National Commission on the
BP Deepwater Horizon Oil Spill
and Offshore Drilling

Staff Presentation to the Commission

Regulatory Oversight:
Safety Issues and Reorganization

December 2, 2010

Status Quo: How the US Regulates Offshore Oil and Gas Development

Department of the Interior:

The Outer Continental Shelf (OCS) Lands Act

Oil, gas, and renewable energy

The 5-year planning process (1978) (including NEPA review)

- Area-wide leasing (1982)
- Since 1990, limited to Central and Western Gulf of Mexico, some areas off Alaska and existing operations off California. (Presidents Bush and Obama announced interest in including more areas.)

Leasing - Fair market value based on resource assessments

- Set lease terms – minimum bonus bids, royalty and rental rates
- Annual (Gulf of Mexico) and other sales under 5 year plan

  Subject to: financial pre-qualification, anti-trust limitations, stipulations
- Ensure resources are produced in a way to optimize recovery – conservation of the resource
- (NEPA process discussed more fully in a subsequent presentation)

Safety and Environmental Protection - Prescriptive regulations enforced with inspections

- Exploration Plans, Development and Production Plans (or DOCDs)
- Drilling, abandonment and decommissioning permits
- Oil spill contingency plans
- Pipeline rights of way
- Human safety responsibility under Memoranda of Understanding with U.S. Coast Guard

Staff Finding: Too Much Regulatory Coordination Required, Overlaps Result in Underlaps

Oversight of high risk activities on the Outer Continental Shelf (OCS) has been divided among a number of federal agencies. Assumed responsibilities often not aligned with permanent capacities and budget resources. Offshore oversight requires boats, helicopters and trained experts.

Department of the Interior (MMS/BOEMRE)

US Coast Guard

- vessels, including mobile drilling units (MMS responsible for petroleum related equipment)
- workplace safety, Memoranda of Understanding with MMS, (No OSHA regulation offshore)

> "Regulatory regimes function most effectively when a single entity has broad safety and pollution prevention responsibility.
> Gaps, overlap, and confusion are not in the interest of safety or regulatory efficiency."
> -*International Regulators Forum*

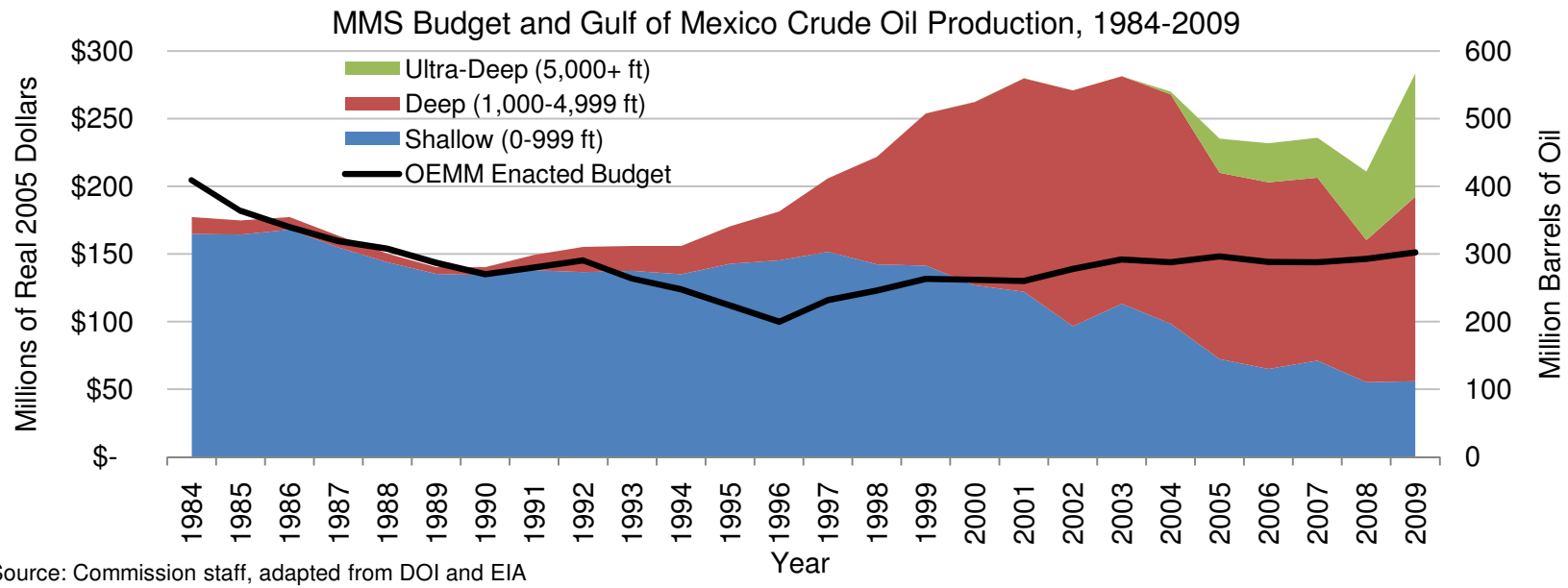
Department of Transportation

- pipelines – Memoranda of Understanding with MMS
- helicopters (no flight plans, unclear as to oversight, incidents only at platforms reported to MMS)

National Atmospheric and Oceanographic Administration (NOAA),Environmental Protection Agency (EPA), National Marine Fisheries Service (NMFS), US Fish and Wildlife Service (FWS)

Staff Finding: Regulator's Resources Idled While Industry Activity Increased

Resources (Budget): Inadequate budget and management oversight by the Congress and successive Administrations have left MMS without the resources to carry out its responsibilities. The Secretary of Interior's appointed Safety Oversight Board reported a serious lack of ongoing training and workforce development. Reliance on "on the job" training for inspectors is inadequate and unacceptable for such high risk, technical operations.



