Amendment Report

Application for a licence amendment

Division 3 Part V of the *Environmental Protection Act 1986*

Licence number	L8159/2004/2
Licence holder	EDL LNG (WA) Pty Ltd
ACN	064 437 789
DWER file number	DER2014/001067-3
Premises	Maitland LNG Facility North West Coastal Highway MAITLAND WA 6714 Legal description – Part of Lot 3002 on Plan 42721
Date of report	10 June 2021
Status of report	Final

Amendment description

This amendment is made pursuant to section 59 of the *Environmental Protection Act 1986* (EP Act) to amend the existing licence issued for a prescribed premises as set out below. This notice of amendment is hereby given under section 59B(9) of the EP Act.

This amendment is limited to changes to more accurately reflect the site's design and risk profile for stormwater at the premises. No other changes have been requested by the licence holder.

In completing the assessment documented in this report, the department has considered and given due regard to its regulatory framework and relevant policy documents which are available at https://dwer.wa.gov.au/regulatory-documents.

Purpose and scope of assessment

EDL LNG (WA) Pty Ltd (EDL / licence holder) has applied to amend their existing licence L8159/2004/2), to more accurately reflect the site's design for managing stormwater, and the risk of subsequent stormwater release from the premises.

Background

The licence holder currently operates the Maitland Liquefied Natural Gas (LNG) plant, a small scale LNG production plant located in the Maitland Strategic Industrial Area (SIA), about 20 km west of Karratha.

The plant was established in 2007 and produces up to 180 t/d of LNG from natural gas supplied from the Dampier-to-Bunbury Natural Gas Pipeline (DBNGP). The plant is powered by an on-site 8.9 MW power station (3 x 2.8 MW solar centaur gas turbines), and an additional 1 MW gas engine is used to provide power to an external third party.

Proposed amendments

Authorised stormwater discharge points

The licence holder advises there are 11 bunded areas at the premises, most for containing spillage from storage tanks and transfer of fuels, chemicals and dangerous goods. Following rainfall events, stormwater contained in these bunded areas is currently transferred to two bunds that are authorised for discharge to the environment.

The licence holder has requested that all 11 bunded areas be authorised as discharge points on the licence, such that they can be verified as being uncontaminated and directly emptied (via discharge to the environment), instead of transferring to the current authorised discharge points.

The licence holder advises that bunds are inspected on a monthly basis, and in the event of a leak or spill, the bund is cleaned and drained to a dedicated tank for off-site liquid waste disposal. Bunds are typically maintained in a clean and dry condition.

The licence holder proposes that after a rainfall event, stormwater collected in each bund will be field tested using hydrocarbon test strips, which will instantly detect lubricating oil at concentrations above 5 mg/L, and discharged to ground if deemed to be uncontaminated. If the presence of hydrocarbons is detected, the water will be drained to a dedicated tank for off-site liquid waste disposal. If there is any doubt about the quality of the water, it will be disposed as liquid waste and not discharged to ground.

The licence holder has provided a list of bunds on the premises and a summary of spillage events (Table 1), where it is noted there has only been one spill of significance over the 14 years of operations to date, being a spill of 100 L in the amine tank bund.

