

# **Amendment Notice 1**

Licence Number	L8395/2009/2
Licence Holder ABN	Electricity Generation and Retail Corporation 58 673 830 106
File Number:	DEC268-2
Premises	Pinjar Gas Turbine Power Station Lot 500 on Plan 59628 Perry Road PINJAR WA 6065
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 <u>info@dwer.wa.gov.au</u>
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 L8395/2009/2 - 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 4332.1.

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 L8395/2009/2.

Instrument	Issued	Amendment
L8395/2009/2	31/10/2013	Licence amended to REFIRE format
L8395/2009/2	15/08/2014	Change occupier name
L8395/2009/2	29/04/2016	Amendment Notice - amendment of licence expiry date to 30/09/2024
L8395/2009/2	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

#### Table 2: Licence amendment

## Location and receptors

The premises is located approximately 50km north of Perth. 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 single rural residential receptor located approximately 4.5km southwest from the Premises

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

Environmental receptors	Distance from Prescribed Premises
Yanchep National Park	12.5 km north west of the Prescribed Premises
Groundwater (located above Gnangara Mound a priority 1water source protection area)	50-70 m deep

#### Table 4: Environmental receptors and distance from activity boundary

### **Risk assessment**

Although the proposed amendment does not result in any changes to emissions from the Premises, air emissions have 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.

Risk Event					Consequence Likelihood				
Source/	Activities	Potential emissions	Potential receptors	Potential pathway	Potential adverse impacts	rating	rating	Risk	Reasoning
<b>Cat 52:</b> Electric Power Generation	Operation of gas turbines	Discharge of combustion gases (NOx)	Nearest rural residential receptor is 4.5km away	Air / wind dispersion	Health and amenity impacts	Slight	Unlikely	Low	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. The removal of this condition does not alter the risk profile of the emission See reasoning below:

## Table 5: Risk assessment for proposed amendments during operation

Licence: L8395/2009/2

Pinjar Gas Turbine Power Station (Pinjar) has six Frame 6 gas turbines (2 x Hitachi and 4 x European Gas Turbines (EGT)) and three Frame 9 gas turbines (2 x John Brown Engineering and 1 EGT). The Licence Holder selected the following gas turbines for stratification testing:

- Unit 2 (Licence emission point reference A2) [Hitachi Frame 6]
- Unit 7 (Licence emission point reference A6) [EGT Frame 6]
- Unit 9 (Licence emission point reference A7) [John Brown Frame 9]
- Unit 11 (Licence emission point reference A9) [EGT Frame 9]

To establish the stratification of the fixed sampling plane (static measurement point) in each of the above gas turbines, the Licence Holder engaged consultants *'Emission Assessments'* to establish the distribution of total oxides of nitrogen (NO + NO<sub>2</sub>) and Oxygen (O<sub>2</sub>) across each designated traverse point. These parameters were chosen as they are the most representative gases in terms presence and in sufficient concentrations to derive an appropriate comparison. During the test periods the process was operating normally, at the highest available stable load point.

At each selected location '*Emission Assessments' 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)*'.

	Analyte	Unit	Average Reading		Stratification %		Is measurement
Emission point			Traverse probe	Static probe	Maximum value	Criteria	location suitable? (non-stratified)
Unit 2 (A2)	Oxides of Nitrogen (NO <sub>x</sub> )	ppm	138.4	136.8	2.6	<±10%	Yes
[Hitachi Frame 6]	Oxygen (O <sub>2</sub> )	%	14.74	14.84	1.1	<±10%	Yes
Unit 7 (A6)	Oxides of Nitrogen (NO <sub>x</sub> )	ppm	140.4	137.9	2.1	<±10%	Yes
[EGT Frame 6]	Oxygen (O <sub>2</sub> )	%	15.66	15.69	0.4	<±10%	Yes
Unit 9 (A7)	Oxides of Nitrogen (NO <sub>x</sub> )	ppm	137.6	136.5	2.7	<±10%	Yes
[John Brown Frame 9]	Oxygen (O <sub>2</sub> )	%	15.15	15.22	0.5	<±10%	Yes
Unit 11 (A9) [EGT Frame 9]	Oxides of Nitrogen (NOx)	ppm	164.6	164.5	0.8	< ±10%	Yes
	Oxygen (O2)	%	14.87	14.87	1.1	< ±10%	Yes

A summary of the stratification tests results are illustrated in Table 6 below (from Application).

