The Importance of Safety Culture:

What lessons can be learned from Macondo?

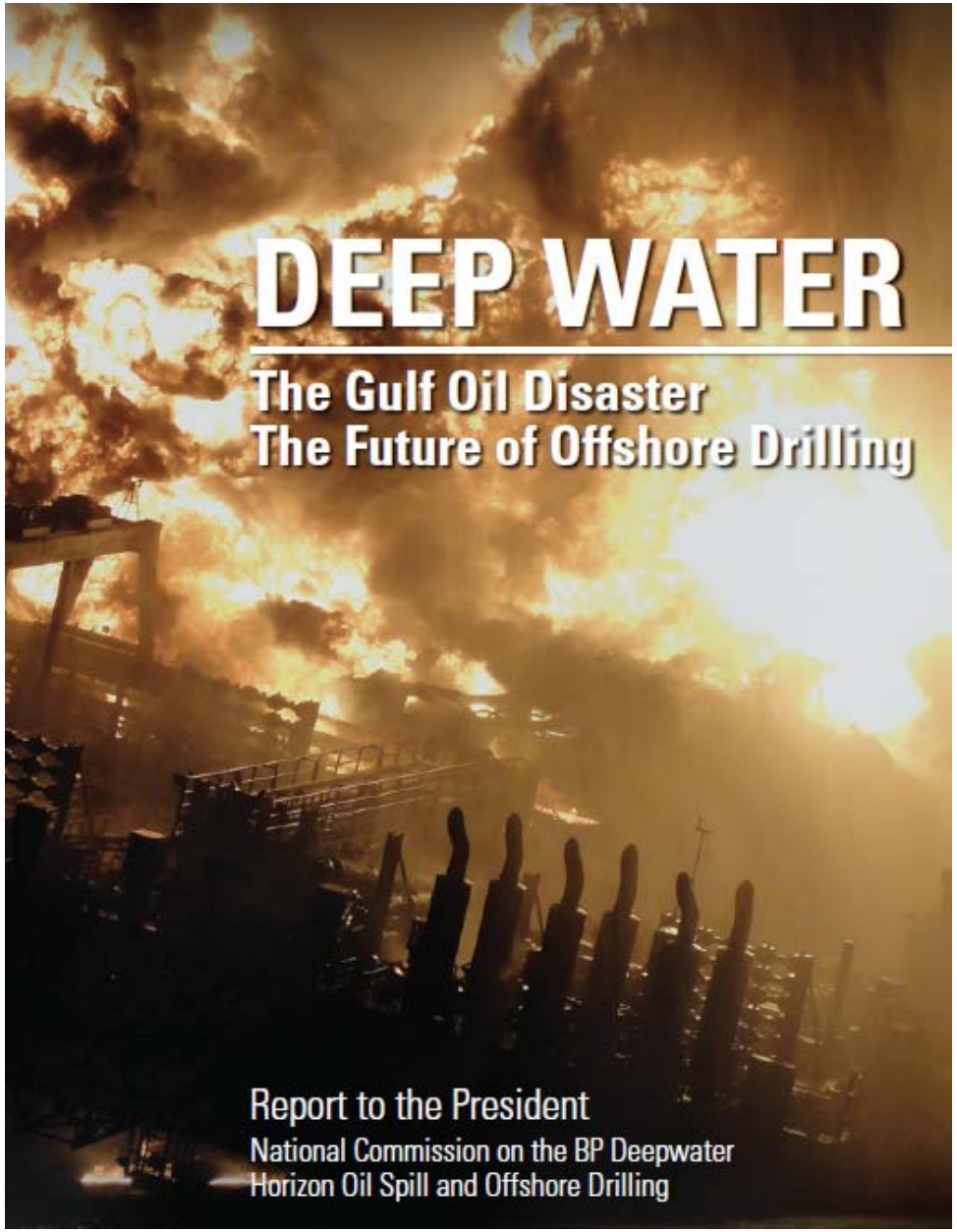
Fran Ulmer 9/16/2012

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

Report to the President

www.oilspillcommission.gov

National Commission on the
BP DEEPWATER HORIZON OIL SPILL
AND OFFSHORE DRILLING



Findings:

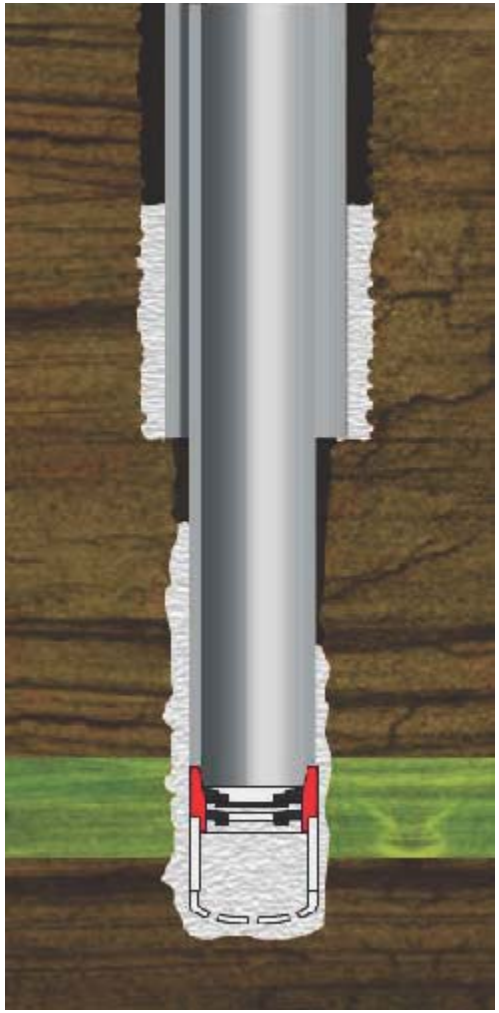
The Deepwater Horizon disaster was foreseeable and preventable

The immediate causes of the Macondo well blowout can be traced to a series of identifiable mistakes made by BP, Halliburton, and Transocean

The decisions made by these companies reveal systemic failures in risk management and raise questions about the safety culture of the industry.

Major Factors Leading to Blowout

- Flawed design for cement slurry
- High risk cementing procedures
- Misinterpretation of negative pressure tests
- Risky Temporary Abandonment Procedures
- Inattention to signs of “kicks”
- Failure to respond appropriately once the blowout began
- Poor communication
- Haste, pressure and confusion



Report Recommendations

Improving the Safety of Offshore Operations

Safeguarding the Environment

Strengthening Spill Response, Planning and Capacity

Advancing Well Containment Capability

Restoring the Gulf of Mexico

Ensuring financial responsibility

Anticipating the challenges of Frontier Areas and the Arctic

Preventing Accidents: *Changing Business As Usual*

The Compelling Need for a Culture of Safety

Recommendations for Industry

- The oil and gas industry should establish its own “Safety Institute”
  - The nuclear power industry did this after Three Mile Island accident
  - Develops and enforces industry standards of excellence
  - Operate independently of the American Petroleum Institute
- The oil and gas industry must adopt a “culture of safety” as a collective responsibility
  - A focused commitment to constant improvement and zero failure rate
  - Other high risk industries have agreed to hold themselves and peers accountable for safety
  - Set up mechanisms to make this real
- Should benchmark safety and environmental practice rules against recognized global best practices
- Should have containment technologies immediately available

