TP1 OPERATIONS MANUAL	Ref. No.: DocsOpen no. 77357
VOLUME 1 - TP1 PLATFORM	Date effective : 27/01/97
SECTION 4 - PRODUCTION FACILITIES	Revision No. : 5
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DIAGRAMS

1. GENERAL

Dry gas from the North Alwyn Field enters the platform via a 24" sea line. The sealine penetrates through the column 2 wall (El. -57.750) and terminates with a pig receiver.

The Alwyn Tie-in facilities on the platform comprise a corrosion spool, a leak detection orifice and a depacking station.

Alwyn gas is normally transferred into the sealine no. 1 on TP1 via the 32" sales gas header. It is also possible to transfer the Alwyn gas to sea line no. 2 on TCP 2 via the TP1/TCP2 interconnection line.

Dry gas from the TCP2 process streams may be transferred to TP1 through the TP1/TCP2 26" dry gas interconnection line, where it is then gathered in the 32" sales gas header and is then transported to St. Fergus gas terminal via a 32" sea line incorporating a pig launcher.

Condensate may be injected into the sealine to St. Fergus from TCP2 platform. The condensate is transferred to TP1 from TCP2 through a 3" interconnection line.

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DIAGRAMS

1. GENERAL

Dry gas from North Alwyn enters the platform via a 24" sea line and terminates at a pig receiver. From the pig receiver the gas discharges into the TP1 dry gas piping via the leak detection system and the depacking station.

2. DESCRIPTION

The 24" sea line from North Alwyn is rated to deliver 23.6 MMSCMD at maximum depacking conditions; the DCQ being 7.5 MMSCMD with a swing factor of 1.1. The 24" Alwyn sea line terminates in pig receiver M28, which is normally off-stream. Locally operated hydraulic valves, at the receiver inlet and outlet and in the bypass line, enable the gas to be diverted through the receiver during pigging. A flow tee incorporating a grid is fitted at the bypass offtake to ensure that the pig cannot enter the bypass line.

Gas received from North Alwyn via the 24" sea line is routed through a leak detection system and a depacking station. To prevent hydrate formation, methanol injection facilities are provided upstream each of the three depacking valves. Downstream of the depacking station the gas can be routed simultaneously in the following ways.

a) To sea line no. 1 via TP1 sales gas header

b) To sea line no. 2 from TCP2 via the dry gas interconnection

Emergency shutdown (ESD) block valves are incorporated for the Alwyn Process in order to enable isolation of Alwyn piping from TP1 piping and vice versa.
There is the facility to Pressurize the main sealine from Alwyn (2001 R2 x 24"p) between ESDV-M28.1 and ESDV-M28.2. Pressurization is either by Frigg gas from the 32" main sealine or from the Nitrogen Compressor.

The dry gas from Alwyn can be depressurized via blowdown valves ESDV M28.4, ESDV M28.5 and ESDV M28.7. These blowdown valves depressurize into the cold vent stack SP45 through cold vent knock out drum V47. The drainage from cold vent knock out drum V47 is transported to TCP2 via a 3" line where it terminates in oil skimmer CV5.

CONTENTS

1. GENERAL

Dry gas from North Alwyn may be discharged into the 32" sales gas header P124. The Alwyn gas is isolated from the header by an Emergency Shutdown (ESD) block valve.

Instrumentation is provided to measure and record the pressure and temperature of the gas in the header. The pressure instrumentation also provides signals for high and low pressure alarms, and for the flow control computers and controllers. Two pressure transmitters are connected to the header to provide a fail-safe facility. Should there be a discrepancy between them, an alarm annunciates. A hand switch permits the selection of either transmitter to feed the computer or alarm circuits. In addition the header is protected against overpressure through the overpressure protection system (OPPS).

The header and the interconnecting line may be depressurized by blowdown valves ESDV V2C-6/7 to the Cold Vent System. Isolation of the header is achieved by closing ESDV TCP2-1.

A second 32" header P210 is used to feed dry gas to or from TCP2. The Alwyn dry gas may be connected to this header via an emergency shutdown valve (ESDV). The pressure instrumentation for this header is similar to that of the sales gas header.

Dry gas from TCP2 may also be connected to this header through the TP1/TCP2 interconnection line.

The sales gas header is protected against overpressure via the OPPS. (See section 8.5).

Gas from the sales gas header is discharged to St. Fergus via 32" subsea line P140.

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1. GENERAL

Metered dry gas from TCP2, through the TP1/TCP2 interconnection line and the sales gas header, and from the Alwyn field are discharged via 32" subsea line P140.

Scraper pig launcher M3 is installed at the inlet to the subsea line. Hydraulically operated valves HV M3-1, HV M3-2 and HV M3-3 are installed in the launcher inlet, outlet and bypass, respectively. These valves are normally set to allow gas flow through the 32" launcher bypass.

Condensate may be injected into the sealine from TCP2 through line 221EF-3"P.

The platform can be isolated from the sealine by closing ESDV-M3-1.

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1. GENERAL

Condensate may be pumped from TCP2 to TP1 for injection into the 32" sea line no. 1 via line 221EF-3"P. An emergency shutdown valve, ESDV-B3 isolates the interconnecting line in an emergency.