



California State Lands Commission

**Mineral Resources
Management Division**

**Safety Audit Program
Oct 20, 2010**

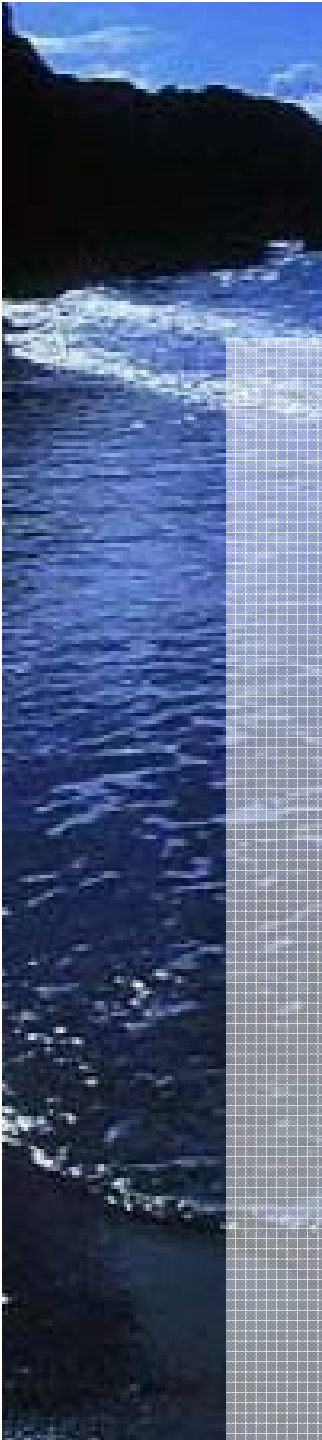
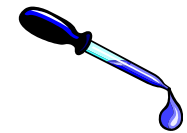


Summary of Oil & Gas Operations Statistics

- ◆ **Over the past 10 years:**
 - ◆ 168 million barrels of oil (7 billion gallons) have been produced in California
 - ◆ \$2.4 Billion in State revenue

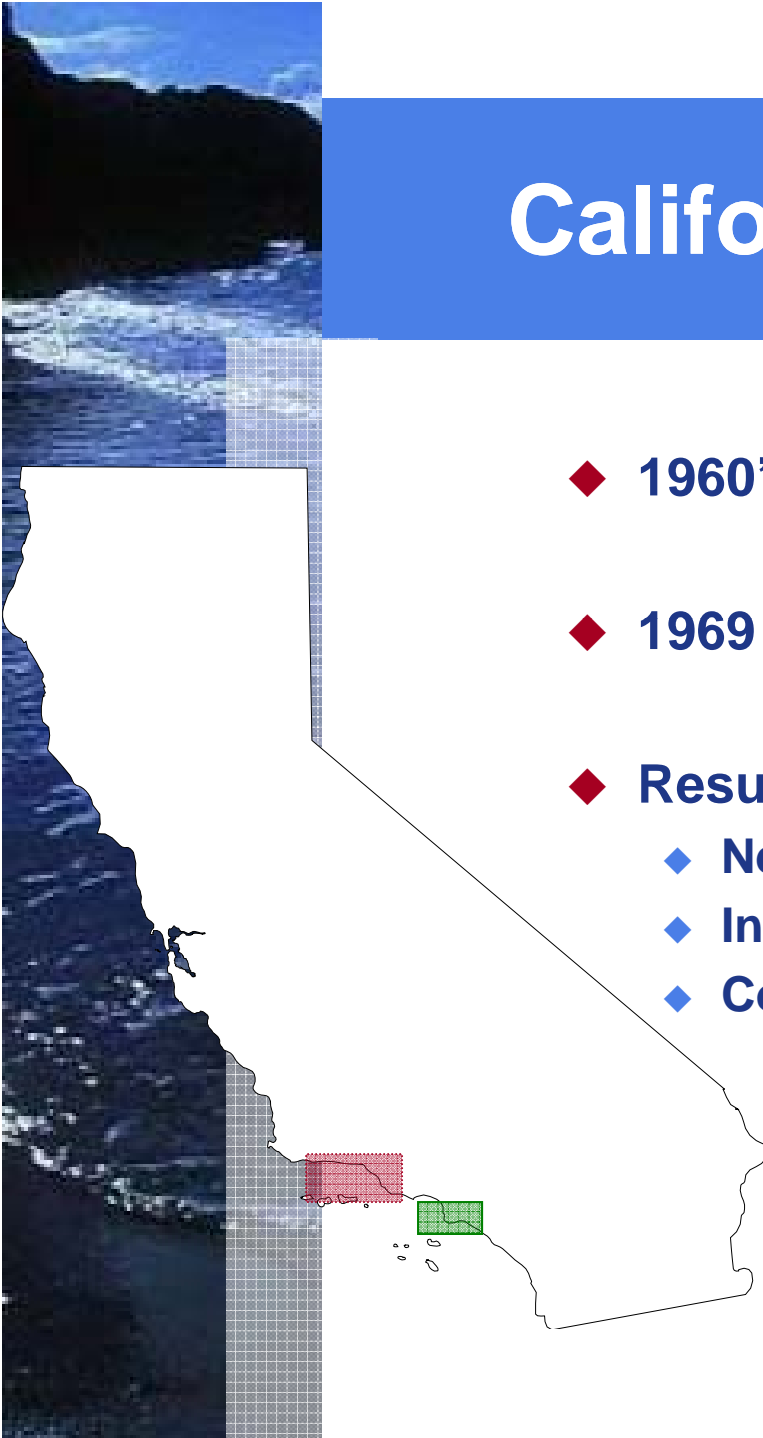


- ◆ **Offshore oil spills:**
(in state waters from oil & gas drilling & production ops)
 - ◆ generally measured in drops or ounces
 - ◆ less than 12 per year,
 - ◆ Average volume less than half a barrel (+/- 21 gallons) each year

