



Licence Number	L7167/1997/10
Licence Holder	Electricity Generation and Retail Corporation
ABN	58 673 830 106
File Number:	DER2014/001050-1
Premises	Mungarra Gas Turbine Power Station, Nangetty-Walkaway Road Lot 101 on Plan 59625 WEST CASUARINAS WA 6630
Date of Amendment	11 October 2018

Amendment

The Chief Executive Officer (CEO) of the Department of Water and Environmental Regulation (DWER) has amended the above Licence in accordance with section 59 of the *Environmental Protection Act 1986* (EP Act) as set out in this Amendment Notice. This Amendment Notice constitutes written notice of the amendment in accordance with section 59B(9) of the EP Act.

Caron Goodbourn
A/Manager, Process Industries
Regulatory Services
Officer delegated under Section 20 of the Environmental Protection Act 1986

Definitions and interpretation

Definitions

In this Amendment Notice, the terms in Table 1 have the meanings defined.

Table 1: Definitions

Term	Definition
Amendment Notice	refers to this document
AS 4323.1	Australian Standard AS 4323.1: Stationary source emissions – Selection of sampling point positions.
CEO	means Chief Executive Officer. CEO for the purposes of notification means: Director General Department Administering the <i>Environmental Protection Act 1986</i> Locked Bag 33 Cloisters Square PERTH WA 6850 info@dwer.wa.gov.au
Delegated Officer	an officer under section 20 of the EP Act
Department	means the department established under section 35 of the <i>Public Sector Management Act 1994</i> and designated as responsible for the administration of Part V, Division 3 of the EP Act.
DWER	Department of Water and Environmental Regulation
EP Act	Environmental Protection Act 1986 (WA)
Existing Licence	Licence L7167/1997/10 - Licence issued under Part V, Division 3 of the EP Act
Frame 6	Hitachi (37.4 Mega Watt (MW)) European Gas Turbine (EGT) (38.3MW)
Frame 9	John Brown Engineering (116.4 MW) European Gas Turbine (123.7MW)
Licence Holder	Electricity Generation and Retail Corporation
Occupier	has the same meaning given to that term under the EP Act.
Prescribed Premises	has the same meaning given to that term under the EP Act.
Premises	refers to the premises to which this Decision Report applies, as specified at the front of this Decision Report.
Risk Event	as described in Guidance Statement: Risk Assessment
USEPA	United States Environmental Protection Agency

Amendment Notice

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

The key documents and guidance statements which inform this assessment are outlined in Appendix 1

Amendment description

The Licence Holder submitted a licence amendment application on 5 July 2018 seeking the removal of Condition L3.2.3 - *the licensee shall ensure that sampling required under Condition 3.2.1 of the Licence is undertaken at sampling locations in accordance with the AS 4323.1 or relevant part of the CEMS Code* from the Existing Licence.

There are fixed tapping points on each gas turbine to monitor point source emissions to air as required by Condition L3.2.3 in the Existing Licence. A report prepared by 'Emission Assessment' (report number 1516-133), identified these fixed tapping point locations as being non-compliant with AS 4323.1 and thus with Condition 3.2.3.

This Amendment Notice, explains in detail below, the risk assessment of the proposed amendment, being the use of sampling locations that are not strictly in accordance with AS 4323.1.

Administrative amendments such as updating, including or deleting redundant definitions have also been included in the amended licence. All amendments undertaken are described in the Amendment Section below

Amendment history

Table 2 provides the amendment history for L7167/1997/10.

Table 2: Licence amendment

Instrument	Issued	Amendment
L7167/1997/10	31/10/2013	Amendment to REFIRE for mat
L7167/1997/10	15/08/2014	Change occupier name and update to latest template version
L7167/1997/10	27/11/2014	Licence reissue
L7167/1997/10	6/01/2016	Amendment Notice - amendment of licence expiry date to 29/12/2022
L7167/1997/10	29/04/2017	Amendment Notice #1 Update registered business address
L7167/1997/10	11/10/2018	Amendment Notice – removed Condition 3.2.3 which allows the licensee to monitor point source emissions to air at sampling locations not in accordance with AS 4323.1

Location and receptors

The premises is located approximately 50km north-west of Geraldton. Table 3 below lists the relevant sensitive land uses in the vicinity of the Prescribed Premises which may be receptors relevant to the proposed amendment.

Table 3: Receptors and distance from activity boundary

Residential and sensitive premises	Distance from Prescribed Premises
Single dwelling rural residential receptors	Surrounded by farmland with the closest rural residential receptors located approximately 1.7km southwest and 2.2km east from the Premises

Table 4 below lists the relevant environmental receptors in the vicinity of the Prescribed Premises.