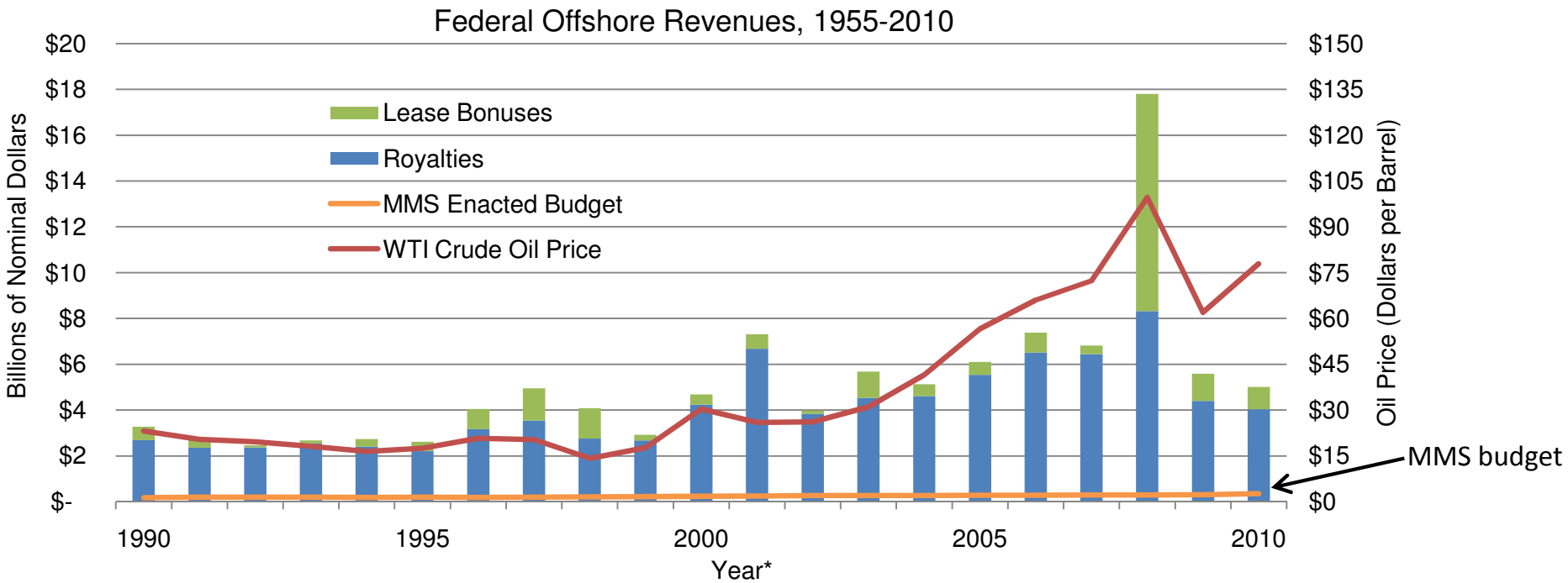
Source: Commission staff, adapted from DOI and EIA
Note: OEMM (Office of Energy and Minerals Management) has responsibility for renewable energy, leasing and environmental, resource evaluation, regulatory, and information management programs. It does not include revenue management or general administration.

Oil and Gas Revenues: A Conflict of Interest and A Distraction

- **Revenue Policy** - Office of Energy and Minerals Management sets royalty rates, rental rates, lease stipulations.

- **Production Verification** – offshore safety inspectors check production meters (1/3 of all inspections).

- **Revenue Collection** - Office of Natural Resource Revenue (formerly Mineral Revenue Management) collects and disburses all royalty payments, rentals, bonuses, fines, penalties, assessments, and other revenue due the Federal Government, Indian Tribes and allottees, States and the American people from the leasing and production of natural resources from Federal and Indian lands onshore and the Outer Continental Shelf. The Royalty in Kind (RIK) program was operated under this office.



Source: Commission staff, adapted from DOI; note: *calendar year for 1990-2000, fiscal year for 2001-2010

Staff Findings: Regulators Unable to Keep Pace with Industry

Technology and Operational Complexity: The federal approach to management and oversight of the leasing and development of offshore resources has not kept up with rapid changes in technology, practices, and risks in different geological and ocean environments.

The Safety Oversight Board Report acknowledged the lack of ongoing training for engineers and inspectors. Less participation in professional meetings and conferences (OTC/SPE).

Safety Environmental Management Plans: The MMS management systems and regulatory philosophy have seriously lagged offshore peer regulators in not requiring companies to have a documented Safety and Environmental Management System, a fundamental tool for hazardous operations. Voluntary program in early 1990's. Limited participation led to need for a regulation, which was resisted by industry.

Outdated Organizational Misalignment: Functional Reorganization Recommended, Not Implemented

***LMI Government Consulting* completed a Business Assessment and Alignment study of Offshore Minerals Management (OMM) in May 2007**

"In Fall 2006, OMM asked LMI to evaluate its organization effectiveness by functionally assessing the program, with the goal of improving organizational efficiency and effectiveness in an environment of increasing workload and requirements."

