Costly Lesson: Safety Is Never Simple

U.S. investigators have identified a very simple safety oversight that put lives at risk and caused massive damage to the Formosa Plastics facility in Texas late last year &#151 the lack of a "No Parking" sign.

According to the federal Chemical Safety Board, the October fire and explosions at Formosa's Olefins II unit at Point Comfort might have been prevented if the unit's access lanes for vehicles &#151 and areas off-limits to vehicles &#151 had been marked. The accident was triggered, according to the board's final report, when a worker driving a forklift truck and towing a trailer full of gas cylinders backed into an open space between two columns to turn around. When he drove forward, the trailer snagged on the protruding tip of a drain pipe valve and tore it away, opening a two-inch breach. Pressurized liquid propylene shot out, collecting in a pool on the pavement and forming a vapor cloud that quickly ignited. The explosion injured two workers and 14 others sustained minor injuries as they scrambled away from the rapidly expanding disaster. The fires weakened steel beams supporting an adjoining pipe rack that collapsed. The pipe rack ruptured pipelines carrying flammable hydrocarbons under pressure, which fed the fire. It burned for five days.
The safety board said that fireproof insulation for the pipe rack's support columns might have limited the conflagration. In addition, said the board, "had the Olefins II unit been equipped with automated shutdown valves, it may have been possible to stop the propylene flow, limiting the size of the fire." Operators were unable to get to manual shut-off valves because of the vapor cloud and then the fire storm. However, the board found that the initial, "seemingly minor event, in which a trailer bumped into a drain valve" could have been the most easily avoided. "The propylene piping involved in this incident," said the board's report, "protruded into an open space, yet it had no impact protection." The report noted that Formosa had administrative safeguards for vehicle operations in the plant, but they did not specify where vehicles could or could not operate. "The plant design drawings designate specific access ways for vehicles," the board found, but "these are not physically marked in the unit." The area where the forklift and trailer snagged the drain valve "was not a designated access way but was large enough for a vehicle to easily pass." Well, apparently not easily enough.
Many individuals working in the chemical industry are rightfully proud of the industry's safety record. The American Chemistry Council cites Labor Department statistics that show &#151 despite often hazardous environments &#151 that the chemical industry has illness and injury rates half those of manufacturing in general. Chemical workers, the council contends, are safer than those in retailing. Many outside the industry, however, argue that the sector's safety record leaves a lot to be desired, citing for example the horrific explosion and fires that killed 15 workers at the BP refinery in Texas City, Texas in March 2005. Both sides agree, though, that more should be done to improve safety. Remarkably, the Chemical

Safety Board's report on Formosa's disaster shows that all too often that extra needed effort need not be much at all.

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