



Licence

Environmental Protection Act 1986, Part V

Licensee: BHP Billiton Iron Ore Pty Ltd

Licence: L8803/2013/1

Registered office: Level 1, City Square
Brookfield Place
125 St Georges Terrace
PERTH WA 6000

ACN: 008 700 981

Premises address: Yarnima Power Station
Part of AML70/244 within co-ordinates (MGA Zone 50): E777140 N7416161; E777446 N7415805; E777431 N7415791; E777410 N7415775; E777391 N7415763; E777370 N7415750; E777357 N7415741; E777349 N7415735; E777341 N7415729; E777244 N7415637; E777229 N7415623; E777206 N7415601; E777175 N7415569; E777156 N7415548; E777136 N7415524; E777114 N7415493; E776996 N7415634; E777062 N7415693; E777082 N7415711; E777134 N7415754; E777085 N7415813; E777022 N7415898; E777020 N7415932; E776967 N7415995; and E776953 N7416013, NEWMAN WA 6753 as depicted in Schedule 1

Issue date: Thursday, 27 February 2014

Commencement date: Monday, 3 March 2014

Expiry date: Saturday, 2 March 2019

Prescribed premises category

Schedule 1 of the *Environmental Protection Regulations 1987*

Category number	Category description	Category production or design capacity	Approved premises production or design capacity
52	Electric power generation: premises (other than premises within category 53 or an emergency or standby power generating plant) on which electrical power is generated using a fuel.	20 megawatts or more in aggregate (using natural gas) 10 megawatts or more in aggregate (using a fuel other than natural gas)	198 MWe

Conditions

This Licence is subject to the conditions set out in the attached pages.

.....
Jonathan Bailes
Manager Licensing (Process Industries)
Officer delegated under section 20
of the *Environmental Protection Act 1986*



Contents

Licence	1
Contents	2
Introduction	2
Licence conditions	4
1 General	4
2 Emissions	6
3 Monitoring	7
4 Improvements	7
5 Information	8
Schedule 1: Maps	10
Schedule 2: Reporting & notification forms	12

Introduction

This Introduction is not part of the Licence conditions.

DER's industry licensing role

The Department of Environment Regulation (DER) is a government department for the state of Western Australia in the portfolio of the Minister for Environment. DER's purpose is to advise on and implement strategies for a healthy environment for the benefit of all current and future Western Australians.

DER has responsibilities under Part V of the *Environmental Protection Act 1986* (the Act) for the licensing of prescribed premises. Through this process DER regulates to prevent, control and abate pollution and environmental harm to conserve and protect the environment. DER also monitors and audits compliance with Works Approvals and Licence conditions, takes enforcement action as appropriate and develops and implements licensing and industry regulation policy.

Licence requirements

This licence is issued under Part V of the Act. Conditions contained within the licence relate to the prevention, reduction or control of emissions and discharges to the environment and to the monitoring and reporting of them.

Where other statutory instruments impose obligations on the Premises/Licensee the intention is not to replicate them in the licence conditions. You should therefore ensure that you are aware of all your statutory obligations under the Act and any other statutory instrument. Legislation can be accessed through the State Law Publisher website using the following link:

<http://www.slp.wa.gov.au/legislation/statutes.nsf/default.html>

For your Premises relevant statutory instruments include but are not limited to obligations under the:

- *Environmental Protection (Unauthorised Discharges) Regulations 2004* – these Regulations make it an offence to discharge certain materials such as contaminated stormwater into the environment other than in the circumstances set out in the Regulations.
- *Environmental Protection (Controlled Waste) Regulations 2004* - these Regulations place obligations on you if you produce, accept, transport or dispose of controlled waste.
- *Environmental Protection (Noise) Regulations 1997* – these Regulations require noise emissions from the Premises to comply with the assigned noise levels set out in the Regulations.

You must comply with your Licence. Non-compliance with your Licence is an offence and strict penalties exist for those who do not comply.



Licence holders are also reminded of the requirements of section 53 of the Act which places restrictions on making certain changes to prescribed premises unless the changes are in accordance with a Works Approval, Licence, closure notice or environmental protection notice.

Licence fees

If you have a Licence that is issued for more than one year, you are required to pay an annual Licence fee prior to the anniversary date of issue of your Licence. Non payment of annual Licence fees will result in your Licence ceasing to have effect meaning that it will no longer be valid and you will need to apply for a new Licence for your Premises.

Ministerial conditions

If your Premises has been assessed under Part IV of the Act you may have had conditions imposed by the Minister for Environment. You are required to comply with any conditions imposed by the Minister.

Premises description and Licence summary

In order to meet the increased power demand for the expanding mining operations in the central Pilbara, BHP Billiton Iron Ore Pty Ltd (BHPBIO) operate the Yarnima Power Station (YPS). The YPS is located approximately 2.1 kilometres (km) north-west of the Newman townsite and adjacent to the existing Newman Power Station within mining tenement AML70/244. The nearest sensitive receptor is the town of Newman and BHPBIO’s Mt Whaleback and Newman Hub operations, which are situated to the west-south-west within the same mining tenement.

