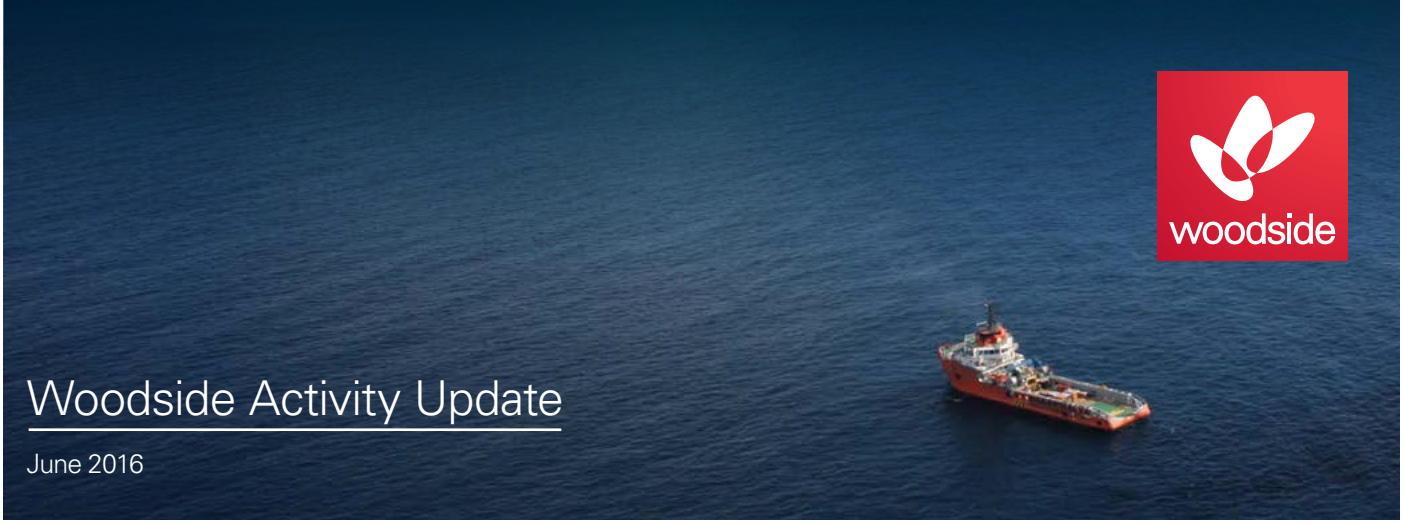

Woodside Activity Update

June 2016

North Rankin Complex Operations

Revision to enable Persephone start-up and operation

Woodside is submitting a revision to the accepted North Rankin Complex Operations Environment Plan to account for the start-up and operation of the Persephone Project, in accordance with the *Offshore Petroleum and Greenhouse Gas Storage (Environment) Regulations 2009*.

Background

The North Rankin Complex (NRC) is a single integrated facility comprising the interconnected North Rankin A (NRA) and North Rankin B (NRB) platforms and associated subsea infrastructure, including two export trunklines (TL1 and TL2) which run between NRC and the onshore Karratha Gas Plant (KGP).

The facility is located in Commonwealth waters about 135 km offshore from Dampier on the north-west coast of Western Australia in a water depth of about 125 metres.

The NRA and NRB platforms are located in Production Licence WA-1-L, with trunklines located in Pipeline Licences WA-1-PL and WA-10-PL.

The North West Shelf (NWS) Project participants are Woodside (Operator), BHP Billiton Petroleum, BP Developments Australia, Chevron Australia, Japan Australia LNG (MIMI) and Shell Australia.

NRA has been in operation since 1984. NRB was commissioned in 2013 and is linked to NRA by two bridges. NRB's primary function is to provide gas compression and condensate pumping of fluids produced from the NRA wells and exported via the NRA export facilities.

The current NRC Operations Environment Plan was accepted in August 2014, and included within its scope modifications to NRC associated with the Persephone Project that are required before first gas production. A revision to this accepted Environment Plan that incorporates changes relevant to the start-up and operation of the Persephone Project is being prepared and Woodside welcomes your feedback ahead of its submission.