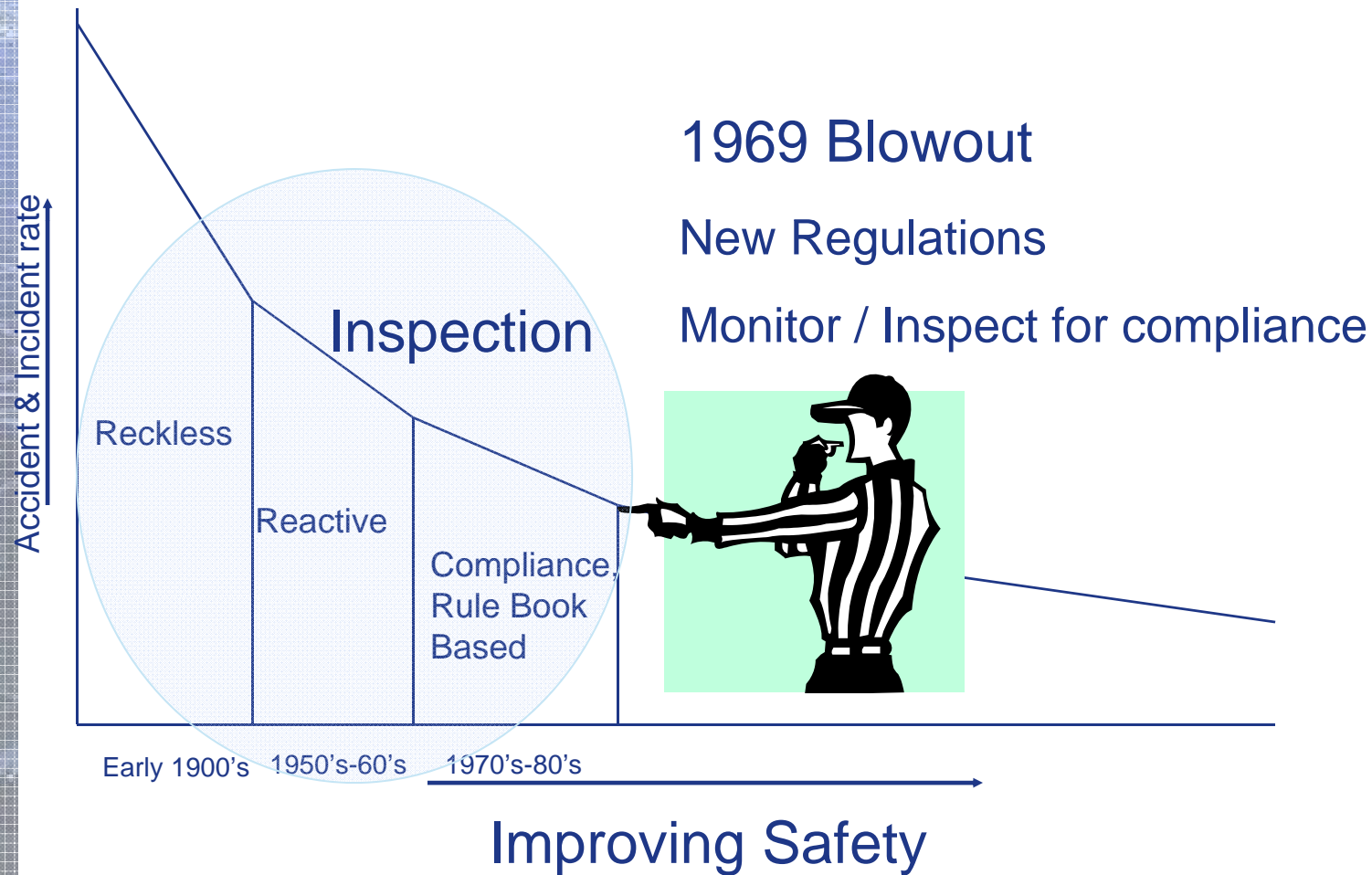


California Offshore Safety

- ◆ 1960's – State Platforms installed
- ◆ 1969 Blowout – Platform A
- ◆ Resulted in:
 - ◆ New regulations
 - ◆ Inspection program
 - ◆ Contingency Plans/Drills



