



COMPLIANCE AUDIT PROGRAM: COAL ASH DAMS

**FINAL
COMPLIANCE AUDIT REPORT**

**ENERGY AUSTRALIA NSW PTY LTD
MOUNT PIPER POWER STATION**

EPL 13007

**350 BOULDER ROAD
PORTLAND NSW 2847**

JULY 2016

This report has been prepared to present the findings of the audit carried out and no responsibility is accepted for its use in any other context, or for any other purpose.

EXECUTIVE SUMMARY

An Environment Protection Authority (EPA) compliance audit was undertaken at Mount Piper Power Station ('the premises') located at Portland, NSW. The premises is operated by Energy Australia NSW Pty Ltd ('the licensee').

The site was audited as part of an EPA compliance audit program on coal ash dams and emplacement areas. The main objectives of the audit were to assess compliance with;

- conditions attached to Environment Protection Licence 13007 that relate to the coal ash dams and emplacements including associated surface water and dust management,
- the legislative requirements for Pollution Incident Response Management Plans - Part 5.7A of the Protection of the Environment Operations Act 1997 (POEO) and Chapter 7, Part 3A of the POEO (General) Regulation 2009, in relation to the coal ash emplacements.

Assessments of compliance were made using information collected during an audit inspection, information supplied by the licensee and a review of records and documentation relating to the premises. The procedures for conducting EPA compliance audits are detailed in the *Compliance Audit Handbook* (DEC 2006). The audit inspection was carried out by EPA Officers on 12 November 2015.

The findings of the audit indicate that the licensee was complying with the licence requirements relating to the management of the dry ash emplacement area. It is noted however that the licensee was not complying with some of the requirements of the POEO Act in relation to Pollution Incident Response Management Plan requirements.

An action program has been developed to address the identified non-compliances. A risk assessment is used to colour code non-compliances according to their environmental significance. The action program includes a timeframe for non-compliances to be addressed to ensure the licensee deals with issues raised through the audit process in a timely manner.

Where issues of environmental concern were observed which did not strictly relate to the scope of the audit or assessment of compliance they were recorded as a further observation. A further observation was made in regards to the siting of the weather monitoring station and a dust gauge managed by a sub-contractor.

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1.0 INTRODUCTION

An Environment Protection Authority (EPA) compliance audit was undertaken at Mount Piper Power Station ('the premises') located at Portland, NSW. The premises is operated by Energy Australia NSW Pty Ltd ('the licensee').

The site was audited as part of an EPA compliance audit program on coal ash dams and ash emplacement areas. The main objectives of the audit were to assess compliance with conditions attached to Environment Protection Licence 13007 that relate to the coal ash emplacements and compliance with Part 5.7A of the Protection of the Environment Operations Act 1997 (POEO) in relation to Pollution Incident Response Management Plans and to develop an action program to be implemented by the licensee to address any non-compliance(s) identified during the audit.

The audit inspection was undertaken by EPA Officers on 12 November 2015.

The procedures for conducting EPA Compliance Audits are detailed in the *Compliance Audit Handbook* (DEC 2006), which can be accessed on the EPA website at <http://www.environment.nsw.gov.au/resources/licensing/cahandbook0613.pdf>.

1.1 Audit Objectives

The objectives of the audit were to assess the licensee's compliance with the EPA's regulatory requirements relating to the coal ash emplacements. The audit criteria are included in section 1.3.

1.2 Scope of the Audit

The scope of the audit included an examination of activities undertaken at the premises in relation to the coal ash emplacement. These activities included:

- Transport and disposal of waste in the coal ash emplacement.
- Management of waste water and stormwater in relation to the coal ash emplacements.
- Management of dust in relation to the coal ash emplacements.
- Undertaking monitoring and recording of data and information as per the licence conditions in relation to coal ash emplacement management.
- Maintenance and operation of plant and equipment associated with the coal ash emplacements.
- Preparation, keeping, testing and implementing a PIRMP.

The temporal scope for the assessment of compliance was:

- The day of the audit inspection for observations relating to activities undertaken at the premises.
- 24 months until the end of the audit inspection (13 November 2013 – 12 November 2015) for monitoring, reporting and supporting documentary evidence.

1.3 Audit criteria, evidence and findings

Audit criteria (the requirements against which the auditor assesses audit evidence) were:

- Conditions attached to Environment Protection Licence 13007 that relate to the coal ash emplacements and associated surface water and dust management.
- The legislative requirements for Pollution Incident Response Management Plans- Part 5.7A of the Protection of the Environment Operations Act 1997 (POEO) and Chapter

7, Part 3A of the POEO (General) Regulation 2009, in relation to the coal ash emplacements.

Audit evidence was collected during a site inspection, which included discussions with relevant staff and observations of operational activities, and a review of relevant documentation and records.

Findings of the audit are summarised in Tables 3, 4 and 5. An action program (Section 4) has been developed to provide a time frame for follow-up action necessary to address any non-compliance identified.

1.4 Premises and Process Description

Mt Piper Power Station is located approximately 17km northwest of Lithgow. The power station comprises two 700MW coal fired steam turbine generators built over two stages in 1992 and 1993. Energy Australia acquired Mount Piper Power Station from the State owned 'Delta Electricity' in September 2013.

Ash from the power station is placed in a dry ash repository area. Approximately 680 000 m³ of ash is placed in the repository area on an annual basis. The ash placement area is located in close proximity to the power station and is placed in the former Western Main open cut mine void adjacent to the power station. Approval was recently granted to extend the ash emplacement area into the area known as "Lamberts North". Placement in this area commenced in September 2013. The management of the ash repository area is undertaken by a sub-contractor.

To minimise dust emissions from the ash emplacements the ash is kept moist, is compacted and rehabilitated and covered as soon as possible. Run off from surrounding areas is prevented from entering the ash emplacement area. The site is designed so that rain water that falls on the ash emplacement area is retained on site in a series of catchment drains and ponds and reused for dust suppression.

The nearby creeks are monitored on a monthly basis to help determine whether ash emplacements are impacting on nearby waterways. Weather conditions are monitored to help inform daily operations to reduce the likelihood of dust and water emissions.

