

Floating Production, Storage & Offloading Design & Technology

27 – 29 September 2011, Kuala Lumpur, Malaysia



Expert Trainers:

Jean - Paul Denise

Senior Naval Architect, Azur Offshore Ltd

FPSO & Floating Production Systems

- ❖ ENSEEIHT Toulouse: Engineering Degree (Mechanical) and MSc (Fluid Mechanics)
- ❖ Mc Gill University: Montreal Canada, MEng (Fluid Mechanics and Vibrations)
- ❖ Chartered Engineer, RINA, MIMechEng



Jean Luc Chasserot,

TPA Professor

Technical Director – Azur Offshore Ltd

www.petroedgeasia.net

FPSO DESIGN & TECHNOLOGY

27 – 29 September 2011, Kuala Lumpur

About the Training Course

The number of floating production systems is set to grow from 250 units to 299 in 2011. As crude oil prices rise above USD 100 per barrel, FPSO technology is no doubt the most efficient and viable solution for deepwater offshore field development. However, with development projects going to greater depth and complexity, the big question still remains on how to drive greater efficiency from better FPSO designs and what are the new developments in turret, mooring, swivel technologies to improve safety and lower cost.

This 3 day training course will focus on the key technical questions that an FPSO project team need to address as part of the overall FPSO design project. The course has been exclusively designed to equip participants with the key tools needed to find answers to these questions and to make the appropriate decisions to advance future projects. The course will cover the full spectrum of issues relating to FPSO design projects which will allow technical personnel obtain a better understanding of challenges and risk areas associated with this. This course has also been recently updated to include the latest developments in FLNG technology and market developments.

By attending this 3 day training course, you will be able to:

- ❖ Understand the floating production market by geography and their design types & characteristics
- ❖ Examine the key design and technology considerations for FPSO construction today
- ❖ Identify the critical design requirements, codes and standards which govern FPSO design
- ❖ Review the main functions of topside process systems, its typical production capabilities and related disciplines
- ❖ Understand key design considerations for Hull, Mooring, Swivels & Fluid Transfers Systems and Risers
- ❖ Learn Oil export and offshore offloading requirements and systems
- ❖ Gain an overview of FPSO design development projects and the key factors for success
- ❖ Review the introduction of FLNG technology and current projects in Asia and Europe

Featured Case Study Discussions on:

Case Study One; Processing system operations on BP FPSO Greater Plutonio

Review of the Training CD every BP Operator must learn before going offshore to operate the Subsea Production Facilities and the FPSO Facilities, from Reservoir to Oil and Gas Export systems.

Case Study Two; Chevron ALBA FSO; First Internal Turret in the North Sea

A detailed review of the Turret system with mooring lines design & installation, Chain table & Riser connections, main deck turret piping & pigging system, fluid Swivel & back-up, leak detection system, interfaces with cargo piping and Oil & Gas export lines including Integrity Monitoring Systems.

Case Study Three; The TOTAL Angola FPSO DALIA Story, operating in deep water Block 17.

This training course is designed for

This course is recommended for personnel involved in FPSO projects who require specific knowledge on FPSO design and technology:

- Current and future Offshore Installation Managers
- Conceptual Design Engineers
- Development Engineers
- Engineering & Integration Managers
- Naval Architects
- FPSO Project Managers
- Process Engineers
- Operations Managers

**NEW! LATEST UPDATES ON
FLNG TECHNOLOGY AND
MARKET DEVELOPMENTS**

The training course has a limited attendance for up to 25 participants only. Sessions commence at 9am on all days, with short intervals at 10.30am and 3.30pm respectively. Lunch will be provided at 12:30pm for 1.5 hours. Sessions will end at 5pm on all days.

