



Licence Number	L7860/2003/5
Licence Holder	Electricity Generation and Retail Corporation
ABN	58 673 830 106
File Number:	2010/0030761
Premises	Cockburn No 1 Power Station Weston Street NAVAL BASE WA 6165
	Legal description – Part Lot 22 on Diagram72310
Date of Amendment	17 June 2019

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.

MANAGER, PROCESS INDUSTRIES
REGULATORY SERVICES

an Officer delegated under section 20 of the *Environmental Protection Act 1986* (WA).

Definitions and interpretation

Definitions

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

Table 1: Definitions

Term	Definition
CEMS	Continuous Emission Monitoring System
mg/m ³	milligrams per cubic metre
ppmvd	parts per million volumetric dry

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 has applied for three amendments to the existing licence:

1. Remove condition 1.3.1 which limits operations at low load (50 MW to 80 MW) to the hours of 7 pm to 7 am.
2. Amend Table 2.2.2 which sets limits on discharges to air to reflect the operating conditions of the gas turbine as it operates since upgrades to the burners in 2015 and allow more flexible operations of the power station.
3. Insert a condition to impose a 90% monthly availability limit to the continuous emissions monitoring for discharges to water.

BACKGROUND

The Licence Holder operates a Category 52 Electrical Power Generation plant at this premises since 2003. The facility consists of a 160 MWe natural gas fired turbine and generator and an 80 MWe steam turbine and generator using waste heat from the gas turbine.

The licence was amended in December 2010 inserting a condition that allowed operations between 50 MW and 80 MW between the hours of 7pm and 7am, and, the following limits table (units were changed from pmvd to mg/m³ in 2013):

Point source emission limits to air					
Emission point Reference	Parameter	Operating condition	Facility nominal load (MW)	Limit (including units) ^{1,2}	Averaging period
A1	NOx	Base load	240	70 mg/m ³	30 minutes
		Low load	165		
		Low load (7pm- 7am)	50-80	113 mg/m ³	
		Frequency control	145-240		

Note 1: All units are referenced to STP.

Note 2: Concentration units for A1 are referenced to 15% O₂. Correction for continuous monitoring should be made continuously.

This amendment was granted at the request of the Licence Holder and was made to allow the power station to operate at night when electricity demand was low.

In 2015 new burners were installed allowing the turbine to operate more efficiently at low power loads.

The Licence Holder has applied to change the wording of the above table to reflecting the operation of the upgraded gas turbine. The turbine burners are a conical shape and operate with a pilot gas flame burning from the centre during start and at very low load. As the load is increased, premixed fuel is introduced from holes in the side of the cone spreading the fuel for low emission burning and the pilot is deactivated. The Licence Holder has defined switchover as the point where the pilot burners are switched off and proposed that the limits table be amended to use the words below switch over and above switch over to allow them to use Cockburn power station more frequently because it is their most efficient power station. NOx

emissions from gas turbines decrease with increasing ambient temperatures and on warm days the gas turbine will meet the 70 mg/m³ limit at loads less than 145 Megawatts.

Cockburn power station is required by licence conditions to continuously monitor the temperature and free chlorine concentration of sea water used for cooling and discharged to Cockburn Sound. The Licence Holder has requested some flexibility for equipment to allow for breakdown, maintenance and calibration.

Amendment history

Table 2 provides the amendment history for L7860/2003/5.

Table 2: Licence amendments

Instrument	Issued	Amendment
L7860/2003/5	15/6/2015	New licence issued because of the expiry of L7860/2015/4
L7860/2003/5	28/8/2015	Licence amendment to allow installation Alstom EV burners to allow the Gas Turbine to operate at lower load under normal operation.
L7860/2003/5	25/9/2015	Licence amendment to allow increased NOx emissions during the commissioning of the new burners
L7860/2003/5	29/4/2016	Licence amendment to extend the expiry date to 16 June 2030
L7860/2003/5	9/9/2016	Amendment Notice No 1 removing references to the commissioning of new burners and redundant improvement conditions. Changing the reporting dates and definition of annual period at request of Licence Holder.
L7860/2003/5	6/1/2017	Amendment Notice No 2, an administrative amendment to change some occupier details and addresses.
L7860/2003/5	19/11/2018	Amendment Notice No 3, amendment to allow use of an alternative sampling port for stack monitoring

