safety valve (which protects the valve during shipping) has not been removed. This will affect the pressure at which the valve opens.

4. Flexible hoses are being used to connect piping that does not fit together properly. Also, the flange on the right appears to be missing at least one bolt, and the faces of the flange do not align properly.

5. All of these pumps are identical in appearance and there is no evidence of any labeling.

6. The valves and other pipe fittings on the inlet of the relief valve (RV) result in greater inlet pressure drop, which could cause relief valve chattering. The block valve on the RV inlet does not appear to have anything to prevent someone from closing it and isolating the RV from the process.

7. There are many hazards in this photograph. Here are some of them (you may find others): (1) no visible label on the storage tank; (2) no eye wash or safety shower in the area; (3) the person in the picture is not wearing any personal protective equipment; (4) no chocks at tank truck wheels; (5) no visible spill containment; (6) many tripping hazards (and slipping hazards posed by the snow); (7) little or nothing to prevent the driver from backing the truck into the shed and the unloading piping; (8) inadequate platform to access the unloading connection; (9) no way to drain the hose when unloading is complete; (10) no pressure gages anywhere on the unloading piping; (11) the valve handle downstream of the pump is too high; (12) the unloading piping is poorly supported.



Constant vigilance is the key to safety!

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