The A$1.2 billion Persephone Project will develop the Persephone field through two subsea-drilled production wells and a subsea manifold, approximately 6.7 km from the NRC platform. The manifold will be connected to the NRC platform via a 12" flexible flowline and control umbilical. The Persephone Project is scheduled for start-up in early 2018.

The drilling, subsea installation and cold commissioning of the Persephone Project is detailed in a separate Environment Plan and does not form part of the NRC Operations Environment Plan.

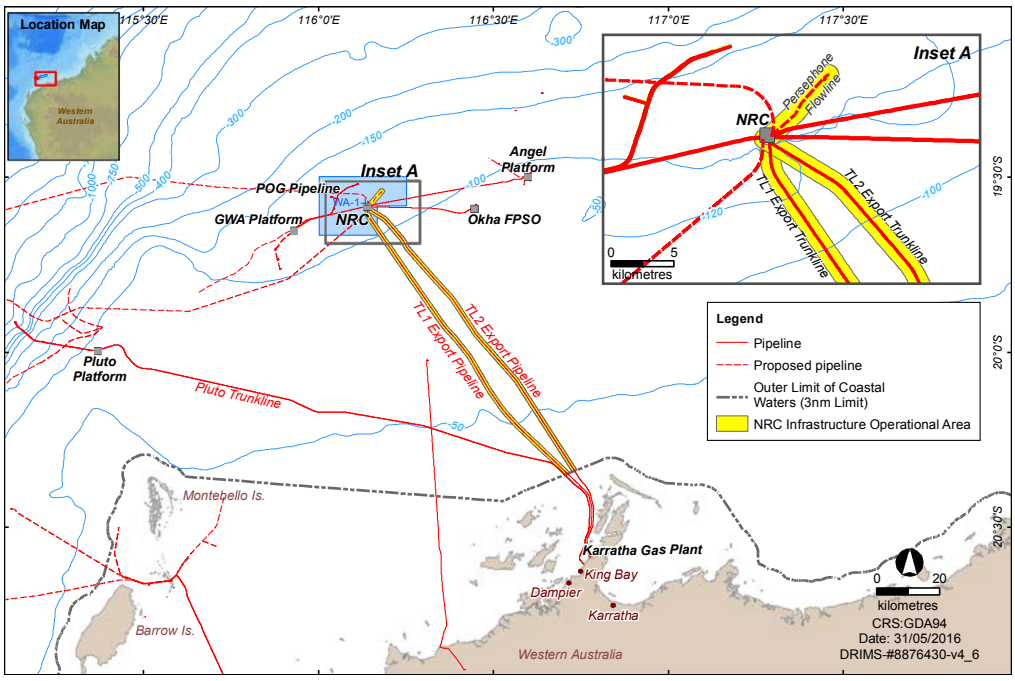

Figure 1: North Rankin Complex location.

Operations

The NRC facility currently produces dry gas and condensate from the North Rankin and Perseus fields, with production from the Persephone field expected in early 2018. Gas and condensate from these reservoirs is processed on the facility then transported via two trunklines to the onshore Karratha Gas Plant.

The NRC facility is connected to the NWS Project's Goodwyn A facility, Angel facility and Okha floating production storage and offloading (FPSO) facility. Connection of these facilities to NRC is via subsea tie-in assemblies to the first and second trunklines for direct export of product to the Karratha Gas Plant.

NRC has full remote control capability over the Angel facility (not normally manned) and remote monitoring capability of product export from the other interconnecting facilities. Operation of the connected facilities and their associated subsea pipelines and infrastructure (other than TL1 and TL2 trunklines) are the subject of separate Environment Plans.

The NRC facility is designed to export up to 66 kilotonnes per day of gas and 6 kilotonnes per day of condensate.

The facility is marked on nautical charts surrounded by a 500 metre exclusion zone to shipping.

Activities

Activities undertaken at the NRC facility include:

PRODUCTION AND MAINTENANCE

Production and maintenance involves receiving hydrocarbons from the reservoirs, processing and transport of hydrocarbons to the Karratha Gas Plant via two subsea trunklines. Inspection, maintenance and repairs are conducted to maintain safe and reliable production within the platform design constraints. Following commissioning and introduction of hydrocarbons from the Persephone field, operation of the field will be controlled from NRC.

