Floating Systems Integrity Management

API RECOMMENDED PRACTICE 2FSIM
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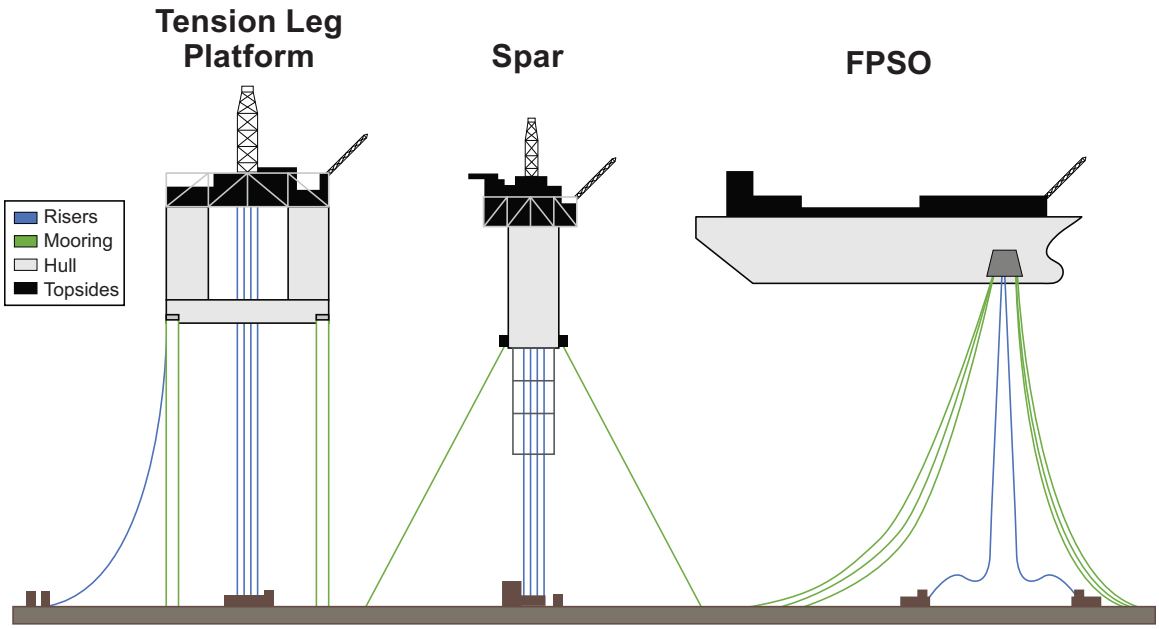
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Introduction

This recommended practice (RP) is one of three additions to API's portfolio of offshore floating structures standards that address integrity management (IM) of floating systems (API 2FSIM), mooring systems (API 2MIM), and riser systems (API 2RIM).

This RP is intended to be used by owners and engineers in the development, implementation, and delivery of a process to maintain system integrity of floating production systems (FPSs), including tension leg platforms (TLPs). The specifications, procedures, and guidance provided herein are based on internationally recognized industry standards and on global industry best practices.

API's existing suite of recommended practices such as API 2FPS, API 2T, API 2SK, API 2RD, and API 2SIM address several aspects of life cycle integrity management expectations, and the three new standards add to that suite by capturing experiences from owners, operators, integrity management specialists, recognized classification societies (RCSs), and regulators, establishing a common framework for IM for FPSs. The figure below depicts the interfaces between the hull and mooring and risers for various types of FPSs and the IM standard that addresses the specific systems.



Physical Interfaces between API IM Standards

Implementation of effective integrity management for floating systems requires an understanding of the interfaces between the hull, mooring, and risers and how they translate to stewardship of IM activities in the field. The new standards have been developed with the objective of recognizing and identifying key interfaces, and they emphasize the criticality of a systems level approach.

By having a consistent systems level approach and by pursuing a risk-based framework to develop, evaluate, plan, and implement an integrity management program for a floating system, the user can tailor the IM program around the unique design drivers, in-service and operating conditions while conforming to the owner's organizational safety, health and environment risk management policies and regulatory requirements.

Floating Systems Integrity Management

1 Scope

This recommended practice (RP) provides guidance for floating system integrity management (FSIM) of floating production systems (FPSs), which include tension leg platforms (TLPs), used by the petroleum and natural gas industries to support drilling, production, storage, and/or offloading operations.

FPSs described in this RP are governed by local regulatory requirements and recognized classification society (RCS) rules (if classed). No specific regulatory compliance or RCS requirements are restated in this RP. The requirements of this RP do not apply to mobile offshore drilling units (MODUs) or to mobile offshore units (MOUs) used in support of construction operations. For integrity management (IM) considerations, these units are typically governed by RCS rules, and include, among others:

— floating systems intended primarily to perform drilling and/or well intervention operations even when used for extended well test operations;

— floating systems used for offshore construction operations (e.g. crane barges or pipelay barges), for temporary or permanent offshore living quarters, or for transport of equipment or products (e.g. transportation barges, cargo barges); for these, see appropriate RPs.

This RP does not address moorings or risers; these are addressed separately by API 2MIM and API 2RIM, respectively. Dynamic positioning is not covered in this RP.

The following types of floating systems are explicitly covered by this RP:

— ship-shaped floating systems and barges (monohull or otherwise);

— semisubmersibles;

— spars;

— tension leg platforms (TLPs), including tendon systems.

The following types of floating system components are included within the context of this RP:

— hull structure, including above water, below water, and internal (i.e. hull compartments) structure and corrosion protection systems (e.g., coatings, cathodic potential, etc.);

— structural systems, such as turrets, topsides structure, helidecks, flares, cranes, and process decks, and their interfaces with the hull structure;

— mooring system support structure on the hull (e.g. foundations for chain jacks, fairleads, chain stoppers, etc.)

— tendon systems, including foundations;

— marine systems, such as ballast, bilge, venting, soundings, firefighting systems, cargo systems, emergency power, propulsion, steering, sensors, alarms, and controls (vessels in transit are not included);

— permanent means of access and egress, including walkways, grating, handrails;

— structural interfaces between hull structure and riser system;