Bluewaters Power 1 Pty Ltd

Electricity Generation Licence (EGL4)

2014 Asset Management System Review

June 2014

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Mr Les Egerton
General Manager Environment Safety & Compliance
Bluewaters Power 1 Pty Ltd
Level 8, 225 St Georges Terrace
Perth, WA 6000

9 June 2014

Dear Les

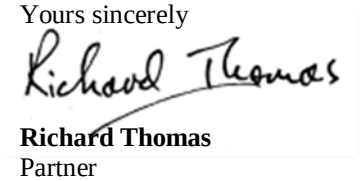
Electricity Generation Licence (EGL4) Asset Management System Review Report -

We have completed the Electricity Generation Licence Asset Management System Review for Bluewaters Power 1 Pty Ltd for the period 1 January 2010 to 31 December 2013 and are pleased to submit our report to you.

I confirm that this report is an accurate presentation of the findings and conclusions from our review procedures.

If you have any questions or wish to discuss anything raised in the report, please contact Andrew Baldwin on 9365 7236 or myself on 9365 7024.

Yours sincerely



Richard Thomas
Partner
Deloitte Touche Tohmatsu

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1 Independent Reviewer's Report

With the Economic Regulation Authority's (**the Authority**) approval, Deloitte Touche Tohmatsu (**Deloitte**) was engaged to conduct a limited assurance review of Bluewaters Power 1 Pty Ltd's (**BP1**) Electricity Generation Licence (EGL4) (the **Licence**) asset management system.

The review was conducted in accordance with the specific requirements of the Licence and the August 2010 issue of the *Audit Guidelines: Electricity, Gas and Water Licences* issued by the Authority (**Audit Guidelines**) for the period 1 January 2010 to 31 December 2013.

BP1's responsibility for maintaining an effective asset management system

BP1 is responsible for putting in place policies, procedures and controls, which are designed to provide for an effective asset management system for assets subject to the Licence.

Deloitte's responsibility

Our responsibility is to express a conclusion on the effectiveness of BP1's asset management systems to meet Licence requirements based on our procedures. We conducted our engagement in accordance with Australian Standard on Assurance Engagements (**ASAE**) *3500 Performance Engagements* issued by the Australian Auditing and Assurance Standards Board and the Audit Guidelines, in order to state whether, based on the work performed, in all material respects, anything has come to our attention to indicate that BP1 had not established and maintained an effective asset management system for assets subject to the Licence, as measured by the effectiveness criteria in the Audit Guidelines and in operation during the period 1 January 2010 to 31 December 2013.

Our engagement provides limited assurance as defined in ASAE 3500.

Our procedures consisted primarily of:

- Utilising the Audit Guidelines as a guide for development of a risk assessment and document review to assess controls
- Development of a Review Plan for approval by the Authority and an associated work program
- Interviews with and representations from relevant BP1 staff to gain an understanding of the development and maintenance of policies and procedural type documentation
- Examination of documented policies and procedures for key functional requirements and consideration of their relevance to BP1's asset management system requirements and standards
- Physical visit to the plant site
- Consideration of reports and references evidencing activity
- Consideration of the installation's function, normal modes of operation and age
- Reporting of findings to BP1 for review and response.

Limitations of use

This report is made solely for the information and internal use of BP1 and is not intended to be, and should not be, used by any other person or entity. No other person or entity is entitled to rely, in any manner, or for any purpose, on this report.

We understand that a copy of the report will be provided to the Authority for the purpose of reporting on the effectiveness of BP1's asset management systems. We agree that a copy of the report may be provided to the Authority for its information in connection with this purpose but, as will be made clear in the report, only on the basis that we accept no duty, liability or responsibility to the Authority in relation to the report. We accept no duty, responsibility or liability to any party, other than you, in connection with the report or this engagement.

Inherent limitations

A limited assurance engagement is substantially less in scope than a reasonable assurance engagement conducted in accordance with ASAE 3500 and consequently does not allow us to obtain assurance that we would become aware of all significant matters that might be identified in a reasonable assurance engagement. Accordingly, we will not express an opinion providing reasonable assurance.

We cannot, in practice, examine every activity and procedure, nor can we be a substitute for management's responsibility to maintain adequate controls over all levels of operations and its responsibility to prevent and detect irregularities, including fraud. Accordingly, readers of our reports should not rely on the report to identify all potential instances of asset management system deficiencies, which may occur.

Any projection of the evaluation of the effectiveness of asset management system processes and procedures to future periods is subject to the risk that the processes and procedures may become inadequate because of changes in conditions, or that the degree of compliance with management procedures may deteriorate.

Independence

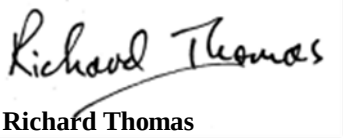
In conducting our engagement, we have complied with the independence requirements of the Australian professional accounting bodies.

Conclusion

Based on our work described in this report, in all material respects, nothing has come to our attention to indicate that BP1 had not established and maintained an effective asset management system for assets subject to the Licence, as measured by the effectiveness criteria in the Audit Guidelines and in operation during the period 1 January 2010 to 31 December 2013.

Table 3 of this report provides the effectiveness ratings for each of the 12 key processes in the asset management life-cycle assessed during our engagement. For those aspects of BP1's asset management system that were assessed as having opportunities for improvement, relevant observations, recommendations and action plans are summarised at section 2.4 of this report and detailed at section 4 of this report.

DELOITTE TOUCHE TOHMATSU



Richard Thomas
Partner
Perth, June 2014

2 Executive Summary

2.1 Introduction and background

The Economic Regulation Authority (the **Authority**) has, under the provisions of the *Electricity Industry Act 2004* (the **Act**), issued the Bluewaters Power 1 Pty Ltd (**BP1**) an Electricity Generation Licence (EGL4) (the **Licence**).

BP1 was granted a licence in 2006 to operate existing generating works on a 229.8MW coal fired facility in Collie, which supplies electricity to the South West Interconnected System (**SWIS**) network. The plant commenced operations in May 2009 under the ownership of Griffin Power.

Griffin Coal, the parent of Griffin Power went into receivership in 2010 and later sold ownership of its related powerhouses in 2013. Sumitomo Corp and Kansai Electric Power Corp (the new joint owners of the Bluewaters powerhouses) applied to the Authority for a name change from Griffin Power 1 Pty Ltd to Bluewaters Power 1 Pty Ltd.

BP1 has an Operations and Maintenance (**O&M**) agreement with Transfield Worley Power Services (**TWPS**) to operate and maintain the facility in accordance with the terms of that agreement.

Section 14 of the Act requires BP1 to provide to the Authority an asset management system review (the **review**) conducted by an independent expert acceptable to the Authority not less than once in every 24 month period (or any longer period that the Authority allows). The Authority set the period to be covered by the review as 1 January 2010 to 31 December 2013.

At the request of BP1, Deloitte Touche Tohmatsu (**Deloitte**) has undertaken a limited assurance review of BP1's asset management system.

The limited assurance review was undertaken in order to state whether, based on the work performed, in all material respects, anything has come to our attention to indicate that BP1 had not established and maintained an effective asset management system for assets subject to the Licence, as measured by the effectiveness criteria in the Audit Guidelines and in operation during the period 1 January 2010 to 31 December 2013.

The objective of this report is to:

(a) Provide a summary of the background to the review and of the procedures performed by us

(b) Communicate our review findings and associated recommendations to you.

Our independent reviewer's report is also contained in section 1 of this report.

The review has been conducted in accordance with the August 2010 issue of the *Audit Guidelines: Electricity, Gas and Water Licences* (**Audit Guidelines**), which sets out 12 key processes in the asset management life-cycle.

2.2 Findings

In considering BP1's internal control procedures, structure and environment, its compliance arrangements and its information systems specifically relevant to those effectiveness criteria subject to review, we observed that:

- Throughout the period subject to review BP1 had maintained consistent procedures and controls within its asset management system
- BP1 and TWPS staff appeared to have a good understanding of their roles, particularly displaying an understanding of the asset management processes within their area of responsibility.

This review assessed that:

- For the asset management process and policy definition adequacy ratings, 47 of the 55 elements of BP1's asset management system are rated as "Adequately defined" and seven elements are rated as "Requires some improvement" and one is not rated

- For the asset management performance ratings, 40 of the 55 elements of BP1's asset management system are rated as "Performing effectively", eight elements are rated as "Opportunity for improvement" and seven are not rated
- There are four opportunities for improvement where further action is recommended.

Specific assessments for each criterion are summarised at **Table 3** in section 3 "Summary of ratings" of this report.

Detailed findings, including relevant observations, recommendations and action plans are located in section 4 "Detailed findings, recommendations and action plans" of this report.

2.3 BP1's response to previous review recommendations

This review considered how BP1 has progressed against the action plans detailed in the 2010 asset management system review report and BP1's subsequent advice to the Authority.

Our assessment of BP1's progress is that of the nine recommendations detailed in the 2010 report:

- One was accompanied by a specific action plan developed by Griffin Power. For the remaining recommendations, Griffin Power stated that an action plan was not mandatory for inclusion in the post review implementation plan and that the items would be reviewed and actioned through internal management systems and would form part of the next Audit process (i.e. this Review)
- Six recommendations were addressed during the review period and each element is now considered to be complete
- Two recommendations (relating to BP1's risk management activities) have been partially completed. These items are addressed at Issue 2/2014 of this report
- One recommendation (relating to BP1's contingency planning process) remains outstanding. This item is addressed at Issue 3/2014 of this report.

Refer to section 5 of this report for further detail.

2.4 Recommendations and action plans

<table>
<tr><th>AMS Key Process and Effectiveness Criteria</th><th>Adequacy rating</th><th>Issue 1/2014</th></tr>
<tr><td rowspan="3">2(e) Ongoing legal/environmental/safety obligations of the asset owner are assigned and understood
4(a) Opportunities and threats in the system environment are assessed
4(c) Compliance with statutory and regulatory requirements</td><td>Requires some improvement (B)</td><td rowspan="3">Although compliance with BP1’s statutory and regulatory requirements (referenced at items 2(e), 4(a) and 4(c)) is subject to periodic assessment, a formal management framework has not been established for clarifying roles and responsibilities for ensuring continual monitoring of compliance and changes in legislative requirements.</td></tr>
<tr><td>Performance rating</td></tr>
<tr><td>Opportunity for improvement (2)</td></tr>
<tr><td colspan="2">Recommendation 1/2014
BP1 implement an effective statutory and regulatory management and compliance framework to enable:
All relevant staff to recognise:
Key compliance requirements
The impact of any breach or near breach of those compliance requirements
Key roles and responsibilities for meeting statutory and regulatory requirements
Key dates and actions required to be monitored and addressed
Any breach or near breach to be adequately investigated and any subsequent learnings to be applied to operational procedures to reduce the risk of the recurrence
Formal periodic monitoring of statutory and legislative requirements for any changes.</td><td>Action Plan 1/2014
BP1 will:
Implement an excel based compliance management process to:
Capture key statutory and regulatory compliance requirements relevant to the management of its power station operations, including relevant dates and actions required
Track the completion of those actions
Record the details of any breach or near breach, including the results of any investigation.
Develop a guidance document, which outlines:
BP1’s key statutory and regulatory obligations relevant to the management of its power station operations
Roles assigned to relevant staff for recognising, recording and investigating any breach or near breach.
The guidance document will be communicated to relevant staff.
Responsible person: General Manager Environment Safety & Compliance
Target date: 31 March 2015</td></tr>
</table>

AMS Key Process and Effectiveness Criteria	Adequacy rating	Issue 2/2014
8(a) Risk management policies and procedures exist and are being applied to minimise internal and external risks associated with the asset management system	Requires some improvement (B) **Performance rating** Opportunity for improvement (2)	Although BP1's operational risk management activities appear to be generally understood and applied by BP1 and TWPS staff, BP1 has not applied a formal process to its risk management activities to ensure its risk management philosophies and approach are consistently applied. For example, a consistent timeframe has not been designed for reviewing risk treatment plans and reports, other than through the annual review of the Asset Management Plan (**AMP**) (which also refers to the use of TWPS's Risk Assessment Worksheet and Risk Action Plan).
Recommendation 2/2014 BP1 formalise its processes for assessing risks, implementing treatment plans and monitoring status on a more frequent basis than the annual review of the AMP.		**Action Plan 2/2014** In addition to the operational risk assessment activities performed by TWPS, Bluewaters Power has recently initiated a strategic risk assessment and management process within its five year business planning cycle. The overarching risk management process to be applied across Bluewaters Power's management of its power station operations will be formalised to recognise all key risk management requirements, activities and timeframes. **Responsible Person:** Chief Executive Officer **Target Date:** 31 December 2014

AMS Key Process and Effectiveness Criteria	Adequacy rating	Issue 3/2014
9(a) Contingency plans are documented, understood and tested to confirm their operability and to cover higher risks	Requires some improvement (B) **Performance rating** Opportunity for improvement (2)	A number of contingency arrangements are in place, inherent within the design of the plant and within contractual arrangements. However an over-arching contingency plan has not been established to ensure all contingency arrangements have been clearly identified, documented and rigorously challenged and tested.
Recommendation 3/2014 BP1: 1. Establish a formal process for ensuring that emergency management plans and contingency arrangements in place for all key risks to the Unit's operations and availability (such as coal supply, water supply, water disposal and ash disposal) are rigorously challenged and tested 2. Prepare a clear over-arching "umbrella" document to capture all contingency plans in place for each of the key risks to each Unit's operations and availability.		**Action Plan 3/2014** In March 2014, Bluewaters Power formally reviewed its contingency arrangements as part of its five year business planning cycle. The overarching contingency planning process to be applied to the management of all key risks to the plant's operations and availability will be formalised. This process will accommodate the need for regular testing of contingency plans, where appropriate, including emergency management plans. **Responsible Person:** Chief Executive Officer **Target Date:** 31 December 2014

<table>
<tr><th>AMS Key Process and Effectiveness Criteria</th><th>Adequacy rating</th><th>Issue 4/2014</th></tr>
<tr><td rowspan="3">12(a) A review process is in place to ensure that the asset management plan and the asset management system described therein are kept current
12(b) Independent reviews (e.g. internal audit) are performed of the asset management system</td><td>Requires some improvement (B)</td><td rowspan="3">BP1’s AMP, which is the main reference to the asset management system, is reviewed and updated (where necessary) on an annual basis. However, a formal process has not been established for ensuring the currency of the asset management system, including the need for independent review of the AMP and any other references which describe the asset management system, or feed into the AMP.
We note that previous versions of the AMP had described the SAP computerised maintenance management systems deployed by TWPS (as a key aspect of the asset management system), however the current version of the AMP does not clearly reference the key components of BP1’s asset management system.</td></tr>
<tr><td>Performance rating</td></tr>
<tr><td>Opportunity for improvement (2)</td></tr>
<tr><td colspan="2">Recommendation 4/2014
BP1 establish a formal review process for ensuring the currency of its asset management system, including the relevant references (including but not restricted to the AMP), which make up that system.
Such a review process should accommodate the need for a sufficient degree of independence in the review.</td><td>Action Plan 4/2014
BP1 will add a step to the annual review and update of the AMP to ensure all components of its asset management system (including the relevant version and active modules of the SAP system) are adequately documented and kept up to date. Sufficient independence in this review process is achieved through the preparation of the plan by TWPS staff and approval by BP1 staff.
Responsible Person: General Manager Operations
Target Date: 31 March 2015</td></tr>
</table>

2.5 Scope and objectives

The objective of the review was to independently examine the effectiveness and performance of the asset management system established for BP1's assets subject to BP1's electricity generation licence and the effectiveness criteria included in the Audit Guidelines for the period 1 January 2010 to 31 December 2013.

