Pragmatic and Consistent Approach to Life Extension of Floating Structures

Cedric Morandini and Jerome Flouri, Bureau Veritas

Abstract

Life extension of offshore assets is a popular and hot topic as Operators are willing to maximize the operation of their platforms in order to increase their economical returns while maintaining satisfactory level of safety and integrity of their asset.

The paper will propose a pragmatic, fit for purpose and consistent approach in establishing the baselines for life extension of any type of floating structures: FSO, FPSO, FSRU, FSU, FLNG and FPU.

What will be covered by the proposed approach are as follow:

- Hull structure as a whole,
- Critical hull structure details
- Main marine systems including cargo, boiler, steam, seawater and freshwater systems
- Mooring system as a whole including anchoring system, mooring hardware, turret mechanical and structural components.

The proposed methodology will cover the overall Life Extension process in several steps with toll gate at the end of each step in order to facilitate and streamline the decision process.

The first steps are rather easy to be implemented and are mainly based on desktop studies with the review of the various reports supporting and detailing the design of the specific floating structure. They will be complemented by review of existing inspection reports covering the main systems as detailed above, and may trigger additional inspection campaigns and systems testing to enable proper understanding of their conditions.

In addition the benefits in using proper and efficient Asset Integrity Management Systems from day one to support the overall integrity of the floating structure while enabling Life extension plan will be highlighted and discussed.

Such approach will be based on experiences gained throughout several life extension projects conducted by Bureau Veritas for various floating structures operating in different modes and located in various environmental sites.

Key Words: Life Extension, Asset Integrity Management, Hull, Mooring, Marine, Inspection