1.5 Statutory Instruments

Environment Protection Licence 13007 was issued to the licensee by the EPA under section 55 of the *Protection of the Environment Operations Act 1997* on 1 January 2009. At the time of the audit inspection, the most recent variation to the licence was dated 29 June 2015 and this licence is attached as Appendix A.

The scheduled activity undertaken at the premises and the relevant fee scale is:

- Electricity Generation (Generation of electrical power from coal: > 4,000 Gwh generated)

The licence also applies to all other activities carried on at the premises including the following listed ancillary activities:

- Chemical storage facilities,
- Coal Works,
- Crushing, grinding or separating,
- Sewage Treatment,
- Waste storage.

The anniversary date for the licence is 1 January.

A copy of the current version of the licence can be accessed through the EPA online public register at: <http://www.epa.nsw.gov.au/prpoeoapp/>.

1.6 Risk Assessment of Non-Compliances

A risk assessment of non-compliances was undertaken as part of the audit process to identify the relative significance of any identified non-compliance. The risk assessment involved assessing each non-compliance against two criteria:

- The likelihood of environmental harm occurring
- The level of environmental impact as a result of the non-compliance.

After these assessments were made a risk code was assigned using the risk analysis matrix identified in Table 1.

Table 1 Risk analysis matrix

		Likelihood of Environmental Harm Occurring		
Level of Environmental Impact		Certain	Likely	Less Likely
	High	Code Red	Code Red	Code Orange
	Moderate	Code Red	Code Orange	Code Yellow
	Low	Code Orange	Code Yellow	Code Yellow

Within the risk analysis matrix:

- A **code red** risk assessment denotes that the non-compliance is of considerable environmental significance and therefore must be dealt with as a matter of priority.
- A **code orange** risk assessment denotes that the non-compliance is of environmental significance however; remedying the non-compliance can be given a lower priority than a red risk assessment.
- A **code yellow** risk assessment indicates that the non-compliance could receive a lower priority than a red or orange risk code, but the non-compliance is still important and must be addressed.
- There are also a number of licence conditions that do not have a direct environmental significance, but are still important to the integrity of the regulatory system. These conditions relate to administrative, monitoring and reporting requirements. Non-compliance of these conditions is given a **code blue** risk assessment.

The colour code was used as the basis for deciding on the priority of remedial action required by the licensee and the timeframe within which the non-compliance needs to be addressed. This information is presented in the action program alongside the target/action date for the non-compliance to be addressed.

While the risk assessment of non-compliances is used to prioritise actions to be taken, the EPA considers all non-compliances to be important and licensees must ensure that all non-compliances are addressed as soon as possible.

2.0 ASSESSMENT OF COMPLIANCE

2.1 Findings of the audit

The licensee's compliance with the audit criteria (requirements) is summarised in Table 2. The detailed findings of the audit are provided in Tables 3, 4 and 5.

Table 2 Summary of compliance

Compliance assessment		Number of findings
Yes (Compliant)		33
No (Not Compliant) Categorised by risk code	code red	0
	code orange	0
	code yellow	0
	code blue	4
Not Determined		0
Total		37

Table 3 Assessment of Compliance with Environment Protection Licence 13007

Condition Number	Compliance / Risk assessment	Comment	Action required by licensee
2	Discharges to Air and Water and Applications to Land		
P1.1 – P1.3	<p>These are statements indicating that the points in the tables are identified for the purposes of monitoring and/or setting of limits of pollutants discharged from the points.</p> <p>It is noted that the monitoring /discharge points referred to in these conditions do not relate to the management of the ash emplacements and therefore are beyond the scope of this audit.</p>		
3	Limit conditions		
L1	Pollution of waters (<i>Scope: day of audit inspection</i>)		
L1.1	Yes	<p><i>Surface water</i></p> <p>The licensee was not polluting surface waters at the time of the audit inspection.</p>	
L3	Concentration limits (<i>Scope: From 13 November 2013 to 12 November 2015</i>)		
L3.1 – L3.6	Beyond the scope	It is beyond the scope of this audit to assess compliance with the concentration limits in these conditions as they relate to discharges to air from the power station and do not relate to the scope of the audit (ie ash emplacement operations).	
L4	Waste (<i>Scope: From 13 November 2013 to 12 November 2015</i>)		
L4.1	See assessment of compliance with L4.2 and L4.3.		
L4.2	Yes		
L4.3	Yes		
L4.4	Statement	This condition permits the licensee to receive waste water from the Wallerawang power station, however these activities are beyond the scope of this audit as it does not relate to the management of the ash emplacement area.	
4	Operating conditions		

Condition Number	Compliance / Risk assessment	Comment	Action required by licensee
O1	Activities must be carried out in a competent manner (<i>Scope: day of audit inspection</i>)		
O1.1b)	The treatment, storage, processing, reprocessing, transport and disposal of waste generated by the activity		
	Yes	Transport of dry ash to the ash emplacements	
	Yes	Management of waste water generated from the ash emplacement area <i>a) Control of stormwater run on to the ash emplacement area</i> The licensee was controlling the stormwater run on to the ash emplacement area in a competent manner. Drainage lines have been designed and constructed around the perimeter of the ash emplacements to divert clean stormwater away from the ash emplacements <i>b) Preventing uncontrolled discharges to surface waters</i> The licensee was managing dirty water from the coal ash emplacements in a manner to minimise and prevent uncontrolled discharges to surface waters.	
	Yes	Management of dust from the ash emplacements - Operational procedures - Dust monitoring (equipment and results) See further observation on dust and weather monitoring equipment	
O2	Maintenance of plant and equipment (<i>Scope: day of audit inspection</i>)		
O2.1a)	All plant and equipment installed at the premises or used in connection with the licensed activity must be maintained in a proper and efficient condition		
	Yes	Maintenance of plant and equipment used to minimise or prevent water pollution	
	Yes	Maintenance of plant and equipment used to minimise or prevent dust emissions	
O2.1b)	All plant and equipment installed at the premises or used in connection with the licensed activity must be operated in a proper and efficient manner		
	Yes	Operation of plant and equipment used minimise or prevent water pollution	

