Government of Western Australia
Department of Water and Environmental Regulation

# Amendment Report

## Application for Licence Amendment

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

| | |
|---|---|
| **Licence Number** | L8803/2013/1 |
| **Licence Holder** | BHP Iron Ore Pty Ltd |
| **ACN** | 008 700 981 |
| **File Number** | INS-0001878 / APP-0032881 |
| **Premises** | Yarnima Power Station<br>Part of AML70/244<br>NEWMAN WA 6753 |
| **Date of Report** | 25 June 2026 |
| **Decision** | Revised licence granted |

Michael Greenslade
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**MANAGER, HEAVY INDUSTRIES**
an officer delegated under section 20 of the *Environmental Protection Act 1986* (WA)

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# 1. Decision summary

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 construction and operation of the proposed Stage 4 works at the premises. As a result of this assessment, Revised Licence L8803/2013/1 has been granted.

# 2. Scope of assessment

## 2.1 Regulatory framework

In completing the assessment documented in this Amendment 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.

## 2.2 Background

BHP Iron Ore Pty Ltd (BHP, the Licence Holder) currently operate the Yarnima Power Station located approximately 2km north-west of Newman under Licence L8803/2013/1. The premises provides critical power supply for BHP's mining operations as well as domestic supply for the town of Newman. Currently, the Premises has a power generation capacity of 233 megawatts (MW) and comprises of the following:

- Three Siemens SGT-800 Combined Cycle Gas Turbines (CCGTs) with Heat Recovery Steam Generators (HRSG);
- Two steam turbine generators that utilise the steam generated from the HRSGs;
- Temporary Power Station comprising of 35 Cummins QSK50 1.03 MW (de-rated capacity) diesel generators fitted with Selective Catalytic Reduction (SCR) technology;
- Four 0.963MW emergency backup diesel generators (Cummins KTA50) to supply power should one or more of the Cummins QSK50 engines fails; and
- Three 1.7MW black start diesel generators installed on site (for starting the CCGTs after a power outage).

Additional emergency generators (Emergency Power Station) were installed for a temporary period in 2023 to support maintenance of the Siemens gas turbines however these generators have since been decommissioned.

Fuel storage to support the operation of the power station is provided by two 800 kilolitre (kL) diesel storage tanks.

## 2.3 Application summary

On 12 December 2025, the Licence Holder submitted an application to the department to amend Licence L8803/2013/1 under section 59 and 59B of the *Environmental Protection Act 1986* (EP Act) seeking authorisation for the implementation of Stage 4 expansion works, also known as Inland Power Generation 1 (IPG1).

IPG1 involves the installation of 63 MWe of gas reciprocating engines (GREs) to increase the generating capacity of the premises and meet forecast increases in electricity demand. The additional power will be supplied by 14 Jenbacher J624 engines, capable of 4.5MW of output and operated on natural gas. While the gas engines will also have the ability to operate on a hydrogen/natural gas blend should this become available in the future, the assessment does not consider hydrogen as a fuel source.

The engines will be housed within two engine halls, each accommodating seven engines. Individual exhausts from each engine will be combined into two groups of seven stacks, with each stack constructed to a minimum height of 17.5 metres above ground level. A 572 kilowatt (kW) black-start diesel generator will also be installed to enable start-up of the gas engines during emergency conditions (i.e. when power to the grid is unavailable). Additional oil and coolant stored will be provided to support operation of the GREs and the existing oily water systems extended to service the new infrastructure.

The GREs will operate as a flexible generation system, either collectively to provide 63 MW of efficient baseload power or individually to deliver variable levels of output while maintaining high efficiency. Individual GRE units can be rapidly ramped up or down in response to peak electricity demand. This operational approach allows the CCGTs to operate at full capacity, where they are most efficient, while the GREs respond to incremental fluctuations in power demand. The fast-response capability of the GREs will also support the future integration of renewable energy sources into BHP's inland power grid.

Electrical load will be distributed across GRE units to ensure units are operated as close to the most efficient output of 4.5MW as possible. This means that rather than running one unit at 4MW and one at 2MW, load will be evenly distributed so that both are running at 3MW.

IPG1 replaces the need for the 35 MWe diesel Temporary Power Station which will be decommissioned once the GREs are fully commissioned. The Licence Holder has also requested the removal of the Emergency Power Station from the Licence as this infrastructure has been fully decommissioned.

This amendment will result in changes to both Category 52 and Category 73 activities on the Licence. Table 1 below outlines the proposed changes to the existing Licence.

**Table 1: Proposed design capacity changes**

| Category | Current design capacity | Proposed design capacity | Description of proposed amendment |
|---|---|---|---|
| 52 | 233 MWe | 261 MWe | The primary CCGTs have a total generating capacity of 198MW. This amendment relates to the:<br>• installation of 14 x 4.5MW gas reciprocating engines with a total generating capacity of 63MW; and<br>• decommissioning of the Temporary Power Station (35MW) |
| 73 | 2,000 $m^3$ in aggregate | 2,052 $m^3$ in aggregate | Existing fuel storage is considered sufficient to support the proposed change. New storage to be installed as follows:<br>• 27,000L clean engine oil tank;<br>• 5,000L waste engine oil tank;<br>• 2 x 10,000L coolant storage (waste and clean) |

### 2.3.1 Commissioning

Commissioning will occur over five stages (see below):

**Stage 1** **Construction completion** involves verification against design and marks the point where construction is compete and commissioning can begin. Construction is expected to be completed in January 2028.

**Stage 2** **Pre-commissioning** involves testing of equipment without loads. Tests are performed on equipment in isolation. Power to IPG1 will be provided by a diesel generator during this phase of commissioning. Pre-commissioning is expected to commence in July 2027 for about 10 months (until April 2028).

**Stage 3** **Load commissioning** marks the beginning of environmental commissioning and includes operational testing of the power generating system through the use of a load bank while being isolated from the BHP High Voltage (HV) network. It includes start-up, commissioning and verification of the gas engines design criteria. A diesel generator will be used for start-up and will continue to operate until the gas engines are self-sustaining. The load bank is capable of receiving 12 MW; equivalent to three gas engines partly loaded. Stage 3 is expected to occur over a four-month period commencing in about February 2028.

