

Environment Protection Licence

Licence - 761

Licence Details

Number:	761
Anniversary Date:	01-July

Licensee

SUNSET POWER INTERNATIONAL PTY LTD
 LEVEL 7, 287 ELIZABETH STREET
 SYDNEY NSW 2000

Premises

VALES POINT POWER STATION AND COAL UNLOADER
 VALES POINT ROAD
 MANNERING PARK NSW 2259

Scheduled Activity

Chemical storage
 Coal works
 Crushing, grinding or separating
 Electricity generation
 Energy recovery
 Sewage treatment

Fee Based Activity

Scale

Coal works	> 2000000-5000000 T annual handing capacity
Crushing, grinding or separating	> 2000000 T annual processing capacity
Energy recovery from general waste	Any capacity
General chemicals storage	0-5000 kL storage capacity
Generation of electrical power from coal	> 4000 GWh annual generating capacity
Petroleum products storage	0-5000 kL storage capacity
Sewage treatment processing by small plants	0-20 ML annual maximum volume of discharge

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Region
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Information about this licence

Dictionary

A definition of terms used in the licence can be found in the dictionary at the end of this licence.

Responsibilities of licensee

Separate to the requirements of this licence, general obligations of licensees are set out in the Protection of the Environment Operations Act 1997 ("the Act") and the Regulations made under the Act. These include obligations to:

- ensure persons associated with you comply with this licence, as set out in section 64 of the Act;
- control the pollution of waters and the pollution of air (see for example sections 120 - 132 of the Act);
- report incidents causing or threatening material environmental harm to the environment, as set out in Part 5.7 of the Act.

Variation of licence conditions

The licence holder can apply to vary the conditions of this licence. An application form for this purpose is available from the EPA.

The EPA may also vary the conditions of the licence at any time by written notice without an application being made.

Where a licence has been granted in relation to development which was assessed under the Environmental Planning and Assessment Act 1979 in accordance with the procedures applying to integrated development, the EPA may not impose conditions which are inconsistent with the development consent conditions until the licence is first reviewed under Part 3.6 of the Act.

Duration of licence

This licence will remain in force until the licence is surrendered by the licence holder or until it is suspended or revoked by the EPA or the Minister. A licence may only be surrendered with the written approval of the EPA.

Licence review

The Act requires that the EPA review your licence at least every 5 years after the issue of the licence, as set out in Part 3.6 and Schedule 5 of the Act. You will receive advance notice of the licence review.

Fees and annual return to be sent to the EPA

For each licence fee period you must pay:

- an administrative fee; and
- a load-based fee (if applicable).

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The EPA publication “A Guide to Licensing” contains information about how to calculate your licence fees. The licence requires that an Annual Return, comprising a Statement of Compliance and a summary of any monitoring required by the licence (including the recording of complaints), be submitted to the EPA. The Annual Return must be submitted within 60 days after the end of each reporting period. See condition R1 regarding the Annual Return reporting requirements.

Usually the licence fee period is the same as the reporting period.

Transfer of licence

The licence holder can apply to transfer the licence to another person. An application form for this purpose is available from the EPA.

Public register and access to monitoring data

Part 9.5 of the Act requires the EPA to keep a public register of details and decisions of the EPA in relation to, for example:

- licence applications;
- licence conditions and variations;
- statements of compliance;
- load based licensing information; and
- load reduction agreements.

Under s320 of the Act application can be made to the EPA for access to monitoring data which has been submitted to the EPA by licensees.

This licence is issued to:

SUNSET POWER INTERNATIONAL PTY LTD
LEVEL 7, 287 ELIZABETH STREET
SYDNEY NSW 2000

subject to the conditions which follow.

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1 Administrative Conditions

A1 What the licence authorises and regulates

A1.1 This licence authorises the carrying out of the scheduled activities listed below at the premises specified in A2. The activities are listed according to their scheduled activity classification, fee-based activity classification and the scale of the operation.

Unless otherwise further restricted by a condition of this licence, the scale at which the activity is carried out must not exceed the maximum scale specified in this condition.

Scheduled Activity	Fee Based Activity	Scale
Coal works	Coal works	> 2000000 - 5000000 T annual handing capacity
Crushing, grinding or separating	Crushing, grinding or separating	> 2000000 T annual processing capacity
Energy recovery	Energy recovery from general waste	Any capacity
Chemical storage	General chemicals storage	0 - 5000 kL storage capacity
Electricity generation	Generation of electrical power from coal	> 4000 GWh annual generating capacity
Chemical storage	Petroleum products storage	0 - 5000 kL storage capacity
Sewage treatment	Sewage treatment processing by small plants	0 - 20 ML annual maximum volume of discharge

A2 Premises or plant to which this licence applies

A2.1 The licence applies to the following premises:

Premises Details
VALES POINT POWER STATION AND COAL UNLOADER
VALES POINT ROAD
MANNERING PARK
NSW 2259
PREMISES MARKED AND SHOWN AS "EPL761 PREMISES (APPROXIMATE BOUNDARIES INCLUDING ASSET PROTECTION ZONES)" ON THE PLAN NUMBER "VX837351" TITLED "ENVIRONMENT LICENCE MONITORING LOCATIONS LAYOUT & DETAILS", AMENDMENT 03, DATED 30/06/2015 ("THE PLAN") (EPA REF. DOC15/381265).

A3 Other activities

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A3.1 This licence applies to all other activities carried on at the premises, including:

Ancillary Activity
Railway systems activities

A4 Information supplied to the EPA

A4.1 Works and activities must be carried out in accordance with the proposal contained in the licence application, except as expressly provided by a condition of this licence.

In this condition the reference to "the licence application" includes a reference to:

- a) the applications for any licences (including former pollution control approvals) which this licence replaces under the Protection of the Environment Operations (Savings and Transitional) Regulation 1998; and
- b) the licence information form provided by the licensee to the EPA to assist the EPA in connection with the issuing of this licence.

2 Discharges to Air and Water and Applications to Land

P1 Location of monitoring/discharge points and areas

P1.1 Any new continuous emission monitoring systems installed on the premises for the purpose of monitoring emissions to atmosphere must comply with "Approved methods of the sampling and analysis of air pollutants in New South Wales."

P1.2 The following points referred to in the table below are identified in this licence for the purposes of monitoring and/or the setting of limits for the emission of pollutants to the air from the point.

<i>Air</i>			
EPA identification no.	Type of Monitoring Point	Type of Discharge Point	Location Description
10	Ambient air monitoring Meteorological monitoring		Wyee Air Quality Monitoring Station located at the cemetery, marked and shown as "MET" on the plan titled "VX837352 Environment Ambient Monitoring Locations Layout & Details", Amendment 00, dated 15/11/13 (EPA ref. DOC14/1645).
11	Discharge to air Air emissions monitoring	Discharge to air Air emissions monitoring	Stack serving Boiler Unit No. 5, marked and shown as "11" on the Plan.
12	Discharge to air Air emissions monitoring	Discharge to air Air emissions monitoring	Stack serving Boiler Unit No. 6, marked and shown as "12" on the Plan.
13	Ambient air monitoring		Dust gauge located to the south east of the premises near Tall Timbers Road, marked and shown as "V2" on the Plan.

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14	Ambient air monitoring	Dust gauge located on north eastern edge of ash dam, marked and shown as "V3" on the Plan.
15	Ambient air monitoring	Dust gauge located to the south-west of the premises, marked and shown as "V4" on the Plan.
16	Ambient air monitoring	Dust gauge located off Dorothy Street, marked and shown as "V5" on the Plan.
17	Ambient air monitoring	Dust gauge located on Griffith Road to the north of the premises, labelled "V6" on the plan titled 'Fig 1 Vales Pt and Munmorah Power Stations Dust Gauges and Ambient Air Quality Monitoring Sites', supplied to the EPA 24 May 2002.

P1.3 The following utilisation areas referred to in the table below are identified in this licence for the purposes of the monitoring and/or the setting of limits for any application of solids or liquids to the utilisation area.

P1.4 The following points referred to in the table are identified in this licence for the purposes of the monitoring and/or the setting of limits for discharges of pollutants to water from the point.