LMI Report Findings

- "OMM [had] four primary responsibilities: access to resources on the OCS, minimum impact to the environment, safe operations on the platforms, and receipt of fair market value for resources."
  - *Survey of senior leaders indicated dominant focus on Access to Resources*
- "OMM awards oil and gas leases *while also* regulating operations of the oil and gas industry, *which might be perceived as a conflict of interest"*
- The program needed to clearly "distinguish business functions in order to clarify roles and responsibilities, resource requirements and funding"
- Too many functions were "geographic or personality-based, rather than process driven"
- Regions and districts [interpreted] regulations differently for the same situation or event"
- OMM is working harder instead of smarter – 'More people' is seen as the standard solution for many problems
- The workforce is highly specialized, educated and experienced. The workforce is dedicated to its profession
- Twice as many technical experts in managerial positions as best practice for a federal agency

LMI Report Recommendation: Functional Reorganization

- Would improve managerial focus within functional areas, provide broader access to unique skill sets (expertise versus cross training)

Staff Finding: Need to Address Risks

Lack of Risk Management: MMS has not and does not have a proactive risk management approach to the oversight and regulation of offshore drilling. Neither the MMS nor the industry has comprehensive systems in place to track and analyze offshore incident data for lagging and leading indicators and trends. The regulatory review and approval process for exploration plans, permits for deep water wells, and oil spill response do not require adequate risk evaluation and management planning.

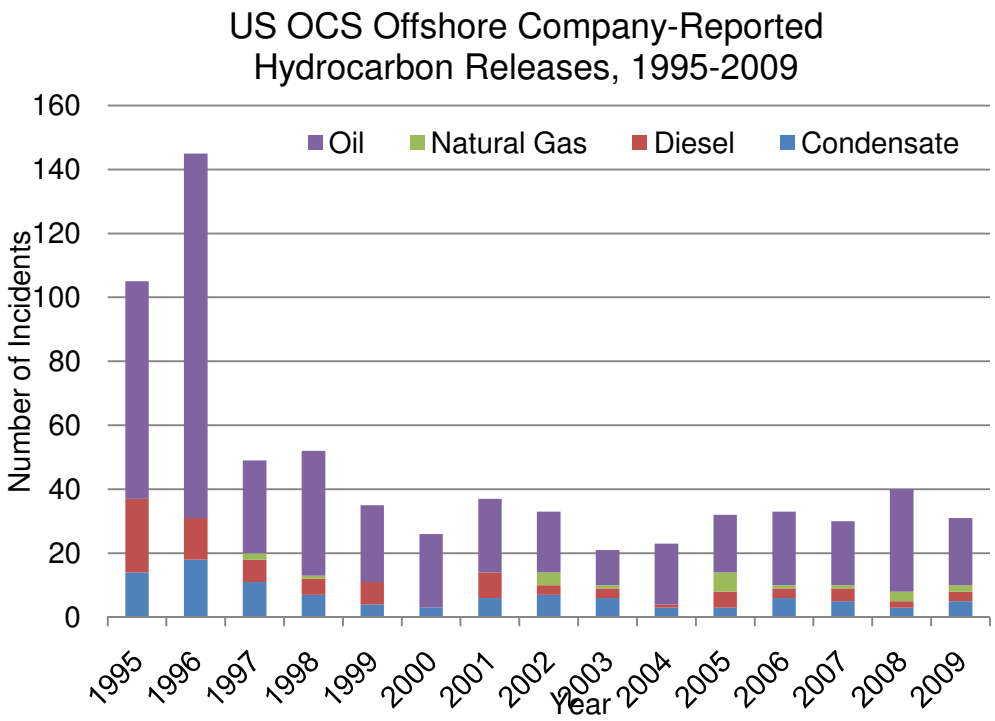
Hydrocarbon Release Reporting Requirements

All liquid spills reported

- All spills reported to U.S. Coast Guard
- Spills over 1 barrel to BOEMRE
- Spills under 1 barrel to BOEMRE (voluntarily)

US gas releases only reported if it results in equipment or process shutdown

Australia, Canada, Netherlands, Norway, and the United Kingdom all require major and/or significant gas release number of incidents and mass



Source: Commission Staff, adapted from Department of Interior

Staff Finding: Production Trumped Safety

The regulatory and inspection process has been subject to political and industry pressure. The industry has successfully sought Congressional intervention to prevent implementation of MMS rulemakings. For example, the time frames allowed for regulatory approvals for complex operations are inadequate, the 30 day requirement to approve exploration plans set by statute to expedite operations has limited the opportunity for critical technical review.