**Stage 4** **Acceptance testing** occurs when the system is connected to the HV network. The existing Temporary Power Station will be disconnected from the HV network at the commencement of Stage 4 commissioning (although will remain on standby until the end of Stage 5 commissioning). These works are expected to occur over a one-month period.

**Stage 5** **In-service operation testing** is when the system is progressively brought up to nameplate capacity and performance tests (including stack testing) are conducted to verify performance against design criteria. Stage 5 commissioning is expected to commence in July 2028 and continue until proven fully reliable for unrestricted dispatch to the HV network (approximately nine months).

The Temporary Power Station will be fully decommissioned at the completion of Stage 5 (by December 2029 at the latest as required by the State Agreement Approval). Given that these units are containerised gensets, decommissioning is not expected to generate any waste or emissions, with diesel gensets disconnected and transported from the premises via truck.

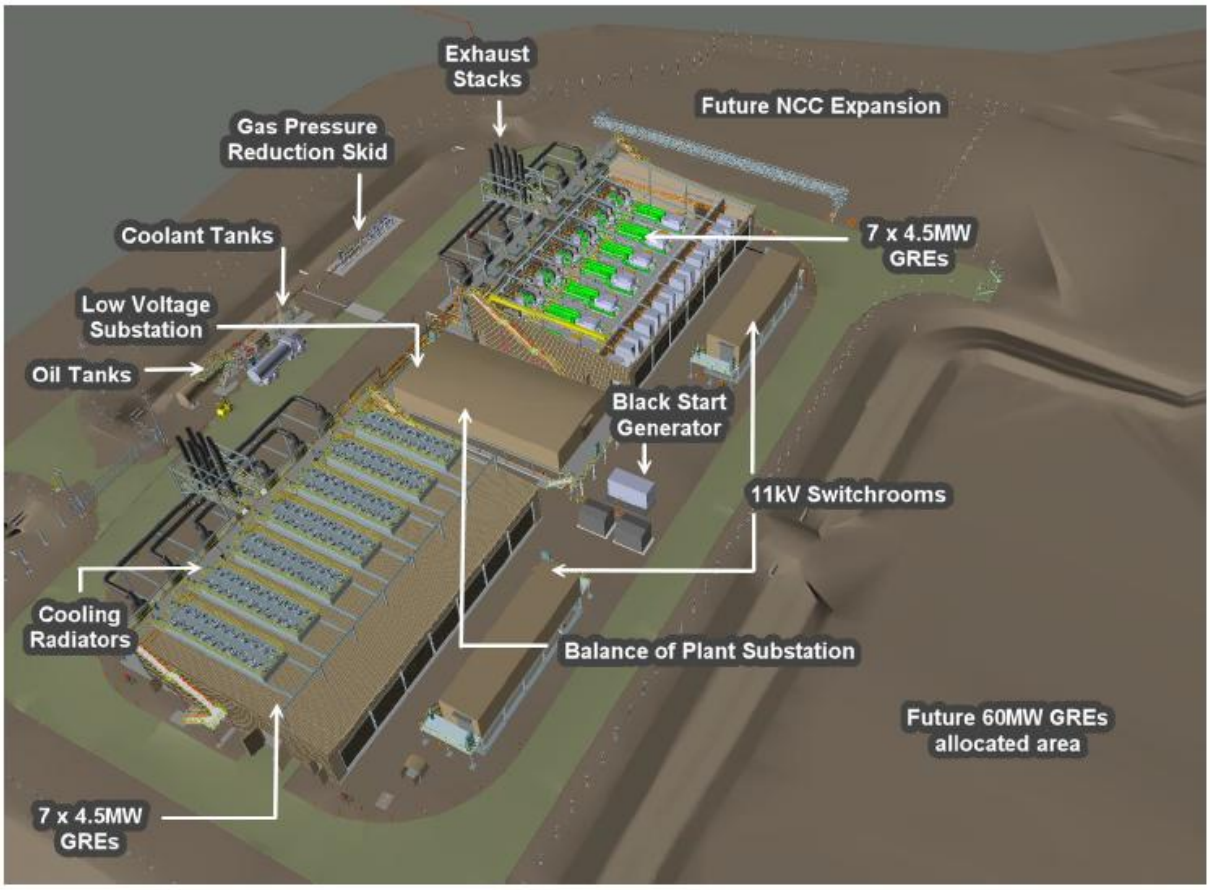


**Figure 1: General layout of IPG1.**

## 2.4 Predictive Emissions Monitoring System

Conditions of the licence previously required the installation of a Predictive Emissions Monitoring System (PEMS) on the CCGTs to replace the existing Continuous Emissions Monitoring System (CEMS), which had been identified as having reliability issues. The licence specified that the PEMS must be installed and certified in accordance with the Unites States Environmental Protection Authority (US EPA) Performance Specification 16 (PS 16), which sets out quality assurance requirements and performance specifications to ensure data accuracy and reliability.

The documentation originally submitted by the Licence Holder did not adequately demonstrate full compliance with PS 16, particularly regarding the relative accuracy requirements. As part of this application, the Licence Holder provided additional Relative Accuracy Test Audit (RATA) results for the PEMS which confirmed that the PEMS meets the certification requirements of PS 16. As a result, the conditions relating to PEMS installation on the CCGTs have been removed, per the Licence Holder's request, following submission and assessment of the new RATA reports which the delegated officer has determined adequately demonstrates compliance with the condition requirements.

Ongoing compliance testing will continue to be required to ensure the PEMS is maintained in accordance with PS 16.

## 2.5 Part IV of the EP Act

The Stage 4 expansion works proposal was referred to the Environmental Protection Authority (EPA) under Part IV of the EP Act in April 2024. The EPA determined to assess the proposal via the level "Referral Information".