Water and land

EPA Identification no.	Type of Monitoring Point	Type of Discharge Point	Location Description
1	Discharge to waters Discharge quality monitoring Volume monitoring	Discharge to waters Discharge quality monitoring Volume monitoring	Cooling water outlet at Wyee Bay, marked and shown as "VPOC" on the Plan.
2	Discharge to waters Discharge quality monitoring Volume monitoring	Discharge to waters Discharge quality monitoring Volume monitoring	Discharge from the ash water recycle system to the cooling water outlet canal, marked and shown as "VPADB" on the Plan.
3	Discharge to utilisation area Volume monitoring	Discharge to utilisation area Volume monitoring	Pump at Retention Pond 2 that discharges treated effluent and stormwater runoff from the north-eastern corner of the ash dam to the Ash Dam Effluent Application Area, marked and shown as "Pond 2" on the Plan.
4	Discharge to waters Discharge quality monitoring Volume monitoring	Discharge to waters Discharge quality monitoring Volume monitoring	Seepage from ash dam rehabilitated area, marked and shown as "VPADS" on the Plan.
6	Ambient water monitoring		Ambient water quality monitoring point located in Crangan Bay, marked and shown as "LMB5" on the plan titled "VX837352 Environment Ambient Monitoring Locations Layout & Details", Amendment 00, dated 15/11/13 (EPA ref. DOC14/1645).

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7	Ambient water monitoring		Ambient water quality monitoring point in Wyee Bay, marked and shown as "LMB7" on the plan titled "VX837352 Environment Ambient Monitoring Locations Layout & Details", Amendment 00, dated 15/11/13 (EPA ref. DOC14/1645).
8	Ambient water monitoring		Ambient water quality monitoring point located in Chain Valley Bay, marked and shown as "LMB15" on the plan titled "VX837352 Environment Ambient Monitoring Locations Layout & Details", Amendment 00, dated 15/11/13 (EPA ref. DOC14/1645).
18	Discharge to waters Discharge quality monitoring Volume monitoring	Discharge to waters Discharge quality monitoring Volume monitoring	Overboarding of Ash Dam, marked and shown as "VPADD" on the Plan.
19	Groundwater quality monitoring		Groundwater bore, marked and shown as "VPGM/D3" on the Plan.
20	Groundwater quality monitoring		Groundwater bore, marked and shown as "VPGM/D5" on the Plan.
21	Groundwater quality monitoring		Groundwater bore, marked and shown as "VPGM/D6" on the Plan.
22	Groundwater quality monitoring		Groundwater bore, marked and shown as "VPGM/D8" on the Plan.
23	Groundwater quality monitoring		Groundwater bore, marked and shown as "VPGM/D10" on the Plan.

Note: Condition L7 specifies the limit conditions specific to discharges from Monitoring and Discharge Point 18.

3 Limit Conditions

L1 Pollution of waters

L1.1 Except as may be expressly provided in any other condition of this licence, the licensee must comply with section 120 of the Protection of the Environment Operations Act 1997.

L2 Load limits

L2.1 The actual load of an assessable pollutant discharged from the premises during the reporting period must not exceed the load limit specified for the assessable pollutant in the table below.

Note: An assessable pollutant is a pollutant which affects the licence fee payable for the licence.

L2.2 The actual load of an assessable pollutant must be calculated in accordance with the relevant load calculation protocol.

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Assessable Pollutant	Load limit (kg)
Arsenic (Air)	
Benzene (Air)	
Benzo(a)pyrene (equivalent) (Air)	
Coarse Particulates (Air)	
Fine Particulates (Air)	
Fluoride (Air)	
Lead (Air)	
Mercury (Air)	
Nitrogen Oxides (Air)	
Salt (Enclosed Water)	
Selenium (Enclosed Water)	
Sulfur Oxides (Air)	
Total suspended solids (Enclosed Water)	
Volatile organic compounds (Air)	

- L2.3 When a Load Reduction Agreement expires or is terminated the EPA will, after consultation with the licensee, apply a new load limit having regard to the agreed load in the table below or the load that may be achievable if the agreement is terminated early.

Assessable Pollutant	Agreed Load(kg)
Coarse Particles	750,000
Fine Particles	900,000

Note: For the purposes of calculating fees payable by the licensee on termination or expiration of the Load Reduction Agreement under clause 28B of the Protection of the Environment Operations (General) Regulation, the maximum load for each assessable pollutant is taken to be the lowest reported actual load over the agreement period minus one percent.

- L2.4 If the licence is transferred during the reporting period immediately preceding the termination or expiration of the Load Reduction Agreement, a reference in condition L2.3 to the actual load reported in the Annual Return for that period is taken to be a reference to the total of the actual loads reported in the Annual Returns prepared by the transferring licensee and the new licensee.
- L2.5 Condition R1.3 requires an Annual Return to be prepared by both the transferring licensee and the new licensee.

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L3 Concentration limits

- L3.1 For each monitoring/discharge point or utilisation area specified in the table\ below (by a point number), the concentration of a pollutant discharged at that point, or applied to that area, must not exceed the concentration limits specified for that pollutant in the table.
- L3.2 Where a pH quality limit is specified in the table, the specified percentage of samples must be within the specified ranges.
- L3.3 To avoid any doubt, this condition does not authorise the pollution of waters by any pollutant other than those specified in the table\.
- L3.4 Air Concentration Limits

POINT 11,12

Pollutant	Units of measure	100 percentile concentration limit	Reference conditions	Oxygen correction	Averaging period
Chlorine	milligrams per cubic metre	200			
Cadmium	milligrams per cubic metre	1			
Mercury	milligrams per cubic metre	1			
Nitrogen Oxides	milligrams per cubic metre	1500			
Total Fluoride	milligrams per cubic metre	50			
Hydrogen chloride	milligrams per cubic metre	100			
Sulfuric acid mist and sulfur trioxide (as SO ₃)	milligrams per cubic metre	100			
Total Solid Particles	milligrams per cubic metre	100			
Type 1 and Type 2 substances in aggregate	milligrams per cubic metre	5			

- L3.5 The reference basis for the air pollutants in condition L3.4 are as follows:

For Nitrogen oxides (NO₂ and/or NO), solid particles and Carbon monoxide (CO): dry, 273 K, 101.3kPa, 7% O₂.

For Sulphuric acid mist (H₂SO₄) and/or sulphur trioxide (SO₃), chlorine (Cl₂), Hydrogen chloride (HCl), Total Fluoride, Hazardous substances, Cadmium (Cd) and Mercury (Hg): dry, 273K, 101.3 kPa.

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L3.6 For the purposes of NO₂ or NO or both, as NO₂ equivalent, at Points 11 and 12 and in accordance with the Protection of the Environment Operations (Clean Air) Regulation 2010, the activity or plant defined by the licence at these locations is taken to belong to Group 2 until 1 January 2022 or unless otherwise approved in writing by the EPA.

L3.7 Water and/or Land Concentration Limits

POINT 1

Pollutant	Units of Measure	50%Limit	90%Limit	98.5%Limit	100 percentile concentration limit
Chlorine (free residual)	milligrams per litre				0.2

POINT 2

Pollutant	Units of Measure	50%Limit	90%Limit	98.5%Limit	100 percentile concentration limit
pH	pH				6.5-9.5
Total suspended solids	milligrams per litre				50

POINT 4

Pollutant	Units of Measure	50%Limit	90%Limit	98.5%Limit	100 percentile concentration limit
Total suspended solids	milligrams per litre				50

POINT 18

Pollutant	Units of Measure	50%Limit	90%Limit	98.5%Limit	100 percentile concentration limit
pH	pH				6.5-9.0
Total suspended solids	milligrams per litre				50

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L3.8 Temperature Limit - Point 1

Pollutant	Units of Measure	97% Limit	100 Percentile Limit
Temperature	degree Celsius	35	37.5

Note: Definition of Temperature Limits at Point 1

- a) The 97% limit specified for the pollutant 'Temperature' at Point 1 means during normal electricity supply conditions, cooling waters may be discharged over 35°C and up to, but not exceeding, a maximum temperature of 37.5°C for up to a total of 262 hours over a reporting period.
- b) An additional 69 hours are allocated under shortfall of electricity supply conditions as per Special Condition E1.2, where cooling waters may be discharged over 35°C and up to, but not exceeding, a maximum temperature of 37.5°C over a reporting period.
- c) The 100% limit specified for the pollutant 'Temperature' at Point 1 means cooling waters may never exceed a maximum temperature of 37.5°C except in accordance with Special Condition E1.2.
- d) In the event that the licensee exceeds the 97 percentile temperature limit the licensee must advise the EPA on a weekly basis, every day such an exceedance occurs.

L3.9 For the purpose of compliance the temperature limits for Condition L3.8 are based on 10 minute averages.

L4 Volume and mass limits

- L4.1 For each discharge point or utilisation area specified below (by a point number), the volume/mass of:
- a) liquids discharged to water; or;
 - b) solids or liquids applied to the area;
- must not exceed the volume/mass limit specified for that discharge point or area.

