

Overflowing Tanks

The U.S. Chemical Safety Board (CSB) recently released the results of its investigation of a tank farm fire at a petroleum products storage facility in Puerto Rico on Oct. 23, 2009. The photos below show the facility during the fire and the significant damage that it caused. (Read the report at www.csb.gov/caribbean-petroleum-refining-tank-explosion-and-fire/).

Several Process Safety Beacons have covered tank overflow incidents, including those published in September 2004, September 2006, September 2009, and October 2009. It is only by coincidence that the October 2009 Beacon covered tank overflow in the same month that the Puerto Rico incident occurred.

Appendix B of the CSB report of the incident includes a list of

22 major tank farm fires since 1962. That list, however, does not include all such events; for example, the incident described in the September and October 2009 Beacons is not included. It is worth noting that 19 of the 22 incidents listed in the report involved tank overflow. It is surprising that simply putting more material into a tank than will fit is a frequent contributor to major incidents considering the more-complex operations that occur at process facilities.

Some of the significant operational and technical causes of the Puerto Rico incident include unreliable instruments, inadequate procedures, and the lack of independent overflow protection systems on storage tanks. These issues likely contribute to many similar incidents.



▲ Multiple tanks caught fire during the incident.



▲ The tank farm incurred significant damage.

Did you know?

- Although the operations in your storage tank farm may not seem to be very complex, they may actually be more complicated than you think. There may be many interconnections between tanks. You may have to put material in tanks that are already partially full, or divide incoming material among several tanks.
- Your tank farm probably contains the largest inventory of hazardous material in your plant. If an incident occurs, it will likely be large.

What can you do?

- Never underestimate the consequences of flammable, combustible, or toxic material overflow from a tank.
- Read the September 2004, September 2006, September 2009, and October 2009 Process Safety Beacons (available at <http://sache.org/beacon/products.asp>) for guidance on what to do in the case of tank overflow.

Stop tank overflows!

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