Optimizing LNG Terminal & Vessel Operation & Management

To reduce cost through advanced methods of optimizing vessel operations

11th May 2015 - 15th May 2015 at Kuala Lumpur, Malaysia

Petrosync Distinguished Instructor
Mr. Jason Harvey Ratcliffe
SPT MARINE TRANSFER SERVICES LTD
International Consultant & Project Manager, LNG Department

- Experienced Master Mariner with over 20 years of experience in marine operations including experience in LNG terminal operations, LNG STS operations, Ship operations, and Chartering roles
- Qatargas Operating Co Ltd as Terminal Manager (2003-2007), responsible for managing ship loading, gas up and cool downs, and technical expertise and support for Qatargas and Ras Laffan terminal operators
- Qualified ISO 9001:2008 Lead Auditor, ISM/ISP Auditor
- Previously with BG Group as Marine Deep Sea Assurance Manager (2008-2011) responsible for Marine Assurance solutions for ship vetting, ship-terminal compatibility of LNG Vessels. He has also developed BG Marine Assurance policies and procedures relating to Deep Sea Assurance and Ship vetting
- Marine Superintent for OSG Ship Management (UK) Ltd, responsible for the marine aspects of the technical management of QFlex LNG vessels

OPTIMIZING LNG TERMINAL OPERATIONS AND MANAGEMENT
- LEARN the natural gas & LNG technical terms to improve the efficiency and effectiveness in daily operations
- UNDERSTAND the fundamentals of LNG terminal design, and gain awareness of LNG terminal safety for implantations on to daily operations
- LEARN and MANAGE the LNG terminal equipments by mooring equipment and monitoring equipment
- ADAPT the best practices of the operating systems at every stage of terminal operations during offloading and onloading of LNG Carriers
- LEARN the various LNG carrier arrival procedures to improve the efficiency of transfer operations

OPTIMIZING LNG VESSEL OPERATIONS AND MANAGEMENT
- LEARN the application of International Safety Management requirements for vessel management
- UNDERSTAND the vessel operation cycle including dry dock operations
- LEARN and MANAGE the vessel operation processes performed in close cooperation of the entire ship team
- ADAPT the best practices of vessel operations in post dock and pre dock operations of LNG Carriers
- LEARN the safety procedures to prevent emergency incidents

SPECIALY DESIGNED FOR
The course is designed for, but not limited to, vessel engineers, LNG terminal operators, LNG engineers, marine engineers and HSE engineers, who are directly involved in vessel operations. In addition, this program may be beneficial to commercial and management staff who require a technical overview of vessel operations.
Achieving such expectations involves effective training in today’s fast-paced global LNG Market. Therefore there is the need to have a strong technical and operational team with an in-depth knowledge on LNG Terminal Operations. This course is designed as an intensive training in all aspects of LNG Terminal Operations including LNG terminal operational activities, terminal design, terminal construction, and operational safety. The course is based on a balanced combination of classroom teaching and syndicate discussions supported by practical exercises within the LNG industrial environment. This program is designed with leading industry knowledge and practical case studies discussion and analysis to provide an interactive learning environment.

**DAY 1: FUNDAMENTALS OF LNG OPERATIONS**

**Module 1: Introduction and Basics – Natural Gas & LNG, Technical Terms**
- Basic Terminology
- LNG Chain
- Physical Properties of LNG
- Uses of LNG

**Module 2: Fundamentals of LNG Terminal Design**
- Location
- Types of LNG Terminals
- Current LNG Terminal Construction projects

**Module 3: Managing an Effective LNG Operations Team**
- Prerequisite – experience, structure
- Training
- Commissioning to Hand-Over to Operational Team
- Department interaction – Commercial to Operations
- On-going training & staff welfare

*Case Study 1: Building and Designing an LNG Terminal*

**Day 2: LNG TERMINAL EQUIPMENTS AND TERMINAL SAFETY**

**Module 4: LNG Terminal Equipment**
- Jetty Design & Equipment;
- Loading Arms
- LNG Tanks
- Mooring Equipment
- Monitoring equipment