The YPS was constructed in two main stages:

- Stage 1 was constructed under Works Approval W4952/2011/1 and consists of a 32 megawatt (MW) single open cycle Gas Turbine Generator (GTG3) power station and associated infrastructure. Fuel requirements of the turbine (SGT-800 Siemens) is approximately 9.3 terajoules (TJ) of natural gas per day, allowing a nominal output of 32 MW (based on full load operation at 30°C ambient temperature). The SGT-800 Siemens turbine is fitted with dry low nitrogen oxides (NO_x) combustors to reduce NO_x emissions in the gas turbine exhaust and minimise ground concentrations of NO_x; and
- Stage 2 was constructed under Works Approval W5194/2012/1 and includes the installation of an additional two GTGs (GTG1 and GTG2)) coupled with three Heat Recovery Steam Generators (HRSGs) supplying steam to two Steam Turbine Generators (STGs).

The licences and works approvals issued for the Premises since 10/11/2011 are:

Instrument log		
Instrument	Issued	Description
W4952/2011/1	10/11/2011	New application – Stage 1.
W5194/2012/1	09/08/2012	New application – Stage 2.
W4952/2011/1	02/05/2013	Works approval amendment to extend the commissioning period from 3 months to 9 months.
L8803/2013/1	27/02/2014	New licence.
L8803/2013/1	24/09/2015	Licence amended to include Stage 2.

Severance

It is the intent of these Licence conditions that they shall operate so that, if a condition or a part of a condition is beyond the power of this Licence to impose, or is otherwise *ultra vires* or invalid, that condition or part of a condition shall be severed and the remainder of these conditions shall nevertheless be valid to the extent that they are within the power of this Licence to impose and are not otherwise *ultra vires* or invalid.

END OF INTRODUCTION



Licence conditions

1 General

1.1 Interpretation

1.1.1 In the Licence, definitions from the *Environmental Protection Act 1986* apply unless the contrary intention appears.

1.1.2 For the purposes of this Licence, unless the contrary intention appears:

'Act' means the *Environmental Protection Act 1986*;

'annual period' means the inclusive period from 1 July until 30 June in the following year;

'averaging period' means the time over which a limit is measured or a monitoring result is obtained;

'CEMS' means continuous emissions monitoring system;

'CEMS Code' means the current version of the Continuous Emission Monitoring System (CEMS) Code for Stationary Source Air Emissions, Department of Environment & Conservation, Government of Western Australia;

'CEO' means CEO, Environmental Regulation Division of the Department of Environment Regulation for and on behalf of the Chief Executive Officer as delegated under section 20 of the Act;

'CEO' for the purpose of correspondence means;

Chief Executive Officer
Department Administering the Environment Protection Act 1986
Locked Bag 33
CLOISTERS SQUARE WA 6850
Email: info@der.wa.gov.au

'GTG' means Gas Turbine Generator;

'Licence' means this Licence numbered L8803/2013/1 and issued under the Act;

'Licensee' means the person or organisation named as Licensee on page 1 of the Licence;

'MWe' means power output (electricity generated) in megawatts;

'NATA' means the National Association of Testing Authorities, Australia;

'NATA accredited' means in relation to the analysis of a sample that the laboratory is NATA accredited for the specified analysis at the time of the analysis;

'normal operating conditions' means any operation of a particular process (including abatement equipment) excluding start-up, shut-down and upset conditions, in relation to stack sampling or monitoring;

'NO_x' means oxides of nitrogen, calculated as the sum of nitric oxide and nitrogen dioxide and expressed as nitrogen dioxide;

'Premises' means the area defined in the Premises Map in Schedule 1 and listed as the Premises address on page 1 of the Licence;



'Schedule 1' means Schedule 1 of this Licence unless otherwise stated;

'Schedule 2' means Schedule 2 of this Licence unless otherwise stated;

'six monthly' means the 2 inclusive periods from 1 July to 31 December and 1 January to 30 June in the following year;

'stack test' means a discrete set of samples taken over a representative period at normal operating conditions;

'STP dry' means standard temperature and pressure (0°Celsius and 101.325 kilopascals respectively), dry;

'USEPA' means United States (of America) Environmental Protection Agency.

'USEPA Method 7E' means the USEPA Method 7E *Determination of Nitrogen Oxides Emissions from Stationary Sources (Instrumental Analyser Procedure)*; and

'USEPA Method 10' means the USEPA Method 10 *Determination of Carbon Monoxide Emissions from Stationary Sources*.

'usual working day' means 0800 – 1700 hours, Monday to Friday excluding public holidays in Western Australia;

1.1.3 Any reference to an Australian or other standard in the Licence means the relevant parts of the standard in force from time to time during the term of this Licence.

1.1.4 Any reference to a guideline or code of practice in the Licence means the version of that guideline or code of practice in force from time to time, and shall include any amendments or replacements to that guideline or code of practice made during the term of this Licence.

1.1.5 Nothing in the Licence shall be taken to authorise any emission that is not mentioned in the Licence, where the emission amounts to:

- (a) pollution;
- (b) unreasonable emission;
- (c) discharge of waste in circumstances likely to cause pollution; or
- (d) being contrary to any written law.

1.2 General conditions

1.2.1 The Licensee shall operate and maintain all pollution control and monitoring equipment to the manufacturer's specification or any relevant and effective internal management system.

1.2.2 The Licensee shall immediately recover, or remove and dispose of spills of environmentally hazardous materials outside an engineered containment system.

1.2.3 The Licensee shall:

- (a) implement all practical measures to prevent stormwater run-off becoming contaminated by the activities on the Premises; and
- (b) treat contaminated or potentially contaminated stormwater as necessary prior to being discharged from the Premises.¹

Note1: The *Environmental Protection (Unauthorised Discharges) Regulations 2004* make it an offence to discharge certain materials into the environment.



