The Deepwater Horizon Case

When ignoring risk signals causes the greatest environmental disaster in history

■ Reading time: 11 minutes | WRM Solutions — Rodolfo Liuzzi, CEO

Operational risk in the offshore extraction sector is one of the most complex and dangerous in the world. The Deepwater Horizon case demonstrates that even when danger signals are clear, documented and visible in real time, they can be ignored — with devastating and irreversible consequences for people, the environment and the economy.

A night in the Gulf of Mexico

On 20 April 2010, at 9:50pm, the Deepwater Horizon oil rig — owned by Transocean and leased to BP — explodes in the Gulf of Mexico. The explosion kills 11 workers and injures 17. The rig sinks two days later, on 22 April 2010.

What follows is the largest offshore environmental disaster in history. For 87 consecutive days, crude oil pours into the Gulf of Mexico — more than 200 million gallons of crude oil poured into the Gulf for almost three months before the well could be capped.

An event that changed the offshore oil industry forever. And that could have been avoided.

The chain of causes: a disaster foretold

Subsequent investigations revealed a chilling reality. The loss of life at the Macondo well on 20 April 2010, and the subsequent pollution of the Gulf of Mexico throughout the summer of 2010, were in part the result of poor risk management, last-minute changes to plans, failure to observe and respond to critical indicators, inadequate well control response and inadequate emergency response training.

This was not a single error. It was a chain of wrong decisions, each of which had increased the risk exponentially.

The signals nobody wanted to see

Signal #1 — Pressure anomalies ignored in real time:

Abnormal pressure signals were visible on real-time displays. They had been recorded hours before the explosion. They were not correctly interpreted — or worse, they were deliberately ignored to meet the production schedule.

Signal #2 — The failed cement integrity test:

At the heart of the disaster is the failure of the cement barrier in the Macondo well. Halliburton, the company responsible for the cementing work, had conducted tests that showed concerning results. These results did not prevent operations from continuing.

Signal #3 — Safety systems bypassed:

Investigations revealed numerous systems deficiencies, and acts and omissions by Transocean and its crew, that had an adverse impact on the ability to prevent or limit the magnitude of the disaster. These included poor maintenance of electrical equipment that may have ignited the explosion, bypassing of gas alarms and automatic systems.

Signal #4 — Commercial pressure on the schedule:

The rig was behind schedule. BP had already spent more than 50 million dollars in additional costs on the Macondo well. The pressure to complete operations and abandon the well was enormous. In this climate, risk signals were minimised, procedures were shortened, decisions were made in haste.

Responsibilities: three companies, one disaster

Investigations established multiple and shared responsibilities. In September 2014, the federal court overseeing lawsuits against BP and others found that BP was 67% responsible for the blowout, explosion and spill. Transocean, the rig's owner, was found 30% to blame. The remaining 3% of fault was attributed to Halliburton, a contractor.

Three companies. Three separate chains of command. One single disaster that could have been stopped at any point in the chain.

The cost of blindness

The human cost:

11 workers lost their lives in the explosion of 20 April 2010. 17 were injured. Hundreds of thousands of people living and working along the Gulf of Mexico coastline suffered devastating economic consequences — fishermen, restaurateurs, tourism operators, entire communities.

The financial cost:

In June 2016, BP announced its final estimate of the costs of the oil spill: 61.6 billion dollars. In April 2016, BP agreed to settle environmental claims for 20.8 billion dollars — the largest environmental damage settlement in the nation's history. This settlement included a 5.5 billion dollar federal Clean Water Act penalty, the largest in the history of environmental law. Separately, BP paid 4 billion dollars in criminal fines and penalties.

The environmental cost:

The oil slick covered a significant part of the Gulf of Mexico for months. The consequences for the marine ecosystem, bird populations, seabeds and the coasts of Louisiana, Mississippi, Alabama and Florida were devastating and continue to this day.

The reputational cost:

BP was one of the largest oil companies in the world. The Deepwater Horizon case cracked this reputation permanently. CEO Tony Hayward was dismissed in July 2010 after a series of disastrous

public statements — including his famous phrase "I'd like my life back" while 11 families mourned their dead.

The lesson for every organisation

The Deepwater Horizon case does not only concern the offshore oil sector. It concerns every organisation in which commercial pressure can override a safety culture. Three fundamental principles emerge from this disaster.

First — Real-time signals must be heard:

Pressure anomalies were visible on the rig's screens hours before the explosion. In every organisation, real-time operational data are signals. Ignoring them for convenience or under schedule pressure is a deliberate choice — with potentially catastrophic consequences.

Second — Shared responsibility is a systemic risk:

When three companies — BP, Transocean and Halliburton — operate on the same site with separate chains of command, responsibility for safety can fall into the gaps between organisations. As in the Carillion case with subcontractors, the complexity of the supply chain amplifies operational risk.

Third — Commercial pressure can never override safety:

The rig was behind schedule. Costs were out of control. The pressure to complete operations was enormous. In this climate, risk signals are minimised, procedures are shortened, decisions are made in haste. This is the moment when operational risk stops being managed and starts to accumulate.

Conclusion

The Deepwater Horizon explosion was not an accident. It was the inevitable consequence of a chain of wrong choices, ignored signals and an organisational culture in which production speed had replaced safety as the primary value.

87 days of oil in the Gulf of Mexico. 11 lives lost. 61.6 billion dollars in total costs. And an ecosystem that still bears the scars of that night of 20 April 2010.

As in the cases of Boeing 737 MAX, KNP Logistics, Carillion and Miteni — the signals existed. They were documented. And they were ignored.

Operational risk management does not start when the crisis explodes. It starts every day, in every operational decision, in every signal one chooses to listen to — or to ignore.

And in your organisation — who has the power to stop everything when the signals become too strong to ignore?

Sources

BP Deepwater Horizon Accident Investigation Report (September 2010)

BOEMRE Panel Report, U.S. Department of the Interior (October 2011)

U.S. Coast Guard Report of Investigation (July 2011)

U.S. Department of Justice, Deepwater Horizon Settlement (April 2016)

NOAA, Deepwater Horizon Oil Spill Settlements (2016)

National Commission on the BP Deepwater Horizon Oil Spill and Offshore Drilling, Final Report (January 2011)