Government of Western Australia
Department of Environment Regulation

Amendment Notice 1

Licence Holder:	NewGen Power Kwinana Pty Ltd
ACN:	116 827 546
Licence Number:	L8271/2008/1
File Number:	2013/000850
Premises:	Kwinana Gas-Fired Power Plant Lot 22 Leath Road, NAVAL BASE WA 6165 Portion Crown Reserve No. 30611 and being part of Lots 161, 218, and 1772 and part of Lot 22 (the subject of Diagram 72310 and being part of the land contained in Certificate of Title Volume 1918 Folio 62)
Date of amendment:	28 June 2017

Amendment

The Chief Executive Officer (CEO) of the Department of Environment Regulation (DER) 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 and follows.

Date signed: 28 June 2017

Jonathan Bailes
A/SENIOR MANAGER, INDUSTRY REGULATION (PROCESS INDUSTRIES)
LICENSING AND APPROVALS

an officer delegated under section 20 of the Environmental Protection Act 1986 (WA)

Amendment Notice

This notice is issued under 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 following DER Guidance Statements have informed the decision made on this amendment:

- Guidance Statement: Regulatory Principles (July 2015)
- Guidance Statement: Setting Conditions (October 2015)
- Guidance Statement: Decision Making (November 2016)
- Guidance Statement: Risk Assessment (November 2016)

Amendment Description

NewGen Power Kwinana Pty Ltd (the Licence Holder) holds Licence L8271/2008/1 for the operation of the Kwinana Gas-Fired Power Plant (the Premises).

The Premises is a base-load facility that has been in commercial operation since December 2008 and is part of the South West Interconnected System (SWIS).

The Premises comprise a 170MW combined-cycle gas turbine, with an 80MW heat recovery steam generator and steam turbine. An additional 80MW generation capacity is available from supplementary (or duct) firing, providing a total nominal capacity of 330MW. The main air emissions from the Premises are oxides of nitrogen. The Premises are fired by natural gas supplied from the North-West Shelf, and use low-NOx burners.

The Premises uses seawater for condenser cooling, which has no direct contact with process fluids or wastes. A sodium hypochlorite dosing plant is used to control marine growth in the inlet structures, pumping equipment, condensers and the outfall structures. The cooling water intake and outfall fall within the marine area covered by the *State Environmental (Cockburn Sound) Policy 2015* (Cockburn Sound SEP).

This Amendment Notice is the result of an application for licence amendment lodged by the Licence Holder on 25 January 2017. The Licence Holder requested the following amendments:

1. Remove condition 2.2.2 which specifies an emissions to air target of 70mg/m3 for nitrogen oxides (NOx); and
2. Remove condition 2.3.2 which specifies an emission limit of 0.5 parts per million (ppm) for chlorine in wastewater discharged to Cockburn Sound.

The Licence Holder also requested that the Premises map and map of emission points in the licence is updated to show the correct location of the cooling water discharge monitoring point; and that Form WR1 is updated to reflect that surface water chlorine and temperature monitoring are carried out continuously.

Other approvals

The Licence Holder has provided the following information relating to other approvals as outlined in Table 1.

Table 1: Relevant approvals

Legislation	Number	Approval
Part IV of the *Environmental Protection Act 1986*	Ministerial Statement 693 (MS693) published 12 October 2005	Implementation of the construction, operation and maintenance of a nominal 320-megawatt combined-cycle base-load power plant at Kwinana.

Conditions 7-1 to 7-3 of MS693 require the proponent to prepare, implement and publish a Stack Emissions Management Plan (SEMP) to address:

1. *specific measures to minimise total air emissions from the power station to meet emission limits consistent with best practicable technology and current industry standards;*
2. *monitoring of air emissions, including nitrogen oxides (NOx) and volatile organic compounds (VOCs); and*
3. *public reporting of air emissions and any complaints about air emissions.*

Table 1 in Schedule 1 of MS693 describes the key proposal characteristics. Oxides of nitrogen are characterised as approximately 25 to 31 parts per million by volume (which equates to approximately 50 to 63mg/m3 (as NO_2)).

The SEMP was approved by the Office of the Environmental Protection Authority in 2005 and subsequently revised in 2014. Table 1 (atmospheric emission limits) of the current SEMP states the emission concentration limit for NOx as 70mg/m^3. Table 2 (ambient air quality standards) of the SEMP states that the annual average ground level concentration of NOx at monitoring sites in Hope Valley and Rockingham were approximately 10ug/m^3, well below the NEPM standard of 60ug/m^3.

Amendment history

Table 2 provides the amendment history for Licence L8271/2008/1.