Condition Number	Compliance / Risk assessment	Comment	Action required by licensee
	Yes	Operation of plant and equipment used minimise or prevent dust emissions	
O3	Dust <i>The premises must be maintained in a condition which minimises or prevents the emission of dust from the premises.</i>		
O3.1	Yes		
5	Monitoring and Recording Conditions <i>(Scope: From 13 November 2013 to 12 November 2015)</i>		
M1	Monitoring records		
M1.1-M1.3	Beyond the scope	It is beyond the scope of the audit to assess compliance with the requirements of these conditions as there are no monitoring requirements on the licence relating to the scope of the audit (i.e. management of the ash emplacement areas).	
M2	Requirement to monitor concentration of pollutants discharged		
M2.1-M2.5	Beyond the scope	It is beyond the scope of the audit to assess compliance with the requirements of these conditions as there are no monitoring requirements on the licence relating to the scope of the audit (i.e. management of the ash emplacement areas).	
M5	Weather monitoring		
M5.1	Beyond the scope	It is beyond the scope of the audit to assess compliance with the weather monitoring requirements as the weather station referred to in this condition is not used to manage the operations of the ash emplacement areas. A separate weather monitoring station is operated within the ash emplacement area and the data from this unit is used to help inform operational practices regarding ash placement. <i>However see Further observation on Weather and dust monitoring equipment in Section 3.</i>	

Table 4 Assessment of Compliance with *Protection of the Environment Operations Act 1997, PIRMP requirements.*

Legislation: PROTECTION OF THE ENVIRONMENT OPERATIONS ACT 1997 – Chapter 5, Part 5.7A			
Section	Compliance assessment	Comment	Action required by licensee
153A	Duty to prepare a pollution incident response management plans <i>The holder of an environment protection licence must prepare a pollution incident response management plan (PIRMP) that complies with this Part in relation to the activity to which the licensee relates.</i>		
	Yes	Preparation of a plan	
	Compliance with this part of the Act (Part 5.7A) Refer to the assessment of compliance outlined within this table.		
153C	Information to be included in plan <i>A PIRMP must be in the form required by the regulations and must include the following;</i>		
	a) <i>the procedures to be followed by the holder of the relevant Environment Protection Licence in notifying a pollution incident to;</i>		
	<ul style="list-style-type: none"> <i>the owners or occupiers of premises in the vicinity of the premises</i> <i>the local authority for the area in which the premises relates are located and any area affected or potentially affected</i> <i>any persons or authorities required to be notified by Part 5.7A</i> 		
	Yes		
	b) <i>a detailed description of the action to be taken immediately after a pollution incident</i>		
	Yes		
	c) <i>the procedures to be followed for coordinating any action taken in combating the pollution caused</i>		
	Yes		
	d) <i>any other matter required by the regulations</i>		
	Refer to the assessment of compliance outlined within this table.		
153D	Keeping of Plan <i>The plan must be kept at the premises to which the relevant environment protection licence relates and made available in accordance with the</i>		

Legislation: PROTECTION OF THE ENVIRONMENT OPERATIONS ACT 1997 – Chapter 5, Part 5.7A			
Section	Compliance assessment	Comment	Action required by licensee
	<i>regulations</i>		
	Yes		
153E	Testing of plan <i>The plan must be tested in accordance with the regulations</i>		
	Refer to the assessment of compliance with POEO (General) Regulation 2009 – Clause 98E: Testing of plan.		
153F	Implementation of plan <i>The PIRMP must be implemented immediately if a pollution incident occurs</i>		
	This requirement did not apply within the scope of the audit, as a pollution incident had not occurred within that time period.		

Table 5 Assessment of Compliance with the Protection of the Environment Operations (General) Regulation 2009

Legislation: PROTECTION OF THE ENVIRONMENT OPERATIONS (GENERAL) REGULATION 2009- Chapter 7, Part 3A			
Section	Compliance assessment	Comment	Action required by licensee
98B	Form of Plan		
	1) <i>Plan must be in written form</i>		
	Yes		
	2) <i>Plan may form part of another document so long as the information required is readily identifiable.</i>		
	Not applicable	This requirement is not applicable as the plan does not form part of another document.	
98 C (1)	ADDITIONAL MATTERS TO BE INCLUDED IN THE PLAN		
	a) <i>description of the hazards</i>		
	Yes		

Legislation: PROTECTION OF THE ENVIRONMENT OPERATIONS (GENERAL) REGULATION 2009- Chapter 7, Part 3A			
Section	Compliance assessment	Comment	Action required by licensee
	<i>b) likelihood of such hazards occurring</i>		
	Yes		
	<i>c) details of pre-emptive actions to be taken to minimise or prevent any risk of harm</i>		
	Yes		
	<i>d) inventory of potential pollutants</i>		
	Yes		
	<i>e) maximum quantity of any pollutant likely to be stored</i>		
	No CODE BLUE	The plan includes the maximum quantities of most of the listed pollutants on site however there is no maximum quantity listed for the 'Brine concentrate pond' and 'Contaminated water ponds'.	The plan must include the maximum quantities of all pollutants likely to be stored on site.
	<i>f) a description of any safety equipment or other devices used to minimise the risks to human health or the environment and to contain or control a pollution incident</i>		
	Yes		
	<i>g) names, positions and 24 hour contact details of key personnel</i>		
	No CODE BLUE	The plan does not include the <u>names</u> of key personnel however it is noted that the position titles and 24 hour contact details of these positions are included in the plan.	The PIRMP must make reference to a shift roster which includes the names of key personnel and their responsibilities as outlined in 98C (1) (g).
	<i>h) contact details of relevant authorities (EPA, Local council, Ministry of Health, Work cover, Fire and Rescue NSW)s.148 of Act</i>		
	Yes		
	<i>i) mechanisms for providing early warnings to occupiers of nearby premises</i>		