Prescriptive Safety Regulations

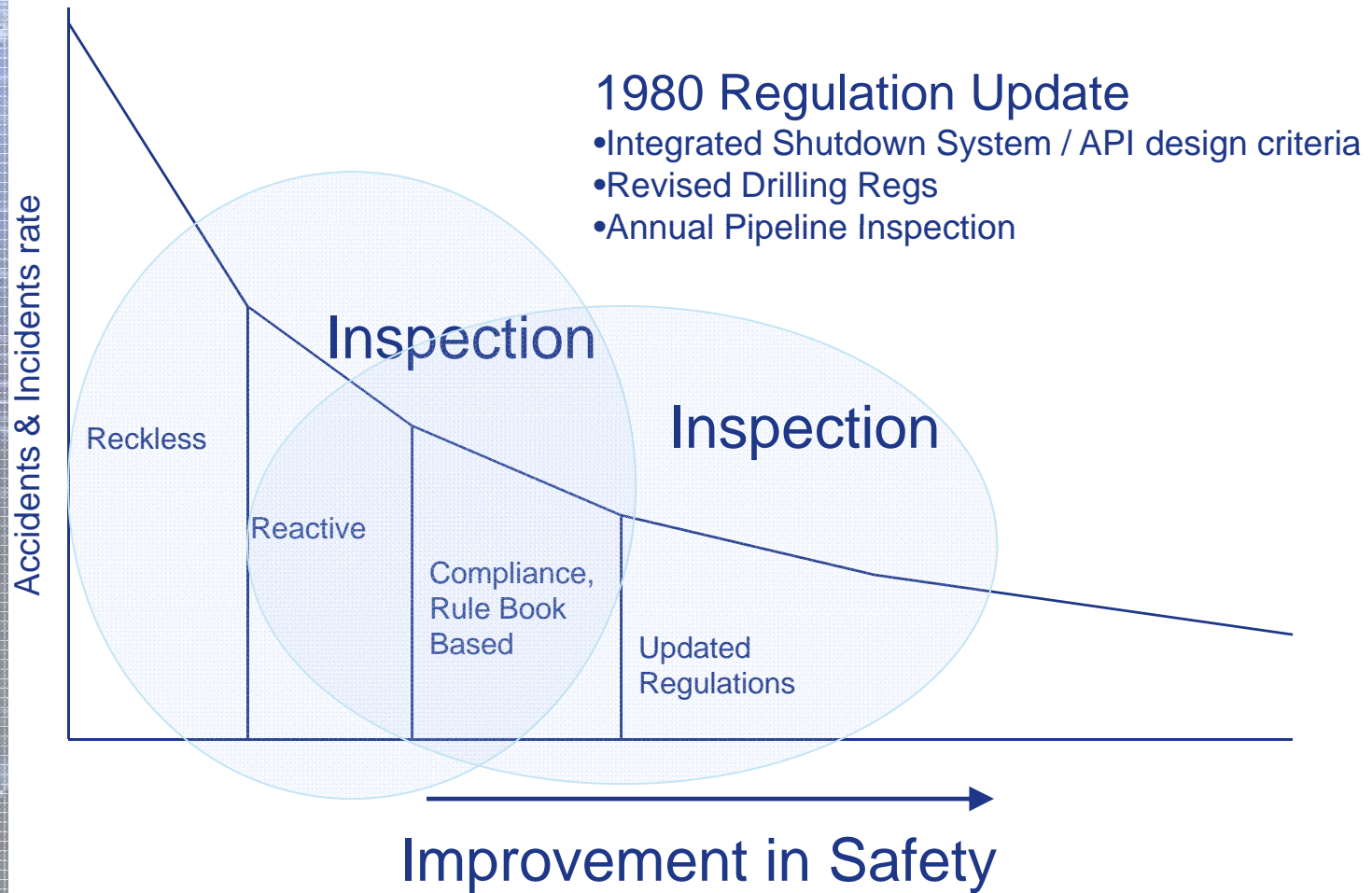


Inspection Program History

- ◆ Existing Leasing regulations (1938-1970's)

- ◆ 1980 – Regulation Update
 - ◆ Integrated Shutdown System & API design criteria
 - ◆ Revised Drilling Regs
 - ◆ Annual Pipeline Inspection

