

Floating Structures

PAFA Consulting Engineers have undertaken a wide range of projects into offshore floating structures; for both the oil and gas and maritime industries.

In particular, we have developed design guidance for extreme waves that may result in green water and wave slam loads on FPSOs & FSUs; methods for rapidly assessing the forces involved in ship to ship collisions; and performed risk assessments of structural behaviour and offshore operations relating to floating vessels.

In code development, we have assisted Class Societies in developing fatigue guidance and are currently leading the development of ship codes and three International Standards Organization (ISO) standards for floating structures:

- 19901-7 : Mooring systems
- 19904 : Floating structures
- 19904-1 : Tension leg platforms

PAFA Consulting Engineers have been involved in the following projects:

- Green water and wave slam¹
- Weather-sensitive operations
- Fatigue of welded connections
- Semi-submersible riser arch trays
- Expert Witness in a number of floating structure related arbitrations
- Northern Producer impact study
- Shuttle tanker - FPSO impact forces
- Risk assessment for FPSO design
- FPSO survey Requirements
- ISO 19900 series development
- Schiehallion design basis review

¹ Fyfe, A. J and Ballard, E. J "Prediction of Green Water Events on FPSO Vessels", The 22nd OMAE, Cancun, Mexico, 2003.

² Frieze, P. A and Smedley, P. A. "Ship Bow Damage During Impacts with Ships and Bridge Piers", ICCGS, Copenhagen, 2001.

Summary

- Extreme waves loading
- Ship impact methodology
- Ultimate strength & fatigue assessments
- Material behaviour
- Risk assessment
- Expert witness/Arbitration
- ISO code development

Clients

- ABS
- BP-Amoco
- European Union
- Global Maritime
- Health & Safety Executive
- OGP
- UKOOA

**For More Information,
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