**Module 5: LNG Carriers**
- Types
- Vessel Nomination/Compatibility
- Vetting

**Module 6: LNG Terminal Safety**
- Fire-Fighting
- Gas Detection
- Equipment Safety parameters i.e.
- Loading Arm Safety Systems.
- Spill Control
- Boil-Off Gas Management

*Case Study 2: LNG Terminal Construction Requirements*

**Day 3: LNG TERMINAL MANAGEMENT AND MAINTENANCE SYSTEM**

**Module 7: Management Systems**
- OCIMF – Marine Terminal Management & Self-Assessment
- Codes of Practice
- Maintenance System

**Module 8: LNG Terminal Operations – Offloading/Onloading**
- Pre-LNG Carrier Arrival Checks – Terminal Equipment, Vessel
- LNG Carrier Arrival Procedures
- Vessel Berthing/Unberthing
- Pre-Cargo Meeting
- Emergency Tests
- Offloading/Onloading Operation Procedure
- Operations Team Responsibilities

**Module 9: Custody Transfer Measurement**
- Tank Equipment
- Corrections
- Calibration
- Surveyor
- Fiscal

*Case Study 3: LNG Transfer Operations Group Discussion: Problem and Solution*
**Module 1 - Vessel Management**
- Requirements of International Standard Management (ISM) Responsibilities
- Shipboard management team
- Regulatory of compliance
- Introduction to Flag and Classification

**Module 3 - Ballast Passage**
- Cooling down cargo tanks prior to arrival
- Spraying during ballast passage

**Module 4 - Loading Operation**
- Preparation for loading
- Cargo lines for cool down
- Tank pressure management
- Draining and inerting manifold and loading arms

**Module 5 - Loaded Voyage**
- Passage Planing / Pilotage
- Boil - off gas burning
- De-ballasting

**Module 6 - Discharging Operation**
- Preparation of discharging
- Liquid line cooldown before discharging
- Arm cooldown before discharging
- Tank pressure management
- Ballasting

**Module 7 - Pre-Dry Dock Operation**
- Stripping and line draining
- Tank warm up
- Gas Freeing
- Aerating

**Module 8 - One Tank Operation**
- Standard procedures for tank preparation after loading

**Module 9 - Contingency Plans**
- Leak of LNG vapour
- Emergency cargo pump operation for LNG tanks
- Ship to ship transfer
- Tackling fire
Jason Ratcliffe is currently with SPT Marine Services Ltd as their Project Managers for the company’s LNG Department. Being part of SPT LNG team, Jason has had an extensive operational experience with export and import terminal experience. He has worked with various gas majors, including OSG Shipping, BG Group, and Qatargas Operating Company Limited.

Jason’s consultancy work has been focused on LNG fleet operations and terminal operations. He was Terminal Manager with Qatargas, and has attended for the company’s ship loading activities for routine loading, gassing up, and cooling down, and loading on numerous existing and new delivered vessels. Jason has also attended to troubleshooting operational problems to avoid delays in the operation, whilst ensuring safety of the operation both for the ship and terminal. He has provided technical expertise to the company as well as to Ras Raffan terminal operator to ensure safe loading operations. During his time with Qatargas, he has also provided training to local staff on all aspects of LNG Terminal Operations. He was involved with the expansion project within QG Berth and upgrade work for LNG Terminal and offshore SBM.

Whilst working at BG, Jason has assisted directly in the planning of and the commissioning operation of the Dragon LNG terminal, and conducted numerous other due diligence inspections and audits of LNG terminals globally, prior to cargo’s being delivered. As the Assurance Manager, he was responsible for the ship vetting and terminal approvals for the LNG shipping operations. This also had him working closely with the commercial department to ensure that the supply chain was not affected.

