

# COGFPSO11

## Plan and prepare for FPSO/FSU shuttle tanker operations (Active Weather Vaning)



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### Overview

This unit is concerned with ensuring that safe and efficient planning and preparation are carried out for cargo offloading operations by the FPSO/FSU Control Room when the FPSO/FSU is using heading control methods.

This unit deals with the following:

- 1 Plan and prepare to start up shuttle tanker operations

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 MOT11 National Occupational Standards in FPSO/FSU – April 2005

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### Performance criteria

*You must be able to:*

- P1 carry out FPSO/FSU/field operational pre-planning
- P2 update impact of weather conditions on operations
- P3 evaluate heading control requirements against operational parameters and prevailing weather conditions
- P4 update operational pre-planning as required
- P5 review and confirm shuttle tanker operations/offloading plan
- P6 conduct team briefings
- P7 establish and maintain effective communications with relevant parties
- P8 confirm as suitable vessel, ballast, tank status, tank priorities and hydrostatic profile
- P9 ensure pre-operational operations/checks are completed
- P10 supervise and co-ordinate hawser and hose transfer operations
- P11 verify cargo system, ballast system and inert gas system status
- P12 exchange operational information and documentation with shuttle tanker

# COGFPSO11

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### Knowledge and understanding

*You need to know and understand:*

- K1 the procedures necessary to carry out FPSO/FSU/field operational pre-planning
- K2 how to update operations taking into account the impact of weather conditions (e.g. heavy weather, adverse weather, normal weather)
- K3 how to evaluate and action heading control requirements, power generation (e.g. prevailing weather data) against operational parameters as appropriate
- K4 how to update operational pre-planning taking heading control requirements against operational parameters and prevailing weather conditions into account
- K5 how to conduct effective team briefings
- K6 the procedures for validating vessel, ballast, tank status and tank priorities
- K7 the procedures for validating the hydrostatic profile (to include list, trim, draft)
- K8 how to carry out line pressure tests prior to cargo operations and COW'ing
- K9 the pre-operational operations/checks (to include pre-mooring, routine checks on hawser/hose, navigational systems, heading control systems)
- K10 how hawser/hose transfer operations should safely and effectively be carried out
- K11 the procedures necessary to maintain effective supervision and coordination of hawser/hose connection activities with shuttle tanker
- K12 how to verify cargo system, ballast system and inert gas system status
- K13 procedures for exchanging operational information and documentation with shuttle tanker (e.g. cargo nomination, vessel particulars, notice of readiness, operational parameters, shutdown parameters, cargo and ballast handling plans, communication and back up systems)
- K14 the location and identity of all control room equipment using P + ID's as appropriate
- K15 the layout of appropriate working areas (e.g. control room, control stations)
- K16 the layout/function/operation of: process flows, ballast system, cargo system, crude oil washing, inert gas system, cargo heating system, cargo metering, cargo offloading system, shuttle tanker mooring 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

# COGFPSO11

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- K17 the heading control systems and their operational parameters, along with the navigational systems used to support these operations
- K18 the location of process high pressures, high temperatures and the relevant safety measures
- K19 how to carry out effective trouble shooting procedures
- K20 the location, function and operation of ESD systems using P & ID's as appropriate
- K21 how to carry out effective handovers between shifts and maintain continuity
- K22 how to carry out positive reporting of instructional actions, tasks, safety measures and checks ensuring reports are clear accurate and complete
- K23 the emergency procedures relevant to the cargo handling system
- K24 the emergency procedures relevant to the ballast control system
- K25 the emergency procedures relevant to shuttle tanker operations
- K26 working understanding of the terms TPC, MCTC, KG, KM, LCB, C of G, Moments, Displacement, Reserve Buoyancy, angle of Loll, Volume, RVP, BS & W
- K27 the maximum allowable trim and reason(s) for limitation
- K28 effects on vessel due to loading or discharging weights on draft, freeboard, trim, list, density (of water and crude oil)
- K29 effects on vessel of staggered loading conditions
- K30 terms and consequences of FS Effect, Stiff and Tender ship, Hogging and Sagging, Stable, Unstable and Neutral Equilibrium
- K31 terms and effects of shear force and bending moments, compressive and tensile loadings, area under curve of stability
- K32 tensile loadings
- K33 information sources in relation to the performance of manual calculations
- K34 the routine checks on the loading calculator/computer equipment

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**Developed by** Cogent

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**Version number** 1

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**Date approved** June 2009

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**Indicative review date** June 2011

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**Validity** Current

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**Status** Original

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**Originating organisation** Cogent

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**Original URN** FPSO11

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**Relevant occupations** Engineering and manufacturing technologies; Engineering; Process, Plant and Machine Operatives; Plant and Machine Operatives

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**Suite** Floating Production & Storage Offload (FPSO)

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**Key words** safe, efficient, shuttle tanker, operations, cargo offloading, heading control methods