

Multinational audits – Maintaining Safe Operations

Petroleum Safety Authority, Norway

NSOAF – North Sea Offshore Authority Forum

NSOAF brings together safety regulators for petroleum activities in the North Sea basin and this body has pursued several projects over the years, aiming to reduce differences between formal national requirements for technical, operational and educational aspects of the petroleum industry in these waters, as well as to strengthen and catalyze the continuous improvement initiatives and learning.

Background and context

Historically, inadequate maintenance and maintenance related activities have been seen to play a role in major accidents.

In theory, three aspects of maintenance are important in relation to safe operations:

1. Incidents that lead to an injury of the persons involved in performing the work
2. Errors in planning, execution or control of the work performed (erroneous execution)
3. Missing or delayed maintenance (maintenance activities not done!)

The first (1) leads to lost time injuries, while (2) and (3) may represent a major accidents risk.

Multi National Audit(s)

During 2015 and 2016, the Health and Safety Working Group of the NSOAF, chaired by The Petroleum Safety Authority Norway, met to discuss common challenges in the oil and gas industry in their respective countries. The challenges related to maintaining and operating ageing installations in a lower oil price environment was selected as topic for further work and follow-up. Further, the team targeted installations/organisations that had experienced a transfer of ownership. In the audits, it was agreed to also include management in the interview/dialogue process, addressing leadership and cultural aspects of maintaining safe operations.

This work formed the basis for a series of audits (multinational audits — MNA) in 2017 on the topic of Maintaining Safe Operations, with a common set of themes and questions. Each member country adapted the questions to their local regulatory regime and their language. Furthermore, they conducted their audits as part of their regular audit/supervisory program. A total of 22 audits were performed.

The objectives of the MNAs were to ensure that relevant lessons learned from the audits are communicated to the industry and implemented in the North Sea.

The resulting joint report describes the audit process and summarizes the findings and learnings from the MNAs. The findings from the audits are presented in the report as good or poor practices to indicate areas of improvement and potential for knowledge transfer. [Link to report](#)

Good practice (Examples from report):

- Strong and determined leadership on both corporate/strategical and operational level is key to maintaining safe operations, especially in the demanding contextual situation described for this MNA, balancing the strategies on safety and efficiency and cost in a prudent manner.
- A well-organized Computerised Maintenance Management System (CMMS) is crucial for planning, executing, reporting and analysing maintenance and integrity.
- The Maintenance Management System (MMS) and maintenance organisation should undergo periodic reviews and the Management of Change (MOC) process.
- Senior management is involved together with the OIM in offshore decisions regarding maintenance. The workforce is also involved.

- Most audit teams report that the operators work to establish and maintain a balanced policy for maintaining the integrity for the installation with medium and long-term perspective.
- The operator/duty holder is monitoring and handling overdue and upcoming maintenance tasks, using the information to assess resource needs.

Poor practice (Examples from report)

- Several organisations have limited or no overall strategy for Maintenance Management.
- Decisions on integrity issues are taken by the operations teams.
- There are limited requirements for competence in the operations team, and the organisations struggle to demonstrate the competence in key roles, like the Technical Authority role.
- Audits identified quality issues in handling of deferrals of planned maintenance.
- The Risk Management processes often fail to identify the correct severity level
- Some MNAs found that the Operational Risk Assessments are used as tool for keeping installations in operation instead of shutting down when the cumulative risk becomes too great.
- Even after years and decades of operations, the CMMS content/data do have quality issues, as wrong classification of equipment, lack of Maintenance Procedures, parts of the Corrective Maintenance being handled outside the system (CMMS) etc.
- The data recorded in the CMMS is not used for analysis and improvements.
- Most operators/duty holders have no systematic checks of completed maintenance work, but have informal processes involving checks of work performed by personnel.
- Inadequate processes for monitoring/auditing/reviewing/investigating their own processes.

Key findings will be shared with representatives from all parties involved in the industry. The report will be published on the homepages of all participating organisations.

IRF coordination

The questionnaires developed for the MNAs were shared with the members of the Asset Integrity work group of the IRF.

The process and findings of the MNA was presented at the IRF conference in Aberdeen in June this year. ([Link to presentation](#))

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