In accordance with the Audit Guidelines, the review considered the effectiveness of BP1's existing control procedures within the following 12 key processes in the asset management life-cycle.

#	Key processes	Effectiveness criteria
1	Asset planning	(a) Planning processes and objectives reflect the needs of all stakeholders and is integrated with business planning (b) Service levels are defined (c) Non-asset operations (e.g. demand management) are considered (d) Lifecycle costs of owning and operating assets are assessed (e) Funding options are evaluated (f) Costs are justified and cost drivers identified (g) Likelihood and consequences of asset failure are predicted (h) Plans are regularly reviewed and updated.
2	Asset creation and acquisition	(a) Full project evaluations are undertaken for new assets, including comparative assessment of non-asset solutions (b) Evaluations include all life-cycle costs (c) Projects reflect sound engineering and business decisions (d) Commissioning tests are documented and completed (e) Ongoing legal/environmental/safety obligations of the asset owner are assigned and understood.
3	Asset disposal	(a) Underutilised and underperforming assets are identified as part of a regular systematic review process (b) The reasons for under-utilisation or poor performance are critically examined and corrective action or disposal undertaken (c) Disposal alternatives are evaluated (d) There is a replacement strategy for assets.
4	Environmental analysis (all external factors that affect the system)	(a) Opportunities and threats in the system environment are assessed (b) Performance standards (availability of service, capacity, continuity, emergency response, etc.) are measured and achieved (c) Compliance with statutory and regulatory requirements (d) Achievement of customer service levels.
5	Asset operations	(a) Operational policies and procedures are documented and linked to service levels required (b) Risk management is applied to prioritise operations tasks (c) Assets are documented in an Asset register, including asset type, location, material, plans of components, an assessment of assets' physical/structural condition and accounting data (d) Operational costs are measured and monitored (e) Staff receive training commensurate with their responsibilities.

#	Key processes	Effectiveness criteria
6	Asset maintenance	(a) Maintenance policies and procedures are documented and linked to service levels required (b) Regular inspections are undertaken of asset performance and condition (c) Maintenance plans (emergency, corrective and preventative) are documented and completed on schedule (d) Failures are analysed and operational/maintenance plans adjusted where necessary (e) Risk management is applied to prioritise maintenance tasks (f) Maintenance costs are measured and monitored.
7	Asset management information system	(a) Adequate system documentation for users and IT operators (b) Input controls include appropriate verification and validation of data entered into the system (c) Logical security access controls appears adequate, such as passwords (d) Physical security access controls appear adequate (e) Data back-up procedures appear adequate (f) Key computations related to licensee performance reporting are materially accurate (g) Management reports appear adequate for the licensee to monitor licence obligations.
8	Risk management	(a) Risk management policies and procedures exist and are being applied to minimise internal and external risks associated with the asset management system (b) Risks are documented in a risk register and treatment plans are actioned and monitored (c) The probability and consequences of asset failure are regularly assessed.
9	Contingency planning	Contingency plans are documented, understood and tested to confirm their operability and to cover higher risks
10	Financial planning	(a) The financial plan states the financial objectives and strategies and actions to achieve the objectives (b) The financial plan identifies the source of funds for capital expenditure and recurrent costs (c) The financial plan provides projections of operating statements (profit and loss) and statement of financial position (balance sheets) (d) The financial plan provide firm predictions on income for the next five years and reasonable indicative predictions beyond this period (e) The financial plan provides for the operations and maintenance, administration and capital expenditure requirements of the services (f) Significant variances in actual/budget income and expenses are identified and corrective action taken where necessary.
11	Capital expenditure planning	(a) There is a capital expenditure plan that covers issues to be addressed, actions proposed, responsibilities and dates (b) The plan provide reasons for capital expenditure and timing of expenditure (c) The capital expenditure plan is consistent with the asset life and condition identified in the asset management plan (d) There is an adequate process to ensure that the capital expenditure plan is regularly updated and actioned.

#	Key processes	Effectiveness criteria
12	Review of Asset Management System	(a) A review process is in place to ensure that the asset management plan and the asset management system described therein are kept current (b) Independent reviews (e.g. internal audit) are performed of the asset management system.

Each key process and effectiveness criterion is applicable to BP1's Licence and as such was individually considered as part of the review. The Review Plan set out at Appendix A details the risk assessments made for and review priority assigned to each key process and effectiveness criterion.

2.6 Approach

Our approach for this review involved the following activities, which were undertaken during the period January to March 2014:

- Utilising the Audit Guidelines as a guide, development of a risk assessment, which involved discussions with key staff and document review to assess relevant controls
- Development of a Review Plan (see **Appendix A**) for approval by the Authority
- Correspondence and interviews with BP1 staff to gain understanding of process controls in place (see **Appendix B** for staff involved)
- Visited the power station at TWPS's site with a focus on understanding the facility, its function and normal mode of operation, its age and an assessment of the facility against the AMS review criteria
- Review of documents, processes and controls to assess the overall effectiveness of BP1's asset management systems (see **Appendix B** for reference listing)
- Consideration of the resourcing applied to maintaining those controls and processes
- Reporting of findings to BP1 for review and response.

2.7 Inherent limitations

A limited assurance engagement is substantially less in scope than a reasonable assurance engagement conducted in accordance with ASAE 3500 and consequently does not allow us to obtain assurance that we would become aware of all significant matters that might be identified in a reasonable assurance engagement. Accordingly, we will not express an opinion providing reasonable assurance.

We cannot, in practice, examine every activity and procedure, nor can we be a substitute for management's responsibility to maintain adequate controls over all levels of operations and its responsibility to prevent and detect irregularities, including fraud. Accordingly, readers of our reports should not rely on the report to identify all potential instances of non-compliance which may occur.

Any projection of the evaluation of the effectiveness of asset management system processes and procedures to future periods is subject to the risk that the processes and procedures may become inadequate because of changes in conditions, or that the degree of compliance with management procedures may deteriorate.

3 Summary of ratings

In accordance with the Audit Guidelines, the assessment of both the process and policy definition adequacy rating (refer to **Table 1**) and the performance rating (refer to **Table 2**) for each of the key asset management system processes is performed using the below ratings.

For the avoidance of doubt, these ratings do not provide reasonable assurance.

Table 1: Asset management process and policy definition adequacy ratings

Rating	Description	Criteria
A	Adequately defined	• Processes and policies are documented • Processes and policies adequately document the required performance of the assets • Processes and policies are subject to regular reviews, and updated where necessary • The asset management information system(s) are adequate in relation to the assets that are being managed.
B	Requires some improvement	• Process and policy documentation requires improvement • Processes and policies do not adequately document the required performance of the assets • Reviews of processes and policies are not conducted regularly enough • The asset management information system(s) require minor improvements (taking into consideration the assets that are being managed).
C	Requires significant improvement	• Process and policy documentation is incomplete or requires significant improvement • Processes and policies do not document the required performance of the assets • Processes and policies are significantly out of date • The asset management information system(s) require significant improvements (taking into consideration the assets that are being managed).
D	Inadequate	• Processes and policies are not documented • The asset management information system(s) is not fit for purpose (taking into consideration the assets that are being managed).

Table 2: Asset management performance ratings

Rating	Description	Criteria
1	Performing effectively	• The performance of the process meets or exceeds the required levels of performance • Process effectiveness is regularly assessed and corrective action taken where necessary.
2	Opportunity for improvement	• The performance of the process requires some improvement to meet the required level • Process effectiveness reviews are not performed regularly enough. • Process improvement opportunities are not actioned.
3	Corrective action required	• The performance of the process requires significant improvement to meet the required level • Process effectiveness reviews are performed irregularly, or not at all • Process improvement opportunities are not actioned.
4	Serious action required	• Process is not performed, or the performance is so poor that the process is considered to be ineffective.

This report provides:

- A breakdown of each function of the asset management system into sub-components as described in the Audit Guidelines. This approach is taken to enable a more thorough review of key processes where individual components within a larger process can be of greater risk to the business therefore requiring different review treatment
- A summary of the ratings applied by the review (**Table 3**) for each of:
    - Asset management process and policy definition adequacy (**definition adequacy rating**)
    - Asset management performance (**performance rating**).
- Detailed findings, including relevant observations, recommendations and action plans (**Section 4**). Descriptions of the effectiveness criteria can be found in section 4 and the Review Plan at Appendix A.

Table 3: Asset management system effectiveness summary

						Ratings	
Criteria	Consequence	Likelihood	Inherent Risk	Control Risk	Review Priority	Definition adequacy	Performance
1. Asset planning						**A**	**1**
1(a)	Moderate	Probable	Medium	Moderate	Priority 4	A	1
1(b)	Moderate	Probable	Medium	Strong	Priority 4	A	1
1(c)	Minor	Probable	Low	Moderate	Priority 5	A	1
1(d)	Moderate	Unlikely	Medium	Moderate	Priority 4	A	1
1(e)	Minor	Unlikely	Low	Moderate	Priority 5	A	1
1(f)	Moderate	Unlikely	Medium	Strong	Priority 4	A	1
1(g)	Moderate	Probable	Medium	Moderate	Priority 4	A	1
1(h)	Minor	Probable	Low	Moderate	Priority 5	A	1
2. Asset creation and acquisition						**A**	**2**
2(a)	Moderate	Unlikely	Medium	Strong	Priority 4	A	NR
2(b)	Moderate	Unlikely	Medium	Strong	Priority 4	A	NR
2(c)	Moderate	Unlikely	Medium	Moderate	Priority 4	A	NR
2(d)	Moderate	Unlikely	Medium	Moderate	Priority 4	A	NR
2(e)	Major	Probable	High	Moderate	Priority 2	B	2
3. Asset disposal						**A**	**1**
3(a)	Moderate	Probable	Medium	Moderate	Priority 4	A	1
3(b)	Minor	Probable	Low	Moderate	Priority 5	A	NR
3(c)	Minor	Unlikely	Low	Moderate	Priority 5	A	NR
3(d)	Moderate	Probable	Medium	Moderate	Priority 4	A	1
4. Environmental analysis						**B**	**2**
4(a)	Moderate	Probable	Medium	Moderate	Priority 4	B	2
4(b)	Moderate	Probable	Medium	Moderate	Priority 4	A	1
4(c)	Moderate	Probable	Medium	Moderate	Priority 4	B	2
4(d)	Moderate	Unlikely	Medium	Moderate	Priority 4	A	1
5. Asset operations						**A**	**1**
5(a)	Moderate	Unlikely	Medium	Moderate	Priority 4	A	1
5(b)	Moderate	Probable	Medium	Moderate	Priority 4	A	1
5(c)	Minor	Probable	Low	Strong	Priority 5	A	1
5(d)	Moderate	Probable	Medium	Moderate	Priority 4	A	1
5(e)	Moderate	Probable	Medium	Moderate	Priority 4	A	1
6. Asset maintenance						**A**	**1**
6(a)	Moderate	Probable	Medium	Moderate	Priority 4	A	1
6(b)	Moderate	Probable	Medium	Moderate	Priority 4	A	1
6(c)	Moderate	Probable	Medium	Moderate	Priority 4	A	1
6(d)	Moderate	Probable	Medium	Moderate	Priority 4	A	1
6(e)	Moderate	Probable	Medium	Moderate	Priority 4	A	1
6(f)	Minor	Probable	Low	Moderate	Priority 5	A	1

						Ratings	
Criteria	Consequence	Likelihood	Inherent Risk	Control Risk	Review Priority	Definition adequacy	Performance
7. Asset management information system						**A**	**1**
7(a)	Minor	Probable	Low	Moderate	Priority 5	A	1
7(b)	Moderate	Probable	Medium	Moderate	Priority 4	A	1
7(c)	Minor	Probable	Low	Moderate	Priority 5	A	1
7(d)	Minor	Probable	Low	Moderate	Priority 5	A	1
7(e)	Moderate	Probable	Medium	Moderate	Priority 4	A	1
7(f)	Moderate	Probable	Medium	Moderate	Priority 4	NR	NR
7(g)	Minor	Probable	Low	Moderate	Priority 5	A	1
8. Risk management						**B**	**2**
8(a)	Moderate	Likely	High	Moderate	Priority 2	B	2
8(b)	Moderate	Probable	Medium	Moderate	Priority 4	A	2
8(c)	Moderate	Probable	Medium	Moderate	Priority 4	A	1
9. Contingency planning						**B**	**2**
9(a)	Major	Probable	High	Moderate	Priority 2	B	2
10. Financial planning						**A**	**1**
10(a)	Minor	Probable	Low	Moderate	Priority 5	A	1
10(b)	Minor	Unlikely	Low	Moderate	Priority 5	A	1
10(c)	Minor	Probable	Low	Moderate	Priority 5	A	1
10(d)	Minor	Unlikely	Low	Moderate	Priority 5	A	1
10(e)	Minor	Unlikely	Low	Moderate	Priority 5	A	1
10(f)	Minor	Probable	Low	Moderate	Priority 5	A	1
11. Capital expenditure planning						**A**	**1**
11(a)	Moderate	Probable	Medium	Moderate	Priority 4	A	1
11(b)	Minor	Probable	Low	Moderate	Priority 5	A	1
11(c)	Minor	Probable	Low	Moderate	Priority 5	A	1
11(d)	Minor	Probable	Low	Moderate	Priority 5	A	1
12. Review of AMS						**B**	**2**
12(a)	Moderate	Probable	Medium	Weak	Priority 3	B	2
12(b)	Moderate	Probable	Medium	Moderate	Priority 4	B	2

4 Detailed findings, recommendations and action plans

Summary of generation works subject to review

BP1's generation plant facility is located in the Coolangatta Industrial Estate, Boys Home Road Collie. Commissioned in 2006, the plant is comprised of a single sub-critical natural circulation boiler and a single reheat condensing turbine, auxiliary plant, associated electrical substation, coal handling plant, an administration/stores/workshop building and a network of access roads.

Key details relating to BP1's facility are:

- The facility has gross output capacity of 229.3 MW
- The facility is connected to the Western Power South West Interconnected Grid and generated electricity is supplied to the SWIS network
- TWPS's operations and maintenance staff are based permanently onsite and are responsible for operating the plant and performing routine and first line intervention maintenance under the terms of the O&M agreement. The agreement includes incentives and penalties for TWPS, pertaining to availability and reliability of the plant
- Coal for the facility is sourced primarily from Griffin Coal Mine (GCM) via overland conveyor to bunkers with 19 hour storage. Water is supplied via 500mm pipeline from two major dewatering sources at GCM.

A loss of BP1's facility would have a critical effect on BP1's revenues as all the electricity generated is sold onto the SWIS network under a power purchase agreement.

The following tables contain:

- *Findings*: the reviewer's understanding of the process and any issues that have been identified during the review
- *Recommendations*: recommendations for improvement or enhancement of the process or control
- *Action plans*: BP1's formal response to review recommendations, providing details of action to be implemented to address the specific issue raised by the review.

