

Good Housekeeping Is Critical to Safety

A sugar mill in Port Wentworth, GA, had been operating for almost 100 years, but poor housekeeping procedures allowed sugar to accumulate around equipment and on structures. Periodic fires were reported at the site, but corrective actions were not effective or sustainable.

During operation, chutes that fed sugar onto a conveyor belt would get clogged by sugar clumps, causing sugar to overflow onto the floor. The tunnel containing the conveyor was large and ventilated, which prevented airborne dust from reaching explosive levels. However, in 2007, the company enclosed the conveyor belt to reduce contamination of the sugar, but did not include a ventilation system. In February 2008, a chute became plugged, creating a dust cloud that ignited and caused a series of sugar dust explosions. The plant was destroyed, 14 people were killed, and 38 were injured.

The initial explosion set off a series of explosions due to the sugar residue throughout the process plant. While the initial explosion would have been severe on its own, the presence of accumulated sugar fed secondary explosions and fires — greatly increasing the impact of the incident. Read the full U.S. Chemical Safety Board (CSB) report at www.csb.gov/userfiles/file/imperial%20sugar%20report%20final%20-%20to%20post.pdf.



▲ Poor housekeeping at this Port Wentworth, GA, sugar mill exacerbated an incident that killed 14, injured 38, and destroyed the plant.

Did You Know?

- Accumulated materials from processes and packaging are fuel in the event of a fire or explosion. Minimizing this accumulation is essential to good plant housekeeping.
- Safety systems such as fire protection may not be designed for the addition of extra fuel from dust or other spilled materials.
- Spills and leaks of raw materials, process intermediates,

or finished products are not only a safety issue — they reduce process yield.

- Housekeeping is more than removing spills. It also includes removing clutter, such as unused equipment and packaging.
- Metal dust or filings are also fire and explosion hazards, and should receive the same attention as other combustible materials.

What Can You Do?

- Know the housekeeping expectations of your plant and ensure they are followed.
- Ensure that proper handling and disposal methods are applied for materials that are collected during housekeeping activities.
- Follow the unique disposal guidelines for metallic wastes.

- If you do not know the type of material to be cleaned, consult safety personnel for guidance on proper personal protective equipment (PPE) and cleaning procedures.
- Note substandard housekeeping during rounds and report this to management. If possible, clear any issues immediately using the proper safety methods.

Clean areas are safer!

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