Preventing Accidents: *Changing Laws*

Raising liability caps

Promoting financial responsibility

Providing protection for "whistleblowers" for safety problems

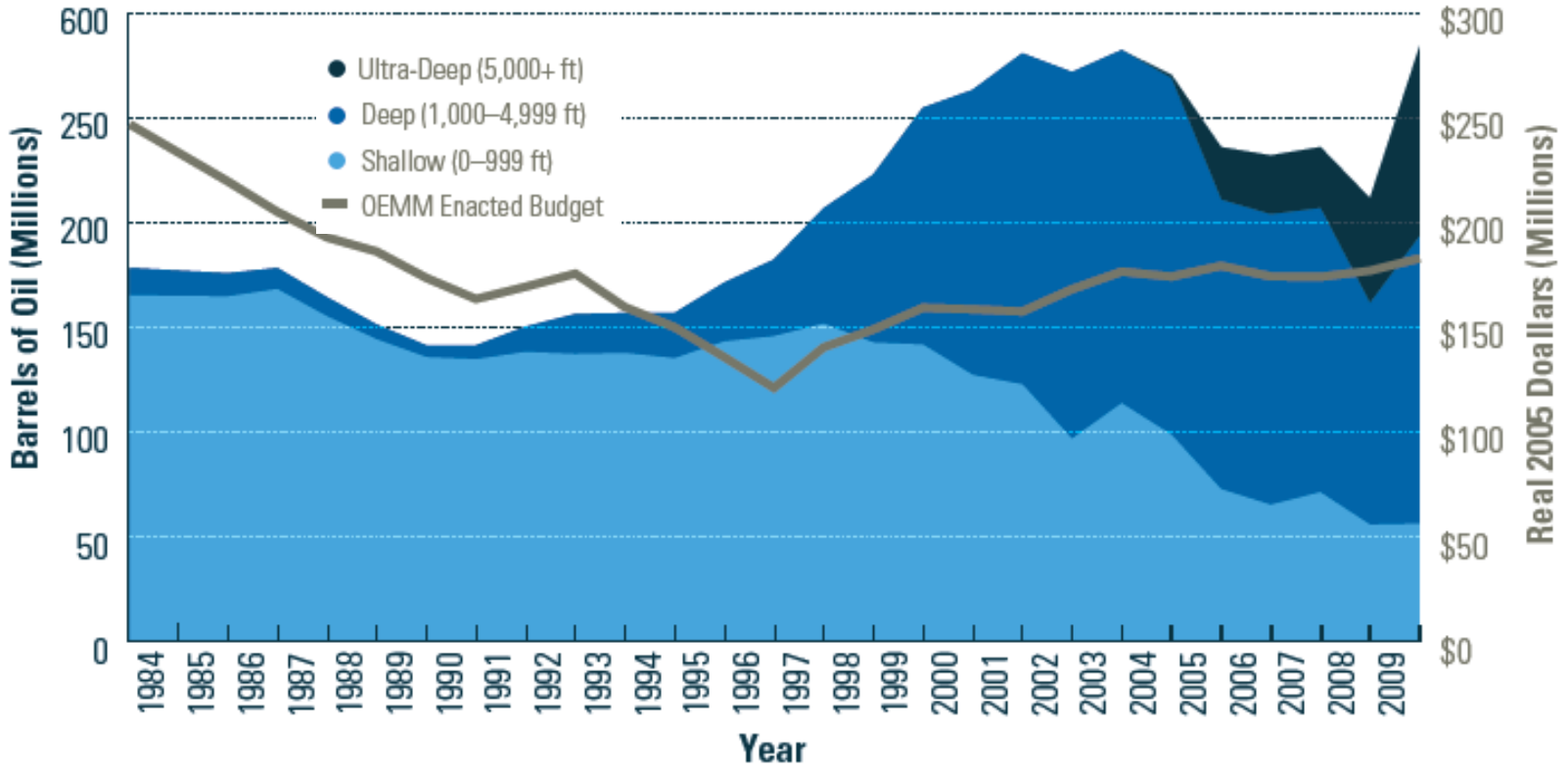
Recommendations for Congress

- Establish independent Bureau of Safety and Environmental Enforcement
- Establish fees as dedicated source of funding for regulators
- Provide full dedicated funding for R&D to improve
- Response and containment techniques
- Significantly increase liability cap and financial responsibility requirements
- Increase allowable payouts from oil spill liability trust fund
- Establish a state-federal gulf coast ecosystem restoration council with long-term funding
- Dedicate 80% of Clean Water Act penalties to Gulf restoration

Advancing Safety: *Changing Government*

Adequate, Stable Resources for Regulatory Oversight is Essential, as is Competency and Independence

FIGURE 3.3: MMS Budget and Gulf of Mexico Crude Oil Production, 1984-2009



Recommendations for Federal Agencies

- Assign offshore energy management responsibilities to 3 entities
  - An independent safety authority
  - A Leasing and Environmental Science Office
  - An Office of Natural Resources Revenue
- Promulgate improved regulations and interagency coordination
- Develop management system incorporating “safety case” approach
- Promote adoption of consistent international best practice standards
- Improve NEPA environmental reviews
  - Stronger interagency consultation (particularly with NOAA)
  - Implemented by Office of Environmental Science

Special Challenges in the Arctic

- Cold, dark, remote, extreme weather, inadequate charting, communications, training, infrastructure, underdeveloped technology appropriate to conditions, lack of knowledge about the ecosystems and very vulnerable environment and indigenous populations dependent upon healthy marine mammals, fish, birds, etc.

Recommendations for the Arctic

- Drilling must be done with the utmost care because of the sensitive Arctic environment
- An immediate, comprehensive research program to provide a foundation of scientific information is needed
- Industry and the Coast Guard should address gaps with respect to:
  - Oil-spill response
  - Containment
  - Search and rescue
- The U.S. should promote the development of international drilling standards for the Arctic

Many other entities have made similar recommendations

- BOEM/US Coast Guard Joint Investigation Team
- International Assn of Drilling Contractors
- International Regulators Forum
- API/ Center for Offshore Safety (COS)
- U.S. Chemical Safety Board
- Canada's National Energy Board
- Harvard 's Emmett Environmental Law and Policy Clinic
- PEW, The Wilderness Society, Oceana, IDDRI Experts Workshop and many other conferences and workshops
- DOI's Ocean Energy Safety Advisory Committee

National Academy of Engineering/ National Research Council Recommendations

- “Industry, BSEE and other regulators should foster an effective safety culture though consistent training, adherence to principles of human factors, system safety, and continued measurement through leading indicators.
- Require operators to develop a comprehensive ‘safety case’ as part of their exploration and production plans’ for certain high-risk areas including the Arctic.
- Develop more detailed requirements for incident reporting and data concerning offshore incidents and ‘near misses’ …such reporting should be publicly available.”

How to embed a meaningful and sustainable safety culture?

Internal and external influences in corporate decision making

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(effective, constructive, independent enforcement to assure attention to risk management: accountability)

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5. Three way partnership: management, labor and government

Arctic Boundary as defined by the Arctic Research and Policy Act (ARPA)

All United States and foreign territory north of the Arctic Circle and all United States territory north and west of the boundary formed by the Porcupine, Yukon, and Kuskokwim Rivers; all contiguous seas, including the Arctic Ocean and the Beaufort, Bering and Chukchi Seas; and the Aleutian chain.[1]

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Map author: Allison Gaylord, Nuna Technologies. May 27, 2009.

1. The Aleutian chain boundary is demarcated by the 'Contiguous zone' limit of 24-nautical miles.

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