Legislation: PROTECTION OF THE ENVIRONMENT OPERATIONS (GENERAL) REGULATION 2009- Chapter 7, Part 3A			
Section	Compliance assessment	Comment	Action required by licensee
	Yes		
	<i>j) arrangements for minimising the risk of harm to persons on site</i>		
	Yes		
	<i>k) a detailed map showing the location of the premises to which the licence relates, the surrounding area that is likely to be affected by a pollution incident, the location of potential pollutants on the premises and the location of any stormwater drains on the premises</i>		
	No CODE BLUE	The plan does not provide a detailed map showing the surrounding area that is likely to be affected by a pollution incident.	The plan must contain a detailed map showing the surrounding area that is likely to be affected by a pollution incident.
	<i>l) description of how any identified risk of harm to health will be reduced</i>		
	Yes		
	<i>m) nature and objectives of any staff training program</i>		
	Yes		
	<i>n) the dates the plan has been tested and name of person who carried out the test</i>		
	Yes		
	<i>o) the dates on which the plan is updated</i>		
	Yes		
	<i>p) the manner in which the plan is to be tested and maintained</i>		
	Yes		
98 D	AVAILABILITY OF PLAN		
98D (1)	<i>A plan is to be made readily available</i>		
	<i>a) to an authorised officer on request</i>		

Legislation: PROTECTION OF THE ENVIRONMENT OPERATIONS (GENERAL) REGULATION 2009- Chapter 7, Part 3A			
Section	Compliance assessment	Comment	Action required by licensee
	Yes		
	b) at the premises to any person who is responsible for implementing the plan		
	Yes		
98 D (2) & (3)	a) A plan is to be made publicly available within 14 days after it is prepared in a prominent position on a publicly accessible website of the person required to prepare the plan (only parts required by sections 153 C (a) of the Act and clause 98C (1) (h) and (i) of the Regulation).		
	Yes	The licensee has ensured the plan is located in a prominent position on a publicly accessible website. However, it was beyond the scope of the audit to assess whether the plan was made publicly available within 14 days after it was prepared as the audit was conducted after this time.	
98 E	TESTING OF PLAN		
98 E (1) & (2)	(1) Testing of the plan is to be carried out so to ensure that the information included is accurate and up to date and the plan is capable of being implemented in a workable and effective manner.		
	(2) Any such test is to be carried out;		
	a) routinely at least once every 12 months		
	Yes		
	b) within 1 month of any pollution incident		
This requirement did not apply at the time of the audit, as there had been no pollution incidents within the scope of the audit. It is noted that the licensee has in place procedures for testing the Plan within 1 month of any pollution incident.			

3.0 FURTHER OBSERVATIONS

Where issues of environmental concern were observed which did not strictly relate to the scope of the audit or assessment of compliance they were recorded as a further observation.

Weather and dust monitoring equipment used for operation of the Ash Emplacement Area

Energy Australia employs a sub-contractor to manage the operation of the ash emplacement area. The sub-contractor operates a weather monitoring station (model: *Envirodata -Easidata Mk 4 System*) within the ash emplacement area to help inform daily operational practices for the ash emplacement (including to assist with dust and water management).



It is noted that the operation of this weather monitoring station is not a licensing requirement however issues were noted with the siting of the station that could be improved for more accurate weather monitoring data (site staff indicated that this weather station was soon to be replaced with a newer model).

The Australian Standard 'AS3580.14:2014 *Methods for sampling and analysis of ambient air*' describes the standards for setting up and locating meteorological monitoring equipment. It states that equipment monitoring wind speed and direction should be located in an area generally free from obstructions. It is noted that the station is located at the base of a 'lift' or mound (see adjacent photo). The location of this station potentially hinders accurate readings of wind direction and speed due to the hilly nature of the

terrain and its proximity to the slope. When monitoring ambient temperature the standard states that the monitoring equipment should be located on level ground and should be at least 2 metres high. This monitor is located at a height of less than two metres high and is on a slope.

It was also noted that one of the sub-contractor operated dust gauges inspected (gauge no. 4. See adjacent photo) appeared to be located under branches of a tree which may act as a barrier to dust deposition. The relevant Australian Standard relating to monitoring dust 'AS 3580.10.1:2003 – *Determination of particulate matter- deposited matter*' states that the dust gauge should have a clear sky angle of at least 120°.

The licensee should consult the appropriate Australian standards when implementing the new weather monitoring station and with the siting of dust gauges to help ensure that accurate meteorological data is obtained.



4.0 ACTION PROGRAM

The action program identified in Table 6 must be undertaken by the licensee.

Table 6 Action Program

Item	Condition No.	Action Details	Non-Compliance Code	Target/Action Date
Environment Protection Licence No. 13007				
There are no non compliances noted against EPL 13007				
Protection of the Environment Operations Act 1997, Chapter 5, Part 5.7A				
There are no non compliances noted against POEO Act 1997 Chapter 5, part 5.7A				
Protection of the Environment Operations (General) Regulation 2009- Chapter 7, Part 3A				
2	98C 1 e	The PIRMP must include the maximum quantities of all pollutants likely to be stored on site (including the brine concentrate pond and contaminated water ponds).	Code Blue	Within 3 months of the issue of the Final Audit Report
3	98C 1 g	The PIRMP must make reference to a shift roster which includes the names of key personnel and their responsibilities as outlined in 98C (1) (g).		
4	98C 1 k	The PIRMP must include a detailed map showing the surrounding area that is likely to be affected by a pollution incident.		

APPENDIX A
ENVIRONMENT PROTECTION LICENCE 13007

(Refer to the NSW EPA online public register at: <http://www.epa.nsw.gov.au/prpoeoapp/>)

APPENDIX B
LICENSEES RESPONSE TO DRAFT REPORT



EnergyAustralia

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19 May 2016

Winston Wickremeratne
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Environment Protection Authority

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Dear Mr Wickremeratne,

With regards to the recent compliance audit report compiled by the EPA for EnergyAustralia's Wallerawang and Mt Piper Power Stations (EPL's 766 and 13007), EnergyAustralia wishes to make the following comments on the audit report. EnergyAustralia also provides supplementary evidence with regards to the findings of the reports that the EPA may wish to consider when preparing the final audit report.

GENERAL COMMENT

Whilst welcoming audits of this nature and the associated opportunity to improve in areas of environmental management and compliance, EnergyAustralia does not fully agree with the draft Executive Summary as the primary focus is on the EPA's findings of potential non-conformance and not the broader aspects of the findings which demonstrate a strong compliance culture at EnergyAustralia. Given that this will become a public document, EnergyAustralia requests that the EPA consider any positive, conforming outcomes from the audit and provide some commentary on these aspects in the final report and specifically in the executive summaries.