Table 1: Spills and leaks from bunded areas at the Maitland LNG plant

Bund ref	Associated equipment	Liquid chemical held within the bund	Recorded spills or leaks
9	De-ethaniser column skid	TEG (process flow in pipework only)	Nil loss of containment in 14 years
10	Amine contractor vessel	Amine/water mix (40/60) contained within pipework and vessels	Nil loss of containment in 14 years
13	Amine plant skid	Amine/water mix (40/60) 5,000 L Spills and leaks contained into segregated slops tank and recycled back to process	Nil loss of containment in 14 years
		2 x amine pump oil (15 L each)	Nil loss of containment in 14 years
14	TEG heater skid	TEG (see SDS) 10,000 L	5 L through handling spillage
16	Amine tank	Amine/water mix (40/60) 1,000 L	100 L through process losses (drains tank)
33	LNG impoundment basin	LNG 325,000 L	Nil loss of containment in 14 years
42	TEG tank	TEG	Nil loss of containment in 14 years
		2 x TEG pump oil (1 L each)	Nil loss of containment in 14 years
49	Transformer	Transformer oil 1,000 L	Nil loss of containment in 9 years
53	Drains tank	Waste oil / oil water collection	Nil loss of containment
54	Demineralised water tank	Demineralised water, for diluting of amine into amine process mix @ 40% amine	Clean water only from potable water through RO plant
55	Transformer	Transformer oil 1,000 L	Nil loss of containment in 14 years

NATA accredited testing

As mentioned above, the licence holder proposes to conduct field sampling of hydrocarbons, instead of having to collect samples in accordance with relevant Australian standards and analysis by a NATA accredited laboratory.

This is on the grounds of the requirements being impractical due to the remoteness of the site, where the samples would need to be preserved and transported to Perth for analysis. This would result in significant delays in waiting for the results, and thus restrict the ability of the licence holder to release water from the bunds in a timely manner, when required.

Location and receptors

The premises is located in the southeastern corner of the industrial core of the Maitland SIA. The SIA was previously part of the Karratha Pastoral Station and is currently largely undeveloped, with the Maitland LNG plant being the only established industry to date.

The North West Coastal Hwy, a major transport route between Geraldton and Port Hedland, runs along the southern boundary of the SIA. The DBNGP traverses the SIA and connects to the premises via a 3.3 km buried pipeline.

The Maitland SIA is located on a coastal plain which is broad, low-lying, and slopes gently seawards and is traversed by a number of north flowing rivers. It has formed on alluvium and is fringed on the northern boundary by tidal and salt flats, mangrove communities, sand shoals and sand dunes. Sediments include clay, sand, silt and calcrete, with the soils comprising red clays, cracking clays and red duplex soils.

The Maitland River is located about 7 km west of the premises. Minor tributaries and drainage lines exist within proximity to the premises, with the nearest about 200 m west of the premises boundary. There are no beds or banks or riparian vegetation of significance within immediate proximity to the premises; however the premises has been established above the 100 year annual recurrence interval flood level as the local area is potentially subject to flooding from high sea storm surges, flooding from the Maitland River and surface runoff from ranges to the south.

Vegetation within the Maitland SIA and surrounds belongs to the Pilbara Bioregion, which is dominated by hummock grasslands, acacia forests and woodlands. Smaller areas of acacia shrublands, tussock grasslands, chenopod and samphire scrublands, salt marshes, mangroves and euclaypt woodland along watercourses also occur. However, the conservation value of the local area is low, due to extensive degradation from fire and stock grazing.

Risk assessment

Determination of emission, pathway and receptor

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).

To establish a risk event there must be an emission, a receptor which may be exposed to that emission through an identified actual or likely pathway, and a potential adverse effect to the receptor from exposure to that emission.

Risk ratings

Risk ratings have been assessed in accordance with the *Guideline: Risk Assessments* (DWER 2020) for each identified emission source and takes into account identified potential source-pathway and receptor linkages. Where linkages are in-complete they have not been considered further in the risk assessment.

Where the licence holder has proposed mitigation measures/controls, these have been considered when determining the final risk rating. Where the delegated officer considers the licence holder’s proposed controls to be critical to maintaining an acceptable level of risk, these will be incorporated into the works approval as regulatory controls.

Additional regulatory controls may be imposed where the applicant's controls are not deemed sufficient. Where this is the case the need for additional controls will be documented and justified in the below table.

Risk assessment table

The table below describes the risk events associated with the amendments consistent with the *Guideline: Risk Assessments* (DWER 2020). The table identifies whether the risk events are acceptable and tolerated, or unacceptable and not tolerated, and the appropriate treatment and degree of regulatory control, where required.