4.1 Asset planning

Key process: Asset planning strategies are focused on meeting customer needs in the most effective and efficient manner (delivering the right service at the right price).

Expected outcome: Integration of asset strategies into operational or business plans will establish a framework for existing and new assets to be effectively utilised and their service potential optimised.

No	Effectiveness criteria	Findings	
1(a)	Planning process and objectives reflect the needs of all stakeholders and is integrated with business planning	Through discussions with the General Manager Environment Safety & Compliance and consideration of BP1's planning processes, we determined that BP1's business model and resources relate to operating and maintaining a coal fired plant in accordance with contractual arrangements with Transfield Worley Power Services (**TWPS**). From a business planning perspective, we determined that BP1 has established asset management processes and mechanisms to assimilate the requirements of its various stakeholders. In particular, we observed that BP1 has: • Developed an asset management plan for operating and maintaining the various components of the power station to achieve optimum performance over its entire life • Established an Operations & Maintenance (O&M) agreement with TWPS in relation to site maintenance of the power station and supply of electricity for the grid • Effected a power supply agreement to supply electricity on the South West Interconnected System (SWIS). Examination of BP1's asset management processes and mechanisms indicates that the broader and long term plans have been defined within the contractual agreements and are subject to regular review by the joint venture owners.	
		Adequacy Rating: Adequately defined (A)	**Performance Rating:** Performing effectively (1)
1(b)	Service levels are defined	Through discussions with the General Manager Environment Safety & Compliance and examination of BP1's AMP and contractual documentation, we determined that the plant's required service levels have been: • Agreed and defined within the O&M agreement with TWPS and governed by a performance-based incentive program • Built into the AMP to facilitate the achievement of those service levels. That plan references relevant operational information for each item of equipment.	
		Adequacy Rating: Adequately defined (A)	**Performance Rating:** Performing effectively (1)
1(c)	Non-asset options (e.g. demand management) are considered	As BP1's power station has only recently been commissioned and comprises relatively new plant and equipment, BP1 has considered non-asset options for its facility but deemed them non-relevant at this stage as it continues to generate power to meet its obligations under its power supply agreements.	
		Adequacy Rating: Adequately defined (A)	**Performance Rating:** Performing effectively (1)

No	Effectiveness criteria	Findings	
1(d)	Lifecycle costs of owning and operating assets are assessed	Through discussions with the General Manager Environment Safety & Compliance and examination of BP1's AMP and contractual documentation, we determined that assessment of lifecycle costs of owning and operating the assets is undertaken by means of BP1's AMP that considers each major item of equipment and provides specific details, including: • Operating and maintenance philosophy • Key life cycle issues and how they are addressed • Life cycle plan and critical outages • Performance improvement opportunities • Critical reinvestments • Retirement/disposal consideration at end of plant life. An economic evaluation model is also utilised as part of the budgeting and forecasting process to assess the cost associated with the overall plant life and generate projections on the next 30-40 years of plant life.	
		Adequacy Rating: Adequately defined (A)	**Performance Rating:** Performing effectively (1)
1(e)	Funding options are evaluated	Through discussions with the General Manager Environment Safety & Compliance and General Manager Finance and Accounting; and examination of BP1's AMP and contractual documentation, we determined that: • Day to day operating expenses are funded from operating cash flows • Funding options are considered and evaluated by means of Request for Expenditure (Rfe) process for budgeted items and Application for Expenditure (Afe) process for non-budgeted items. A Delegated Financial Authority matrix helps ensure that fund requests above specified levels are required to be authorised by the appropriate level of management.	
		Adequacy Rating: Adequately defined (A)	**Performance Rating:** Performing effectively (1)
1(f)	Costs are justified and cost drivers identified	Through discussions with the General Manager Environment Safety & Compliance and General Manager Finance & Accounting; and consideration of BP1's AMP and contractual documentation, we determined that: • The AMP includes a detailed life cycle plan that identifies and assesses all life cycle costs and cost drivers associated with each major equipment at the facility • The plant site is managed using TWPS site processes, including SAP, to plan, schedule and track costs. The O&M agreement with TWPS incorporates a performance based incentive program supported by close monitoring to ensure that resources are directed towards improvements in plant operation and maintenance and implementing action plans that minimise costs and improve reliability, operating efficiency and environmental performance.	
		Adequacy Rating: Adequately defined (A)	**Performance Rating:** Performing effectively (1)

No	Effectiveness criteria	Findings	
1(g)	Likelihood and consequences of asset failure are predicted	Through discussion with the General Manager Environment Safety & Compliance and consideration of BP1's AMP and relevant supporting documentation, we observed that BP1's AMP is a major tool used for predicting the likelihood and consequences of asset failure. Specifically, we observed that: • The AMP considers each major item of equipment and provides specific details of its operation and maintenance strategy and key life cycle issues and remedial plans • A detailed forward maintenance program in accordance with manufacturer's guidelines and expert experience is maintained for the plant that is reviewed on a daily basis • TWPS's operations and maintenance staff operate the plant and perform routine and first line intervention maintenance on a scheduled basis under an O&M agreement with BP1 • Condition monitoring techniques are employed on a frequent basis to identify defects, including: ▪ Oil analysis ▪ Vibration analysis ▪ Radiography and thermography to identify any surface or internal defects. • During scheduled outages, main components of the facility's plant are inspected for defects by external consultants • Operational performance of TWPS is incentivised by bonuses and penalties associated with plant availability and timely completion of maintenance activities.	
		Adequacy Rating: Adequately defined (A)	**Performance Rating:** Performing effectively (1)
1(h)	Plans are regularly reviewed and updated	Through discussions with General Manager Environment Safety & Compliance and consideration of BP1's AMP and relevant supporting documentation, we determined that the plans are subject to constant review on a regular basis. In addition, we observed that: • The AMP is revised annually in accordance with the O&M agreement • The detailed maintenance program is maintained as a forward-looking document to avoid unplanned outages and subjected to revision in accordance with continuous improvement principles, with a view to maximising availability and aligning outages to coincide with off-peak and off-season periods. The operational and capital expenditure budget is tracked on a monthly basis and any variances analysed to determine impact on the scheduled maintenance and outage plans.	
		Adequacy Rating: Adequately defined (A)	**Performance Rating:** Performing effectively (1)

4.2 Asset creation and acquisition

Key process: Asset creation/acquisition means the provision or improvement of an asset where the outlay can be expected to provide benefits beyond the year of outlay.

Expected outcome: A more economic, efficient and cost-effective asset acquisition framework which will reduce demand for new assets, lower service costs and improve service delivery.

<table>
<tr><th>No</th><th>Effectiveness Criteria</th><th colspan="2">Findings</th></tr>
<tr><td rowspan="2">2(a)</td><td rowspan="2">Full project evaluations are undertaken for new assets, including comparative assessment of non-asset solutions</td><td colspan="2">Through consideration of relevant supporting documentation and discussion with the General Manager Environment Safety & Compliance and General Manager Finance & Accounting; we observed that BP1 has developed expenditure approval procedures, which outline the requirement for project evaluations to be undertaken prior to seeking funds approval. As part of the project evaluation process, BP1 requires the following to be completed:
• A full business case, which outlines the considerations for instigating new projects including environmental considerations, asset alternatives, the approval requirements, financial and capital requirements, current state assessment and timeline
• Economic evaluation modelling in support of the business case. The modelling utilises a standard set of high level economic assumptions to assess the cost associated with the overall plant life and generate cost predictions over the 30-40 years of plant life
• Consideration of non-asset options.
During the period 1 January 2010 to 31 December 2013 (the period subject to review), as no new assets were planned to be created or acquired in relation to the BP1 plant, no project evaluations were undertaken.</td></tr>
<tr><td>Adequacy Rating: Adequately defined (A)</td><td>Performance Rating: Not rated</td></tr>
</table>

No	Effectiveness Criteria	Findings	
2(b)	Evaluations include all life-cycle costs	As documented at Asset Planning s.1(d) above, through discussions with the General Manager Environment Safety & Compliance and General Manager Finance & Accounting; and an examination of the procedures for expenditure approval and associated forms and templates, we determined that BP1 has the following process in place to assess lifecycle costs of owning and operating assets: • Assessment of lifecycle costs of owning and operating the assets is undertaken by means of BP1's AMP that considers each major equipment and provides specific details, including: ▪ Operating and maintenance philosophy ▪ Key life cycle issues and how they are addressed ▪ Life cycle plan and critical outages ▪ Performance improvement opportunities ▪ Critical reinvestments ▪ Retirement/disposal consideration at end of plant life. • An economic evaluation model is also utilised as part of budgeting and forecasting process to assess the cost associated with the overall plant life and generate projections on the next 30-40 years of plant life. • Project evaluations provide for estimates of the amount of investment required as well as identifying the source of funds. During the period 1 January 2010 to 31 December 2013 (the period subject to review), as no new assets were planned to be created or acquired in relation to the BP1 plant, no project evaluations were undertaken.	
		Adequacy Rating: Adequately defined (A)	**Performance Rating:** Not rated
2(c)	Projects reflect sound engineering and business decisions	As documented at Asset Planning - 1(d) above, through discussions with the General Manager Environment Safety & Compliance, General Manager Finance & Accounting and examination of BP1's AMP and contractual documentation, expenditure approval procedure and associated forms and templates, we determined that BP1 has the following procedures in place to assess the commercial and technical competence of projects: • Project evaluations are performed with the input from both engineering and finance personnel and with evaluation results detailed and approved by relevant personnel to ensure all engineering, finance, environmental, health and safety aspects are addressed • Managed using project modelling tools whilst taking into account relevant economic measures. During the period 1 January 2010 to 31 December 2013 (the period subject to review), as no new assets were planned to be created or acquired in relation to the BP1 plant, no project evaluations were undertaken.	
		Adequacy Rating: Adequately defined (A)	**Performance Rating:** Not rated

No	Effectiveness Criteria	Findings	
2(d)	Commissioning tests are documented and completed	Through discussions with the General Manager Environment Safety & Compliance and consideration of relevant procedures, we observed that BP1 has the following procedures designed to perform commissioning tests: • Commissioning tests are required for any components added to BP1's assets • Full documentation of commissioning tests is required. During the period 1 January 2010 to 31 December 2013 (the period subject to review), as no new assets were established or commissioned in relation to the BP1 plant, no further commissioning tests were undertaken.	
		Adequacy Rating: Adequately defined (A)	**Performance Rating:** Not rated
2(e)	Ongoing legal/environmental/safety obligations of the asset owner are assigned and understood	Through discussion with the TWPS Station Manager, TWPS Production Superintendent, TWPS Mechanical Engineer, Manager Bluewaters Power Station & Bluewaters Power General Manager Safety Environment & Compliance; and consideration of relevant supporting documentation, we observed that: • BP1's environmental licence obligations are managed jointly by BP1 as the station owner and TWPS as the operations and maintenance contractor. Aspects of the environmental licence that involve TWPS, such as SOx emissions, which are measured by an instrument calibrated and maintained by TWPS, appear to have been addressed by both parties • A review of the annual ministerial statements is undertaken by BP1 on a periodic basis. The statements (685 and 724) are prepared annually to satisfy the requirements of the Minister for Environment and approved operational environmental management plans • BP1 (in conjunction with TWPS) operates and monitors its operations in accordance with the following statutory legislation and licences: ▪ Environmental Operating Licence ▪ SOx emissions. We observed that monitoring of SOx emissions is undertaken on a continuous basis to enable reporting of any breaches, in accordance with the environmental licence requirements ▪ Environmental Noise Regulations, which specify the permissible noise levels as measured at site boundary locations ▪ Water/liquid discharge. Water is discharged via the Collie Power Station pipeline under a contractual arrangement. ▪ Greenhouse emissions under the NGER Act ▪ Occupational Health and Safety Regulations ▪ Pressure vessel inspection requirements. Although compliance with the above statutory and regulatory requirements is subject to regular review, a formal management framework has not been established for clarifying roles and responsibilities for continual monitoring of compliance and changes in legislative requirements. Refer to recommendation 1/2014 at Environmental Analysis section 4(c) below.	
		Adequacy Rating: Requires some improvement (B)	**Performance Rating:** Opportunity for improvement (2)

4.3 Asset disposal

Key process: Effective asset disposal frameworks incorporate consideration of alternatives for the disposal of surplus, obsolete, under-performing or unserviceable assets. Alternatives are evaluated in cost-benefit terms.

Expected outcome: Effective management of the disposal process will minimise holdings of surplus and under-performing assets and will lower service costs.

No	Effectiveness Criteria	Findings	
3(a)	Underutilised and underperforming assets are identified as part of a regular systematic review process	As documented at Asset Planning s.1(g) above, through discussions with the General Manager Environment Safety & Compliance and examination of relevant supporting documentation, we observed that BP1 has applied the following mechanisms for identifying under-utilised and under-performing assets: • The AMP considers each major item of equipment and provides specific details of its operation and maintenance strategy and key life cycle issues and remedial plans • A detailed forward maintenance program in accordance with manufacturer's guidelines and expert experience is maintained for the plant that is reviewed on a daily basis • TWPS's operations and maintenance staff operate the plant and perform routine and first line intervention maintenance on a scheduled basis under an O&M agreement with BP1 • Condition monitoring techniques are employed on a frequent basis to identify defects, including: ▪ Oil analysis ▪ Vibration analysis ▪ Radiography and thermography to identify any surface or internal defects. • During scheduled outages, main components of the facility's plant are inspected for defects by external consultants • Operational performance of TWPS is incentivised by bonuses and penalties associated with plant availability and timely completion of maintenance activities. • Results of these assessments and inspections are included in the rolling five year plans. During the period 1 January 2010 to 31 December 2013 (the period subject to review), no assets were determined to be significantly underutilised or underperforming.	
		Adequacy Rating: Adequately defined (A)	**Performance Rating:** Performing effectively (1)

No	Effectiveness Criteria	Findings	
3(b)	The reasons for under-utilisation or poor performance are critically examined and corrective action or disposal undertaken	Through discussions with the General Manager Environment Safety & Compliance and examination of relevant supporting documentation, we observed that BP1 has applied the mechanisms at Asset Disposal (s.3(a)) to facilitate the examination of under-utilised and under-performing assets by: • Collection of relevant data and information to enable assessment of the root cause of any underutilisation or poor performance of power station assets • Employing a project evaluation process as part of the capital expenditure approval process, which involves presenting a business case with details of why the upgrade/purchase of equipment is crucial to the condition of the asset • Incorporating assessments into the rolling five year plans that detail the major capital projects planned for the coming financial year, including any equipment refurbishment, upgrade or replacement. During the period 1 January 2010 to 31 December 2013 (the period subject to review), as no assets were determined to be significantly underutilised or underperforming no corrective action or disposal was deemed to be warranted.	
		Adequacy Rating: Adequately defined (A)	**Performance Rating:** Not rated
3(c)	Disposal alternatives are evaluated	Through discussions with the General Manager Environment Safety & Compliance and examination of supporting documentation, we determined that BP1's processes require: • Consideration of alternatives for decommissioning, removal or storage of key plant • The rolling five year plans to provide details of the major projects planned for each asset in the coming financial year, including any equipment replacement requirements. During the period 1 January 2010 to 31 December 2013 (the period subject to review), as no assets were determined to be significantly underutilised or underperforming no disposal was deemed to be warranted.	
		Adequacy Rating: Adequately defined (A)	**Performance Rating:** Not rated
3(d)	There is a replacement strategy for assets	Through discussions with the General Manager Environment Safety & Compliance and consideration of BP1's asset management plans and strategies, we observed that: • The AMP considers each major item of equipment and provides specific details of its operation and maintenance strategy and key life cycle issues and remedial plans • Rolling five year plans provide details of the major projects planned for each asset in the coming financial year, including any equipment replacement requirements.	
		Adequacy Rating: Adequately defined (A)	**Performance Rating:** Performing effectively (1)

4.4 Environmental analysis

Key process: Environmental analysis examines the asset system environment and assesses all external factors affecting the asset system.

