



Application for a licence amendment

Division 3, Part V *Environmental Protection Act 1986*

Licence number	L8752/2013/2
Licence holder	Woodside Burrup Pty Ltd
ACN	120 237 416
File number	2013/002356-2
Premises	Pluto Liquefied Natural Gas (LNG) Project Lot 384 Deposited Plan 220146, Lot 572 on Deposited Plan 28209 and Lot 574 on Deposited Plan 28209 BURRUP WA 6714 as depicted in Schedule 1
Date of report	11 February 2025
Decision	Revised licence granted

1. Decision summary

Licence L8752/2013/2 is held by Woodside Burrup Pty Ltd (licence holder, WBPL) for the Pluto LNG Project (the premises) located on Burrup Road on the Burrup Peninsular.

This Amendment Report documents the assessment of potential risks to the environment and public health from proposed changes to the emissions and discharges during the operation of the premises. As a result of this assessment, revised licence L8752/2013/2 has been granted.

The revised licence issued as a result of this amendment supersedes the existing licence previously granted in relation to the premises. The revised licence has been granted in a new format with existing conditions being transferred, but not reassessed, to the new format.

2. Scope of assessment

2.1 Regulatory framework

In completing the assessment documented in this report, the Department of Water and Environmental Regulation (DWER, department) has considered and given due regard to its regulatory framework and relevant policy documents which are available at <https://www.wa.gov.au/service/building-utilities-and-essential-services/integrated-essential-services/dwer-regulatory-documents>.

2.2 Amendment application summary

On 3 April 2024, the licence holder submitted an application to the department to amend the Pluto LNG licence L8752/2013/2 under section 59 and 59B of the *Environmental Protection Act 1986* (EP Act). The following amendments are being sought:

- Authorisation for modifications to the existing Pluto LNG Train 1 Regenerative Thermal Oxidiser (RTO) which are intended to support safe and reliable operation for emissions abatement when the RTO is unavailable.

2.2.1 Background and context to the application

The Pluto liquid natural gas (LNG) project commenced LNG production in 2012. The premises comprises a single processing train (Pluto Train 1) which receives gas and liquids piped via a trunkline from the Pluto gas field located approximately 190 km offshore north-west of Dampier. Received gas and liquids are separated and processed via Pluto Train 1 to LNG and condensate which are exported.

Woodside Burrup Pty Ltd (WBPL) is planning to commence processing gas from the Scarborough gas field through the existing Pluto LNG Train 1 in 2026. The Scarborough field is located approximately 375 km off the Pilbara coast. In order to facilitate the processing of Scarborough gas WBPL is planning to undertake suite of maintenance and modifications to the existing Train 1 facility which are required to enable the processing of gas from the Scarborough gas field. The licence holder has conducted an assessment of the full scope of Pluto Train 1 modifications and determined only modifications to the Train 1 RTO to be within the scope of section 53 of the EP Act therefore is seeking a licence amendment to authorise the RTO modifications.

The amendment scope, as proposed by the licence holder in the application, is detailed in Table 1 and can be summarised as modifications to the existing Pluto Train 1 RTO inclusive of the installation of a new by-pass vent stack within the existing footprint of site infrastructure. The planned RTO modifications are a result of a proactive risk assessment conducted by the licence holder which resulted in design improvements to enable safe operations and maintain environmental design objectives. The licence holder advised the amendments do not increase any emissions, and all works are to be completed within the existing infrastructure footprint.

Table 1. Amendment scope

Proposed modifications	
1.	Installation of new piping, blower and instrumentation to enable Acid Gas Removal Unit (AGRU) off-gas and MEG storage off-gas to be directly injected to the RTO combustion chamber.
2.	Installation of a new smaller diameter vent stack (A8b) for the disposal of waste streams from the AGRU and MEG storage for use when the RTO is offline/unavailable
3.	Modifications to the RTO control, instrumentation, safety/emergency relief vents and safeguarding system.

The RTO is an air pollution control system used to oxidise low concentration residual separation by-products (VOCs) from the Pluto Train 1 acid gas removal unit (AGRU) and off-gas from the mono-ethylene glycol (MEG) storage. The licence holder advised that the RTO operates reliably (>93% availability over the last four years) and during the times when it is offline or unavailable, AGRU and MEG storage off-gases are discharged via the RTO bypass vent stack (authorised emission point A8a). Scarborough gas has a low CO₂ composition resulting in a lower flow rate of off-gas from the AGRU and MEG storage to the RTO. In order to safely disperse of lower flow rate gases when the RTO is offline or unavailable, a smaller diameter vent stack is required to ensure adequate exit velocity is maintained.

