

## **Incident Investigation Quality**

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### **Introduction**

While subtleties exist from jurisdiction to jurisdiction, all offshore petroleum regulators agree on the criticality of offshore operators, whether they be oil companies or service providers, conducting thorough and sound investigations when an incident or accident happens. A quality investigation should provide ultimate root causes with defined, corrective actions. This complete understanding of the event will ideally prevent similar incidents from re-occurring on that facility. A higher, but no less important goal from a regulator's perspective involves the importance and future impact of sharing key learnings from thorough investigations industry-wide, to help prevent other similar incidents from occurring elsewhere throughout the world.

Critical aspects in conducting a quality investigation include:

- a methodically trained investigating team that can unbiasedly conduct the investigation – objectivity is vital for acceptance of a trusted investigation and the associated outcomes. The lead investigator should not have been involved with or contributed directly or indirectly to the occurrence. The trained team should be able to concisely assemble the final report, with clear writing and photos or videos if required to better capture the investigation. A worker representative should also be engaged as part of the incident investigation team for insight and transparency purposes for the sake of the workforce.
- immediate post-incident access to required information and personnel involved with the incident. Factors like evidence preservation, digital capture and immediate witness interviews post-incident are required for credibility and potential legal capture. Faulty machinery may require additional engineering or metallurgical analysis.
- a sound process via formal training to conduct the investigation and deal with the outcomes to effect a quality investigation will be discussed throughout the remainder of the article.

### **Investigative Processes**

There are numerous methodologies for conducting incident investigations. Many models follow a similar blueprint, starting with determining a clear outline of events leading up to and during (and following) the incident. An accurate and precise picture is dependent on the skill of the investigating team to extract the required information and the co-operation of the parties under investigation. For example, this can be performed by interviewing the involved personnel, the investigator must be asking the “right” questions to the “right” personnel. The investigating team must be technically competent in the analysis of

applicable equipment data collection and other forms of historical capture from the facility. Timely collection of all evidence post-incident is more reliable for increased accuracy. A multidisciplinary investigation team, including broad workforce representation, is often the most effective way to ensure the required skill set for each unique investigation is satisfactory.

The timeline then should clearly outline the determined causal factors. Causal factors are defined as actions that if rectified or avoided may have prevented the incident from occurring in the first place. They tend to include errors that enabled any safeguards to fail.

Upon determination of the causal factors, further scrutiny is required to determine root cause(s). Root cause is defined as the fundamental reason why the incident took place. It is the lack of best practices or decomposition of a protective barrier that allowed the hazard to become an accident.

### **So why does a quality investigation matter to the Offshore Regulator?**

Poorly conducted investigations undertaken by offshore operators that do not accurately reflect the timeline of events may not indicate the true root cause of the incident. This is problematic because if the root cause is not determined, the proper corrective actions and their implementation will most likely be missed. Fall out from these outcomes include the increased probability of incident re-occurrence and the regulator losing trust in the investigative capabilities of offshore operators. In our jurisdiction, we spend a significant amount of time reviewing offshore investigation reports. When the report is incomplete, unclear or does not appear to have outlined the true root cause, our safety officers spend a significant amount of time following up with the operators, requiring them to revisit the investigation report and analysis until the operator has produced a quality report with clear root causes and corrective actions.

In contrast, a quality report from an offshore operator would be well written and objective, with a clear timeline with relevant details. Quality reports may contain diagrams, photos and any other tools to better explain the scenario at the time of the incident. This is the groundwork for conclusion of the actual root cause along with along with corrective measures and lessons learned. Quality investigations should detail an incident analysis to a level commensurate with the potential consequences, not just actual consequences. As a regulator, the review of a quality report indicates that the operator has demonstrated due diligence and the chances for re-occurrence and potential escalation have been significantly reduced or eliminated.

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