Deepwater Horizon

Major Incidents and Regulatory Action and Inaction Worldwide

Year	(selected) Major Incidents	International Actions	United States Actions
1969	**1969** · BLOWOUT · Santa Barbara, CA · Union Oil Company · ~4.2M gallons of oil spilled		
1970			
1971			
1972			
1973		**1973** · WORLD · OPEC launches oil embargo, prices skyrocket	
1974			
1975			
1976	**1977** · BLOWOUT · Ekofisk, Norway · Phillips Petroleum · ~5.3M gallons of oil spilled		
1977			
1978	**1978** · BLOWOUT · Ixtoc I well, Bay of Campeche· PEMEX · ~126M gallons of oil spilled		**1978** · USA · Outer Continental Shelf Lands Act Amendments passed
1979		**1979** · USA · Three Mile Island reactor accident prompts reform of civilian nuclear industry in US and worldwide	
1980	**1980** · RIG SINKING, *Alexander Kielland,* structural failure · North Sea, Norway · Phillips Petroleum · 123 fatalities		
1981		**1981** · NORWAY· Commission on Inquiry on *Alexander Kielland* issues findings critical of safety oversight regime	
1982	**1982** · RIG SINKING, *Ocean Ranger,* rogue wave · Newfoundland, Canada · Mobil Oil · 82 fatalities		**1982**· USA · Secretary of the Interior James Watt creates the Minerals Management Service from the U.S. Geological Survey and the Bureau of Land Management
1983			
1984			
1985		**1985** · NORWAY· "Petroleum Activities Act" moves safety regulation away from compliance to "risk-based" regime	
1986		**1986** · WORLD · Crude oil prices fall 46% from year before	
1987	**1988** · EXPLOSION · Piper Alpha Platform, North Sea, UK · Occidental Petroleum · 167 fatalities		
1988			
1989	**1989** · EXPLOSION · South Pass Block 60, Louisiana · ARCO Oil · 7 fatalities	**Nov 1990** · UK · Lord Cullen delivers report on the Piper Alpha explosion, recommending sweeping change	**Jan 1990** · USA · Marine Board (National Research Council) Report urges MMS to move to a "risk-based" safety regime
1990	**1989** · TANKER WRECK, *Exxon Valdez* · Bligh Reef, Alaska · ~11M gallons barrels of oil spilled	**1991→1993** · UK · Single safety authority established in the Health & Safety Executive (1991); staggered implementation of the "Safety Case" regulations begins	**Jun 1990** · USA · President Bush issues moratorium on OCS leasing in CA, southern FL, the North Atlantic, WA, and OR
1991			**1991** · USA · MMS proposes safety and environmental management program (SEMP)
1992			
1993			
1994		**1996** · Australia · Safety Case-type regulations begin, though administered on the local (State) level	
1995	**1994→1998** · MMS VIOLATION and $49M FINE · Auger Platform, Gulf of Mexico · Shell Oil · vent/flare 1-6M ft^3 gas/day		
1996		**1997** · UK · Industry-led effort, "Step Change for Safety," seeks to reduce the injury rate by sharing best practices	**1997** · USA · MMS indefinitely delays requiring a "SEMP" management system for operators
1997			
1998			**1998** · USA · Industry pressured Congress to halt rulemakings on valuation, G&G data, bonus and rental rates…
1999			
2000			
2001	**2001** · RIG SINKING, *P-36,* mechanical failure · Roncador, Brazil · Petrobras · 11 fatalities		
2002		**2002** · Australia · Single safety authority established – National Offshore Petroleum Safety Authority	**2002** · USA · The Coast Guard transfers responsibility for safety on fixed platforms to MMS
2003		**2004** · NORWAY· Single safety authority established – Petroleum Safety Authority	**2003** · USA · MMS proposes a rule requiring reporting of all gas releases – significant risk indicator
2004	**2005** · RIG NEAR-SINKING, *Thunder Horse,* structural failure · Mississippi Canyon, Gulf of Mexico · BP	**2005** · UK · "Safety Case" regulations updated	
2005			
2006			**2006** · USA · OMB limits MMS rule to reporting gas releases only when for an "equipment or process shut-in"
2007	**2009** · BLOWOUT · Montara well, Australia · PTTEP Company · ~5M gallons of oil spilled		
2008		**2008** · WORLD · Crude oil prices hit all-time high	
2009	**2010** · NEAR-BLOWOUT · Gullfaks "C," Norway · Statoil		**2009** · USA · MMS proposes "SEMS" rule
2010	**2010** · BLOWOUT · Macondo, Mississippi Canyon · BP		

Peer Regulators: Risk Based Regulatory Model

Risk Based Model for Consent and Oversight

- Minimum prescriptive standards (including industry standards) with additional guidance for risk assessment and management plans
- "Duty Holders" must demonstrate risk assessment and risk management plan (U.K./Australia - "safety case")
- Facility Based - Require "safety case" or certification for every facility
  - Rig/MODU's (owner), Producing Platform (operator)
- Documented Safety and Environmental Management Plans (SEMP)
- Burden on industry/operators
- Regulator reserves the right to deny or rescind permission to operate

Inspection/Supervision/Audit Practices

- Conducted by team of experts
- Systems approach instead of checklist
- Third-party certification on equipment

Personnel and Training

- Engineering and Other Technical Experts
- Benchmarked salary scales for specialized professional staff
- Continuous and specialized training and certifications

Tri-Partite Engagement

- Worker-elected safety representatives
- Regulator communicates directly to workforce

Statistics and Data Analysis

- Regular reports on detailed summary statistics and trend analysis
- Leading (hydrocarbon releases) and lagging (fatalities, injuries, accidents) indicators reported and analyzed

Proposed Recommendation from Staff: Risk Management

The government should reorient its regulatory approach to integrate risk assessment and risk management practices into its oversight of the offshore industry.

- Regulatory regime should evolve from one of basic prescriptive regulations to a ***system of augmented baseline regulations supplemented with a proactive risk based performance approach specific to individual facilities, operations and environments***. Similar to the "Safety Case" approach in the North Sea. A risk based management approach should focus on areas with high risk geological structures, the arctic and frontier areas.
- Continue area-wide leasing in much of the Gulf of Mexico. For ultra-deep water, complex geology, and any other "frontier" areas, set competence standards as prequalification for bidding. Require lessee to demonstrate acceptable risk assessment and risk management in higher risk areas prior to commencing drilling.
- Need to assess liability limits and financial responsibility.

Augmenting Baseline Prescriptive Regulations with Proactive Risk-Based Performance

