Amendment Report

Application for Licence Amendment

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

Licence Number	L8155/2004/2
Licence Holder	EDL NGD (WA) Pty Ltd
ACN	070 941 721
File Number	DER2015/001548
Premises	Broome Power Station 2-4 McDaniel Road MINYIRR WA 6725 Legal description – Part of Lot 1049 on Deposited Plan 213567 As defined by the boundary and coordinates in Figure 1 of the Revised Licence
Date of Report	24 June 2024
Decision	Revised licence granted

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1. Decision summary

Licence L8155/2004/2 is held by EDL NGD (WA) Pty Ltd (licence holder) for the Broome Power Station (the premises), located at 2-4 McDaniel Road, Minyirr, Western Australia.

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 L8155/2004/2 has been granted.

2. Scope of assessment

2.1 Regulatory framework

In completing the assessment documented in this Amendment Report, the Department of Water and Environmental Regulation (department) has considered and given due regard to its Regulatory Framework and relevant policy documents which are available at DWER Regulatory documents | Western Australian Government (www.wa.gov.au).

2.2 Application summary

On 8 November 2023, the licence holder submitted an application to the department to amend Licence L8155/2004/2 under section 59 and 59B of the *Environmental Protection Act 1986* (EP Act). The application seeks to remove the requirement for hydrocarbon contaminated stormwater from the transformer bunds to be directed to an oily water separator prior to discharge via L1. The licence holder seeks to instead incorporate in the licence that water contained within the transformer bunds is checked for contamination and discharged to land on the premises if it is uncontaminated.

In addition, four 2,500 litre diesel day tanks on the premises have been replaced by a single 11,000 litre self-bunded day tank requiring an amendment to the infrastructure table in the licence.

The following amendments are being sought to authorise these changes:

- Amendment to Table 1 to allow discharge of stormwater from the transformer bunds complying with Table 5 without going through the oily water separator.
- Amendment to the number of diesel day tanks specified in Table 1.
- Amendment of Table 5 to allow manual release of stormwater that does not have visible oil and grease.
- Amendment to Table 7 to allow visual monitoring of stormwater before discharge to the environment.

Background

Water collected in the transformer sumps is currently directed to an underground oil-water separator system which the licence specifies must clean the water to better than 15 mg/L for the water to be authorised to be discharged via discharge point L1.

The licence holder has encountered problems with this system during extreme rainfall events over several years. Experience has demonstrated that this type of system is poorly suited to the climate of extreme wet and extreme dry seasons. The system is also difficult to maintain and monitor because it is underground.

The licence holder proposes the following solution:

- The sumps in the transformer bunds will be blocked so that no stormwater from the

concrete bunds will flow to the oil-water separator system.

- Stormwater will be collected in the sump instead.
- Either during a rainfall event or afterwards, the stormwater will be checked for any sign of contamination and clean water will be released to ground or contaminated water pumped to a container for disposal.
- The licence holder is also considering installing one or more hydrocarbon filters in the bund wall which would allow the automatic release of clean water from the bund via the filters.
- The transformer bunds are located in a flat area covered with gravel.

The licence holder has proposed that the licence does not specify which method of treatment and management is used for potentially contaminated stormwater from the transformer bunds but that it only specifies criteria for release of the water to the environment.

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).

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.

3.1 Source-pathways and receptors

3.1.1 Emissions and controls

The key emissions and associated actual or likely pathway during premises operation which have been considered in this Amendment Report are detailed in Table 1 below. Table 1 also details the control measures the licence holder has proposed to assist in controlling these emissions, where necessary.

Table 1: Licence Holder controls

Emission	Sources	Potential pathways	Proposed controls
Potentially contaminated stormwater (hydrocarbons)	Transformer bunds	Direct discharge and overland runoff contaminating soil or infiltrating groundwater	Inspection of bund for signs of hydrocarbon contamination. If water in bund is observed to be clean it will be discharged to land. If water in bund is observed to have signs of hydrocarbon contamination assume it is greater than 15 mg/l and dispose of offsite by waste carrier. Bund walls are 0.5 metre high
Hydrocarbons	Leaks and spills from storage of diesel		Self bunded tank located inside a concrete and cement brick bund with permeability less than 1 x 10^{-9} m/s.