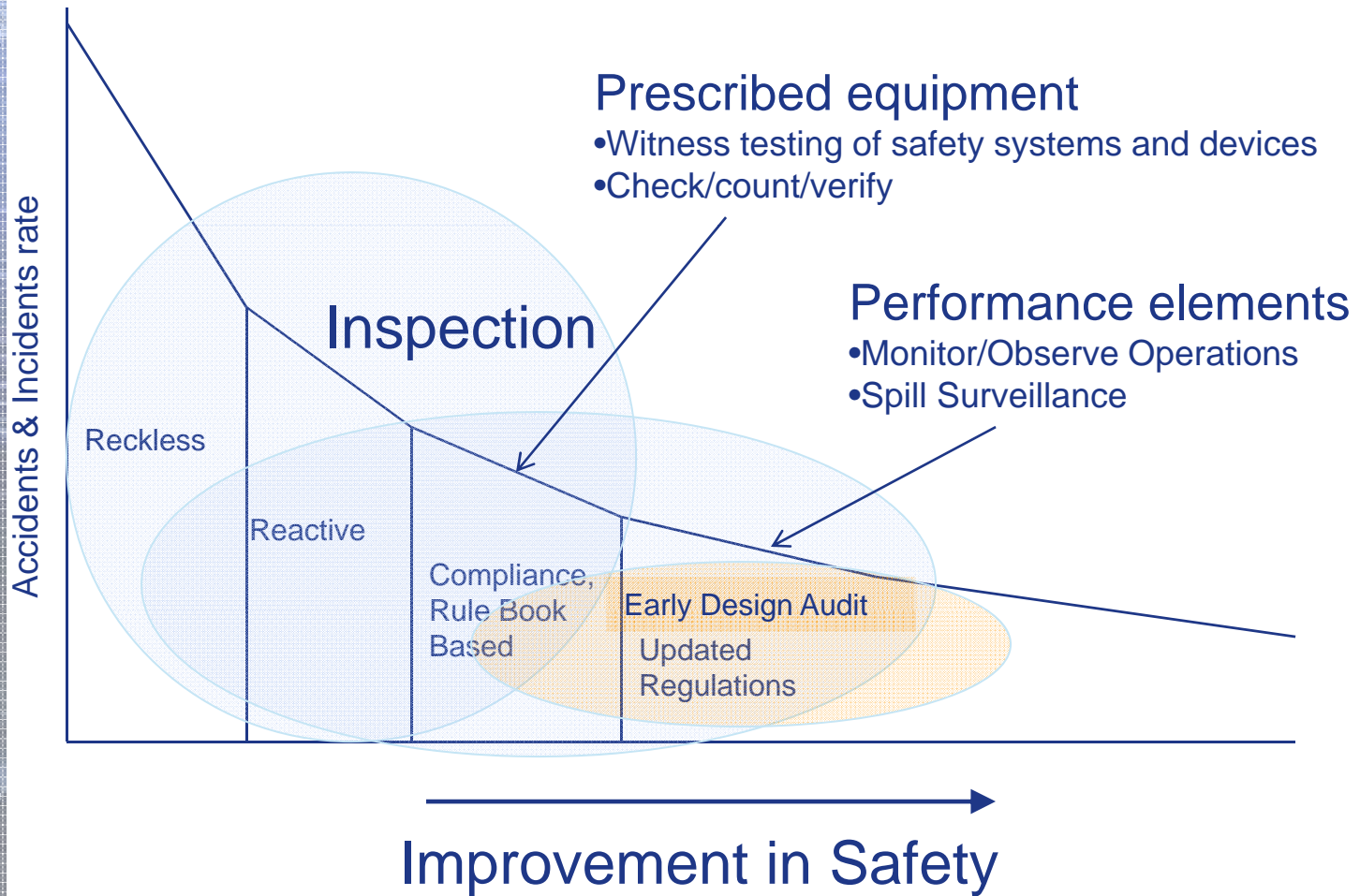
Prescriptive Requirements



Production Regulations - History

- ◆ 1960's – State Platforms installed
- ◆ 1969 Blowout – Platform A - New regulations
 - ◆ Inspection program requirements
 - ◆ Contingency Plans/Drills
- ◆ 1980 – Updated regulations
 - ◆ Integrated Shutdown System & API design criteria
 - ◆ Revised Drilling Regs
 - ◆ Annual Pipeline Inspection
- ◆ 1986 – Safety Design Analysis Developed
 - ◆ An early Safety Audit Program
 - ◆ RP 14C Design Standard Analysis

Inspections Evolve



Production Regulations Platform Inspection Program

- ◆ **Monthly Testing & Inspection — 2-3 days**
 - ◆ Production systems (safety valves, pressure/level indicators)
 - ◆ Safety systems (alarms & shutdowns)
 - ◆ Fire Fighting, Life Saving, Cathodic Protection (pipelines)
 - ◆ Test an average of 317 devices
 - ◆ Deficiencies are corrected immediately or equipment is OOS
- ◆ **Inventory on-site spill response equipment**
- ◆ **Daily Inspections**
 - ◆ Pipeline route, pollution checks, royalty production verification