The licence holder therefore proposes to install a second smaller diameter bypass vent (emission point A8b) adjacent to the existing bypass vent stack. The new bypass vent will be at least 30 metres high and 110 mm in diameter in order to ensure adequate dispersion of the off-gases is achieved. Associated with these works the licence holder will also install infrastructure to direct AGRU and MEG storage off-gases directly to the RTO combustion chamber and will make modifications to the RTO control, instrumentation, safety/emergency relief vents and safeguarding system to ensure safe and reliable operation of the RTO combustion systems to limit the frequency and duration of use of the RTO bypass vents.

Figure 1 and Figure 2 were provided by the licence holder detailing a flow-scheme overview of the proposed works.

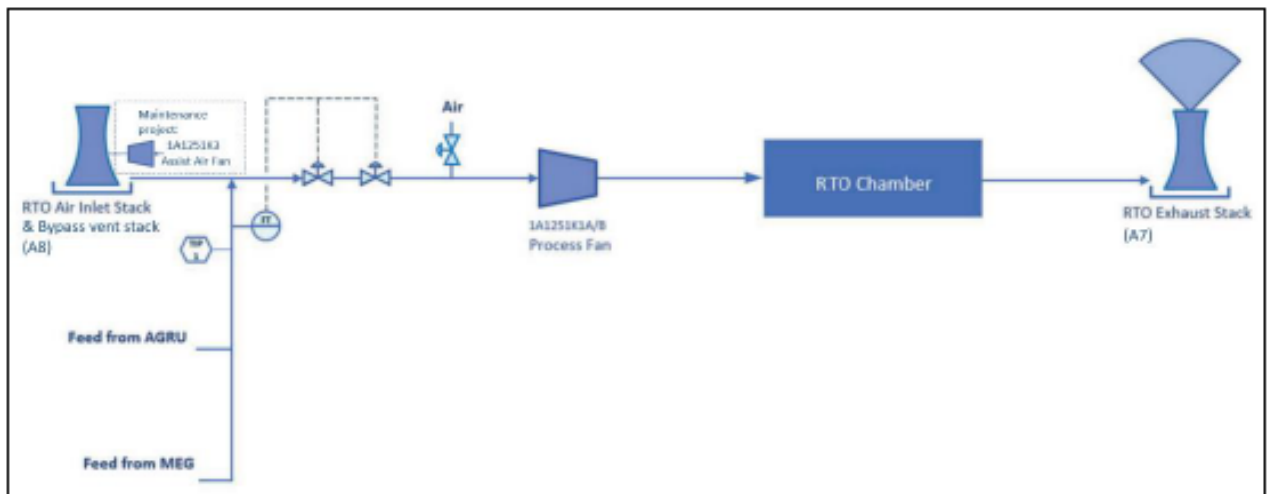


Figure 1. Current RTO arrangement.