EnergyAustralia samples in excess of the EPL requirements. We do this for due diligence and it allows us to ensure compliance. For example when required to sample 'weekly during flow' we may often take up to three samples. When flow is trivial 'less than 1 ML/d' (see comments below) we sample in the knowledge that the sample is not representative of process discharge.

WALLERAWANG POWER STATION – EPL 766

During discussions with the EPA several years ago, and in considerations of the large volumes of process flow when operating plant is discharging, an agreement was sought to determine a monitoring regime that took into account the issue of 'trivial' flow, that is, flow that did not originate as part of the power station process and that was difficult to sample due to the small volumes present at a discharge point designed to accommodate very large flows. The following was confirmed by the EPA in 2013 - *A nil discharge from LDP4 permits a minor discharge of water (of less than 1ML/day interim) via LDP4 in order to maintain the health of the watercourse leading to LDP4.* Whilst this particular correspondence related to LDP 4 the broader conversation focussed on a discussion of trivial flow.

This interpretation of less than 1ML/day of flow being essentially 'trivial' has been equally and consistently applied across all LDP's. During the sampling process, flow is assessed and recorded as being either Nil, Trivial or Flow.

In terms of licence compliance, only occurrences where 'flow' is recorded are reported, and out of limit results acted upon. Where Nil or Trivial flow is recorded, samples are typically taken as part of EnergyAustralia's

commitment to due diligence, and are analysed so that a record of the sampling and assessment is available if required.

Specific reference is made to each of the individual audit findings below;

Item 1

6/7/15

Finding - Sulphate recorded as 1800mg/L.

Comment - Trivial flow recorded and sample was collected for due diligence only. This should not be reflected as an NC in the audit.

24/8/15

Finding - Sulphate was recorded as 1800mg/L.

Comment - Trivial flow was recorded and sample was collected for due diligence only. This should not be reflected as an NC in the audit.

Between the week 26/8/15 to 30/8/15, flow was recorded. The Licence monitoring condition requires that a representative sample to be collected weekly during any discharge. The weekly representative samples collected during this time recorded a sulphate result of 1,084 mg/L. This included the due diligence result of 1800mg/L collected 24/8/15 when only trivial flow was recorded. This should not be reflected as an NC in the audit.

29/6/15

Finding - Sulphate was recorded as 1400mg/L.

Comment - Trivial flow was recorded and sample was collected for due diligence only. This should not be reflected as an NC in the audit.

Item 2

20/04/2015

Finding - pH was recorded as 4.9

Comment - Trivial flow was recorded and sample was collected for due diligence only. This should not be reflected as an NC in the audit.

01/06/2015

Finding - pH was recorded as 5.1

Comment - Between the week 1/6/15 - 7/6/15, flow was recorded. The Licence monitoring condition requires that a representative sample to be collected weekly during any discharge. The weekly representative samples collected during this time recorded a pH result of 6.7. This should not be reflected as an NC in the audit.

09/06/2015

Finding - pH was recorded as 4.6

Comment - Trivial flow was recorded and sample was collected for due diligence only. This should not be reflected as an NC in the audit.

06/07/2015

Finding - pH was recorded as 4.3

Comment - Trivial flow was recorded and sample was collected for due diligence only. This should not be reflected as an NC in the audit.

15/07/2015

Finding - pH was recorded as 4.8

Comment - Samples were not collected on this date. This should not be reflected as an NC in the audit.

20/07/2015

Finding - pH was recorded as 5.0

Comment - Between the week 20/7/15 - 27/7/15, flow was recorded. The Licence monitoring condition requires that a representative sample to be collected weekly during any discharge. The weekly representative

samples collected during this time recorded a pH result of 6.7. This should not be reflected as an NC in the audit.

24/08/2015

Finding – pH was recorded as 4.4

Comment - Trivial flow was recorded on this day and sample was collected for due diligence only. Between the week 24/8/15 – 30/8/15, flow was recorded. The Licence monitoring condition requires that a representative sample to be collected weekly during any discharge. The weekly representative samples collected during this time recorded a pH result of 7.4. This should not be reflected as an NC in the audit.

Item 3 Return Water Storage (2MG Tank)

A long standing and well established risk management process is in place for the 2MG tank. Thickness testing, routine inspections and maintenance are performed on this system in order to minimise the risk. EnergyAustralia deems this as an adequate approach at this time in terms of reducing the risk to 'as low as reasonably practical'. Secondary containment is not considered practical in terms of cost, noting that the entire site is under a program of decommissioning, demolition and rehabilitation (DDR), with a sale and purchase agreement between EA and the State (Treasury) being in place to cap costs.

With the risk management process established for the 2MG tank and in place, EnergyAustralia wishes that this finding be removed from the audit report as an NC.

Item 4 Monitor the concentration of each pollutant

Sulphate analysis was conducted on the 27/7/15, 10/8/15 and 17/8/15, however these analysis reports were overlooked when compiling the original data package for the EPA. The analytical reports are now attached for the EPA's review.

27/7/15 – 404 mg/L

10/8/15 – 1,299 mg/L (trivial flow was recorded on this day, sampling and analysis was for due diligence only).

17/8/15 – 1,592 mg/L (trivial flow was recorded on this day, sampling and analysis was for due diligence only).

Item 5 Sampling Frequency

Sampling and analysis was conducted on all dates outlined in this finding, however the analysis reports were overlooked when compiling the data package for the EPA. The analytical reports for all dates are attached for the EPA's review.

Item 6 Methods of Analysis

The testing laboratory is accredited (and was accredited for the period Nov-13 – Nov-15) to perform all analyses as required for the monitoring of listed pollutant concentrations of Wallerawang CIP settling pond discharge; EPL 766 LDP3.

NATA accreditation for 'Ecolab Pty Ltd t/a Nalco Australia Pty Ltd', Accreditation No. 1099, scope applies to results from 12th November 2013 to 30th June 2015 for metals analysis. For metals from 1st July 2015 to 13th November 2015, please refer to ALS Environmental Laboratory NATA scope, accreditation No. 825.

