

# FPSO Training Course

**6th-8th December 2010**  
Millennium Hotel Paris Opera



**JOIN THE 900+ PROFESSIONALS WHO HAVE ALREADY ATTENDED THIS COURSE AND GAIN A DETAILED UNDERSTANDING OF:**

- FPSO design and technology
- Key regional differences and trends
- Regulatory issues, classification and verification activities
- Commercial aspects of the project
- Developing a contracting and execution strategy
- Legal considerations for FPSO projects
- Hull structure, design and maintenance
- Design issues for topsides
- Interface management challenges
- Turrets and swivels
- Risers and mooring systems
- FPSO conversion considerations
- Safety and environmental issues
- Field installation, operations and preparations for start-up

**Networking opportunities include Drinks Reception on Day 1 and the FPSO Course Dinner on Day 2**

Organised by:

In association with:

Course approved for CPD Accreditation by:



Institute of Marine Engineering, Science and Technology



Royal Institution of Naval Architects

**For the latest programme or to book online please visit [www.fpsocourses.com/europe](http://www.fpsocourses.com/europe)  
OR call the Registration Hotline on +44 (0)20 7017 5518**

## FPSO Training Course

6th-8th December - Paris

The past 18 months have been incredibly tough for the FPSO industry however due to the increase in oil price and deepwater production set to remain high on the agenda for the next few years, the long-term outlook is looking more positive.

For those involved with this challenging and dynamic sector, keeping on top of developments in the market and having a solid understanding of what it takes to design, install and operate an FPSO is crucial to the success of any deepwater development.

This course is a MUST for all personnel involved with FPSOs, whatever your discipline, to gain a better understanding of the entire project cycle and arm you with the tools needed to find answers and solutions and to make appropriate decisions to progress future projects.

### UNIQUE, COMPREHENSIVE AND INTERACTIVE TRAINING!

### Who should attend?

This course is recommended for all personnel involved with an FPSO project - whether new to the industry or whose area of responsibility have increased as well as experienced professionals who want to refresh their overall knowledge of the entire FPSO project process.

- Conceptual Design Engineers
- Development Engineers
- FPSO Project Managers
- Engineering & Integration Managers
- Naval Architects
- Operations Managers
- Process Engineers
- Offshore Installation Managers
- Financiers
- Insurers

### Do you need more extensive and detailed FPSO training?

*The FPSO Advanced Technical Training Programme* will provide project team members with a rational approach to the identification and resolution of key FPSO configuration and design decisions and help team members understand the information needed to make sound decisions.

This 5-day residential course will allow the course director and lecturers to go into more depth and include interactive break-out sessions to ensure you receive the optimum training experience.

**Monday 27th September – Friday 1st October 2010**  
**The Winchester Hotel, Winchester, UK**

For further details visit [www.ibcenergy.com/advanced2010](http://www.ibcenergy.com/advanced2010) or email [sue.woolley@informa.com](mailto:sue.woolley@informa.com)

### Dates for 2011 announced!

#### 3-day FPSO Training Course

- Oslo – 16-18 February 2011
- Houston – 27-29 April 2011
- London – 20-22 June 2011
- Rio de Janeiro – 12-14 September 2011
- Paris – 5-7 December 2011

#### 5-day residential FPSO Advanced Technical Course

September 26-30, 2011

For further details please visit the course website [www.fpsocourses.com](http://www.fpsocourses.com) or contact the course manager Sue Woolley at [sue.woolley@informa.com](mailto:sue.woolley@informa.com)

### COURSE LEADER

**Duncan Peace**, Managing Director, **Crondall Energy Consultants Ltd**

### Day 1 - 6th December

08.30 Registration and Coffee

#### 09.00 Session 1.1 Course introduction

- Course objectives, summary of overall course content and FPSO market overview
- Basic characteristics of FPSOs – advantages and disadvantages compared to other technologies

**Duncan Peace**, *Managing Director, Crondall Energy Consultants Ltd*

#### 10.00 Session 1.2 [Part 1] Introduction to FPSO design and technology

This session will provide an outline of key design and technology elements of FPSOs including regional differences in FPSO design, technology and project execution. The session will address:

- Terminology
- Technical building blocks: hull, mooring & station-keeping, topsides, ship to sub-sea interface, storage & offloading
- Major design considerations and decisions for overall FPSO configuration
- Typical examples: a review of 3 or 4 FPSOs from different regions of the world
- New technology developments