Learn more about our in-house training solutions and save more!
Call +65 67419927 or email info@asiaedge.net
www.petroedgeasia.net

FPSO DESIGN & TECHNOLOGY

27 – 29 September 2011, Kuala Lumpur

Course Introduction

Lecture L1: Floating Production Market

- ❖ Floating production market: presentation by geographical areas: North Sea, Brazil, West Africa, Far East (including Australia), etc., Arctic.
- ❖ Characteristics of main areas: location, environment, water depth, others
- ❖ Major floating production developments in each area (field names, floaters).
- ❖ Typical field layouts and field development requirements

Lecture L2: Floater Design and Technology

- ❖ Presentation of the different types of floaters: Mono-hull, Semi-submersible, Deep draught Semi-submersible, Spar, TLP, FDPSO, others.
- ❖ Functional requirements
- ❖ New build versus conversion
- ❖ Construction material
- ❖ Decommissioning and re-use
- ❖ Technical building blocks: hull, topsides, mooring, risers, storage and offloading
- ❖ Major considerations for overall floater configuration, key interfaces

Lecture L3: Design Requirements, Codes and Standards Identification of the main requirements, rules and standards, which govern the design.

- ❖ International codes and standards
- ❖ Client general specifications
- ❖ Client particular specifications
- ❖ Certification / Classification requirements

Lecture L4: Topsides Design – Introduction to Process Systems

Presentation of the main functions of topsides processing:

- ❖ Oil separation
- ❖ Gas treatment and compression
- ❖ Water injection
- ❖ Produced water
- ❖ Flare
- ❖ Other process systems
- ❖ Utility systems

Completed by review of some important issues, of which:

- ❖ Fluid characteristics (reservoir data, API)
- ❖ Naphtenates
- ❖ Salt
- ❖ Sea water lift and treatment (filtering, sulphate removal)
- ❖ VOC recovery

Followed by presentation of specific process requirements for a floater:

- ❖ Vessel motion
- ❖ Weather considerations
- ❖ Layout

And a summary of typical production capabilities of floaters worldwide.

Case Study ONE: Processing system operations on BP FPSO Greater Plutonio

- ❖ Review of the Training CD every BP Operator must learn before going offshore to operate the Subsea Production Facilities and the FPSO Facilities. (From Reservoir to Oil and Gas Export systems).

Lecture L5: Topsides Design – Introduction to other Disciplines

Presentation of the important disciplines (besides process) regarding topsides design:

- ❖ Safety: health, safety and environment (fire and gas detection, active and passive protection, escape, evacuation, rescue, emergency systems, etc.)
- ❖ Piping and layout: equipment piping, pipe racks, routing, spools, pipe supports
- ❖ Structure: module design, pancakes, space frames, supports
- ❖ Electrical: power generation (main generators, essential and emergency generators, electrical distribution)
- ❖ Instrumentation: integrated control and safety system (ICSS), etc.
- ❖ Handling: cranes, monorails, laydown, access
- ❖ Corrosion protection
- ❖ Accommodation

Learn more about our in-house training solutions and save more!
Call +65 67419927 or email info@asiaedge.net
www.petroedgeasia.net

FPSO DESIGN & TECHNOLOGY

27 – 29 September 2011, Kuala Lumpur

Lecture L6: Hull Design;

Presentation of the main design issues:

- ❖ New hull or 2nd hand tanker conversion
- ❖ Storage layout
- ❖ Accommodation location & Safety requirements
- ❖ Stability
- ❖ Motion behaviour
- ❖ Corrosion protection, etc.

Lecture L7: Mooring Design

- ❖ Types of mooring: spread mooring, turret mooring
- ❖ Characteristics of spread mooring systems
- ❖ Characteristics of turret mooring systems: internal, external, permanent and disconnectable types
- ❖ Analysis methodologies

Lecture L8: Swivels and Fluid Transfer Systems

- ❖ Principles of in-line and toroidal swivels:
- ❖ Characteristics (dimensions, fluid types, leak control, etc.)
- ❖ Current limitations
- ❖ Suppliers
- ❖ Applications
- ❖ Principles of drag chain system and applications

Case Study TWO: Chevron ALBA FSO; First Internal Turret in the North Sea

- ❖ A detailed review of the turret system with mooring lines design & installation, Chain table & Riser connections, main deck turret piping & pigging system, fluid Swivel & back-up, leak detection system, interfaces with cargo piping and Oil & Gas export lines including Integrity Monitoring Systems.