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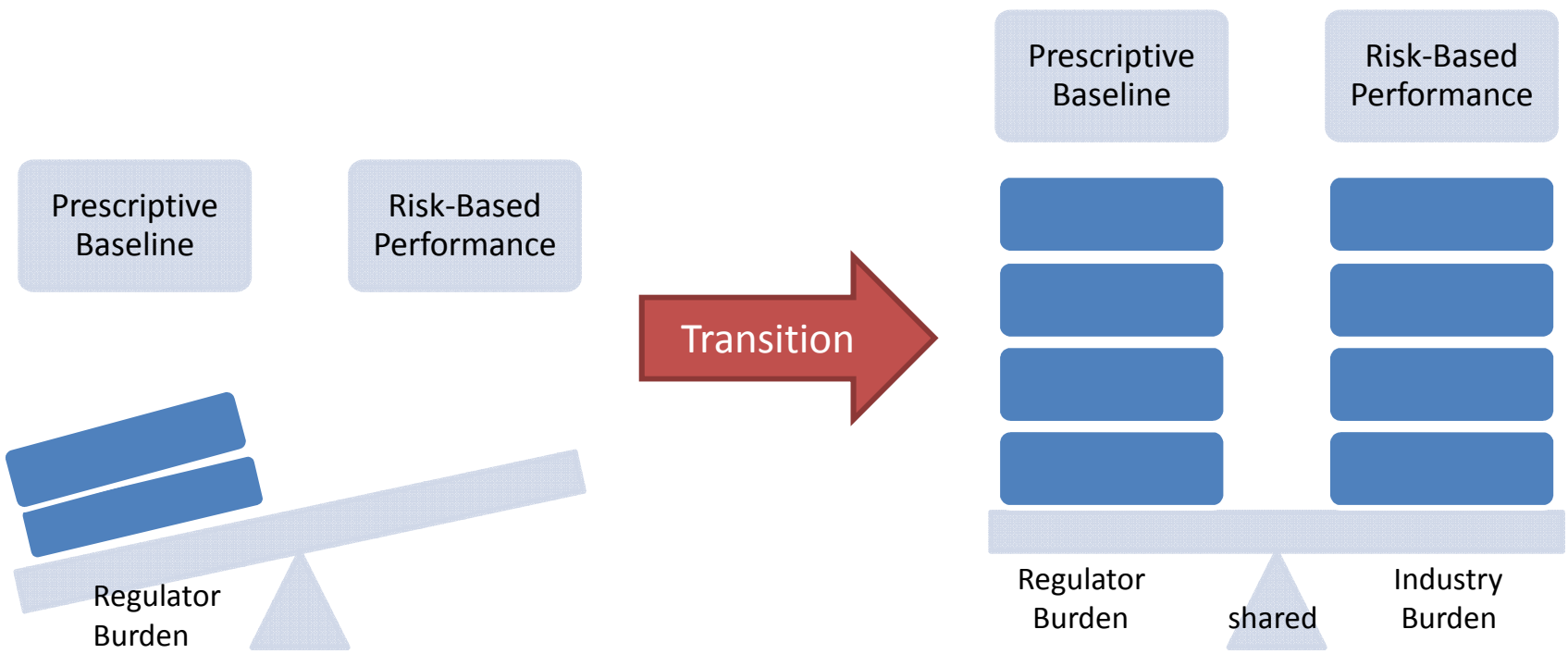


Staff Finding: Roles and Responsibilities

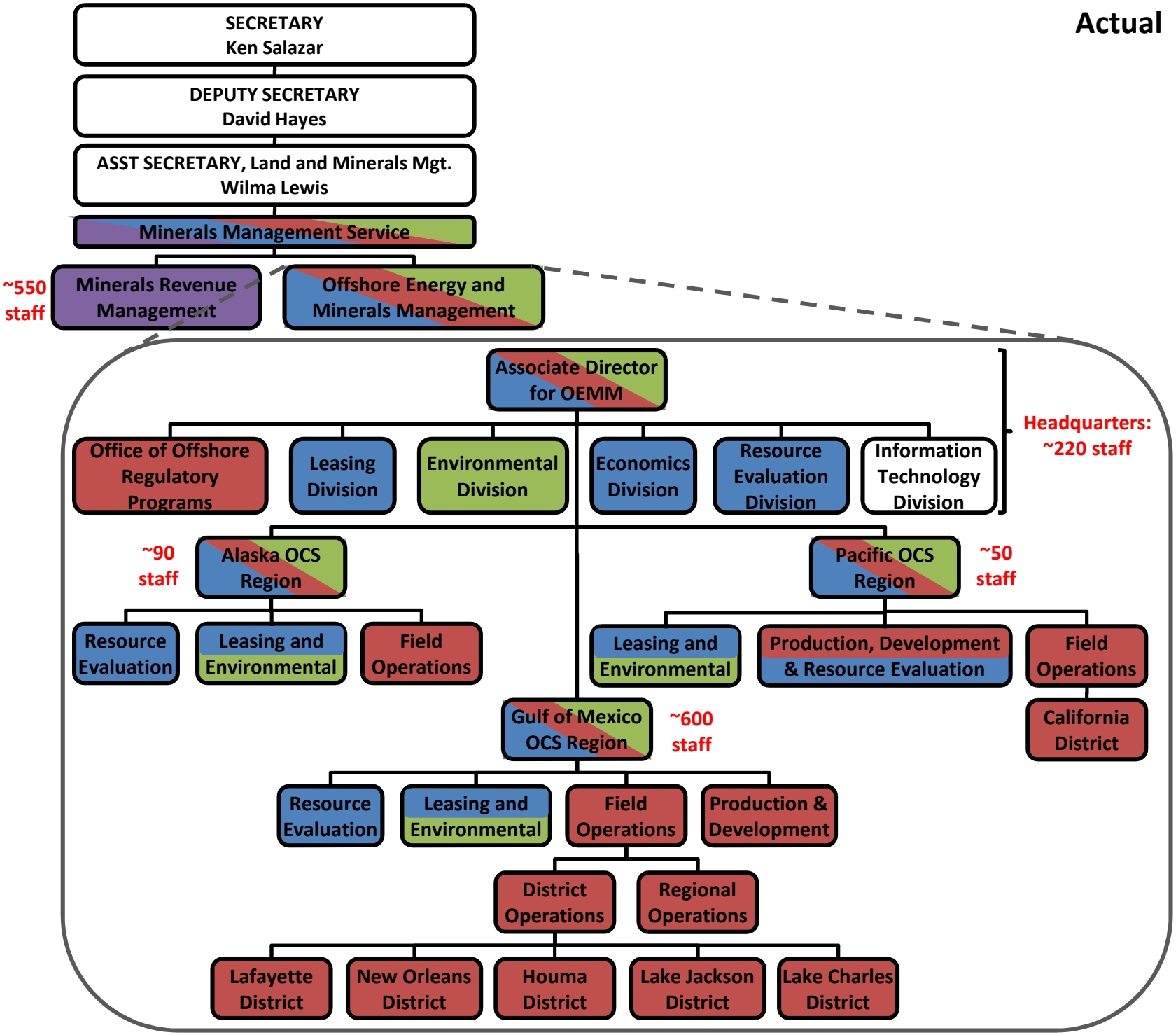
MMS had four distinct responsibilities requiring different skill sets and cultures:

- offshore leasing
- revenue collection and auditing
- permitting and operational safety
- environmental protection

The language of the Outer Continental Shelf Lands Act (OCSLA) has been interpreted as elevating the goal of "expeditious and orderly development" above the requirements of safety and environmental protection.