The referred proposal was for 120WM of additional power supply at Yarnima Power Station through the installation of gas reciprocating engines, replacing the existing Temporary Power Station.

The EPA released its report and recommendations in December 2024 (EPA Report 1776) which considered greenhouse gas emissions (GHG) as the primary environmental factor for assessment. In its report, the EPA noted that following aspects of the proposal could be managed under Part V of the EP Act:

- clearing of native vegetation (BHP holds a Native Vegetation Clearing Permit (CPS 5617/6) for clearing of vegetation within their lease area, including the Yarnima Power Station premises);
- emissions and discharges from the premises including air and noise; and
- spills and leaks associated with containment infrastructure.

Ministerial Statement 1243 (MS 1243) was granted by the Minister for Environment on 20 January 2025 approving the proposal to install up to 120MW of additional power and subject to conditions relating to GHG emissions.

The delegated officer notes that the current application relates to only 63MW of additional power and is within the scope of the approval granted under Part IV. In accordance with DWER's *Guidance Statement: Setting Conditions*, conditions of a Part V licence must not be *"…contrary to, or otherwise than in accordance with, an implementation agreement or decision under Part IV of the EP Act."* Further, that conditions *"will not unnecessarily duplicate requirements imposed on licensees directly by the EP Act or another written law".* Based on conditions applied through MS 1243, the delegated officer has determined not to unnecessarily duplicate the assessment of GHG emissions as they were considered under EPA Report 1776 nor duplicate requirements of MS 1243 relating to GHG emissions.

# 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 *Guidance Statement: Risk Assessments* (DER 2017).

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 construction and operation of the Stage 4 works which have been considered in this Amendment Report are detailed in Table 2 below. Table 2 also details the proposed control measures the Licence Holder has proposed to assist in controlling these emissions, where necessary.

**Table 2: Licence Holder controls**

| Emission | Sources | Potential pathways | Proposed controls |
|---|---|---|---|
| **Construction** | | | |
| Dust | Installation of equipment including earthworks and vehicle movements. | Air/windborne pathway | Water trucks to be used for dust suppression on roads and open areas.<br>Speed limits will be applied. |
| Noise | | Air/windborne pathway | Work primarily completed during daylight hours. Night works where excessive noise generation is expected will be managed through a construction noise management plan in accordance with the *Environmental Protection (Noise) Regulations 1997*. |
| **Commissioning and operations** | | | |
| Air emissions | Commissioning / operation of gas reciprocating engines | Air/windborne pathway | Temporary Power Station to be decommissioned post commissioning of IPG1.<br>Process controls limit operational capabilities during commissioning including the ability for the GREs and diesel engines of the Temporary Power Station to operate simultaneously (refer to section 0).<br>GREs will be routinely maintained to ensure efficient operation.<br>Licence Holder will conduct annual stack testing on GREs for NOx and CO.<br>Licence Holder will record operational data for the Temporary Power Station in accordance with existing conditions of the Licence.<br>Existing controls on the Licence regarding the operation of the CCGTs including continuous monitoring via PEMS. |
| Noise | | Air/windborne pathway | Engines housed within engine halls that achieve a weighted sound reduction (Rw) of 49 on all facades and the roof.<br>Engine exhausts fitted with silencers.<br>Attenuated ventilation fan and outlets.<br>Noise validation to be carried out through commissioning. |

| Emission | Sources | Potential pathways | Proposed controls |
|---|---|---|---|
| Hydrocarbons | Spills and or leaks from equipment | Direct discharge to land / infiltration to groundwater | GREs will be constructed on bunded concrete pad with collection sumps to capture leaks.<br>Sumps contain level alarms which will cease pumping to the sump if triggered.<br>The bunded area will be connected to the existing stormwater treatment / oily water system with treated stormwater directed to an existing lined evaporation pond.<br>Sump pumps are operated manually and sumps inspected before pumps are activated to ensure only water/contaminated water is directed to the oily water treatment system.<br>The existing oil water separator has sufficient capacity to receive additional waste stream and is fitted with high level alarms to ensure operational capacity is not exceeded.<br>Treated stormwater from the oily water separator is directed to a lined Evaporation Pond for disposal.<br>Major spills observed within secondary containment will be manually removed via vacuum truck.<br>All storage tanks, pipelines and bunding will be constructed in accordance with AS 1940.<br>Coolant and sump oil storage tanks will be double skinned with interstitial probes between skins for leak detection.<br>Large spills associated with oil/coolant storage will be manually removed from the premises by a licensed contractor. Stormwater and minor spills will be directed to the oily water separator.<br>Bunds will be inspected regularly to ensure rainwater does not accumulate, bunds are kept clean, and bund integrity is maintained. |
| Treated stormwater | Storage within the existing Evaporation Pond | Direct discharge to land / infiltration to groundwater (overflow) | Freeboard maintained on the Evaporation Pond to prevent overtopping. |
| | | Seepage / infiltration to groundwater | The Evaporation Pond is lined with a high-density polyethylene (HDPE) liner. |

### 3.1.2 Receptors

In accordance with the *Guidance Statement: Risk Assessment* (DER 2017), 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 3 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 *(Guidance Statement: Environmental Siting* (DER 2016)).

