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Application Note AN03.6

Offshore Platform Communications

Introduction

This Application Note describes a communications system provided MRS (Pacific) Pty Ltd for communications between the offshore platforms in the Bayu Undan gas field. The field lies in the Timor Sea, 500 km offshore of Darwin and 250 km south of East Timor. It straddles the boundary between blocks 91-12 (60%) and 91-13 (40%) within Area A of the Australia/Indonesia Zone of Cooperation. The fields are located on the same 160 km² structure. The 25x15 km field will require approximately 26 wells over its lifetime to produce the reserves, 16 of which - including the first high-angle well in the Timor Sea - will be required before start-up. The field life is estimated to be 25 years. First liquid production is planned to commence in late 2003, with full commercial production by 2004.

The development complex includes:

Wellhead (WHP) Platform

This simple structure consists of 17.7x24.4 m topsides (pictured opposite) supported by a four-leg 1,319 t jacket.

Compression, Utilities & Quarters (CUQ) Platform

The CUQ and the DPP (see below) both consist of an 8-leg steel jacket, slotted to accommodate topside deck float-over. The jacket dimensions are 48x50 m, with a height of 90 m. The topsides are 54x64 m and are 17.5 m high.

Drilling, Production & Processing (DPP) Platform

The processing equipment on the CUQ & DPP includes three 23MW gas-turbine-driven injection compressors, two 7.5MW gas-turbine flash gas compressors and two turbo expanders. It has high-pressure (100/310bar) column vessels and four gas-turbine-driven generators.



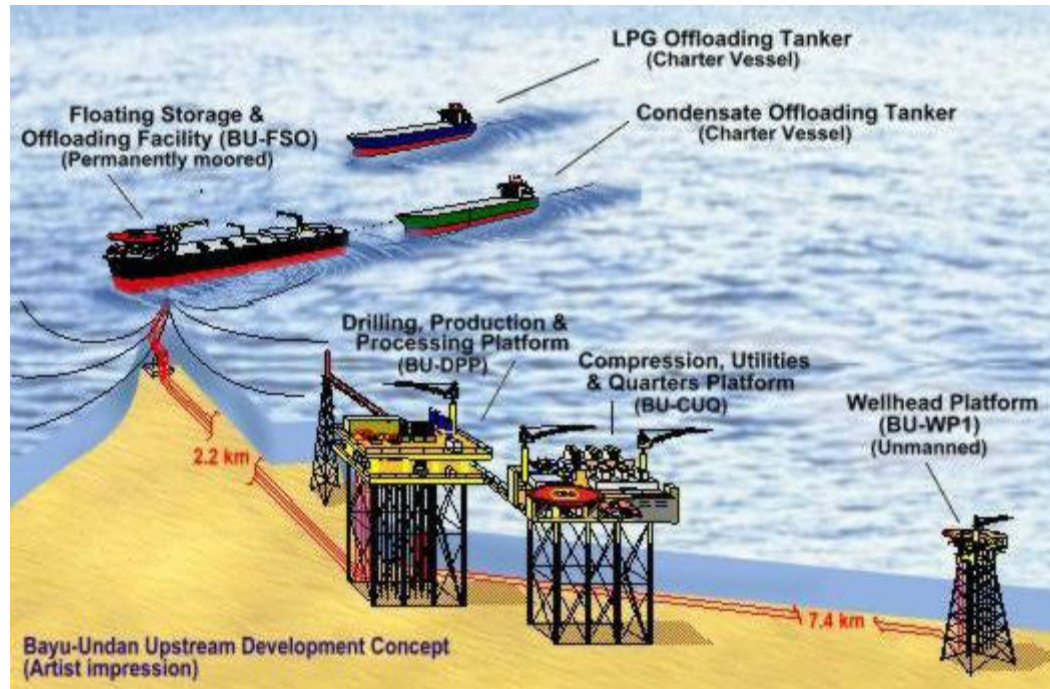
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Floating Storage & Offloading Facility (FSO)

This integrated condensate and LPG storage offloading facility stores 130,000 m³ of condensate, 47,500 m³ of propane and 47,500 m³ of butane. It has no propulsion system of its own and is 248 m long, 54 m wide, with a tonnage of 150,000 dwt. Accommodation is available for 60 people. The purpose-built FSO is permanently positioned offshore in the field.