Lecture L9: Riser Design

- ❖ Different types of riser systems: rigid risers, flexible risers, SCRs, hybrid tower systems & other current solutions. Design requirements
- ❖ Characteristics (structural design, dimensions, fluid types, etc.)
- ❖ Key functional requirements and drivers (including dynamic loads)
- ❖ Analysis methodologies & dynamic design example.

Lecture L10: Oil Export Options and Offshore Offloading

- ❖ Different types of Offloading: CALM, SALM, tandem, etc.
- ❖ Fiscal metering, export pumps
- ❖ Key functional requirements and drivers
- ❖ Analysis methodologies
- ❖ Shuttle tanker operations and safety track record

Lecture L11: FPSO Design Development

- ❖ Development phases: conceptual, FEED, detail design
- ❖ Objectives and deliverables
- ❖ Schedule and man-hours
- ❖ Interfaces
- ❖ Risk management: technical audits, technical reviews, HAZOPs, etc.
- ❖ Weight Control (during design)

Lecture L12: Introduction & market overview of FLNG Technologies

- ❖ Introduction to Floating LPG & FLNG Technologies
- ❖ Vessel design - key configuration options & alternate solutions
- ❖ Current Topside processes for LNG liquefaction & regasification for FSRU.
- ❖ Proven Cargo containment designs & insulation techniques track records
- ❖ Offshore Offloading solutions & Cryogenic transfer systems
- ❖ FPU mooring systems, spread lines or large internal Turret
- ❖ Subsea production facilities key interfaces (Field architecture, Risers, Control Umbilicals, etc..)
- ❖ Brief analysis of current Floating Gas Projects - Total Shtokman, Shell Prelude and Inpex Abadi

Case Study THREE: The Total Angola FPSO DALIA Story, operating in deep water Block 17.

End of Training Course

Learn more about our in-house training solutions and save more!
Call +65 67419927 or email info@asiaedge.net
www.petroedgeasia.net

FPSO DESIGN & TECHNOLOGY

27 – 29 September 2011, Kuala Lumpur



About Your Expert Trainers:

Jean-Paul Denise, Senior Naval Architect for FPSO & Floating Production Systems

Qualified in France in Mechanical Engineering and Fluid Mechanics and further in Fluid Mechanics and Vibrations in Canada. Started in the Oil & Gas industry in 1978 for Atkin Franlab thereafter for Principia, Foster Wheeler etc.

Detailed Professional Experience from 2000 to present (main projects only)

2001 to present: SAIPEM s.a. Paris; Senior Technical Advisor;

From October 07: Shtokman Development AG (GAZPROM/ STATOILHYDRO/ TOTAL/) – Study Manager for Conceptual development of the Shtokman field (Barents Sea) with a Floating Production Unit (FPU): icebreaker shaped vessel, internal turret mooring disconnectable in ice conditions, large topsides, seakeeping tests, ice model tests.

July 05 – July 07: TOTAL FPSOs - Contribution to preparation of several proposals for FPSO developments: Pazflor (ex-Miocene) and Usan.

January – June 2005: EXXONMOBIL – ERHA Project – Technical audit and workshop: Review of piping design issues of Erha FPSO.

July 03 - Nov. 2004: TOTAL – Miocene Project – Angola - Technical Advisor on Optimization study relative to development of the Miocene fields, offshore Cabinda, Angola, with FPSO vessel.