**Table 3: Sensitive human and environmental receptors and distance from prescribed activity**

| **Human receptors** | **Distance from prescribed activity** |
|---|---|
| Residential Premises | 1.7km ESE |
| Newman Golf Course | 1.3km south-east |
| Parnpajinya Aboriginal Community (decommissioned) | 2.7km east |
| Industrial premises (Newman Power Station) | Neighbouring premises (directly SW) |
| **Environmental receptors** | **Distance from prescribed activity** |
| Whaleback Creek - Ephemeral creek that is a major tributary to Fortescue River | 200m SE |
| Newman Water Reserve - Priority 1 Public Drinking Water Source Area (PDWSA) proclaimed under the *Country Areas Water Supply Act 1947* | The Premises is located within the Newman Water Reserve, a P1 PDWSA. Groundwater is located approximately 20m below ground level (bgl). |
| Hamersley – Fractured Rock Aquifer proclaimed under the *Rights in Water and Irrigation Act 1914* | |
| **Cultural receptors** | **Distance from prescribed activity** |
| Aboriginal heritage site | Premises is within boundary of listed heritage site which covers the majority of the Mt Whaleback Mine<br>Other nearby sites:<br>ID: 17394 – 2.3km ENE "Ritual/Ceremonial"<br>ID: 7036 - 3km SW |

## 3.2 Air quality modelling

Environmental Technical Analytics (ETA) were engaged by the Licence Holder to carry out an air quality assessment to predict ground levels concentrations of air pollutants and determine impact to nearby receptors. Predicted levels were compared against the health criteria provided in the *National Environmental Protection (Ambient Air Quality) Measure 2021* (NEPM) to determine the risk of impact on nearby sensitive receptors.

The following scenarios were considered in the modelling both in isolation and cumulatively considering other nearby emission sources (i.e. the adjacent Newman Power Station):

- **Existing:** Three existing CCGTs only operating on natural gas.
- **Proposed:** The existing CCGTs operating on natural gas along with the proposed GREs.
- **Start-up:** All GREs operating under start-up conditions.
- **Emergency:** Existing CCGTs operating on diesel with no GREs operating as they are only capable of operating on natural gas. The cumulative assessment assumes that Newman Power Station is also operating on diesel as a result of interruption to regional gas supply.

NOx is considered the primary pollutant of concern and was considered in all modelled scenarios. For the emergency scenario where the premises operates on diesel, emissions of carbon monoxide (CO), sulfur dioxide ($SO_2$) and particulate matter were also considered as these emissions are generally higher during diesel combustion as opposed to combustion of natural gas.

To account for the bundled stack configuration, and associated increase in plume buoyancy, modelling assumed a single point source from each engine hall (with the stack diameter equivalent to all the total of the bundled stacks).

It is noted that the modelling assumes a NOx concentration of the 186mg/$m^3$ (at 15% $O_2$, dry at 0° celsius) from the GRE stacks under normal operating conditions. However, during start-up, emissions are expected to be much higher during the first five minutes (2,700mg/$m^3$) before returning to typical emission levels. To account for these short periods of higher emissions, emissions estimates used in the model were calculated as an hourly time-weighted average, assuming higher emissions during the first five minutes, then typical emissions for the remaining minutes in the hour.

A technical review of the modelling determined that the methods and assumptions used are appropriate. A minor limitation was identified associated with the location of the stacks, which, per the final design, are proposed to be located 20m west compared to the modelling assessment. It was determined that this limitation does not impact the overall results of the modelling but that the updated stack locations should be used for all future modelling assessments.

Results of cumulative modelling indicate that the maximum 1-hour $NO_2$ concentration at modelled sensitive receptors is 41.7µg/$m^3$ at R4 (<28% of the NEPM guideline) (Figure 2). The annual average $NO_2$ concentrations are predicted to be about 3% of the assessment criteria. Similar results were shown for start-up and emergency conditions with the maximum 1-hour $NO_2$ concentration predicted to be 42µg/$m^3$ and 36.4 µg/$m^3$ respectively at sensitive receptors. These results suggest a significant improvement in overall air quality associated with the operation of the GREs compared to the diesel engines of the TPS.