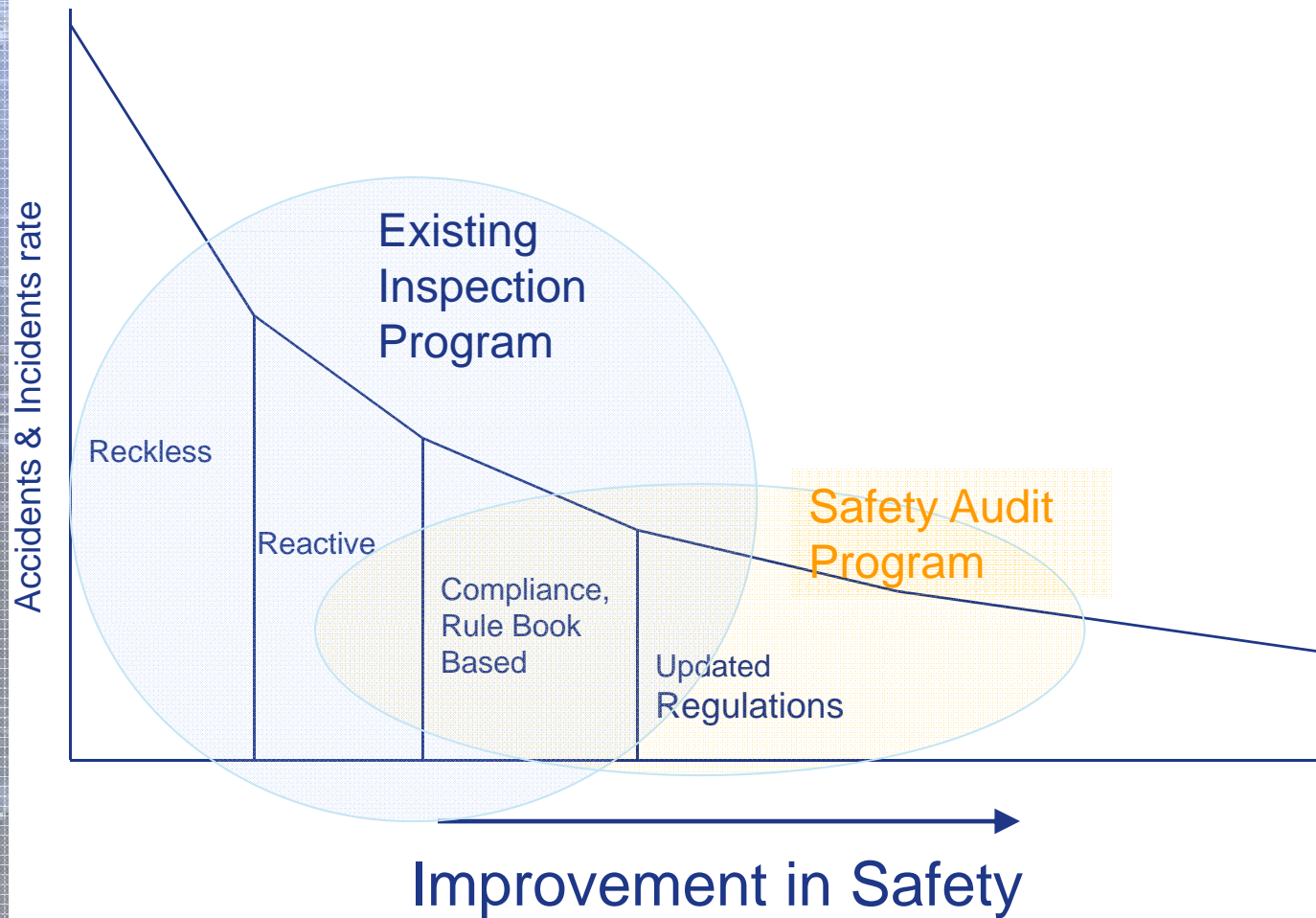


Production Regulations - History

- ◆ 1960's – State Platforms installed
- ◆ 1969 Blowout – Platform A - New regulations
- ◆ 1980 – Updated regulations
- ◆ 1986 – Safety Design Analysis Developed

- ◆ 1990 – Lempert Keene Seastrand Act (SB 2040)
 - ◆ After Exxon Valdez and American Trader Spills
 - ◆ Added Inspections for Marine Facilities & BAP Requirement
 - ◆ Realignment of Spill Drill and Contingency Plan Responsibilities
- ◆ 1999 - Augmented Safety Audit Program
 - ◆ Design and integrated safety system improvements
 - ◆ Operations Manuals
 - ◆ Maintenance requirements of aging platforms

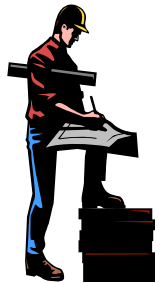
Complementary Programs



Safety Audit – Team Approach

Teams

◆ **Equipment Functionality & Integrity**



◆ **Electrical**



◆ **Technical**



◆ **Administrative**



◆ **Organizational Safety / Human Factors -
Safety Assessment of Management Systems (SAMS)**