Oct. 03 - June 2004: TOTAL – Akpo Project – Project Engineering Manager responsible for all technical aspects and FEED design endorsement, for the proposal of a large FPSO to be applied on the Akpo field, offshore Nigeria, in 1325 m water depth.

Feb. - May 2004: CHEVRON TEXACO – Agbami Project – Project Engineering Manager responsible for all technical aspects and FEED design verification, for the proposal of a large FPSO to be applied on the Agbami field, offshore Nigeria, in 1500 m water depth.

Oct. 02- July 2003: PETROBRAS – P51 & P52 Project – Project Engineering Manager responsible for all technical aspects of two parallel proposals for two semi-submersible production vessels to be applied offshore Brazil on the Roncador and Marlim fields, respectively.

Jan. – Sept. 2002: SAKHALIN ENERGY – Sakhalin II Project – Offshore Pipelines Area Manager responsible for all technical aspects of FEED design relative to several pipelines offshore Sakhalin island.

Nov - Dec. 2001: TEXACO - Agbami Project - Technical consultant on the preparation of a bid for a Wellhead Barge to be applied in deep water (1,500 m) offshore Nigeria.

2001: TECHNIP France Lead Naval Architect; Paris : TotalFinaElf – AKPO Project – Lead Naval Architect for the Basic Engineering of a FPSO and export buoy to be applied in deep water offshore Nigeria. Mooring system design, write-up of specifications, topsides lay-out, Hazid, etc...

1993 – 2001 Offshore Design Engineering (ODE); Technical Advisor ; London

Jan.-March 2001: Confidential Client – Isis Field (Tunisia) – Technical adviser for the independent assessment of a FPSO project on behalf of the financing house. Audit included vessel / mooring system specification, conversion works, topsides production facilities, subsea facilities and risers.

2000-2001: PREMIER OIL – Patos-Marinza Project – Conceptual design of a FSU (Floating Storage Unit) and its mooring system for the storage of heavy crude at a shallow water location offshore Albania (Adriatic Sea).

2000: DORIS – Development of a method for the float-out installation of two large topside decks (10,000 tonnes each) onto a novel FPSO (the OCTOPLUS concept), for application in deep waters on the West coast of Africa.

ELF Angola, Girassol – Technical consultant for explosion response analysis of FPSO topsides.

1999-2000 TOTALFINA, Otter & Nuggets Projects - Following merger of Total and Fina, extension of previously ongoing work on Fina's Otter prospect (see below) to incorporate parallel Nuggets subsea development. Detailed technical support to both TotalFina's pre-project group in Paris and project management group in Aberdeen. Supervision of the completion of FEED activities on both of these projects and support to Client for compilation of ITB documentation.

Design Patents:

Improvements in or relating to Turret Moored Vessels, UK and Norwegian Applications filed in Feb. 1995. Two applications on Arctic turret, references FR2008-51832 and FR2008-51833, both filed on 21 March 2008

Active trainer and contributor for various Azur lectures and courses on FPSO/Floaters since 1994

Learn more about our in-house training solutions and save more!

Call +65 67419927 or email info@asiaedge.net

www.petroedgeasia.net

FPSO DESIGN & TECHNOLOGY

27 – 29 September 2011, Kuala Lumpur



TPA Professor Jean-Luc CHASSEROT BSc . MSc - Technical Director & Senior Consultant – Field development with SPS, URF & Floaters, Azur Offshore Ltd.

Started to work for the Energy Industry in 1972, after qualifying in Mechanical Engineering (BSc) & Industrial Engineering (BSc) in France. Worked on design & construction of several LNG carriers in French & US Shipyards Returned to France in 78 to join Comex Seal/Ind to move to Aberdeen

Joined A.O.L. in Jan 83 to work in London on new field development Projects. Seconded to various Operators for;

83/ 85 BALMORAL Field for Sun Oil UK-New Semi FPV & large SPS/Pipeline system. Involved from system design up to offshore HUC.

