Loss Lessons

51st Annual Canadian Chemical Engineering Conference
Guiding Principles

“Those who cannot remember the past are condemned to repeat it”
- George Santayana

“The first duty of business is to survive, and the guiding principle of business economics is not maximizing profit, it is the avoidance of loss”
- Peter Drucker
Outline

- 10 largest losses in last 30 years.
- 10 largest losses so far in 2001.
- Specific loss lessons.
  - Fire at a cooling tower
  - Fire at a lube oil refinery
  - Tank fire at an oil refinery
  - Fire at a flammable liquids filling operation
Top 10 losses in last 30 years

✿ Phillips- Pasadena, Texas Oct 23, 1989
  - $812 million (physical damage only)

✿ Shell- Norco, Lousiana May 5, 1988
  - $314 million

✿ Total- La Mede France November 9, 1992
  - $297 million

✿ Shell- Bintulu, Indonesia December 25, 1997
  - $275 million

✿ Hoechst Celanese Corp- Pampa, Texas
  November 14, 1987
  - $274 million
Top 10 losses in last 30 years

- **Fuji Oil- Sodegaura, Japan October 16, 1992**
  - $183 million
- **Nipro- Flixborough, UK June 1, 1974**
  - $170 million
- **Qatar Petroleum- Umm Said, Qatar April 3, 1977**
  - $167 million
- **Unocal- Lemont, Illinois July 23, 1984**
  - $167 million
- **Pemex- Cactus Gas Plant July 26, 1996**
  - $139 million
Reliance Petroleum
Jamnager refinery
Gujarat, India
January 26
Earthquake measuring 7.9 on the Richter scale
Loss estimate US$46 million
10 Largest Losses- 2001

- Chevron Phillips Chemical Company LP
- St. James, Louisiana
- February 11
- Fire of styrene vessel internals
- Loss estimate- US$18 million physical damage
- 7 months of downtime
10 Largest Losses - 2001

- Tata Chemicals Limited
- Mithapur, India
- March 2
- Fire in on-site power plant
- Loss estimate - US$20.8 million
- Partial recovery within 24 days, 4 to 5 months until full operations resume.
10 Largest Losses- 2001

- El Paso Corporation
- Aruba, Caribbean
- 225,000 bbl/day oil refinery
- April 10
- Fire in the crude oil processing area
- Loss estimate- US$120 million
10 Largest Losses - 2001

- Conoco Inc.
- Humber Refinery
- Grimsby, UK
- 180,000 bbls/day
- April 16
- Vapour cloud explosion
- Loss estimate US$260 million
10 Largest Losses - 2001

- Tosco Corporation
- Carson Refinery
- Carson, California
- 125,000 bbls/day
- April 23
- Fire in Coker Unit
- Loss estimate - US$120 million
10 Largest Losses- 2001

- Tosco Corporation
- Wood River Refinery
- Roxana, Illinois
- 286,400 bbls/day
- April 28
- Fire in crude unit #2
- Loss estimate- US$60 million
10 Largest Losses - 2001

- Ultramar Diamond Shamrock
- Three Rivers Refinery
- Three Rivers, Texas
- 98,000 bbls/day
- July 9
- Fire in alkylation unit
- Loss estimate US$10 million plus loss of profits
10 Largest Losses - 2001

- Citgo Petroleum (division of PdVSA)
- Lemont, Illinois
- 167,000 bbls/day
- August 16
- Fire at crude unit
- Loss estimate $25 million plus loss of profits
10 Largest Losses - 2001

- AtoFina
- Toulouse France
- September 15
- US$700 million
- Massive detonation of ammonium nitrate pile.
Out of 14,500 facilities filing government-required risk-management plans, 1,145 reported 1,913 accidents between June 1994 and 1999. Those accidents killed 33 workers, injured nearly 1,900 and sent 217 people outside the plants to the hospital.