2 Emissions

2.1 General

2.1.1 The Licensee shall record and investigate the exceedance of any descriptive or numerical limit specified in any part of section 2 of this Licence.

2.2 Point source emissions to air

2.2.1 The Licensee shall ensure that where waste is emitted to air from the emission points in Table 2.2.1 and identified on the map of emission points in Schedule 1 it is done so in accordance with the conditions of this licence.

Table 2.2.1: Emission points to air			
Emission point reference and location on Map of emission points	Emission point	Emission point height (m)	Source, including any abatement
A1	GTG1 Stack	30	SGT-800 Siemens single open cycle gas turbine fitted with dry low NO _x combustors
A2	GTG2 Stack	30	SGT-800 Siemens single open cycle gas turbine fitted with dry low NO _x combustors
A3	GTG3 Stack	30	SGT-800 Siemens single open cycle gas turbine fitted with dry low NO _x combustors direct to atmosphere
A4	HRSG Stack 3	30	SGT-800 Siemens single open cycle gas turbine fitted with dry low NO _x combustors passed through Heat Recovery Steam Generator Stack (HRSG)
A5	HRSG Stack 2	30	SGT-800 Siemens single open cycle gas turbine fitted with dry low NO _x combustors passed through Heat Recovery Steam Generator Stack (HRSG)
A6	HRSG Stack 1	30	SGT-800 Siemens single open cycle gas turbine fitted with dry low NO _x combustors passed through Heat Recovery Steam Generator Stack (HRSG)

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 limits to air			
Emission point Reference	Parameter	Limit (including units)¹	Averaging period
A1-A6	NO _x	140 mg/m ³	CEMS (30 minute average)

Note 1: All units are referenced to STP dry and 15% O₂.



3 Monitoring

3.1 General monitoring

- 3.1.1 The Licensee shall ensure that all laboratory samples are submitted to and tested by a laboratory with current NATA accreditation for the parameters being measured.
- 3.1.2 The Licensee shall ensure that annual monitoring is undertaken at least 9 months apart.
- 3.1.3 The Licensee shall record production or throughput data and any other process parameters relevant to any non-continuous or CEMS monitoring undertaken.
- 3.1.4 The Licensee shall ensure that all monitoring equipment used on the Premises to comply with the conditions of this Licence is calibrated in accordance with the manufacturer's specifications.
- 3.1.5 The Licensee shall, where the requirements for calibration cannot be practicably met, or a discrepancy exists in the interpretation of the requirements, bring these issues to the attention of the CEO accompanied with a report comprising details of any modifications to the methods.

3.2 Monitoring of point source emissions to air

- 3.2.1 The Licensee shall undertake the monitoring in Table 3.2.1 according to the specifications in that table.

Table 3.2.1: Monitoring of point source emissions to air					
Emission point reference	Parameter	Units¹	Averaging period	Frequency²	Method
A1 or A6 A2 or A5 A3 or A4	NO _x	mg/m ³	N/A	Continuous	CEMS
	CO		30 minute	Annually	USEPA Method 7E
	NO _x				USEPA Method 10
	CO				

Note 1: All units are referenced to STP dry and 15% O₂.

Note 2: Monitoring shall be undertaken to reflect normal operating conditions and any limits or conditions on inputs or production.

- 3.2.2 The Licensee shall ensure that all non-continuous sampling and analysis undertaken pursuant to condition 3.2.1 is undertaken by a holder of NATA accreditation for the relevant methods of sampling and analysis.
- 3.2.3 For any parameter in Table 3.2.1 requiring continuous monitoring, the Licensee shall ensure that the CEMS is regularly operated, maintained and calibrated in accordance with the CEMS Code.



4 Information

4.1 Records

- 4.1.1 All information and records required by the Licence shall:
- (a) be legible;
 - (b) if amended, be amended in such a way that the original and subsequent amendments remain legible or are capable of retrieval;
 - (c) except for records listed in 4.1.1(d) be retained for at least 6 years from the date the records were made or until the expiry of the Licence or any subsequent Licence; and
 - (d) for those following records, be retained until the expiry of the Licence and any subsequent licence:
 - (i) off-site environmental effects; or
 - (ii) matters which affect the condition of the land or waters.
- 4.1.2 The Licensee shall ensure that:
- (a) any person left in charge of the Premises is aware of the conditions of the Licence and has access at all times to the Licence or copies thereof; and
 - (b) any person who performs tasks on the Premises is informed of all of the conditions of the Licence that relate to the tasks which that person is performing.
- 4.1.3 The Licensee shall complete an Annual Audit Compliance Report indicating the extent to which the Licensee has complied with the conditions of the Licence, and any previous licence issued under Part V of the Act for the Premises for the previous annual period.
- 4.1.4 The Licensee shall implement a complaints management system that as a minimum records the number and details of complaints received concerning the environmental impact of the activities undertaken at the Premises and any action taken in response to the complaint.

4.2 Reporting

- 4.2.1 The Licensee shall submit to the CEO an Annual Environmental Report by the 1 October. The report shall contain the information listed in Table 4.2.1 in the format or form specified in that table.

