



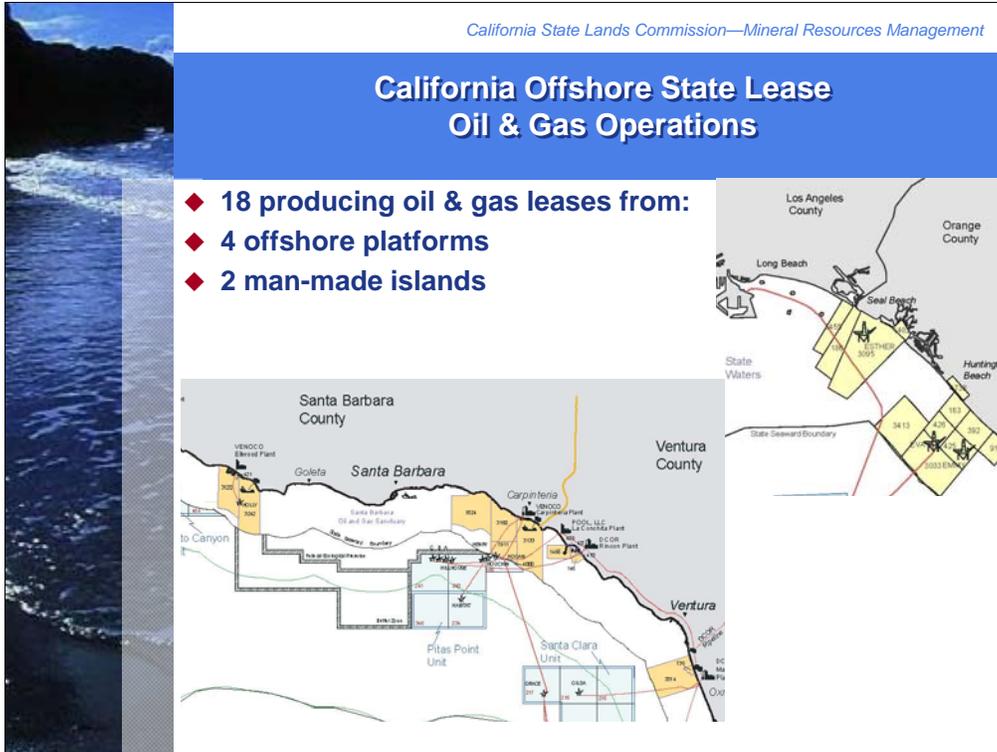
The CSLC has served, since 1938, as manager of the State’s sovereign lands, including ungranted tidelands, submerged lands, and navigable waterways. The State’s jurisdiction includes the beds of navigable rivers, streams, lakes, bays, tide and submerged coastal lands extending to a distance of three (3) nautical miles. By statute, the Commission may lease these lands for the orderly development of State mineral resources. The Mineral Resources Management Division (MRMD) is responsible for carrying out the Commission’s responsibilities for mineral leasing and oil production activities.

The CSLC also carries out responsibilities for marine terminal operations in State waters with its Marine Facilities Division (MFD), surface management of State lands including leasing of marine oil terminals and right-of-ways for oil and gas pipelines crossing State waters with its Land Management Division (LMD). And the Division of Environmental Planning and Management (DEPM) ensures the Commission’s compliance with the provisions of the California Environmental Quality Act (CEQA).

Oil production activities, marine terminal operations, and pipeline infrastructure carry an inherent level of safety and pollution risk. The accident in the deep waters of the Gulf of Mexico is a solemn reminder of these risks. The CSLC has long recognized that these risks exist and, over many decades, has developed strong regulations, policies and practices to ensure that the highest level of protection of State waters is maintained.

California Offshore State Lease Oil & Gas Operations

- ◆ 18 producing oil & gas leases from:
- ◆ 4 offshore platforms
- ◆ 2 man-made islands



The Mineral Resources Management Division (MRMD) oversees the leasing and operations of all mineral leases in State's offshore tide and submerged lands along the state's more than 1,100 miles of coastline, extending from mean high tide out to three (3) nautical miles.

Presently, eighteen (18) producing offshore oil & gas leases exist in State waters (as shown in the Maps). The leases are developed from 4 offshore platforms, 2 man-made islands, and from onshore coastal facilities.

Ten (10) leases are affiliated with and produce oil from the 4 offshore platforms, and two man-made islands. The Platforms are located in offshore Santa Barbara, Seal Beach and Huntington Beach, and one of the manmade islands is off the coast of Ventura.

