

## Facility Siting

March 2010



**Damage to portable trailers from the March 2005 Texas City explosion**

Five years ago, on March 23, 2005, a series of explosions occurred at an oil refinery in Texas City, Texas during the restart of a hydrocarbon isomerization unit. 15 workers were killed and 180 were injured. All fatalities and many of the injuries occurred in and around trailers that had been placed near the isomerization unit to support maintenance activities on other units. A distillation column was overfilled and overpressurized. The relief valve opened, releasing hot hydrocarbon to the atmosphere through a vent stack to the atmosphere. This was not the first time a release had occurred from the vent stack, but this time the release was much larger. The resulting flammable vapor cloud ignited causing a massive explosion.

This incident highlights the importance of the location of occupied buildings, both permanent and temporary, relative to highly hazardous processing facilities. In response to industry and public concern, the American Petroleum Institute (API) has created or updated two Recommended Practices on management of hazards associated with permanent (RP752) and portable (RP753) buildings.

## What can you do?

While it is easy to think that facility siting and location of occupied buildings are only a concern for management, there is a lot that people working in the plant have to contribute. For example:

- Understand your plant's facility siting studies. Know which areas of your plant are off limits for temporary buildings. Make sure that any changes in building location, or in plant operations near occupied buildings, are thoroughly evaluated using the site Management of Change (MOC) process.

- Point out differences between facility siting studies and the way buildings are actually used. For example, management may believe that a local control hut in the plant is used infrequently, but operators may know that it is actually regularly occupied for long periods of time.

- Don't seek refuge from a potential explosion in a building that is not designed for a blast. An explosion creates a pressure wave, and buildings which are not built to withstand an explosion are likely to be heavily damaged or completely destroyed. A person is more likely to be injured by the collapse of a building which is not blast resistant than by the same pressure wave in an open area.

- As soon as you become aware of a flammable material release which could create a flammable vapor cloud, follow your plant's emergency procedures, including sounding evacuation alarms to ensure that non-essential personnel evacuate process units and nearby buildings.

- Assure that nonessential personnel are not allowed in the process area during high hazard operations - for example, plant start-up, emergency shutdown, plant upsets.

- Insist that process upsets that result in hazardous material releases are properly investigated and corrective actions taken.

***Be sure that your occupied buildings are safe!***