**Chattering PSV**

**EPSC Learning Sheet  May 2020**

**What Happened:**
In 1985 in Priolo (Italy) an explosion occurred on a refinery, after a pressure safety valve opened. The vigorous opening and closing of the safety valve caused trembling that damaged the piping and caused an LPG release; the vapour cloud ignited.

**Aspects:**
- Chattering is the rapid opening and closing of a pressure relief valve. The resulting vibration can cause misalignment, valve seat damage and sometimes even mechanical failure of valve internals and associated piping.
- Chattering is influenced by: high inlet pressure drop, high backpressure, oversized relief valve e.g. above 140% (See API 521 Part II, section 7) and is difficult to fully avoid.
- Avoid multiple PSV’s with the same pressure setting.
- The PSV surrounding piping needs to be strong & well fixed.
- Inspect also for potential damage of the PSV fixture and surrounding piping, after a release.

**PSV can violently chatter**
This requires design consideration.