Feedback from Experience on Structural Integrity of Floating Offshore Installations
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Abstract

Industry has experienced a significant increasing in the number of floating systems in the recent years. Current order book and potential projects under study also indicate that this number might increase even more significantly in the next 10 years. At some point in their lives, these facilities will present ageing signs such as corrosion, buckling and fatigue.

The paper provides feedback from experience on structural integrity assessment of production and drilling units and presents significant technical aspects identified from several projects. Failure mechanisms such as corrosion, fatigue and buckling are discussed. Techniques to analyze and assess structural integrity are also considered, including remediation to address anomalies and defects, inspection planning and execution.

The use of adequate techniques and new technologies are important parameters in the overall integrity management process, but there might not be a single right way or process to ensure structural integrity, thus consensus may not be always achieved. A successful implementation and continuation of Structural Integrity Management programs is strongly dependent on operators understanding of risks and potential consequences. Therefore, integrity managers and staff involved in integrity activities need to be committed with such programs, which should be well understood by stakeholders across different organizations.

The paper will highlight best practices and procedures applied to structural integrity management of floating offshore installations, including not only technical aspects, but also integrity management review process, data and communication management.

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