



Application for licence amendment

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

Licence number	L7860/2003/5
Licence holder	Electricity Generation and Retail Corporation
ACN	58 673 830 106
DWER file number	2010/003076
Premises	Cockburn No 1 Power Station Lot 22 Weston Street NAVAL BASE, WA 6165
Date of report	20 April 2022
Status of report	Final

1. Decision summary

Licence L7860/2003/5 is held by Electricity Generation and Retail Corporation (licence holder) for the Cockburn No 1 Power Station (the premises), located at Weston Street, Naval Base.

This 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, revised licence L7860/2003/5 has been granted.

The revised licence consolidates and supersedes the existing licence previously granted in relation to the premises. It has been granted with existing conditions being transferred, but not reassessed, to the new format.

2. Scope of assessment

2.1 Regulatory framework

In completing the assessment documented in this 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>.

2.2 Background

Cockburn Power Station is situated in the Kwinana Industrial Area, a specialist centre for chemical and resource-based processing, about 30 km south of Perth. It comprises a 185 megawatt electric (MWe) natural gas-powered gas turbine which provides steam to an 80 MWe steam turbine, which together as one unit equates to a maximum operating capacity of 265 MWe under optimal operating conditions.

The condenser system for the steam turbine requires cooling water to condense the low energy steam to water, which is returned to a heat recovery steam generator for the gas turbine. Seawater is used for cooling water in a once-through system.

The combined cycle plant cooling water is dosed with sodium hypochlorite to prevent growth of marine organisms in the condenser tubes. The dosed cooling water solution is then discharged into Cockburn Sound via an outfall through the neighbouring Kwinana Power Station 'Stage C' outlet. The cooling water system operates with an outfall of 5.0 m³/s and a maximum temperature rise of 9°C above ambient seawater temperature.

Existing licence L7860/2003/5 requires continuous monitoring of temperature and total residual chlorine levels in the Stage C cooling water inlet, whilst cooling water is being discharged.

2.3 Proposed amendment

The licence holder has requested to change the requirement for continuous monitoring of total residual chlorine levels to only when chlorine dosing is being undertaken.

The licence holder advises that whilst dosing of cooling water with sodium hypochlorite is the most common mode of operation it is not strictly required for the power station to operate, and on occasion it does operate for short periods without dosing occurring. The main purpose of this amendment is to allow for compliant operation of the power station in the event of a chlorine sensor failure.

The licence holder advises it will continue to continuously monitor whether chlorine dosing is occurring and can therefore verify at any point in time whether there is an active source of chlorine present in the cooling water.

The licence holder therefore requests condition 3.3.1 is changed to require continuous

monitoring of total residual chlorine only when a source of chlorine is active, i.e., during active dosing of cooling water with sodium hypochlorite. This monitoring will continue for at least 60 minutes after the cessation of dosing, to detect any residual chlorine remaining in the cooling water system.

The licence holder also requests an additional monitoring requirement be added to condition 3.4.1, to require continuous monitoring of electro-chlorination plant operations, to ensure all hypochlorite dosage is recorded (to demonstrate whether a source of chlorine is active).

3. Decision

The delegated officer notes the requested amendment relates to monitoring requirements only, with no changes proposed to existing controls for emissions and discharges at the premises.

The delegated officer considers it reasonable to only require monitoring of chlorine levels when a source of chlorine is likely to be present.

It is noted the licence holder has proposed alternatives for ensuring the risk of impacts to environmental values within Cockburn Sound from discharge of cooling water remains acceptable, such as continuous monitoring at least 60 minutes after hypochlorite dosing (to detect any residual chlorine in the system) and additional monitoring of electrochlorination plant operations, to ensure a record of all dosing activities is being maintained. The delegated officer is satisfied these changes will result in a similar level of oversight of the dosing activity and has imposed these on the revised licence.

The delegated officer notes the existing limit for total residual chlorine of 0.5 ppm within the cooling water discharge stream remains unchanged, and a review of the most recent annual environmental report indicates there have been no recent exceedances of this limit.

3.1 Consolidation of licence

As part of this amendment the department has consolidated the licence by incorporating changes made under previously issued amendments and amendment notices (Table 1).

Table 1: Licenses consolidated in this amendment

Instrument	Issued	Summary of approval
L7860/2003/5	15/06/2015	New licence issued because of the expiry of L7860/2015/4
L7860/2003/5	28/08/2015	Licence holder-initiated amendment to allow installation Alstom EV burners to allow the gas turbine to operate at lower load under normal condition.
L7860/2003/5	25/09/2015	Licence holder-initiated amendment to allow increased NOx emissions during the commissioning of the new burners.
L7860/2003/5	29/04/2016	Licence amendment to extend the expiry date to 16 June 2030.
L7860/2003/5	09/09/2016	Amendment Notice 1: licence holder-initiated licence amendment to remove references to the commissioning of new burners and redundant improvement conditions. Changing the reporting dates and definition of annual period.
L7860/2003/5	06/01/2017	Amendment Notice 2: licence holder-initiated amendment to change occupier and address details.
L7860/2003/5	19/11/2018	Amendment Notice 3: licence holder-initiated amendment to allow alternative sampling port for stack monitoring.
L7860/2003/5	17/06/2019	Amendment Notice 4: licence holder-initiated licence amendment to change wording in point source emissions to air for operation conditions.

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 amendments or amendment notices.