Pipelines

Flow lines between the WHP and DPP consist of an 8 km long 18" carbon steel CRA-lined production line and a 8 km long 16" injection line. Flow lines between the DPP and FSO consist of a 12" condensate line, a 6" carbon steel propane line, a 6" butane line and a 4" carbon-steel fuel gas line, all 2.3 km long.

Radio Communications Systems

The radio communication equipment provided by MRS (Pacific) Pty Ltd consists of the following subsystems:

UHF Platform Communication System – Repeater channels are 50 Watt, fully-redundant units providing coverage to the platform operations. Repeater channels are combined onto a single stainless steel arrayed antenna. Intrinsically-safe handheld radios, headsets and ear microphones were also supplied as part of the package.

VHF Marine Radio System – Comprised of two VHF Marine



repeaters used to communicate with tender vessels. Two fully redundant transceivers were supplied, together with VHF Marine handheld radios.

VHF AM Radio System – Two VHF AM transceivers were supplied for communication with helicopter operations. Air band handheld radios and headsets were part of the supply contract.

Radio Control Consoles – Four radio operator consoles were supplied to control all radio traffic. Control of all radio channels with voice recording facilities and channel patch can be achieved by any of the four consoles.



HF SSB Radio – A single 250 Watt HF transceiver with two operator positions was supplied for long distance communication.

Inmarsat C System – A single Inmarsat C capsat system was supplied with terminal, printers and remote alarm positions.

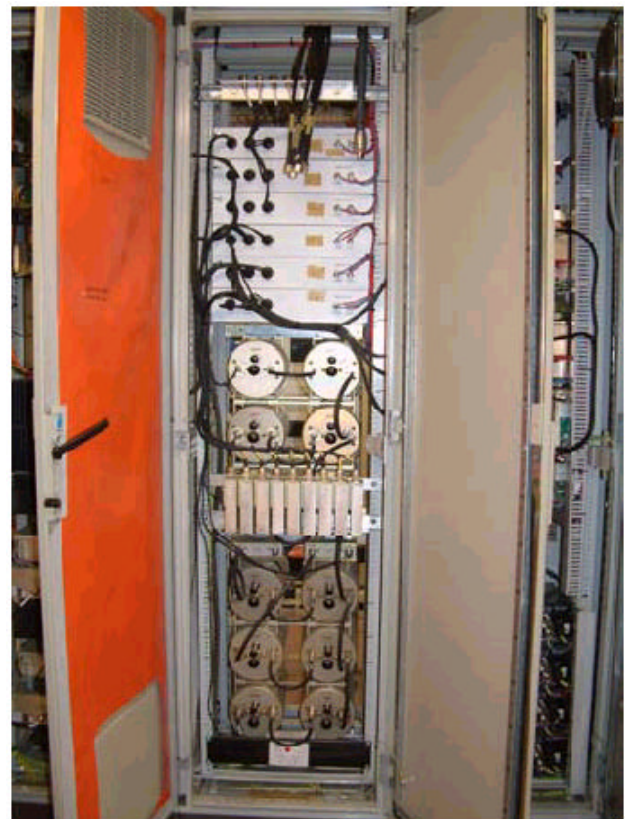
Weatherfax – A wall-mounted Weatherfax receiver was provided.

Radar Transponder – A roof mounted S and X band radar transponder was supplied to alert shipping of platform location.

Crane Radio System – Four systems were provided to allow communication on either UHF/VHF or public address, from any of the four crane systems. Each crane is fitted with operator consoles and public address amplifiers, allowing the crane operator to control voice communication channels.

Non-Directional Beacon – A helicopter platform non-directional beacon was supplied to allow helicopters to pinpoint platform position.

Nurse Call System – Supplied to service the platform hospital. The system comprises call points, over door indicators and mimic panels. In all, 33 equipment enclosures were supplied all fitted with rolling front doors, including a main distribution frame containing intrinsically-safe barriers and relays.



Inmarsat B System – A single Inmarsat B system was supplied for the FSO.

Survival Craft Radio Systems – Radio equipment for the survival craft on the FSO were supplied as part of the scope of works.

Rescue Boat Systems – Radio equipment for rescue boats for personnel stationed on the FSO were also supplied as part of the scope of works.

For Further Information

If you require clarification of any of the above notes or have any comments or suggestions relating to this or other application notes from Mine Radio Systems please call your nearest Mine Radio Systems distributor or agent.