

15 Years of the *Process Safety Beacon*!

November 2016

1 **CCPS** *Process Safety Beacon* Messages for Manufacturing Personnel

Trace quantities of flammables can cause an event like this!

Flammables in a vessel vapor space is a hazard present in many facilities. In most cases, it is associated with handling flammable liquids, vessel systems include vent gas (e.g., nitrogen purging, electrical grounding, hot work permit procedures, etc).

But, a flammable vapor space can also develop in vessels which contain only TRACE amounts of flammable materials. Here are a few of the ways this could happen:

- A reaction involving a chemical with trace quantities of a flammable material, when the main component is consumed in the reaction, trace amount quantities accumulate in the vessel's vapor space.
- A liquid containing small quantities of volatile or non-volatile flammable impurities flows through a vessel, the flammable material is released and trapped in the vapor space.
- Absorption of a liquid which contains trace quantities of a non-absorbed flammable impurity which can be held to accumulate in the vapor space.

Important Items to Look for to Identify this Hazard

- a stagnant vessel vapor space, and
- trace amounts of flammable chemicals which could be released from the liquid.



What To Do If You Have This Hazard

- treat the vessel as if it held a flammable material
- install a purging flow in the vapor space to maintain a flammable concentration less than 2% of the lower explosive limit.

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In November 2001, CCPS published the first issue of the *Process Safety Beacon* (1) and distributed it to a few hundred people. Since then, 180 messages for front line process industry workers have been published (read-only copies available at www.sache.org). Distribution has expanded to over 38,000 people on the direct mailing list, and those recipients are free to share the *Beacon* with co-workers. Total readership is probably several hundred thousand each month. The *Beacon* is currently translated into more than 25 languages by a dedicated group of volunteer translators, who contribute their time to promote process safety worldwide.

In 2016, there were two *Beacons* focusing on repeat incidents – February, on fires resulting from overflowing tanks containing flammable

materials (2), and May on ammonium nitrate explosions (3). These incidents are examples of events that we hope the *Beacon* can help prevent. Learn from incidents that have happened somewhere else, so that you don't have to learn the hard way by having a similar incident in your own plant!



Did you know?

- The *Beacon* is written for operators, maintenance workers, and other front line process industry workers. It focuses on things that they can observe and actions they can take within their job responsibility.
- We realize that many engineers, chemists, other technical staff, and managers read the *Beacon*, and hopefully they learn something from it. However, the *Beacon* is not written for them. You will not find suggestions such as “change the process,” “replace the equipment,” or “follow Standard XYZ” in the “What can you do?” section.
- You are free to share the *Beacon* with your co-workers and colleagues, either as printed copies or as computer files.

What can you do?

- When you read a *Beacon*, think about what you can learn from it, even if it discusses an incident which happened in a very different kind of plant. For example, the September 2016 *Beacon* was about a fire on a ship. Most *Beacon* readers do not work on ships, but the real message was about the importance of management of change (MOC), which applies to every kind of plant or equipment.
- There is limited space in a *Beacon* and it cannot include all of the important lessons from an incident. Think about other things that you can learn from the incident, and search for more information on the specific incident or similar incidents.
- If you work in a plant with a good process safety management program, you probably don't have many incidents. It is easy to become complacent. Use the *Beacon* to remind everybody of what can happen if you fail to rigorously carry out all of the activities in your plant's process safety management system.
- Read the February 2008 *Beacon* on “How to use the *Beacon*”, which you can view at www.sache.org.

The *Beacon* – sharing process safety lessons for 15 years!

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