

Hazards from Abandoned Equipment

- In a Texas refinery in February 2007, propane leaked from cracked control station piping that had been out of service for 15 years. A huge fire resulted (pictures), injuring four people, requiring evacuation of the refinery, shutting it down for two months, and causing losses of \$50 million. You can read more about this incident in the October 2008 and May 2010 Process Safety Beacons.
- In a food processing plant, piping was taken out of service because of asbestos insulation, but the piping was left in place. Eventually the block valves leaked, resulting in product contamination.
- Water leaked into an abandoned electrical box causing a ground fault and a power system trip.
- A process using phosphorus trichloride (PCl_3), a highly water-reactive material, was shut down. A PCl_3 tank was supposed to be emptied and left in place. It was not completely emptied. Several years later there was a leak. The PCl_3 reacted with water on the ground to create a toxic hydrogen chloride cloud.



Did You Know?

- Plants often stop using equipment, piping, and even entire plants or production units for weeks, months, or even years. This can be because of economic conditions, seasonal variation in product demand, or changes in the process.
- Equipment that is not in use must be isolated from operating equipment, emptied of all chemicals, and de-energized. Your plant should have lockout/tagout procedures to provide guidance on what should be done.
- When a process is modified and equipment is removed from service, it may be isolated during the plant modifications with the intent to remove it later. But, is it really ever removed? Is the old equipment left in place, rusting and deteriorating?

What Can You Do?

- Always do a management-of-change review when removing equipment from service, either temporarily or permanently, or when removing abandoned equipment. Consider what isolation, de-inventorying, and de-energizing is required for equipment not in use. Follow your plant's lockout/tagout procedures.
- Make sure that equipment that is abandoned with the intention of "removing it later" is actually removed.
- Raise management awareness of unused piping or equipment. You may know about piping or equipment that is no longer used and has been forgotten.
- Periodically inspect equipment that is out of service to ensure that it does not create a hazard to operating equipment, or the environment. Look for signs of damage, corrosion, or leakage. Pay special attention to block valves, blinds, and other devices that isolate out-of-service equipment from operating equipment.

Manage change when abandoning and removing equipment!

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