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Safety is not proprietary. And for this reason ExxonMobil shares its best practices within our industry and across other industries. We seek to learn from others. **Testimony of Rex Tillerson, CEO of Exxon Mobil, Hearing before the National Commission, November 9, 2010.**

The Gulf of Mexico oil spill (also referred to as the BP oil spill, the Deepwater Horizon oil spill or the Macondo blowout) resulted from the explosion of the well platform on April 20, 2010. Eleven lives were lost and seventeen others were injured. It highlighted the dangers that can be associated with extraction of resources. It shone a spotlight on the Industry in both the sense of safety and of the environment. Much has been written about the environmental aspects of such a spill or others than came before such as the grounding of Exxon Mobil's Exxon Valdez in 1989 off of Alaska. So for the purposes of this article I will write about the safety aspect and the implications to Industry as a whole.

One of my members has often said (in relation to safety) “You’re working with money or you’re working for money”. His meaning as it relates to safety is that some clients pay you for a service (i.e. turnkey) and leave the parameters of your operations to you whereas a few will walk the talk; do more than just pay lip service to safety and standards; and will pay for extra costs as it relates to higher levels of safety and standards. Keep in mind the majority of clients (as do contractors) operate somewhere inbetween these two goalposts.

The USA National Commission on the BP Deepwater Horizon Oil Spill and Offshore Drilling released their final report on January 1, 2011. The URL link is here: <http://www.oilspillcommission.gov/final-report> . Of particular interest is Chapter Eight titled “Safety is not proprietary” Changing Business as Usual (see the quote at the beginning of this article for full reference).

The chapter examines how petroleum companies have been managing the risks associated with finding and producing oil and how they can do it better, individually and as a responsible industry overall. The record shows that without effective government oversight, the offshore oil and gas industry will not adequately reduce the risk of accidents, nor prepare effectively to respond in emergencies. However, government oversight, alone, cannot reduce those risks to the full extent possible. Government oversight (see Chapter 9) must be accompanied by the oil and gas industry's internal reinvention: sweeping reforms that accomplish no less than a fundamental transformation of its safety culture.

In March 1980, the Alexander Kielland—built as a drilling rig but under lease to Phillips Petroleum Company to house offshore workers at the Ekofisk Field in the Norwegian North Sea—capsized, killing 123 of the 212 people on board the “flotel.” Two years later, during preparation for an approaching North Atlantic storm, the Ocean Ranger Semi-submersible drilling the Hibernia field for Mobil Oil of Canada, sank off the coast of Newfoundland; all 84 crew members were lost in the freezing-cold waters. And in July

1988, the Piper Alpha production platform operated by Occidental Petroleum 120 miles northeast of Aberdeen, Scotland, exploded and sank, killing 167 people, including 2 rescuers. Although the causes of the accidents varied, they all involved international operations of U.S.-based oil and gas companies. Common contributing factors included inadequate safety assurance, worker training, and evacuation procedures. Poor communication and confusion about lines of authority amplified the death toll in at least two of the accidents.

All these foreign regulators—the United Kingdom, Norway, and Canada—had previously relied on the kind of prescriptive approach used in the United States, but in the aftermath of these fatal accidents in harsh, remote offshore environments, authorities elsewhere concluded that adding a risk-based approach was essential. They faulted reliance on the “prescriptive regulation with inspection model” for being fundamentally reactive. And therefore incapable of driving continuous improvement in policies and practices.

According to Magne Ognedal, the Director General of the Norwegian Petroleum Safety Authority, the prescription-only model engendered hostility between the parties and put the risk—legal and moral—onto the regulator to accommodate changing technology, geology, and location, rather than onto the operator, where the responsibility rightly belonged. Under the new safety-management model, minimum standards for structural and operational integrity (well control, prevention of fires and explosions, and worker safety) remained in place. But the burden now rested on industry to assess the risks associated with offshore activities and demonstrate that each facility had the policies, plans, and systems in place to manage those risks. In the United Kingdom, such risk management plans were called a “Safety Case.”

For years, the American Petroleum Institute (API) also led the effort to persuade the Minerals Management Service (MMS) not to adopt a new regulatory approach—the Safety and Environmental Management System (SEMS)—and instead has favored relying on voluntary, recommended safety practices. Safety and environmental management systems are used in similar forms in other parts of the world and many credit them with the better safety records achieved outside U.S. waters (see Chapter 3). Beginning early in the last decade, the trade organization steadfastly resisted MMS’s efforts to require all companies to demonstrate that they have a complete safety and environmental management system in addition to meeting more traditional, prescriptive regulations—despite the fact that this is the direction taken in other countries in response to the Piper Alpha rig explosion in the late 1980s. Indeed, many operators in the Gulf were used to this safety-based approach on their rigs in the North Sea and Canada.

Another example: The nuclear (subs) USA Navy. Turning from the skies to the sea, between 1915 and 1963, the U.S. Navy lost about one submarine every three years to noncombat causes. In 1963, when the nuclear-powered USS Thresher was lost during a deep test dive, 112 naval personnel and 17 civilians perished. The Navy investigation found that a deficient silver-braze joint in a piping system had failed, flooding the engine room. The investigation went far beyond immediate causes and “found deficient

specifications, shipbuilding practices, and maintenance practices, along with inadequate documentation of construction and maintenance actions and deficient operational procedures.” After the Thresher loss, Admiral Hyman Rickover, then head of the nuclear Navy, told his staff to establish a system to ensure that such an accident would never recur. The new SUBSAFE system was established within 54 days of the loss of the Thresher, and no SUBSAFE-certified submarine has since been lost.

Principles of the Naval “SUBSAFE” System

- Top management commitment to safety
- Clear and written safety requirements
- Education, not just training
- Regular rewriting of requirements
- Separation of powers and assignment of responsibilities
- Emphasis on rigor, technical compliance, and work discipline
- Documentation capturing what is done and why it is done
- Participatory audit approach, and requirements for objective quality evidence
- Program based on written procedures, not personality-driven
- Continual certification of a facility
- Accountability and accompanying responsibility
- Special efforts to be vigilant against complacency

I have gone too long for my word count already so I will continue with some of the interesting portions of the report in my next column. Suffice it to say - for now – that in many ways the concept of the Canadian Association of Upstream Oil and Gas Associations for Safety and Training called Enform is in many ways the epitome of the outcome of this report

From the Thursday Files

Groups of animals often make what look like wise decisions, even though most of the members of the group are ignorant of what is going on.

Iain Couzin of Princeton University