Safety Audit Results

1st Round Audits

1999 - 2005

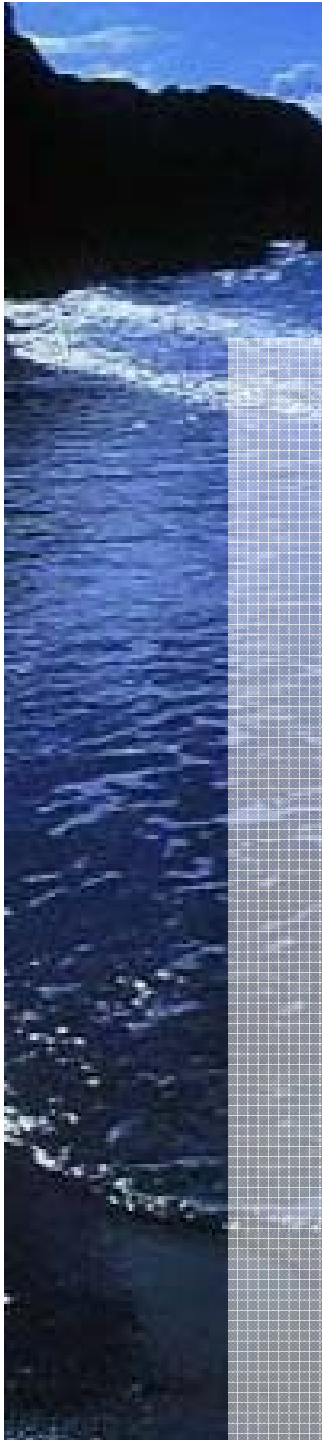
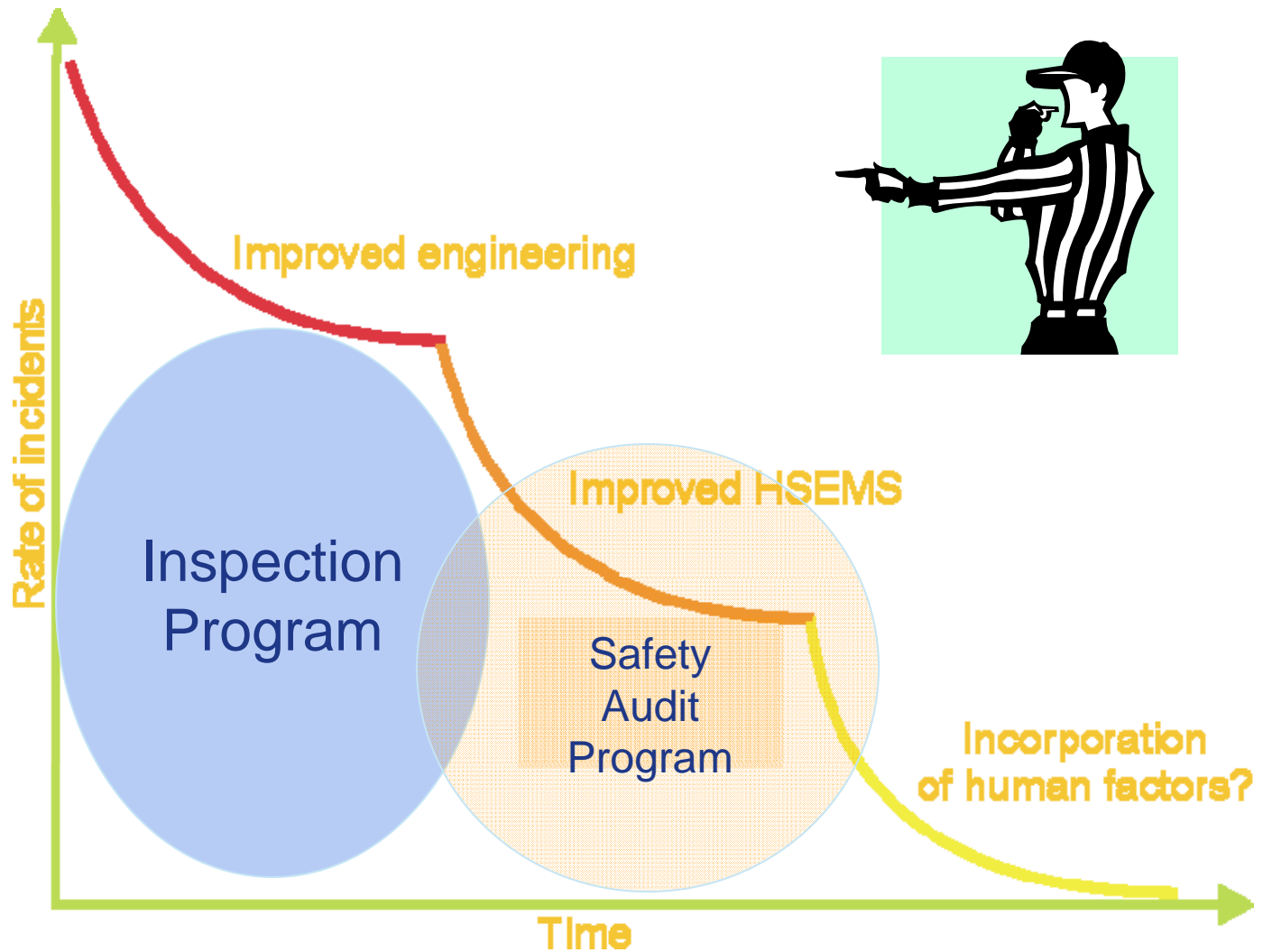
Audit Category	ACTION ITEMS			
	<i>by Priority Level</i>			
	1	2	3	TOTAL
Platforms	13	92	612	717
Islands & Onshore	62	170	1033	1265
	75	262	1645	1982

2nd Round Audits

2006 - 2010

Item Completion Status	ACTION ITEMS			
	<i>by Priority Level</i>			
	1	2	3	TOTAL
100% on schedule	2	32	484	518
99% on schedule	13	53	451	517
	15	85	935	1035