EnergyAustralia considers it fully complies with this licence requirement. This should not be reflected as an NC in the audit.

Item 7 Methods approved by the EPA

CA14503 for analysis of metals follows USEPA 6020 which is found in the approved methods publication. This method was used for results for metal analysis from 12th November 2013 to 30th June 2015. EG020A/EG094B for analysis of metals follows USEPA 6020 which is found in the approved methods publication. This method was used for results for metal analysis from 1st July 2015 to 13th November 2015 and currently.

CA1116 for analysis of conductivity follows APHA section 2510 which is found in the approved methods publication. This method has been used for results for conductivity for the period 12th November 2013 to 13th November 2015 and currently.

EnergyAustralia considers it fully complies with this requirement. This should not be reflected as an NC in the audit.

Item 8 Description of Hazards

EnergyAustralia accepts the recommendation that the inclusion of the ash dam failing should be listed in the PIRMP as a potential hazard.

Item 9 Names of Key Personnel

Due to the continuous operation of the site, rotating shift work means multiple employees can fill the requirements of one role. As such, it is not practical to include the names of key personnel in the PIRMP. This should not be reflected as an NC in the audit.

Item 10

Due to the complexity of the power station sites, the various drainage systems on each site and the multiple dangerous goods locations on both sites, it is not practical to have all of this information published on one drawing. Further, potentially affected surrounding areas can be significantly different depending on a particular type of incident and its severity.

EnergyAustralia believes that adequate detail is provided in an efficient and practical manner by having access via the PIRMP to specific site drawings should they be required during an incident. This should not be reflected as an NC in the audit.

MT PIPER POWER STATION – EPL 13007

Item 1 Likelihood of Hazards Occurring

Table 2 of the PIRMP contains reference to the likelihood of hazards causing or threatening material environmental harm. Although not explicit in the column heading, this likelihood ranking encompasses the likelihood of the hazard actually occurring. EnergyAustralia considers it fully complies with this requirement of the PIRMP. This should not be reflected as an NC in the audit.

Item 2 Maximum Quantity of Pollutant

EnergyAustralia notes this recommendation and commits to adding the required information as per the action table schedule.

Item 3 Names of Key Personnel

Due to the continuous operation of the site, rotating shift work means multiple employees can fill the requirements of one role. As such, it is not practical to include the names of key personnel in the PIRMP. This should not be reflected as an NC in the audit.

Item 4

Due to the complexity of the power station sites, the various drainage systems on each site and the multiple dangerous goods locations on both sites, it is not practical to have all of this information published on one drawing. Further, potentially affected surrounding areas can be significantly different depending on a particular type of incident and its severity.

EnergyAustralia believes that adequate detail is provided in an efficient and practical manner by having access via the PIRMP to specific site drawings should they be required during an incident. This should not be reflected as an NC in the audit.

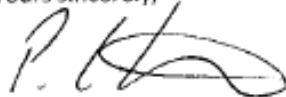
EnergyAustralia also notes the further recommendation regarding the siting of the ash repository weather station at Mt Piper and dust gauge 4. The recommendation will be taken into account and actioned accordingly.

Meeting to Discuss

Due to the complexity of our EPL's and the Power Station sites in general, EnergyAustralia would like to discuss the draft audit findings, and to further clarify any discussion points arising from our response herein, via a face to face meeting with the EPA, prior to a final report being issued.

Please feel free to contact me to arrange a suitable time and location for a meeting, or for further details regarding our response.

Yours sincerely,

A handwritten signature in black ink, appearing to read 'P. Griffiths', with a stylized flourish at the end.

Peter Griffiths
Environment Specialist
EnergyAustralia NSW Pty Ltd
(Ph 02 6354 8350 | Mob 0448 214 609
Peter.Griffiths@energyaustraliansw.com.au

APPENDIX C

LETTER FROM EPA TO LICENSEE COVERING DRAFT COMPLIANCE AUDIT REPORT



Our reference: DOC16/255544
Contact: Nicole Wilmot 02 9995 5422, Marina Hatzakis 02 9995 5428

Mr Peter Griffiths
Environment Specialist
Energy Australia NSW Pty Ltd
350 Boulder Road
PORTLAND NSW 2847

Dear Mr Griffiths

Re. Final Compliance Audit Reports – Wallerawang Power Station (EPL 766) and Mt Piper Power Station (EPL 13007)

The Environment Protection Authority (EPA) is pleased to present you with a copy of the Final Compliance Audit Report for Wallerawang Power Station (EPL 766) and Mt Piper Power Station (EPL 13007). The compliance audits were undertaken as part of the EPA's Compliance Audit Program on coal ash dams and emplacements within NSW. The audit inspection was carried out by EPA officers at your premises on 12 and 13 November 2015.

The comments provided by Energy Australia in an email dated 19 May 2016 and those provided during the conference call between the EPA and Energy Australia at 2.30pm on 10 June 2016 have been considered when finalising these reports. The EPA response to these comments is provided in Attachment A to this letter. Your comments and this letter have been appended to the Final Compliance Audit Reports.

To ensure that all non-compliances in the reports are addressed, we request that you provide an update on your progress against each of the items in the Action Program (Table 6) of the Final Audit Reports by 30 October 2016 to nicole.wilmot@epa.nsw.gov.au and marina.hatzakis@epa.nsw.gov.au. Please also note any comments in the Final Audit Reports against assessments of "Not determined" and the comments under Section 3 "Further Observations".

Copies of the Final Compliance Audit Reports will be made available on the POEO Public Register (<http://www.epa.nsw.gov.au/prpoeoapp/>). Additionally, the EPA is in the process of preparing a Summary Report containing the findings of the Compliance Audit Program. The Summary Report will be made available on the EPA website at the conclusion of the program.

I would like to take this opportunity to thank you and your staff for the co-operation during the audits. If you require further information or clarification on any matters regarding these audits, please do not hesitate to contact Darryl Cliff in the EPA Regional Office on 6332 7602.