PRODUCTION AND WELL MAINTENANCE

Maintenance of production wells may be required to safeguard well integrity. This activity involves well workovers or interventions concurrent with production. The platform-based workovers are typically performed utilising a Hydraulic Workover Unit (HWU) and involve the use of chemicals selected in accordance with Woodside's Chemical Assessment Procedure. The HWU must comply with applicable industry design and construction codes and standards.

REMOTE OPERATIONS

In the event of severe cyclonic activity, the facility may be de-manned for safety reasons and be operated remotely to minimise the risk of disruption to Western Australia's gas supply.

SHUTDOWN ACTIVITIES

The NRC may be shut down periodically to enable major maintenance activities. Shutdown may involve one or more utilities, one or two production trains, or the whole system. During a full shutdown, manning levels are likely to increase.

Environment management

The revised NRC Operations Environment Plan demonstrates that through implementation of mitigation and management measures, environmental risks and impacts associated with operation of the NRC facility, including the start-up and operation of the Persephone Project, will be reduced to as low as reasonably practicable and will be of an acceptable level.

Key commitments in the Environment Plan include:

- All routine marine discharges (drainage water, produced formation water, cooling water, sewage/grey water etc.) will meet legal requirements and be managed according to Woodside's Environmental Performance Standards;
- Waste generated on the facility will be managed in accordance with Woodside's Waste Management Plan. Wastes will be managed and disposed of in a safe and environmentally responsible manner that prevents accidental loss to the environment. Wastes transported onshore will be sent to appropriate recycling or disposal facilities by a licensed waste contractor;
- Gas flaring will be managed to a level required for safe and reliable production. Unplanned flaring will be minimised where possible and managed in accordance with annual performance targets;
- Procedures to keep emissions from combustion of fuel (e.g. power generation) in line with design specifications will be followed. Emissions will be reported in accordance with Regulatory requirements;
- Procedures to reduce the potential for uncontrolled hydrocarbon releases will be followed;
- Appropriate fuel transfer procedures and equipment will be used to prevent spills to the marine environment;
- Appropriate spill response plans, equipment and materials will be in place and maintained to manage any potential spills to the environment;
- Chemical use will be managed in accordance with Woodside's Chemical Selection and Approval Procedure;
- Measures will be taken to protect marine fauna from vessel and helicopter activities; and
- All support vessels will be assessed and managed as appropriate to prevent the introduction or spread of invasive marine species.

Environmental approvals

The revised NRC Operations Environment Plan will be submitted to the National Offshore Petroleum Safety and Environmental Management Authority (NOPSEMA) for acceptance in accordance with the *Offshore Petroleum and Greenhouse Gas Storage (Environment) Regulations 2009*.

Facility details

Location	135 km offshore from Dampier, Western Australia
Facility type	Gas and condensate production facility. Two fixed platforms connected by bridges.
No. of wells	29 platform wells and 2 subsea wells
Estimated production capacity	66 kilotonne per day dry gas and 6 kilotonne per day condensate
Commissioned	NRA – 1984 NRB – 2013 Persephone start-up is expected in early 2018.
Water depth	125 metres
Coordinates (GDA 94)	NRA: 19o35'08.02'S and 116o08'12.28'E NRB: 19o35'02.56'S and 116o08'11.22'E Persephone Manifold: 414,055.64 E 7,839,206.33 N (In GDA 94 Zone 50)

Feedback and further information

If you would like to comment on the proposed activity outlined in this fact sheet or would like additional information, please contact Woodside by Wednesday 13 July 2016:

Stephen Munday
Corporate Affairs Adviser, North West Shelf Project
Woodside Energy Ltd

P: (08) 9348 3719
E: stephen.munday@woodside.com.au
Toll free: 1800 654 249

Please note that stakeholder feedback will be communicated to NOPSEMA as required under legislation. Woodside will communicate any material changes to the proposed activity to affected stakeholders as they arise. Proposed timings for activities may be subject to change.

woodside

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