Point	Unit of Measure	Volume/Mass Limit
1	megalitres per day	6500
2	megalitres per day	120
3	kilolitres per day	380

L5 Waste

- L5.1 The licensee must not cause, permit or allow any waste to be received at the premises, except the wastes expressly referred to in the column titled "Waste" and meeting the definition, if any, in the column titled "Description" in the table below.

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Any waste received at the premises must only be used for the activities referred to in relation to that waste in the column titled "Activity" in the table below.

Any waste received at the premises is subject to those limits or conditions, if any, referred to in relation to that waste contained in the column titled "Other Limits" in the table below.

This condition does not limit any other conditions in this licence.

Code	Waste	Description	Activity	Other Limits
NA	General or Specific exempted waste			N/A

L5.2 The following wastes generated on the premises may be disposed of to the ash dam or within the ash dam catchment.

- a) Ash,
- b) Mill pyrites, residual detergents and oil sheens, sand, concrete products, boiler blowdown, minor chemical spill residues, chemicals for environmental control, ash dam water treatment plant residues, dust returned from the ash recovery plant, marine growth, debris, seaweed, chemical cleaning solutions, oil and chemically impacted soil, de-silting of settling basins, dredge spoil, waste wood, wood chips, dirty water drains, treatment plant discharges, coal handling plant stormwater, neutralised demineralisation effluent, polisher plant effluent, spent ion exchange resins, chlorine plant storage vessel precipitates, cable tunnel drainage, fabric filter bags, coal chitter and soil capping materials, coal mine dewatering discharges,
- c) Any other material approved in writing by the EPA.

Note: A spent solvent in the form of dilute ammonia of less than 5% concentration and at pH of not more than 9 is permitted to be discharged to the Vales Point Ash Dam. Those discharges from the post combustion carbon capture facility must only occur whilst this facility is operational. The total annual volume discharged must not exceed 5 tonnes.

L6 Potentially offensive odour

L6.1 No condition of this licence identifies a potentially offensive odour for the purposes of section 129 of the Protection of the Environment Operations Act 1997.

Note: Section 129 of the Protection of the Environment Operations Act 1997, provides that the licensee must not cause or permit the emission of any offensive odour from the premises but provides a defence if the emission is identified in the relevant environment protection licence as a potentially offensive odour and the odour was emitted in accordance with the conditions of a licence directed at minimising odour.

L7 Other limit conditions

L7.1 The licensee must not permit any discharge from Point 18 (ash dam overflow) unless rainfall measured at Point 10 (ambient air quality and meteorological monitoring point) is greater than 400mm over the 31 day period immediately prior to the discharge.

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4 Operating Conditions

O1 Activities must be carried out in a competent manner

O1.1 Licensed activities must be carried out in a competent manner.

This includes:

- a) the processing, handling, movement and storage of materials and substances used to carry out the activity; and
- b) the treatment, storage, processing, reprocessing, transport and disposal of waste generated by the activity.

O2 Maintenance of plant and equipment

O2.1 All plant and equipment installed at the premises or used in connection with the licensed activity:

- a) must be maintained in a proper and efficient condition; and
- b) must be operated in a proper and efficient manner.

O3 Dust

O3.1 The premises must be maintained in a condition which minimises or prevents the emission of dust from the premises.

O3.2 All operations and activities occurring at the premises must be carried out in a manner that will minimise the emission of dust from the premises.

O3.3 Trucks entering and leaving the premises that are carrying loads of dust generating materials must have their loads covered at all times, except during loading and unloading.

O4 Effluent application to land

O4.1 Effluent application must not occur in a manner that causes surface runoff.

O4.2 Spray from effluent application must not drift beyond the boundary of the premises.

O5 Emergency response

O5.1 The licensee must maintain, and implement as necessary, a current emergency response plan for the premises. The licensee must keep the emergency response plan on the premises at all times. The emergency response plan must document systems and procedures to deal with all types of incidents (e.g. spills, explosions or fire) that may occur at the premises or that may be associated with activities that occur at the premises and which are likely to cause harm to the environment. If a current emergency

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response plan does not exist at the date on which this condition is attached to the licence, the licensee must develop an emergency response plan within three months of that date.

O6 Processes and management

O6.1 All above ground tanks containing material that is likely to cause environmental harm must be bunded or have an alternative spill containment system in place.

O6.2 Bunds must:

- a) have walls and floors constructed of impervious materials;
- b) be of sufficient capacity to contain 110% of the volume of the tank (or 110% volume of the largest tank where a group of tanks are installed);
- c) have floors graded to a collection sump; and
- d) not have a drain valve incorporated in the bund structure,

or be constructed and operated in a manner that achieves the same environmental outcome.

O7 Waste management

O7.1 The licensee must ensure that any liquid and/or non liquid waste generated and/or stored at the premises is assessed and classified in accordance with the EPA's Waste Classification Guidelines as in force from time to time.

O7.2 The licensee must ensure that waste identified for recycling is stored separately from other waste.

O8 Other operating conditions

O8.1 The sulphur content of coal used in the boilers must not exceed 0.5% by weight on a monthly average basis.

O8.2 The sulphur content of any fuel oil used in the boilers must not exceed 0.5% by weight on a monthly average basis.

O8.3 The anti-foaming agents DEAIRES 8042 or DEAIRES 7055 trading now as Defoamer PS may be added to the outlet canal at a rate of not more than 1680 litres per day to control the discharge of floating foam.

Note: Other foaming agents may be used if approved in writing by the EPA.

O8.4 The cooling water system may be chlorinated at a rate of not more than 1200 kilograms of chlorine per day.

Note: Underground Petroleum Storage Systems

The licensee must have regard to the provisions of the Protection of the Environment Operations (Underground Petroleum Storage Systems) Regulation 2008.

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5 Monitoring and Recording Conditions

M1 Monitoring records

- M1.1 The results of any monitoring required to be conducted by this licence or a load calculation protocol must be recorded and retained as set out in this condition.
- M1.2 All records required to be kept by this licence must be:
- a) in a legible form, or in a form that can readily be reduced to a legible form;
 - b) kept for at least 4 years after the monitoring or event to which they relate took place; and
 - c) produced in a legible form to any authorised officer of the EPA who asks to see them.
- M1.3 The following records must be kept in respect of any samples required to be collected for the purposes of this licence:
- a) the date(s) on which the sample was taken;
 - b) the time(s) at which the sample was collected;
 - c) the point at which the sample was taken; and
 - d) the name of the person who collected the sample.

M2 Requirement to monitor concentration of pollutants discharged

- M2.1 For each monitoring/discharge point or utilisation area specified below (by a point number), the licensee must monitor (by sampling and obtaining results by analysis) the concentration of each pollutant specified in Column 1. The licensee must use the sampling method, units of measure, and sample at the frequency, specified opposite in the other columns:
- M2.2 Water and/ or Land Monitoring Requirements

POINT 1

Pollutant	Units of measure	Frequency	Sampling Method
Chlorine (free residual)	milligrams per litre	Monthly	Grab sample
Oil and Grease	Visible	Continuous	In line instrumentation
Temperature	degrees Celsius	Continuous	In line instrumentation

POINT 2

Pollutant	Units of measure	Frequency	Sampling Method
Ammonia	milligrams per litre	Quarterly	Grab sample
Cadmium	milligrams per litre	Quarterly	Grab sample
Copper	milligrams per litre	Quarterly	Grab sample
Lead	milligrams per litre	Quarterly	Grab sample
Manganese	milligrams per litre	Quarterly	Grab sample

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Nitrate + nitrite (oxidised nitrogen)	milligrams per litre	Monthly	Grab sample
Nitrogen (total)	milligrams per litre	Quarterly	Grab sample
pH	pH	Monthly	Grab sample
Phosphorus (total)	milligrams per litre	Monthly	Grab sample
Reactive Phosphorus	milligrams per litre	Monthly	Grab sample
Selenium	milligrams per litre	Quarterly	Grab sample
Total Kjeldahl Nitrogen	milligrams per litre	Quarterly	Grab sample
Total suspended solids	milligrams per litre	Fortnightly	Grab sample
Zinc	milligrams per litre	Quarterly	Grab sample