Table 4.2.1: Annual Environmental Report		
Condition or table (if relevant)	Parameter	Format or form¹
-	Summary of any failure or malfunction of any pollution control equipment and any environmental incidents that have occurred during the annual period and any action taken	None specified
Table 2.2.2	NO _x limit exceedance	N1
Table 3.2.1	NO _x and CO emissions	AR1
Table 3.2.1	Monitoring of CEMS performance	RATA1
4.1.3	Compliance	Annual Audit Compliance Report (AACR)
4.1.4	Complaints summary	None specified

Note 1: Forms are in Schedule 2

- 4.2.2 The Licensee shall ensure that the Annual Environmental Report also contains:
- (a) any relevant process, production or operational data recorded for any non-continuous monitoring under condition 3.1.3; and
 - (b) an assessment of the information contained within the report against previous monitoring results and Licence limits.



- 4.2.3 The Licensee shall ensure that results from CEMS are made available on request as tabulated data and time series graphs including:
- (a) times and dates;
 - (b) limit exceedances;
 - (c) any relevant process, production or operational data recorded under condition 3.1.3; and
 - (d) an assessment of the information contained within the report against previous submissions and Licence limits.

4.3 Notification

- 4.3.1 The Licensee shall ensure that the parameters listed in Table 4.3.1 are notified to the CEO in accordance with the notification requirements of the table.

Condition or table (if relevant)	Parameter	Notification requirement¹	Format or form²
2.1.1	Breach of any limit specified in the Licence	Part A: As soon as practicable but no later than 5pm of the next usual working day. Part B: As soon as practicable	N1
3.1.5	Calibration report	As soon as practicable.	None specified

Note 1: Notification requirements in the licence shall not negate the requirement to comply with s72 of the Act