86 / 88 Various short involvements on Glamis, Draugen FPV for Aker/Shell, GASP R&D subsea separation, Emerald, FROY for Elf Norge, Shell Brent ESDVs, TONI SPS for Agip UK and LYELL SPS / Intra field Flowlines & Umbilicals for tie-back to Ninian Host platform for Conoco.

89 / 94 ALBA Field for CHEVRON UK– Pipeline / Subsea supervisor – Northern Platform and New Floating Storage. Involved from conceptual design up to first oil start-up and trouble shooting offshore. AN Platform to FSU internal turret, pipeline bundle and provision for South subsea development.

95/ 96 SCOTT / TELFORD Subsea tie-back for Hamerada Hess / Laing Oil & Gas. Special retrofit multi riser system, including offshore work.

Mid 96 /Mar 98 OTTER Field FINA UK – Subsea engineering manager responsible for FEED, detail design & bids. Simple SPS to FPSO or Tie-back.

98 / 00 Cameron France SA for ELF Angola, GIRASSOL Field, Senior Project Engineer based in Pau & Beziers looking after Hybrid riser, SPS, etc..

DALIA FEED + prequalification and evaluation of novel Drill Through Horizontal XTrees. Drilling cost savings.

Also worked in Houston & Singapore on the Shell Philippines MALAMPAYA Field to sort out the Field Architecture, System Design, the F.A. issues, the FEED and started Detail Design. Later on, monitored the SIT in Singapore.

Mid 00 / 04 Various missions for A.O.L. in Australia / Singapore / Paris / Malaysia / Sarawak assisting clients in field development studies & training.

Mid 04 / Feb 05 Senior Project Engineer / Auditor on TIOF Field studies for WOODSIDE Mauritania. in Perth & Nouak up to contract award.

05/06 Assisted BP Operations on GREATER PLUTONIO Field to develop the Operation Manual (on CD) level one, for large SPS/Lines & FPSO.

06/ Feb 07-2nd mission in Pau, to assist Total Angola on DALIA field development, deep water, world largest SPS / FPSO with 71 Subsea Wells for Production, Water Injection & Gas disposal. Also worked with all Package Managers to Prepare 7 Papers for OTC Conference - May 07.

Apr 07 to Sep 09; assisted Petronas Carigali on 1st subsea gas tie-back K5 pilot project to wellhead platform and trained new group of Subsea / Offshore Engineers. Assisted Petronas Mauritania on Chinguetti FPSO replacement evaluation and engineering of W.O. operations.

From Jul 09, developed Malaysia operations with JV Partner, SLT International in Kuala Lumpur (FLNG bid INPEX)

March10 / May11 Organised & delivered Six SUT Africa Branch 5 days Subsea Engineering Courses in Nigeria, Angola & Ghana.

For the past 22 years, regular lecturer in Offshore and Subsea Engineering at various engineering Schools / Universities in UK and France.

OTHER QUALIFICATIONS; UK S.U.T. Certified / Registered Subsea Engineer in 88 and Fellowship awarded in 92. Cranfield Institute modular MSc in 88. Fellowship awarded in 96. Made TPA "Total Professeurs Associés" in Oct 2006 to present Lectures in Subsea / FPSO DeepW Field Developments.

petroEDGE

www.petroedgeasia.net



Learn more about our in-house training solutions and save more!

Call +65 67419927 or email info@asiaedge.net

www.petroedgeasia.net

REGISTRATION FORM

Kuala Lumpur, Malaysia	Early Bird Price	✓	Normal Price	✓	TEAM DISCOUNTS
FPSO Design & Technology	S\$ 3599		S\$ 3799		PetroEdge recognises the value of leaning in teams. Group bookings at the same time from the same company receive the following:
PetroEdge In-house Training { } Yes, I would like to organise this training on-site and save over 25% of total course fees! For further information about On-site Training Solutions, please call +65 67419927 or email info@asiaedge.net					3 or more at 5% off 5 or more at 7% off 8 of more at 10% Team discounts are based on Normal Price only and are not applicable for other promotions.