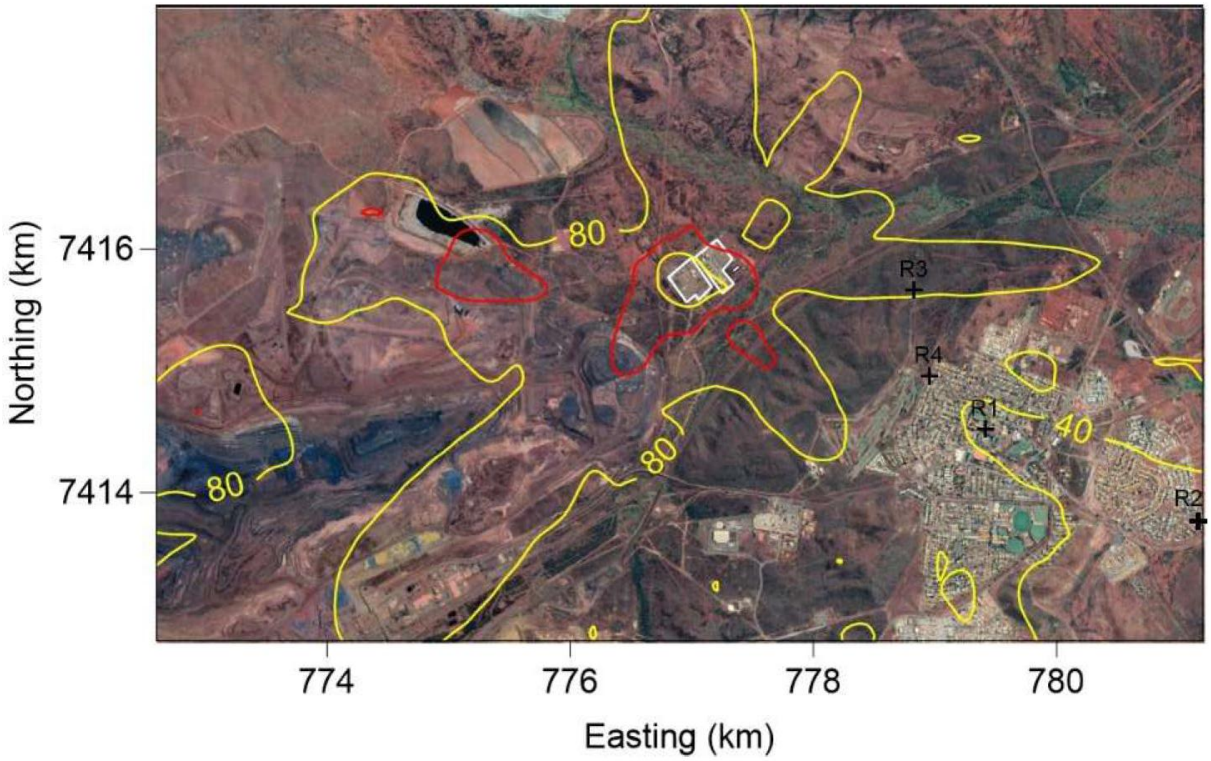


**Figure 2: Maximum predictive 1-hour NOx ground level concentrations (Scenario 2 – cumulative assessment).**

Commissioning

During commissioning, limited concurrent operation of the diesel Temporary Power Station and GREs may occur, however, operating constraints (refer to section 0) mean that full simultaneous operation of all generation equipment is not possible, and emissions would remain below those modelled for full IPG1 operation. Based on the limited duration of time that both the Temporary Power Station and IPG1 are operating, and reduced load conditions, the delegated officer considers the modelled scenarios appropriate for assessing potential air quality impacts during commissioning.

## 3.3 Noise modelling

The Licence Holder engaged Talis Consultants to conduct an environmental noise assessment to support the assessment of noise impacts associated with the proposed changes to the premises. The assessment used SoundPLAN noise modelling software to predict noise levels at sensitive receptors.

The proposal was assessed against assigned noise levels specified in the *Environmental Protection (Noise) Regulations 1997* (Noise Regulations). As per the Noise Regulations, a noise emission must not cause, or significantly contribute to, a level of noise which exceeds the assigned level at the nearest receptor. A noise emission is considered to significantly contribute to a level of noise if it exceeds a level 5 dB below the assigned level (i.e. 30dB(A) in this case).

The modelling was informed by vendor-supplied information, existing on-site noise measurements and representative noise measurements taken at similar power stations across the state. Noise modelling assumed worst-case night-time meteorological conditions to provide conservative noise estimates, and incorporated the following noise mitigation measures for IGP1:

- silencers installed on engine exhausts;
- engine building roof and façades designed to achieve a weighted sound reduction

(Rw) of 32; and

- attenuation installed on ventilation fans and ventilation outlets.

Results of modelling indicated that despite the above controls in place, the proposal would result in an exceedance of the assigned noise levels specified in the Noise Regulations of 0.8dB(A) at one of the modelled receptors (the Parpajinya Community) as well as a small residential area in the north-west boundary of the Newman township; near modelled receptor R3.

The noise assessment identified that the engine hall roof and building facades are the most significant contributing items to the overall received noise levels and that additional mitigation was required to meet the assigned noise levels. Consequently, the Licence Holder proposed to design the engine hall so that the southeast and northeast facades, and building roof, have an Rw of 35, resulting in a further 3dB(A) noise reduction.

Modelling indicates that with the additional measures in place, the assigned noise levels will be achieved at all modelled sensitive receptors with the maximum $L_{A10}$ predicted to be 29.4dB(A) at those locations; below the assigned noise level of 30dB(A). However, the noise controls do not appear to address the potential exceedance in the residential zone north-east of R3 which is predicted to be between 30-35dB(A) (Figure 3).

Technical review confirmed that the modelling is generally suitable for informing the assessment, but also identified limitations that introduce uncertainty into the predicted outcomes and may result in some underestimation of noise levels. These limitations include, for example, the exclusion of certain equipment (such as cooling towers), however, it was noted that type of omission is unlikely to materially influence the overall predicted noise levels. The Licence Holder has advised that the modelling incorporates conservative assumptions, including the simulation of all key equipment operating simultaneously under worst-case night-time meteorological conditions (for example, under temperature inversions), which is intended to avoid underestimating potential impacts.

The delegated officer acknowledges that some aspects of the modelling approach may lead to underprediction, but also recognises that other conservative assumptions have been applied, resulting in an overall level of uncertainty in the model outputs. This includes the potential for exceedances at residential receptors to the north-east of receptor R3 under certain conditions. Notwithstanding this, the risk of loss of amenity at these receptors is considered low, given the infrequent occurrence of meteorological conditions directing noise toward these locations and the presence of typically elevated background noise levels.

Since undertaking the modelling, the Licence Holder has revised the design of the engine halls to achieve further noise reduction such that all facades and the roof will achieve an Rw of 49 (refer to Appendix 1). The Licence Holder has committed to undertaking noise monitoring during commissioning to validate the effectiveness of noise controls and confirm compliance with the Noise Regulations.

