

Oil and Gas

Recently news of an explosion and fire at the Tesoro oil refinery shook homes and shot flames into the night sky, killing five people and critically injuring two others. Bill Hoyle, former head of investigation at the US Chemical Board has raised the following considerations:

1. Too much focus on BP has a significant downside. The federal government and the oil industry seem to want to compartmentalize the oil spill problem as a narrow failure of one company, BP. My view is that any oil company could have experienced the Texas City refinery disaster or the Gulf oil spill. The oil industry applies a higher level of safety practice (legally required) in the UK, North Sea and elsewhere than in the U.S. The insurance company Swiss Re reports that oil refining industry safety practices and incident rates in Europe are dramatically better than in the U.S. This is especially interesting because European-based Shell and BP have identical operations in both regions, but use very different safety practices.



2. U.S. government safety oversight of offshore oil production is extremely poor (onshore safety oversight is only slightly better-- seven people were killed three days before the Gulf spill at the Tesoro Oil Refinery in Anacortes, Washington). The lessons of Piper Alpha (167 dead on a North Sea platform in 1988) and the Lord Cullen report have not been learned and are not being practiced in the U.S. A dedicated safety agency should oversee offshore oil safety as is done in the UK and Australia, etc. MMS and the Coast Guard are incapable of being effective safety regulators. The "safety case" approach to managing operations with major risks, which is used in the UK, Australia and elsewhere should be mandated for oil and chemical operations onshore and offshore in the U.S.

3. The oil industry opposed modest new safety regulations proposed by MMS in 2009. These new

regulations would have copied the OSHA process safety management, PSM, approach used in oil refineries for 18 years and applied it offshore. The oil industry proudly promotes the PSM approach onshore while opposing it in their equally hazardous operations offshore.

4. Deep water drilling and production is inherently extremely high risk and is at the fragile edge of human technical and organizational capability to understand and manage. The oil and chemical industry engineering culture of technological overconfidence has created blindness to the catastrophic risks of deep water drilling. Attention has focused on production goals (preoccupation with technical success) with very little attention to the ability to recover (resilience) when something goes very wrong at great depths. I think this can-do engineering culture (technological arrogance) generates risk blindness and is the most important lesson to be learned from the oil spill. It has connections to the space shuttle disasters.

5. The organization, culture and HRO lessons from the oil spill should inform society's thinking about all high hazard facilities. Years of operation without major incidents provides inadequate insight into catastrophic risks and our ability to respond and recover when things go seriously wrong. Experience shows that the worst case scenarios we experience are too often far worse than the ones anticipated. The layers of protection safety approach is not enough. In deep water oil drilling, adding more blowout protection equipment does not eliminate the potential for catastrophic failure (especially in deep water). Operations with the potential for disaster will experience disasters no matter how many layers of protection are employed. Each additional layer of protection adds technical and organizational complexity and further challenges our ability to understand and manage highly hazardous facilities. We must have the capacity to respond and recover when disaster strikes. In the Gulf deep water oil spill, the industry and government capacity for response and recovery (resilience) is grossly inadequate, therefore, deep water drilling should not continue.



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