The operation of subsea production systems requires operation, inspection and maintenance strategies that differ considerably from their onshore counterparts. This course provides an introduction to the elements of a subsea production system and how they are operated to maximise production and protect system integrity. Additionally, presenters will explore the typical operational parameters for a subsea system, the information available during normal operation and the requirements for inspection and maintenance to mitigate the many risks posed by the both the subsea environment and the produced fluids.

PROGRAMME:

08.30 Registration
08.40 Course starts

08.45 General Introduction to Subsea Production Systems
   Ross Hendricks, TechnipFMC
   Components of subsea systems, the “building blocks”. The purpose of each element and how they fit into the overall system.

09.45 Operating Strategies/practices
   Preben Nielsen, Wood.
   Overall system operation for subsea tie-backs in oil / gas condensate developments. Differences in System operational control schemes (e.g. FLNG vs Conventional LNG vs Domestic Gas). Typical pressure, temperature & compositional operating envelope considerations. Flow rate control and liquid management. Hydrate & Wax mitigation and remediation strategies. Planned and unplanned transient operations (e.g. field start-ups/shut downs)

11.00 Coffee/Tea

11.15 Operating Subsea Systems
   Christian Bottcher, Woodside Energy Ltd.
   A short overview of operating a subsea system, from well start up through the operating phase to well shutdown. What information is readily available, how to interpret it, to ensure a safe, smooth and efficient operation.

12.00 Vulnerabilities - What could go wrong?
   Kevin Ingram, Chevron Australia
   Explanations of the vulnerability of subsea hardware to the following:
   Hydrates, waxes & scale, causes & remedies
   Control Fluid Cleanliness; Incompatible Fluids
   Insulation Resistance; Gas Ingress & condensing water
   Technology Obsolescence
   Reliability, redundancy & flexibility
   Dragged & dropped objects - Fishing activity
   Corrosion/erosion
   Marine environmental influences - temperature, internal water motions, marine growth.

13.00 Lunch

13.30 Managing Subsea Assets
   Roland Fricke, Woodside Energy Ltd
   This session discusses the management of subsea operations by describing the following: Operations in the Asset Lifecycle; Subsea Operators Goals; and Key Elements to these Achieve Goals. This includes examples of existing subsea infrastructure, operations and maintenance roles & team structures including indicative costs.

14.30 Inspection, Repair and Maintenance
   Norman Mackay, DOF Subsea
   The need for IRM and how it is carried out, exploring:
   Diver intervention; ROV & Survey Capabilities; IRM Vessels; Inspection and survey systems; AUV Systems; Integrity management: Planning and Timing. Procedure development; Case study examples

15.30 Coffee/tea

15.45 Advanced Systems
   Caspar Lewis, Baker Hughes, a GE Company
   Production modelling & Operator Simulators
   Subsea Separation
   Subsea Compression
   Direct Seawater injection

16.45 Course Conclusion

SUT reserves the right to change/amend the programme as it sees fit.

Pictures courtesy of FMC Technologies Australia

Thank you to the presenting companies:
The Life Cycle of Flexible Risers and Flowlines

(An Awareness Course)

Society for Underwater Technology – Perth Branch www.sut.org

Celebrating 50 years in 2016

Registration Information

Should you require further information on this event, please contact Jennifer Maninin on j.maninin@sut.org Tel +61 8 9481 0999

To register please e-mail the information required on the registration form to p.slapp@sut.org

Registration Fees

<table>
<thead>
<tr>
<th>Category</th>
<th>Fee</th>
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<tbody>
<tr>
<td>SUT Members Early Bird (register and pay before 1st August)</td>
<td>$400.00 + GST = $440.00</td>
</tr>
<tr>
<td>SUT Members (registration after 1st August)</td>
<td>$454.55 + GST = $500.00</td>
</tr>
<tr>
<td>Non Members Early Bird (register and pay before 1st August)</td>
<td>$472.73 + GST = $520.00</td>
</tr>
<tr>
<td>Non Members (registration after 1st August)</td>
<td>$536.36 + GST = $590.00</td>
</tr>
<tr>
<td>SUT Student Members</td>
<td>$163.64 + GST = $180.00 - limited places available</td>
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</tbody>
</table>

Fee includes - All refreshments and an electronic copy of the available presentations and videos are provided.

Not included - Hard copy presentations are not provided. Should these be required there is an additional fee of $60.

Preferred Payment Methods:

Credit Card: Visa, Mastercard or AMEX only *. We cannot accept payment by any other card.

* Payment by Visa or MasterCard will carry a 1.5% surcharge / AMEX will carry a 2.75% surcharge.

Invoice: Please tick here to be invoiced

Joining Instructions:

Joining instructions will be e-mailed to the registered delegate (as shown on the registration form). All details of presenters and updates to the programme will be included in the joining instructions. Please bring along a laptop to view the presentations.

Transport During the Course:

Delegates are responsible for their own travel arrangements at the beginning and end of each day.

Cancellations: Refunds will be made on written cancellation received up to ten working days prior to the event, but will be subject to a 15% administration charge. Cancellations received 9–4 working days prior to the event will be charged a 50% cancellation fee. Cancellations received 3–0 working days prior to the event will not be refunded. Delegates may wish to nominate a substitute in their place at no charge.

CPD Hours: CPD hours can be claimed for this course, please keep flyer and receipt for auditing purposes.

Payment by Visa or MasterCard will carry a 1.5% surcharge / AMEX will carry a 2.75% surcharge.

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Delegate Profile

So that the lecturers can get an idea of the level at which to pitch their talk, please let us have a few details of your current job position, history and what you hope to learn from the Course.

Please e-mail along with registration form to p.slapp@sut.org

Position Held___________________________________________________________________________________________

Relevant Professional History______________________________________________________________________________
_______________________________________________________________________________________________________
_______________________________________________________________________________________________________

Reason for attending course_______________________________________________________________________________
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_______________________________________________________________________________________________________

Any special dietary requirements____________________________________________________________________________
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Please tick box if you do not want to share your delegate profile with other attendees  □