A stack sample plane is considered to be non-stratified (homogeneous) if the degree of stratification at any point is <  $\pm$ 5.0%. The sample plane is considered to be minimally stratified if the degree of stratification at any point is <  $\pm$ 10.0% and stratified if the degree of stratification > $\pm$ 10%. Based on the above results the tested locations are non-stratified with the distribution of NO<sub>X</sub> and O<sub>2</sub> across the sample planes.

## Decision

Table 6: Summary of results

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.

## Licence Holder's comments

The Licence Holder was provided with the draft Amendment Notice on 4/10/2018. The Licence Holder responded waiving the remaining comment period until 1/11/2018. 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:

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

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

 Manager Licensing (Greater Swan)

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

2. 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 partof the CEMS Code.

- 3. 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 <u>3.2.3</u> 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.

4. The Licence is amended by the deletion of the number shown in strikethrough below and the insertion of the number shown in underlined red text below:

#### Monitoring

3.2.2 The Licensee shall calculate on a monthly basis emissions data for parameters listed in Table 3.2.1 3.2.2 according to the specifications in that table using the Approved methodology.

Emission point reference	Parameter	Units	Frequency	Method
A1-A9	NOx	mg/m <sup>3</sup>	Monthly	Approved Methodology
	SO <sub>2</sub>	g/s		
	PM			
	CO			
	VOCs			

5. The Licence is amended by the insertion of the red text shown in underline below:

#### Reporting

5.2.3 The Licensee shall submit the information in Table 5.2.2 to the CEO according to the specifications in that table.

<u>Table 5.2.2</u>				
Condition or table (if relevant)	Parameter	Reporting period	Reporting date (after end of the reporting period)	Format or form <sup>1</sup>
-	Copies of original monitoring reports submitted to the Licensee by third parties	Not Applicable	Within 14 days of the CEOs request	As received by the Licensee from third parties

Note 1: Forms are in Schedule 2

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

#### 3.3-3.4 Monitoring of point source emissions to surface water and groundwater

There are no specified conditions relating to monitoring of point source emissions tosurface water or groundwater in these sections.

#### 3.5 Monitoring emissions to land

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

#### 3.6-3.7 Monitoring inputs and outputs and process monitoring.

There are no specified conditions relating to monitoring of inputs, outputs or processmonitoring in these sections.

#### 3.8-3.9 Ambient monitoring and meteorological monitoring.

There are no specified conditions relating to ambient monitoring or meteorological monitoring in these sections.

7. 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 (A1701795)
2	Emission Assessments- Report Number: 1617-093 Synergy Pinjar Power station – Stratification Testing of Gas Turbine Sampling Locations 3 April 2017	Stratification	
3	Emission Assessments- Report Number: 1718-131 Synergy Pinjar Power station – Stratification Testing of Gas Turbine Sampling Locations 25 January 2018	Results	
4	Licence L8395/2009/2 – Pinjar Gas Turbine Power Station	L8395/2009/2	accessed at <u>www.dwer.wa.gov.au</u>
5	DER, July 2015. <i>Guidance Statement:</i> <i>Regulatory principles.</i> Department of Environment Regulation, Perth.		accessed at <u>www.dwer.wa.gov.au</u>
6	DER, October 2015. <i>Guidance</i> <i>Statement: Setting conditions.</i> Department of Environment Regulation, Perth.		
7	DER, November 2016. <i>Guidance</i> <i>Statement: Risk Assessments</i> . Department of Environment Regulation, Perth.		
8	DER, November 2016. <i>Guidance</i> <i>Statement: Decision Making.</i> Department of Environment Regulation, Perth.		