Today’s Discussion

- Texas City Accident
- The Safety Review Panel
- Findings and Recommendations
- Lessons for Leaders
The Texas City Refinery Accident

If other companies understand the Panel’s recommendations and apply them, the Panel sincerely believes that the safety of the world’s process industries will be improved and lives will be saved.
Texas City: March 23, 2005

- Overfilled equipment tower/vapor cloud ignited by idling vehicle
- Site safety deficiencies
  - Procedural problems
  - Defective instrumentation
  - Outdated equipment
  - Inadequate supervision/ training
  - Excessive work hours
Casualties and Damage

- Fatalities: 15
- Injuries: 170+
- Trailers: 13 destroyed, 27 damaged
- Houses: damaged (3/4 of a mile away)
- Shelter-in-Place: 43,000 indoors
- Financial Losses: exceeded $1.5 billion
- Worst U.S. industrial accident since 1990
The Safety Review Panel

- Panel composed of former Secretary of State Baker, Chair, and ten leaders from industry, medicine, government, military, and academia
- Thorough, independent, and credible assessment of the effectiveness of BP’s corporate oversight of safety management systems and its corporate safety culture
Safety Review Panel Findings
Findings: Corporate Safety Culture

- Process safety as a core value
- BP had not established a positive, trusting, and open environment
- Resources required for process safety
- Process safety into management decision-making
- No common, unifying process safety culture among its refineries
Findings: Process Safety Management Systems

- Adequate identification and rigorous analysis of hazards
- Timely compliance
- Appropriate level of process safety awareness, knowledge, and competence was not effective
- Corporate expectations into measurable criteria for management of process risk
Findings: Performance Evaluation, Corrective Action, and Corporate Oversight

- Measure and monitor process safety performance
- No effective root cause analysis
- No process safety audit system
- Track process safety deficiencies
- Process safety performance data was not presented at the corporate level
Lessons For Leaders
Process Safety Leadership

- Leadership sets the “tone at the top”
- Process safety as a core value
- Unwavering commitment to safety
- Industry pitfalls
  - Complacency
  - Arrogance
  - Lack of constancy
“It should not be necessary for each generation to rediscover principles of process safety which the generation before discovered. We must learn from the experience of others rather than learn the hard way. We must pass on to the next generation a record of what we have learned.”

— Jesse C. Ducommun, Safety Pioneer
Personal Safety and Process Safety

- Do not confuse personal safety and process safety
- Personal safety primarily affect one individual worker
- Process safety hazards can give rise to major accidents and process safety incidents can have CATASTROPHIC effects
Safety Is a Good Investment

- Safety costs money
- Designate a high-ranking corporate leader for process safety and mainstream the culture
- Do not mandate numerous initiatives that, while well-intentioned, overload personnel
- Do not allow high rates of overtime
Measure Safety Performance

- Do not confuse lack of accidents for good performance
- **Leading Indicators**: Active monitoring or systematic inspection and testing
- **Lagging Indicators**: Reactive monitoring

You think things are going the best, you should be losing the most sleep!
Complacency

- Do not allow good performance to breed complacency
- Preventing process accidents requires vigilance

“People can forget to be afraid.”
Empower Your Employees

- Process safety culture requires a positive, trusting, and open environment

- Single most important factor in creating a good process safety culture is **TRUST**

- Trust that incidents and near misses can be reported even when it reflects poorly on individual knowledge and skills
Safety Reviews

- Peer review should be a centerpiece of safety reviews and evaluations
- Peer review works in the nuclear power industry: *Institute of Nuclear Power Operations (INPO)*
Actions Not Slogans

- Safety is about actions and what people do, not about slogans and signs
- Reward safety performance as well as production performance
- Implement corporate-level aspirational guidelines and expectations relating to process risk
Informed Safety Culture

- Value of protecting human life
- Corporate safety culture is a set of beliefs, norms, and practices *shared* at all levels
- Corporate safety culture requires
  - Openness
  - Transparency
  - Empowerment
Foster a Corporate Safety Culture

“Companies have found that if safety and health values are not consistently (and constantly) shared with all levels of management and among all employees, any gains that result from declaring safety and health excellence a ‘priority’ are likely to be short-lived.”

— Meredith Armstrong Whiting & Charles J. Bennett, The Conference Board, *Driving Toward ‘0’: Best Practices in Corporate Safety and Health*
Risk Management

- Risk management is a continual dynamic process, not an event
- Unforgiving environment
- High consequence events
- Defense in depth
Principles for Nuclear Safety Culture

- Leaders commitment to safety
- Everyone responsible for nuclear safety
- Decision-making reflects safety first
- A questioning attitude is cultivated
- Organizational learning is embraced
- Nuclear safety undergoes constant examination

“Principles for a Strong Nuclear Safety Culture”
INPO November 2004
Important Points

*Process safety accidents can be prevented*

- Applies to every process industry
- Process safety incidents can have catastrophic effects
- Trust
- Safety culture by itself is not enough
- Senior leadership is a vital cog in the process safety management and safety culture