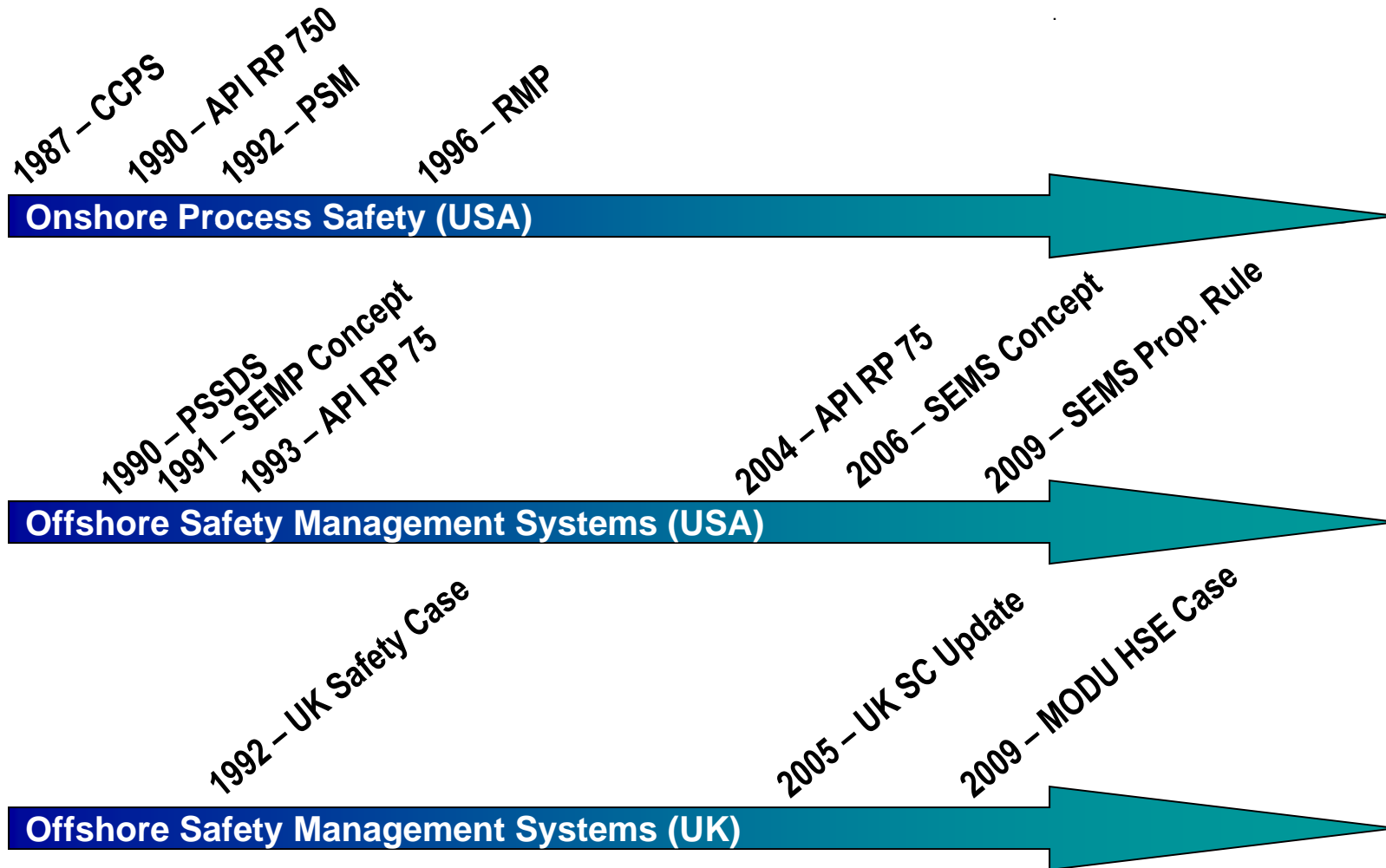
Improving Safety



Safety Assessment of Management Systems (SAMS)

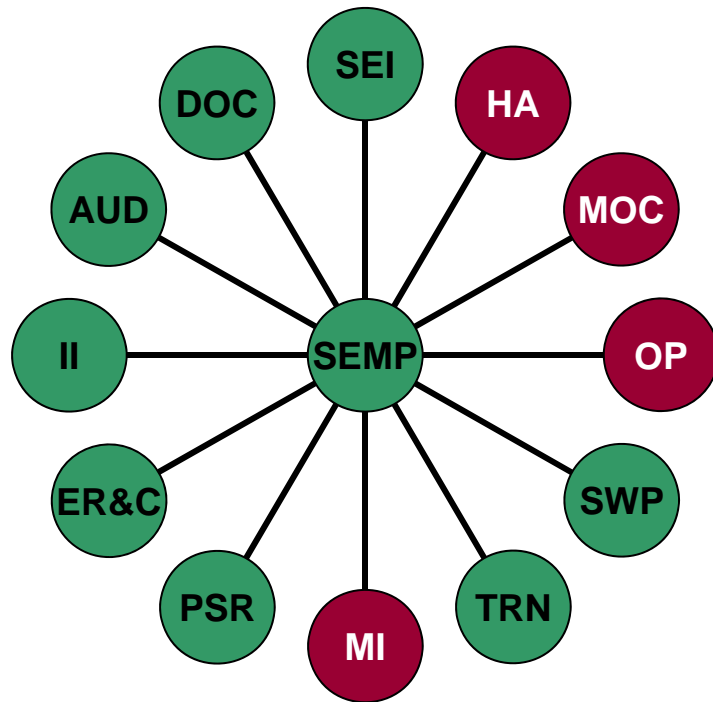
- ◆ Confidential interviews
- ◆ Cross section of company personnel & contractors
- ◆ Tool to evaluate use of SEMP type management systems
 - ◆ Implementation of SEMP elements
 - ◆ “Safety Culture” observed in action
 - ◆ Learn of Company fine tuning to achieve more success
 - ◆ Behavioral Based Safety (BBS) Programs
- ◆ Confidential Report for the company
 - ◆ No Action Item requirements

