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Sections 226 and 708
Offshore Petroleum and Greenhouse Gas Storage Act 2006

VARIATION OF PIPELINE LICENCE WA-4-PL
(COSSACK-WANAEA PIPELINE)

I, **JOANNE JENNIFER BELL**, Delegate of the National Offshore Petroleum Titles Administrator, on behalf of the Commonwealth–Western Australia Offshore Petroleum Joint Authority hereby vary Pipeline Licence WA-4-PL, granted on 17 March 1995 (the Licence), for which:

Woodside Energy Ltd.
(ACN 005 482 986)

BHP Petroleum (North West Shelf) Pty Ltd
(ACN 004 514 489)

BP Developments Australia Pty. Ltd.
(ACN 081 102 856)

Chevron Australia Pty Ltd
(ACN 086 197 757)

Japan Australia LNG (MIMI) Pty. Ltd.
(ACN 006 303 180)

Shell Australia Pty Ltd
(ACN 009 663 576)

are the registered titleholders, as set out below.

The variation takes effect on the day on which this notice of variation is published in the Commonwealth Government Gazette.

Made under the *Offshore Petroleum and Greenhouse Gas Storage Act 2006*
of the Commonwealth of Australia

JOANNE JENNIFER BELL
OPERATIONS MANAGER
DELEGATE OF THE TITLES ADMINISTRATOR
ON BEHALF OF THE COMMONWEALTH–WESTERN AUSTRALIA
OFFSHORE PETROLEUM JOINT AUTHORITY

VARIATION OF
PIPELINE LICENCE WA-4-PL

Cossack-Wanaea Pipeline

Route of Pipeline

1. In the 'First Schedule', the 'Route of The Pipeline' description is varied by:

a) deleting existing text under this heading,

b) and replacing it with:

"The route of the pipeline is described in the table hereunder commencing at the Wanaea field Riser Turret Mooring (RTM) to the SSIV tie-in point on 1TL and the tie-in connection on the Goodwyn A (GWA) to NRA interfield pipeline, along a line no point of which shall be more than 125 metres from the pipeline route shown in the drawing at Attachment 1. Coordinates are based on Geodetic Datum of Australia (GDA94), UTM Zone 50."

Cossack-Wanaea Pipeline			
Feature Name	**KP**	**Eastings (m)**	**Northings (m)**
Wanaea Riser Turret Mooring	N/A	441988.0016	7833895.957
Riser Base	N/A	441869.274	7833902.796
Flexible Crossing with Decommissioned Flowline	N/A	441540.8041	7833923.773
Flexible Crossing with Oil Flowline	N/A	441544.7576	7833911.563
Pipeline End Manifold	0	441553.7904	7833887.58
MEG Line Crossing	0.664	440908.2444	7833662.349
Oil Flowline Crossing	0.746	440830.2624	7833635.35
Decommissioned Flowline Crossing	0.771	440807.0975	7833627.368
Power Cable Crossing	32.078	409997.2777	7834180.546
Angel Pipeline Crossing	32.167	409907.430	7834180.547
Pipeline End Manifold	32.333	409741.9592	7834179.26
Valve Skid WCGEL to NRA	N/A	409721.0568	7834167.365
Tie-in to GWA to NRA interfield pipeline	N/A	409580.1903	7834207.5
1TL SSIV Tie-in	N/A	409712.8447	7834142.589

c) The WA-4-PL Petroleum Pipeline Route Map at Annexure A is deleted and replaced with the map at **Attachment 1**.

Specifications

2. In the 'Second Schedule', '1. Specifications' is varied by deleting all existing text and replacing it with:

*"***(A) System Description**

The Pipeline is comprised of the following main components:

- A flexible riser from the RTM to the seabed where it connects to a Riser Base Assembly (RBA).

- A short length of flexible line from the RBA where it connects to the Wanaea Pipeline End Module (PLEM). The Wanaea PLEM contains several valves and marks the Wanaea end of the rigid pipeline system.

- *A 32.3 km long DN300 rigid steel pipelines from the Wanaea PLEM to the NRA PLEM where it bifurcates to provide two routes. Both of these routes are equipped with valves controlled from NRA and can be used to isolate flow along either of the two routes.*

- *A rigid spool connecting the NRA PLEM to a tie-in point downstream of the 1TL SSIV providing an export route to shore.*

- A short length of flexible pipeline from the NRA PLEM to the NRA Valve Station (NRAVS) followed by another length of flexible pipeline connecting NRAVS to a tee on the Goodwyn export line adjacent to the south face of NRA*, providing an import or export route*.