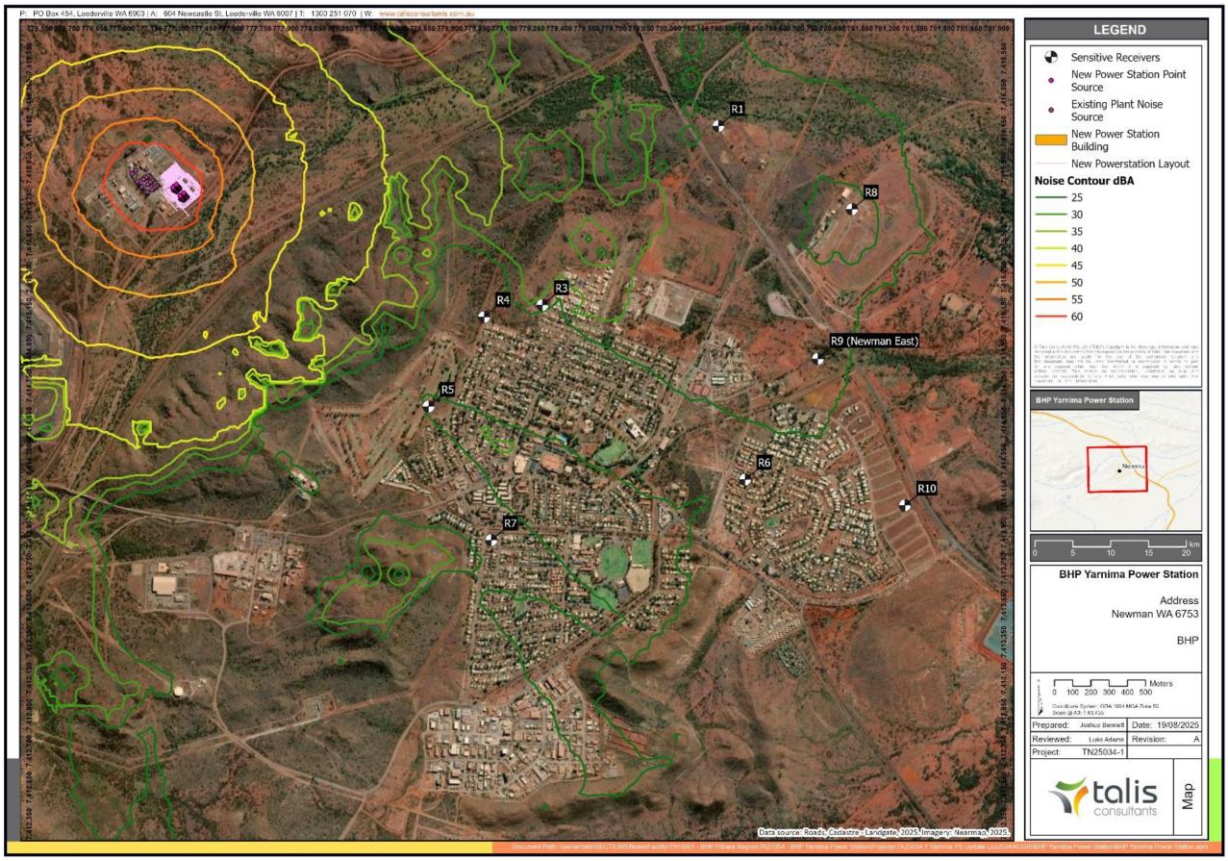


**Figure 3: Prediction $L_{A10}$ noise levels (dB(A)) with additional noise controls applied.**

## 3.4 Risk ratings

Risk ratings have been assessed in accordance with the *Guidance Statement: Risk Assessments* (DER 2017) for those emission sources which are proposed to change and takes 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 4.

The Revised Licence L8803/2013/1 that accompanies this Amendment Report authorises emissions associated with the operation of the Premises i.e. category 52 activities.

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

**Table 4. Risk assessment of potential emissions and discharges from the Premises during construction, commissioning and operation**

| **Risk Event** | | | | | **Risk rating[1]**<br>**C = consequence**<br>**L = likelihood** | **Licence Holder's controls sufficient?** | **Conditions[2] of licence** | **Justification for additional regulatory controls** |
|---|---|---|---|---|---|---|---|---|
| **Source/Activities** | **Potential emission** | **Potential pathways and impact** | **Receptors** | **Licence Holder's controls** | | | | |
| **Construction** | | | | | | | | |
| Installation of gas turbine engines including earthworks | Dust | Air/windborne pathway causing impacts to health and amenity | Residences 1.7km east<br>Public golf Course 1.3km southeast | Refer to section 3.1.1 | C = Slight<br>L = Unlikely<br>**Low Risk** | Y | N/A | The delegated officer considers that there is sufficient separation to sensitive receptors of Newman (1.7km) that dust emissions during construction are likely to pose a low risk. |
| | Noise | | | Refer to section 3.1.1 | C = Slight<br>L = Unlikely<br>**Low Risk** | Y | N/A | Given the short-term nature of construction works and the existing industrial landscape around Newman, the delegated officer determined that construction noise is unlikely to contribute significantly to noise levels at Newman and therefore the risk of noise impacting sensitive receptors is considered to be low. |
| **Commissioning and operation (including time limited operations)** | | | | | | | | |
| Commissioning and operation of gas engines | Air emissions (NOx, SOx, VOCs, CO, PM) | Air/windborne pathway causing impacts to health and amenity | Residences 1.7km east<br>Public golf Course 1.3km southeast | Refer to section 3.1.1 | C = Minor<br>L = Unlikely<br>**Medium Risk** | Y | Condition 1: Infrastructure requirements (Construction)<br>Condition 6: Commissioning requirements<br>Condition 8: Monitoring (during commissioning)<br>Condition 14: Infrastructure requirements (Operation)<br>Conditions 22 and 28: Monitoring (Operation)<br>Condition 32: Reporting requirements (Annual Environmental Report) | As outlined in section 3.2, modelling indicates that GLC concentrations of NOx are predicted to be significantly less than previous model predictions as a result of transitioning from diesel generators to gas engines. The delegated officer considers that the controls proposed by the Licence Holder, combined with existing conditions of the licence, are generally suitable for managing risks associated with air emissions from the premises and has conditioned these on the licence.<br>It is noted that the GREs operate as peaking units, where load and emission rates fluctuate. While the delegated officer considers that PEMS is not necessary for monitoring emissions from the GREs, it is considered that annual stack testing should be undertaken across various load conditions to ensure the emissions variability is adequately captured. This also ensures that the monitoring approach remains broadly comparable to the coverage and representativeness provided by PEMS. On this basis, the licence requires that annual stack testing is undertaken at Low and High loads as defined by the licence which are within the range of normal operating conditions (described section 2.3). To confirm that the engines are operated within the nominated operating range, the Licence Holder is required to record and report the operating load of the engines. This will verify that the testing approach is appropriate and captures the correct operating range.<br>While commissioning activities are authorised under the licence, conditions have been imposed to minimise the likelihood of the GREs and the Temporary Power Station operating at the same time. This is because simultaneous operation has the potential to increase the risk of elevated NOx emissions.<br>Noting that air quality improvements are contingent on the decommissioning of the Temporary Power Station, the licence includes a requirement to confirm the status of decommissioning within six months of the GREs being successfully commissioned. |
| | Noise | Air/windborne pathway causing impacts to health and amenity | | Refer to section 3.1.1 | C = Moderate<br>L = Possible<br>**Medium Risk** | Y | Condition 1: infrastructure requirements<br>Condition 10: Noise validation | Noise modelling indicates that, with the proposed noise control measures in place, the assigned noise levels are predicted to be achieved at all modelled sensitive receptors. However, there remains potential for exceedance at a residential area located north-east of receptor R3. As the effective implementation of these controls is critical to achieving the predicted outcomes, the relevant noise mitigation infrastructure has been conditioned on the licence.<br>As discussed in section 3.3, while modelling predicts potential exceedance of the assigned |