Table 4: Environmental receptors and distance from activity boundary

Environmental receptors	Distance from Prescribed Premises
Greenough river	8.9km north west

Risk assessment

Although the proposed amendment does not result in any changes to emissions from the Premises, air emissions from identical Frame 6 Gas Turbines has been reassessed as the proposed amendment seeks to remove a condition which relates to the monitoring of these emissions.

Tables 5 below describe the Risk Events associated with the amendment consistent with the *Guidance Statement: Risk Assessments*. Both tables identify whether the emissions present a material risk to public health or the environment, requiring regulatory controls.

Table 5: Risk assessment for proposed amendments during operation

Risk Event						Consequence rating	Likelihood rating	Risk	Reasoning
Source/Activities		Potential emissions	Potential receptors	Potential pathway	Potential adverse impacts				
Cat 52: Electric Power Generation	Operation of gas turbines	Discharge of combustion gases (NOx)	Nearest rural residential receptors located approximately 1.7km southwest and 2.2km east from the Premises	Air / wind dispersion	Health and amenity impacts	Slight	Unlikely	Low	<p>The Delegated Officer considers that the Licence Holder has been able to verify that the exhaust gases are non-stratified and that the sampling locations on the 9 stacks are a representative location to monitor exhaust gases.</p> <p>The removal of this condition does not alter the risk profile of the emission</p> <p>See reasoning below:</p>

The Premises has three Frame 6 gas turbines:

- Units 1 and 2 which have been supplied to Hitachi and are rated at 37.4MW each; and
- Unit 3 which has been supplied by European Gas Turbines (EGT) and is rated at 38.3MW.

Plant infrastructure and tapping points for the Frame 6 (Hitachi and EGT) gas turbines at the Premises are identical to that at Pinjar Gas Turbine Power Station Licence L8395/2009/2.

As the plant infrastructure and sampling locations are identical for both Pingar Gas Turbine Power Station and Mungarra Gas Turbine Power Station, the stratification comparison should be equivalent for each type of gas turbine exhaust.

To confirm stratification for the fixed tapping points on the gas turbines, the Licence Holder engaged consultants '*Emission Assessment*' to conduct stratification tests at the Pinjar Gas Turbine Power Station to confirm the distribution of analytes (NO_x and O₂ being the most representative gases) across multiple sampling planes using the fixed tapping point as the static measurement point.

During the test periods the process was operating normally, at the highest available stable load point.

'*Emission Assessment*' conducted a stratification test of the stack sampling planes in accordance with 'USEPA Method 7E – *Determination of Nitrogen Oxides Emissions from Stationary Sources (Instrumental Analyser procedure)*'.

A summary of the stratification tests results for the Frame 6 gas turbines at the Pinjar Gas Turbine Power Station, are illustrated in Table 6 below.

Table 6: Summary of results at the Pinjar Gas Turbine Power Station

Emission point	Analyte	Unit	Average Reading		Stratification %		Is measurement location suitable? (non-stratified)
			Traverse probe	Static probe	Maximum value	Criteria	
Unit 2 (A2) [Hitachi Frame 6]	Oxides of Nitrogen (NO _x)	ppm	138.4	136.8	2.6	< ±10%	Yes
	Oxygen (O ₂)	%	14.74	14.84	1.1	< ±10%	Yes
Unit 7 (A6) [EGT Frame 6]	Oxides of Nitrogen (NO _x)	ppm	140.4	137.9	2.1	< ±10%	Yes
	Oxygen (O ₂)	%	15.66	15.69	0.4	< ±10%	Yes

A stack sample plane is considered to be non-stratified (homogeneous) if the degree of stratification at any point is < ±5.0%. The sample plane is considered to be minimally stratified if the degree of stratification at any point is < ±10.0% and stratified if the degree of stratification > ±10%.

Based on the above results the tested locations are non-stratified with the distribution of NO_x and O₂ across the sample planes.

Decision

The Delegated Officer has considered the existing monitoring point locations in relation to achieving accurate and representative monitoring results and determined that there will be no change to the risk profile of point source air emissions. The Delegated Officer has determined that the emissions are non-stratified and that the gases are evenly distributed in the stacks. The current tapping point locations would give an accurate and representative measurement of gaseous species in the exhaust gases.

The Delegated Officer therefore grants the amendment request.

Regulatory controls

Previous Condition L3.2.3 which required the Licensee to undertake sampling locations in accordance with AS 4323.1 or the relevant part of the CEMS Code is removed and Condition L3.2.4 has been renumbered to read as Condition L3.2.3.

Monitoring Conditions L3.2.1, L3.2.2, renumbered Condition L3.2.3 and reporting Condition L5.2.1 remains on the Existing Licence to manage point source emissions to air.

The changes are detailed below in the Amendment section.

Holder's comments

The Licence Holder was provided with the draft Amendment Notice on 8/10/2018. The Licence Holder responded waiving the remaining comment period until 6/11/2018. No comments were submitted on the draft Amendment Notice.

