

MEXICO'S ENERGY REFORM: OPPORTUNITIES AND CHALLENGES FOR INTERNATIONAL ENGAGEMENT IN THE GULF OF MEXICO

Opportunities for Improving Collaboration in Developing Common Safety and Environmental Standards

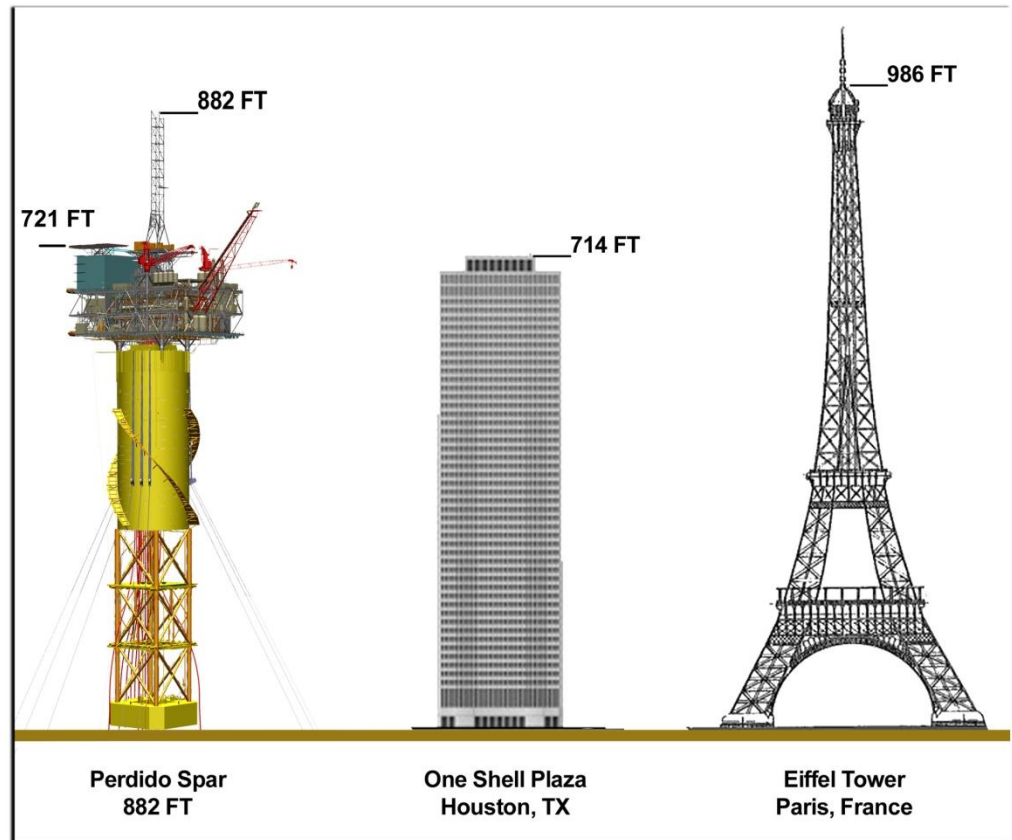
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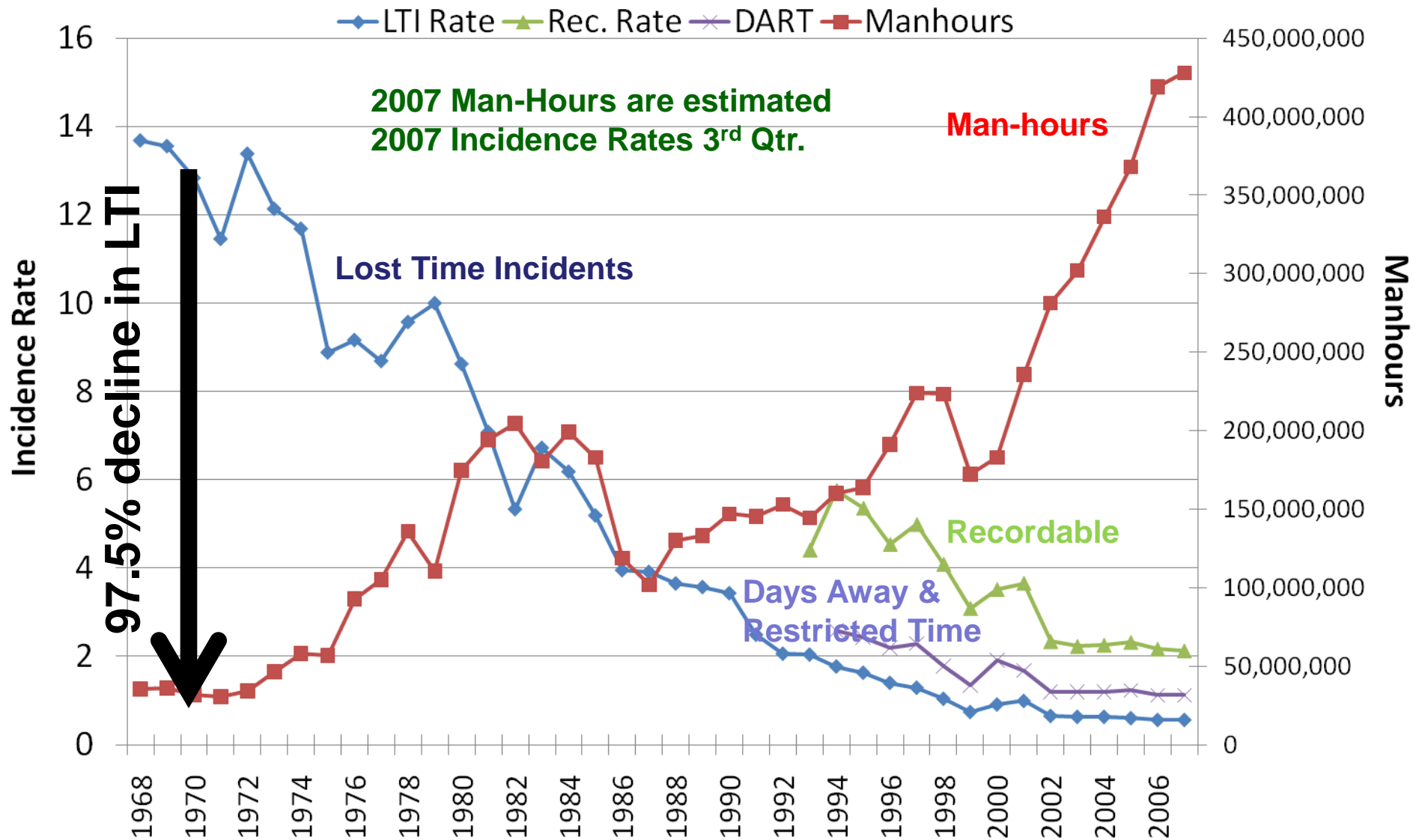