POINT 4

Pollutant	Units of measure	Frequency	Sampling Method
Ammonia	milligrams per litre	Quarterly	Grab sample
Cadmium	milligrams per litre	Quarterly	Grab sample
Copper	milligrams per litre	Quarterly	Grab sample
Lead	milligrams per litre	Quarterly	Grab sample
Manganese	milligrams per litre	Quarterly	Grab sample
Nitrate + nitrite (oxidised nitrogen)	milligrams per litre	Monthly	Grab sample
Nitrogen (total)	milligrams per litre	Quarterly	Grab sample
pH	pH	Monthly	Grab sample
Phosphorus (total)	milligrams per litre	Monthly	Grab sample
Selenium	milligrams per litre	Quarterly	Grab sample
Total Kjeldahl Nitrogen	milligrams per litre	Quarterly	Grab sample
Total suspended solids	milligrams per litre	Monthly	Grab sample
Zinc	milligrams per litre	Quarterly	Grab sample

POINT 18

Pollutant	Units of measure	Frequency	Sampling Method
Ammonia	milligrams per litre	Daily for any discharge >2 hrs	Grab sample
Cadmium	milligrams per litre	Daily for any discharge >2 hrs	Grab sample
Copper	milligrams per litre	Daily for any discharge >2 hrs	Grab sample
Lead	milligrams per litre	Daily for any discharge >2 hrs	Grab sample
Manganese	milligrams per litre	Daily for any discharge >2 hrs	Grab sample
Nitrate + nitrite (oxidised nitrogen)	milligrams per litre	Daily for any discharge >2 hrs	Grab sample

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Nitrogen (total)	milligrams per litre	Daily for any discharge >2 hrs	Grab sample
pH	pH	Daily for any discharge >2 hrs	Grab sample
Phosphorus (total)	milligrams per litre	Daily for any discharge >2 hrs	Grab sample
Selenium	milligrams per litre	Daily for any discharge >2 hrs	Grab sample
Total Kjeldahl Nitrogen	milligrams per litre	Daily for any discharge >2 hrs	Grab sample
Total suspended solids	milligrams per litre	Daily for any discharge >2 hrs	Grab sample
Zinc	milligrams per litre	Daily for any discharge >2 hrs	Grab sample

POINT 19,20,21,22,23

Pollutant	Units of measure	Frequency	Sampling Method
Arsenic	milligrams per litre	Quarterly	Representative sample
Cadmium	milligrams per litre	Quarterly	Representative sample
Calcium	milligrams per litre	Quarterly	Representative sample
Chromium	milligrams per litre	Quarterly	Representative sample
Copper	milligrams per litre	Quarterly	Representative sample
Electrical conductivity	microsiemens per centimetre	Quarterly	Representative sample
Iron	milligrams per litre	Quarterly	Representative sample
Lead	milligrams per litre	Quarterly	Representative sample
Magnesium	milligrams per litre	Quarterly	Representative sample
Manganese	milligrams per litre	Quarterly	Representative sample
Nickel	milligrams per litre	Quarterly	Representative sample
pH	pH	Quarterly	Representative sample
Potassium	milligrams per litre	Quarterly	Representative sample
Selenium	milligrams per litre	Quarterly	Representative sample
Sodium	milligrams per litre	Quarterly	Representative sample
Standing Water Level	metres	Quarterly	In situ
Zinc	milligrams per litre	Quarterly	Representative sample

Note: Sampling and analysis of Ammonia, Total Nitrogen and Total Kjeldahl Nitrogen at Points 2, 4 and 18 need not occur until 30 days prior to the commissioning of the Post Carbon Capture Plant. After this time sampling in accord with the table above must occur.

M2.3 Air Monitoring Requirements

POINT 10

Pollutant	Units of measure	Frequency	Sampling Method
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Fluorides	micrograms per cubic metre	Continuous	AM-8
Nitrogen dioxide	parts per hundred million	Continuous	AM-12
PM2.5	micrograms per cubic metre	Continuous	AM-22
Sulphur dioxide	parts per hundred million	Continuous	AM-20

POINT 11,12

Pollutant	Units of measure	Frequency	Sampling Method
Cadmium	milligrams per cubic metre	Yearly	TM-14
Chlorine	milligrams per cubic metre	Yearly	TM-7 & TM-8
Copper	milligrams per cubic metre	Yearly	TM-12, TM-13 & TM-14
Hydrogen chloride	milligrams per cubic metre	Yearly	TM-7 & TM-8
Mercury	milligrams per cubic metre	Yearly	TM-14
Moisture	percent	Yearly	TM-23
Molecular weight of stack gases	grams per gram mole	Yearly	TM-23
Nitrogen Oxides	milligrams per cubic metre	Continuous	In line instrumentation
Sulfuric acid mist and sulfur trioxide (as SO ₃)	milligrams per cubic metre	Yearly	TM-3
Sulphur dioxide	parts per million	Continuous	In line instrumentation
Temperature	degrees Celsius	Yearly	TM-2
Total Fluoride	milligrams per cubic metre	Yearly	TM-9
Total Solid Particles	milligrams per cubic metre	Yearly	TM-15
Type 1 and Type 2 substances in aggregate	milligrams per cubic metre	Yearly	TM-12 & TM-13
Undifferentiated Particulates	milligrams per cubic metre	Continuous	In line instrumentation
Velocity	metres per second	Yearly	TM-2
Volatile organic compounds	parts per million	Yearly	OM-2
Volumetric flowrate	cubic metres per second	Yearly	TM-2

POINT 13,14,15,16,17

Pollutant	Units of measure	Frequency	Sampling Method
Particulates - Deposited Matter	grams per square metre per month	Monthly	AM-19

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M2.4 For ambient air monitoring of pollutants, the recording of results, and reporting for Annual Return purposes shall include “averaging periods” as stipulated in the National Environment Protection (Ambient Air Quality) Measure e.g. Nitrogen dioxide averaging periods of one hour and one year; and Sulfur dioxide averaging periods of one hour, one day and one year.

M2.5 The following cooling system dosing rates must be carried out using the units of measure and at the frequency specified below

Monitoring required	Units of Measure	Frequency
Amount of anti-foaming agent used	kg/month	Monthly
Amount of Chlorine used	kg/month	Monthly
Amount of biocides used	kg/month	Monthly
Amount of inhibitors used	kg/month	Monthly
Amount of sawdust used	kg/month	Monthly

M2.6 Not less than two water quality surveys as specified below must be conducted in Lake Macquarie during each quarter of the reporting period. The surveys must be scheduled so that there are at least two surveys in each season. For each of the points specified below (by a point), the licensee must monitor (by sampling and obtaining results by analysis) the concentration of each pollutant specified in column 1. The licensee must use the sampling method and sample at the frequency specified opposite in the other columns.

POINTS 6 , 7 and 8

Pollutant	Frequency	Sampling Method
Dissolved Oxygen	At least two(2) surveys per three (3) month period with a minimum of four (4) weeks between each survey.	Measured at 0.1 metres below the surface, 0.5 metres below the surface and thereafter at 1.0 metre intervals to the bottom.
Temperature	At least two(2) surveys per three (3) month period with a minimum of four (4) weeks between each survey.	Measured at 0.1 metres below the surface, 0.5 metres below the surface and thereafter at 1.0 metre intervals to the bottom.
Salinity	At least two(2) surveys per three (3) month period with a minimum of four (4) weeks between each survey.	Measured at 0.1 metres below the surface, 0.5 metres below the surface and thereafter at 1.0 metre intervals to the bottom.
Water clarity	At least two(2) surveys per three (3) month period with a minimum of four (4) weeks between each survey.	Using a Secchi disk.
Zoo-plankton - total count	At least two(2) surveys per three (3) month period with a minimum of four (4) weeks between each survey.	Samples must be preserved and counted annually, Samples must be preserved and retained for species identification if required by the EPA.

M2.7 Information collected for Condition M2.6 - Ambient water quality monitoring for Points 6, 7 and 8 must be submitted to the EPA's Regional Manager - Hunter at PO Box 488G, Newcastle NSW 2300, or by email to

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hunter.region@epa.nsw.gov.au, annually on 1 September.

M3 Testing methods - concentration limits

- M3.1 Monitoring for the concentration of a pollutant emitted to the air required to be conducted by this licence must be done in accordance with:
- a) any methodology which is required by or under the Act to be used for the testing of the concentration of the pollutant; or
 - b) if no such requirement is imposed by or under the Act, any methodology which a condition of this licence requires to be used for that testing; or
 - c) if no such requirement is imposed by or under the Act or by a condition of this licence, any methodology approved in writing by the EPA for the purposes of that testing prior to the testing taking place.
- M3.2 Subject to any express provision to the contrary in this licence, monitoring for the concentration of a pollutant discharged to waters or applied to a utilisation area must be done in accordance with the Approved Methods Publication unless another method has been approved by the EPA in writing before any tests are conducted.

