



Hull Integrity Techniques & Solutions (HITS) Joint Industry Project

The Challenge

As understanding in the management of Floating Offshore Installations (FOIs) has grown across the offshore Oil & Gas industry, so too has an appreciation of the criticality of FOI hull structures.

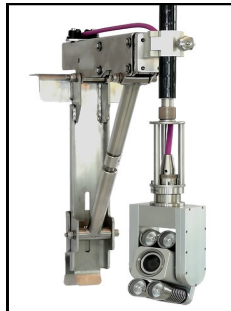
Previously the hull was seen by many operators as merely the platform upon which the production and/or process equipment was located. The hull condition was considered as 'low risk' by many, the product of a probability of failure that was considered low and a consequence that was not generally well understood, but considered not particularly significant. The hull had, after all, been designed and constructed to Classification Society Rules which stemmed from over 200 years of experience with ocean going vessels.

However, the philosophy in Class Rules is that the hull undergoes a robust five yearly cycle of surveys to confirm and assure its continued integrity. Part of that cycle includes drydocking the vessel. Unfortunately, as the industry is well aware, an FOI is not as easy to drydock as a trading ship and indeed when drydocking has proved necessary, the costs and production deferment penalties have been significant. This has resulted in major challenges to operators in managing the hull integrity of their floating installations.

Since, in many jurisdictions, Classification is not mandatory, some operators have chosen not to class their assets. Instead they extend the concepts from structural integrity management strategies of their fixed assets to cover their floating assets and have sought to develop techniques to inspect the submerged hull and the internal cargo and ballast tank structures themselves.

This is of course a perfectly understandable objective and, whichever way an operator chooses to manage the hull integrity, there is a need to address the safety, technical, operational and financial implications of inspecting floating assets on station. Some of the considerations are:

- Use of divers versus robotic solutions
- Confined space entry risks for tank inspections
- Tank cleanliness for inspections
- Production impact
- Dealing with marine growth
- Subsea hull corrosion protection
- Sea chest and shipside valve integrity
- Rudders, propellers and hull appendages



Inspection techniques and the information obtained therefrom are key parameters in the assessment of structural integrity. But are these parameters well identified? What data is needed to assure hull integrity? What is the best way to obtain this data? Will the data gathered assure Class and/or regulatory compliance?

The Solution

It is sensible that the industry collectively assess exactly what they wish to achieve from their hull integrity strategies and that these strategies can be translated into practical, effective and compliant hull integrity and inspection plans. This is the basis of HITS (Hull Integrity Techniques and Solutions) a Joint Industry Project (JIP) that is addressing the question of operator requirements and includes input from Operators, Classification Societies, Regulators, Equipment Manufacturers and Inspection Contractors with the objective of developing clear guidance on hull structural integrity requirements and strategy.

HITS identified four main challenges; minimising diver based inspections, man entry for inspections of confined spaces, tank cleaning requirements for bottom plating and the need for a hull inspector competency standard.

The diverless inspection challenge has been solved and significant progress made towards unmanned tank inspections. Once the remaining challenges have been successfully addressed, HITS intends to solve other issues to benefit hull integrity.

A current list of members, project status and other useful information can be found on the HITS JIP Website at: www.hits-jip.com

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