Risk Event				Consequence rating[1]	Likelihood rating[1]	Risk[1]	Reasoning	Regulatory controls
Source/ Activities	**Potential emissions**	**Potential receptors, pathway and impact**	**Licence holder controls**					
PROPOSED AMENDMENT								
Authorise all 11 bunded areas as stormwater discharge points, including field testing of stormwater, instead of NATA accredited analysis	Hydrocarbon-contaminated stormwater	Discharge of contaminated stormwater to land, causing contamination of shallow groundwater (3.6 mbgl) and an ephemeral drainage line 200 m southwest	Field testing of stormwater within bunds to verify uncontaminated (≤5 mg/L TRH), prior to direct discharge to land If contaminated, bund drained to dedicated tank for off-site liquid waste disposal	Minimal on-site impacts **Slight**	Probably will not occur in most circumstances **Unlikely**	**Low** Acceptable, subject to licence holder controls	The delegated officer considers there is sufficient separation in place to nearby surface water features. Providing that sufficient testing is conducted prior to discharge to verify the water is uncontaminated, the delegated officer considers it unlikely that environmental receptors will be impacted, and therefore has determined there to be an acceptable risk of allowing the discharge of stormwater from all 11 bunds at the premises. The delegated officer considers the existing threshold for contamination of 15 mg/L TRH is appropriate, and that field testing with hydrocarbon test strips that detect the presence of hydrocarbons above 5 mg/L is acceptable. In accordance with the *Guideline: Risk Assessments* (DWER 2020), as the proposed controls are necessary for maintaining an acceptable level of risk, the existing licence will be revised to reflect the above changes.	Table 1: Infrastructure and equipment requirements – table updated to include all 11 bunded areas Table 2: Authorised discharge points – table updated to include all 11 bunded areas Table 3: Emission discharge limits points – table updated to include all 11 bunded areas Table 4: Monitoring of discharges – requirement to conduct testing of stormwater in accordance with AS and analysed at NATA accredited laboratory, replaced with field testing for hydrocarbons with detection strips

Note 1: Consequence ratings, likelihood ratings and risk descriptions are detailed in the Guideline: Risk Assessments (DWER 2020).

Decision

The delegated officer has determined the proposal to approve all 11 bunded areas as authorised discharge points for stormwater is unlikely to result in a material change to the overall risk profile of the site. This determination is based on the following:

- there being sufficient separation to environmental receptors;
- discharge only occurring after rainfall events, and following confirmation through field testing that the contained water is uncontaminated, prior to discharge;
- water that has been confirmed as being contaminated (≥ 5 mg/L TDS) is drained to a dedicated tank for off-site liquid waste disposal; and
- there being a history of only minor spills and leaks within bunded areas at the premises.

The delegated officer has also determined that due to the low risk of impacts, field testing for the presence of hydrocarbons within stormwater samples is sufficient. As such, the requirement for stormwater samples to be collected in accordance with relevant Australian standards and analysed by a NATA accredited laboratory has been removed from the licence.

Consultation

The licence holder was provided with drafts of the revised licence and this report on 12 May 2021 and made no additional comments.

Conclusion

Based on this assessment, it has been determined that a licence amendment will be granted, subject to conditions commensurate with the determined controls and necessary for administration and reporting requirements.

Summary of amendments

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

Condition no.	Amendment
1 – Table 1	Requirement to treat stormwater before discharge replaced with requirement to test and verify compliance with licence limit (15 mg/L TDS) prior to discharge
2 – Table 2	All bunds, sumps and drains added to table as authorised discharge points, with reference to Schedule 1 map
3 – Table 3	Discharge criteria of 15 mg/L TDS applied to all bunds, sumps and drains from which discharge will occur
5 – Table 4	Requirement to sample stormwater in accordance with Australian Standards and analysis by NATA accredited laboratory replaced with testing by hydrocarbon detection strips for all 11 authorised discharge bunds