| Risk Event | | | | | Risk rating[1]<br>C = consequence<br>L = likelihood | Licence Holder's controls sufficient? | Conditions[2] of licence | Justification for additional regulatory controls |
|---|---|---|---|---|---|---|---|---|
| **Source/Activities** | **Potential emission** | **Potential pathways and impact** | **Receptors** | **Licence Holder's controls** | | | | |
| | | | | | | | | noise levels, there is inherent uncertainty regarding these outcomes. Furthermore, exceedances are not expected to significantly impact receptors noting existing background noise in the area associated with nearby industry. To provide greater confidence in actual performance, the licence requires the applicant to undertake noise validation monitoring following commissioning to verify the model predictions. This ensures that compliance is determined based on measured noise levels rather than predicted outcomes. Where monitoring identifies actual non-compliance, the applicant is required to investigate the cause and implement appropriate mitigation measures, ensuring a process to address verified impacts rather than relying solely on model predictions. |
| | Accidental release: Loss of containment of primary or secondary infrastructure including liners, bunds, pipes and valves | Direct discharge, land overflow, contaminated stormwater runoff and/or infiltration | Soil, vegetation and ephemeral surface water creek 200m south of Premises.<br>Infiltration and contamination of Priority 1 PDWSA (directly beneath the Premises) over time.<br>Depth to groundwater is ~20m bgl. | Refer to section 3.1.1 | C = Moderate<br>L = Unlikely<br>**Medium Risk** | Y | Condition 1: Infrastructure requirements (Construction)<br>Condition 14: Infrastructure requirements (Operation) | Conditions are included on the licence to ensure containment infrastructure is constructed as committed. Spills, etc. associated with the ongoing operation of the storage areas can be managed via the *Environmental Protection (Unauthorised Discharges) Regulations 2004.*<br>The delegated officer considers that licence holder controls are suitable for managing risks associated with emissions associated with the stormwater collection system. |
| Storage of treated stormwater within Evaporation Pond | Treated water containing hydrocarbons | Direct discharge to land (overtopping) and infiltration | | Refer to section 3.1.1 | C = Minor<br>L = Rare<br>**Low Risk** | Y | Condition 14: Infrastructure requirements (Operation) | The delegated officer considers that existing controls employed by the Licence Holder are sufficient for managing risks associated with the Evaporation Pond overtopping noting that there have been not events reported to the department since operations commenced. Licence Holder controls have been applied on the licence. |
| | | Infiltration (seepage) to ground/groundwater | | Refer to section 3.1.1 | C = Minor<br>L = Rare<br>**Low Risk** | Y | Condition 14: Infrastructure requirements (Operation) | A condition has been applied on the licence requiring that the Evaporation Pond liner be maintained appropriately. This is aligned with existing operational measures and is considered suitable for managing risks associated with seepage of wastewater from the Evaporation Pond. |

Note 1: Consequence ratings, likelihood ratings and risk descriptions are detailed in the *Guidance Statement: Risk Assessments* (DER 2017).

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

The Licence Holder was provided with draft amendment on 21 May 2026. A summary of the Licence Holder's comments and the department's response are provided in Appendix 1.

# 5. 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.

The delegated officer has applied conditions on the licence consistent with controls proposed by the Licence Holder to manage the risk of emissions and discharges including requirements to implement noise mitigation measures and noise validation works.

Commissioning activities are authorised under the Licence which allow flexibility to complete pre-commissioning activities while ensuring that operational controls limiting the simultaneous operating of IPG1 and the Temporary Power Station are enacted to minimise potential air quality impacts.

Air emissions will be validated through the environmental commissioning phase to confirm that the gas engines are performing as expected. Ongoing emissions testing has been conditioned to ensure that the systems are maintained to design specifications.

## 5.1 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 |
|---|---|
| Cover page | Assessed design capacity updated to align with Table 1 above. |
| Condition 1 (Works) | Condition amended as follows:<br>• Remove existing infrastructure associated with the Temporary Power Station and Emergency Power Station.<br>• Remove requirements relating to PEMS as compliance with these conditions has been demonstrated or determined not required.<br>• Added infrastructure requirements relating to the new GREs, black-start generator and associated hydrocarbon storage. |
| Condition 2 (Compliance reporting) | Adjusted the timeframe for submission of the Environmental Compliance Report from 14 to 30 days post construction. |
| Condition 5 | Deleted |
| Condition 5 (Commissioning) | Inserted commissioning requirements for the GREs. |
| Condition 6 (Commissioning) | Inserted commissioning notification requirements. |
| Condition 7 (prev. 6) (Commissioning – monitoring) | Condition amended to remove reference to Temporary Power Station and insert requirements for monitoring of the GREs. Includes a requirement for monitoring at low, mid and high loads as per the description in Performance Specification 16. |
| Condition 9 (prev. 18) (Noise validation) | Timeframe for completion noise validation work amended to occur within 30 days of completion of commissioning of the GREs. |