**Duncan Peace**, *Managing Director, Crondall Energy Consultants Ltd*

10.45 Break

#### 11.00 Session 1.2 [Part 2] Introduction to FPSO design and technology

**Duncan Peace**, *Managing Director, Crondall Energy Consultants Ltd*

#### 11.45 Session 1.3 Development of an execution strategy

The session examines the options available to the project team, in the development of a suitable contracting strategy for projects in different regions and with different levels of technical complexity. It will consider key commercial considerations, expected field life, risk mitigation strategies and regional and market considerations

- Developing a project strategy – the importance of creating good project definition
- Contracting options
- Lease vs. purchase
- New build vs. conversion
- Redeployment – the potential for re-use and realising value
- Future trends in the market

**Duncan Peace**, *Managing Director, Crondall Energy Consultants Ltd*

12.45 Lunch

#### 13.45 Session 1.4 Regulatory issues, class, regional requirements and verification activities

FPSOs are challenging in the way that they represent a combination of maritime and offshore regulatory regimes, technologies and practices. The session considers relevant technical and regulatory issues that arise in connection with floating production. These include relationships between coastal state authorities, maritime flag authorities & class societies, varying local practices, a brief description of the class approach to FPSO quality assurance and compliance management, as well as challenges and lessons learnt related to design, fabrication, operation and regulatory compliance.

**Tore Sildnes**, *Senior Principal Engineer and Knowledge Manager, Offshore Classification, DNV Energy*

15.15 Break

#### 15.30 Session 1.5 Key regional differences and trends

- Key regional drivers
- Vessel size storage and configurations
- Metocean conditions
- Different technology solutions
- Regional offloading / trading parcels sizes and the impact on vessel storage
- Regional operating differences
- Local content issues

**David Llewelyn**, *Engineering and Management Consultant (FPSOs), David Llewelyn Consult ENK*

17.00 **Session 1.6 Legal considerations for FPSO projects**

- Design and construction risk
- Installation and commissioning
- FPSO Operating Agreements
- Floating LNG
- FPSO offtake and transportation

**Stuart Beadnall, Partner, Stephenson Harwood**



17.45 Close of Day 1 followed by Drinks Reception

**Day 2 - 7th December**

08.00 **Session 2.1 Commercial considerations**

This session will look at the overall commercial aspects of the project, building on the development of a suitable execution strategy (from Session 1.3), and look at key aspects of managing project risks

- Overall planning from concept to first oil
- Commercial considerations and options
- Cost and schedule expectations and drivers
- Capital costs and lease rates
- Evaluating and managing project risks
- Risk management tools during project execution
- Key lessons learned and examples of different execution methodologies

**Duncan Peace, Managing Director, Crondall Energy Consultants Ltd**

09.00 **Session 2.2 Safety and environmental issues for FPSO projects**

- Risk analysis and quantitative risk assessment
- Gas and fire detection
- Explosion pressure impact on design
- Passive fire protection on structures and process equipment
- Escape analysis
- Active fire protection and fire mitigation
- Flare analysis
- Dispersion of exhaust from power supply and auxiliary systems
- HVAC analysis
- Wind chill in case of harsh metocean conditions
- Green water
- Analysis of helicopter operations

**Brynjar Lakså, Chief Engineer, Computational Industry Technologies AS**

10.15 Break

10.30 **Session 2.3 FPSO hull structure, design and maintenance**

- General introduction
- Development alternatives
- Intricacies of the regulatory environment
- Hull strength and fatigue design – contributory factors
- Hull structure design for specified service
- In-service survey and maintenance
- Some lessons learnt

**Karl Mitchell, Lead Naval Architect, Lloyd's Register EMEA**

11.45 **Break out session**

Delegates will break out into groups and apply what they have learned to synthetic FPSO projects

12.30 Lunch

13.30 **Feedback to the class**

Delegates will present their findings to the rest of the class

14.15 **Session 2.4 FPSO turrets and swivels**

The session will examine key issues related to the design of turret mooring & fluid transfer systems including:

- Key functional requirements and drivers
- Different turret mooring types
- Permanent and disconnectable turret types
- Interfaces with sub-sea
- What is going on inside a swivel?

**Duncan Peace, Managing Director, Crondall Energy Consultants Ltd**

15.15 Break

15.30 **Session 2.5 FPSO conversion experience**

This session will look at key issues related to the conversion of tankers into FPSOs and will focus on some of the key scope areas, key risks, and some valuable lessons learned.