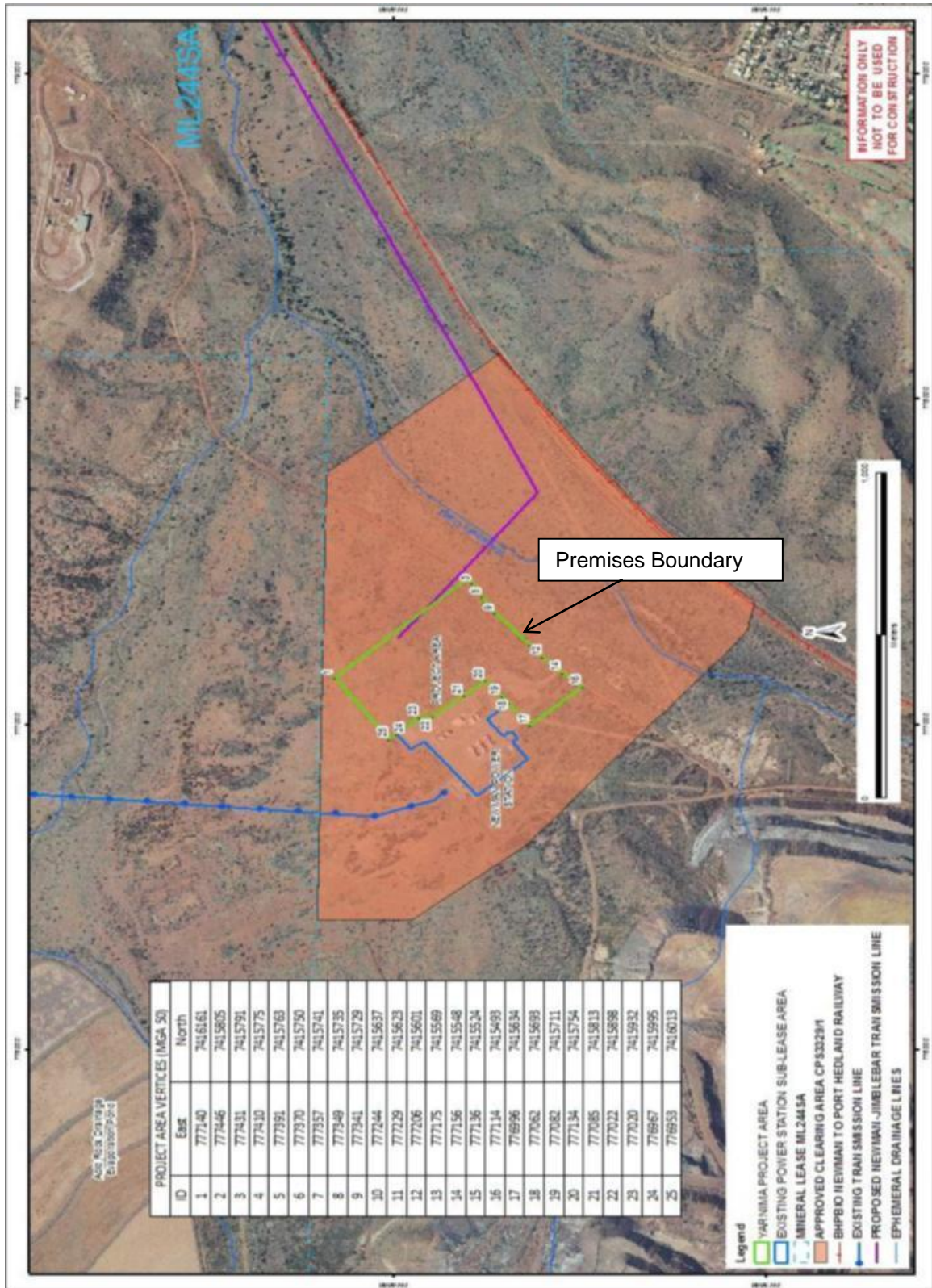
Note 2: Forms are in Schedule 2



Schedule 1: Maps

Premises map

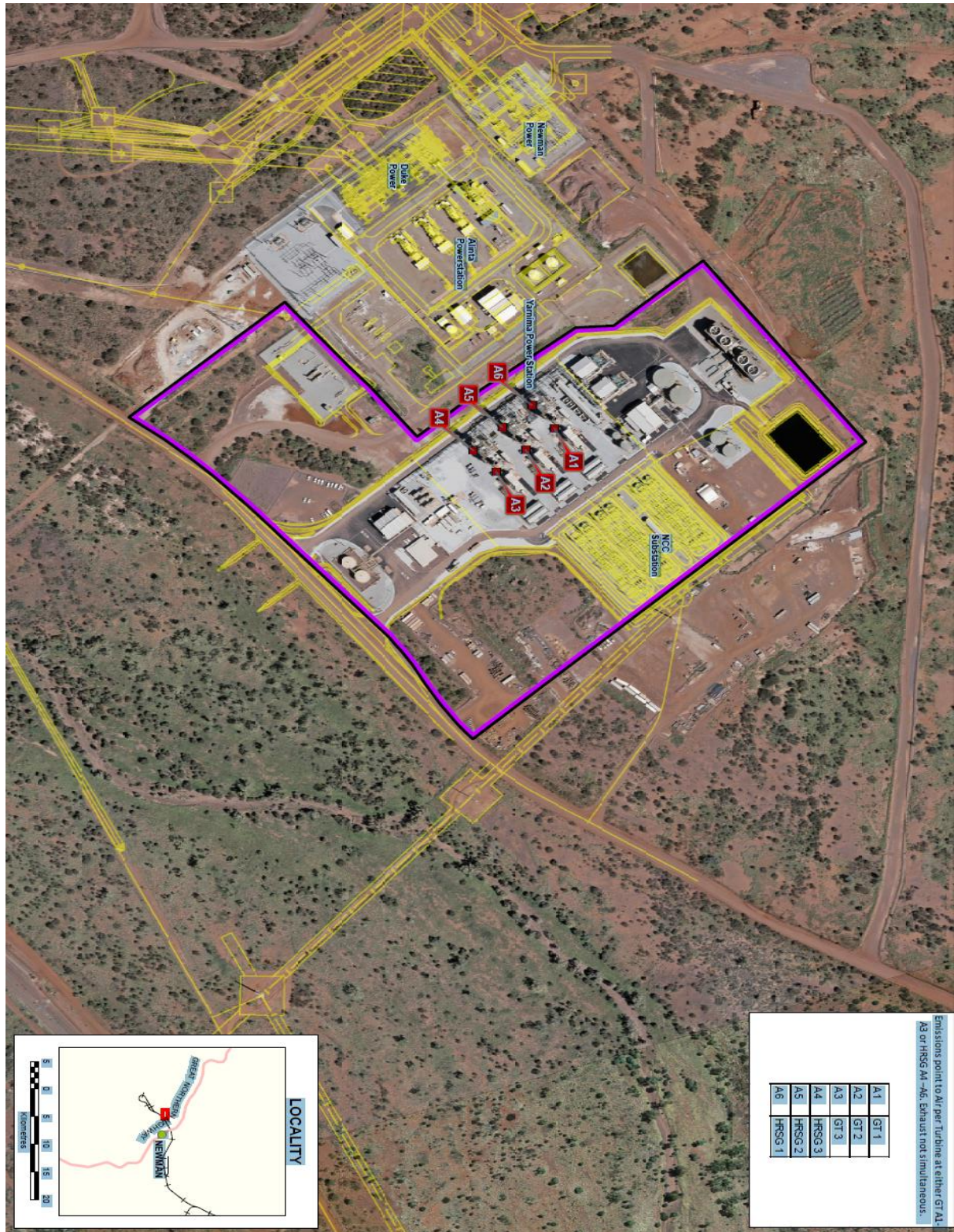
The Premises is shown in the map below. The green line depicts the Premises boundary.





Map of emission points

The locations of the emission points defined in Table 2.2.1 are shown below.





Schedule 2: Reporting & notification forms

These forms are provided for the proponent to report monitoring and other data required by the Licence. They can be requested in an electronic format.

ANNUAL AUDIT COMPLIANCE REPORT PROFORMA

SECTION A LICENCE DETAILS

Licence Number:	Licence File Number:
Company Name: Trading as:	ABN:
Reporting period: _____ to _____	

STATEMENT OF COMPLIANCE WITH LICENCE CONDITIONS

1. Were all conditions of the licence complied with within the reporting period? (please tick the appropriate box)

Yes Please proceed to Section C
No Please proceed to Section B

Each page must be initialled by the person(s) who signs Section C of this Annual Audit Compliance Report (AACR).

Initial:



SECTION B

DETAILS OF NON-COMPLIANCE WITH LICENCE CONDITION.

Please use a separate page for each licence condition that was not complied with.

a) Licence condition not complied with:	
b) Date(s) when the non compliance occurred, if applicable:	
c) Was this non compliance reported to DER?:	
<input type="checkbox"/> Yes <input type="checkbox"/> Reported to DER verbally Date _____ <input type="checkbox"/> Reported to DER in writing Date _____	<input type="checkbox"/> No
d) Has DER taken, or finalised any action in relation to the non compliance?:	
e) Summary of particulars of the non compliance, and what was the environmental impact:	
f) If relevant, the precise location where the non compliance occurred (attach map or diagram):	
g) Cause of non compliance:	
h) Action taken, or that will be taken to mitigate any adverse effects of the non compliance:	
i) Action taken or that will be taken to prevent recurrence of the non compliance:	

Each page must be initialled by the person(s) who signs Section C of this AACR

Initial:



SECTION C

SIGNATURE AND CERTIFICATION

This Annual Audit Compliance Report (AACR) must only be signed by a person(s) with legal authority to sign it. The ways in which the AACR must be signed and certified, and the people who may sign the statement, are set out below.