Revenue issues have taken most of the Director's time at the expense of the other components of the offshore program.

Minerals Management Service – *Geographically (Not Functionally) Organized*



Functional

- Offshore Leasing
- Revenue Collection and Auditing
- Permitting and Operational Safety
- Environmental Protection

International Regulators' Forum (IRF) Consensus Findings and Recommendations (Post Montara and Macondo)

Single Safety Regulator: Regulatory regimes function most effectively when a single entity has broad safety and pollution prevention responsibility. Core responsibilities and objectives must be clearly identified. Gaps, overlap, and confusion are not in the interest of safety or regulatory efficiency.

Risk Based Regulation: Safety management and regulatory priorities should be identified through a comprehensive risk assessment program. Training and competency development programs should be updated to reflect the new risk information. Regulators should challenge industry to resolve potential safety problems.

Continuous Improvement: Operators and contractors must manage their companies to achieve safety objectives and must continually assess the effectiveness of their management programs. New indicators must be explored and assessed, particularly for major hazards and safety culture. Worker input is also essential.

Communication and Learning: Continuous communication among regulators, operators, contractors, workers, industry associations and public interest groups is essential for continuous improvement. Offshore companies should regularly discuss the causes and implications of past accidents with their employees. Industry or government should maintain comprehensive and verified incident data bases.

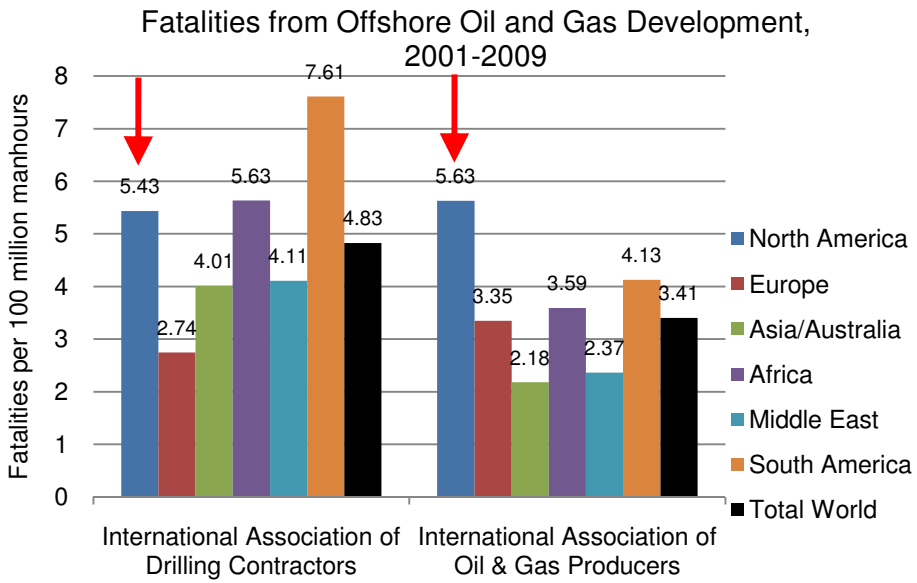
International Standards: Best standards should be identified and applied internationally.

"Not lowest common denominators, not options papers" - Jane Cutler, NOPSA

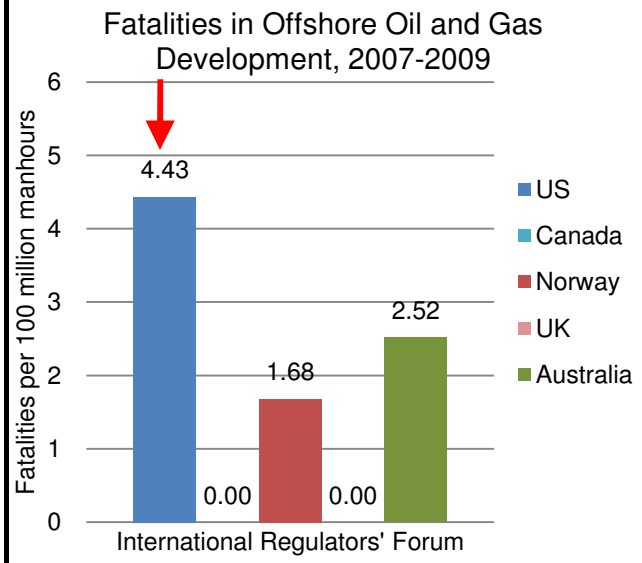
Peer Audits: Peer-based audit programs should be considered for both regulators and operators.

