



## Application for Licence Amendment

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

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<b>Licence Number</b>	L7167/1997/10
<b>Licence Holder</b>	Electricity Generation and Retail Corporation T/A Synergy
<b>ACN</b>	673 830 106
<b>File Number</b>	DER2014/001050-1~3
<b>Premises</b>	Mungarra Gas Turbine Power Station Nangetty- Walkaway Road  Lot 101 on Plan 59625  WEST CASUARINAS WA 6630
<b>Date of Report</b>	29 October 2020
<b>Proposed Decision</b>	Revised licence granted

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## 1. Decision summary

Licence L7167/1997/10 is held by Electricity Generation and Retail Corporation T/A Synergy (licence holder) for the Mungarra Gas Turbine Power Station (the Premises), located at Nangetty-Walkaway Road, West Casuarinas.

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, condition 3.1.6 has been added, conditions 3.2.1 and 4.2.1 have been amended and Revised Licence L7167/1997/10 has been granted.

The Revised Licence issued as a result of this amendment consolidates and 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

### Amendment summary

On 30 July 2020 the licence holder submitted an application to the department to amend Licence L7167/1997/10 condition 3.2.1 under section 59 and 59B of the *Environmental Protection Act 1986* (EP Act) to reduce the frequency of monitoring of the gas turbine stacks from annual (of one of the two stacks) to at least once in every 2 testing years. In any year, defined as 12 months from July to June, that total operating hours of both units combined exceeds 300 hours, testing shall occur the following year.

### 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>.

### Background

Mungarra Gas Turbine Power Station is located approximately 70km south east of Geraldton and consists of two Frame 6 gas turbines. The station is remotely operated upon request for emergency back- up and network support from Western Power. Synergy is responsible for the operation and maintenance of all turbines, plant and equipment at Mungarra Gas Turbine Station.

The total operating hours show a general decreasing trend since 2014/15 and this trend is expected to continue due to anticipated reductions in network support requirements. The total operating hours from 2011 to 2020 provided by the licence holder are shown in Table 1.

**Table 1: Mungarra Gas turbine power station operating hours 2011-2020**

Financial Year	Operating hours A1	Operating hours A3	Total operating hours
2011/2012	3585	4585	8170
2012/2013	1897	3314	5211
2013/2014	682	4672	5354
2014/2015	3287	2238	5525

Financial Year	Operating hours A1	Operating hours A3	Total operating hours
2015/2016	853	99	952
2016/2017	425	105	530
2017/2018	617	367	984
2018/2019	136	149	285
2019/2020	407	165	572

The power generated, gas consumed and NO<sub>x</sub> and SO<sub>2</sub> emission totals from 2011 to 2020 provided by the licence holder are shown in Table 2. These figures include A2 which was deleted from the licence in May 2019. The amount of gas consumed and the annual emission totals of NO<sub>x</sub> and SO<sub>2</sub> show a general decreasing trend since 2014/15.

**Table 2: Mungarra Gas turbine power station production data 2011- 2020**

Financial Year	Power generated (GWh)	Gas consumed (tonnes)	NO <sub>x</sub> (tonnes)	SO <sub>2</sub> (kg)
2011/2012	175	61,616	428	198
2012/2013	126	45,100	308	145
2013/2014	95	34,136	233	110
2014/2015	91	32,646	222	110
2015/2016	17	5,728	41	18
2016/2017	11	4,086	27	13
2017/2018	18	5,991	44	19
2018/2019	5	1,809	12	6
2019/2020	9	2,743	22	9

In May 2019, L7167/1997/10 condition 3.2.1 was amended to delete emission point A2 as it is scheduled for decommissioning and to reduce the frequency of monitoring of each stack from at least once in 3 years (for three emission points) to at least once in 2 years, as the two remaining stacks can be sampled on a rotational basis in 2 years.

The monitoring required by condition 3.2.1 is shown in Table 3.

