Oil Safety Culture and Lessons from the BP Disaster

In January 2007, a panel led by James A. Baker, III issued a report on one of the most serious U.S. workplace disasters in the past two decades: the 2005 Texas City BP refinery explosion that killed 15 workers and injured 180. The 374 page report includes some very important lessons for occupational health and safety professionals, including but not limited to those in the oil industry.

The Baker Report

The Baker Panel investigated the "safety culture" at BP's five North American refineries. The final report includes a scathing indictment against the giant oil company for putting production targets, operational goals and budgets ahead of workplace safety.

The report also includes 10 recommendations that, although addressed to BP, apply to just about any other workplace. If you want to read the full report, click here. If you want a summary of the recommendations, keep reading.

1. **Process Safety Leadership**

The Board of Directors of BP p.l.c, BP's executive management (including its Group Chief Executive), and other members of BP's corporate management must provide effective leadership on and establish appropriate goals for process safety. Those individuals must demonstrate their commitment to process safety by articulating a clear message on the importance of process safety and matching that message both with the policies they adopt and the actions they take.

2. **Integrated and Comprehensive Safety Management System**

BP should establish and implement an integrated and comprehensive process safety management system that systematically and continuously identifies, reduces and manages process safety risks

at its U.S. refineries.

3. **Process Safety Knowledge and Expertise**

BP should develop and implement a system to ensure that its executive management, its refining line management above the refinery level and all U.S. refining personnel, including managers, supervisors, workers and contractors, possess an appropriate level of process safety knowledge and expertise.

4. **Process Safety Culture**

BP should involve the relevant stakeholders to develop a positive, trusting and open process safety culture within each U.S. refinery.

5. **Clearly Defined Expectations and Accountability for Process Safety**

BP should clearly define expectations and strengthen accountability for process safety performance at all levels in executive management and in the refining managerial and supervisory reporting line.

6. **Support for Line management**

BP should provide more effective and better coordinated process safety support for the U.S. refining line organization.

7. **Leading and Lagging Performance Indicators**

BP should develop, implement, maintain and periodically update an integrated set of leading and lagging performance indicators for more effectively monitoring the process
safety performance of the U.S. refineries by BP’s refining line management, executive management (including the Group Chief Executive) and Board of Directors. In addition, BP should work with the U.S. Chemical Safety and Hazard Investigation Board and with industry, labor organizations, other governmental agencies and other organizations to develop a consensus set of leading and lagging indicators for process safety performance for use in the refining and chemical processing industries.

8. **Process Safety Auditing**

BP should establish and implement an effective system to audit process safety performance at its U.S. refineries.

9. **Board Monitoring**

BP's Board should monitor the implementation of the recommendations of the Panel (including the related commentary) and the ongoing process safety performance of BP's U.S. refineries. The Board should, for a period of at least five calendar years, engage an independent monitor to report annually to the Board on BP's progress in implementing the Panel's recommendations (including the related commentary). The Board should also report publicly on the progress of such implementation and on BP's ongoing process safety performance.

10. **Industry Leader**

BP should use the lessons learned from the Texas City tragedy and from the Panel's report to transform the company into a recognized industry leader in process safety management. The Panel believes that these recommendations, together with the related commentary in Section VII, can help bring about sustainable improvements in process safety performance at all BP U.S. refineries.

Conclusion

Hopefully, other companies will heed the solid advice of the Baker Panel. Share them with your senior management team. You can present the report in a work shop or use it as a case study in your next safety leadership course.

And ask yourself the following questions: Do you have opportunities to improve based on the Baker recommendations? Or are you another BP waiting to happen?

The BP Texas City Refinery Explosion

BP's Texas City Refinery, the third largest oil refinery in the U.S., is spread over 1,200 acres and has 1,600 permanent workers.

On March 23, 2005, a cloud of hydrocarbon vapors ignited a fire in the Isomerization Unit (ISOM) that triggered an explosion killing 15 people and injuring 170 more. BP accepted responsibility for the explosion and admitted that it made mistakes that contributed to the tragedy:

- The explosion and fire occurred because established procedures weren't followed during the restart of the raffinate splitter tower that allowed the fluid level in the tower to be 20 times higher than it should have been just before the explosion occurred.
- There was a failure to evacuate workers from temporary office trailers near the F-20 blow down stack before the start up of the raffinate tower and a failure to warn them of danger, both of which increased the number of killed and injured.
- The use of a pressure relief system routed to a flare or closed relief system would have reduced the severity of the incident.

The OSHA Response

After the blast, OSHA inspected the Texas City facility and cited BP for more than 300 violations, including:

- 167 citations for non-intrinsically safe electrical equipment;
- 76 instances of failure to correct deficiencies in equipment that are outside acceptable limits for the pressure relief header subysystem, liquid knockout subsystem and other subsystems and equipment;
- Failure to compile written process safety system for each of the four systems in the ISOM unit;
- 18 instances of failure to properly evaluate the safety and health impact of a catastrophic blast for temporary trailers near the ISOM unit; and
- 31 instances of failure to evaluate the reliability of alarms and the integrity of process systems to determine criticality or Safe Integrity Level.

On September 22, 2005, OSHA announced that British Petroleum Products North America has agreed to pay more than $21 million to settle the violations—the largest fine OSHA has ever assessed, practically doubling the old record of $11 million against a Louisiana fertilizer company.

BP also paid $1.2 billion to settle the lawsuit filed by a woman named Eva Rowe whose parents were killed in the explosion. “This is not about the money,” Rowe is quoted as saying after the suit was settled. “I want the world to know what BP did.”