

Integrity & Assurance

a.k.a.
(Process Safety)
(Integrity Management)
(Mechanical Integrity)
(Technical Safety)

Learning from Our Experience

12 January 2004

Greatest Potential For ...



- **Multiple Injuries/deaths**
- **Significant Environmental Impact**
- **Significant Community Impact**
- **Significant Property Damage**
- **Significant Business Interruption**



Amoco Oil Wake Up Call

1955 Whiting Hydroformer Incident

“ It should not be necessary for each generation to rediscover principles of safety which the generation before already 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,

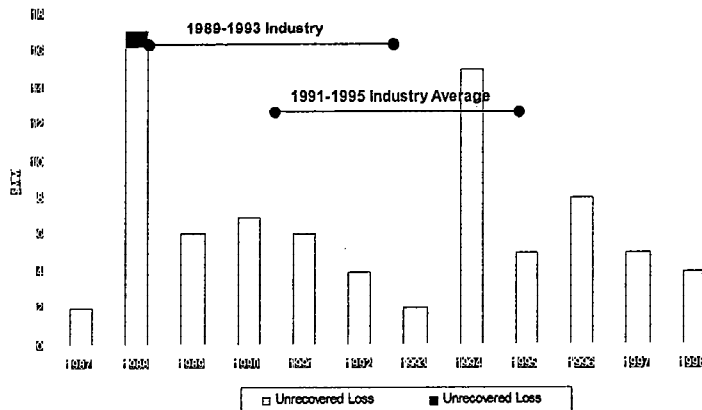
Vice President of Manufacturing, Amoco Oil Company, 1955



Unique Elements

- **Separate from traditional HSSE**
- **Line driven process safety**
- **Director of Process Safety reported to the Vice President of Refining**
- **Process Safety Committee, Process Safety Standards & Guidelines, Recommended Good Practice Manuals, Hazards of ... Booklets**

Amoco Oil Losses v Industry Average



Post BP/Amoco Merger

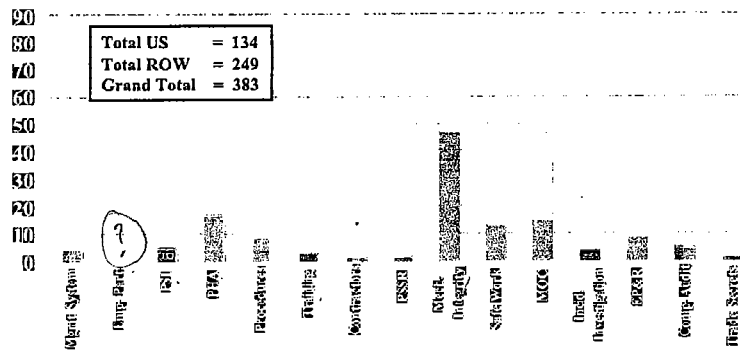
- gHSEr incorporates (some) PSM elements
- Refining adopts the Amoco PSM model
- Chemicals instructs sites to implement Refining PSM
- Group PSIM Standard
- Group Integrity Management Standard
- Integrity management confirmed as

Integrity & Assurance Is Easy to Ignore

- Process safety (high consequence) incidents are naturally infrequent
- Losing focus does not result in immediate consequence
- The 'urgent' overwhelms the 'important' if Integrity & Assurance is a part-time function

Refining PSM Audit Findings

Round 1: 1999-2002



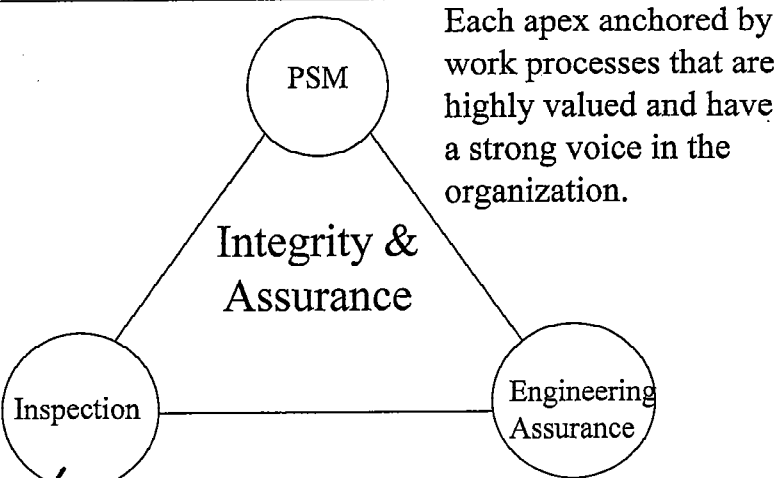
Reviews Completed as of 17 Dec 02
 1999 - Nacéo, Coryton
 2000 - Manin, Kwinana, Whiting, SLC
 2001 - Yorktown, Texas City, Mandan, Toledo, Orangethrough, Bulwer
 2002 - Beyemol, Lavena, Cherry Point, Carson, Nauho, Castellan

? what do these mean?

BP Refining Process Safety Losses

- Includes property damage, environmental cleanup, and business interruption
- 2003 -- \$39,530,400 (through 3Q)
- 2002 -- \$49,906,200
- 2001 -- \$256,846,545
- 2000 -- \$119,610,100

Integrity & Assurance Model



Is there a way to look at the Integrity Assurance Model? What do we see?

*Cut in 1990's
w/ a little*

Integrity & Assurance Proposal

- Name a BP South Houston Integrity & Assurance Manager reporting to the Site Director
- Reporting to the Integrity & Assurance Manager would be the BP South Houston managers for Process Safety, Engineering Assurance, Inspection, and (possibly) a new manager of Assessment & Improvement
- The visibility and focus of this new organization would demonstrate high level commitment to integrity and

What happened to these recommendations?

Benefits of the Proposal

- Integrity & Assurance highly valued and provided a strong voice in the organization.
- Primary focus on integrity and assurance (secondary focus on budget, schedule, resources)
- A separate organization provides independent verification
- Avoid relearning the hard lessons

Steve Morris
Cap. Proj. Mgr.

PSM was rep. to PS Counter