



Warning: Hot Coffee!

Hidden Flood Dangers

No. HC-2012-3 November 7, 2012

Learning Objective: The student shall be able to identify hazards associated with flammable and combustible liquid storage tanks during floods.

Hurricane Sandy's recent landfall and the corresponding fires in New York and New Jersey remind us of the dangers of simultaneous disasters. Flood waters can dislodge tanks, drums, pipes and equipment, which may release hazardous materials such as pesticides, chemicals or fuels.

This event can serve as a reminder of steps to take before and after flooding to minimize the damage.

- Properly anchor all outside storage tanks (including underground tanks) as well as any other item that might float in a flood. Underground tanks, if not completely filled at the time of the flood, may be hydrostatically lifted and thereby sustain major damage. Water can be poured into the tank before a flood to prevent this problem. Mobile containers containing flammable liquids should be secured as well.
- In flood prone areas, tanks should be located so at least 30 percent of their allowable storage capacity is above the 100-year flood level. If this cannot be accomplished, tanks should be anchored to resist floating or moved to areas less prone to floods. Additionally, tank openings that are not water tight should be extended above the 100-year flood level.
- Confirm that vents from tanks and containers are extended above the maximum anticipated flood level. Tank vents generally should be at least 12 feet (3.7 m) above the adjacent ground level.
- Separate and place in a safe location all water-reactive chemical products and flammable liquids. In case of spillage, they would create a pollution issue and a fire hazard with potentially catastrophic consequences.

After the flood:

- Never enter environments that may contain flammable liquids, vapors or other contaminants. Trained hazardous materials cleanup crews should be summoned for assistance.
- Have a plan in place to deal with the aftermath of the event. Supplies for cleanup, tarps, fuel for vehicles and equipment, and lists of emergency contacts are all items that can be readied before a flood.
- Inspect storage and piping systems containing flammable liquids to repair leaks or damage as soon as possible.
- Make sure employees know their responsibilities and how emergencies will be communicated to them.
- Remove water from diked areas around aboveground liquid storage tanks.

For additional information, download the FEMA document "Protecting Building Utilities from Flood Damage" (FEMA P-348) at <http://www.fema.gov/library/viewRecord.do?fromSearch=fromsearch&id=1750>.



This bulk storage facility was damaged by floodwaters, potentially releasing dangerous flammable liquids. Photo courtesy of Federal Emergency Management Agency (FEMA)/Liz Roll.



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