Expected outcome: The asset management system regularly assesses external opportunities and threats and takes corrective action to maintain performance requirements.

No	Effectiveness Criteria	Findings	
4(a)	Opportunities and threats in the system environment are assessed	Through discussion with the TWPS Station Manager, TWPS Production Superintendent, Bluewaters Power Manager Bluewaters Power Station, TWPS Mechanical Engineer, and Bluewaters Power General Manager Safety Environment & Compliance; and consideration of relevant supporting documentation, we determined that: • BP1 has incorporated risk management as a fundamental aspect of its day to day work processes to constantly identify relevant technical and business opportunities and threats in its asset management system environment. In particular: o Coordination meetings held between TWPS power station management staff and BP1 management representatives include a discussion around emerging opportunities and threats and related actions o On a daily basis, maintenance teams on site discuss and prioritise actions for the day and the following week o As part of the annual process for updating the AMP, risks and opportunities relating to the plant operations are re-assessed • BP1's environmental licence obligations are managed jointly by BP1 as the station owner and TWPS as the operations and maintenance contractor. Aspects of the environmental licence that involve TWPS, such as SOx emissions, which are measured by an instrument calibrated and maintained by TWPS, are addressed appropriately by both parties • A review of the annual ministerial statements is undertaken by BP1 on a periodic basis. The statements (685 and 724) are prepared annually to satisfy the requirements of the Minister for Environment and approved operational environmental management plans. We note that a formal management framework has not been established for clarifying roles and responsibilities for monitoring for ensuring continual monitoring of compliance and changes in legislative requirements. Refer to recommendation 1/2014 at section 4(c) below.	
		Adequacy Rating: Requires some improvement (B)	**Performance Rating:** Opportunity for improvement (2)
4(b)	Performance standards (availability of service, capacity, continuity, emergency response, etc.) are measured and achieved	Through discussion with the TWPS Station Manager, TWPS Production Superintendent, Bluewaters Power Manager Bluewaters Power Station, TWPS Mechanical Engineer, Bluewaters Power General Manager Safety Environment & Compliance; and consideration of relevant supporting documentation, we determined that: • BP1's achievement of its environmental licence limit on SOx emissions is dependent on the sulphur content of coal supplies. BP1 monitors its SOx emissions in sufficient detail to flag all instances where its emission limits are breached • BP1 is required to report (via email in the first instance) any breaches of SOx emission limits to the Department of	

No	Effectiveness Criteria	Findings	
		Environment. BP1 appears to be in compliance with those reporting requirements as it reports breaches as required • As part of the contractual arrangement with BP1, TWPS is required to provide monthly reports to Bluewaters Power covering the key performance aspects of the plant. The monthly reports include aspects such as availability and production losses, maintenance costs, EOHS incidents and SOx emission breaches. Any deviations from budget or contractual KPIs are highlighted, and explained, where appropriate.	
		Adequacy Rating: Adequately defined (A)	**Performance Rating:** Performing effectively (1)
4(c)	Compliance with statutory and regulatory requirements	Through discussion with the TWPS Station Manager and the Bluewaters Power General Manager Environment Safety and Compliance, and consideration of relevant supporting documentation, we observed that BP1 (in conjunction with TWPS) operates and monitors its operations in accordance with the following statutory legislation and licences: • Environmental Operating Licence • SOx emissions. We observed that monitoring of SOx emissions is undertaken on a continuous basis to enable reporting of any breaches, as described in section 4(b) above in accordance with the environmental licence requirements • Environmental Noise Regulations, which specify the permissible noise levels as measured at site boundary locations • Water/liquid discharge. Water is discharged via the Collie Power Station pipeline under a contractual arrangement • Greenhouse emissions under the NGER Act • Occupational Health and Safety Regulations • Pressure vessel inspection requirements. Although compliance with BP1's statutory and regulatory requirements (also referenced at items 2(e) and 4(a) above) is subject to regular assessment, a formal management framework has not been established for clarifying roles and responsibilities for ensuring continual monitoring of compliance and changes in legislative requirements.	
		Adequacy Rating: Requires some improvement (B)	**Performance Rating:** Opportunity for improvement (2)
	Recommendation 1/2014 BP1 implement an effective statutory and regulatory management and compliance framework to enable: • All relevant staff to recognise: o Key compliance requirements o The impact of any breach or near breach of those compliance requirements o Key roles and responsibilities for meeting statutory and regulatory requirements	**Action Plan 1/2014** BP1 will: 1. Implement an excel based compliance management process to: • Capture key statutory and regulatory compliance requirements relevant to the management of its power station operations, including relevant dates and actions required • Track the completion of those actions • Record the details of any breach or near breach, including the results of any investigation. 2. Develop a guidance document, which outlines: • BP1's key statutory and regulatory obligations relevant to the	

No	Effectiveness Criteria	Findings	
	• Key dates and actions required to be monitored and addressed • Any breach or near breach to be adequately investigated and any subsequent learnings to be applied to operational procedures to reduce the risk of the recurrence • Formal periodic monitoring of statutory and legislative requirements for any changes.	management of its power station operations • Roles assigned to relevant staff for recognising, recording and investigating any breach or near breach. The guidance document will be communicated to relevant staff. **Responsible person:** General Manager Environment Safety & Compliance **Target date:** 31 March 2015	
4(d)	Achievement of customer service levels	Through discussion with the TWPS Station Manager and the Bluewaters Power General Manager Environment Safety and Compliance; and consideration of relevant supporting documentation, we observed that: • In order to be eligible for contractual bonus payments under the O&M agreement, TWPS is incentivised to operate the plant at: ▪ Optimal availability level ▪ Pre-approved budget for maintenance and operational costs • In the event of a loss in production, TWPS is required to prepare a report to BP1 outlining the reasons for the loss and actions that will be undertaken to prevent its recurrence • In relation to community obligations, Bluewaters Power operates and monitors its operations in accordance with 4(c) above.	
		Adequacy Rating: Adequately defined (A)	**Performance Rating:** Performing effectively (1)

4.5 Asset operations

Key process: Operations functions relate to the day-to-day running of assets and directly affect service levels and costs.

Expected outcome: Operations plans adequately document the processes and knowledge of staff in the operation of assets so that service levels can be consistently achieved.

No	Effectiveness Criteria	Findings	
5(a)	Operational policies and procedures are documented and linked to service levels required	Through discussion with the TWPS Maintenance Superintendent , TWPS Production Superintendent and consideration of relevant supporting documentation, we observed that: • TWPS has documented procedures in place to cover operational and maintenance tasks, which include: ▪ Raising of work orders for planned or unplanned work (as appropriate) and forwarding to the Maintenance Coordinator ▪ Maintenance of backlog and weekly maintenance plan ▪ SAP notifications ▪ Priority discussion and decision making ▪ Daily maintenance meeting that are attended by Operations Coordinator, Planning Coordinator, Maintenance Coordinator, I&C Technical Officer, and optionally by Superintendents, Engineers and Chemists ▪ Pre-start planning meeting (shift meeting) ▪ Preparation of a work pack that includes work permits and Job Safety Analysis (JSA) documents ▪ Technical completion of work order after the task is completed. • A weekly Planned Maintenance schedule is maintained, which includes staff names/levels and daily tasks, including formal work order numbers • The O&M agreement with TWPS specifies the expected service levels and incorporates a performance-based incentive program supported by close monitoring to ensure that resources are directed towards improvements in plant operation and maintenance and implementing action plans that minimise costs and improve reliability, operating efficiency and environmental performance.	
		Adequacy Rating: Adequately defined (A)	**Performance Rating:** Performing effectively (1)

No	Effectiveness Criteria	Findings	
5(b)	Risk management is applied to prioritise operations tasks	Through discussion with the TWPS Power Station Manager, TWPS Maintenance Superintendent and TWPS Production Superintendent and consideration of relevant supporting documentation, we observed that: • Plant assets are managed by TWPS using risk-based processes in accordance with contractual arrangements • Maintenance tasks are performed in a sequential manner, giving priority to safety and people, followed by environment and customers. Higher risk maintenance tasks are given priority over lower risk tasks • Performance and availability of plant is tracked via a monthly client report sent to BP1 that contains a record of availability, maintenance effectiveness KPIs, such as number of maintenance tasks performed vs scheduled and any plant failures that occurred during the month and any consequential production loss • A maintenance meeting is held daily at 8am with appropriate staff to review and decide on the priority of scheduled maintenance tasks for the day • The daily meeting is undertaken in conjunction with weekly maintenance plans that track all maintenance tasks for the upcoming one to two week period. Any maintenance tasks that are taken off the daily list following priority assessments are added on to the maintenance plan for discussion at the next daily meeting.	
		Adequacy Rating: Adequately defined (A)	**Performance Rating:** Performing effectively (1)
5(c)	Assets are documented in an Asset Register including asset type, location, material, plans of components, an assessment of assets' physical/structural condition and accounting data	Through discussion with the TWPS Power Station Manager, TWPS Maintenance Superintendent, TWPS Production Superintendent and the site Mechanical Engineer; and consideration of relevant supporting documentation, such as the AMP and monthly budget spreadsheets, we determined that the plant is managed on a day-to-day basis by TWPS staff in accordance with the O&M agreement. Specifically we noted that: • The electronic SAP system holds detailed information for each major component of plant, such as assets' unique asset identifier details, operational history, cost data and current physical condition. An international power plant classification system (**KKS**) is used to store plant details • The site risk register, which is used in conjunction with the AMP, outlines the major components of the plant and applies a risk rating to any associated issues. The register serves as a high-level asset register for the plant's higher risk components and systems.	
		Adequacy Rating: Adequately defined (A)	**Performance Rating:** Performing effectively (1)

No	Effectiveness Criteria	Findings	
5(d)	Operational costs are measured and monitored	Through discussions with the TWPS Power Station Manager, TWPS Contract Accountant and consideration of relevant supporting documentation, we determined that the O&M agreement includes a contractual requirement for TWPS to report operational costs on a monthly basis to BP1. Specifically we noted that TWPS: • Prepares and presents detailed monthly reports to BP1, which include: ▪ Total operational costs for the month ▪ A summary of YTD costs broken up by month ▪ Calculations to determine variance of costs from the budget for the month ▪ Any bonus payments due to TWPS where actual operational costs are below budget for the month. • Maintains detailed cost information on a KKS level basis within the SAP system to track cost of all major components on the plant. The information is also used in preparation of the monthly operational cost report.	
		Adequacy Rating: Adequately defined (A)	**Performance Rating:** Performing effectively (1)
5(e)	Staff receive training commensurate with their responsibilities	Through discussion with the TWPS Power Station Manager and consideration of relevant supporting documentation, including the TWPS Training Matrix and sample work packs, we determined that: • Each work pack contains relevant procedures and checklists to enable the worker to perform the task required. Photographs of the relevant equipment are also included in the work pack to highlight the area needing work • TWPS maintains a training record for all staff showing qualifications, training, etc. • TWPS (in conjunction with site security) maintains records of all personnel inducted into site as appropriate to their role on site. For instance, a maintenance contractor is required to undergo a more detailed induction than an escorted visitor, to ensure they understand the procedures for working on site, such as emergency response, safety protocols, etc. • Several of the key staff on site have been involved in the running of the power station since inception, including construction and commissioning. Their extensive knowledge of the plant and equipment are drawn upon by the broader team when required.	
		Adequacy Rating: Adequately defined (A)	**Performance Rating:** Performing effectively (1)

4.6 Asset maintenance

Key process: Maintenance functions relate to the upkeep of assets and directly affect service levels and costs.

Expected outcome: Maintenance plans cover the scheduling and resourcing of the maintenance tasks so that work can be done on time and on cost.

<table>
<tr><th>No</th><th>Effectiveness Criteria</th><th colspan="2">Findings</th></tr>
<tr><td rowspan="2">6(a)</td><td rowspan="2">Maintenance policies and procedures are documented and linked to service levels required</td><td colspan="2">Through discussion with the TWPS Maintenance Superintendent and consideration of relevant supporting documentation, we observed that:
TWPS has documented procedures in place for maintenance tasks including:
SAP notifications
Daily maintenance meeting discussions
Priority discussions and decision making
Raising of work orders for planned or unplanned work
Inclusion on backlog and weekly maintenance plan
Preparation of work packs that include work permits and JSAs
Work order technical completion after completion of the required task
TWPS also maintains a weekly Planned Maintenance schedule, which includes staff names/levels and daily tasks, including formal work order numbers
Operational performance of TWPS is incentivised by bonuses and penalties associated with plant availability and timely completion of maintenance activities.</td></tr>
<tr><td>Adequacy Rating: Adequately defined (A)</td><td>Performance Rating: Performing effectively (1)</td></tr>
<tr><td rowspan="2">6(b)</td><td rowspan="2">Regular inspections are undertaken of asset performance and condition</td><td colspan="2">Through discussion with the TWPS Maintenance Superintendent and the TWPS Station Manager; and consideration of relevant supporting documentation, we observed that:
As part of TWPS’s O&M agreement with BP1, asset performance is monitored on a continual basis by the plant operators to ensure that the plant is operating at an optimal efficiency level. Any deviations from normal operations are appropriately investigated
Regular third party inspections of key high risk equipment such as boiler tubes and pressure vessels are performed during planned outages, including preventative maintenance, where required
TWPS is moving to a condition-based monitoring maintenance process whereby monthly samples of oil are taken from the main components of the plant and sent to an external lab for detailed analysis to highlight any potential issues with equipment, which may require preventive maintenance.</td></tr>
<tr><td>Adequacy Rating: Adequately defined (A)</td><td>Performance Rating: Performing effectively (1)</td></tr>
</table>

No	Effectiveness Criteria	Findings	
6(c)	Maintenance plans (emergency, corrective and preventative) are documented and completed on schedule	Through discussion with the TWPS Maintenance Superintendent, TWPS Station Manager and TWPS Contract Accountant; and consideration of relevant supporting documentation, we determined that: • The computerised SAP system is used to record all work schedules and work orders for each KKS level component of the plant. The schedules and work orders are extracted from SAP on a monthly basis to track and monitor maintenance of each main KKS referenced plant item • It is a contractual requirement of TWPS, under the O&M agreement with BP1, to measure, monitor and report on the maintenance activities undertaken on a monthly basis • TWPS prepares a detailed report for BP1 on a monthly basis that outlines planned and achieved maintenance tasks, along with any variances identified.	
		Adequacy Rating: Adequately defined (A)	**Performance Rating:** Performing effectively (1)
6(d)	Failures (including the significance of the failure) are analysed and operational/maintenance plans adjusted where necessary	Through discussion with the TWPS Maintenance Superintendent, TWPS Production Superintendent and TWPS Mechanical Engineer; and consideration of relevant supporting documentation, we observed that: • Unplanned outages that result in a loss of production greater than 100MWh are required to be investigated and reported by TWPS to BP1 along with an explanation of the causes as identified by the investigation. For any ongoing issues, a risk action plan is prepared that outlines the issue and the measures being undertaken to address the risk. We sighted the following examples: ▪ An Operations incident report on loss of production caused by an air dryer fault – March 2013 ▪ An Integrity investigation reports in response to a loss of steam pressure – August 2013 • In conjunction with the annual AMP review, adjustments are made, where necessary, to the risk action plan that is prepared to address significant issues in the plant. Any changes made to the plant as a result of modification of the risk action plan may also require changes to be made to operational/maintenance plans • The O&M agreement with TWPS specifies the expected service levels and incorporates a performance-based incentive program supported by close monitoring to ensure that resources are directed towards improvements in plant operation and maintenance and implementing action plans that minimise costs and improve reliability, operating efficiency and environmental performance.	
		Adequacy Rating: Adequately defined (A)	**Performance Rating:** Performing effectively (1)