— Perdido Records —

- Deepest Drilling & Production System **WR**
- Deepest Spar
- Deepest Subsea Well **WR**
- Deepest Subsea Pipeline Tie-In **WR**
- 1st Development of GOM Lower Tertiary (Paleogene)



Marked Improvement in last 40 yrs



Why SEMS – Safety and Environmental Management System?

- **Shifts from a prescriptive rule based approach to one that is proactive and performance based**
- **Manages safety with the same principles of planning, organization, implementation, and investigation that are in all other business functions**
- **SEMS includes Process, Personal, and all safety programs**

Rule and inspection based systems are important but do not fully address the safety management system errors often seen in major incidents

SEMS Effectiveness

SEMS in an operation requires mechanisms that:

- **Specify what is needed for safe operation**
- **Check to see that these specifications are being followed**
- **Build competency by developing individual knowledge and skill**

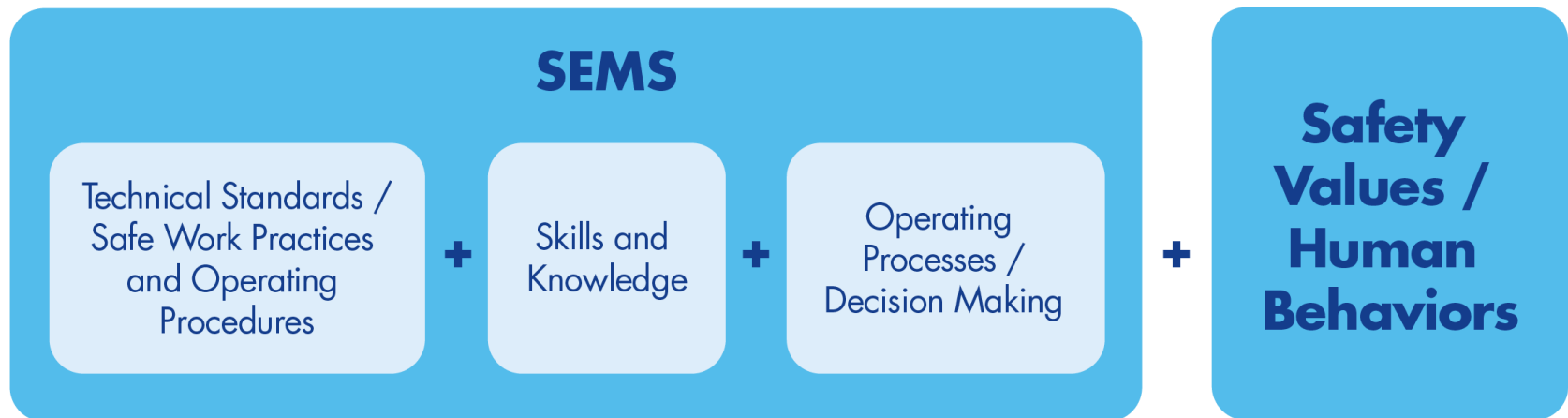
Plus there must be norms and motivations for decision makers to constantly think about safety and behave in ways that maximize safety

Safety & Environmental Management Systems – SEMS

What are the Elements of SEMS?

Leadership & Commitment	Mechanical Integrity
Safety & Environmental Information	Pre-startup Review
Hazards Analysis	Emergency Response & Control
Management of Change	Incident Investigation
Operating Procedures	Audit
Safe Work Practices	Records & Documentation
Training	Contractor Management

What is a Safety and Environmental Management Systems (SEMS)



- **SEMS delivers Safe & Reliable Operations / Operational Integrity if Effectively Implemented**
- **SEMS is a key mechanism to reduce the likelihood of major incidents**

SEMS SUCCESS

SEMS must be:

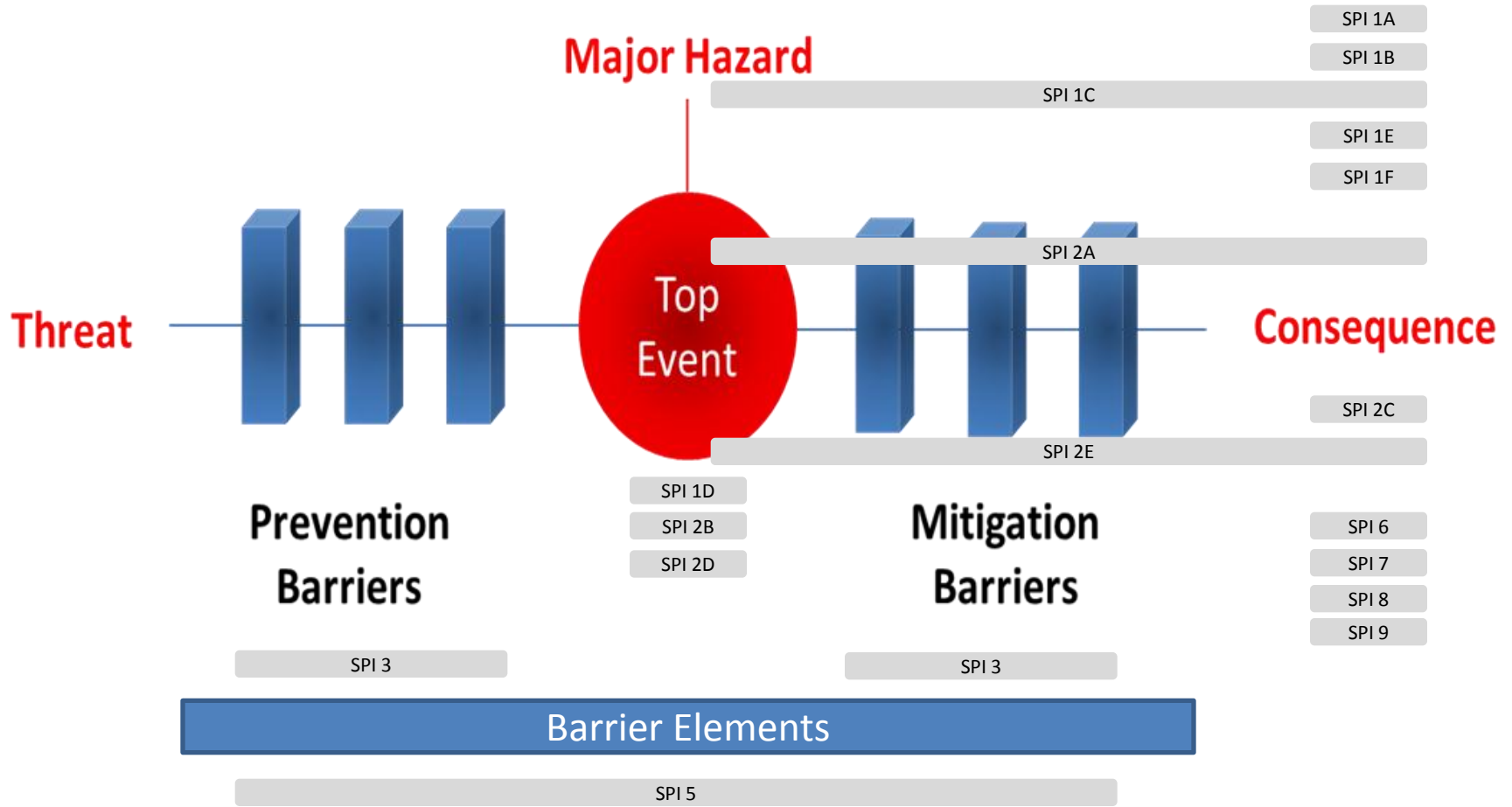
- **Fully acknowledged & accepted by workers**
- **Motivated from the top**
- **Supported throughout the organization**
- **Drive workers' actions**

Elements of Effective SEMS

Effective SEMS Programs should have:

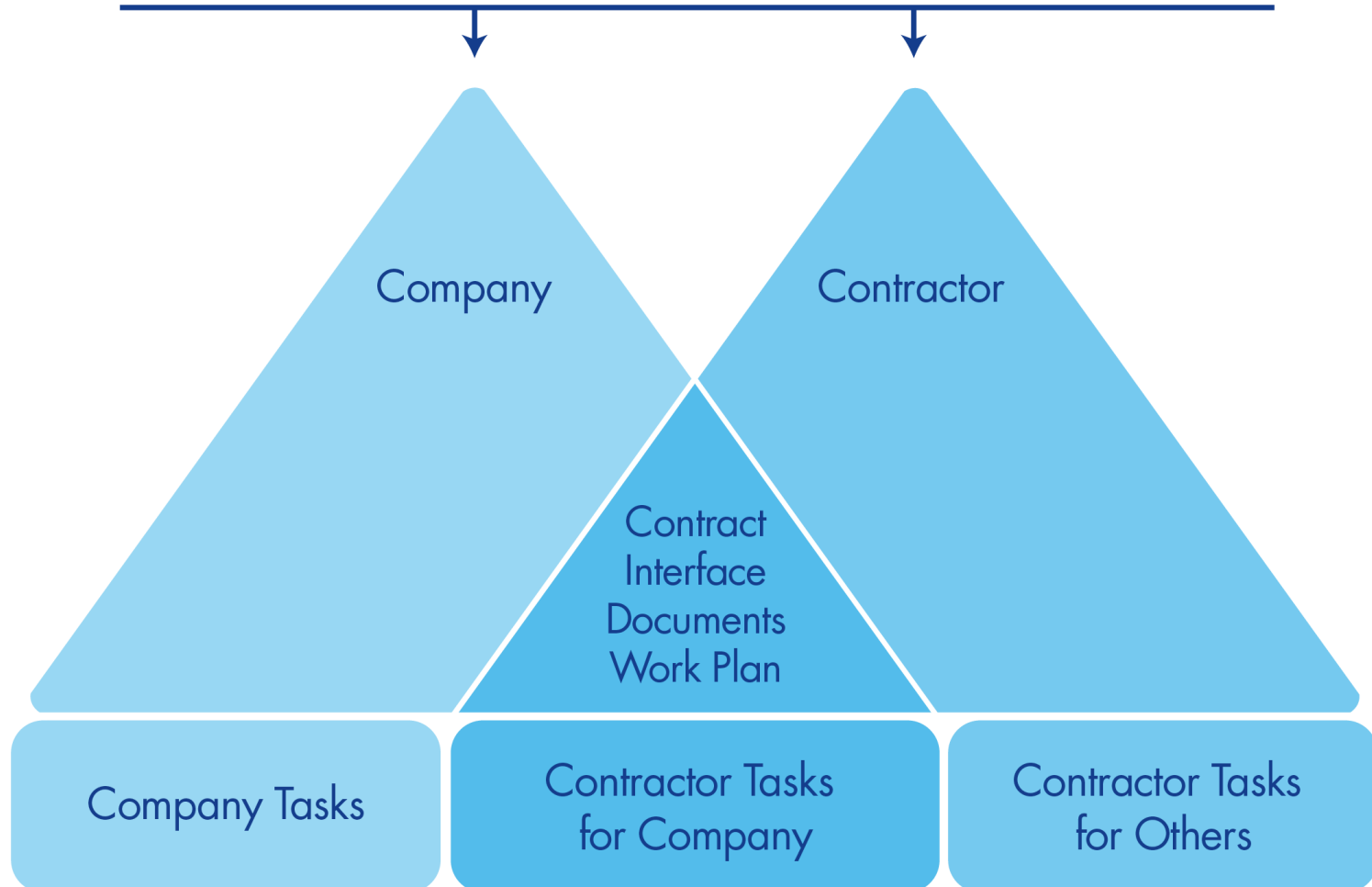
- Audits with a qualified team of auditors**
- Assess through discussions with personnel at all levels how the elements of the SEMS is actually implemented**
- Feed back results to top management**
- Expect continuous improvement and monitors for it**

Safety Performance Indicator Program



Key SEMS Concept: Operator/Contractor Interfaces

Legislation, Industry Standards, Business Environment



Leadership Site Engagement Guidelines

- **Purpose**
 - Demonstrate visible commitment to safe operations
 - Assess the health of the site safety and environmental management system
 - Assess site safety culture
- **Lines of Inquiry**
 - Major hazards known and understood
 - Practices documented, understood and followed
 - Accountabilities for barriers known and understood
 - People/Teams have the skills and knowledge to do their work
 - Stop work authority exercised
 - Local verification processes demonstrate systematic control



Thank You!