Note: The *Protection of the Environment Operations (Clean Air) Regulation 2010* requires testing for certain purposes to be conducted in accordance with test methods contained in the publication "Approved Methods for the Sampling and Analysis of Air Pollutants in NSW".

M4 Testing methods - load limits

Note:

Clause 18(1),(1A) and 2 of the Protection of the Environment Operations (General) Regulation 2009 requires monitoring of actual loads and assessable pollutants listed in L2.2 must be carried out in accordance with the testing method set out in the relevant load calculation protocol for the fee-based activity classification listed in condition A1.2.

Note: Division 3 of the *Protection of the Environment Operations (General) Regulation 2009* requires that monitoring of actual loads of assessable pollutants listed in L2.2 must be carried out in accordance with the relevant load calculation protocol set out for the fee-based activity classification listed in the Administrative Conditions of this licence.

M5 Weather monitoring

- M5.1 For each monitoring specified below (by a point number), the licensee must monitor (by sampling and obtaining results by analysis) each weather parameter specified in Column 1. The licensee must use the sampling method, units of measure, and sample at the frequency, specified opposite in the other columns.

POINT 10

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Parameter	Units of Measure	Frequency	Averaging Period	Sampling Method
Rainfall	mm	Continuous	1 hour	AM-4
Wind Speed at 10m	m/s	Continuous	15 minutes	AM-2 & AM-4
Wind Direction at 10m	°	Continuous	15 minutes	AM-2 & AM-4
Temperature at 2m	°C	Continuous	15 minutes	AM-4
Humidity	%	Continuous	15 minutes	AM-4
Net Radiation	W/m ²	Continuous	15 minutes	AM-4
Additional requirements				
- sitting				AM-1 & AM-4
- measurement				AM-1 & AM-4

M6 Recording of pollution complaints

- M6.1 The licensee must keep a legible record of all complaints made to the licensee or any employee or agent of the licensee in relation to pollution arising from any activity to which this licence applies.
- M6.2 The record must include details of the following:
- the date and time of the complaint;
 - the method by which the complaint was made;
 - any personal details of the complainant which were provided by the complainant or, if no such details were provided, a note to that effect;
 - the nature of the complaint;
 - the action taken by the licensee in relation to the complaint, including any follow-up contact with the complainant; and
 - if no action was taken by the licensee, the reasons why no action was taken.
- M6.3 The record of a complaint must be kept for at least 4 years after the complaint was made.
- M6.4 The record must be produced to any authorised officer of the EPA who asks to see them.

M7 Telephone complaints line

- M7.1 The licensee must operate during its operating hours a telephone complaints line for the purpose of receiving any complaints from members of the public in relation to activities conducted at the premises or by the vehicle or mobile plant, unless otherwise specified in the licence.
- M7.2 The licensee must notify the public of the complaints line telephone number and the fact that it is a complaints line so that the impacted community knows how to make a complaint.
- M7.3 The preceding two conditions do not apply until 3 months after: the date of the issue of this licence.

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M7.4 The licensee must nominate to the EPA a single telephone number for the purpose of the EPA contacting the licensee to provide immediate assistance or response during emergencies or any other incidents at the premises. The telephone number must be current at all times.

The nomination must be provided to the EPA's Regional Manager- Hunter at PO Box 488G, Newcastle NSW 2300.

Note: This condition does not apply until two (2) weeks after the date of issue of the Notice adding this condition to the licence.

M8 Requirement to monitor volume or mass

M8.1 For each discharge point or utilisation area specified below, the licensee must monitor:

- a) the volume of liquids discharged to water or applied to the area;
- b) the mass of solids applied to the area;
- c) the mass of pollutants emitted to the air;

at the frequency and using the method and units of measure, specified below.

POINT 1

Frequency	Unit of Measure	Sampling Method
Daily	megalitres per day	By Calculation (volume flow rate or pump capacity multiplied by operating time)

POINT 2

Frequency	Unit of Measure	Sampling Method
Continuous	megalitres per day	Flow meter and continuous logger

POINT 3

Frequency	Unit of Measure	Sampling Method
Continuous during discharge	kilolitres per day	Flow meter and continuous logger

POINT 4

Frequency	Unit of Measure	Sampling Method
Continuous during discharge	kilolitres per day	Weir structure and level sensor

POINT 18

Frequency	Unit of Measure	Sampling Method
Daily during any discharge	kilolitres per day	By Calculation (volume flow rate or pump capacity multiplied by operating time)

M9 Other monitoring and recording conditions

M9.1 Any new continuous emission monitoring systems installed on the premises for the purpose of monitoring emissions to atmosphere must comply with the EPA's "Approved Methods of the Sampling and Analysis

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of Air Pollutants in New South Wales."

6 Reporting Conditions

R1 Annual return documents

- R1.1 The licensee must complete and supply to the EPA an Annual Return in the approved form comprising:
1. a Statement of Compliance,
 2. a Monitoring and Complaints Summary,
 3. a Statement of Compliance - Licence Conditions,
 4. a Statement of Compliance - Load based Fee,
 5. a Statement of Compliance - Requirement to Prepare Pollution Incident Response Management Plan,
 6. a Statement of Compliance - Requirement to Publish Pollution Monitoring Data; and
 7. a Statement of Compliance - Environmental Management Systems and Practices.

At the end of each reporting period, the EPA will provide to the licensee a copy of the form that must be completed and returned to the EPA.

- R1.2 An Annual Return must be prepared in respect of each reporting period, except as provided below.

Note: The term "reporting period" is defined in the dictionary at the end of this licence. Do not complete the Annual Return until after the end of the reporting period.

- R1.3 Where this licence is transferred from the licensee to a new licensee:
- a) the transferring licensee must prepare an Annual Return for the period commencing on the first day of the reporting period and ending on the date the application for the transfer of the licence to the new licensee is granted; and
 - b) the new licensee must prepare an Annual Return for the period commencing on the date the application for the transfer of the licence is granted and ending on the last day of the reporting period.

Note: An application to transfer a licence must be made in the approved form for this purpose.

- R1.4 Where this licence is surrendered by the licensee or revoked by the EPA or Minister, the licensee must prepare an Annual Return in respect of the period commencing on the first day of the reporting period and ending on:
- a) in relation to the surrender of a licence - the date when notice in writing of approval of the surrender is given; or
 - b) in relation to the revocation of the licence - the date from which notice revoking the licence operates.

- R1.5 The Annual Return for the reporting period must be supplied to the EPA via eConnect *EPA* or by registered post not later than 60 days after the end of each reporting period or in the case of a transferring licence not later than 60 days after the date the transfer was granted (the 'due date').

- R1.6 The licensee must retain a copy of the Annual Return supplied to the EPA for a period of at least 4 years after the Annual Return was due to be supplied to the EPA.

- R1.7 Within the Annual Return, the Statements of Compliance must be certified and the Monitoring and Complaints Summary must be signed by:

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- a) the licence holder; or
- b) by a person approved in writing by the EPA to sign on behalf of the licence holder.

R1.8 Where the licensee is unable to complete a part of the Annual Return by the due date because the licensee was unable to calculate the actual load of a pollutant due to circumstances beyond the licensee's control, the licensee must notify the EPA in writing as soon as practicable, and in any event not later than the due date. The notification must specify:

- a) the assessable pollutants for which the actual load could not be calculated; and
- b) the relevant circumstances that were beyond the control of the licensee.

R2 Notification of environmental harm

Note: The licensee or its employees must notify all relevant authorities of incidents causing or threatening material harm to the environment immediately after the person becomes aware of the incident in accordance with the requirements of Part 5.7 of the Act.

R2.1 Notifications must be made by telephoning the Environment Line service on 131 555.

R2.2 The licensee must provide written details of the notification to the EPA within 7 days of the date on which the incident occurred.

R3 Written report

R3.1 Where an authorised officer of the EPA suspects on reasonable grounds that:

- a) where this licence applies to premises, an event has occurred at the premises; or
- b) where this licence applies to vehicles or mobile plant, an event has occurred in connection with the carrying out of the activities authorised by this licence, and the event has caused, is causing or is likely to cause material harm to the environment (whether the harm occurs on or off premises to which the licence applies), the authorised officer may request a written report of the event.

R3.2 The licensee must make all reasonable inquiries in relation to the event and supply the report to the EPA within such time as may be specified in the request.