Table 2: Licence amendments

Instrument	Issued	Amendment
L8271/2008/1	30/07/2009	Licence amendment
L8271/2008/1	03/06/2010	Licence amendment
L8271/2008/1	07/11/2013	Licence amendment
L8271/2008/1	29/07/2016	Licence amendment
L8271/2008/1	28/06/2017	Amendment Notice 1

Decision

Removal of NOx target for emissions to air

The Licence Holder applied to remove the emissions to air NO_x target from the licence as this aspect is regulated by MS693. Prior to construction of the Premises the Ministerial Statement required the Licence Holder to develop a Stack Emissions Management Plan (SEMP) and implement the SEMP (Conditions 7-1 and 7-2).

For the most recent reporting period (2016) the NO_x target of 70mg/m^3 was exceeded on a number of occasions as a result of an upgraded compressor being incorrectly tuned. For the 2015 reporting period, biannual test results for NO_x were 62 mg/m^3 and 32 mg/m^3, below the required target.

The Delegated Officer has reviewed the inclusion of an emission to air target. Other than reporting on an annual basis, the target is not linked to any management action that the Licence Holder has to carry out if the target is exceeded. In considering whether to change the target to an enforceable limit or link it to a management action, The Delegated Officer had regard to the regulation of emissions to air through MS693 and the SEMP and therefore decided to remove the NOx target from the licence.

Monitoring of NO_x will remain in the licence (condition 3.2.1) and the results will continue to be reported through the Annual Environmental Report (condition 4.2.1).

Removal of chlorine limit for emissions to surface water

Currently the residual chlorine content in discharged cooling water is continuously measured by an in-line analyser. The discharge concentration of chlorine is set at a trigger point of 0.5ppm (mg/l). If the trigger is approached, the Licence Holder is able to reduce the sodium hypochlorite dosing set-point and reduce the concentration of residual chlorine in the cooling water.

The concentration of chlorine in the cooling water is diluted in the discharge channel and through the diffuser at the discharge point. The residual concentration of chlorine at the edge of the mixing zone is expected to be negligible.

Data for residual chlorine monitoring in cooling water provided by the Licence Holder as part of the Annual Environmental Reports show that for the last two reporting periods the average chlorine level was 0.15mg/L and 0.16mg/L.

Discharges to Cockburn Sound are subject to the management requirements of the Cockburn Sound SEP, including the requirement for Environmental Quality Criteria (EQC) established by the Environmental Protection Authority (EPA) to be met.

Based on the above information, the Delegated Officer considers that the risk to the environment from residual chlorine in cooling water is low and has removed the discharge limit from the licence. Conditions relating to the monitoring of residual chlorine will remain in the licence, and monitoring data will continue to be reported through the Annual Environmental Report.

Other amendments

The Delegated Officer has updated condition 3.3.1 and the Premises map to reference the correct location of the cooling water monitoring point. The Delegated Officer has also removed the reporting form templates in Schedule 2 as the Licence Holder provides the required data in their Annual Environment Report which is based on their own template.

Licence Holder's comments

The Licence Holder was provided with the draft Amendment Notice on 13 June 2017. The Licence Holder responded on 19 June 2017 and requested that the Amendment Notice is granted before the end of the consultation period.

Amendment

1. The licence is amended by the deletion of the following Condition 2.2.2:

   2.2.2 The Licensee shall not cause or allow point source emissions to air greater than the limits listed in Table 2.2.2.

Table 2.2.2: Point source emission targets to air			
Emission point Reference	***Parameter***	***Target (including units)[1,2,3]***	***Averaging period***
A1	*Nitrogen oxides (NOx)*	*70 mg/m^3*	*CEMS or PEMS (1 hour average)*

Note 1: All units are referenced to STP dry
Note 2: All units are referenced to 15% O_2
Note 3: Targets do not apply during startup and shutdown

2. The licence is amended by the deletion of the following Condition 2.3.2:

   2.3.2 The Licensee shall not cause or allow point source emissions to surface water greater than the limits listed in Table 2.3.2

Table 2.3.2: Point source emission limits to surface water			
Emission point reference	***Parameter***	***Limit (including units)***	***Averaging period***
W1	*Residual chlorine*	*0.5 ppm*	*Spot sample*

3. Table 3.3.1 of the licence in amended by the deletion of the text shown in strikethrough below and the insertion of the red text shown in underline below.

Table 3.3.1: Monitoring of point source emissions to surface water				
~~Emission~~ Monitoring point reference	***Parameter***	***Units***	***Frequency***	***Method***
~~W1~~ M1	*Residual chlorine*	*mg/l*	*~~Monthly~~ Continuous*	*Not specified[1]*
	Temperature	*Degrees Celcius*	*Continuous*	*Not specified[1]*