- Structural repair refurbishment and life extension
- The refurbishment of marine systems
- New marine systems requirements
- Integration of hull and marine system with topsides utilities
- Turret installation challenges
- Topside installation
- Construction logistics and planning

**Duncan Peace, Managing Director, Crondall Energy Consultants Ltd**

16.30 Break

16.45 **Session 2.6 Risers & mooring systems**

- Types of mooring and riser systems
- Analysis methodologies
- Key drivers for selecting and designing FPSO mooring systems for different environments
- Mooring and riser system integration
- Current trends in mooring system design for deepwater FPSOs
- Materials and installation issues for deepwater moorings and risers
- Moorings and risers in situ inspection

**Martin G. Brown, Consultant Naval Architect, GL Noble Denton**

18.00 Close of Day 2

19.00 FPSO Dinner

**Day 3 - 8th December**

08.30 **Session 3.1 Design issues for FPSO topsides**

Identifies and examines the design issues specific to FPSO topsides based on alternative contract strategies and different risk profiles & lessons learned from a range of FPSO projects. To allow successful management of these risks, industry best practice and lessons learned for selected key design issues will be considered in more detail using representative case studies. As a key design issue, the development of topsides layout will feature in the discussion. Relevant FPSO topsides processes and technologies will be overviewed.

**Simon Lowe, Senior Vice President, Business Development, Teekay Petrojarl**

10.00 Break

10.15 **Session 3.2 Offshore loading**

The offshore loading system to be chosen is dependant on environmental conditions, FPSO characteristics etc. The same applies for the selection of a tanker which varies from the simple crude carrier of convenience to purpose built DP shuttle tankers. Important considerations include:

- 24 hrs dynamic positioning (DP) operations within defined weather criteria
- Bow loading principle
- Safety systems; 'Green line' principle
- Principles of the tailor made 'tandem loading' software
- Competence requirement for DP operators and the competence assurance programme
- Vessel flexibility
- Taut hawser bow loading principle
- Limitations in environmental / operation criteria compared to DP operation
- Safety systems; 'Green line' principle
- Single position reference system versus taut hawser operation

**Kjell E. Helgøy, Manager, Offshore Loading DP E&I, Teekay Marine Services, Teekay Shipping Norway**

11.45 **Session 3.3 Interface management for FPSO projects – tools, procedures & key lessons learned**

This session will cover a range of interface issues that have historically proved problematic in FPSO projects

- Overview of key interface areas on FPSOs – why do interfaces always result in problems in FPSO projects
- Interface management systems – guidelines for successful interface management systems
- Topsides-hull system interfaces – review of key systems and associated interface issues
- Topsides-hull structural interfaces – review of some alternative philosophies
- Turret system interface checklist and sub-sea system interface checklist
- General interface issues
- Risk management – interface management strategies to minimise overall project risk
- Lesson learned – key interface issues from previous projects

**Simon Lowe, Senior Vice President, Business Development, Teekay Petrojarl**

13.15 Lunch

14.15 **Session 3.4 FPSO field installation**

- Management and planning
- Safety
- Anchor and mooring installation
- Riser installation
- FPSO installation and hook-up

**Dr Ian Frazer, Development Director, GL Noble Denton**

15.30 Break

15.45 **Session 3.5 FPSO operations and preparations for field start-up**

The importance of operations involvement in a project and in preparation for start-up is often underestimated. This session covers a selection of an operating strategy, manning considerations, participation in design, construction and commissioning and the tasks needed to prepare an FPSO and its crew for operations. Examples of best practice developed during several recent project start-ups are included.

**David Llewelyn, Engineering and Management Consultant (FPSOs), David Llewelyn Consult ENK**

16.45 **Session 3.6 Debriefing session**

17.00 Close of Course

*"Very thorough, very interesting topics, extremely well chaired/organised – great networking, friendly atmosphere."*

**J Divis, Standard P & I Club**



# FPSO Training Course Paris

Monday 6th – Wednesday 8th December 2010, Millennium Hotel Paris Opera

[www.fpsocourses.com/europe](http://www.fpsocourses.com/europe)

## VIP CODE:

en/swlyz/jc/mb/tr

Event Code  
KS0215 Paris

900+  
professionals  
have benefited  
from this  
course!