3rd International Regulators' Offshore Safety Conference, 18-20 October 2010 Vancouver, British Columbia, Canada.
Members of IRF: Australia, Brazil, Canada, the Netherlands, New Zealand, Norway, the United Kingdom, and the United States

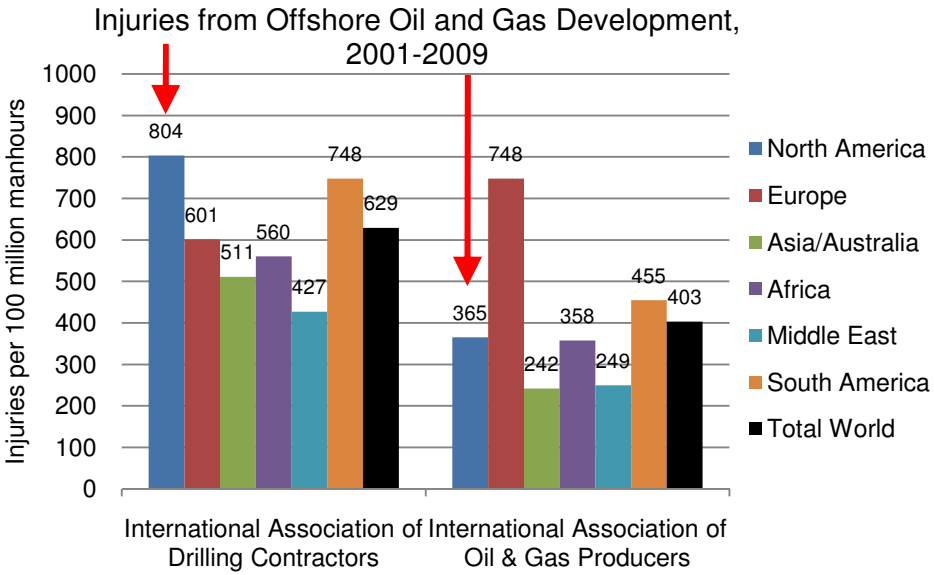
US Not the Gold Standard: Need Single Authority for Offshore System and Worker Safety



Source: Commission staff, adapted from IADC and OGP data
Notes: North America for IADC combines US and Canada; Asia/Australia for OGP combines Former Soviet Union with Asia/Australasia.



Source: Commission staff, adapted from International Regulators' Forum



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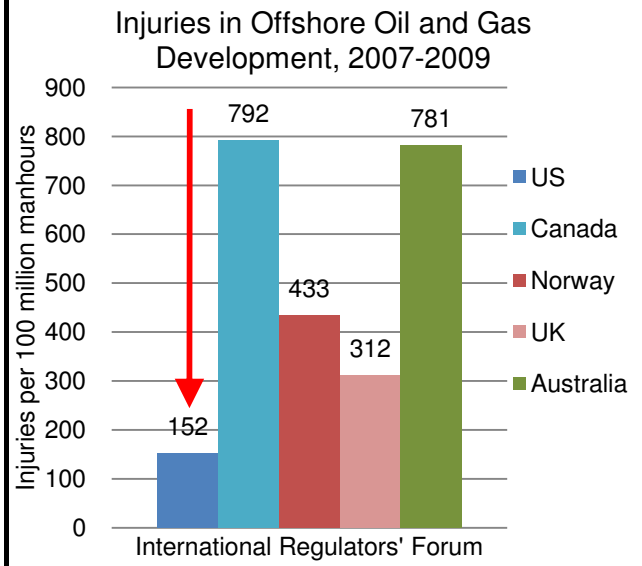


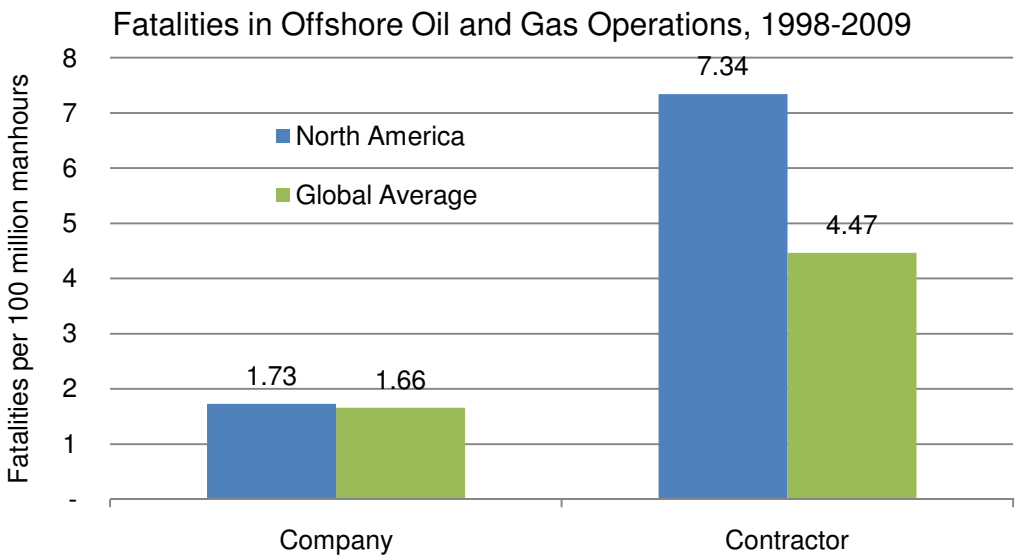
Source: Commission staff, adapted from International Regulators' Forum

U.S. fatalities are higher than peers, yet injuries reported to MMS/BOEMRE are drastically lower – clear indicator of reporting gap on injuries.