No	Effectiveness Criteria	Findings	
6(e)	Risk management is applied to prioritise maintenance tasks	Through discussion with the TWPS Maintenance Superintendent and the TWPS Mechanical Engineer; and consideration of relevant supporting documentation, we observed that: • Daily meetings are used to arrange: ▪ Daily work plans ▪ Weekly plans for upcoming weeks ▪ Outage plans for major scheduled outages. Any issues identified during the outage are either scheduled for immediate action based on risk factor, or entered into SAP to follow up as part of normal scheduled work • All maintenance activities are based on a risk management approach, whereby the maintenance tasks addressing higher risk issues are performed first in order, followed by lower priority tasks. Operational performance of TWPS is incentivised by bonuses and penalties associated with plant availability and timely completion of maintenance activities • The overall site health check (risk register) prepared as part of the AMP also uses a risk based approach to prioritise medium to long term maintenance tasks, and associated capital expenditure projects, such as proposed plant improvements to minimise maintenance costs.	
		Adequacy Rating: Adequately defined (A)	**Performance Rating:** Performing effectively (1)
6(f)	Maintenance costs are measured and monitored	Through discussion with the TWPS Maintenance Superintendent, TWPS Station Manager and TWPS Contract Accountant; and consideration of relevant supporting documentation, we determined that: • SAP is used to record all work orders for each KKS level component of the plant. The required information is extracted from SAP on a monthly basis to track and monitor maintenance costs of each main KKS referenced plant item • Under the terms of the O&M agreement, TWPS is required to measure, monitor and report maintenance costs on a monthly basis to BP1. Operating in accordance with the budgeted costs is one of the KPIs in the contractual arrangement and any variance in actual maintenance costs may have an impact on the fees payable to TWPS by BP1 • TWPS prepares a detailed report for BP1 on a monthly basis, outlining budgeted and unbudgeted maintenance costs.	
		Adequacy Rating: Adequately defined (A)	**Performance Rating:** Performing effectively (1)

4.7 Asset management information system

Key process: An asset management information system is a combination of processes, data and software that support the asset management functions.

Expected outcome: The asset management information system provides authorised, complete and accurate information for the day-to-date running of the asset management system. The focus of the review is the accuracy of performance information used by the licensee to monitor and report on service standards.

<table>
<tr><th>No</th><th>Effectiveness Criteria</th><th colspan="2">Findings</th></tr>
<tr><td rowspan="2">7(a)</td><td rowspan="2">Adequate system documentation for users and IT operators</td><td colspan="2">BP1 utilises the SAP computerised maintenance management system.
Through discussions with the General Manager Information Technology and consideration of relevant system documentation, we observed that TWPS is responsible for operating SAP system in line with Bluewaters Power’s business wide IT policy, comprising general IT policies such as internet usage policy, remote access policy and mobile communications policy. In particular, we observed that:
• A service agreement is in place with the ASG group for SAP support, such as weekly and monthly health-check reviews of the SAP system
• Documents such as SAP user guides, change control registers and digital certificates are maintained and tracked in BP1’s document management system and made available to users and operators
• User guides for SAP, Wholesale Energy Forecast System (WEFS) and other supporting documentation are version controlled and kept up to date.</td></tr>
<tr><td>Adequacy Rating: Adequately defined (A)</td><td>Performance Rating: Performing effectively (1)</td></tr>
<tr><td rowspan="2">7(b)</td><td rowspan="2">Input controls include appropriate verification and validation of data entered into the system</td><td colspan="2">Through discussion with the General Manager Information Technology, we observed that:
• Input controls are managed through built-in checks in SAP and aligned to Bluewaters Power’s overall IT policy
• Processes are in place to verify and validate data entered into the IT system, including data reconciliation between old and new systems, checking data transferred between one system to another is accurate, timely and complete and validating data as close as possible to the point of origin, which includes the ability to trace data back to the source document
• User access is based on roles and positions
• Access is granted only on receipt of a request form duly signed by relevant departmental head.
We observed that the input controls as part of the overall SAP system are subject to regular testing by the ASG group.</td></tr>
<tr><td>Adequacy Rating: Adequately defined (A)</td><td>Performance Rating: Performing effectively (1)</td></tr>
</table>

No	Effectiveness Criteria	Findings	
7(c)	Logical security access controls appears adequate, such as passwords	Through discussions with the General Manager Information Technology and consideration of relevant supporting documentation, we observed that: • The process of granting and managing access is undertaken by means of paper forms based on Austraclear system standards. The forms are required to be signed by the relevant departmental head prior to being forwarded to IT department • End-users are granted the minimum level of access privileges required to perform their job function and to prevent segregation of duties conflicts • Password requirements are maintained to authenticate user access to the Bluewaters Power network and the SAP system, including a minimum number of characters and type of characters and restrictions on use of most recent passwords • Monitoring activity is undertaken on security logs and remote access logs, including vigilance on instances of denial of access due to wrong password inputs • An audit of management's email folders is undertaken periodically to ensure that only relevant personal assistants have access to those folders. We noted that operational processes outline the response approach for suspected access violations and misuse of user privileges.	
		Adequacy Rating: Adequately defined (A)	**Performance Rating:** Performing effectively (1)
7(d)	Physical security access controls appear adequate	Through discussions with the General Manager Information Technology, consideration of relevant supporting documentation and observations made during our visits to BP1 premises, we observed that processes and procedures relating to the access of facilities and the physical protection of information assets and systems are in use both at the head office as well as on site. Physical security for the head office location in Perth is maintained by the relevant building services company (Knight Frank), including the provision of swipe card access to the building. Specifically in the context of access to computer server rooms on site, we observed that: • Access swipe cards are used to restrict and record physical access to the computer server rooms. On termination, an exit checklist is completed whereby phones, cards and laptops are required to be returned and access is revoked • A quarterly review of access logs to the computer rooms is undertaken to identify any unauthorised access. A review of paper forms against actual SAP users is also undertaken on a monthly basis • All contractors are required to be accompanied by appropriate IT personnel when entering the computer rooms. We also noted that precautions appear to have been instigated to contain fire and other damaging events in computer rooms on site.	
		Adequacy Rating: Adequately defined (A)	**Performance Rating:** Performing effectively (1)

No	Effectiveness Criteria	Findings	
7(e)	Data backup procedures appear adequate	Through discussions with the General Manager Information Technology and consideration of relevant supporting documentation, we observed that procedures for managing data backup and data restore of servers have been established. In particular, we observed that: • Regular backups are performed in accordance with defined schedules and media rotation rules. A full backup is performed every weekday and a weekly backup is performed each Friday • Backup tapes are stored securely and protected from environmental harm and unauthorised access • End of calendar year and end of financial year backups are maintained indefinitely • Tape Management Services (TMS) have been engaged to manage off-site backup tapes at a secure location • Testing of back-ups is done on a quarterly basis with archived emails being more commonly tested as often there are requests for mail retrieval. We also noted that access to the backup tapes is limited to a sub-set of IT Operations personnel and examined quarterly.	
		Adequacy Rating: Adequately defined (A)	**Performance Rating:** Performing effectively (1)
7(f)	Key computations related to licensee performance reporting are materially accurate	BP1's asset management information system does not directly provide data used in any computation related to BP1's licence performance reporting.	
		Adequacy Rating: Not rated	**Performance Rating:** Not rated
7(g)	Management reports appear adequate for the licensee to monitor licence obligations	Through discussions with the General Manager Information Technology and consideration of relevant supporting documentation and management reporting procedures, we determined that site management is undertaken by TWPS staff in accordance with the O&M agreement. We also observed that the SAP system is capable of generating a variety of scheduled reports. In particular, we observed that: • Management reports are generated to provide performance information on plant operations and routine and first line intervention maintenance • A daily generation report is produced for daily operator meetings on site and contains relevant information on the volume of MW hours produced and the quantity of diesel and coal consumed • The trading team also prepares a daily operational report to monitor costs from a financial perspective • From an IT performance perspective, an internal job ticketing system is used in accordance with CISS-AID help desk system. Any open tickets as well as uptime register and outage and incident register are regularly reviewed.	
		Adequacy Rating: Adequately defined (A)	**Performance Rating:** Performing effectively (1)

4.8 Risk management

Key process: Risk management involves the identification of risks and their management within an acceptable level of risk.
Expected outcome: An effective risk management framework is applied to manage risks related to the maintenance of service standards.

<table>
<tr><th>No</th><th>Effectiveness Criteria</th><th colspan="2">Findings</th></tr>
<tr><td>8(a)</td><td>Risk management policies and procedures exist and are being applied to minimise internal and external risks associated with the asset management system.</td><td colspan="2" rowspan="2">Criteria 8(a) and (b)
Through discussions with the General Manager Environment Safety & Compliance, General Manager Operations and TWPS Power Station Manager; and consideration of BP1's risk management practices, we observed that:
From an operational perspective, BP1 incorporates risk management as a fundamental aspect of its decision making processes to support and enhance its business activities. In particular:
TWPS (through the O&M agreement) manages the facility's operational risks through day-to-day work practices
BP1 monitors risk treatments via regular Coordination Meetings between TWPS power station management staff and BP1 management representatives. We observed a number of risk treatment plans and related action being reported to those Coordination Meetings
BP1 has applied a typical risk assessment process to identify relevant technical and business risks and to record key risks and associated treatment plans in a risk assessment worksheet that is updated annually
As part of the annual process for updating the AMP and preparing the operating budget, risks relating to the general operations of the plant are re-assessed
On a daily basis, maintenance teams on site discuss and prioritise actions for the day and the following week.
Although BP1's operational risk management activities appear to be generally understood and applied by BP1 and TWPS staff, BP1 has not applied a formal process to its risk management activities to ensure its risk management philosophies and approach are consistently applied. For example, a consistent timeframe has not been designed for reviewing risk treatment plans and reports, other than through the annual review of the AMP (which also refers to the use of TWPS's Risk Assessment Worksheet and Risk Action Plan).</td></tr>
<tr><td>8(b)</td><td>Risks are documented in a risk register and treatment plans are actioned and monitored</td></tr>
<tr><td></td><td>8(a)</td><td>Adequacy Rating: Requires some improvement (B)</td><td>Performance Rating: Opportunity for improvement (2)</td></tr>
<tr><td></td><td>8(b)</td><td>Adequacy Rating: Adequately defined (A)</td><td>Performance Rating: Opportunity for improvement (2)</td></tr>
</table>

No	Effectiveness Criteria	Findings	
	Recommendation 2/2014 BP1 formalise its processes for assessing risks, implementing treatment plans and monitoring status on a more frequent basis than the annual review of the AMP.	**Action Plan 2/2014** In addition to the operational risk assessment activities performed by TWPS, Bluewaters Power has recently initiated a strategic risk assessment and management process within its five year business planning cycle. The overarching risk management process to be applied across Bluewaters Power's management of its power station operations will be formalised to recognise all key risk management requirements, activities and timeframes. **Responsible Person:** Chief Executive Officer **Target Date:** 31 December 2014	
8(c)	The probability and consequences of asset failure are regularly assessed.	Through discussions with the General Manager Environment Safety and Compliance, General Manager Operations, TWPS Power Station Manager and consideration of BP1's asset planning and risk management practices, we observed that BP1 has applied the following mechanisms for identifying and assessing the consequence and likelihood of power station asset failure (as per Asset Planning s.1(g)): • The AMP considers each major item of equipment and provides specific details of its operation and maintenance strategy and key life cycle issues and remedial plans • A detailed forward maintenance program in accordance with manufacturer's guidelines and expert experience is maintained for the plant and reviewed on a daily basis • TWPS's operations and maintenance staff operate the plant and perform routine and first line intervention maintenance on a scheduled basis under an O&M agreement with BP1 • Condition monitoring techniques are employed on a frequent basis to identify defects, including: ▪ Oil analysis ▪ Vibration analysis ▪ Radiography and thermography to identify any surface or internal defects • During scheduled outages, main components of the facility's plant are inspected for defects by external consultants • Operational performance of TWPS is incentivised by bonuses and penalties associated with plant availability and timely completion of maintenance activities • The management and maintenance of the plant assets is reviewed on a day-to-day basis at an operational level and on an annual basis, primarily through the review of the AMP • A high level of priority is accorded to minimising instances of asset failure and the duration of any such failure. The management structures, skills and resources assigned to the asset management processes appear to be appropriate for enabling the regular assessment of the probability and consequences of asset failure.	
		Adequacy Rating: Adequately defined (A)	**Performance Rating:** Performing effectively (1)

4.9 Contingency planning

Key process: Contingency plans document the steps to deal with the unexpected failure of an asset.
Expected outcome: Contingency plans have been developed and tested to minimise any significant disruptions to service standards.