Please tick the box next to the category that describes how this AACR is being signed. If you are uncertain about who is entitled to sign or which category to tick, please contact the licensing officer for your premises.

If the licence holder is		The Annual Audit Compliance Report must be signed and certified:
An individual	<input type="checkbox"/> <input type="checkbox"/>	by the individual licence holder, or by a person approved in writing by the Chief Executive Officer of the Department of Environment Regulation to sign on the licensee's behalf.
A firm or other unincorporated company	<input type="checkbox"/> <input type="checkbox"/>	by the principal executive officer of the licensee; or by a person with authority to sign on the licensee's behalf who is approved in writing by the Chief Executive Officer of the Department of Environment Regulation.
A corporation	<input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/>	by affixing the common seal of the licensee in accordance with the Corporations Act 2001; or by two directors of the licensee; or by a director and a company secretary of the licensee, or if the licensee is a proprietary company that has a sole director who is also the sole company secretary – by that director, or by the principal executive officer of the licensee; or by a person with authority to sign on the licensee's behalf who is approved in writing by the Chief Executive Officer of the Department of Environment Regulation.
A public authority (other than a local government)	<input type="checkbox"/> <input type="checkbox"/>	by the principal executive officer of the licensee; or by a person with authority to sign on the licensee's behalf who is approved in writing by the Chief Executive Officer of the Department of Environment Regulation.
a local government	<input type="checkbox"/> <input type="checkbox"/>	by the chief executive officer of the licensee; or by affixing the seal of the local government.

It is an offence under section 112 of the *Environmental Protection Act 1986* for a person to give information on this form that to their knowledge is false or misleading in a material particular. There is a maximum penalty of \$50,000 for an individual or body corporate.

I/We declare that the information in this annual audit compliance report is correct and not false or misleading in a material particular.

SIGNATURE: _____

NAME:
(printed) _____

POSITION: _____

DATE: ____/____/____

SIGNATURE: _____

NAME:
(printed) _____

POSITION: _____

DATE: ____/____/____

SEAL (if signing under seal)



Licence: L8803/2013/1
Form: AR1
Name: Monitoring of point source emissions to air

Licensee: BHP Billiton Iron Ore Pty Ltd
Period:

Form AR1: Monitoring of point source emissions to air						
Emission point	Parameter	Limit	Result^{1,2} (mg/m)	Averaging period	Method	Sample date & times
A1-A6	NO _x	140 mg/m ³		30 minute average	USEPA Method 7E	
	CO	N/A		30 minute average	USEPA Method 10	

Note 1: All units are referenced to STP dry

Note 2: All units are referenced to 15% O₂

Signed on behalf of BHP Billiton Iron Ore Pty Ltd: Date:



Licence: L8803/2013/1
 Form: RATA1
 Name: Monitoring of CEMS Performance

Licensee: BHP Billiton Iron Ore Pty Ltd
 Period:

Form AR2: RATA								
Emission point	Parameter	Reference Method	Run	Sample date & times	Reference Result	CEMS Result	Unit	
A1	NO _x CO	USEPA Method 7E	1				mg/m ³	
			2					
			3					
			4					
			5					
			6					
		USEPA Method 10	7					
			8					
			9					
			10					
			11					
			12					
Relative Accuracy							%	
Bias							%	

Signed on behalf of BHP Billiton Iron Ore Pty Ltd: Date:



Licence: L8803/2013/1
Form: N1

Licensee: BHP Billiton Iron Ore Pty Ltd
Date of breach:

Notification of detection of the breach of a limit.

These pages outline the information that the operator must provide. Units of measurement used in information supplied under Part A and B requirements shall be appropriate to the circumstances of the emission. Where appropriate, a comparison should be made of actual emissions and authorised emission limits.

Part A

Licence Number	
Name of operator	
Location of Premises	
Time and date of the detection	

Notification requirements for the breach of a limit	
Emission point reference/ source	
Parameter(s)	
Limit	
Measured value	
Date and time of monitoring	
Measures taken, or intended to be taken, to stop the emission	

Part B

Any more accurate information on the matters for notification under Part A.	
Measures taken, or intended to be taken, to prevent a recurrence of the incident.	
Measures taken, or intended to be taken, to rectify, limit or prevent any pollution of the environment which has been or may be caused by the emission.	
The dates of any previous N1 notifications for the Premises in the preceding 24 months.	