3.1.2 Receptors

In accordance with the *Guideline: Risk assessments* (DWER 2020), the Delegated Officer has excluded employees, visitors and contractors of the Licence Holder's from its assessment. Protection of these parties often involves different exposure risks and prevention strategies, and is provided for under other state legislation.

Table 2 below provides a summary of potential human and environmental receptors that may be impacted as a result of activities upon or emission and discharges from the prescribed premises *(Guideline: Environmental siting* (DWER 2020)).

Table 2: Sensitive human and environmental receptors and distance from prescribed activity

Human receptors	**Distance from prescribed activity**
Accommodation units	550 m east of premises
Residential areas	800 m north and west of the premises
Environmental receptors	**Distance from prescribed activity**
Groundwater/Surface Water	Located in the Broome Groundwater Area. Groundwater depth varies from 15.6 to 17.8 metres below ground level across the site. The nearest surface water is Roebuck Bay about 1.1 kilometres southeast of the premises.

3.2 Risk ratings

Risk ratings have been assessed in accordance with the *Guideline: Risk Assessments* (DWER 2020) for those emission sources which are proposed to change and take into account potential source-pathway and receptor linkages as identified in Section 3.1. Where linkages are in-complete they have not been considered further in the risk assessment.

Where the licence holder has proposed mitigation measures/controls (as detailed in Section 3.1), 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 licence as regulatory controls.

Additional regulatory controls may be imposed where the licence holder's controls are not deemed sufficient. Where this is the case the need for additional controls will be documented and justified in Table 3.

The Revised Licence L8155/2004/2 that accompanies this Amendment Report authorises emissions associated with the operation of the premises.

The conditions in the Revised Licence have been determined in accordance with *Guidance Statement: Setting Conditions* (DER 2015).

Table 3. Risk assessment of potential emissions and discharges from the Premises

Risk Event					Risk rating[1] C = consequence L = likelihood	Licence Holder's controls sufficient?	Conditions[2] of licence	Reasoning
Source/Activities	**Potential emission**	**Potential pathways and impact**	**Receptors**	**Licence Holder's controls**				
Discharge of untreated stormwater from transformer bunds.	Potentially contaminated stormwater (hydrocarbons)	Direct discharge and overland runoff contaminating soil or infiltrating groundwater	Broome Groundwater Area (15.6 mbgl)	Refer to Section 3.1	C = Minor L = Possible **Medium Risk**	N	Condition 1, 2, **5 and 9**	The delegated officer reviewed the proposed controls and determined that a visual inspection is not a sufficiently robust means to determine the suitability of untreated stormwater from transformer bunds for discharge as it is operator dependant therefore not replicable or measurable against criteria. To ensure the risk of contamination from discharge of potentially contaminated stormwater is sufficiently low the delegated officer has determined to prescribe the use of hydrocarbon detection strips to determine whether untreated potentially contaminated stormwater collected in the transformer bunds is suitable for discharge. Hydrocarbon strips are considered a suitable measure as they are able to detect the presence of hydrocarbons down to 10 mg/L. The licence conditions will prescribe that stormwater collected in transformer bunds must be tested with hydrocarbon strips prior to discharge with water only able to be discharged where the strips indicate hydrocarbons aren't present or alternatively must be discharged via automatic hydrocarbon filters designed to achieve the licence limit of 15 mg/L.

Risk Event					Risk rating[1] C = consequence L = likelihood	Licence Holder's controls sufficient?	Conditions[2] of licence	Reasoning
Source/Activities	**Potential emission**	**Potential pathways and impact**	**Receptors**	**Licence Holder's controls**				
Storage of diesel	Hydrocarbons (diesel)		Broome Groundwater Area (15.6 mbgl)	Refer to Section 3.1	C = Moderate L = Rare **Medium Risk**	Y	Condition 1,	The delegated officer reviewed the as constructed information provided on the new diesel tank and bunding and determined that the bunding is adequate secondary containment for the diesel store. Existing operational requirements in condition 1 for diesel day tanks will apply to the new infrastructure.

