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Safety Alert

Triple Fatality at Paper Mill Involving a Tank Explosion

On July 29, 2008, three employees were fatally injured and a fourth was seriously injured while hot work was being performed from a catwalk on a “spreader” flange at the top of an 80-foot-tall, 850,000-gallon cylindrical tank that contained recycled water and paper fiber.

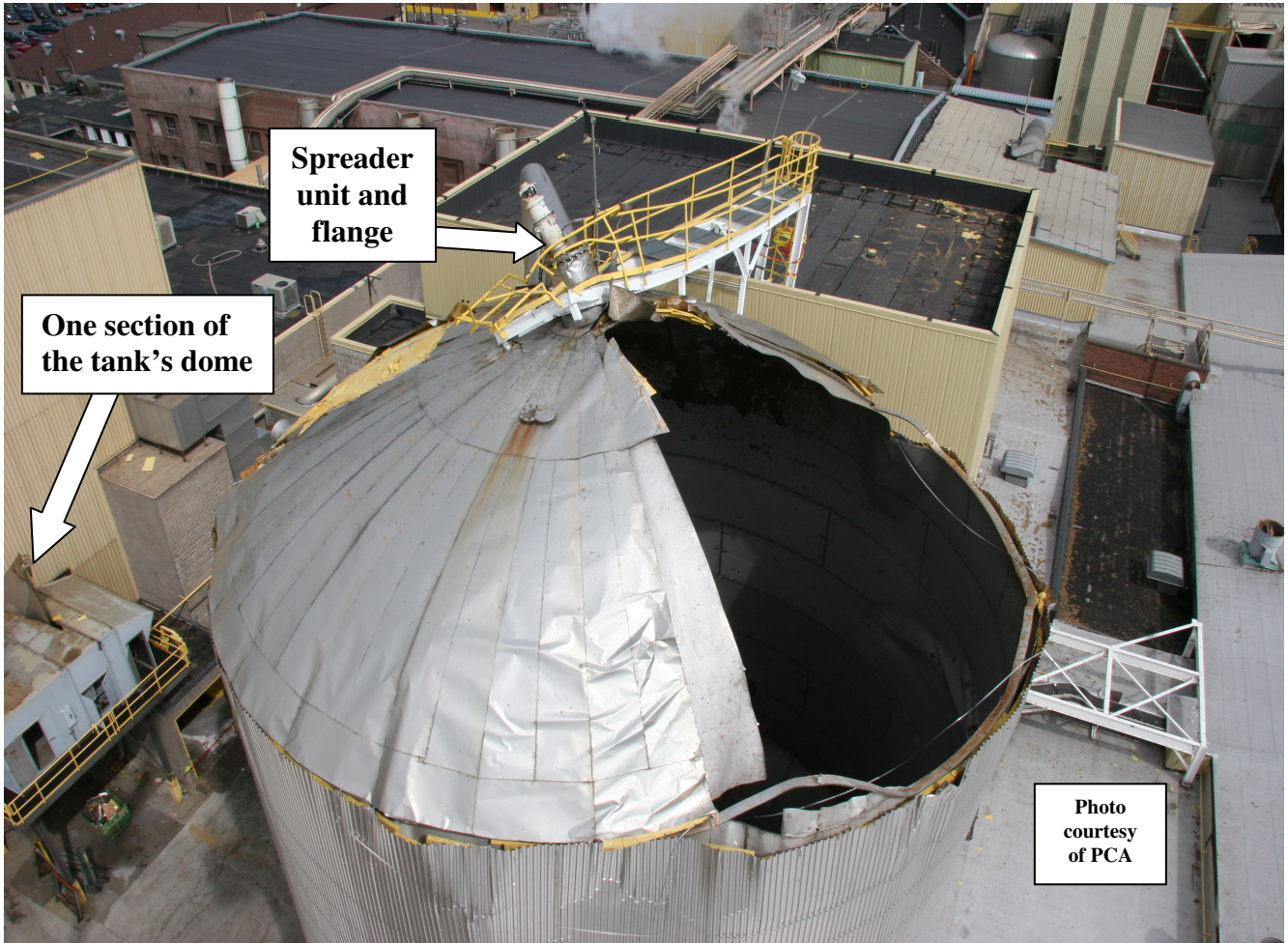
A second half of a “c” clamp was in the process of being welded to the spreader flange so a stitch weld could be made between the spreader flange and the stock feed tube flange, when the tank exploded internally blowing two sections of the domed lid off.

The cause of the explosion remains to be determined.

It is believed from our initial investigation that a flammable gas, possibly hydrogen, was present in the dome of the tank while electric welding was taking place. OSHA and the U.S. Chemical Safety Board along with officials of Packaging Corporation of America will be examining samples taken from the facility to see if anaerobic microbes (which grow in the absence of oxygen and feed in organic matter) produce such gas. Microbiological and chemical analysis results are expected to help determine the cause of the explosion.

Initial recommendations:

1. The employer’s hot work program, permitting & procedures must include work around tanks, chests, pipelines, etc. that store recycled fiber, pulp or “whitewater” (recycled process water) and require atmospheric testing to check for a flammable atmosphere of the interior (including headspaces) and exterior of the items listed above.
2. Proper ventilation of tanks and other whitewater systems needs to be designed, maintained and inspected as whitewater contains nutrients that promote growth of organisms. Especially when the stock and whitewater is left semi-stagnant and poorly mixed.
3. Whitewater systems need to be properly labeled to communicate the hazards associated and workers (including contractors) effectively trained.
4. Where possible, control temperatures and PH levels in the whitewater systems that will eliminate the possibility of bacterial actions.
5. Implement/maintain a biocide program or process that controls the growth of anaerobic bacteria.



**Spreader
unit and
flange**

**One section of
the tank's dome**

**Photo
courtesy
of PCA**