With OSG, he attended terminal operations as ship owners and operators representative, including on-board representation for owner during the commissioning cargo’s at Chinese terminals and numerous ship shore meetings for existing terminals. He is also the onsite marine superintendent for the first LNG STS operation on a large scale between 2 QFlex vessels. He is responsible for the Safety, Quality, and Environmental aspect of safe operations of the vessels, including incident management as part of the LNG team. The ship operations included making sure that the terminal needs were satisfied with regards to physical berth compatibility and operational performance. At present, Jason is with OSG Ship Management, responsible for their day to day marine aspects of the operations relating to ship management of QFlex LNG tankers, including audits and inspections.
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### INVESTMENT PACKAGES

<table>
<thead>
<tr>
<th>Investment Package</th>
<th>Deadline</th>
<th>Course Fee (5 Days)</th>
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</thead>
<tbody>
<tr>
<td>☐ Standard Price</td>
<td>08th May 2015</td>
<td>SGD $ 5,995</td>
</tr>
<tr>
<td>☐ Early Bird Offer</td>
<td>10th April 2015</td>
<td>SGD $ 5,795</td>
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<tr>
<td>☐ Group Discount (3 or more Delegates)</td>
<td>08th May 2015</td>
<td>SGD $ 5,695</td>
</tr>
</tbody>
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Group Discount is based on Standard Price

* To enjoy the promotion & discount offer, payment must be made before deadline
* For 7 or more delegates, please inquire for more attractive package.
* Prices include lunches, refreshments and materials. Promotion & discount cannot be combined with other promotional offers.
* Important: Please note that registration without payment will incur a SGD 200 administration fee.

### DELEGATES DETAILS

1st Delegate Name____________________ Mr [ ] Mrs [ ] Ms [ ] Dr [ ] Others [ ]
Direct Line Number: ____________________ Email: _______________________
Job Title: ____________________________ Department: ______________________
Head of Department: ____________________

2nd Delegate Name____________________ Mr [ ] Mrs [ ] Ms [ ] Dr [ ] Others [ ]
Direct Line Number: ____________________ Email: _______________________
Job Title: ____________________________ Department: ______________________
Head of Department: ____________________

3rd Delegate Name____________________ Mr [ ] Mrs [ ] Ms [ ] Dr [ ] Others [ ]
Direct Line Number: ____________________ Email: _______________________
Job Title: ____________________________ Department: ______________________
Head of Department: ____________________

### INVOICE DETAILS

Attention Invoice to: ______________________
Direct Line Number: ____________________ Fax: _______________________
Company: ______________________ Industry: ______________________
Address: __________________________ Postcode: ______________________
Country: ______________________ Email: ______________________

Please note:
- If you have already registered by Phone [ ] Fax [ ] Email [ ] Web [ ]
- If you have not received an acknowledgement before the training, please call us to confirm your booking.

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☐ By Credit Card :
   Please debit my credit card: [ ] Visa [ ] MasterCard [ ] AMEX Security Code: ________
   Card Number: __________________________ Expiry Date: ______________________
   Name printed on card: __________________________

☐ By Direct Transfer : Please quote invoice number(s) on remittance advice
   PetroSync Global Pte Ltd Bank details:
   Account Name: PetroSync Global Pte Ltd
   Bank Name : DBS Bank Ltd
   Bank Code : 7171 Bank Swift Code : DBSSSGSGXXX • Branch code : 288
   Account No - • SGD : 288-901898-0 • USD : 0288-002682-01-6

   All bank charges to be borne by payer. Please ensure that PetroSync Global Pte Ltd receives the full invoiced amount.

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70% attendance is required for PetroSync’s Certificate.

Please accept our apologies for mail or email that is incorrectly addressed. Please email us at registration@petrosync.com and inform us of any incorrect details. We will amend them accordingly.

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- For Payment by Direct TelegraphicTransfer, client has to bear both local and oversea bank charges.
- For credit card payment, there is an additional 4% credit card processing fee.

**Course Confirmation**

I agree to PetroSync’s terms & conditions, payment terms and cancellation policy.

Authorized Signature : ______________________

**PAYMENT TERMS** : Payment is due in full at the time of registration. Full payment is mandatory for event attendance.