

Tips:

## Making your processing support functions safer

**Is your plant's manufacturing process safe, while your support functions go unchecked? Are most of your safety dollars devoted to your process, with only a few going toward associated functions? Read this article for tips to identify and fix commonly overlooked safety hazards in process support functions.**

**P**owder and bulk solids processors are committed to safe operations. No one wants to see employees hurt. From plant design through operation, companies dedicate much effort and many dollars to blend safety into their manufacturing processes.

That's as it should be. It's during processing that high pressures, high temperatures, and hazardous materials can create serious threats to employees, property, and the environment.

Unfortunately, plants rarely apply strict safety standards to processing support functions, such as:

- Unloading or loading materials for receiving and shipping.
- Charging raw materials into the process.
- Packaging.
- Warehousing.

The following sections explain how to identify hazards in your support functions.

**Unloading or loading materials.** Do employees climb on railcars in all kinds of weather without the aid of fixed stairways, platforms, railings, or loading arms? Do employees have adequate weather protection and lighting? When no fixed safety structures exist, each employee should be fitted with a safety harness. Also, the work area should have a weather covering to keep rain or snow off platforms and ladders.

**Charging raw materials into the process.** Do employees manually charge raw materials into your process? Does this occur at elevated heights, and do employees dispense the material from heavy containers? Even if you have a charging room, many organic and inorganic additives can generate a static charge when discharged from a container. If such a charge creates a spark and a dangerous air-to-dust ratio exists in the room, a serious explosion can occur.

Typically, installing an adequate dust control system at the unloading or loading point will help you prevent a dust-related explosion. You may need to ground certain containers or receiving vessels or add nitrogen to your process in some cases.

**Packaging.** All the following hazards were observed in one plant's packaging operation. Do any of these common hazards exist in your plant?

- Floor surfaces slippery from moisture and loose material.
- No aisle markings to separate pedestrian and forklift traffic.
- No safety mirrors at aisle crossways.
- Insufficient operator headroom beneath overhead conveyors or other equipment.
- No building evacuation plan.
- Ramps so steep that forklift drivers involuntarily accelerate.
- Conveyor chain drive covers missing.
- Guard plate missing at machine's point of operation.
- Electrical disconnect switches unmarked.
- Restricted access to electrical and compressed-air control switches and valves.
- Motor disconnect switches not located at motors.
- Emergency stop controls on equipment not readily available to operators.
- High atmospheric dust levels.

**Warehousing.** Are your forklift drivers required to stack pallets too high or too deep? In most cases, pallets shouldn't be stacked higher than four levels. The load is less stable beyond this level. And stacking more than seven loads deep can also present safety hazards. A forklift driver backing out with such a load can bump a neighboring palletized section, causing it to tip, resulting in injury or damaged packages.

### **A dangerous situation**

A look around your plant may leave you wondering why these obvious support function safety hazards are present. But if your plant is like most others, the hazards exist because the plant was designed or modified with only *process* safety in mind.

Loading and unloading, charging, packaging, and warehousing typically get less attention and little funding. In these functions, safety training also takes a back seat to that in processing areas.

You've probably noticed that management can often justify capital for process safety improvements, but support functions don't compete well for limited funds. As one chemical company executive vetoed funds for packaging safety measures, he said,

"We're in the chemicals business, not the packaging business."

When your plant's revenues come from processing, that's where money will be spent. However, your manufacturing process can't exist without support functions. And safety issues affecting your support functions are no less important than those affecting your process.

### **Safety as a plantwide commitment**

Unquestionably, a safe manufacturing process is essential to avoid major calamities in your plant. But when your plant's commitment to safety isn't extended to support functions because the hazards look less catastrophic, they become more and more prevalent, and outcomes can be serious.

Here are some recommendations:

- Make a commitment to plantwide safety.
- Conduct inspections, talk to supervisors, observe support operations, and identify safety problems.
- Develop a plantwide program to eliminate all hazards.
- Obtain funding for that program.
- Remove identified hazards and institute safety training.

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