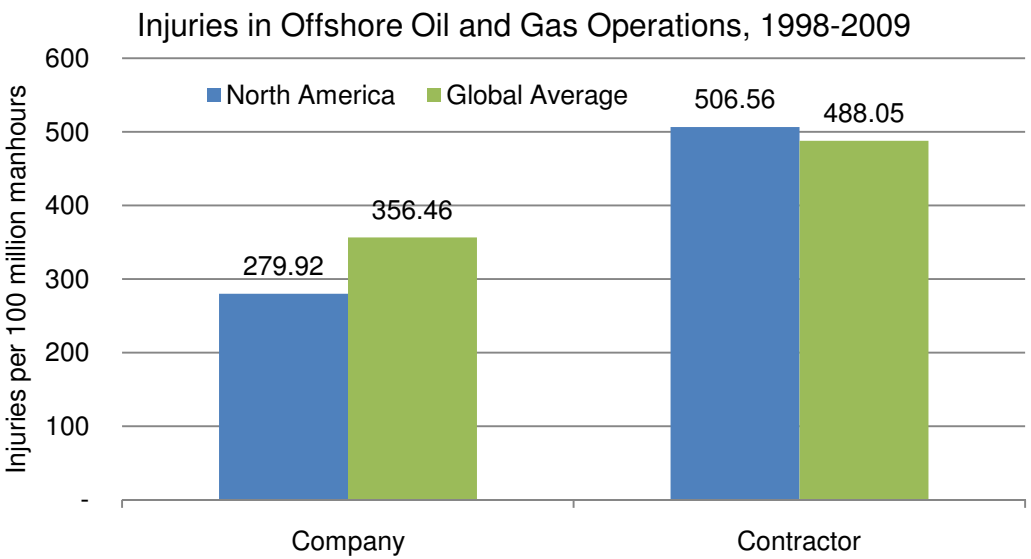
With little to no union presence it is not clear who is watching out for contractor worker safety.

Helicopters are a major safety gap.

Contractor Safety: Need Single Authority for Offshore System and Worker Safety



Source: Commission staff, adapted from International Association of Oil & Gas Producers



Source: Commission staff, adapted from International Association of Oil & Gas Producers

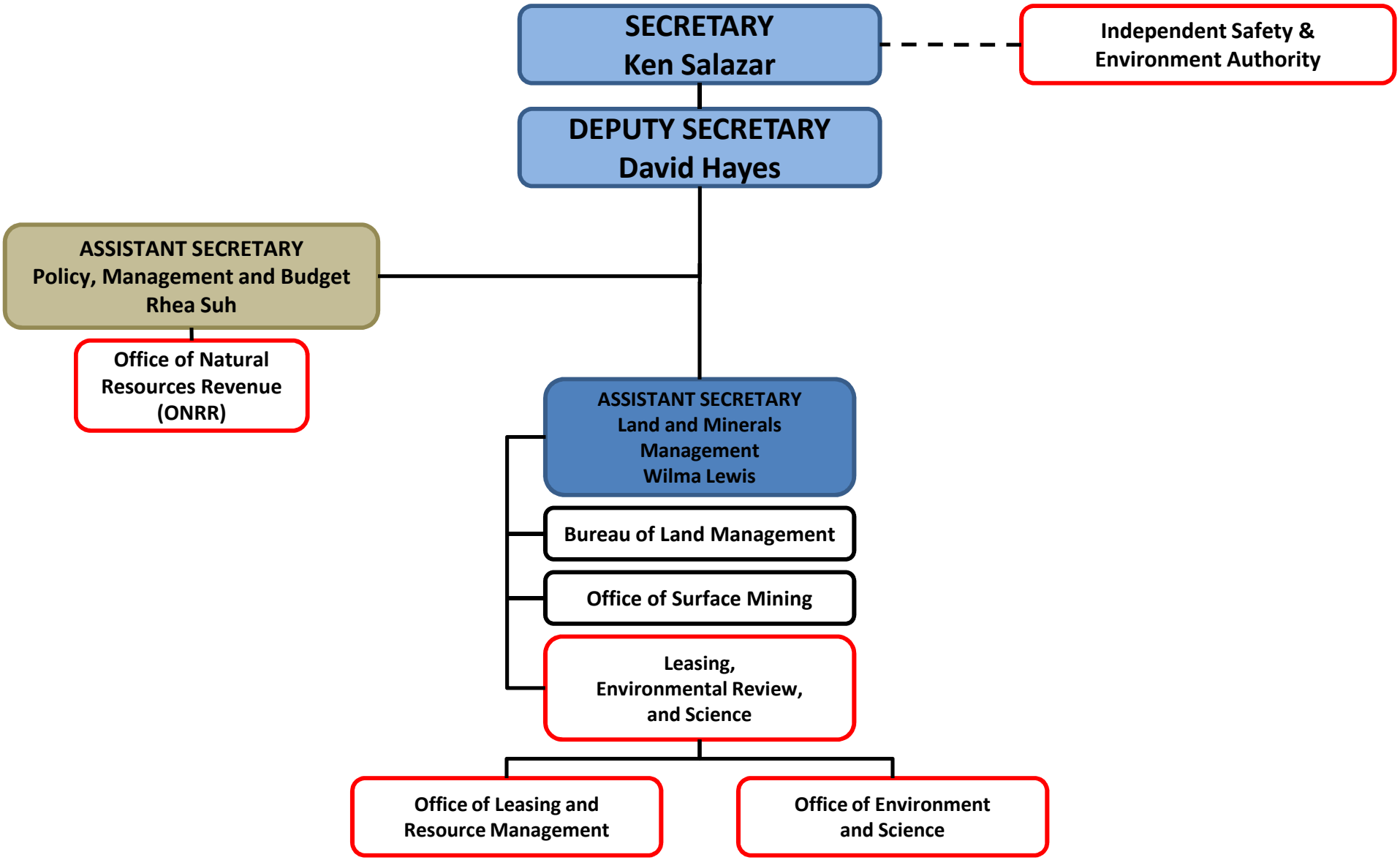
Contractors work 80% of the manhours in offshore development

- Of the 126 persons on board Deepwater Horizon on the night of April 20, only 8 were BP employees (94% contractors)

Uneven tracking of contractor data

Business incentive for contractors to not report

Proposed Recommendation from Staff: Organization Structure



Note: Office of Natural Resources Revenue - royalty collection and auditing – change was effective 10/1/10. Rest of the reorganization still under consideration.