Texas City Refinery March 23, 2005
15 People Killed
Many more injured
A community devastated
Background

• 1997 getting Health, Safety and Environment right (gHSEr) established as BP’s HSE framework - benchmarked with industry peers

• 1999-2005 declining injury rates - among the best in the industry

• March 23, 2005 – Texas City incident caused us to look deeply and urgently into what we can learn

• BP and CSB separately investigated the incident (BP report at www.bpresponse.org)

• BP U.S. Refineries Independent Safety Review Panel (Baker) established at recommendation of CSB in October 2005. Note: Panel explicitly did not review the causes of the Texas City accident.

(Report at www.bp.com/bakerpanelreport)
Texas City 3/23/05 Explosion - BP Incident Investigation

The BP Report identified 4 critical factors and 5 underlying cultural issues:

**CRITICAL FACTORS**
- Start-up procedures and management oversight
- Loss of containment
- Design and engineering of blowdown unit
- Control of work and trailer siting

**UNDERLYING CULTURAL ISSUES**
- Insufficient business context
- Safety as a priority
- Organizational complexity
- Inability to see risk
- Lack of early warning indicators

Incident investigation report available at: www.bpresponse.org
The purpose of the Panel was to assess the effectiveness of corporate oversight of safety management systems at BP’s 5 U.S. refineries and to assess BP’s corporate safety culture. It did not seek to determine the root causes of the March 2005 incident at Texas City.

The Panel report, issued in January 2007, made recommendations in the following areas:

1. Process safety leadership
2. Integrated and comprehensive process safety management system
3. Process safety knowledge and expertise
4. Process safety culture
5. Clearly defined expectations and accountability for process safety
6. Support for line management
7. Leading and lagging performance indicators for process safety
8. Process safety auditing
9. Board monitoring
10. Industry leader

Panel report available at: www.bp.com/bakerpanelreport
Texas City Site - what’s changed?

• New site Leadership
• Leadership training and support
• HSSE Team expansion
• Workforce engagement in “what you say matters” and “safe & reliable” action
• Removal of trailers and relocation of personnel to new office buildings
• Removal of blowdowns in heavier than air light hydrocarbon service and new flare systems
• Plant inspection and maintenance improvement programs
• Control of work improvement program
• Operating procedure improvements
• Training/ learning and development enhancements
• New system for performance indicators
What’s Changed?

• Executive leadership has fundamentally reviewed its strategic approach to operations

• Founded on the global application of a new operations management system, based on continuous improvement & consistency through standardization
  ➢ Independent Panel Recommendations form part of this broader agenda

• Group Operations Risk Committee (GORC) gives line ownership:
  ➢ Oversee performance & plans for consistent, safe, reliable operations
  ➢ Re-enforces senior executives emphasis on safe and reliable operations

What has not Changed?

• Our HSE Commitment

• Environmental and personal safety leadership
BP Group Learning - Way Forward

Immediate action

Six point Plan

Deep Embedding

Aspiration

2005

2011+

Plant

Temporary Accommodation
Blow-down Stacks

Operating procedures

Major Accident Risk
Integrity Management & Control of Work
Compliance
Audit Actions

People

gHSEr

Operations Competence

Operating Management System (OMS)

World Class Operating Company

…sustained by the right organizational capability & culture
We have grouped learnings from the Panel’s 10 recommendations into 4 focus areas for BP Group:

1. Process safety leadership
   (1) “process safety tone at the top”, (5) “define expectations & strengthen accountability”, (10) “industry leader”

2. Integrated and comprehensive management system
   (2) “system that systematically and continuously identifies, reduces, and manages process safety risks”, (7) “leading & lagging indicators”, (8) “audit”, (9) “independent third party”

3. People - process safety knowledge and expertise
   (3) “process safety knowledge and expertise”, (6) “process safety support”

4. People - process safety culture
   (4) “positive, trusting, and open process safety culture”
“Safe and reliable operations" is our number one priority.

Executive Management and the Safety, Environment & Ethics Assurance Committee of Board of Directors visits to major sites / refineries

Group Operational Risk Committee chaired by Tony Hayward meets regularly

Senior executives attended Operations Academy executive session at MIT

New leadership appointments for Refining, Group & US Levels

Performance contract and remuneration changes

Resources focused on operations
  ➢ Increased spending to improve integrity & reliability of US refineries
  ➢ Front line deployment of experienced engineers to specific refineries
  ➢ New S&O Audit team employs over 60 people

Independent Expert reporting directly to Board appointed
Independent Panel Learnings
- Integrated and comprehensive system

- Integrity Management and the Control of Work Group Standards are being implemented
- Operating Management System (OMS) will deliver integrated and comprehensive process safety management system
- Site implementation plans at each U.S. refinery incorporate Independent Panel recommendations
- Improved practices for risk management, incident reporting, & incident investigation
- Leading and lagging indicators
- New Group S&O audit
Integrated and comprehensive system - OMS key concepts

Comprehensive Elements of Operating:

- Leadership
- Organization
- Optimization
- Risk
- Processes
- Procedures
- Performance
- People
- Plant
- Privilege to Operate
- Results

Systematic management:

1. Intent
2. Risk Assessment & Prioritisation
3. Planning & Controls
4. Management Review & Improvement
5. Implementation & Operation

Consistently implemented …
Integrated and comprehensive system - Process safety indicators

• BP is proactively involved in industry activity (e.g. API, CCPS and others)
  ➢ CCPS published recommendations for process safety leading and lagging metrics in December 2007
  ➢ API working on CSB recommendation for industry metrics
• BP leading and lagging indicators already in use include
  ➢ Integrity management related incidents and high potential near-misses
  ➢ Major Accident Risk assessments
  ➢ Uncontrolled releases
  ➢ Overdue inspections & tests
• Process Safety Index based on Independent Panel recommendation
• BP ongoing development of metrics consistent with industry guidance and “health of barriers” concept as per UK H&SE HSG 254
Independent Panel Learnings
- Process Safety Knowledge & Expertise

- New Group and Refining Safety and Operations functional teams
  - Head of Discipline approach
  - Engineering Authorities
  - Group Head of Operations has been recruited (DuPont)
  - Group Process Safety Advisor & Process Safety Engineering team
  - Refining Head of Process Safety appointed (ex Dow)
- New process safety fundamentals training
- Operations Academy established with MIT
- Capability assessments of Operations leadership teams completed
- Process Safety specialists from consultants deployed in U.S. refineries
  - focus on action item closure
  - acceleration of priority improvement programs
Independent Panel Learnings
- Process Safety Culture

- GORC commitment to build a culture that puts operations at the centre of everything we do
- Safety Culture Assessment and improvement process implemented at various sites.
- Leadership support by external expertise at many refineries
- Independent Panel process safety culture findings shared with U.S. refining workforce and repeat cultural survey scheduled for 2008.
- Jointly developed, with United Steel Workers, a 10-Point Plan to improve safety.
Executive focus:

- “Our number one priority remains safe, reliable operations and we made material progress in 2007 across all of the Baker Panel's recommendations. In 2008 I need you to continue to focus on safe and reliable operations.” CEO Feb’08

Visible change:

- “A lot is going on”
- Removal of trailers & blowdowns and construction of new buildings and flares
- Increase in process safety resource and S&O support
- New process safety indicators
- Process safety measures in personal performance contracts

The ongoing journey:

- Immediate priorities based on risk reduction and restoring productivity of operational assets
- Operating Management System (OMS) - the ‘BP way of operating’