No	Effectiveness Criteria	Findings
9(a)	Contingency plans are documented, understood and tested to confirm their operability and to cover higher risks.	Through discussion with the TWPS Station Manager, TWPS Production Superintendent, Bluewaters Power Manager Bluewaters Power Station, Bluewaters Power General Manager Operations, and Bluewaters Power General Manager Safety Environment and Compliance; and consideration of relevant supporting documentation, we determined that: • The plant site maintains a range of emergency planning documents, including an emergency response plan, a confined space rescue plan and a fire emergency plan along with IT support • A number of contingency arrangements are in place, inherent within the design of the plant and within contractual arrangements. However an over-arching contingency plan has not been established to ensure all contingency arrangements have been clearly identified, documented and rigorously challenged and tested. In particular, we observed that: • Inherent in the design and setup of the plant and the contractual agreements in place with third parties, contingencies are in place for the main business operational risks as follows: ▪ Coal supply: • Coal is primarily sourced from Griffin Coal Mine (**GCM**) via an overland conveyor to bunkers with 19 hour storage. The conveyor can deliver daily station consumption (5,000 tonnes) in less than 8 hours, so a potential downtime of 8 hours per day is available for maintenance on the delivery system • A stockpile of 250,000 tonnes (40 days storage) is maintained at the base of the station, which can be activated for use within 1-2 hours • In the event of conveyor failure, an alternative delivery by truck as well as a delivery from another supplier (Premier) can be arranged, which has been tested and proved • An alternative delivery of Run of Mine coal (**ROM**) direct from GCM by haul-packs and subsequent crushing by mobile crusher at BP1 has also been successfully demonstrated ▪ Water supply: • BP1 has an onsite water storage for over 24 hours of operation (16ML per day, with a dam capacity of 20ML) • Water is supplied to the 20ML dam mainly via a 500mm pipeline from either of the two major dewatering sources at GCM. Additionally, about 25% of the power station's water usage can be supplied by a hired pump from the Big Blue storage, a nearby flooded colliery that holds about 3GL of water • A third alternative for water supply is the small (50ML) settling pond at GCM from which water can be sourced via a hired diesel pump ▪ Ash removal: • BP1 produces between 600 and 800 tonnes of ash per day. Approximately 24 hours production of ash can

		be stored in onsite silos • Removal of ash is undertaken primarily by GCM as part of the Coal Supply Agreement (CSA) to the overburden dump at GCM • In the event of GCM's failure to remove ash, BP1 has a right to dump the ash at GCM under a step-in agreement contained in the CSA. • TWPS has a site emergency management plan in place, which covers emergencies such as fire, explosion, major spills, gas leaks, civil disturbances, acts of terrorism and natural disasters. However, no evidence is available to demonstrate a regular testing of the emergency management plan • Normal operation processes and procedures used to maintain, control and operate the plant include adequate contingency aspects to allow the plant personnel to react to emergencies and implement necessary actions to limit the emergency's impact and recurrence. The plant has been demonstrated to run safely in events of emergency that have occurred since commencement of operations in 2009, including a burner failure in 2009 that required the plant to be shut down for emergency repairs. The burner was removed for offsite repair and a temporary plug fitted to allow the unit to run on seven instead of the usual eight burners during the repair • In addition to the normal operational processes and procedures for the plant (as mentioned above) the risks relating to operational emergencies (such as catastrophic failure of plant) are managed by: ▪ Using regular third party inspections of key high risk equipment (such as boiler tubes and pressure vessels) and undertaking preventative maintenance on those items, where required ▪ Implementing a condition-based maintenance regime, whereby oil samples from key equipment are taken regularly and sent to an external lab for analysis. Any contaminants identified in the oil samples could indicate undue wear and tear of the particular item and a timely maintenance action is then initiated.	
		Adequacy Rating: Requires some improvement (B)	**Performance Rating:** Opportunity for improvement (2)
	Recommendation 3/2014 BP1: 1. Establish a formal process for ensuring that emergency management plans and contingency arrangements in place for all key risks to the Unit's operations and availability (such as coal supply, water supply, water disposal and ash disposal) are rigorously challenged and tested 2. Prepare a clear over-arching "umbrella" document to capture all contingency plans in place for each of the key risks to each Unit's operations and availability.	**Action Plan 3/2014** In March 2014, Bluewaters Power formally reviewed its contingency arrangements as part of its five year business planning cycle. The overarching contingency planning process to be applied to the management of all key risks to the plant's operations and availability will be formalised. This process will accommodate the need for regular testing of contingency plans, where appropriate, including emergency management plans. **Responsible Person:** Chief Executive Officer **Target Date:** 31 December 2014	

4.10 Financial planning

Key process: The financial planning component of the asset management plan brings together the financial elements of the service delivery to ensure its financial viability over the long term.

Expected outcome: A financial plan that is reliable and provides for the long-term financial viability of the services.

No	Effectiveness Criteria	Findings	
10(a)	The financial plan states the financial objectives and strategies and actions to achieve the objectives	Through discussion with the General Manager Finance and Accounting and consideration of BP1's financial planning mechanisms, we observed that: • BP1's financial plan takes the form of an operational budget that is prepared on a rolling five year basis, reflecting its financial objectives and strategies that are driven by its contractual agreements for generation and supply of electricity • The financial plan puts together the financial elements of the plant's operations to reflect its financial viability over the long term.	
		Adequacy Rating: Adequately defined (A)	**Performance Rating:** Performing effectively (1)
10(b)	The financial plan identifies the source of funds for capital expenditure and recurrent costs	Through discussion with the General Manager Finance and Accounting and consideration of BP1's financial planning mechanisms, we determined that: • Operational cash flows are retained for budgeted maintenance and capital expenditure, based on retained funds capacity or by submission to the power station owners for non-budgeted expenditure • BP1 has a loan facility that is fully drawn presently and also has access to a working capital facility, if required.	
		Adequacy Rating: Adequately defined (A)	**Performance Rating:** Performing effectively (1)
10(c)	The financial plan provides projections of operating statements (profit and loss) and statement of financial position (balance sheets)	Through discussion with the General Manager Finance and Accounting and consideration of BP1's financial planning mechanisms, we determined that: • BP1's financial plan constitutes a summary of budgeted income and expenses from the supply of electricity under its contractual agreements, which is prepared and updated annually and includes a rolling forecast for the next five years • An income statement and a position statement are prepared as part of statutory financial statements on a six-monthly and annual basis.	
		Adequacy Rating: Adequately defined (A)	**Performance Rating:** Performing effectively (1)

No	Effectiveness Criteria	Findings	
10(d)	The financial plan provides firm predictions on income for the next five years and reasonable indicative predictions beyond this period	Through discussions with the General Manager Finance and Accounting and consideration of BP1's financial planning mechanisms, we observed that BP1's financial plan: • Is prepared on an annual basis and updated every year for the projections of income and expenses based on five year outage and maintenance schedules and also taking into account the increment in Consumer Price Index (CPI) • Includes a summary of planned capital expenditure projects for the next five years with a brief description of the intended purpose of the project • Utilises an economic evaluation model as part of budgeting and forecasting process to assess the cost associated with the overall plant life and to generate cost predictions over the 30-40 years of plant life.	
		Adequacy Rating: Adequately defined (A)	**Performance Rating:** Performing effectively (1)
10(e)	The financial plan provides for the operations and maintenance, administration and capital expenditure requirements of the services	Through discussions with the General Manager Finance and Accounting and examination of BP1's financial plans for the four years relevant to this review, we observed that BP1's financial plans: • Provide a detailed monthly view of operational expenditure i.e. operations maintenance and administration expenses on a rolling five year basis • Includes a summary of current and planned capital expenditure projects over the following five years, with a brief description of each project's purpose.	
		Adequacy Rating: Adequately defined (A)	**Performance Rating:** Performing effectively (1)
10(f)	Significant variances in actual/budget income and expenses are identified and corrective action taken where necessary	Through discussions with the General Manager Finance and Accounting and examination of BP1's financial planning mechanisms, we observed that: • On a monthly basis, a variance analysis report is produced to: ▪ Assess actual versus budgeted income and expenditure ▪ Identify areas that are over budget or problematic and determine necessary corrective action • A set of audited financial statements are prepared on a six-monthly and annual basis as part of statutory requirements • A set of ratio certificates are calculated and presented to lenders on a quarterly basis as part of the debt agreement. We also observed that the O&M agreement with TWPS is governed by a performance based incentive program that accords a 20% weighting to performance on budget.	
		Adequacy Rating: Adequately defined (A)	**Performance Rating:** Performing effectively (1)

4.11 Capital expenditure planning

Key process: The capital expenditure plan provides a schedule of new works, rehabilitation and replacement works, together with estimated annual expenditure on each over the next five or more years. Since capital investments tend to be large and lumpy, projections would normally be expected to cover at least 10 years, preferably longer. Projections over the next five years would usually be based on firm estimates.

Expected outcome: A capital expenditure plan that provides reliable forward estimates of capital expenditure and asset disposal income, supported by documentation of the reasons for the decisions and evaluation of alternatives and options.

No	Effectiveness Criteria	Findings	
11(a)	There is a capital expenditure plan that covers issues to be addressed, actions proposed, responsibilities and dates	Through discussions with the General Manager Finance and Accounting and consideration of BP1's capital planning procedures and examination of the capital expenditure plans for the four years relevant to this review, we determined that: • A capital expenditure plan is included in the annual financial plan • Capital expenditure planning is undertaken along with financial planning on a rolling four year basis • The plan provides information on the amount, purpose and description of budgeted capital expenditure • The plan also provides information on project responsibilities and the estimated dates of funds release.	
		Adequacy Rating: Adequately defined (A)	**Performance Rating:** Performing effectively (1)
11(b)	The plan provides reasons for capital expenditure and timing of expenditure	Through discussions with the General Manager Finance and Accounting, consideration of BP1's capital planning procedures and examination of the capital expenditure plans for the four years relevant to this review, we determined that the capital expenditure plan outlines the: • Details of the financial year in which the capital expenditure amount is planned • Reasons for the capital expenditure.	
		Adequacy Rating: Adequately defined (A)	**Performance Rating:** Performing effectively (1)
11(c)	The capital expenditure plan is consistent with the asset life and condition identified in the asset management plan	Through discussions with the General Manager Finance and Accounting, consideration of BP1's capital planning procedures and examination of the capital expenditure plans for the four years relevant to this review, we determined that: • BP1's procedures require life cycle costs of assets to be assessed and recorded in the AMP for each major equipment, including key life cycle issues, critical outages and operating & maintenance philosophy • The capital expenditure plan concurs with the assessed life cycle costs of the plant's assets.	
		Adequacy Rating: Adequately defined (A)	**Performance Rating:** Performing effectively (1)

No	Effectiveness Criteria	Findings	
11(d)	There is an adequate process to ensure that the capital expenditure plan is regularly updated and actioned	Through discussions with the General Manager Finance and Accounting, consideration of BP1's capital planning procedures and examination of the capital expenditure plans for the four years relevant to this review, we determined that: • The capital expenditure budget is tracked on a monthly basis and any variances analysed to determine impact on the scheduled maintenance and outage plans • An economic evaluation model is utilised as part of budgeting and forecasting process to assess the cost associated with the overall plant life and to generate cost predictions over the 30-40 years of plant life • For non-budgeted capital expenditure an application for expenditure is required to be made that evaluates the project rationale in conjunction with the economic evaluation model • On completion, the projects are reviewed against the approved criteria to test whether the project objectives were met • Daily site meetings are held at the plant to review the ongoing maintenance projects and schedules. Any required changes are then fed into the rolling plans and capital expenditure plans on a monthly basis.	
		Adequacy Rating: Adequately defined (A)	**Performance Rating:** Performing effectively (1)

4.12 Review of Asset Management System

Key process: The asset management system is regularly reviewed and updated.

Expected outcome: Review of the Asset Management System to ensure the effectiveness of the integration of its components and their currency.

No	Effectiveness Criteria	Findings	
12(a)	A review process is in place to ensure that the asset management plan and the asset management system described therein are kept current	BP1's AMP, which is the main reference to the asset management system, is reviewed and updated (where necessary) on an annual basis. The General Manager Operations and the TWPS Power Station Manager have the primary responsibility for that annual review. However, a formal process has not been established for ensuring the currency of the asset management system, including the need for independent review of the AMP and any other references which describe the asset management system, or feed into the AMP. We note that previous versions of the AMP had described the SAP computerised maintenance management systems deployed by TWPS (as a key aspect of the asset management system), however the current version of the AMP does not clearly reference the key components of BP1's asset management system.	
		Adequacy Rating: Requires some improvement (B)	**Performance Rating:** Opportunity for improvement (2)
12(b)	Independent reviews (e.g. internal audit) are performed of the asset management system	Although components of BP1's asset management system are subject to regular review and update, as noted at 12(a) above, a formal process has not been established for ensuring a sufficient degree of independence in any regular review of the currency of the asset management system.	
		Adequacy Rating: Requires some improvement (B)	**Performance Rating:** Opportunity for improvement (2)
	Recommendation 4/2014 BP1 establish a formal review process for ensuring the currency of its asset management system, including the relevant references (including but not restricted to the AMP), which make up that system. Such a review process should accommodate the need for a sufficient degree of independence in the review.	**Action Plan 4/2014** BP1 will add a step to the annual review and update of the AMP to ensure all components of its asset management system (including the relevant version and active modules of the SAP system) are adequately documented and kept up to date. Sufficient independence in this review process is achieved through the preparation of the plan by TWPS staff and approval by BP1 staff. **Responsible Person:** General Manager Operations **Target Date:** 31 March 2015	

5 Follow-up of previous review action plans

Rec. No	Ref	Recommendation	Previous Review Action Plan	Status	Revised action plan (if applicable)
AMS 1/2010	1.1	The Asset Management Plan (AMP) should be reviewed and updated after the warranty outage in April 2010.	As part of their contract obligations, BW2 operators (TWPS) are obliged to review the asset management plan annually and submit a report to Griffin's Executive General Manager Operations and Trading.	***Complete*** The AMP is now updated by TWPS and approved by Bluewaters Power on a yearly basis. We sighted the most current (2013) version.	*n/a*
AMS 2/2010	1.4	Document whole of life cycle cost model and review annually.	*Generic action plan* Action Plan not mandatory for inclusion in post audit implementation plan as detailed in Audit Guidelines (July 2009) Section 11.9. These items will be reviewed and actioned through internal management systems and will form part of next Audit process.	***Complete*** Bluewaters Power now utilises an economic evaluation model that provides forecasts of income and expenses over 30 years.	*n/a*
AMS 3/2010	1.7	Risk Treatment Plans and reports should be reviewed on a more frequent basis, i.e. quarterly.	*Refer to generic action plan 2/2010 above (no specific action plan nominated).*	***Partially outstanding*** As part of the annual process for updating the AMP and preparing the operating budget, risks relating to the general operations of the plant are re-assessed. Other activity which considers risk treatments include the maintenance teams' daily discussion and prioritisation of actions for the day and the following week. However, Bluewaters Power has not applied a formal process to its risk management activities (including designation of a consistent timeframe for reviewing risk treatment plans and reports).	**Recommendation 2/2014** Bluewaters Power formalise its processes for assessing risks, implementing treatment plans and monitoring status on a more frequent basis than the annual AMP review.

Rec. No	Ref	Recommendation	Previous Review Action Plan	Status	Revised action plan (if applicable)
AMS 4/2010	7.6	Consideration should be given to import Western Power metering data into the control room for cross – checking of service delivery levels.	*Refer to generic action plan 2/2010 above (no specific action plan nominated).*	***Complete*** Bluewaters Power determined that its existing processes for monitoring metering data through the Manager, Market Operations are appropriate and sufficient.	*n/a*
AMS 5/2010	8.2	Risk Register, Treatment Plans and reports should be reviewed on a more frequent basis, i.e. quarterly.	*Refer to generic action plan 2/2010 above (no specific action plan nominated).*	***Partially outstanding*** As part of the annual process for updating the AMP and preparing the operating budget, risks relating to the general operations of the plant are re-assessed. On a daily basis, maintenance teams on site discuss and prioritise actions for the day and the following week. However, a formal process has not been established.	*Refer to recommendation 2/2014 above (re formal risk management framework).*
AMS 6/2010	9.1	An over-arching business contingency plan should be developed for the station documenting separate plans for Griffin Power.	*Refer to generic action plan 2/2010 above (no specific action plan nominated).*	***Outstanding*** A number of contingencies are in place, inherent within the design of the plant and within contractual arrangements. However an over-arching contingency plan has not been established to ensure all contingency arrangements have been clearly identified, documented and rigorously challenged and tested. Refer also to 2014 review findings.	**Recommendation 3/2014** Bluewaters Power: 1. Establish a formal contingency plan and process for ensuring that emergency management plans and contingency arrangements in place for all key risks to BP1's operations and availability are rigorously challenged and tested 2. Prepare a clear over-arching "umbrella" document to capture all contingency plans in place for each of the key risks to each Unit's operations and availability.
AMS 7/2010	10.1	Develop procedural documentation to detail the process in relation to annual budgeting, business planning and the 10 year financial plans.	*Refer to generic action plan 2/2010 above (no specific action plan nominated).*	***Complete*** The AMP is now updated by TWPS and approved by BP1 on a yearly basis. We sighted the most current (2013) version.	*n/a*
AMS 8/2010	11.1	Develop procedural documentation to detail the process in relation to capital budgeting.	*Refer to generic action plan 2/2010 above (no specific action plan nominated).*	***Complete*** Bluewaters Power's capital budgeting process is now formally documented.	*n/a*

Rec. No	Ref	Recommendation	Previous Review Action Plan	Status	Revised action plan (if applicable)
AMS 9/2010	12.1	Review and update the AMP after the planned outage in April 2010.	*Refer to generic action plan 2/2010 above (no specific action plan nominated).*	***Complete*** The AMP is now updated by TWPS and approved by BP1 on a yearly basis. We sighted the most current (2013) version.	*n/a*

Appendix A – Review plan

Bluewaters Power 1 Pty Ltd

Electricity Generation Licence (EGL4)

2014 Asset Management System Review

Review Plan

March 2014

Contents

1 Introduction

Overview

The Economic Regulation Authority (**the Authority**) has under the provisions of the Electricity Industry Act 2004 (**the Act**), issued to Bluewaters Power 1 Pty Ltd (**BP1**) an Electricity Generation Licence (EGL4) (**the Licence**) to operate a coal fired powerhouse, which supplies electricity to the South West Interconnected System (**SWIS**).