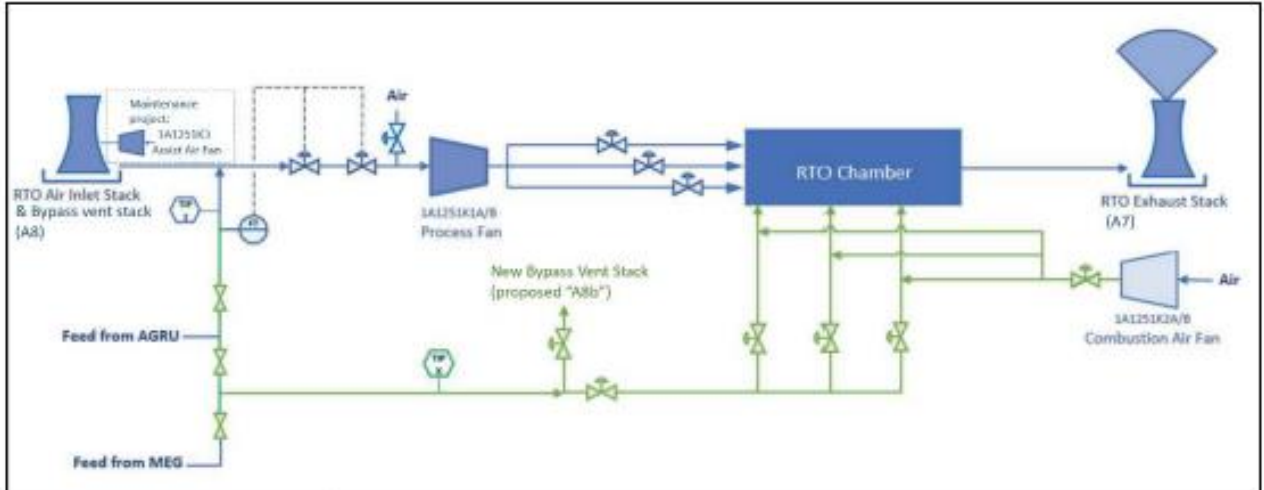


Figure 2. Proposed modified RTO arrangement.

3. Risk assessment

The department assesses the risks of emissions from prescribed premises and identifies the potential source, pathway and impact to receptors in accordance with the *Guideline: Risk assessments* (DWER 2020). Risk ratings are assessed in accordance with the *Guideline: Risk Assessments* (DWER 2020) for those emission sources which are proposed to change. A risk assessment was previously undertaken

The proposed works will result in an additional emission point on the premises (A8b) which will be used to discharge lower flow rate off-gases from the AGRU and MEG storage when the RTO is unavailable. This change does not constitute an increase or significant change to the premises air emissions as the existing RTO bypass vent stack (A8a) has already been assessed and is already authorised for use in this manner. It is however unsuitable for safe discharge of lower flow rate gases, necessitating installation of an alternate RTO bypass vent which can be used instead when required for discharge of lower flow rate gases when the RTO is unavailable.

The risk profile of the premises air emissions is therefore not expected to change as a result of the proposed amendments to the RTO, and existing licence conditions relating to air emissions will continue to apply, therefore no further risk assessment has been undertaken for this amendment.

4. Consultation

The licence holder was provided with the draft Amendment Report on 18 November 2024. Comments received from the licence holder on 12 December 2024 have been considered by the Delegated Officer as detailed in Appendix 1.

5. Decision

Based this assessment the delegated officer has determined that the proposed modifications to the RTO as outlined in Table 1 do not alter the risk profile of the premises and has therefore determined to amend the licence to authorise the modifications to the RTO and the discharge of emissions via the alternate RTO bypass vent when the RTO is unavailable.

In determining to amend the licence the delegated officer has considered the following:

- The RTO modifications have been designed to ensure continued safe and reliable operation of the RTO combustion systems when processing of Scarborough gas commences and to limit the frequency and duration of use of the RTO bypass vents,

as well as safe dispersion of gases when the RTO is unavailable via an RTO bypass vent.

- The RTO modifications will not change the current risk profile of the premises air emissions, and the risks posed by ongoing emissions from the premises will continue to be subject to the existing licence conditions which include quarterly reporting of the status of the RTO to inform the department when it has been offline.
- The RTO bypass vents are designed to be used at times when the RTO is unavailable, therefore quarterly and annual reporting requirements have been amended to include reporting utilisation of the RTO bypass emission point so the department can verify the RTO bypass emission point use is in line with the assessed operational strategy of use when the RTO is unavailable.
- The licence holder's design specifications for the RTO bypass vent are critical controls to ensure safe dispersion of gases from the vent and have therefore been specified as infrastructure construction controls in the licence with associated compliance reporting for the works upon completion.
- Due to the infrequent nature and short duration of the use of the RTO bypass vents, they are not suitable locations for stack monitoring.
- The amendment application scope does not include the processing of Scarborough gas and this has not been considered in this assessment. Should the licence holder determine that the processing of Scarborough gas requires approval under section 53 of the EP Act obligation lies with the licence holder to seek any necessary approval if it is required.

5.1 Licence updates

As part of this amendment the delegated officer has taken the opportunity to update the format of the licence to align with the department's current template.

In amending the licence, the delegated officer has:

- updated the format and appearance of the licence;
- revised condition numbers, and removed any redundant conditions and realigned condition numbers for numerical consistency; and
- updated reporting and record keeping conditions consistent with the current DWER licensing format.

The obligations of the licence holder have not changed in updating the licence therefore no additional risk assessment relating to previously assessed activities has been undertaken. The full details of the amendments to the licence are included in section 6.1. The decision report for the previous licence will remain on the DWER website for future reference and will act as a record of DWER's decision making.

