



PROCESS SAFETY *10 YEARS AFTER TEXAS CITY*

CAER Safety Summit
March 17, 2016

KAREN PAULK – INTRODUCTION

- **Company - Phillips 66**
- **Title - Operations Excellence/HSE Strategic Planning Manager**
- **Education –**
 - B.S. Education – McNeese State University, Lake Charles, LA
 - M.S. Management Systems – Loyola University, New Orleans, LA
 - School of hard knocks
- **31 years in the industry**
 - 23 years at a refinery
 - 8 years in the corporate offices

KAREN PAULK – PROCESS SAFETY JOURNEY

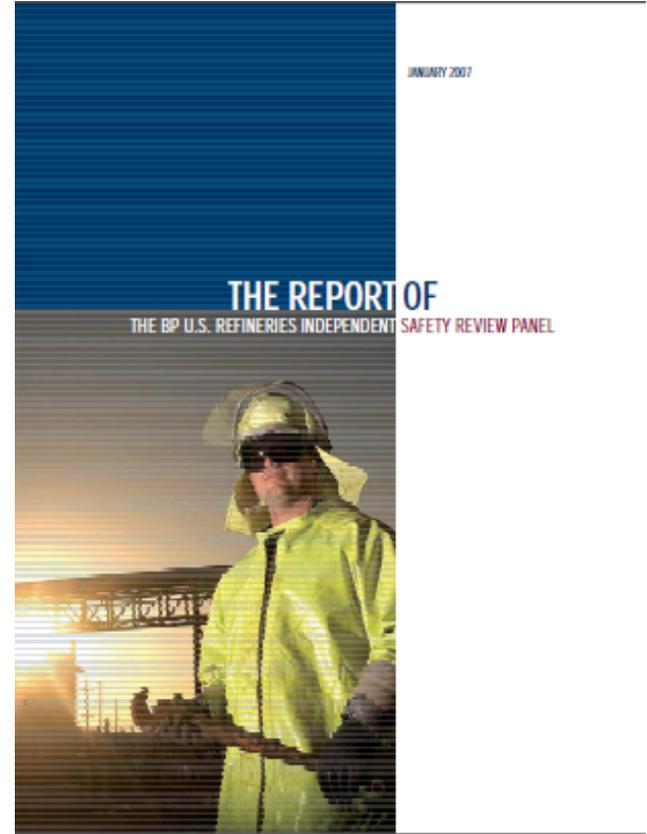
- **1985 – Refinery Operator - Sulfur Recovery Unit**
- **1986 – My first LOPC (H₂S Near Miss)**
- **1992 – OSHA 1910.119 promulgated**
- **1998 – Process Safety vs Personal Safety**
 - Process Safety became “personal” for me
- **2002 – PSM Lead – What are these 14 elements all about?**
- **2005 – Texas City ISOM Unit explosion**
- **2007 – Baker Panel Report published**
- **2008 – Corporate Process Safety Leader**

REMEMBERING TEXAS CITY

- **March 23, 2005**
- **During startup, overfilled raffinate splitter tower sending hydrocarbons to a blowdown drum**
- **Blowdown drum malfunction and stack overflow**
- **Vapor cloud formation and subsequent explosion**
- **15 fatalities, 180 injuries**
- **Chemical Safety Board investigation**

BAKER PANEL

- Chemical Safety Board recommended BP form an independent panel to conduct a thorough review of the company's:
 - corporate safety culture,
 - safety management systems,
 - and corporate oversight at its U.S. refineries



KEY LEARNINGS FROM BAKER PANEL REPORT

- **Corporate Culture**
 - Board level knowledge
 - Employee empowerment
- **Process Safety Management System**
 - Focus on risk
 - Establish/enforce high standards
- **Corporate Oversight**
 - Investigate, audit and correct deficiencies
 - Measure process safety performance

KEY LEARNINGS FROM BAKER PANEL REPORT

- Corporate Culture

- Executive Leaders understand Process Safety
- Process Safety is part of variable compensation
- Ownership for Process Safety lies with appropriate functional groups (i.e., PSM department does not “own” process safety any more)
- Employee’s have the Right and Responsibility to stop unsafe work
- Technical knowledge valued to ensure understanding of hazards
- No tolerance for deviations from risk management standards

KEY LEARNINGS FROM BAKER PANEL REPORT

- Process Safety Management System
 - Incorporated Process Safety into HSE Management System
 - Expansion of internal company standards for asset integrity and operating excellence
 - Strong focus on understanding potential hazards and risks
 - Strong focus on maintaining critical safeguards
 - Continuous Improvement – Plan. Do. Assess. Adjust.



KEY LEARNINGS FROM BAKER PANEL REPORT

- Corporate Oversight

- Investigating twice as many “near-misses” compared to past
- Learnings from investigations/audits built into our standards
- Compliance Audit programs focus more on process safety and risk
- High accountability “Compliance Verification” process for managers
- Fund and track compliance with standards (avoid initiative overload)
- Trend and respond to process safety performance indicators

KAREN'S CONCLUSIONS

- Baker Panel – significant impact on the refining industry
- Process safety excellence requires great leadership
- Good risk management goes beyond laws and regulations
- Our job is never done – rigor and diligence in the context of a continuously improving management system

Dedicated to the memory of those who lost their lives in a process safety incident.