**Table 3: Condition 3.2.1 Monitoring of point source emissions to air**

Emission point reference	Parameter	Units <sup>1, 2</sup>	Averaging period	Frequency	Method
A1 or A3	NOx	mg/m <sup>3</sup> and g/s	Stack test (30 minutes average)	On a rotational basis at least once in two annual periods when the combined operating hours of the two turbines is greater than 300 hours in the previous annual period	USEPA Method 7E
	CO		Stack test (30 minutes average)	On a rotational basis at least once in two annual periods when the combined operating hours of the two turbines is greater than 300 hours in the previous annual period	USEPA Method 10
	VOCs		Stack test Spot sample	On a rotational basis at least once in two annual periods when the combined operating hours of the two turbines is greater than 300 hours in the previous annual period	USEPA Method 18

Note 1: All units are referenced to STP dry.

Note 2: All units are referenced to 15% O<sub>2</sub>.

The amendment under assessment amends the frequency of stack testing to at least once in two annual periods when the combined operating hours of the two turbines is greater than 300 hours in the previous annual period. Based on the operating hours information provided by the licence holder (Table 1), 2018/2019 was the only annual period in which the combined operating hours of A1 and A3 was less than 300 hours between 2011 and 2020.

### 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.

### 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 4 below. Table 4 also details the proposed control measures the licence holder has proposed to assist in controlling these emissions, where necessary.

**Table 4: licence holder controls**

<b>Emission</b>	<b>Sources</b>	<b>Potential pathways</b>	<b>Controls</b>
Combustion gases- primarily NO <sub>x</sub> , CO and VOCs	Gas turbines	Air/windborne pathway	Existing licence controls <ul style="list-style-type: none"> <li>- Monthly emissions data for NO<sub>x</sub>, SO<sub>2</sub>, PM, CO and VOC are calculated using an Approved Methodology specified in the Licence</li> <li>- Stack testing will occur on a rotational basis such that each stack is tested at least once in 2 testing years when the combined operating time is greater than 300 hours in the previous year</li> </ul>

### 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 5 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 5: Sensitive human and environmental receptors and distance from prescribed activity**

<b>Human receptors</b>	<b>Distance from prescribed activity</b>
Single dwelling rural residential receptors	1.7 km southwest and 2.2km east
<b>Environmental receptors</b>	<b>Distance from prescribed activity</b>
None	N/A

## 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 0. 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 0), 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 6.

The Revised Licence L7167/1997/10 that accompanies this Amendment Report authorises emissions associated with the operation of the Premises i.e. Electric power generation.

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

**Table 6: Risk assessment of potential emissions and discharges from the Premises during operation**

Risk Event					Consequence rating	Likelihood rating	Risk <sup>1</sup>	Reasoning	Regulatory controls
Source/Activities	Potential emission	Potential pathways and impact	Receptors	licence holder's controls					
<b>Operation</b>									
Operation of gas for emergency back-up, network support and for monitoring	Combustion gases- primarily NO <sub>x</sub> , CO and VOCs	Air/windborne pathway causing impacts to health and amenity	Single dwelling rural residential receptors 1.7 km southwest and 2.2km east Homestead 8.5 km west	Refer to Section 3.1.1	Low level on- site impacts Minimal off- site impacts local scale <b>Minor</b>	May only occur in exceptional circumstances  <b>Rare</b>	<b>Low Risk</b>	Turbine operating hours from 2011-2020 show a general decreasing trend and this is expected to continue.  The total operating hours of turbines A1 and A3 has fallen below 300 hours once (2018- 2019) between 2011 and 2020.  Gas consumption and annual NO <sub>x</sub> and SO <sub>2</sub> emission figures from 2011-2020 show a general decreasing trend which would be expected to continue if the general decreasing trend in turbine operating hours continues as expected.  Existing controls on the licence are considered appropriate for regulating air emissions from the turbines.	<b><u>Recording turbine operating hours (condition 3.1.6) and reporting turbine operating hours (amendment to condition 4.2.1) to evidence requirement for stack testing and to evidence compliance with condition 3.2.1</u></b>