6. Conclusion

Based on the assessment in this Amendment Report, the delegated officer has determined that a revised licence will be granted, subject to conditions commensurate with the determined controls and necessary for administration and reporting requirements.

6.1 Summary of amendments

Table 6 provides a summary of the proposed amendments and will act as record of implemented changes. All proposed changes have been incorporated into the revised licence as part of the amendment process.

Table 2. Summary of licence amendments and updates

Existing Condition	Condition Summary	Revised licence condition	Conversion Notes
Interpretation 1.1.1, 1.1.3, 1.1.4	Definitions from the Act Referencing Australian Standards	Interpretation	Interpretation updated to current format. Conditions which previously formed the interpretation (noted) have been removed as they are redundant.
1.1.2	Defined terms	Table 12	Definitions have been moved to a separate section of the licence. Definitions for AACR/Approved form, Act/EP Act, and Licensee/licence holder have been updated to current format and definitions for ACN, condition, department; DWER, discharge, emission, NTU, prescribed premises, suitably qualified mechanical engineer and WWTP have been added. Licensee has been changed to licence holder throughout the licence to align with current terminology.
2.1.1	Licence holder to record and investigate exceedances	Condition 1	New numbering
2.2.1	Emissions to air	Condition 2	Consolidated air, land and surface water authorised discharge conditions into one.
2.3.1	Emissions to surface water		
2.4.1	Emissions to land		
2.2.2	Emissions - air limits	Condition 3	Condition wording updated and new numbering
2.2.3	Management Actions	Condition 4	New numbering
2.4.2	Emission limits	Condition 5	
3.1.1	Monitoring in accordance with AS5667.1	Condition 6	
3.1.2	Monitoring – Minimum days between samples	Condition 7	
3.1.3	Monitoring – recording production and throughput	Condition 8	
3.1.4	Monitoring – calibration of equipment	Condition 9	
3.1.5	Monitoring – Reporting to CEO	Condition 10	
3.2.1	Monitoring - discharges to air	Condition 11	
3.2.2	Air monitoring emission sampling done in accordance with AS4232.1	Condition 12	
3.2.3	Air monitoring emission sampling done by accredited person	Condition 13	

Existing Condition	Condition Summary	Revised licence condition	Conversion Notes
3.3.1	Surface water emissions monitoring	Condition 14	
3.4.1	Land emissions monitoring	Condition 15	
3.4.2	Land discharge monitoring contingency	Condition 16	
4.1.1	Records	Condition 17 and 18	Records requirements updated to current licence format and new numbering
4.1.2	Persons left in charge of site responsibilities	Removed	Redundant condition removed
4.1.3	AACR requirement	Condition 20	Condition wording updated and new numbering
4.1.4	Complaints management system	Condition 19	
4.2.1	AER requirements	Condition 21	Condition wording updated and new numbering Addition of reporting RTO availability and bypass emission point utilisation
4.2.2	AER requirements	Condition 22	Condition wording updated and new numbering
4.2.3	Non annual reporting requirements	Condition 23	New numbering and updates to clarify quarterly RTO reporting and include additional RTO bypass emission point use in the quarterly report.
4.3.1	Notification requirements	Condition 24	New numbering
New conditions	NA	Condition 25	Works condition included to authorise assessed works with key infrastructure controls
		Condition 26 and 27	Department mandated compliance reporting conditions for works
Schedule 1	Emissions points and monitoring locations	Figure 2	Figure 2 updated, includes new authorised emission point

References

1. Department of Environment Regulation (DER) 2015, *Guidance Statement: Setting Conditions*, Perth, Western Australia.
2. Department of Water and Environmental Regulation (DWER) 2020, *Guideline: Risk Assessments*, Perth, Western Australia.
3. DWER 2019, *Guideline: Decision Making*, Perth, Western Australia.
4. Woodside Burrup Pty Ltd, Application to amend L8752/2013/2 including attachments prepared by Woodside Burrup Pty Ltd April 2024, Perth, Western Australia .