Note 1: Consequence ratings, likelihood ratings and risk descriptions are detailed in the *Guideline: Risk assessments* (DWER 2020).
Note 2: Proposed Licence Holder's controls are depicted by standard text. **Bold and underline text** depicts additional regulatory controls imposed by department.

4. Consultation

Table 4 provides a summary of the consultation undertaken by the department.

Table 4: Consultation

Consultation method	Comments received	Department response
Local Government Authority advised of proposal 12 March 2024	The Shire of Broome responded on 17 April 2024 with the following comments: • What are the processes/ procedures for the visual inspection undertaken to determine if contaminants are present in the bunded stormwater. There are concerns that a visual inspection only may not identify contaminants in the water and that an inconsistent approach to the visual inspections may result in varying assessments of the presence of contaminants. • It is noted that the approach to capture the stormwater without overflowing excludes flood events. It appears no information has been provided on how any contaminants would be dealt with in the event of a flood situation or where the bunds overflow in a high rain event. The assumption would be that the overflow would make its way into the stormwater system at the front of the property without inspection or treatment. This would appear to be the same as the current situation where the oily water separator does not work in high rain events.	• The Delegated Officer agrees that a visual inspection is not sufficient, and has included in the licence a requirement to use hydrocarbon detection strips prior to the release of untreated stormwater from the transformer bunds. • The Delegated Officer notes that the bund walls are 0.5 metres high. The 1% annual exceedance probability for 24 hours is 408 mm. With daily inspection incidence of un-supervised over-topping of the bund will be extremely rare and will be accompanied by a large volume of water from outside the bund.
Licence Holder was provided with draft amendment on 5/6/2024	The applicant replied on 13/6/2024 with a new map for Figure 2 and a request that the licence allow for automatic discharge of filtered stormwater from the transformer bunds.	The Delegated Officer accepted the new map and amended the licence to authorise discharge of stormwater filtered by automatic hydrocarbon filters subject to annual testing to confirm adherence to 15 mg/L limit, by amending Tables 2, 5 and 7.

5. Decision

The Delegated Officer has determined that the proposal to cease use of the transformer bunds oil-water separation system and instead use a process of checking for contamination of collected stormwater before discharge from the transformer bunds, or discharge via automatic hydrocarbon filters will not significantly alter the risk profile of the premises. In reaching this conclusion the Delegated Officer took into account the following:

- The existing oily water separator is ineffective during high flow events which occur on occasions due to the climate of the premises location which has resulted in discharge of stormwater with elevated hydrocarbons into the environment on a number of occasions;
- The licence holder will be required to use hydrocarbon detection strips to test for the presence of hydrocarbon contamination in stormwater collected in the bunds prior to discharge of alternatively discharge the water via automatic hydrocarbon filters,
- The current discharge criterion of 15 mg/L TRH in the existing licence is maintained by specifying a limit of no detection of TRH when tested with hydrocarbon detection strips (capable of detection of 15 mg/L TRH or less) for untreated water discharged from the transformer bunds; and;
- The bunds are sufficiently deep such that overtopping of contained stormwater is not expected to occur other than in very rare and extreme rainfall events.

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 5 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 5: Summary of licence amendments

Condition no.	Proposed amendments
1	Amendment of Table 1 to remove reference to oily water separator L1 and specify that hydrocarbon contaminated water from C and F station bunds must be directed to oily water separators L2 and L3 for treatment.
2	Amendment of Table 2 to remove L1 as an authorised discharge point and include the transformer bunds as discharge points.
5	Amendment of table 5 to remove L1 and instead specify a TRH discharge limit for transformer bund outlets TB1-TB5 of nil detection via hydrocarbon detection strips if untreated or <15 mg/L where discharged via automatic hydrocarbon filters.
9	Amendment of Table 9 to include monitoring by hydrocarbon detection strip prior to any discharge of untreated water from the transformer bunds or annual testing of discharge from the bunds where water is discharged via the automatic hydrocarbon filters
Definitions	Definitions included for hydrocarbon detection strips and automatic hydrocarbon filters.

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: Environmental Siting*, Perth, Western Australia.
3. DWER 2020, *Guideline: Risk Assessments*, Perth, Western Australia.
4. EDL 2023, *Environmental Licence Amendment Application – Supporting Information Broome Power Station*, Brisbane, Queensland