Risk Event					Consequence rating	Likelihood rating	Risk <sup>1</sup>	Reasoning	Regulatory controls
Source/Activities	Potential emission	Potential pathways and impact	Receptors	licence holder's controls					
								<p>An additional condition has been added requiring the licence holder to record operating hours of each turbine and the total operating hours in an annual period.</p> <p>A condition has been amended requiring the licence holder to report the operating hours of each turbine and the total operating hours in an annual period in the AER. The Department will then be aware as to when a stack test is required</p>	

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. Decision

Based on the assessment in this Amendment Report, the Delegated Officer has determined that a Revised Licence will be granted based on a reduced level of risk taking into account reduced operating hours of the turbines provided by the licence holder and existing licence conditions. The frequency of monitoring in condition 3.2.1 has been amended such that monitoring of each stack will be required on a rotational basis at least once in 2 annual periods when the combined operating time of the two turbines is greater than 300 hours in the previous annual period. A new condition has been added which require the licence holder to record the operating hours of each turbine and a total number of operating hours for both turbines (condition 3.1.6) and condition 4.2.1 has been amended to require the licence holder to report the operating hours of each turbine and a total number of operating hours for both turbines in an annual period in the AER in order to evidence the requirement for stack testing and to evidence compliance with condition 3.2.1.

### 4.1 Consolidation of Licence

As part of this amendment package the department has consolidated the licence by incorporating changes made under the Amendment Notices as summarised in Table 7.

**Table 7: Licences consolidated in this amendment**

Instrument	Issued	Summary of approval
L7167/1997/10	6/01/2017	Amendment notice 1 initiated by the licence holder: administrative changes to update registered business address and contact details.
L7167/1997/10	11/10/2018	Amendment notice 2 initiated by the licence holder: made administrative changes and removed condition 3.2.3 for point source emissions to air at sampling locations which is not compliant with AS 4323.1.
L7167/1997/10	13/05/2019	Amendment notice 3 initiated by the licence holder: to remove Unit 2 as it has been placed in care and maintenance and is scheduled to be decommissioned.

The obligations of the licence holder have not changed in consolidating the licence. The department has not undertaken any additional risk assessment of the Premises related to previous Amendment Notices.

In consolidating the licence, the CEO has:

- updated the format and appearance of the Licence;
- deleted the redundant AACR form set out in schedule 1 of the previous licence and advise the licence holder to obtain the form from the department's website; and

The full consolidation of licence conditions as they relate to this Revised Licence are detailed in Section 5. Previously issued Amendment Notices will remain on the department's website for future reference and will act as a record of the department's decision making.

## 5. Consultation

Table 8 provides a summary of the consultation undertaken by the department.

**Table 8: Consultation**

Consultation method	Comments received	Department response
Licence holder was provided with draft amendment on 12 October 2020	Comments received 27/10/20- licence holder accepted the amendment	N/A

## 6. Conclusion

Based on this assessment, it has been determined to amend the existing licence, subject to conditions commensurate with the determined controls and necessary for administration and reporting requirements.

### Summary of amendments

Table 9 provides a summary of the proposed amendment 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 9: Summary of licence amendments**

Condition no.	Proposed amendments
-	Assessed production/design capacity- 75.7 MW (Amendment Notice 3 May 2019)
-	Premises description and Licence summary- Unit 2 has been deleted (Amendment Notice 3 May 2019)
2.1	Redundant condition- deleted
2.2	Now condition 2.1
2.2.1	Now condition 2.1.1
2.2.1	Emission Point A2 has been deleted (Amendment Notice 3 May 2019)
2.3- 2.8	Redundant conditions (Amendment Notice 2 (October 2018))- deleted
3.1.6	New condition- The licence holder shall record the operating hours of each turbine and a total number of operating hours for both turbines in an annual period
3.2.1	Emission point A2 is deleted from Table 3.2.1 and the frequency of monitoring of each stack is amended from at least once in 3 years to at least once in 2 years (Amendment Notice 3 May 2019).  Frequency of monitoring is amended such that monitoring of each stack will be required on a rotational basis at least once in 2 annual periods when the combined operating time of the two turbines is greater than 300 hours in the previous annual period.
3.2.2	Emission Point A2 has been deleted (Amendment Notice 3 May 2019)
3.2.3	Redundant condition (Amendment Notice 2 October 2018)- deleted
3.2.4	Now condition 3.2.3 (previous condition 3.2.3 redundant- Amendment Notice 2 October 2018)