### 5 EASY WAYS TO REGISTER

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Web: [www.fpsocourses.com/europe](http://www.fpsocourses.com/europe)

Mail: Informa UK Ltd, P O Box 406  
West Byfleet KT14 6NN, UK

### VENUE DETAILS

Millennium Hotel Paris Opera  
12 blvd Haussmann,  
Paris, F-75009,  
France

Tel: +33 149 49 1600

[www.millenniumhotels.com](http://www.millenniumhotels.com)

### ACCOMMODATION DETAILS

**Reduced Rate Hotel Accommodation:** The cost of accommodation is not included in the course fee. To book accommodation for this course please contact Zibrant on tel: +44 (0)1332 285590, fax: +44 (0)1332 287604, email: [informa@zibrant.co.uk](mailto:informa@zibrant.co.uk) or web: [www.zibrant.co.uk/informa](http://www.zibrant.co.uk/informa)

### SPECIAL REQUIREMENTS

Please list below any special requirements you may have

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### TERMS AND CONDITIONS

**FEE:** This includes all sessions, lunch, refreshments, drinks reception and dinner on Day 2 and available documentation. Bookings received two weeks before the date of the course must be accompanied by a credit card confirmation.

**VAT:** Under EU legislation delegates from all countries are required to pay VAT at the relevant rate on any conference taking place in an EU member state. Delegates from outside the EU member states may be entitled to reclaim this cost. Informa, in conjunction with Meridian VAT Reclaim, the world's leading VAT recovery organisation, can help you to make a significant reduction on your attendance costs. A claim form will be sent to you with your booking confirmation.

**CANCELLATIONS:** Cancellations received in writing two weeks before the event will be subject to a service charge of £250. It is regretted that cancellations received after this time cannot be accepted and are subject to the full event fee. Substitutions are welcome at any time.

It may be necessary for reasons beyond the control of the organiser to alter the content and timing of the programme or the identity of the speakers. In the unfortunate event that an event is cancelled Informa UK Ltd are not liable for any costs incurred by delegates in connection with their attendance. This contract is subject to English law.

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CHOOSE YOUR PACKAGE – FPSO PARIS EVENT CODE: KS0215	DATES	REGISTER BY 8th October 2010	SAVE	REGISTER AFTER 8th October 2010
<input type="checkbox"/> <b>FPSO Paris course</b> including paper copy of notes AND CD ROM	6-8 December 2010	£2274 + 19.6% TVA (VAT) = £2719.70	£200	£2474 + 19.6% TVA (VAT) = £2958.90
<input type="checkbox"/> <b>FPSO Paris course</b> including paper copy of notes ONLY	6-8 December 2010	£2199 + 19.6% TVA (VAT) = £2630	£200	£2399 + 19.6% TVA (VAT) = £2869.20
<input type="checkbox"/> <b>FPSO Paris course</b> including CD ROM only	6-8 December 2010	£2124 + 19.6% TVA (VAT) = £2540.30	£200	£2324 + 19.6% TVA (VAT) = £2779.50

The VAT rate is subject to change and may differ from the advertised rate. The amount you are charged will be determined when your invoice is raised.

If you book more than 2 delegates, the 3rd and each subsequent delegate will receive £200 off the booking fee

All discounts can only be claimed at the time of registration and multi-booking discounts cannot be combined with other discounts that may be available. Further discounts are subject to approval. Please note the course fee does not include travel or hotel accommodation costs.

☐ I am unable to attend but please reserve me \_\_\_\_\_ set(s) of the Course Documentation @ £650 (£675 overseas)

### STEP 2: DELEGATE DETAILS

**1st Delegate** Mr/Mrs/Ms

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Telephone  
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### STEP 3: PAYMENT DETAILS

☐ ☐ ☐ ☐ ☐ Please charge my credit card

(CVV: Last 3 digits on signature strip on back of credit card. AMEX - 4 digit number on front of card)

Card No \_\_\_\_\_ Expiry Date \_\_\_\_ / \_\_\_\_

CVV Number \_\_\_\_\_

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☐ Enclosed is a cheque payable to **Informa UK Ltd** (quote reference number KS0215 and delegates name) and sent with remittance advice to: Informa UK Ltd, Customer Services, Sheepen Place, Colchester, Essex CO3 3LP, UK

☐ **By Bank Transfer** (quote reference number KS0215 and delegates name) and the delegates surname in the transfer instructions.

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Sort Code: 60-06-06, IBAN: GB25NWBK60060601825550, Swift Address: NWBKGB2L

**EUR** NatWest Bank Plc, 25 High Street, Colchester CO1 1DG, Essex, UK Account Name: Informa UK Ltd, Account No: 06880185

Sort Code: 60-06-06, IBAN: GB08NWBK60721106880185, Swift Address: NWBKGB2L

☐ **Yes I agree to the Terms & Cancellations Conditions as stated on this form**

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