(B) Design

(i) Except as otherwise specified in this Schedule the pipeline shall be designed, constructed, tested and operated in accordance with the Australian Standard 2885: SAA Gas and Liquid Petroleum Pipelines. *The pipeline is currently operated in accordance with the DNV-ST-F101 Submarine Pipeline Systems Standard.*

(ii) The pipeline design is based on the following parameters:-

(a) Outside diameter of pipe (mm)		323.9
Nominal wall thickness (mm)		12.7
Length of pipeline (km)		32.3
(b) Pipe steel grade		API 5L X52
(c) Pipe specification		Electric Resistance Welded
(d) Joint type		Butt welded
(e) Minimum yield strength (MPa)		358
(f) Design pressure (MPag)		14.8
(g) Maximum operating pressure (MPag)		14.8
(h) Field test pressure (MPa)		18.5
(i) Fittings and valves specification		ANSI Class 900
(j) Water depth range (m)		78 – 120
(k) Corrosion coating:	External	6 mm asphalt enamel
	Internal	0.060 mm epoxy
	Field joints	Cold bituminous tape and HD polyurethane infill
(l) Weight coating		30 mm thick reinforced concrete, SG 3.04
(*m)* Cathodic Protection		Sacrificial Zinc Anodes

(n) Maximum inlet temperature (º C)	65
(*o*) Minimum operating temperature (º C)	*a) Between the flexible riser and flowline (from Okha Floating Production, Storage and Offloading [FPSO] Facility Riser Base Assembly [RBA] to the Wanaea Pipeline End [WANPE]): -30°C integrity limit;* *b) Between the rigid pipeline, in-line structures and rigid spool (North Rankin A Pipeline End [NRAPE] to 1TL): 0°C integrity limit; and* *c) Between the flexible jumpers (from the NRAPE to the Goodwyn Alpha Inter Field Pipeline [GWAIFLTI]): normal operating limit is 18.95°C with an integrity limit of -3.5°C which may occur during a Subsea Isolation Valve (SSIV) leak-off testing.*
(p) Substance to be conveyed	*Dehydrated dry natural gas in compressed phase*
(*q*) Pipeline specific gravity (min)	1.68
(*r*) Design Capacity (Std m^3/day)	3.11 x 106 at 15.6º C, 1 atm
(s) Design environmental loading	100-year storm conditions

(C) Pressure Test

Before seeking the consent of the Designated Authority to operate the pipeline, the pipeline shall be subjected to pressure tests in compliance with Section 9 of Australian Standard 2885, SAA Pipeline Code in accordance with the requirements of Australian Standard 1978, SAA Code for Field Pressure Testing of Pipelines. During the test, the pressure at the control points shall be measured at appropriate intervals using pressure gauges calibrated and certified by dead weight tester of adequate sensitivity for the volume of the test section and all details should be recorded. Temperatures representative of the sea water adjacent to the pipeline shall also be measured at appropriate time intervals using instruments of adequate sensitivity for the volume of the test section and all details shall be recorded.

In addition, suitable continuous recording equipment shall be used to record the pressure and temperature in the pipeline during the whole period of pressure testing. The pressure recording equipment and any other pressure gauges used in the pipeline pressure test shall be checked immediately prior to and after the test by an adequately sensitive dead weight tester. Where a pressure/volume plot is applicable, water volume shall be measured by suitably calibrated devices.

The pipeline shall not be operated until an adequate examination has been carried out, after final tie-in, to determine that the pipeline is free from buckles, dents or any other damage.

The licensee shall give the Director at least three days notice of intention to test and shall within thirty days of completion of the pressure test, forward to the Director a copy of the pressure chart including its calibration and graphs of the dead weight tester readings (as well as other pertinent factors) all duly interpreted and witnessed in a certified test report.

The licensee shall provide transport and accommodation at its expense for Inspectors nominated by the Director to witness any testing.

(D) Welding Procedures and Welders' Qualification Tests

Before commencing the construction of the pipeline, the welding procedure and welder's qualification tests, in compliance with the Australian Standard 2885, SAA Pipeline Code, shall be submitted to the Director for approval before commencing the construction of the pipeline. The licensee shall forward to the Director a copy of the test results (as well as other pertinent factors) all duly interpreted in a certified test report.

(E) Coating System tests

Before commencing the construction of the pipeline, the adequacy of the proposed protective coating system shall be as far as reasonably practicable. The licensee shall forward to the Director a copy of any test results (as well as other pertinent factors)."

Note: text in *italics* in Specifications reflects changes to the licence given effect by this variation.

Attachment 1