Name	
Post	
Signature on behalf of BHP Billiton Iron Ore Pty Ltd	
Date	



Decision Document

Environmental Protection Act 1986, Part V

Proponent: BHP Billiton Iron Ore Pty Ltd

Licence: L8803/2013/1

Registered office: Level 1, City Square
Brookfield Place
125 St Georges Terrace
PERTH WA 6000

ACN: 008 700 981

Premises address: Yarnima Power Station
Part of AML70/244 within co-ordinates (MGA Zone 50): E777140
N7416161; E777446 N7415805; E777431 N7415791; E777410
N7415775; E777391 N7415763; E777370 N7415750; E777357
N7415741; E777349 N7415735; E777341 N7415729; E777244
N7415637; E777229 N7415623; E777206 N7415601; E777175
N7415569; E777156 N7415548; E777136 N7415524; E777114
N7415498; E776996 N7415634; E777062 N7415698; E777082
N7415711; E777134 N7415754; E777085 N7415813; E777022
N7415898; E777020 N7415932; E776967 N7415995; and E776953
N7416013, NEWMAN WA 6753

Issue date: Thursday, 27 February 2014

Commencement date: Monday, 3 March 2014

Expiry date: Saturday, 2 March 2019

Decision

Based on the assessment detailed in this document the Department of Environment Regulation (DER) has decided to issue an amended licence. DER considers that in reaching this decision it has taken into account all relevant considerations.

Decision Document prepared by: Ty Matson
Licensing Officer

Decision Document authorised by: Jonathan Bailes
Delegated Officer



Contents

Decision Document	1
Contents	2
1 Purpose of this Document	2
2 Administrative summary	3
3 Executive summary of proposal and assessment	4
4 Decision table	4
5 Advertisement and consultation table	7
6 Risk Assessment	7

1 Purpose of this Document

This decision document explains how DER has assessed and determined the application and provides a record of DER's decision-making process and how relevant factors have been taken into account. Stakeholders should note that this document is limited to DER's assessment and decision making under Part V of the *Environmental Protection Act 1986*. Other approvals may be required for the proposal, and it is the proponent's responsibility to ensure they have all relevant approvals for their Premises.



2 Administrative summary

Administrative details		
Application type	Works Approval <input type="checkbox"/> New Licence <input type="checkbox"/> Licence amendment <input checked="" type="checkbox"/> Works Approval amendment <input type="checkbox"/>	
Activities that cause the premises to become prescribed premises	Category number(s)	Assessed design capacity
	52	198 MWe
Application verified	Date: N/A	
Application fee paid	Date: N/A	
Works Approval has been complied with	Yes <input checked="" type="checkbox"/> No <input type="checkbox"/> N/A <input type="checkbox"/>	
Compliance Certificate received	Yes <input checked="" type="checkbox"/> No <input type="checkbox"/> N/A <input type="checkbox"/>	
Commercial-in-confidence claim	Yes <input type="checkbox"/> No <input checked="" type="checkbox"/>	
Commercial-in-confidence claim outcome	N/A	
Is the proposal a Major Resource Project?	Yes <input checked="" type="checkbox"/> No <input type="checkbox"/>	
Was the proposal referred to the Environmental Protection Authority (EPA) under Part IV of the <i>Environmental Protection Act 1986</i> ?	Yes <input checked="" type="checkbox"/> No <input type="checkbox"/>	Referral decision No: N/A Managed under Part V <input checked="" type="checkbox"/> Assessed under Part IV <input type="checkbox"/>
Is the proposal subject to Ministerial Conditions?	Yes <input type="checkbox"/> No <input checked="" type="checkbox"/>	Ministerial statement No: EPA Report No:
Does the proposal involve a discharge of waste into a designated area (as defined in section 57 of the <i>Environmental Protection Act 1986</i>)?	Yes <input type="checkbox"/> No <input checked="" type="checkbox"/>	Department of Water consulted Yes <input type="checkbox"/> No <input checked="" type="checkbox"/>
Is the Premises within an Environmental Protection Policy (EPP) Area Yes <input type="checkbox"/> No <input checked="" type="checkbox"/>		
Is the Premises subject to any EPP requirements? Yes <input type="checkbox"/> No <input checked="" type="checkbox"/>		



3 Executive summary of proposal and assessment

In order to meet the increased power demand for the expanding mining operations in the central Pilbara, BHP Billiton Iron Ore Pty Ltd (BHPBIO) operate the Yarnima Power Station (YPS). The YPS is located approximately 2.1 kilometres (km) north-west of the Newman townsite and adjacent to the existing Newman Power Station within mining tenement AML70/244. The nearest sensitive receptor is the town of Newman and BHPBIO's Mt Whaleback and Newman Hub operations, which are situated to the west-south-west within the same mining tenement.

The YPS was constructed in two main stages:

- Stage 1 was constructed under Works Approval W4952/2011/1 and consists of a 32 megawatt (MW) single open cycle Gas Turbine Generator (GTG3) power station and associated infrastructure. Fuel requirements of the turbine (SGT-800 Siemens) is approximately 9.3 terajoules (TJ) of natural gas per day, allowing a nominal output of 32 MW (based on full load operation at 30°C ambient temperature). The SGT-800 Siemens turbine is fitted with dry low nitrogen oxides (NO_x) combustors to reduce NO_x emissions in the gas turbine exhaust and minimise ground concentrations of NO_x; and
- Stage 2 was constructed under Works Approval W5194/2012/14 and includes the installation of an additional two GTGs (GTG1 and GTG2)) coupled with three Heat Recovery Steam Generators (HRSGs) supplying steam to two Steam Turbine Generators (STGs).

This Licence amendment is for the operation of Stage 2. The Licence template has also been updated to the current version. Blank conditions have been removed which has resulted in the condition numbers changing throughout the licence.

4 Decision table

All applications are assessed in line with the *Environmental Protection Act 1986*, the *Environmental Protection Regulations 1987* and DER's Operational Procedure on Assessing Emissions and Discharges from Prescribed Premises. Where other references have been used in making the decision they are detailed in the decision document.