Eight (8) active offshore leases produce oil from four onshore coastal sites, located in the Huntington Beach and Ventura areas.

The second island that produces oil and gas under a state lease is located in Long Beach harbor and is also a part of the Long Beach Unit.

The Long Beach Unit is located within the granted tidelands of the City of Long Beach and produces from four manmade islands as well as onshore locations. Although State revenue is derived from the Long Beach Unit, it is not handled as a state lease.

Summary of Oil & Gas Operations Statistics

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

Over the past 10 years, approximately 168 million barrels of oil (7 billion gallons) have been produced, treated and transported from State offshore leases. Because of the maturity of the fields currently under lease in the State, production will continue to decline without any new sources of oil. The majority of wells drilled or re-drilled are used to replace current wells and production.

The number of active wells producing offshore oil on State offshore interests has remained between 1,030 and 1,105 throughout the past 10-year period (with minor fluctuations).

During this same 10-year time span the cumulative revenue collected from offshore oil production has totaled more than \$2.4 billion. For the most recent fiscal year of 2009/2010 the revenue was approximately \$310 million and has averaged almost \$350 million per year for the past five years.

The MRMD staff that implement the programs discussed in this report are highly qualified, trained, and experienced professionals who have given the CSLC the highest level of service to assure the safest operations in State waters. The CSLC staff has played a significant part in generating and maintaining “non-tax revenue” for the State through safe management and leasing of State mineral interests, particularly oil and gas resources. In addition, through rules and regulations, and statutory leasing authority, the staff has developed strong and effective safety standards for offshore drilling, which have been adopted by the industry.

Staff is presently engaged in updating existing oil and gas drilling and production regulations. MRMD efforts in these updates have been under development on an ongoing basis, but, in light of the Deepwater Horizon spill, the need for timely adoption has become apparent. The extent to which the CSLC has imposed new requirements through already existing leases has mainly depended on securing cooperation from the lessees, whom have been compliant, or by lease amendment as part of a lessee project application. Now, however, the CSLC recognizes, pursuant to PRC §8755, it may have the authority to impose new regulations upon all existing leases. Regardless, the staff is confident that, as in the past, the lessees will understand and agree with the need for the updated requirements.

Summary of California Regulations

◆ Drilling Regulations

◆ Program Review by Engineers

- ◆ Casing Design Testing
- ◆ BOPE
- ◆ Cementing / Mud Program
- ◆ Critical Ops

◆ Production Regulations

- ◆ Monthly Platform Inspections
- ◆ Pipeline Inspections
- ◆ Safety & Spill Prevention Audits

◆ Oil Spill Contingency Plans

◆ Operations Manuals & Emergency Planning

Drilling Regulations

◆ Blowout Prevention

◆ Oil & Gas Drilling Regs: Article 3.2

- ◆ Well Casing Requirements
- ◆ Well Cementing Requirements
- ◆ Pressure Testing Requirements
- ◆ Blowout Prevention Equipment (both surface and subsea)
- ◆ Supervision & Training of Personnel (including well control drills)
- ◆ Mud & well monitoring requirements

Drilling Regulations

◆ CSLC staff engineers

- ◆ review drilling programs including casing and cementing
- ◆ inspect drilling
 - ◆ major drilling programs infrequent
 - ◆ limited CSLC drilling engineering staff

◆ DOGGR responsible for

- ◆ review of drilling operations statewide
- ◆ Inspection of offshore drilling ops and cementing ops.
- ◆ The latest version of DOGGR's well control manual concurs with SLC regulations and API RP 53 recommended practices for well control equipment and testing.

Drilling Regulations

- ◆ **When BOP's required during Production**
 - ◆ Required whenever tubing is pulled or when wellhead is removed.
 - ◆ Prior to removing or installing BOP's the annulus sealed by tubing packer, and tubing plug (or back-pressure valve) installed in tubing
 - ◆ Needed if redrilling or re-perforation required, and for abandonment
 - ◆ "Lubricator" (bag-type preventer) installed on production head for wireline work

Production Regulations - History

- ◆ **1960's – State Platforms installed**
- ◆ **1969 Blowout – Platform A - New regulations**
 - ◆ Inspection program
 - ◆ 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
- ◆ **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**

Since the 1960's when the platforms were installed, the state has had an ongoing inspection program.

The 1969 Blowout on Platform A brought new regulations and the first of the contingency plans and Drill requirements.