R3.3 The request may require a report which includes any or all of the following information:

- a) the cause, time and duration of the event;
- b) the type, volume and concentration of every pollutant discharged as a result of the event;
- c) the name, address and business hours telephone number of employees or agents of the licensee, or a specified class of them, who witnessed the event;
- d) the name, address and business hours telephone number of every other person (of whom the licensee is aware) who witnessed the event, unless the licensee has been unable to obtain that information after making reasonable effort;
- e) action taken by the licensee in relation to the event, including any follow-up contact with any complainants;
- f) details of any measure taken or proposed to be taken to prevent or mitigate against a recurrence of such an event; and
- g) any other relevant matters.

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- R3.4 The EPA may make a written request for further details in relation to any of the above matters if it is not satisfied with the report provided by the licensee. The licensee must provide such further details to the EPA within the time specified in the request.

R4 Other notifications

- R4.1 The Licensee shall notify the Department of Health or the Safe Food NSW Shellfish Quality Assurance Program of any bypass or overflow from the onsite Sewage Treatment Plant that discharges to waters. When the licensee notifies the Department of Health or Safe Food NSW Shellfish Quality Assurance Program of a bypass or overflow incident, the licensee must also notify the EPA by telephoning its Environment Line service on 131 555. Notifications are to be made immediately after the licensee or one of the licensee's employees or agents becomes aware of the incident, and must include all relevant information including the information required under condition R4.2.
This condition does not negate the obligations of the licensee to report to all relevant authorities pursuant to its obligations under Part 5.7 of the *Protection of the Environment Operations Act 1997*.

- R4.2 Notifications required by condition R4.1 must include the following information:

- a) The location of the bypass or overflow and description of the receiving environment;
- b) The date, estimated start time and duration of the bypass or overflow;
- c) The estimated volume of the bypass or overflow;
- d) The nature of the incident and what lead to the bypass or overflow;
- e) Any testing or inspections of the discharge or receiving waters that have been carried out, or are proposed to be carried out, and details of when the results are anticipated.
- f) Any other available information regarding harm or potential harm to the environment.

R5 Other reporting conditions

- R5.1 The licensee must produce an air emission exceedence report if the concentration of sulphur dioxide at any time exceeds 600ppm.

Within seven (7) days of the licensee becoming aware of the exceedence of the limits specified in this condition, a written report must be sent to the EPA's Regional Manager - Hunter at PO Box 488G, Newcastle NSW 2300, or emailed to hunter.region@epa.nsw.gov.au, and must include the following:

- a) details of the date and time of the exceedence;
- b) the duration of the exceedence; and
- c) the reason(s) for the exceedence.

7 General Conditions

G1 Copy of licence kept at the premises or plant

- G1.1 A copy of this licence must be kept at the premises to which the licence applies.

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G1.2 The licence must be produced to any authorised officer of the EPA who asks to see it.

G1.3 The licence must be available for inspection by any employee or agent of the licensee working at the premises.

G2 Other general conditions

G2.1 Completed Programs

Program	Description	Completed Date
Air Quality Assessment to Determine Site Specific	Air quality assessment to determine site specific emission limits. Ensure emission limits are reflective of proper and efficient operation of plant and equipment and also do not have an impact on the receiving environment.	17-September-2002
Extent of Saline Estuarine Waters	Undertake a study of Wyee Creek and diversion channel to determine extent of estuarine waters. Identify appropriate location for discharge of saline waters from premises so that freshwater systems are not impacted	30-April-2012
Reduce Impact of Discharges	Mitigation measures to reduce impact of discharge from ash dam in Wyee Creek diversion channel. Reduce impact of saline water discharge on freshwater system	30-April-2012
Ash Dam Seepage - Groundwater Investigation	Investigate groundwater quality in vicinity of Ash Dam to determine any impact and associated mitigation measures	21-October-2015

8 Pollution Studies and Reduction Programs

U1 Investigation of further controls to reduce Nitrogen Oxide Emissions

U1.1 Aim - The aim of this pollution reduction study is to assess the feasibility of achieving reductions in the emissions of nitrogen oxides at the premises.

U1.2 The licensee must undertake a review of international best practice measures to minimise the generation, and emission, of nitrogen oxides (NO_x) from coal fired electricity generation.

U1.3 The licensee must identify control techniques, including both combustion and post combustion options, for achieving the following NO_x emission concentrations from electricity generating unit(s) at the premises:

- (i) 800 mg/m³ (dry, 273 K, 101.3 kPa, 7% O₂), equivalent to Protection of the Environment Operations (Clean Air) Regulation Group 5 limit;
- (ii) 500 mg/m³ (dry, 273 K, 101.3 kPa, 7% O₂), equivalent to Protection of the Environment Operations (Clean Air) Regulation Group 6 limit; and

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(iii) <500 mg/m³ (dry, 273 K, 101.3 kPa, 7% O₂), consistent with international best practice.

- U1.4 The licensee must assess and evaluate the feasibility of implementing control options identified in U1.3(i)-(iii). Evaluation must have regard for, as a minimum, cost, timing, emission performance and technology and engineering considerations.
- U1.5 The licensee must submit a consolidated report, prepared by a suitably qualified person, which addresses the requirements of U1.1, U1.2 and U1.3. The report must be submitted to the EPA's Regional Manager - Hunter at PO Box 488G, Newcastle NSW 2300, or by email to hunter.region@epa.nsw.gov.au, by 1 July 2017.

9 Special Conditions

E1 Discharge of cooling waters into Lake Macquaire

E1.1 All special conditions listed under condition E1 of this licence apply to 31 August 2021.

E1.2 In the event that:

(a) AEMO, or a person authorised by the AEMO, directs the licensee, under the National Electricity Rules, to maintain, increase or be available to increase power generation, for system security, the licensee may exceed the maximum operating hours above 35°C and the maximum temperature specified in conditions L3.1 and L3.8; or

(b) The EPA may, by notice in writing, in response to circumstances that the EPA considers may impact on the function of the NSW electricity grid, grant the licensee an approval to exceed the cooling water temperature limits specified in conditions L3.1 and L3.8. This approval remains in place for the period specified in the approval or if no period is specified, for 72 hours from the date and time of the approval.

When a direction issued under E1.2(a) is revoked by the AEMO, or an approval issued under E1.2(b) is revoked by the EPA, the licensee must, as soon as practicable, run down the cooling water discharge temperature to within the limits specified in conditions L3.1 and L3.8.

If the licensee receives a direction from the AEMO under E1.2(a), the licensee must notify the EPA in writing, as soon as practicable, of the time and date the direction was given by the AEMO and the period of time that the limits specified in conditions L3.1 and L3.8 were exceeded.

An approval issued under E1.2(b) does not count towards hours accumulated above cooling temperature parameters under this licence.

Note: The EPA may vary the licensed temperature conditions after 31 August 2021 following a review of studies undertaken on thermal discharges to Lake Macquarie.

E2 Seagrass Monitoring Program

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- E2.1 The licensee must implement and maintain in an annual basis a Seagrass Monitoring Program approved in writing by the EPA.
- E2.2 The licensee must submit on an annual basis, with the Annual Return, a Seagrass Monitoring Program Report that includes, but is not limited to:
- (a) Provision of date, analysis and conclusions of the Seagrass Monitoring Program carried out in the previous 12 months.
 - (b) Comparison and discussion of data collected since the commencement of the Seagrass Monitoring Program in the summer of 2016-2017 and any other relevant or previous studies.

The Seagrass Monitoring Program Report must be submitted annually from 31 August 2017 up until and including 31 August 2021.

- E2.3 If the Seagrass Monitoring Program required under the above conditions identifies observed changes that indicates a reduction in seagrass areas, where these changes are likely to be attributed to the licensed activities, the licensee must prepare a report that details the following.
- (a) A description of ameliorative measures, including the timeframe for the implementation of management actions; and
 - (b) In the case where impacts are unavoidable, a description of how the impacts will be offset.

The report is to be submitted to the EPA's Regional Manager - Hunter at PO Box 488G, Newcastle NSW 2300, or by email to hunter.region@epa.nsw.gov.au, within three months of providing the Seagrass Monitoring Program Report required under the above condition.