In consolidating the licence, the CEO has:

- updated the format and appearance of the licence;
- updated the premises correct legal description;
- 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;
- revised licence condition’s numbers, and removed any redundant conditions and realigned condition numbers for numerical consistency; and
- corrected clerical mistakes and unintentional errors.

The full consolidation of licence conditions as they relate to this revised licence are detailed in section 5.1. 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.

3.2 April 2022 amendment

The licence was amended in April 2022 to correct unintentional errors relating to the total design capacity of the unit. The correction was made to reflect the maximum operating capacity of the unit under optimal operating conditions, which totals 265 MWe (split 185 MWe for the gas fired turbine and 80 MWe for the steam turbine).

4. Consultation

The licence holder was provided with a draft amended licence and this report on 14 February 2022 and made several comments relating to incorrect condition numbering, request for unit measurement and capacity of generator changes, provision of additional information including an infrastructure location map and query on removal of conditions.

Several conditions were removed by the department as they were considered redundant, due to their being unenforceable or duplicating other existing requirements. Units of measurement change was made, condition numbers updated, and additional information included within the amended licence.

5. Conclusion

Based on the assessment in this report, the delegated officer has determined that a revised licence will be granted, subject to conditions commensurate with the determined controls and necessary for administration and reporting requirements.

5.1 Summary of amendments

Table 2 provides a summary of the proposed amendments and consolidation of licence conditions 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 2: Summary and consolidation of licence conditions in this amendment

Existing condition	Condition summary	Revised licence condition	Conversion notes
1.1.1 1.1.2	Interpretation and definitions	N/A Interpretation section, Definitions and Table 9	Redundant condition. Revised to current licensing format.

Existing condition	Condition summary	Revised licence condition	Conversion notes
1.1.3	Australian or other standard	N/A Interpretation section, Definitions and Table 9	Redundant condition. Revised to current licensing format.
1.1.4	Reference to code of practice	N/A Interpretation section, Definitions and Table 9	Redundant condition. Revised to current licensing format.
1.2.5	Emissions	Condition 2 and Table 2	Redundant condition. Revised to current licensing format.
1.2.1	Pollution control and monitoring equipment	N/A	Redundant condition. Adequately covered by alternative existing conditions. Deleted from licence.
1.2.2	Storage of environmentally hazardous materials	N/A	Redundant condition. Adequately regulated by the Dangerous Goods Safety Act 2004. Deleted from licence.
1.2.3	Recovery and removal of spills	N/A	Redundant condition. Adequately covered by EP (Unauthorised Discharges) Regulations 2004. Deleted from licence.
1.2.4	Prevention of contamination and containment of contaminated stormwater	N/A	Redundant condition. Not valid or enforceable or risk based. Deleted from licence
1.3.1	Deleted within Amendment Notice 4	N/A	N/A
2.1.1	Record and investigate exceedances	Condition 18	Revised to current licensing format.
2.2.1	Emissions to air	Condition 2	Revised to current licensing format
2.2.2	Point source emission limits to air	Condition 3	Revised to current licensing format.
2.3.1	Point source emission to surface water	Condition 4	Revised to current licensing format
2.3.2	Point source emission limits to surface water	Condition 5	Revised to current licensing format
3.1.1	General monitoring requirements	Condition 6	Revised to current licensing format
3.1.2	Six monthly sampling for air emissions	Condition 7	Revised to current licensing format
3.1.3	Record data	Condition 8	Revised to current licensing format

Existing condition	Condition summary	Revised licence condition	Conversion notes
3.1.4	Calibration to manufactures specifications	Condition 9	Revised to current licensing format
3.1.5	Calibration requirements	Condition 10	Revised to current licensing format
3.2.1	Monitoring air emissions	Condition 11	Revised to current licensing format.
3.2.2	Deleted within Amendment Notice 3	N/A	N/A
3.2.3	NATA accreditation	Condition 12	Revised to current licensing format.
3.3.1	Surface water monitoring	Condition 5	Revised to current licensing format
3.3.2	90% availability limit for continuous surface water monitoring	Condition 14	Revised to current licensing format
3.4.1	Outputs and inputs monitoring	Condition 16	Revised to current licensing format
3.5.1	Groundwater monitoring	Condition 15	Revised to current licensing format
4.1.1	Deleted within Amendment Notice 1	N/A	N/A
5.1.1	Records	Condition 20	New numbering and update to licence wording format.
5.1.2	Person in charge	N/A	Redundant condition. Not enforceable or risk based. Deleted from licence.
5.1.3	AACR	Condition 18	Revised to current licensing format. Licence holder can access new form from www.dwer.wa.gov.au
5.1.4	Complaints register	Condition 17	Revised to current licensing format
5.2.1	AER reporting	Condition 21	Revised to current licensing format
5.2.2	AER data requirements	Condition 21	Revised to current licensing format
5.2.3	Non annual reporting requirements	Condition 21	Revised to current licensing format
5.3.1	Notification requirements	Condition 18	Revised to current licensing format, any licence exceedances and breached are reported annually
Schedule 1: Maps	Premises map	Schedule 1: Figure 1 Premises map	New naming convention, updated map.
Schedule 1 maps	Monitoring location map	Schedule 1 Figure 2 Monitoring points maps	New naming convention.

Existing condition	Condition summary	Revised licence condition	Conversion notes
Schedule 2 Reporting & notifications	Annual Audit Compliance Report Form N1 Notification	N/A	Redundant attachment. Deleted from Licence Forms accessed at www.dwer.wa.gov.au
New condition 18	N/A	Condition 20	Standard books condition for revised licence.