MRMD regulations have always been considered "dynamic," and the regulations provide for improved technologies as developed under the all-encompassing definition of "good oilfield" or "good engineering" practice.

The MRMD regulations had a significant update in 1980 that added an integrated shutdown system and other API design criteria, updated drilling criteria, and added an annual pipeline inspection requirement.

A form of the Safety Audit Program was being used as early as 1986 to complement our Inspection program and to review the platform design, safety controls and systems, and other elements.

In 1990, the Lempert Keene Seastrand Act, (SB 2040) was passed following the Exxon Valdez and American Trader Spills. The Act considered existing oil spill prevention programs to be insufficient and required Marine facilities to employ "best achievable technology" or protection. As a result, the CSLC is required to regularly inspect and monitor all marine facility operations for their effects on public health, safety, and the environment.

The Safety and Oil Spill Prevention Audit Program was augmented in the 1990's to further prevent oil spills and other undesirable events at oil and gas processing facilities.

on a five year cycle

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



Platform Monthly Inspection Program is used so that every offshore facility is reliable and kept in a fully operable condition. Inspections are conducted by inspectors from the Huntington Beach or Goleta field offices.

Each inspection requires two to three days complete.

The core of each inspection is witnessing the physical testing of the facilities production and processing alarms and shutdowns. This includes each well's surface and subsurface safety valves, the emergency shutdown system, pressure and level alarms, fire fighting, life saving, cathodic protection for pipelines, other sensors and equipment, inventory checks of on-site spill response equipment and records for other drills and tests. Inspections include testing of an average of 317 devices.

Deficiencies are corrected immediately, or the affected equipment is shut down and isolated, which may require shut in of the entire facility.

The Inspectors also conduct daily surveillance of operations, pollution checks at facilities, beaches, and along pipelines, as well as royalty production verification duties. They round out their duties attending spill drills and conducting records checks for compliance with other requirements and schedules.

Safety & Spill Prevention Audit

- ◆ **Comprehensive evaluation of compliance with :**
 - ◆ Federal, State, and local codes
 - ◆ Industry standards and best practices.
- ◆ **Analysis of marine facility design**
- ◆ **Verification of equipment “fitness for purpose” and maintenance**
- ◆ **A progressive type inspection**
- ◆ **Evaluation of operating personnel qualifications and organizational safety culture**
- ◆ **Correction of deficiencies**

8/24/2010

The Safety Audit Program provides a comprehensive evaluation of compliance with:

MRMD regulations, other federal, state, and local codes, as well as industry standards and best practices from API, ASME, American Society for Testing and Materials (ASTM), National Association of Corrosion Engineers (NACE), and other professional organizations.

An analysis of the technical design of the marine facility and its safety system

A verification that the physical equipment, alarms, and controls are “fit for purpose” and being properly maintained.

The Safety Audit is a progressive type inspection that goes deeper into areas with perceived problems.

The safety audit results in a comprehensive report evaluating facility design, condition, procedures, and personnel qualifications, and produces a matrix of action items that are prioritized by risk, and corrected during a follow-up phase. Safety audits are repeated every five years, as recommended by industry and government codes.

Safety Audit – Team Approach

Teams

- ◆ Equipment Functionality & Integrity
- ◆ Electrical
- ◆ Technical
- ◆ Administrative
- ◆ Organizational Safety / Human Factors -
Safety Assessment of Management Systems (SAMS)



Team Approach: The Safety Audit Program uses five teams, each with specific focus, to conduct the safety audit. The five teams systematically evaluate the facilities, operations, personnel, and management from many different perspectives. The five teams and their areas of emphasis include:

Equipment Functionality and Integrity (EFI)

Electrical (ELC)

Technical (TEC)

Administrative (ADM)

Human Factors (HF)