DECISION TABLE			
Works Approval / Licence section	Condition number W = Works Approval L= Licence	Justification (including risk description & decision methodology where relevant)	Reference documents
Point source emissions to air including monitoring	L2.2.1 – L2.2.2 L3.2.1 – L3.2.3	<p>All emission points have been added to the licence to include the 2 additional GTGs and the 3 HRSGs. No additional assessment has been carried out for emissions to air. Assessment of the emissions to air has been carried out under Works Approval W5194/2012/1 and Licence L8803/2013/1. Emissions were found to be acceptable. Emissions verification testing of the Stage 2 plant has been carried out and emissions were found to be comparable with those previously assessed. The emission limit specified in the licence and monitoring requirements have been applied to all emission points (noting that only the relevant monitoring point on each of the three generating trains will be sampled depending on the operating mode of the plant i.e. open or closed cycle).</p> <p>During the verification testing the locations of the sampling planes at GT1 Bypass Stack, GT1 Main Stack, GT3 Bypass Stack and GT3 Main stack were deemed 'non-ideal' due to their proximity to nearby sources of flow disturbance which have the potential for creating non-laminar flow and affecting the homogenous distribution of gaseous parameters. A subsequent assessment of the sampling planes for flow and stratification of gaseous components demonstrated that although the locations are 'non-ideal', the relevant criteria have been met to demonstrate laminar flow and non stratified gas distribution. The locations of the sampling plane are therefore considered suitable for both reference method testing and continuous emission monitoring system (CEMS) measurements. Accordingly the requirement for sampling positions to comply with Australian Standard AS4323.1 <i>Stationary Source Emissions Method 1: Selection of sampling positions</i> has been removed.</p> <p>Air emission modelling was based on 5 turbines operating with a NO_x limit of 70mg/m³. BHP has only installed 3 turbines. It is proposed that all 3 turbines will be run continuously for the next 12 months. This will result in some turbines operating on low load due to fluctuating demand from the power grid. Whilst operating on low load total mass air emission will be lower, however concentrations will be higher.</p>	<p>Stage 2 Commissioning Report (BHPBIO-LETTER-020892) dated 9 April 2015.</p> <p>Emissions Assessments report 1415-279 dated 21 July 2015.</p> <p>Further information dated 16 September 2015</p>



DECISION TABLE			
Works Approval / Licence section	Condition number W = Works Approval L= Licence	Justification (including risk description & decision methodology where relevant)	Reference documents
		<p>The turbines are unable to meet the initial operating NO_x limit of 70mg/m³ when operating below 25MW. Above 25MW it is not expected that the NO_x emissions will go over 70mg/m³ based on the manufacturers guaranteed performance data.</p> <p>The Licensee has provided updated assessment data that concluded that, at the worst case operating scenario of NO_x emission of 140mg/m³ there would be no significant increase in risk and that ambient air quality at the nearest receptor would remain well below the assessment criteria. The NO_x emission limit has been raised to 140mg/m³.</p>	
Noise	N/A	<p>No additional assessment has been carried out for noise emissions. Noise monitoring has been conducted during the commissioning period to validate noise levels predicted in the original assessment. The results of the monitoring concluded that the modelled noise levels were higher than the actual levels; the gas turbines do not exhibit a tonal characteristic (which can be more noticeable/annoying to receptors); and the noise levels from the power station operating under normal conditions are compliant with the <i>Environmental Protection (Noise) Regulations 1997</i> at all receptor locations. No licence controls are considered necessary.</p>	<p>Stage 2 Commissioning Report (BHPBIO-LETTER-020892) dated 9 April 2015.</p> <p><i>Environmental Protection (Noise) Regulations 1997</i></p>
Monitoring general	L3.1.2 L3.2.1	<p>Periodic monitoring requirements have been changed from six monthly to annually in line with the requirement to calibrate the CEMS.</p>	N/A
Improvements	N/A	<p>Improvement requirements related to the commissioning of Stage 2 plant have been removed as all requirements have been completed.</p>	<p>Stage 2 Commissioning Report (BHPBIO-LETTER-020892) dated 9 April 2015.</p>
Licence Duration	N/A	<p>The licence duration has not been reassessed as a result of this amendment.</p>	



5 Advertisement and consultation table

Date	Event	Comments received/Notes	How comments were taken into consideration
10/08/2015	Proponent sent a copy of draft instrument	Administrative changes requested, clarification of data reporting requirements, and emissions performance of engines when operating at low load.	Administrative changes made and conditions 3.2.1, 4.2.2 and 4.2.3 updated.
13/08/2015	Meeting with proponent to discuss draft instrument and application of 70mg/m ³ limit at low loads (<25MW).	Additional assessment information provided on 16/09/2015 (see decision table).	Limit in Table 2.2.2 increased from 70mg/m ³ to 140mg/m ³

6 Risk Assessment

Note: This matrix is taken from the DER Corporate Policy Statement No. 07 - Operational Risk Management

Table 1: Emissions Risk Matrix

Likelihood	Consequence				
	Insignificant	Minor	Moderate	Major	Severe
Almost Certain	Moderate	High	High	Extreme	Extreme
Likely	Moderate	Moderate	High	High	Extreme
Possible	Low	Moderate	Moderate	High	Extreme
Unlikely	Low	Moderate	Moderate	Moderate	High
Rare	Low	Low	Moderate	Moderate	High