

Process Safety in the Year 2020

Sao Paulo
June 21, 2010



The miracles of science™

Themes – PSM in 2020

1. Our reduction in Process Safety Incidents is impressive.... but they will likely continue to occur
 - **New industries and process technologies will continue to add new process risks**
 - **The workforce is aging in developed countries while still maturing in developing countries**
 - **Use of Contractors will continue to increase**
 - **Some BP-Texas City learnings will be forgotten**
 - **Our common goal must be ZERO PSI's**

Themes – PSM in 2020

2. Governments' role will not change dramatically
 - **Will respond in a reactive manner to catastrophic events; public demand for improved performance will intensify**
 - **Few, if any new meaningful PSM regulations**
 - **Pre-occupied with economic, security, energy and environmental matters**

Themes – PSM in 2020

3. Process Safety Managing Systems will continue to improve
 - **Incident Investigations will continue to identify areas of vulnerability that organizations can respond to**
 - **More sophisticated/reliable tools for managing Human Factors will be developed**
 - **Safety Instrumented Systems (measurement, data analysis and control) will continue to advance and contribute**

Themes – PSM in 2020

- **PHA techniques will strengthen as more risk management/mitigation demands increase**
- **Mechanical Integrity detection technologies and data managing/planning systems will advance**
- **Change management, training, permitting and other data intensive elements will be increasingly managed with integrated information systems**
- **Operating Discipline will improve as news of global incidents continue to make headlines**

Themes – PSM in 2020

4. Prevention of Process Safety Incidents will become a higher management priority
 - **Integration of PSM needs into the resource allocation processes; capital, cost and people**
 - **Personnel changes are carefully managed with PSM credentials being an increasingly important consideration; at all levels**
 - **Risk management and accident prevention will be management responsibilities for which leaders are held accountable**

Themes – PSM in 2020

- **The linkage between excellent Process Safety Management and Operational Excellence will be recognized by a growing number of leaders**
- **PSM Principles will be more universally applied in industry's that have high risk profiles**
 - **Metals Processing and Mining**
 - **Food**
 - **Transportation**
 - **Power Generation**
 - **Major capital projects**
- **Leaders will develop stronger PSM cultures**

Themes – PSM in 2020

5. Challenges, for myself and for you, include:
 - Be more persuasive and business oriented when recommending change to leadership
 - Develop better risk identification / evaluation techniques; Consequence Analysis and Frequency of Occurrence methodologies
 - More effective first and second party auditing to drive continuous improvement
 - Improved metrics that predict, communicate, and that when analyzed, are acted upon