Yours sincerely

A handwritten signature in blue ink, appearing to read 'W. Wickmeratne', written over a circular stamp.

7/7/16

WINSTON WICKMERATNE
Head Environmental Audit Section
Environment Protection Authority

Attachment A: EPA's comments in response to Energy Australia's email
Enclosure: Final Compliance Audit Report – Wallerawang Power Station and Mt Piper Power Station

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Attachment A: EPA Response to Energy Australia's email - dated 19 May 2016

Wallerawang Power Station

Section of Draft Audit Report	Energy Australia's comments - Refer to B of the Final Compliance Audit report	EPA's comments
General Comment		<p>The EPA notes Energy Australia's comment that you "request the EPA consider any positive, conforming outcomes from the audit and provide some commentary on these aspects in the final report" and has included in the Executive Summary comments on positive outcomes of the audit.</p> <p>All EPA audit reports provide information on both compliances and non-compliances, specifically Section 2.1 – Findings of the audit provides a table which indicates that Energy Australia were complying with 50 of the 58 requirements audited.</p>
General Condition L2.1 – Concentration limits – EPA ID Point 3 - Sulfate Monitoring: 6/7/15, 24/8/15 Condition L2.1 – Concentration limits – EPA ID Point 3 - pH Sampling events 20/4/15, 9/6/15 and 6/7/15.		<p>Trivial flow</p> <p>The EPA acknowledges Energy Australia's comment that "a nil discharge from EPA ID Point 4 (your reference: LDP4) permits a minor a discharge of waster (of less than 1ML/day interim) via EPA ID Point 4 in order to maintain the health of the watercourse leading to EPA ID Point 4". However, it should be noted that this does not apply to other discharge points listed on the licence. Condition O5.3 of the Environment Protection Licence states:</p> <p>"Notwithstanding condition O5.1, the licensee is not required to use water from the Fish River Scheme when one or both units are out of service and there is no discharge of cooling tower water from Licensed Discharge Points (LDP) 1, 4 and 21. Note: no discharge from LDP4 includes an allowance for a minor discharge discharge of less than 1ML/day to maintain the health of the watercourse leading to LDP4."</p> <p>The assessments have not been changed.</p>
Condition L2.1 Monitoring: 24/8/15		<p>The licensee requires Sulfate to be monitored weekly during discharge from EPA ID Point 3. The concentration limit for Sulfate is 1200mg/L using a representative sampling method. For the week beginning Monday 24 August 2015 to 30 August 2015, sulfate concentrations were recorded for the following dates:</p>

Section of Draft Audit Report	Energy Australia's comments - Refer to B of the Final Compliance Audit report	EPA's comments
		<ul style="list-style-type: none"> Monday 24 August – 1800mg/L (flow was recorded) Wednesday 26 August – 1300 mg/L (flow was recorded) Thursday 27 August – 1300 mg/L (flow was recorded) <p>The results indicate that the concentration limit for sulfate was exceeded on all 3 occasions. A sample needs to be collected so that it is representative of the condition being investigated. A representative sample is a sample representative of a specific sampling event (same date and time) and not an average of multiple samples taken over multiple days during a week. The assessment has not been changed.</p>
Condition L2.1 Sampling event 1/6/15		<p>The licensee requires pH to be monitored weekly during discharge from EPA ID Point 3. The concentration range limit for pH is 6.5 – 8.5 using a representative sampling method. For the week beginning Monday 1 June to 7 June 2015, pH concentrations were recorded for the following dates:</p> <ul style="list-style-type: none"> Monday 1 June – 5.1 (flow was recorded) Wednesday 3 June – 7.4 (flow was recorded) Thursday 4 June– 7.5 (flow was recorded) <p>The sample result for Monday 1 June exceeded the pH concentration range limit. A sample needs to be collected so that it is representative of the condition being investigated. A representative sample is a sample representative of a specific sampling event (same date and time) and not an average of multiple samples taken over multiple days during a week. The EPA acknowledges that Energy Australia re-sampled on 3/6/15 and 4/6/15 following the exceedance on 1/6/15 and the Audit Report reflects this, however the limit was exceeded and sample results for the week cannot be averaged. The assessment has not been changed.</p>
Condition L2.1 Sampling event 15/7/15		<p>As part of the audit, Energy Australia provided the EPA with laboratory reports for the period covered by the scope. Energy Australia provided a laboratory report for 15 July 2015. The laboratory report states that a sample was analysed as received and the result was 4.8 pH</p>

Section of Draft Audit Report	Energy Australia's comments - Refer to B of the Final Compliance Audit report	EPA's comments
		<p>Units on the sample date 15 July 2015 and that a flow was recorded, not 5.1 units as stated in Energy Australia's response.</p> <p>The assessment has not been changed.</p>
<p>Condition L2.1 Sampling event 20/7/15</p>		<p>The licensee requires pH to be monitored weekly during discharge from EPA ID Point 3. The concentration range limit for pH is 6.5 – 8.5 using a representative sampling method.</p> <p>For the week beginning Monday 20 July to 26 July 2015, pH concentrations were recorded for the following dates:</p> <ul style="list-style-type: none"> Monday 20 July – 5.1 (flow was recorded) Thursday 23 July – 7.6 (flow was recorded) <p>The sample result for Monday 20 July and 23 July exceeded the pH concentration range limit. A sample needs to be collected so that it is representative of the condition being investigated. A representative sample is a sample representative of a specific sampling event (same date and time) and not an average of multiple samples taken over multiple days during a week.</p> <p>The EPA acknowledges that Energy Australia re-sampled on 23/7/15 following the exceedance on 20/7/15 and the Audit Report reflects this, however the limit was exceeded and sample results for the week cannot be averaged. The laboratory report states that "NATA accreditation does not cover the performance of this service".</p> <p>Please note that the sample result for Monday 27 July forms part of the week beginning Monday 27 July 2015 and therefore excluded.</p> <p>The assessment has not been changed.</p>
<p>Condition L2.1 Sampling event 24/8/15</p>		<p>The licensee requires pH to be monitored weekly during discharge from EPA ID Point 3. The concentration range limit for pH is 6.5 – 8.5 using a representative sampling method.</p> <p>For the week beginning Monday 24 August to 30 August 2015, pH concentrations were recorded for the following dates:</p> <ul style="list-style-type: none"> Monday 24 August – pH 4.4 (flow was recorded) Wednesday 26 August – 8.6 (flow was recorded) Thursday 27 August – 8.6 (flow was recorded)

