
Overview

This unit is concerned with ensuring that the Marine Systems, as defined by your organisation, are safely and efficiently monitored and controlled from the FPSO/FSU Control Room and all potential operational hazards (e.g. stress) are safely and effectively managed during the following Marine Operations:

- 1 cargo handling
- 2 ballast handling
- 3 bilges
- 4 offload station
- 5 bunker station
- 6 controlled space entry
- 7 restricted space entry
- 8 enclosed space entry

This unit deals with the following:

- 1 Monitor and control marine systems

During this work you must take account of the relevant worksite operational requirements, procedures and safe working practices AS THEY APPLY TO YOU.

Previous Version:

Unit MOT3 National Occupational Standards in FPSO/FSU – April 2005

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Monitor and control the FPSO/FSU marine systems

Performance criteria

You must be able to:

- P1 monitor field marine and FPSO/FSU steady state operations
- P2 update impact of weather conditions on operations
- P3 validate safety systems
- P4 evaluate navigational systems operational parameters and update as necessary
- P5 evaluate heading control requirements and update as necessary
- P6 ensure vessel stress is maintained within operational parameters
- P7 maintain cargo tank atmospheres within operational parameters
- P8 ensure sediment control crude oil wash operations are carried out within operational parameters and in line with procedures
- P9 monitor operations for potential abnormal situations and deal with them as appropriate
- P10 maintain communications with control room, process and other relevant personnel
- P11 carry out routine duties, checks and procedures and report as necessary
- P12 complete, clearly and accurately, all relevant log details

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Knowledge and understanding

You need to know and understand:

- K1 how to effectively monitor field marine and FPSO/FSU steady state operations
- K2 how to update the impact of weather conditions on operations (e.g. heavy weather, adverse weather, normal weather) as appropriate
- K3 the procedures to validate the safety systems (e.g. ESDs, Fire and Gas, CCTV, communications) as appropriate
- K4 how to evaluate navigational operational parameters (e.g. radar, GPS, UTM's, ARPA, charts, light/sound signals) and update as appropriate
- K5 how to evaluate heading control requirements (e.g. prevailing weather data) and update the factors which effect vessel stress and how to manage them safely and effectively
- K6 the procedures to ensure vessel stress is maintained within operational parameters
- K7 how cargo tank atmospheres are maintained within operational parameters
- K8 the procedures to ensure sediment control crude oil wash operations are carried out within operational parameters
- K9 the procedures necessary to effectively monitor operations for potentially abnormal situations
- K10 how to safely and effectively deal with abnormal situations
- K11 how routine duties, checks and procedures must be carried out and reported
- K12 how to clearly and accurately complete the relevant log details
- K13 how to select, use and care for PPE (to include sight/hearing protection, gloves, footwear, hard hats, respirators)
- K14 the implications of statutory (e.g. HASAWA and COSHH) and organisational requirements
- K15 how to interpret operational requirements (e.g. relevant policies, procedures, instructions, codes of practice, standards and schedules)
- K16 the safety measures that need to be put in place and all the safety practices/procedures that need to be adhered to
- K17 how to locate and identify all control room equipment using P + ID's as appropriate
- K18 how to carry out effective shift handovers and maintain continuity
- K19 how to carry out positive reporting of instructional actions, tasks, safety measures and checks, ensuring they are clear, accurate and complete
- K20 the layout of appropriate working areas (e.g. control room, control stations)

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- K21 The structure/function/operation of: process flows, ballast system, cargo system, crude oil washing, inert gas system, cargo heating system, FPSO/FSU mooring system, bunkering systems (e.g. polymers, potable water, lube oil, diesel), instrument and plant air, vessel cooling water, diesel system and hydraulic system using P + ID's and Process Flow Diagrams as appropriate
- K22 The location of process high pressures, high temperatures and the relevant safety measures
- K23 The procedures necessary to carry out effective trouble shooting
- K24 The location, function and operation of ESD systems using P & ID's as appropriate
- K25 How to establish/maintain effective fixed/mobile communications with relevant internal/ external personnel (e.g. supervisor, other operators, supply vessels)
- K26 The permit to work system
- K27 The emergency procedures relevant to the marine systems
- K28 Working understanding of the terms TPC, MCTC, KG, KM, LCB, C of G, Moments, Displacement, Reserve Buoyancy, angle of Loll, Volume, RVP, BS & W
- K29 The minimum and maximum allowable draft
- K30 The maximum allowable trim and limitation source
- K31 Effects on vessel due to loading or discharging weights on draft, freeboard, trim, list, density (of water and crude oil)
- K32 Effects on vessel of staggered loading conditions
- K33 Terms and consequences of FS Effect, Stiff and Tender ship, Hogging and Sagging, Stable, Unstable and Neutral Equilibrium
- K34 Terms and effects of shear force and bending moments, compressive and tensile loadings, area under curve of stability
- K35 Tensile loadings
- K36 Information sources in relation to the performance of manual calculations
- K37 The routine checks on the loading calculator/computer equipment

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Suite Floating Production & Storage Offload (FPSO)

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