Each team works closely with appropriate company contacts/resources

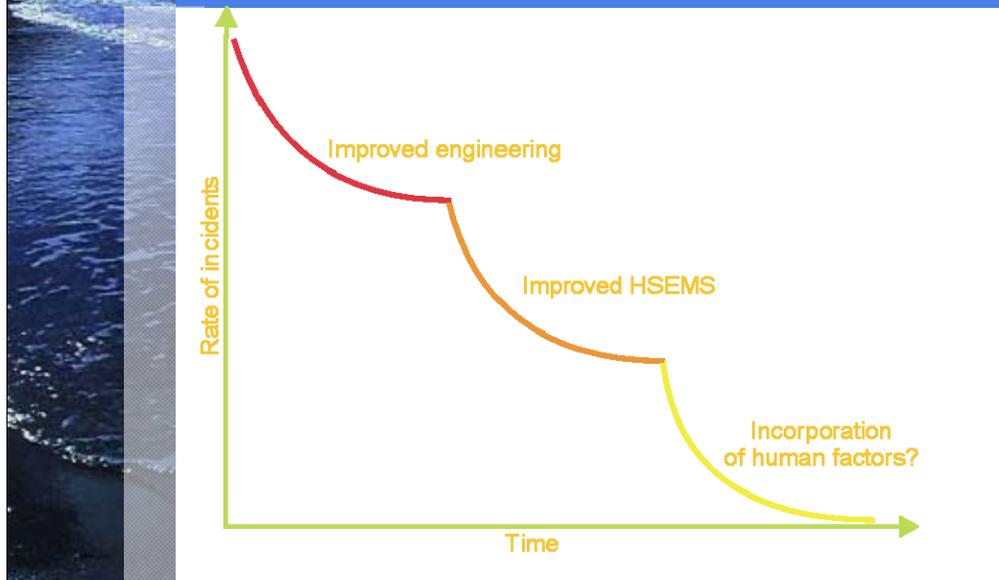
Each team records action items on prioritized matrix w/corrective actions and contributes to the written report

Safety Assessment of Management Systems (SAMS)

- ◆ Confidential interviews
- ◆ Cross section of company personnel & contractors
- ◆ Tool to address
 - ◆ Human Factors
 - ◆ Organizational Factors
- ◆ Confidential Report for the company
 - ◆ No Action Item requirements

Organizational safety culture, and the level of maturity of safety programs, is evaluated by a Safety Assessment of Management Systems (SAMS) procedure, which assesses these factors through a series of confidential interviews with a cross-section of company operators, engineers, management, and contractors. The SAMS evaluation is a tool that addresses human error factors, and which can be used by the operator to improve programs to reduce human error.

Improving Safety Performance



In order to Improve the safety performance of California State oil and Gas lease operations, the MRMD staff has continued to seek ways to move beyond prescriptive regulations for equipment and engineering and the requisite compliance inspections.

The 1980 regulations update included new requirements in the operations manuals for operating procedures, various contingency plans, and other elements that help implement improved Health, Safety, and Environmental Management Systems and Human Factors considerations. These improvements are intended to drive down the rate of undesirable incidents.



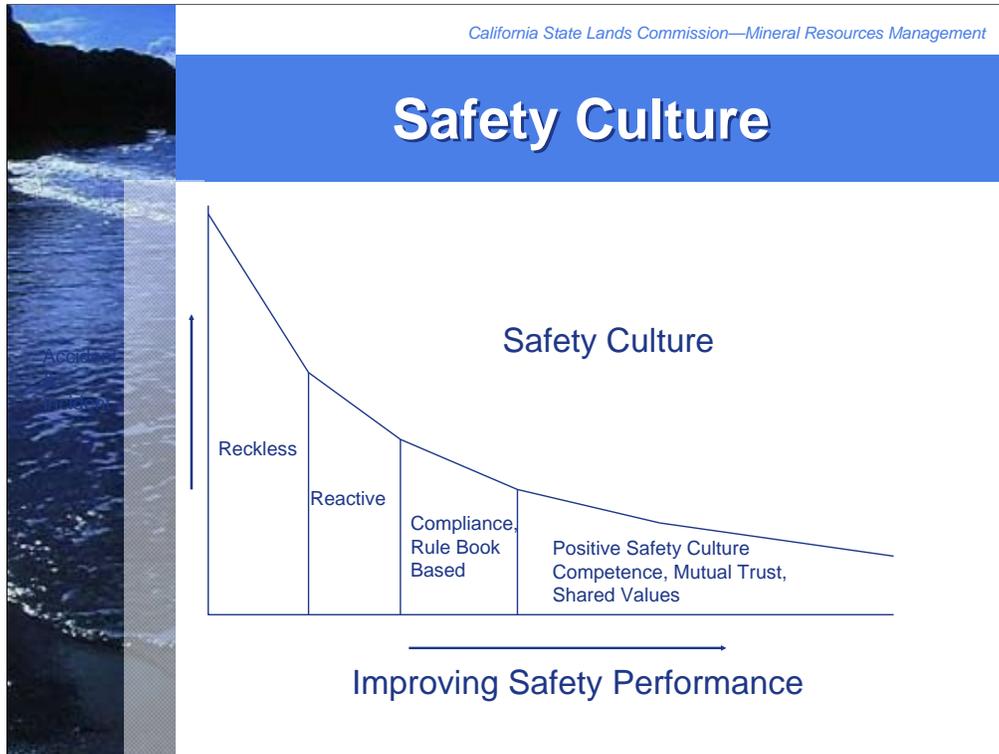
Looking at the areas of opportunity for human factors improvement, we see that there are three areas which can be addressed .