3.3- 3.9	Redundant conditions (Amendment Notice 2 (October 2018))- deleted
4	Redundant condition- deleted
4.2.1	Operating hours of each turbine and a total number of operating hours for both turbines in an annual period to be reported in the AER
5	Now condition 4
5.1- 5.3	Now condition 4.1- 4.3
Schedule 1 Maps	Emission Point A2 has been removed
Schedule 2 Reporting & Notifications	AACR attachment deleted (forms accessed at <a href="http://www.dwer.wa.gov.au">www.dwer.wa.gov.au</a> N1 form notification requirements for any failure or malfunction of any pollution control equipment- deleted

**Caron Goodbourn**

**MANAGER, PROCESS INDUSTRIES  
REGULATORY SERVICES**

*An officer delegated by the CEO under section 20 of the EP Act*

## 7. References

1. DER 2017, *Guidance Statement: Risk Assessments*, Perth, Western Australia.
2. Department of Environment Regulation (DER) 2016, *Guidance Statement: Environmental Siting*, Perth, Western Australia.
3. DER 2015, *Guidance Statement: Setting Conditions*, Perth, Western Australia.

## Appendix 1: Application validation summary

SECTION 1: APPLICATION SUMMARY (as updated from validation checklist)				
<b>Application type</b>				
Works approval	<input type="checkbox"/>			
Licence	<input type="checkbox"/>	Relevant works approval number:		None <input type="checkbox"/>
		Has the works approval been complied with?	Yes <input type="checkbox"/> No <input type="checkbox"/>	
		Has time limited operations under the works approval demonstrated acceptable operations?	Yes <input type="checkbox"/> No <input type="checkbox"/> N/A <input type="checkbox"/>	
		Environmental Compliance Report / Critical Containment Infrastructure Report submitted?	Yes <input type="checkbox"/> No <input type="checkbox"/>	
		Date Report received:		
Renewal	<input type="checkbox"/>	Current licence number:		
Amendment to works approval	<input type="checkbox"/>	Current works approval number:		
Amendment to licence	<input checked="" type="checkbox"/>	Current licence number:	L7167/1997/10	
		Relevant works approval number:	N/A	<input type="checkbox"/>
Registration	<input type="checkbox"/>	Current works approval number:	None	<input type="checkbox"/>
Date application received	30 July 2020			
<b>Applicant and Premises details</b>				
Applicant name/s (full legal name/s)	Electricity Generation and Retail Corporation T/A Synergy			
Premises name	Mungarra Gas Turbine Power Station			
Premises location	Lot 101 on Plan 59625, Nangetty-Walkaway Road WEST CASUARINAS WA 6630			
Local Government Authority	Shire of Mullewa			
<b>Application documents</b>				
HPCM file reference number:	DWERDT314201			
Key application documents (additional to application form):	Supplementary information document which includes annual operating hours, estimated annual emissions, and a risk assessment. 2020 stack testing report Amendment fee calculation			
<b>Scope of application/assessment</b>				

Summary of proposed activities or changes to existing operations.	<p><i>Licence amendment</i></p> <p>Operation of gas turbines for power generation.</p> <p>The gas turbines on the premises are only operated to provide emergency back-up and network support. The operating hours of the turbines have reduced significantly in recent years and are expected to continue to reduce. Due to the intermittent nature of operation of the turbines emissions testing cannot be scheduled to occur at a time units are in use for network control and rather are operated specifically to undertaken required emission testing. The licence holder is therefore seeking to amend the frequency of monitoring of the gas turbine stacks from annual monitoring (of one of the two stacks) such that it will only be required when the gas turbines are operated for &gt;300 hours in the previous year.</p>
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Category number/s (activities that cause the premises to become prescribed premises)