| | |
|---|---|
| Condition 13 (prev. 12)<br>(Infrastructure requirements) | • Infrastructure requirements associated with the new GREs inserted.<br>• Inserted requirements that limit the simultaneous operation of the Temporary Power Station and the GREs as well as a requirement to decommission the Temporary Power Station and associated back-up generators with 6 months of completing commissioning of the GREs.<br>• Adjustments to description of bulk diesel storage noting that hydrocarbons storage includes other substances beyond diesel (e.g. engine oil and coolant). Hydrocarbon storage specifications have also been removed noting that risks associated with storage are managed through the condition specifying containment infrastructure.<br>• Specifications relating to the Emergency Power Station have been removed.<br>• Conditions have been applied regarding maintaining a freeboard and the HDPE liner integrity on the Evaporation Pond consistent with existing Licence Holder controls. |
| Condition 14 (prev. 13)<br>(Emission points to air) | Condition updated to remove reference to the decommissioned Emergency Power Station (A42 – A50) and include emission points associated with the GREs (J1 – J14 and D4) |
| Condition 15 (prev. 14)<br>(Emission limits) | Remove reference to CEMS as this is replaced by PEMS. |
| Condition 18 (prev. 17)<br>(General monitoring) | Removed reference to CEMS. |
| Condition 21 (prev. 20)<br>(Emissions monitoring) | Amended to remove reference to CEMS and included annual monitoring associated with the GREs. |
| Condition 22 | Removed as it relates to CEMS monitoring. |
| Condition 25 | Removed reference to CEMS. |
| Condition 26<br>(Processing monitoring) | Amended to remove reference to Emergency Power Station (A42 – A50) and include new GREs (J1 – J14) and black-start generators (D1 – D4). |
| Condition 30<br>(Reporting) | Updated to provide clarity on the type and format of information to be submitted including provision of third-party testing reports associated with RATA and RAA.<br>Include requirement to report operating load of GREs recorded in accordance with condition 26. |
| Condition 31 | Removed. Refer to Appendix 1. |
| Definitions | Removed: ‘CEMS’ and ‘CEMS Code’<br>Inserted: ‘decommissioned’, ‘High load’, ‘High Voltage Network’, ‘Low load’ and missing test methods (USEPA methods 5, 6C, 17 and 18)<br>Definition for ‘SOx’ changed to ‘$SO_2$’ |
| Schedule 1 and 2 | Figures and coordinated updated |

# References


1. Department of Environment Regulation (DER) 2016, *Guidance Statement: Environmental Siting*, Perth, Western Australia.
2. DER 2017, *Guidance Statement: Risk Assessments*, Perth, Western Australia.
3. DER 2015, *Guidance Statement: Setting Conditions*, Perth, Western Australia.
4. Environmental Technologies & Analytics (ETA) 2025, *Yarnima Power Station Expansion Air Quality Assessment Final Report*, prepared for BHP August 2025.
5. Talis Consultants 2025, *Yarnima Power Station Environmental Noise Assessment*, prepared for BHP 1 October 2025.

# Appendix 1: Summary of Licence Holder's comments - risk assessment & draft conditions

| Condition | Summary of Licence Holder's comment | Department's response |
|---|---|---|
| Condition 1 (Table 1) | Update the level of specified noise reduction on the facades and building roof of the engine hall to enable the installation of a higher level of noise control. The design has been amended such that all building facades and the building roof will achieve an Rw of 49. | Accepted noting that this will achieve a higher level of noise reduction. Existing conditions on the licence requiring noise validation will indicate if this level of reduction is suitable or if further reductions are required to achieve the assigned noise levels prescribed in the Noise Regulations. |
| | The Licence Holder advised that the black start diesel generator is self-bunded equipment. As such, the Licence Holder requested that the condition be amended to remove reference to concrete bunds. | Condition has been amended removing the reference to concrete bunds and replacing with reference to secondary containment as requested by the Licence Holder. The delegated officer considers that the intent of this condition, which is to ensure the equipment is installed with secondary containment for capturing spills, is still met with the proposed change. |
| Condition 8 (Table 3) | Correct SOx to $SO_2$ noting that US EPA Method 6C applies to $SO_2$. | Correction made. |
| | Allow use of Method 17 for measuring particulates noting that the stack gas exit temperature will be above dewpoint and therefore a heated probe as required by Method 5 is not necessary. | Considering the low likelihood of condensable particulate formation associated with the use of predominantly methane fuel with low sulphur content, the delegated officer has determined that Method 17 is an appropriate alternative to Method 5. |
| | Remove reference to US EPA specification on the basis that this is targeted at PEMS certification and not fit for purpose in this instance as the "low" loads are outside the normal operating range of the GREs and therefore are not considered relevant for the purpose of compliance testing.<br>As outlined in section 2.3, the normal operating range of the GREs is identified as being within 3 – 4.5MW. The Licence Holder also advised that operating the GREs at the low loads specified in US EPA Specification 16 would result in high NOx emissions that are not representative of normal operating conditions. Furthermore, that the emission rates at sustained low loads were not factored into the Licence Holder's risk assessment, meaning that proposed NOx limits would not be able to be achieved.<br>Instead, the Licence Holder proposes to undertake stack testing at 'Low' and 'High' loads that are within the normal operating range of the GREs 3 – 4.5MW. | Noting that the general operating strategy for the GREs is to operate above 3MW, the delegated officer considers it appropriate for stack testing to occur within the normal operating range. As such, conditions have been amended to require stack testing at 'Low' and 'High' loads within that range as specified below:<br>• Low load means operating between 3 – 3.4MW (about 65 – 75% load), and<br>• High load means operating between 4.02 – 4.5MW (about 90-100% load).<br>The delegated officer considers that this will adequately capture emissions across the operating range of the GREs. The Licence Holder is required to record and report operating loads of the GREs to demonstrate that they have been operated within the nominated range rather than at consistent low loads (i.e. below 3MW). |
| Condition 22 (Table 7) | As above, requested testing only required at loads within the normal operating range. | Condition amended as above. |
| Condition 31 | Licence Holder has advised that the Emergency Power Station associated with emission points A42 – A59 was not required to be operated for emergency backup generation during the CCGT maintenance campaign. | Noting advice from the Licence Holder that the relevant equipment was not operated, the delegated officer considers that no further reporting is required and the condition can be removed. |
| Definitions | Update definitions to align with amended conditions. | Changes made as outlined in Table 5 to accommodate above changes. |
| General | Various typographical errors were noted including incorrect condition number referencing. | Noted and amended accordingly. |