Prescriptive facility and equipment regulations of the past can only capitalize on a limited portion of the safety opportunity.

Use of Management Systems to improve safety and by addressing the environment that our People must work within can lead to improvements in Safety Performance.

An indicator that these elements are in place occurs when workers exhibit a desired “Safety Culture.”

Safety Culture



Safety Culture within an organization can drive safety improvements beyond what the prescriptive “rule book” system can achieve.

While the presence of the “rule book” inspector /regulator can achieve high levels of rule compliance, safety performance is limited.

An organization with a strong “safety culture” will continue to make the right decisions, even when the regulator is absent.

MRMD monitor our operators “safety culture” during our daily field inspection activities as well as during our Safety Audits. Our Safety Assessment of Management Systems (SAMS) tool provides non-attributive feedback right to the operating company in a confidential report,

Safety Audit Results

1st Round Audits

1999 - 2005

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

2nd Round Audits

2006 - 2010

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

We have audited all of our state lease facilities twice in the last ten years. The number of identified action items was reduced to about half the second time through.

Action items are predominantly related to a prescriptive type regulations, codes, or other requirements for equipment and engineering items.

A small number of items pertain to operating manuals, procedures, and other contingency plan documents.

Virtually all action items are resolved within months of a Safety Audit.

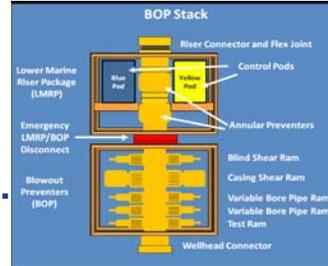
Federal vs. California Platforms – Drilling

- ◆ The drilling and blowout prevention regulations of the MMS also rely on API RP 53.
- ◆ MMS Pacific Operations inspect drilling operations and required equipment.
- ◆ Gulf Coast Operations, as we understand, rely mainly on reports of operations and operator testing results.



Summary of Oil & Gas Operations Gulf BP Spill Comparative Analysis

- ◆ **Offshore Environment**
 - ◆ Water Depth
 - ◆ Formation Depth
 - ◆ Pressures
- ◆ **Blowout Prevention Equip.**
 - ◆ Redundancy
- ◆ **Well Casing**
- ◆ **Cementing of Casing**
 - ◆ Time = Compressive Strength
 - ◆ Bond Logs
- ◆ **Daily Reports - Review**



Comparisons

- ◆ **Similarities with Deepwater Horizon and California Drilling:**
 - ◆ Casing design and drilling program reviewed and approved by regulators
 - ◆ Cementing programs comparable
 - ◆ BOP requirements generally comparable
 - ◆ Pressure testing of cementing/well tubulars comparable



Comparisons

- ◆ **Differences of Deepwater Horizon and California Drilling Operations:**
 - ◆ All wells in state water use surface BOPE, last “floater” used in mid 1980’s in less than 500’ of water
 - ◆ All well programs approved by both SLC and DOGGR, and monitored daily by SLC staff
 - ◆ All cementing ops and pressure testing witnessed (and approved) by SLC or DOGGR staff
 - ◆ SLC and OSPR approved Oil Spill Plans prior to any drilling operations
 - ◆ Regional spill response co-ops and vessels in proximity to all drilling (and quick response)

Comparisons

- ◆ **Other differences between Pacific Operations and Deepwater Horizon**
 - ◆ Reservoir pressures at or near normal (DH formation pressure nearly twice that of normal pressure – “abnormally pressured”)
 - ◆ Most new wells only “flow” for short periods of time, and with generally lower rates
 - ◆ Average depth of wells 4-6,000 feet (although some range to 12-13,000 feet but near normal pressure)
 - ◆ Average water depth in state water less than 350 feet
 - ◆ BOPE testing more frequent and witnessed
 - ◆ Production systems safety testing more frequent and witnessed

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/MR/M/MRM_Home_Page.html

- ◆ **Our regulations are also there:**
http://www.slc.ca.gov/Regulations/Chapter_3.html