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Messages for Manufacturing Personnel

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Good Housekeeping for Safety!

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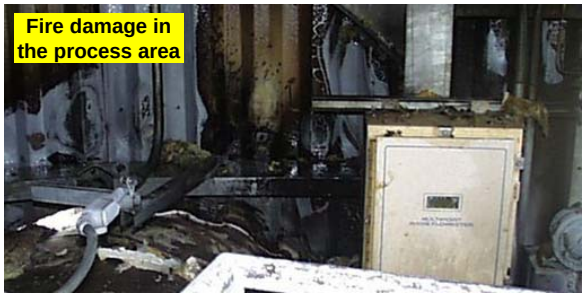
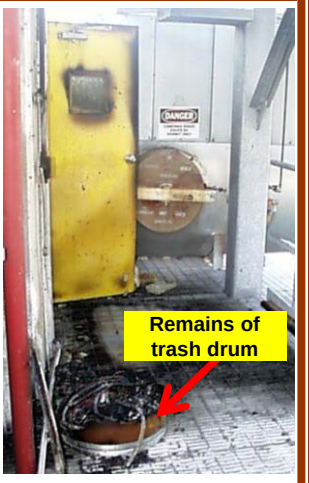
A fire started in a fiber trash drum in a process building. The drum contained solder flux and paste, welding debris, general trash, and oil soaked rags. It had not been emptied for a long time. The ignition source may have been hot welding debris or spontaneous combustion of the oil soaked trash.





The trash drum fire got much worse. Some of the process equipment, pipes, structural steel, and floors were coated with dried polymer from previous spills. The fire spread from the trash drum to the accumulated spilled polymer. A much larger fire resulted, which did significant damage to the building, process equipment, instruments, and control equipment. Although no one was injured, the plant was shut down for an extended period of time, and the damage was several hundred thousand dollars.

Why did it happen?

- Poor housekeeping contributed to this incident for two reasons:
  - The initial fire started in a fiber drum being improperly used for trash and debris from construction and maintenance. The drum was not emptied regularly.
  - The fire grew much larger because of accumulated polymer on piping, equipment, and the building structure. This accumulated combustible solid material was the fuel which made the fire much worse.
- The accumulated polymer came from leaks of an aqueous polymer emulsion due to process equipment problems.
- The operating personnel in the plant gave up on trying to keep the plant clean because the repeated leaks made this a hopeless task.
- The leakage of polymer was an equipment design issue beyond the control of operating personnel. This was an engineering design problem which needed management and engineering attention.
- Perhaps the culture in which a dirty plant had become "normal" was a factor in making it acceptable to put trash and maintenance debris in a fiber drum and to not empty the trash drum regularly.
- This kind of situation is called "normalization of deviation" when discussing process safety culture. This is just a fancy term for giving up on changing an unacceptable situation and accepting it as normal.

What can you do?

- Remove all maintenance debris from the work area immediately and disposed of it properly. The job is not finished until you clean up!
- Dispose of oil or chemical soaked rags and paper properly (metal containers, separated from potential ignition sources, not in process areas).
- Put general trash in proper containers and empty the containers regularly.
- Keep process areas clean. Any combustible material, including combustible dust, that accumulates on equipment, floors, cable trays, or structural steel is fuel which could make a fire much larger!
- Do not accept a situation where equipment problems result in leaks which make it difficult or impossible to keep process areas clean. Remind your management of a potentially dangerous situation, and work with them to resolve the problem.

A clean plant is a safer plant!

The Beacon is usually available in Arabic, Afrikaans, Chinese, Danish, Dutch, English, French, German, Greek, Gujarati, Hebrew, Hindi, Italian, Japanese, Korean, Malay, Marathi, Norwegian, Persian, Polish, Portuguese, Romanian, Russian, Spanish, Swedish, Telugu, Thai, and Vietnamese.