

Facility	PEMEX LPG Terminal at San Juan Ixhuatepec, Mexico City
Date	19 th of November 1984
Consequences	650 fatalities and 6400 injured.
Description of accident	<p>A 200mm pipe between a storage cylinder and sphere ruptured, releasing LPG. The release continued for some 5 to 10 minutes resulting in a large gas cloud which ignited, causing an explosion and many ground fires.</p> <p>These ground fires led to a series of Boiling Liquid Expanding Vapour Explosions (BLEVEs) in the LPG terminal. The outstanding cause of escalation was the ineffective gas detection system and as a result, lack of emergency isolation.</p>
Key lessons learned [1,2]	<ul style="list-style-type: none"> • Siting of major hazards installation The high death toll occurred because of the proximity of the plant to residential areas. • Good fire and explosion hazard management strategy requires effective prevention, detection and emergency response barriers. <ul style="list-style-type: none"> ○ The total destruction of the facility occurred because there was a failure of the overall system of protection, including layout, emergency isolation and water spray systems. The terminal's fire water system was disabled in the initial blast. The plant had no gas detection system and therefore when the emergency isolation was initiated it was probably too late. • Boiling liquid expanding vapour explosions (BLEVE) hazards The accident showed that BLEVEs are an important hazard.
Reports & Links	<p>1) HSE website: COMAH incident reports</p> <p>2) Lees' Loss Prevention in the Process Industries: Hazard Identification, Assessment and Control, ed. Mannan, S., 3rd edition, Elsevier Butterworth-Heinemann, 2005</p>