E3 Cooling Water Temperature Study

- E3.1 The Licensee must conduct a study into the potential impacts of discharges of cooling water at temperatures above the limits imposed under L3.1 and L3.8 of this licence under future predicted operating conditions. The study must include, but need not be limited to:
1. A prediction of the expected maximum inlet water temperature of Lake Macquarie cooling water based on the maximum recorded temperature in the last 5 years.
 2. With reference to point 1 above, predict the maximum expected cooling water temperature that would be discharged with all units operating at maximum supply capacity.
 3. A review of electricity supply trends and past extreme weather events for the previous 12 months and predict the expected number of hours that would be required to be operated at above the limits prescribed at conditions L3.1 and L3.8 of this licence to prevent a lack of reserve based on these events.
 4. Modelling the plume of cooling water and profile its temperature above ambient lake temperature based on a 10 metre grid and 1 degree Celsius change in water temperature.
 5. Consider points 2, 3 and 4 above and investigate and predict the likely impact of exceedances of the cooling water temperature limits at conditions L3.1 and L3.8 of the licence on sea grasses within the temperature plume of the cooling water outlet.
 6. Make recommendation as to how potential impacts from an increase in cooling water discharge temperature on the environmental can be mitigated or offset.

The Licensee must provide a report which details the findings and recommendations of the Study to the

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EPA by no later than 5.00pm on 30 November 2017.

E4 Fuels used in the power station

E4.1 The following fuels may be used in the power station for station startup and combustion support provided that they comply with the specification set out in this licence:

- a) Distillate / heating oils
- b) Distillate / heating oils blended with refined oil additives

E4.2 The licensee must sample and analyse sufficient samples of fuel received on the premise to assess whether the material complies with the specifications in this licence.

E4.3 SPECIFICATION OF FUELS

Distillate / heating oil and distillate refined oil blends burnt in the power station must comply with the specifications in Table 1.

TABLE 1

Characteristic of Fuel	Limit	Test Method
Ag	Less than 10ppm by weight	
As	less than 10ppm by weight	Pre-treatment method
Be	less than 10ppm by weight	USEPA 200.2(waters)
Cd	less than 5ppm by weight	
Cr(total)	less than 30ppm by weight	Pre-treatment method
Co	Less than 10ppm by weight	HNO ₃ H ₂ O ₂ (oils and organic matrices)
Cu	less than 50ppm by weight	
Hg	less than 10ppm by weight	
Mn	less than 50ppm by weight	Analysis:
Mo	less than 50ppm by weight	ALPHA 20 th ed under part 3000
Ni	less than 50ppm by weight	
Pb	less than 50ppm by weight	
Sb	less than 15ppm by weight	
Se	less than 15ppm by weight	
Sn	less than 40ppm by weight	
V	less than 40ppm by weight	
Polychlorinated biphenyls	less than 2ppm by weight	USEPA 8081A
Energy	10 - 48 MJ per Kg	AS1038.5
Sulphur (total)	less than 1.10% by weight	AS1038.6.3.2

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Flourine (total)	less than 0.05% by weight	AS1038.10.4D (2002)
Chlorine (total)	less than 0.50% by weight	AS1038.8.2 (1996)

E4.4

Source Emission Testing - Alternative Fuel Burning Trials

Any distillate / heating oil or distillate refined oil blend that complies with the specification in Table 2 may be burnt for the purpose of undertaking emission monitoring trials in accordance with monitoring specified in this licence.

TABLE 2.

Characteristic of Fuel	Limit	Test Method
Ag	Less than 10ppm by weight	
As	Less than 50ppm by weight	Pre-treatment method
Be	Less than 50ppm by weight	USEPA 200.2 (waters)
Cd	Less than 20ppm by weight	
Cr (total)	Less than 100ppm by weight	Pre-treatment method
Co	Less than 50ppm by weight	HNO ₃ H ₂ O ₂ (Oils and organic matrices)
Cu	Less than 100ppm by weight	
Hg	Less than 20ppm by weight	
Mn	Less than 250ppm by weight	ANALYSIS:
Mo	Less than 200ppm by weight	ALPHA 20 th ed under part 3000
Ni	Less than 250ppm by weight	
Pb	Less than 200ppm by weight	
Sb	Less than 50ppm by weight	
Se	Less than 50ppm by weight	
Sn	Less than 100ppm by weight	
V	Less than 150ppm by weight	
Polychlorinated biphenyls	Less than 2ppm by weight	USEPA 8081A
Energy	10 - 48 MJ per Kg	AS1038.5
Sulphur (total)	Less than 1.10% by weight	AS1038.6.3.2
Flourine (total)	Less than 0.05% by weight	AS1038.10.4 D (2002)
Chlorine (total)	Less than 0.50% by weight	AS1038.8.2 (1996)

E5 Solid alternative fuel

E5.1 For the purpose of this licence, solid alternative fuel means timber products that are: -

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a) In accordance with regulation 8 (special requirements – wood wastes) of division 2.2 (eligible renewable energy sources) in part 2 of the Renewable Energy (Electricity) Regulations 2001 and Renewable Energy (Electricity) Act 2000.

b) Biomass that is sustainably harvested as defined in, Greenhouse Gas Emissions from Electricity Supplied in NSW; Emissions Workbook, October 2000. Ministry of Energy and Utilities.

Note: No condition of this licence authorises the intentional burning of solid alternative fuel contaminated with paint, chemicals, timber preservatives and treatments or hazardous substances.

E5.2 Solid alternative fuel may only be co-fired with coal and at a rate not exceeding five (5) percent by weight of the coal feed rate.

E5.3 The concentration of Type 1 & 2 elements and substances (as defined in the Protection of the Environment Operations (Clean Air) Regulation 2010) in solid alternative fuel burnt in the power station, must not exceed 350 milligrams per kilogram.

E5.4 The licensee must have a statistically valid sampling and quality control program for all solid alternative fuel co-fired with coal on the premises. The quality control program must include the determination of the solid alternative fuel's calorific value (MJ/kg), the concentration of Type 1 & 2 elements and substances (as defined in the Protection of the Environment Operations (Clean Air) Regulation 2010), and the concentration of chlorine (Cl), copper (Cu), fluorine (F) and sulphur (S).

The concentration of the elements and substances referred to above must be reported as milligrams per kilogram of solid alternative fuel.

E5.5 Before commencing regular use of alternative fuels the licensee must provide the EPA with: -

a) A report describing the results of the assessment trial(s) including emission monitoring conducted during the trials, and

b) Documented evidence that either the alternative fuels specified in this licence are permitted to be used under the terms of any development consent issued or this premise or that development consent is not required under the provisions of the *Environmental Planning and Assessment Act 1979*.

E6 Ferrous Chloride or Ferrous Sulphate Dosing Program Trial

E6.1 Ferrous Chloride or Ferrous Sulphate, not both, may be added to the condenser cooling water on a trial basis at Generating Unit 6 ("VP6") only at the rate, method and duration defined in Stage 1 of Option A for Ferrous Chloride or Option B for Ferrous Sulphate of the report titled "*Vales Point Power Station Ferrous Chloride/Sulphate Dosing Program - Environmental Impact & Risk Assessment*" provided to the EPA, and complies with the following.

(a) For Stage 1, Ferrous Chloride or Ferrous Sulphate, not both, may be added for a period not exceeding 180 consecutive days.

(b) The Stage 1 Ferrous Dosing Program ("FDP") trial may be carried out within 12 months of the Notice adding this condition to the licence. No further dosing may be carried out without prior written approval of the EPA.

(c) The licensee must provide written notification to the EPA's Regional Manager - Hunter at least 14 days prior to the Stage 1 trial commencing. Notification must be provided to PO Box 488G, Newcastle NSW 2300, or by email to hunter.region@epa.nsw.gov.au.

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(d) Daily monitoring must be undertaken of the outlet canal after the VP06A condenser outlet and before licensed Point 2 one (1) hour after the introduction of ferrous chloride or ferrous sulphate into the condenser cooling water of VP06A. Daily monitoring must also be conducted at the inlet canal at least one (1) hour prior to the introduction of ferrous chloride or ferrous sulphate into the condenser cooling water of VP06A.

(e) Each sample collected as required by paragraph (d) of this condition must be analysed for Iron (Fe); Copper (Cu), Chromium (Cr), Zinc (Zn) Manganese (Mn) Arsenic (As) Cadmium (Cd) chloride, sulfates and pH.

(f) If Cr is detected analysis of Chromium speciation for Chromium Six Cr(VI) and Chromium Three Cr(III) must be included.

(g) Each analysis result must be retained by the licensee for 12 months after the completion of the Stage 1 trial.

(h) The licensee must conduct a review and analysis of the results of the trial and prepare a report including, but not limited to, an assessment of any potential environmental impacts of the Stage 1 trial.

(i) The FDP Stage 1 report required by paragraph (g) of this condition and the analysis results required under paragraph (e) of this condition must be provided to the EPA's Regional Manager - Hunter at PO Box 488G, Newcastle NSW 2300, or by email to hunter.region@epa.nsw.gov.au, no later than three months after the completion of the trial.

