



# THE INSTITUTION OF ENGINEERS, MALAYSIA

Bangunan Ingenieur, Lots 60/62, Jalan 52/4, Peti Surat 223,46720 Petaling Jaya, Selangor Darul Ehsan

Tel: 03-79684001/2 Fax: 03-79577678 E-mail: [sec@iem.org.my](mailto:sec@iem.org.my)

IEM Homepage: <http://www.myiem.org.my>

## Pre-AGM Talk on Global Performance Assessment of Marine Installation Adopting Float-over Methodology

(organised by Marine Engineering and Naval Architecture Technical Division, IEM)

**BEM Approved CPD/PDP Hours: 2**

**Ref. No. IEM19/HQ/078/T**

**Date** : 25<sup>th</sup> May 2019 (Saturday)  
**Time** : 9.00am – 11.00am (Refreshments will be served at 8.30am)  
**Venue** : Tan Sri Prof. Chin Fung Kee Auditorium, 3rd Floor, Wisma IEM, Petaling Jaya.  
**Speakers** : Ir. Dr. Rafee Makbol Mohamed Ali, Ir. Faizal Mahamud and Ir. Affiq Aiman Bin Aminuddin

### SYNOPSIS

Marine installations in the oil & gas industry are high risk structures because not only subject to hazardous and flammable hydrocarbon materials but also to hostile marine environmental loadings most of which were unpredictable in terms of magnitude scale. Hence, appropriate input parameters for use in analysis should be selected in optimizing the design. The installations are also to be designed to a unique load combination. Besides process plant aspects and inherent hazard factors by plant activity, the design must account for the criteria during in-service and pre-service (before commissioning) conditions; corrosion caused by seawater; and high content of CO<sub>2</sub> and sulphur in crude oils add to the cost and complexity of maintenance work offshore. Therefore, the design must be kept as simple as possible with the maximum throughput every time without sacrificing the safety aspects.

The float-over methodology allows Superstructure (Topsides) to be fabricated with most equipment ready for commissioning that not only reduces offshore hook-up work and standby time but also removes the need for heavy lift barge and its limitation which will significantly reduce offshore installation cost.

A brief approach in accounting for global design possible events in terms structural and naval architectural aspects will be discussed. These design variables considerations and underlying engineering parameters will be assessed in meeting installation minimum performance within budget constraints, time schedule, safety and functionality.

### SPEAKERS' BIODATA

**Ir. Dr Rafee Makbol Mohamed Ali** is a Structural Engineer with over 29 years of experience in fabrication, design, installation and certification of offshore installations. He started his career working in fabrication then had joined several design Consultants in Kuala Lumpur prior to pursuing PhD in Structures at Imperial College London. He then joined Atkins (UK) as Lead Engineer for wind farm substations and metrological platforms. He left UK to join Lloyd's Register KL as Team Leader/Structural Specialist. At present he is with Aker Solutions as Lead Structural Engineer.

**Ir. Faizal Mahamud** studied in Civil Engineering (Civil & Structural) at UKM has 12 years of experience in the oil & gas industry specifically in Structural engineering. He has extensive experience in performing FEED and detail design that relate to float-over, FPSO and Offshore Fixed Platform analysis. He started career as Structural Engineer with RNZ Integrated (KL) and had involved in projects that related to float-over methodology. At present he is with Aker Solutions as Senior Structural Engineer.

**Ir. Affiq Aiman Bin Aminuddin** studied in Marine Engineering (Mechanical) at UTM has 11 years of experience in the oil & gas industry with experience ranging from FEED, bid preparation, detail design, fabrication, commissioning and site operation both domestic and international projects. Started careers as Naval Architect with Boustead Heavy Industries; involved in preparing technical specification and navy vessel construction. Later, joined Sime Darby Engineering as Project Engineer for the construction of derrick lay barge and anchor handling tugs, then joined ALE Heavy Lift as Naval Architect and specialist for marine operations in load-out and float-off. At present he is with Aker Solutions as Naval Architect.

**Ir. Roznan Abdul Rashid**  
Chairman  
Marine Engineering & Naval Architecture Technical Division

### FEE ANNOUNCEMENT (Effective: 1<sup>st</sup> October 2017)

#### Members:

- (i) Registration Fee: No Charge
- (ii) Administrative Fee:
  - (a) Online RM15
  - (b) Walk-In RM20

#### Non-Members:

- (i) Registration Fee: RM50
- (ii) Administrative Fee: RM20

- Limited seats are available on a "first come first served" basis (maximum 100 participants).
- To secure your seat, kindly register online at [www.myiem.org.my](http://www.myiem.org.my)

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