Section 14 of the Electricity Industry Act requires BP1 to provide to the Authority an asset management system review (the **review**) conducted by an independent expert acceptable to the Authority not less than once in every 24 month period. With the Authority's approval, Deloitte Touche Tohmatsu (**Deloitte**) has been appointed to conduct the review for the four year period 1 January 2010 to 31 December 2013.

Griffin Energy, who was granted an electricity generation licence in March 2006 to operate the BP1 powerhouse, went into receivership in 2010 and later sold ownership of the powerhouse in 2013. Sumitomo Corp and Kansai Electric Power Corp (the new joint owners of the powerhouse) applied to the Authority for a name change from Griffin Power 1 Pty Ltd to Bluewaters Power 1 Pty Ltd.

The review will be conducted in accordance with the August 2010 issue of the *Audit Guidelines: Electricity, Gas and Water Licences* (**Audit Guidelines**). In accordance with the Audit Guidelines this document represents the Review Plan (**the Plan**) that is to be agreed upon by Deloitte and BP1 and presented to the Authority for approval.

Objective

The objective of the review is to independently examine the effectiveness and performance of the asset management system established for the assets subject to BP1's Licence.

Scope

In accordance with the Audit Guidelines, the review is required to consider the effectiveness of BP1's existing control procedures within the 12 key processes in the asset management life-cycle as outlined below at Table 1.

Table 1 – Asset management system key processes and effectiveness criteria

#	Key processes	Effectiveness criteria
1	Asset planning	• Planning processes and objectives reflect the needs of all stakeholders and is integrated with business planning • Service levels are defined • Non-asset operations (e.g. demand management) are considered • Lifecycle costs of owning and operating assets are assessed • Funding options are evaluated • Costs are justified and cost drivers identified • Likelihood and consequences of asset failure are predicted • Plans are regularly reviewed and updated.

#	Key processes	Effectiveness criteria
2	Asset creation and acquisition	• Full project evaluations are undertaken for new assets, including comparative assessment of non-asset solutions • Evaluations include all life-cycle costs • Projects reflect sound engineering and business decisions • Commissioning tests are documented and completed • Ongoing legal/environmental/safety obligations of the asset owner are assigned and understood.
3	Asset disposal	• Underutilised and underperforming assets are identified as part of a regular systematic review process • The reasons for under-utilisation or poor performance are critically examined and corrective action or disposal undertaken • Disposal alternatives are evaluated • There is a replacement strategy for assets.
4	Environmental analysis (all external factors that affect the system)	• Opportunities and threats in the system environment are assessed • Performance standards (availability of service, capacity, continuity, emergency response, etc.) are measured and achieved • Compliance with statutory and regulatory requirements • Achievement of customer service levels.
5	Asset operations	• Operational policies and procedures are documented and linked to service levels required • Risk management is applied to prioritise operations tasks • Assets are documented in an Asset register, including asset type, location, material, plans of components, an assessment of assets' physical/structural condition and accounting data • Operational costs are measured and monitored • Staff receive training commensurate with their responsibilities.
6	Asset maintenance	• Maintenance policies and procedures are documented and linked to service levels required • Regular inspections are undertaken of asset performance and condition • Maintenance plans (emergency, corrective and preventative) are documented and completed on schedule • Failures are analysed and operational/maintenance plans adjusted where necessary • Risk management is applied to prioritise maintenance tasks • Maintenance costs are measured and monitored.

#	Key processes	Effectiveness criteria
7	Asset management information system	• Adequate system documentation for users and IT operators • Input controls include appropriate verification and validation of data entered into the system • Logical security access controls appears adequate, such as passwords • Physical security access controls appear adequate • Data back-up procedures appear adequate • Key computations related to licensee performance reporting are materially accurate • Management reports appear adequate for the licensee to monitor licence obligations.
8	Risk management	• Risk management policies and procedures exist and are being applied to minimise internal and external risks associated with the asset management system • Risks are documented in a risk register and treatment plans are actioned and monitored • The probability and consequences of asset failure are regularly assessed.
9	Contingency planning	Contingency plans are documented, understood and tested to confirm their operability and to cover higher risks.
10	Financial planning	• The financial plan states the financial objectives and strategies and actions to achieve the objectives • The financial plan identifies the source of funds for capital expenditure and recurrent costs • The financial plan provides projections of operating statements (profit and loss) and statement of financial position (balance sheets) • The financial plan provide firm predictions on income for the next five years and reasonable indicative predictions beyond this period • The financial plan provides for the operations and maintenance, administration and capital expenditure requirements of the services • Significant variances in actual/budget income and expenses are identified and corrective action taken where necessary.
11	Capital expenditure planning	• There is a capital expenditure plan that covers issues to be addressed, actions proposed, responsibilities and dates • The plan provide reasons for capital expenditure and timing of expenditure • The capital expenditure plan is consistent with the asset life and condition identified in the asset management plan • There is an adequate process to ensure that the capital expenditure plan is regularly updated and actioned.

#	Key processes	Effectiveness criteria
12	Review of Asset Management System	• A review process is in place to ensure that the asset management plan and the asset management system described therein are kept current • Independent reviews (e.g. internal audit) are performed of the asset management system.

Responsibility

BP1's responsibility for maintaining an effective asset management system

BP1 is responsible for putting in place policies, procedures and controls, which are designed to provide for an effective asset management system for assets subject to the Licence.

Deloitte's responsibility

Our responsibility is to express a conclusion on the effectiveness of BP1's asset management systems to meet Licence requirements based on our procedures. We will conduct our engagement in accordance with Australian Standard on Assurance Engagements *ASAE 3500 Performance Engagements* issued by the Australian Auditing and Assurance Standards Board and the Audit Guidelines, in order to state whether, based on the procedures performed, anything has come to our attention that causes us to believe that BP1's asset management system has not been operating effectively, in all material respects, in accordance with the Audit Guidelines. Our engagement will provide limited assurance as defined in ASAE 3500.

Limitations of use

Our report will be produced solely for the management of BP1, for the purpose of meeting the reporting requirements of section 14 of the Act. We disclaim any assumption of responsibility for any reliance on this report to any person other than the management of BP1 for any purpose other than that for which it was prepared. We disclaim all liability to any other party for all costs, loss, damages, and liability that the other party might suffer or incur arising from or relating to or in any way connected with the contents of our report, the provision of our report to the other party, or the reliance on our report by the other party.

Inherent limitations

A limited assurance engagement is substantially less in scope than a reasonable assurance engagement conducted in accordance with ASAE 3500 and consequently does not allow us to obtain assurance that we would become aware of all significant matters that might be identified in a reasonable assurance engagement. Accordingly, we will not express an opinion providing reasonable assurance.

We cannot, in practice, examine every activity and procedure, nor can we be a substitute for management's responsibility to maintain adequate controls over all levels of operations and their responsibility to prevent and detect irregularities, including fraud. Accordingly, readers of our report should not rely on the report to identify all potential opportunities for improvement which may be required.

Any projection of the evaluation of the level of effectiveness to future periods is subject to the risk that the systems may become inadequate because of changes in conditions, or that the degree of effectiveness with management procedures may deteriorate.

Independence

In conducting our engagement, we will comply with the independence requirements of the Australian professional accounting bodies.

2 Approach

The review will be conducted in three distinct phases, being a risk assessment, system analysis/policy and procedure review and examination of performance. From the review results, a report will be produced to outline findings, overall assessments and recommendations for improvement in line with the Audit Guidelines. Each step of the review is discussed in detail below.

Risk assessment

The review will focus on identifying or assessing those activities and management control systems to be examined and the matters subject to review. Therefore, the purpose of conducting the risk assessment as a preliminary phase enables the reviewer to focus on pertinent/high risk areas of BP1's licence obligations. The risk assessment gives specific consideration to the status of post review action plans devised in response to previous review recommendations, changes to BP1's systems and processes and any matters of significance raised by the Authority and/or BP1. The level of risk and materiality of the process determine the level of review required i.e. the greater the materiality and the higher the risk, the more effort will be applied.

The first step of the risk assessment is the rating of the potential consequences of BP1 not meeting its licence obligations, in the absence of mitigating controls. The consequence rating descriptions listed at Table 10 of the Audit Guidelines (refer to **Appendix 1-A**), provides the risk assessment with context to enable the appropriate consequence rating to be applied to each obligation subject to review.

Once the consequence has been determined, the likelihood of BP1 not meeting its licence obligations (against the defined effectiveness criteria) is assessed using the likelihood rating listed at Table 11 of the Audit Guidelines (refer to **Appendix 1-B**). The assessment of likelihood is based on the expected frequency of non-performance against the defined criteria, over a period of time.

Table 2 below (sourced from Table 12 of the Audit Guidelines) outlines the combination of consequence and likelihood ratings to determine the level of inherent risk associated with each individual effectiveness criteria.

Table 2: Inherent risk rating

	Consequence		
Likelihood	Minor	Moderate	Major
Likely	Medium	High	High
Probable	Low	Medium	High
Unlikely	Low	Medium	High

Once the level of inherent risk has been determined, the adequacy of existing controls is assessed in order to determine the level of control risk. Controls are assessed and prioritised as weak, moderate or strong dependant on their suitability to mitigate the risks identified. The control adequacy ratings used by this risk assessment are aligned to the ratings listed at Table 14 of the Audit Guidelines (refer to **Appendix 1-C**).

Once inherent risks and control risks are established, the review priority can then be determined using the matrix listed at Table 15 of the Audit Guidelines (refer to **Table 3** below). Essentially, the higher the level of risk the greater the level of examination is required.

Table 3: Assessment of Review Priority

	Adequacy of existing controls		
Inherent Risk	Weak	Moderate	Strong
High	Review priority 1	Review priority 2	
Medium	Review priority 3	Review priority 4	
Low	Review priority 5		

The following table outlines the review requirement for each level of review priority. Testing can range from extensive substantive testing around the controls and activities of particular processes to confirming the existence of controls through discussions with relevant staff.

Table 4: Review Priority Table

Priority Rating and Resulting Review Procedures	
Rating	Review requirement
Priority 1	• Controls testing and extensive substantive testing of activities • Follow-up and if necessary, re-test matters previously reported.
Priority 2	• Controls testing and moderate substantive testing of activities • Follow-up and if necessary, re-test matters previously reported.
Priority 3	• Limited controls testing (moderate sample size). Only substantively test activities if further control weakness found • Follow-up of matters previously reported.
Priority 4	• Confirmation of existing controls via observation and walk through testing • Follow-up of matters previously reported.
Priority 5	• Confirmation of existing controls via observation, discussions with key staff and/or reliance on key references (“desktop review”).

The risk assessment has been discussed with stakeholders to gain their input as to the appropriateness and factual accuracy of risk and control ratings and associated explanations. The key sources considered in reaching our preliminary assessment of the risk and control ratings were based on:

- Prior assessments of the state of controls during the 2010 EGL asset management system review
- Our understanding of BP1’s asset operations from previous engagements
- Our understanding of the electricity generation industry and regulatory environment
- Any other factors that may have an effect on the level of risk or strength of controls.

At this stage, the risk assessment can only be a preliminary assessment based on reading of documentation and interviews by the auditors. It is possible that the ratings and risk assessment comments may be revised as we conduct our work and new evidence comes to light. Accordingly, the risk assessment for this review is a preliminary draft, not a final report, and no reliance should be placed on its findings. It is however, an invaluable tool for focussing review effort.

The asset management system review risk assessment is attached at **Appendix 2**.

Systems analysis/policy and procedure review

The level of policy and procedure review required will be determined utilising the aforementioned priority scale. Once the priority level has been defined, the review will consist of:

- Interviewing key operational and administrative staff responsible for the development and maintenance of policies and procedural type documentation
- Examination of documented policies and procedures for key functional requirements and consideration of their relevance to BP1's asset management system requirements and standards.

The policy and procedure definition element of the asset management system review will be performed to provide a rating as defined under Table 5 (refer below).

Key documents which may be subject to review are not specifically disclosed in this plan. A list of documents examined will be included in the review report.

Examination of performance

The actual performance of the relevant controls and processes in place will then be examined via:

- Consideration of reports and references evidencing activity
- Interviews with key operational staff
- Physical visit to the plant site
- Consideration of the installation's function, normal modes of operation and age.

A full work program will be completed to record the specific aspects of our review and examination of the performance of each asset management system key process. This work program will be based on:

- The review priority determined by the risk assessment to be applicable to each effectiveness criteria
- The results of the policy and procedure review, as described above
- The location of personnel and activity to be tested.

The performance effectiveness element of the asset management system review will be performed to provide a rating as defined under Table 6 (refer below).

Reporting

In accordance with the Audit Guidelines, the reviewer must provide an assessment of both the process and policy definition rating (refer to **Table 5** below and also **Table 5** of the Audit Guidelines) and the performance rating (refer to **Table 6** below and also **Table 6** of the Audit Guidelines) for each of the key processes in BP1's asset management system.

Table 5: Asset management process and policy definition adequacy ratings

Rating	Description	Criteria
A	Adequately defined	• Processes and policies are documented. • Processes and policies adequately document the required performance of the assets. • Processes and policies are subject to regular reviews, and updated where necessary • The asset management information system(s) are adequate in relation to the assets that are being managed.
B	Requires some improvement	• Process and policy documentation requires improvement. • Processes and policies do not adequately document the required performance of the assets. • Reviews of processes and policies are not conducted regularly enough. • The asset management information system(s) require minor improvements (taking into consideration the assets that are being managed).
C	Requires significant improvement	• Process and policy documentation is incomplete or requires significant improvement. • Processes and policies do not document the required performance of the assets. • Processes and policies are significantly out of date. • The asset management information system(s) require significant improvements (taking into consideration the assets that are being managed).
D	Inadequate	• Processes and policies are not documented. • The asset management information system(s) is not fit for purpose (taking into consideration the assets that are being managed).