Section of Draft Audit Report	Energy Australia's comments - Refer to B of the Final Compliance Audit report	EPA's comments
		<p>The sample result for Monday 24 August exceeded the pH concentration range limit.</p> <p>A sample needs to be collected so that it is representative of the condition being investigated. A representative sample is a sample representative of a specific sampling event (same date and time) and not an average of multiple samples taken over multiple days during a week.</p> <p>The EPA acknowledges that Energy Australia re-sampled on 26 August and 27 August following the exceedance on 24 August and pH was within range however the laboratory reports states that "NATA accreditation does not cover the performance of this service" as it was sampled by Energy Australia and not the laboratory. Condition M3.2 requires that the monitoring for the concentration of a pollutant discharged to waters is done in accordance with the Approved Methods Publication.</p> <p>The assessment has not been changed.</p>
Condition O1.1 b) Item 3 Return Water Storage (2MG tank)		<p>The EPA acknowledges that Energy Australia has an established risk management process in place to manage any risks associated with the 2MG tank.</p> <p>The assessment has been changed to a compliance.</p>
Condition M2.2-M2.3 – Sampling Frequency Item 4 & 5 – Monitor the concentration of each pollutant		<p>The EPA notes Energy Australia has now submitted the laboratory Reports for:</p> <ul style="list-style-type: none"> • 2014 – 27 January, 24 and 31 March, 28 April, 26 May, 30 June, 28 July, 25 August, 29 September, 27 October, 24 November and 29 December; and • 2015 – 7 and 14 September and 26 October. <p>Assessment for Condition M2.2-M2.3 – Sampling Frequency has been amended to a Compliance.</p> <p>It is noted that the following exceedances were recorded in the submitted reports and Condition L2.1 has been updated to reflect these exceedances:</p> <ul style="list-style-type: none"> • Sulfate (1300mg/L) and pH limit (4.5) was exceeded for 10 August 2015, and • Sulfate (1600mg/L) and pH limit (4.5) was exceeded for 17 August 2015.
Item 6 – Methods of Analysis		<p>NATA Accreditation</p>

Section of Draft Audit Report	Energy Australia's comments - Refer to B of the Final Compliance Audit report	EPA's comments
		<p>Condition M3.2 requires the analyses of concentration of pollutants to be undertaken by a laboratory accredited to perform those analyses, such as the National Association of Testing Authorities (NATA) or equivalent.</p> <p>Energy Australia provided the EPA with NATA certification details.</p> <p>The assessment has been changed to a compliance.</p>
Item 7 – Methods approved by the EPA		<p>The EPA notes that Energy Australia have provided the NATA accreditation number 1099 for the laboratory commissioned for the analysis of discharges from EPA Point 3.</p> <p>This laboratory is NATA accredited for the following pollutants using Approved Methods and in-house methods for:</p> <ul style="list-style-type: none"> • Conductivity • Fluoride • pH • Solids • Sulfate • Turbidity <p>However the laboratory reports provided to the EPA show that the test methods used for the analysis of metals, pH, Total suspended solids, Selenium and Sulfate were the in-house methods not the Approved Methods.</p> <p>Condition M3.2 of the EPL requires that the "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". While the laboratory is accredited for the Approved Methods, the methods used were in-house methods not approved by the EPA prior to use.</p> <p>The assessment has not been changed.</p>
Protection of the Environment Operations (General) Regulation		Noted.

Section of Draft Audit Report	Energy Australia's comments - Refer to B of the Final Compliance Audit report	EPA's comments
2009- Chapter 7, Part 3A 98 C (1) a) Item 8 Description of Hazards		
Protection of the Environment Operations (General) Regulation 2009- Chapter 7, Part 3A 98 C (1) g) Names of Key Personnel		This non-compliance remains as the regulation clearly states that the names of key personnel must be included in the PIRMP. To comply with this requirement it is recommended that Energy Australia includes a reference in the PIRMP to a shift roster which has a list of the name of the current personnel in each of the relevant positions.
Protection of the Environment Operations (General) Regulation 2009- Chapter 7, Part 3A 98 C (1) k) Item 10 – Drainage systems		This non-compliance remains as the regulation clearly states that the names of key personnel must be included in the PIRMP. To comply with this requirement it is recommended that Energy Australia includes a reference to an attachment which includes the drainage system onsite in the PIRMP. The surrounding area likely to be affected by a pollution incident needs to also be included on a map in the PIRMP.

Mt Piper Power Station

Section of Draft Audit Report	Energy Australia's comments	EPA's comments
Pollution Incident Response Management Plan		
POEO (General) Regulation 2009- Chapter 7, Part 3A 98 C (1) b) <i>Likelihood of hazards occurring</i>		Energy Australia's comments are noted. The assessment has been changed to a compliance.
POEO (General) Regulation 2009- Chapter 7, Part 3A 98 C (1) e)		Comments noted.

Section of Draft Audit Report	Energy Australia's comments	EPA's comments
<i>Maximum quantities</i>		
POEO (General) Regulation 2009- Chapter 7, Part 3A 98 C (1) g)		This non-compliance remains as the regulation clearly states that the names of key personnel must be included in the PIRMP. To comply with this requirement it is recommended that Energy Australia includes a reference in the PIRMP to a shift roster which has a list of the name of the current personnel in each of the relevant positions.
<i>Names of Key Personnel</i>		
POEO (General) Regulation 2009- Chapter 7, Part 3A 98 C (1) k)		This non-compliance remains as the regulation requires that the PIRMP includes a map showing the surrounding area that is likely to be affected by a pollution incident (or a reference to map/s that are located in other documents).
<i>Map of surrounding area likely to be affected by a pollution incident</i>		It is acknowledged that different maps will be required depending on the incident type. To comply with this requirement it is recommended that, if these maps are already available, a reference is placed in the PIRMP to the location of these maps. If these maps are not available they must be developed.