Table 1: Prescribed premises categories

Prescribed premises category and description	Assessed production or design capacity	Proposed changes to the production or design capacity (amendments only)
Category 52: Electric power generation	75.7 MW	NA

**Legislative context and other approvals**

Has the applicant referred, or do they intend to refer, their proposal to the EPA under Part IV of the EP Act as a significant proposal?	Yes <input type="checkbox"/> No <input checked="" type="checkbox"/>	Referral decision No: Managed under Part V <input type="checkbox"/> Assessed under Part IV <input type="checkbox"/>
Does the applicant hold any existing Part IV Ministerial Statements relevant to the application?	Yes <input type="checkbox"/> No <input checked="" type="checkbox"/>	Ministerial statement No: EPA Report No:
Has the proposal been referred and/or assessed under the EPBC Act?	Yes <input type="checkbox"/> No <input checked="" type="checkbox"/>	Reference No:
Has the applicant demonstrated occupancy (proof of occupier status)?	Yes <input type="checkbox"/> No <input checked="" type="checkbox"/> (Not required for an amendment)	Certificate of title <input type="checkbox"/> General lease <input type="checkbox"/> Expiry: Mining lease / tenement <input type="checkbox"/> Expiry: Other evidence <input type="checkbox"/> Expiry:
Has the applicant obtained all relevant planning approvals?	Yes <input type="checkbox"/> No <input type="checkbox"/> N/A <input checked="" type="checkbox"/>	Approval: Expiry date: If N/A explain why?
Has the applicant applied for, or have an existing EP Act clearing permit in relation to this proposal?	Yes <input type="checkbox"/> No <input checked="" type="checkbox"/>	CPS No: N/A No clearing is proposed.

Has the applicant applied for, or have an existing CAWS Act clearing licence in relation to this proposal?	Yes <input type="checkbox"/> No <input checked="" type="checkbox"/>	Application reference No: N/A Licence/permit No: N/A No clearing is proposed.
Has the applicant applied for, or have an existing RIWI Act licence or permit in relation to this proposal?	Yes <input type="checkbox"/> No <input checked="" type="checkbox"/>	Application reference No: Licence/permit No: Licence / permit not required.
Does the proposal involve a discharge of waste into a designated area (as defined in section 57 of the EP Act)?	Yes <input type="checkbox"/> No <input checked="" type="checkbox"/>	Name: N/A Type: Has Regulatory Services (Water) been consulted? Yes <input type="checkbox"/> No <input type="checkbox"/> N/A <input checked="" type="checkbox"/> Regional office:
Is the Premises situated in a Public Drinking Water Source Area (PDWSA)?	Yes <input type="checkbox"/> No <input checked="" type="checkbox"/>	Name: N/A Priority: N/A Are the proposed activities/ landuse compatible with the PDWSA (refer to <a href="#">WQPN 25</a> )? Yes <input type="checkbox"/> No <input type="checkbox"/> N/A <input checked="" type="checkbox"/>
Is the Premises subject to any other Acts or subsidiary regulations (e.g. <i>Dangerous Goods Safety Act 2004, Environmental Protection (Controlled Waste) Regulations 2004, State Agreement Act xxxx</i> )	Yes <input type="checkbox"/> No <input type="checkbox"/>	Unsure, application doesn't state however not applicable to the amendment
Is the Premises within an Environmental Protection Policy (EPP) Area?	Yes <input type="checkbox"/> No <input checked="" type="checkbox"/>	
Is the Premises subject to any EPP requirements?	Yes <input type="checkbox"/> No <input checked="" type="checkbox"/>	
Is the Premises a known or suspected contaminated site under the <i>Contaminated Sites Act 2003</i> ?	Yes <input type="checkbox"/> No <input checked="" type="checkbox"/>	Classification: N/A Date of classification: N/A