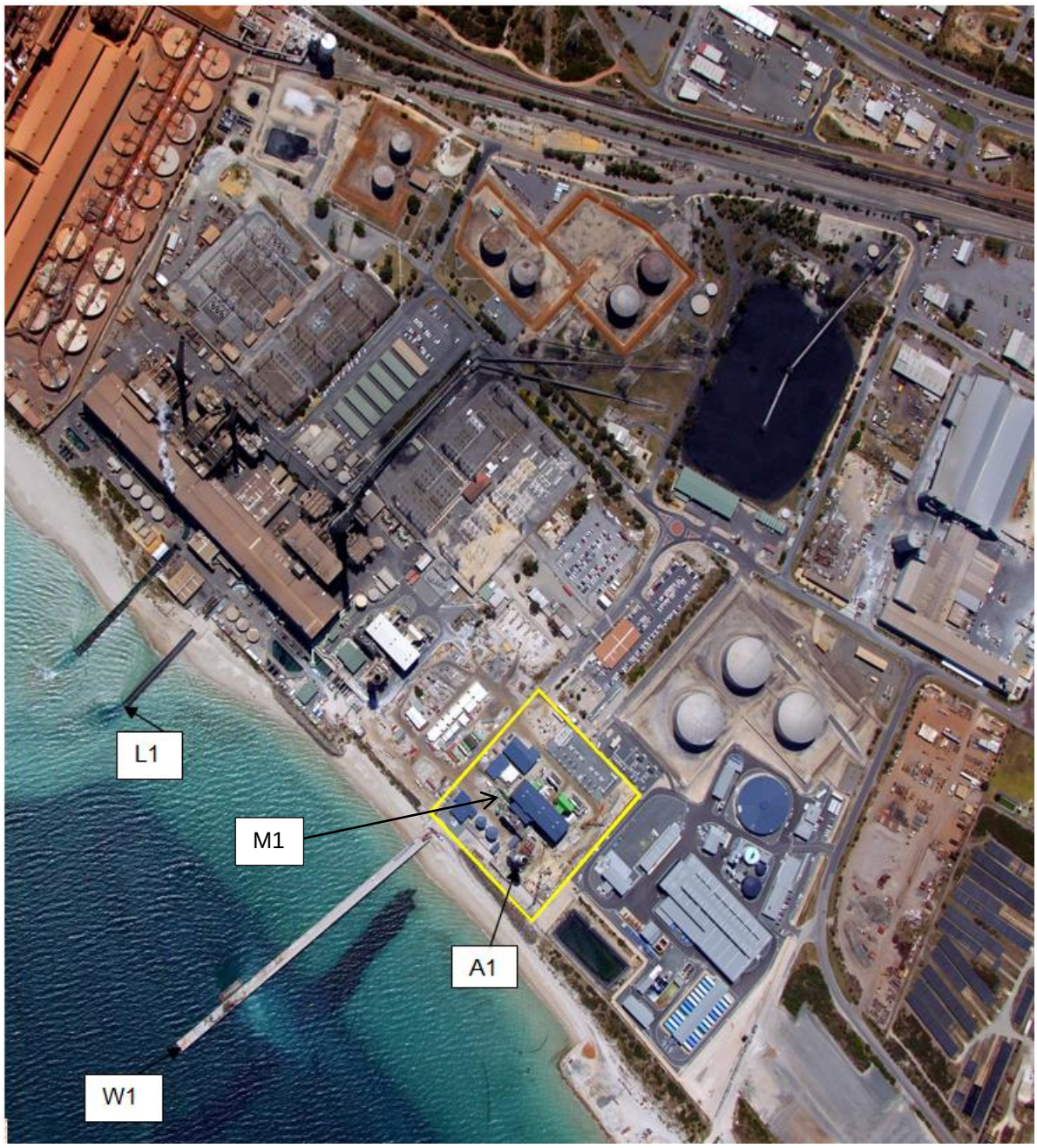
Note 1: In field non-NATA accredited sampling permitted

4. The licence is amended by the deletion of *Form AR1* and *Form WR1* in Schedule 2.
5. The *Premises map and map of emission points* in Schedule 1 of the licence is replaced by the *Premises map and map of emission points* attached to this Amendment Notice.

Premises map and map of emission points

The Premises is shown on the map below. The yellow line depicts the Premises boundary.

The location of the emission points defined in Tables 2.2.1 and 2.3.1 and monitoring point in Table 3.3.1 are shown below.



Appendix 1: Key Documents

	Document Title	In text ref	Availability
1	Licence L8271/2008/1 – Kwinana Gas-Fired Power Plant	L8271/2008/1	accessed at http://www.der.wa.gov.au
2	Application Form: Licence amendment and supporting documentation	N/A	DER records (A1365478)
3	E-mail - Supplementary information to licence amendment application.	N/A	DER records (A1372799)
4	Statement that a proposal may be implemented (pursuant to the provisions of the *Environmental Protection Act 1986*) - Kwinana Gas-Fire Power Station, Leath & Barter Roads, Kwinana - published 12 October 2005	MS693	Accessed at http://www.epa.wa.gov.au
5	*State Environmental (Cockburn Sound) Policy 2015*	Cockburn Sound SEP	Accessed at http://www.epa.wa.gov.au