Appendix 1: Summary of licence holder's comments on risk assessment and draft conditions

Condition	Item	Licence holder comment	DWER response
Condition 2 - Table 1	All	Requested condition wording revert to the existing wording in the licence rather than the proposed changes which are outside the scope of the amendment application and are considered to alter existing obligations.	The condition wording was reverted to align with the existing licence as the intent of any administrative changes is not to alter existing obligations.
Condition 2 - Table 1	Stack height of Bypass Vent P12D05	Requested the discharge point height for the bypass vent be altered from 30 m to greater than 30 m to provide flexibility should there be potential changes deemed necessary during detailed engineering design and construction. Requested that the conditioning reflects the minimum height of the discharge point.	Changed as requested as increased stack height does not increase risk associated with emissions from the discharge point.
Condition 2 - Table 1	NOTE 1: Discharge points A8a and A8b	<p>Requested removal of Note 1 which restricted use of emission points A8(a) and (b) to periods when the RTO connected to discharge point A7 is offline as it is inconsistent with the intended use of the RTO and its modified design. Use of the wording 'offline' is also inconsistent with the Amendment Report which refers to the RTO as 'unavailable'.</p> <p>The existing licence does not include this note for the existing RTO bypass vent, discharge point A8a. If to the requirement is retained in its current form, it may inadvertently impair Woodside's ability to optimise the use of this emission control abatement technology. Flexibility may be required across the system in order to optimise availability, such as thermally destructing one out of the two waste gas streams, instead of being required to vent both (MEG storage and AGRU) waste gases in order to comply with the licence. Utilisation of the new bypass vent / valving and piping systems supports optimised availability of the system in cases where variable rate and composition could potentially cause processing instability. Woodside will continue to optimise RTO processing up-time and complete applicable notifications with regard to RTO operational status.</p>	Note 1 removed and requirements to report utilisation of the RTO and its bypass emission points A8(a) and (b) to the department via quarterly and annual reports to allow for the department to verify that RTO bypass use is in line with the assessed operational strategy.
Condition 19	Complaint recording details	Requested the condition wording is updated to clarify that only complaints and details relevant to alleged emissions from the premises are applicable under this condition as stakeholder	Part c of the condition altered to stipulate that complaint details, concerns and issues are "in relation to the alleged emissions from the premises". The condition is

Condition	Item	Licence holder comment	DWER response
		engagement and feedback received under other regulatory regimes or instrument consultation frameworks should not be captured.	intended only to apply to complaints relating the alleged emissions from the premises.
Condition 25, - Table 11	New bypass vent design requirements	<p>Requested the following clarifications to design requirements for the RTO pipework, blower and instrumentation components:</p> <p>“a) The infrastructure amendment must be constructed to provide a new additional pathway for off-gases from AGRU and/or MEG to be able to be direct to the RTO combustion chamber to support safe operation”</p> <p>The existing wording does not accurately reflect the modified RTO design and operating philosophy in line with the amendment application. The modified RTO design will involve installing a new pathway to allow direct injection of gases to the RTO combustion chamber, whilst also retaining the existing pathway for waste gases to be pre-mixed and combined with inlet air. Woodside is mindful of ensuring the existing operational arrangement of the RTO is retained in the licence conditions (i.e. AGRU and MEG waste streams pre-mixed with air prior to entering the RTO, not direct injection), and allow for future operational flexibility for direct injection to the RTO combustion chamber. The use of each arrangement is subject to process gas conditions and operational needs to optimise performance of the plant.</p>	Condition wording revised based on the licence holder’s comments to better reflect the modified RTO design.
		The 100mm diameter included in Woodside’s amendment application represented the nominal pipe size, not the internal diameter. Allowing for material thickness, the maximum internal diameter of the exhaust stack is expected to be less than 110mm. Requested the maximum internal diameter is increased to 110 mm.	Condition changed as requested as the increased diameter will not increase risk associated with emissions from the discharge point.
Condition 27 and definitions	Definition for suitably qualified mechanical engineer	Requested removal of the requirement for a suitably qualified mechanical engineer to be employed by an independent third party. Woodside has extensive access to both in-house and third-party mechanical engineers (working under existing Woodside contracts) who have the experience and technical capability to fulfill the definition requirements.	Recognising that the licence holder has access to suitably qualified engineers in house the requirement to be employed by an independent third party has been removed from the definition.

Condition	Item	Licence holder comment	DWER response
Miscellaneous	NA	The licence holder provided additional information and maps requested to clarify emission point details and locations as well as details of error corrections required in the licence and decision report.	The licence and decision report were updating accordingly where required based on the information provided.