Amendment

Interpretation

1. The Licence is amended by the deletion of the text shown in strikethrough below and the insertion of the red text shown in underline below:

*"AACR" means Annual Audit Compliance Report – available at:
<https://www.der.wa.gov.au/our-work/licences-and-works-approvals/publications#aacr>*

~~'CEO' for the purpose of correspondence means;~~

~~Manager Licensing (Greater Swan)
Department of Environment Regulation
Locked Bag 33
GLOISTERS SQUARE WA 6850
Telephone: (08) 9333 7510
Facsimile: (08) 9333 7550
Email: grswanbooragoon@der.wa.gov.au;~~

*CEO for the purposes of notification means:
Director General
Department Administering the Environmental Protection Act 1986
Locked Bag 33 Cloisters Square
PERTH WA 6850
info@dwer.wa.gov.au*

~~'AS 4323.1' means the Australian Standard AS4323.1 Stationary Source Emissions Method 1:—
Selection of sampling positions;~~

2. The Licence is amended by the deletion of text shown in strikethrough below:

Emissions

~~2.3 Point source emission to surface water~~

~~— There are no point source emissions to surface water in this section.~~

~~2.4 Point source emissions to groundwater~~

~~There are no specified conditions relating to point source emissions to groundwater in this section.~~

~~2.5 Emissions to land~~

~~There are no specified conditions relating to emissions to land in this section.~~

~~2.6 Fugitive emissions~~

~~There are no specified conditions relating to fugitive emissions in this section.~~

~~2.7 Odour~~

~~There are no specified conditions relating to odour in this section.~~

~~2.8 Noise~~

~~There are no specified conditions relating to fugitive emissions, odour and noise in this section.~~

3. The Licence is amended by the deletion of previous Condition 3.2.3 as shown in the strikethrough text below:

3.2.3 ~~The licensee shall ensure that sampling required under Condition 3.2.1 of the Licence is undertaken at sampling locations in accordance with the AS 4323.1 or relevant part of the CEMS Code.~~
4. The Licence is amended by the deletion of the number shown in strikethrough below and the insertion of the renumbered Condition shown in underlined red text below:
3.2.4 3.2.3 *The Licensee shall ensure that all non-continuous sampling and analysis undertaken pursuant to condition 3.2.1 for the parameters specified in Table 3.2.1 is undertaken by a holder of NATA accreditation for the relevant methods of sampling and analysis.*
5. The Licence is amended by the deletion of text shown in strikethrough below:

Monitoring

~~3.3 Monitoring of point source emissions to surface water~~

~~There are no specified conditions relating to monitoring of point source emissions to surface water in this section.~~

~~3.4 Monitoring of point source emissions to groundwater~~

~~There are no specified conditions relating to monitoring of point source emissions to groundwater in this section.~~

~~3.5 Monitoring of emissions to land~~

~~There are no specified conditions relating to monitoring of emissions to land in this section.~~

~~3.6 Monitoring of inputs and outputs~~

~~There are no specified conditions relating to monitoring of inputs and outputs in this section.~~

~~3.7 Process monitoring~~

~~There are no specified conditions relating to process monitoring in this section.~~

~~3.8 Ambient environmental quality monitoring~~

~~There are no specified conditions relating to process monitoring in this section.~~

~~3.9 Meteorological monitoring~~

~~There are no specified conditions relating to meteorological monitoring in this section.~~

6. The licence is amended by the deletion of the AACR from Schedule 2: Reporting & notification forms

Appendix 1: Key documents

	Document title	In text ref	Availability
1	Application Form and supporting documentation submitted on 23/05/2018	Amendment application	DWER internal records (A1701802)
2	Emission Assessments- <i>Report Number: 1617-093 Synergy Pinjar Power station – Stratification Testing of Gas Turbine Sampling Locations 3 April 2017</i>	Stratification Results	
3	Emission Assessments- <i>Report Number: 1718-131 Synergy Pinjar Power station – Stratification Testing of Gas Turbine Sampling Locations 3 25 January 2018</i>		
4	Licence L7167/1997/10 – Mungarra Gas Turbine Power Station	L7167/1997/10	accessed at www.dwer.wa.gov.au
5	Licence L8395/2009/2 – Pinjar Gas Turbine Power Station	L8395/2009/2	
6	DER, July 2015. <i>Guidance Statement: Regulatory principles</i> . Department of Environment Regulation, Perth.		
7	DER, October 2015. <i>Guidance Statement: Setting conditions</i> . Department of Environment Regulation, Perth.		
8	DER, November 2016. <i>Guidance Statement: Risk Assessments</i> . Department of Environment Regulation, Perth.		
9	DER, November 2016. <i>Guidance Statement: Decision Making</i> . Department of Environment Regulation, Perth.		