FPSO Operation And Maintenance (Floating Production Storage And Offloading)

Description:

For the successful operation of the FPSO it is of vital importance to understand the process from the wellhead through the topside process, storage and offload. Often putting together an operations team receives scarce publicity despite being one of the most important steps to a successful project. This 5-day training course will present the process from the wellhead through topside process, storage and offload.

The FPSO Operation and Maintenance training course will focus on the key technical challenges and risks associated the operation and maintenance of an FPSO. It will arm the participant with a wealth of knowledge to help them advance their project.

This training course will feature:

- Operation and maintenance – Guidance and General Requirements
- Environmental Influences affecting FPSO operation
- Cargo and ballast tanks

- Offloading operations

- Control and safety systems

- Safety in operation and maintenance

Who Should Attend?

This BTS training course is suitable to a wide range of professionals but will greatly benefit:

- Technical staff, project engineers, engineering discipline leads, engineering specialists, and operating staff

- Maintenance technicians, supervisors, and managers, as well as other non-engineering personnel

Course Objectives:

By the end of this course delegates will be able to:

- Identify the key operational requirements

- Recognize the effects of the ocean environment on FPSO operation.

- Understand the FPSO process system

- Appreciate safety in operation and maintenance

Course Outline:

Day One: Introduction to Floating Production, Storage and Offload

Competency Description: The objective is to understand the key considerations of design, operation and maintenance requirements of the FPSO.

Key behaviours

- Identify the key characteristics of an FPSO

- Understand the applicable rules and regulations

- Comprehend the operation strategy

- Be familiar with the objectives of the maintenance strategy

- Understand the topside process system equipment and interfaces

Topics to be covered

- Introduction to FPSO design and technology

- Rules, regulations, codes and standards

- Operation requirements

- Maintenance – guidance and general requirements

- Plant inspection

- Plans procedures and records

- Processing operations

- FPSO process system

Day Two: Environmental and Design Aspects affecting Operation

Competency Description: The ocean environment has a profound impact on the FPSO topside process plant operation, helicopter operations, offloading operations, crew comfort and safety and mooring arrangements. The objective is to understand the influence of loads on structural integrity, behaviour and performance of the topsides equipment.

Key behaviours

- Be aware of the impact of the ocean environment on the operability of processing equipment

- Prevent corrosion and increased risk of reduced integrity by proper hull structure assessment

- Understand the ship motion, acceleration and deflection affecting topsides

- Recognize the deterioration of mooring lines

- Understand the turret swivel system and main bearing integrity

Topics to be covered

- Corrosion and corrosion protection

- Stress buckling and fatigue

- Hull structural assessment

- Topsides

- Mooring lines and anchors

- Turret and swivel system

- SURF and subsea interfaces

- Accommodation and lifesaving equipment

Day Three: Storage and Offloading

Competency Description: To develop an understanding of operation, inspection and maintenance requirements and challenges of the containment and offloading system on an FPSO.

Key behaviours

- Know the cargo and ballast system particulars

- Be familiar with the tank entry safety procedures

- Understand the procedures for offloading crude oil

- Know the custody transfer requirements

Topics to be covered

- Cargo pumping system characteristics

- Cargo storage

- Cargo heating

- Cargo blanketing and venting

- Crude oil wash

- Cargo control system

- Cargo metering

- Tank entry

- Ballast system

- Cargo loading and stability

- Cargo transfer operations and procedures

- Offloading crude

- Custody transfer

- Diesel oil storage treatment transfer

- Pressure safety valves

- Emergency shutdown valves (QC valves)

Day Four: Power Heating and Utility Systems

Competency Description: Malfunction of the utility and supporting systems may reduce, stop, or even endanger the production and personnel. The objective is to understand the operation and maintenance of the power generation system and the main process plant utilities.

Key behaviours

- Understand operational concerns of the prime movers

- Be familiar with HV and LV switchboards

- Inspect and test batteries and UPSs

- Be acquainted with the requirements for the utility and supporting systems

Topics to be covered

- Power generation and heating

- Power distribution system

- Heating sources and generators

- UPSs and batteries

- Cooling system

- Utility systems

- Electrical system

- Piping

- Instrumentation

- Telecommunication

- HVAC

Day Five: Safety in Operation and Maintenance

Competency Description: Ensuring safety, operability and system or structural integrity are the main concerns on a FPSO. The objective is to gain a better knowledge of: how to optimize production and plant capacity while increasing safety levels and ensure environmental compliance.

Key behaviours

- Comprehend the functioning of integrated control and safety system
- Know the operations, maintenance safety approach for process equipment
- Recognize the hazards of electrical energy and hazards associated with process fluids
- Know how to handle emergencies

Topics to be covered

- Control and safety systems
- Safety instrumentation
- Accessibility to the FPSO offshore plant
- Fire prevention and control (F&G)
- Hazards associated with process fluids
- Assessment of hazards
- Emergency plan – equipment and procedures
- Fire prevention and control
- Electrical safety
- Emergency shutdown