The above condition does not permit or authorise Spent Pickle or Passivation Liquor to be received at the premises and used in the ferrous chloride dosing trial.

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Dictionary

General Dictionary

3DGM [in relation to a concentration limit]	Means the three day geometric mean, which is calculated by multiplying the results of the analysis of three samples collected on consecutive days and then taking the cubed root of that amount. Where one or more of the samples is zero or below the detection limit for the analysis, then 1 or the detection limit respectively should be used in place of those samples
Act	Means the Protection of the Environment Operations Act 1997
activity	Means a scheduled or non-scheduled activity within the meaning of the Protection of the Environment Operations Act 1997
actual load	Has the same meaning as in the Protection of the Environment Operations (General) Regulation 2009
AM	Together with a number, means an ambient air monitoring method of that number prescribed by the <i>Approved Methods for the Sampling and Analysis of Air Pollutants in New South Wales</i> .
AMG	Australian Map Grid
anniversary date	The anniversary date is the anniversary each year of the date of issue of the licence. In the case of a licence continued in force by the Protection of the Environment Operations Act 1997, the date of issue of the licence is the first anniversary of the date of issue or last renewal of the licence following the commencement of the Act.
annual return	Is defined in R1.1
Approved Methods Publication	Has the same meaning as in the Protection of the Environment Operations (General) Regulation 2009
assessable pollutants	Has the same meaning as in the Protection of the Environment Operations (General) Regulation 2009
BOD	Means biochemical oxygen demand
CEM	Together with a number, means a continuous emission monitoring method of that number prescribed by the <i>Approved Methods for the Sampling and Analysis of Air Pollutants in New South Wales</i> .
COD	Means chemical oxygen demand
composite sample	Unless otherwise specifically approved in writing by the EPA, a sample consisting of 24 individual samples collected at hourly intervals and each having an equivalent volume.
cond.	Means conductivity
environment	Has the same meaning as in the Protection of the Environment Operations Act 1997
environment protection legislation	Has the same meaning as in the Protection of the Environment Administration Act 1991
EPA	Means Environment Protection Authority of New South Wales.
fee-based activity classification	Means the numbered short descriptions in Schedule 1 of the Protection of the Environment Operations (General) Regulation 2009.
general solid waste (non-putrescible)	Has the same meaning as in Part 3 of Schedule 1 of the Protection of the Environment Operations Act 1997

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flow weighted composite sample	Means a sample whose composites are sized in proportion to the flow at each composites time of collection.
general solid waste (putrescible)	Has the same meaning as in Part 3 of Schedule 1 of the Protection of the Environment Operations Act 1997
grab sample	Means a single sample taken at a point at a single time
hazardous waste	Has the same meaning as in Part 3 of Schedule 1 of the Protection of the Environment Operations Act 1997
licensee	Means the licence holder described at the front of this licence
load calculation protocol	Has the same meaning as in the Protection of the Environment Operations (General) Regulation 2009
local authority	Has the same meaning as in the Protection of the Environment Operations Act 1997
material harm	Has the same meaning as in section 147 Protection of the Environment Operations Act 1997
MBAS	Means methylene blue active substances
Minister	Means the Minister administering the Protection of the Environment Operations Act 1997
mobile plant	Has the same meaning as in Part 3 of Schedule 1 of the Protection of the Environment Operations Act 1997
motor vehicle	Has the same meaning as in the Protection of the Environment Operations Act 1997
O&G	Means oil and grease
percentile [in relation to a concentration limit of a sample]	Means that percentage [eg.50%] of the number of samples taken that must meet the concentration limit specified in the licence for that pollutant over a specified period of time. In this licence, the specified period of time is the Reporting Period unless otherwise stated in this licence.
plant	Includes all plant within the meaning of the Protection of the Environment Operations Act 1997 as well as motor vehicles.
pollution of waters [or water pollution]	Has the same meaning as in the Protection of the Environment Operations Act 1997
premises	Means the premises described in condition A2.1
public authority	Has the same meaning as in the Protection of the Environment Operations Act 1997
regional office	Means the relevant EPA office referred to in the Contacting the EPA document accompanying this licence
reporting period	For the purposes of this licence, the reporting period means the period of 12 months after the issue of the licence, and each subsequent period of 12 months. In the case of a licence continued in force by the Protection of the Environment Operations Act 1997, the date of issue of the licence is the first anniversary of the date of issue or last renewal of the licence following the commencement of the Act.
restricted solid waste	Has the same meaning as in Part 3 of Schedule 1 of the Protection of the Environment Operations Act 1997
scheduled activity	Means an activity listed in Schedule 1 of the Protection of the Environment Operations Act 1997
special waste	Has the same meaning as in Part 3 of Schedule 1 of the Protection of the Environment Operations Act 1997
TM	Together with a number, means a test method of that number prescribed by the <i>Approved Methods for the Sampling and Analysis of Air Pollutants in New South Wales</i> .

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TSP	Means total suspended particles
TSS	Means total suspended solids
Type 1 substance	Means the elements antimony, arsenic, cadmium, lead or mercury or any compound containing one or more of those elements
Type 2 substance	Means the elements beryllium, chromium, cobalt, manganese, nickel, selenium, tin or vanadium or any compound containing one or more of those elements
utilisation area	Means any area shown as a utilisation area on a map submitted with the application for this licence
waste	Has the same meaning as in the Protection of the Environment Operations Act 1997
waste type	Means liquid, restricted solid waste, general solid waste (putrescible), general solid waste (non - putrescible), special waste or hazardous waste

Mr Grahame Clarke

Environment Protection Authority

(By Delegation)

Date of this edition: 14-June-2000

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End Notes

- 1 Licence varied by notice V/M upgrade, issued on 08-Jul-2000, which came into effect on 08-Jul-2000.
- 2 Licence varied by notice 1001143, issued on 22-Sep-2000, which came into effect on 17-Oct-2000.
- 3 Licence varied by notice 1015942, issued on 24-May-2002, which came into effect on 18-Jun-2002.
- 4 Licence varied by notice 1019491, issued on 19-Dec-2003, which came into effect on 13-Jan-2004.
- 5 Licence varied by notice 1039721, issued on 12-Aug-2004, which came into effect on 06-Sep-2004.
- 6 Licence varied by notice 1053558, issued on 05-Dec-2005, which came into effect on 30-Dec-2005.
- 7 Licence varied by notice 1065959, issued on 01-Nov-2006, which came into effect on 01-Nov-2006.
- 8 Licence varied by notice 1068259, issued on 01-Nov-2007, which came into effect on 01-Nov-2007.
- 9 Condition A1.3 Not applicable varied by notice issued on <issue date> which came into effect on <effective date>
- 10 Licence varied by notice 1096237, issued on 24-Dec-2008, which came into effect on 24-Dec-2008.
- 11 Licence varied by notice 1099216, issued on 07-May-2009, which came into effect on 07-May-2009.
- 12 Licence varied by notice 1105162, issued on 19-Aug-2009, which came into effect on 19-Aug-2009.
- 13 Licence varied by notice 1109542, issued on 01-Dec-2009, which came into effect on 01-Dec-2009.
- 14 Licence varied by notice 1117452, issued on 22-Nov-2010, which came into effect on 22-Nov-2010.
- 15 Licence varied by notice 1128999, issued on 16-Jun-2011, which came into effect on 16-Jun-2011.
- 16 Licence varied by notice 1502146 issued on 02-Nov-2011
- 17 Licence format updated on 03-Nov-2011
- 18 Licence fee period changed by notice 1502852 on 01-Jan-2012
- 19 Licence varied by notice 1503238 issued on 04-Jan-2012

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20	Licence varied by notice	1504645 issued on 01-May-2012
21	Licence varied by notice	1506558 issued on 14-Nov-2012
22	Licence varied by notice	1513810 issued on 13-Nov-2013
23	Licence varied by notice	1518777 issued on 04-Mar-2014
24	Licence varied by notice	1521871 issued on 05-Sep-2014
25	Licence varied by notice	1535348 issued on 14-Dec-2015
26	Licence transferred through application 1536547 approved on 17-Dec-2015 , which came into effect on 18-Dec-2015	
27	Licence varied by notice	1541050 issued on 18-Aug-2016
28	Licence varied by notice	1545995 issued on 14-Nov-2016
29	Licence varied by notice	1549284 issued on 10-Feb-2017
30	Licence varied by notice	1551199 issued on 31-May-2017
31	Licence varied by notice	1553516 issued on 27-Sep-2017