Decision

1 Remove Condition 1.3.1 and Amend Table 2.2.2

In determining to amend the licence, the following matters were considered by the Delegated Officer:

- NOx emissions decrease with increasing ambient temperatures giving the capacity for the gas turbine to operate at low loads with low NOx emissions during the day;
- the original licence limits were set when the Licence Holder was operating coal powered turbines emitting up to 1000 mg/m³ NOx at the Kwinana Power Station next door, these turbines have now been decommissioned and removed;
- the existing licence restricts the operating hours of the Cockburn No1 power station which is Synergy's lowest emission intensity thermal power station on the South West Interconnected System;

The Delegated Officer has determined that the proposed amendment does not significantly increase the risk to the environment. The definitions are amended, Condition 1.3.1 is deleted and Table 2.2.2 is amended.

2 90% monthly availability of CEMS

The Delegated Officer accepts that continuous monitoring equipment will from time to time require maintenance or calibration and that the proposed amendment is reasonable and does not significantly increase the risk to the environment.

Licence Holder's comments

The Licence Holder was provided with the draft Amendment Notice on 11 June 2019. The Licence Holder advised on 12 June 2019 that they wished to waive the comments period and have the Amendment Notice issued.

Amendment

1. Definitions of the Licence are amended by the insertion of the red text shown in underline below:

“above switchover” means the gas turbine premix burner group is in operation exclusively

“below switchover” means the gas turbine pilot burner group are in operation either exclusively or in conjunction with the premix burner group

2. The Licence is amended by the deletion of the following Condition.

~~*1.3.1 The Licensee may only operate between 50MW and 80MW load capacity between the hours of 7pm and 7am.*~~

3. Table 2.2.2 of 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:

Table 2.2.2: Point source emission limits to air					
Emission point Reference	Parameter	Operating condition	Facility nominal load (MW)³	Limit (including units)^{1,2,3}	Averaging period
A1	NOx	Base load	240	70 mg/m³	30 minutes
		Low load	145		
		<u>Low load (7pm-7am)</u>	<u>50-80</u>	<u>113 mg/m³</u>	
		<u>Frequency control</u>	<u>145-240</u>		

Note 1: ~~All units are referenced to STP.~~

Note 2: ~~Concentration units for A1 are referenced to 15% O₂. Correction for continuous monitoring should be made continuously.~~

Note 3: ~~Limits are applicable to normal operating conditions.~~

Table 2.2.2: Point source emission limits to air					
<u>Emission point Reference</u>	<u>Parameter</u>	<u>Operating condition</u>	<u>Facility nominal load (MW)³</u>	<u>Limit (including units)^{1,2,3}</u>	<u>Averaging period</u>
<u>A1</u>	<u>NOx</u>	<u>Gas turbine above switchover</u>		<u>70 mg/m³</u>	<u>30 minutes</u>
		<u>Gas turbine below switchover</u>		<u>113 mg/m³</u>	
		<u>Frequency Control Mode</u>			

Note 1: All units are referenced to STP.

Note 2: Concentration units for A1 are referenced to 15% O₂. Correction for continuous monitoring should be made continuously.

Note 3: Limits are applicable to normal operating conditions.

4. The Licence is amended by the insertion of the following Condition:

3.3.2 For any parameter in Table 3.3.1 requiring continuous monitoring, the Licence Holder shall ensure that the CEMS is available for at least 90% of operational time in a calendar month and 95% of the operational time in the preceding 12 months.

Appendix 1: Key documents

	Document title	Availability
1	L7860 - Application to Amend Licence - Synergy - Cockburn Power Station	DWER Records A177150
2	DER, July 2015. <i>Guidance Statement: Regulatory Principles</i> . Department of Environment Regulation, Perth.	accessed at www.dwer.wa.gov.au
3	DER, October 2015. <i>Guidance Statement: Setting Conditions</i> . Department of Environment Regulation, Perth.	
4	DER, November 2016. <i>Guidance Statement: Risk Assessments</i> . Department of Environment Regulation, Perth.	
5	DER, November 2016. <i>Guidance Statement: Decision Making</i> . Department of Environment Regulation, Perth.	