DELEGATE DETAILS

Delegate 1: _____ Mr Mrs Ms Dr Other

Telephone: _____ Email: _____

Job Title: _____

Department: _____

Delegate 2: _____ Mr Mrs Ms Dr Other

Telephone: _____ Email: _____

Job Title: _____

Department: _____

Head of Department: _____

Company: _____

Address: _____

Country: _____

Postcode: _____

Attention Invoice to: _____

Telephone: _____

Fax: _____

Email: _____

4 Easy Ways to Register

Online: www.petroedgeasia.net

Email: info@asiaedge.net

Phone: (65) 6741 9927

Fax: (65) 67478737

Please note:

- indicate if you have already registered by Phone Fax Email Web
- if you have not received an acknowledgement before the training course, please call us to confirm your booking.
- photocopy this form to register multiple delegates.

Payment Methods

By Cheque/ Bank Draft: Make Payable to Asia Edge Pte. Ltd.

By Direct Transfer: Please quote AE1 with the remittance advise

Account Name: Asia Edge Pte. Ltd.

Bank Number: 508 Account Number: 762903-001Swift Code: OCBGSGSG

All bank charges to be borne by payer. Please ensure that Asia Edge Pte Ltd receive the full invoice amount.

PAYMENT POLICY: Payment is due in full at the time of registration. Full payment is mandatory for event attendance. I agree to Asia Edge Pte Ltd. payment terms

CANCELLATIONS & SUBSTITUTIONS: You may substitute delegates at any time. ASIA EDGE PTE LTD does not provide refunds for cancellations. For cancellations received in writing more than seven (7) days prior to the training course you will receive a 100% credit to be used at another ASIA EDGE PTE LTD training course for up to one year from the date of issuance. For cancellations received seven (7) days or less prior to an event (including day 7), no credits will be issued. In the event that ASIA EDGE PTE LTD cancels an event, delegate payments at the date of cancellation will be credited to a future ASIA EDGE PTE LTD event. This credit will be available for up to one year from the date of issuance. In the event that ASIA EDGE PTE LTD postpones an event, delegate payments at the postponement date will be credited towards the rescheduled date. If the delegate is unable to attend the rescheduled event, the delegate will receive a 100% credit representing payments made towards a future ASIA EDGE PTE LTD event. This credit will be

available for up to one year from the date of issuance. No refunds will be available for cancellations or postponements.

ASIA EDGE PTE LTD is not responsible for any loss or damage as a result of a substitution, alteration or cancellation/postponement of an event. ASIA EDGE PTE LTD shall assume no liability whatsoever in the event this training course is cancelled, rescheduled or postponed due to a fortuitous event, Act of God, unforeseen occurrence or any other event that renders performance of this training course impracticable or impossible. For purposes of this clause, a fortuitous event shall include, but not be limited to: war, fire, labor strike, extreme weather or other emergency.

PROGRAM CHANGE POLICY: Please note that speakers and topics were confirmed at the time of publishing; however, circumstances beyond the control of the organizers may necessitate substitutions, alterations or cancellations of the speakers and/or topics. As such, ASIA EDGE PTE LTD reserves the right to alter or modify the advertised speakers and/or topics if necessary. Any substitutions or alterations will be updated on our web page as soon as possible.

ASIA EDGE PTE. LTD.

Company Registration No: No. 200710561C

Copyright © 2005 ASIA EDGE PTE LTD. All rights reserved. This brochure may not be copied, photocopied, reproduced, translated, or converted to any electronic or machine-readable form in whole or in part without prior written approval of ASIA EDGE PTE LTD

Learn more about our in-house training solutions and save more!

Call +65 67419927 or email info@asiaedge.net

www.petroedgeasia.net