Evolution of Select SMS Guidelines & Regulations



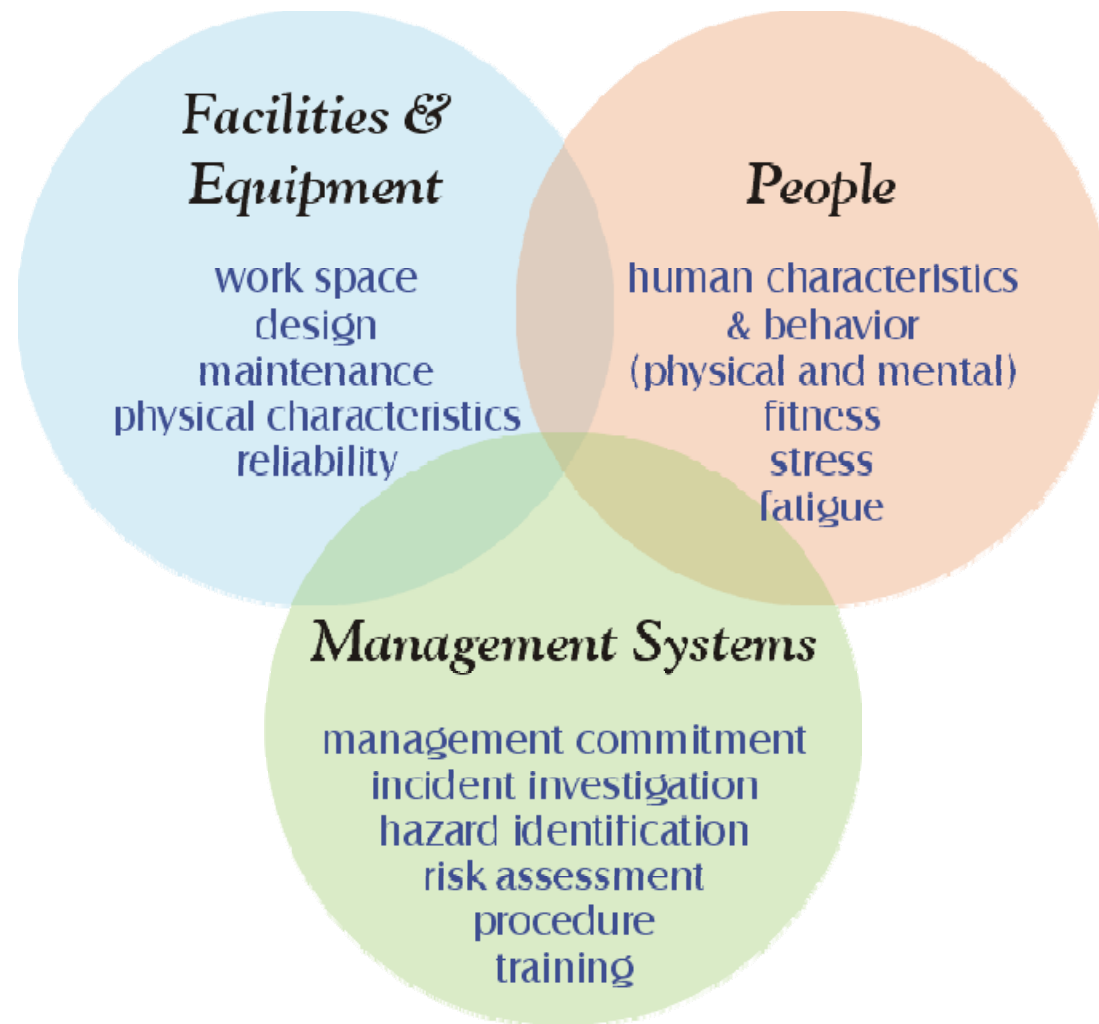
SEMP/SEMS Element Identification

MRMD
Regs



- Safety & Environmental Information
- Hazard Analysis
- Management of Change
- Operating Procedures
- Safe Work Practices
- Training
- Mechanical Integrity
- Pre-Startup Review
- Emergency Response & Control
- Investigation of Incidents
- Audit of SEMP Elements
- Records & **Documentation**





Links

- ◆ **Full report to Commission 20 Aug 2010:**
http://www.slc.ca.gov/Meeting_Summaries/08-20-10/ITEMS_AND_EXHIBITS/50.pdf
- ◆ **Our divisions homepage:**
http://www.slc.ca.gov/Division_Pages/MRM/MRM_Home_Page.html
- ◆ **Our regulations are also there:**
http://www.slc.ca.gov/Regulations/Chapter_3.html