Table 6: Asset management performance ratings

Rating	Description	Criteria
1	Performing effectively	• The performance of the process meets or exceeds the required levels of performance. • Process effectiveness is regularly assessed and corrective action taken where necessary.
2	Opportunity for improvement	• The performance of the process requires some improvement to meet the required level. • Process effectiveness reviews are not performed regularly enough. • Process improvement opportunities are not actioned.
3	Corrective action required	• The performance of the process requires significant improvement to meet the required level. • Process effectiveness reviews are performed irregularly, or not at all. • Process improvement opportunities are not actioned.
4	Serious action required	• Process is not performed, or the performance is so poor that the process is considered to be ineffective.

The asset management review report will be structured to address all key components expected by the Audit Guidelines, including:

- Response to previous review recommendations (refer to **Appendix 3**)
- Performance summary and rating for each effectiveness criteria (Table 1), utilising the asset management process and policy definition adequacy ratings (Table 5) and the asset management performance ratings (Table 6)
- Review observations for each effectiveness criteria
- Status and response to recommendations from the previous review
- Where appropriate, recommendations on actions required to address opportunities for improvement.

Where appropriate, BP1 will provide a post review implementation plan for incorporation into the report as an appendix.

3 General Information

All aspects of the review will undergo quality assurance and review procedures as outlined in our previous communications. Before delivery of a final report, full quality procedures will be applied, including second partner review.

Key BP1 contacts

The key contacts for this review are:

- Les Egerton — General Manager Environment Safety and Compliance
- Steve Deonck — Power Station Manager – TWPS
- Paul Kirchler — GM Operations - Bluewaters Power
- Rob McConchie — Manager Bluewaters Power Station – Bluewaters Power
- Micheal Karpinski — General Manager Finance and Accounting – Bluewaters Power.

Deloitte Staff

Deloitte staff who will be involved with this assignment are:

- Richard Thomas — Partner
- Andrew Baldwin — Account Director
- Amit Grover — Senior Analyst
- Emlyn King — Analyst
- Shailesh Tyagi — Principal Engineer
- Bryn Durrans — Engineer
- Darren Gerber — Partner (Quality Assurance Review)

Resumes for key Deloitte staff are outlined in the proposal accepted by BP1 and the Auditors Approval Submission document presented to the Authority.

Timing

The initial risk assessment phase was completed on 7 February 2014. The draft review plan and detailed risk assessment were submitted to the Authority for comment on 17 February 2014. The review plan was subsequently amended on 11 March 2013 to address the Secretariat's observations and requests.

The remainder of the fieldwork phase is scheduled to be performed in February and March 2014.

Deloitte's time and staff commitment to the completion of the review is outlined in the proposal accepted by BP1 and subsequently presented to the Authority. In summary, the estimated time allocated to each activity is as follows:

- Planning (including risk assessment): 15 hours
- Fieldwork: 40 hours
- Reporting: 15 hours.

Appendix 1 – Risk assessment key

1-A Consequence ratings

Source: Audit Guidelines – Electricity, Gas and Water Licences August 2010

	Rating	Examples of non-compliance			
		Supply Quality	**Supply Reliability**	**Consumer Protection**	**Breaches of legislation or other licence conditions**
1	Minor	Minor public health and safety issues. Breach of quality standards minor - minimal impact on customers.	System failure or connection delays affecting only a few customers. Some inconvenience to customers.	Customer complaints procedures not followed in a few instances. Nil or minor costs incurred by customers.	Licence conditions not fully complied with but issues have been promptly resolved.
2	Moderate	Event is restricted in both area and time e.g., supply of service to one street is affected up to one day. Some remedial action is required.	Event is restricted in both area and time e.g., supply of service to one street is affected up to one day. Some remedial action is required.	Lapse in customer service standards is clearly noticeable but manageable. Some additional costs may be incurred by some customers.	Clear evidence of one or more breaches of legislation or other licence conditions and/or sustained period of breaches.
3	Major	Significant system failure. Life-threatening injuries or widespread health risks. Extensive remedial action required.	Significant system failure. Extensive remedial action required.		

1-B Likelihood ratings

Source: Audit Guidelines – Electricity, Gas and Water Licences August 2010

	Level	Criteria
A	Likely	Non-compliance is expected to occur at least once or twice a year
B	Probable	Non-compliance is expected to occur every three years
C	Unlikely	Non-compliance is expected to occur at least once every 10 years or longer

1-C Adequacy ratings for existing controls

Source: Audit Guidelines – Electricity, Gas and Water Licences August 2010

Rating	Description
Strong	Strong controls that are sufficient for the identified risks
Moderate	Moderate controls that cover significant risks; improvement possible
Weak	Controls are weak or non-existent and have minimal impact on the risks

Appendix 2 – Risk assessment

1	Asset Planning
Key Process:	Asset planning strategies are focused on meeting customer needs in the most effective and efficient manner (delivering the right service at the right price).
Outcome:	Integration of asset strategies into operational or business plans will establish a framework for existing and new assets to be effectively utilised and their service potential optimised.

Ref	Effectiveness criteria	Consequence	Likelihood	Inherent Risk Rating	Controls Assessment	Review Priority
1(a)	Planning process and objectives reflect the needs of all stakeholders and is integrated with business planning	Moderate	Probable	Medium	Moderate	Priority 4
1(b)	Service levels are defined	Moderate	Probable	Medium	Strong	Priority 4
1(c)	Non-asset options (e.g. demand management) are considered	Minor	Probable	Low	Moderate	Priority 5
1(d)	Lifecycle costs of owning and operating assets are assessed	Moderate	Unlikely	Medium	Moderate	Priority 4
1(e)	Funding options are evaluated	Minor	Unlikely	Low	Moderate	Priority 5
1(f)	Costs are justified and cost drivers identified	Moderate	Unlikely	Medium	Strong	Priority 4
1(g)	Likelihood and consequences of asset failure are predicted	Moderate	Probable	Medium	Moderate	Priority 4
1(h)	Plans are regularly reviewed and updated	Minor	Probable	Low	Moderate	Priority 5

2	Asset Creation and Acquisition
Key Process:	Asset creation/acquisition means the provision or improvement of an asset where the outlay can be expected to provide benefits beyond the year of outlay
Outcome:	A more economic, efficient and cost-effective asset acquisition framework which will reduce demand for new assets, lower service costs and improve service delivery.

Ref	Effectiveness criteria	Consequence	Likelihood	Inherent Risk Rating	Controls Assessment	Review Priority
2(a)	Full project evaluations are undertaken for new assets, including comparative assessment of non-asset solutions	Moderate	Unlikely	Medium	Strong	Priority 4
2(b)	Evaluations include all life-cycle costs	Moderate	Unlikely	Medium	Strong	Priority 4
2(c)	Projects reflect sound engineering and business decisions	Moderate	Unlikely	Medium	Moderate	Priority 4
2(d)	Commissioning tests are documented and completed	Moderate	Unlikely	Medium	Moderate	Priority 4
2(e)	Ongoing legal/environmental/ safety obligations of the asset owner are assigned and understood	Major	Probable	High	Moderate	Priority 2

3	Asset Disposal
Key Process:	Effective asset disposal frameworks incorporate consideration of alternatives for the disposal of surplus, obsolete, under-performing or unserviceable assets. Alternatives are evaluated in cost-benefit terms.
Outcome:	Effective management of the disposal process will minimise holdings of surplus and under-performing assets and will lower service costs.

Ref	Effectiveness criteria	Consequence	Likelihood	Inherent Risk Rating	Controls Assessment	Review Priority
3(a)	Under-utilised and under-performing assets are identified as part of a regular systematic review process	Moderate	Probable	Medium	Moderate	Priority 4
3(b)	The reasons for under-utilisation or poor performance are critically examined and corrective action or disposal undertaken	Minor	Probable	Low	Moderate	Priority 5
3(c)	Disposal alternatives are evaluated	Minor	Unlikely	Low	Moderate	Priority 5
3(d)	There is a replacement strategy for assets	Moderate	Probable	Medium	Moderate	Priority 4

4	Environmental analysis
Key Process:	Environmental analysis examines the asset system environment and assesses all external factors affecting the asset system.
Outcome:	The asset management system regularly assesses external opportunities and threats and takes corrective action to maintain performance requirements.

Ref	Effectiveness criteria	Consequence	Likelihood	Inherent Risk Rating	Controls Assessment	Review Priority
4(a)	Opportunities and threats in the system environment are assessed	Moderate	Probable	Medium	Moderate	Priority 4
4(b)	Performance standards (availability of service, capacity, continuity, emergency response, etc.) are measured and achieved	Moderate	Probable	Medium	Moderate	Priority 4
4(c)	Compliance with statutory and regulatory requirements	Moderate	Probable	Medium	Moderate	Priority 4
4(d)	Achievement of customer service levels	Moderate	Unlikely	Medium	Moderate	Priority 4

5	Asset operations
Key Process:	Operational functions relate to the day-to-day running of assets and directly affect service levels and costs.
Outcome:	Operations plans adequately document the processes and knowledge of staff in the operation of assets so that service levels can be consistently achieved.

Ref	Effectiveness criteria	Consequence	Likelihood	Inherent Risk Rating	Controls Assessment	Review Priority
5(a)	Operational policies and procedures are documented and linked to service levels required	Moderate	Unlikely	Medium	Moderate	Priority 4
5(b)	Risk management is applied to prioritise operations tasks	Moderate	Probable	Medium	Moderate	Priority 4
5(c)	Assets are documented in an Asset Register including asset type, location, material, plans of components, an assessment of assets' physical/structural condition and accounting data	Minor	Probable	Low	Strong	Priority 5
5(d)	Operational costs are measured and monitored	Moderate	Probable	Medium	Moderate	Priority 4
5(e)	Staff receive training commensurate with their responsibilities	Moderate	Probable	Medium	Moderate	Priority 4

6	Asset maintenance
Key Process:	Maintenance functions relate to the upkeep of assets and directly affect service levels and costs.
Outcome:	Maintenance plans cover the scheduling and resourcing of the maintenance tasks so that work can be done on time and on cost.

Ref	Effectiveness criteria	Consequence	Likelihood	Inherent Risk Rating	Controls Assessment	Review Priority
6(a)	Maintenance policies and procedures are documented and linked to service levels required	Moderate	Probable	Medium	Moderate	Priority 4
6(b)	Regular inspections are undertaken of asset performance and condition	Moderate	Probable	Medium	Moderate	Priority 4
6(c)	Maintenance plans (emergency, corrective and preventative) are documented and completed on schedule	Moderate	Probable	Medium	Moderate	Priority 4
6(d)	Failures *(including the significance of the failure)* are analysed and operational/maintenance plans adjusted where necessary	Moderate	Probable	Medium	Moderate	Priority 4
6(e)	Risk management is applied to prioritise maintenance tasks	Moderate	Probable	Medium	Moderate	Priority 4
6(f)	Maintenance costs are measured and monitored	Minor	Probable	Low	Moderate	Priority 5

7	Asset Management Information System
Key Process:	An asset management information system is a combination of processes, data and software that support the asset management functions.
Outcome:	The asset management information system provides authorised, complete and accurate information for the day-to-date running of the asset management system. The focus of the review is the accuracy of performance information used by the licensee to monitor and report on service standards.

Ref	Effectiveness criteria	Consequence	Likelihood	Inherent Risk Rating	Controls Assessment	Review Priority
7(a)	Adequate system documentation for users and IT operators	Minor	Probable	Low	Moderate	Priority 5
7(b)	Input controls include appropriate verification and validation of data entered into the system	Moderate	Probable	Medium	Moderate	Priority 4
7(c)	Logical security access controls appear adequate, such as passwords	Minor	Probable	Low	Moderate	Priority 5
7(d)	Physical security access controls appear adequate	Minor	Probable	Low	Moderate	Priority 5
7(e)	Data backup procedures appear adequate	Moderate	Probable	Medium	Moderate	Priority 4
7(f)	Key computations related to licensee performance reporting are materially accurate	Moderate	Probable	Medium	Moderate	Priority 4
7(g)	Management reports appear adequate for the licensee to monitor licence obligations	Minor	Probable	Low	Moderate	Priority 5

8	Risk Management
Key Process:	Risk management involves the identification of risks and their management within an acceptable level of risk.
Outcome:	An effective risk management framework is applied to manage risks related to the maintenance of service standards

Ref	Effectiveness criteria	Consequence	Likelihood	Inherent Risk Rating	Control Risk	Review Priority
8(a)	Risk management policies and procedures exist and are being applied to minimise internal and external risks associated with the asset management system	Moderate	Likely	High	Moderate	Priority 2
8(b)	Risks are documented in a risk register and treatment plans are actioned and monitored	Moderate	Probable	Medium	Moderate	Priority 4
8(c)	The probability and consequences of asset failure are regularly assessed	Moderate	Probable	Medium	Moderate	Priority 4

9	Contingency Planning
Key Process:	Contingency plans document the steps to deal with the unexpected failure of an asset.
Outcome:	Contingency plans have been developed and tested to minimise any significant disruptions to service standards.

Ref	Effectiveness criteria	Consequence	Likelihood	Inherent Risk Rating	Controls Assessment	Review Priority
9(a)	Contingency plans are documented, understood and tested to confirm their operability and to cover higher risks	Major	Probable	High	Moderate	Priority 2

10	Financial Planning
Key Process:	The financial planning component of the asset management plan brings together the financial elements of the service delivery to ensure its financial viability over the long term.
Outcome:	A financial plan that is reliable and provides for the long-term financial viability of the services.

Ref	Effectiveness criteria	Consequence	Likelihood	Inherent Risk Rating	Controls Assessment	Review Priority
10(a)	The financial plan states the financial objectives and strategies and actions to achieve the objectives	Minor	Probable	Low	Moderate	Priority 5
10(b)	The financial plan identifies the source of funds for capital expenditure and recurrent costs	Minor	Unlikely	Low	Moderate	Priority 5
10(c)	The financial plan provides projections of operating statements (profit and loss) and statement of financial position (balance sheets)	Minor	Probable	Low	Moderate	Priority 5
10(d)	The financial plan provides firm predictions on income for the next five years and reasonable indicative predictions beyond this period	Minor	Unlikely	Low	Moderate	Priority 5
10(e)	The financial plan provides for the operations and maintenance, administration and capital expenditure requirements of the services	Minor	Unlikely	Low	Moderate	Priority 5
10(f)	Significant variances in actual/budget income and expenses are identified and corrective action taken where necessary	Minor	Probable	Low	Moderate	Priority 5

11	Capital expenditure planning
Key Process:	The capital expenditure plan provides a schedule of new works, rehabilitation and replacement works, together with estimated annual expenditure on each over the next five or more years. Since capital investments tend to be large and lumpy, projections would normally be expected to cover at least 10 years, preferably longer. Projections over the next five years would usually be based on firm estimates
Outcome:	A capital expenditure plan that provides reliable forward estimates of capital expenditure and asset disposal income, supported by documentation of the reasons for the decisions and evaluation of alternatives and options.

Ref	Effectiveness criteria	Consequence	Likelihood	Inherent Risk Rating	Controls Assessment	Review Priority
11(a)	There is a capital expenditure plan that covers issues to be addressed, actions proposed, responsibilities and dates	Moderate	Probable	Medium	Moderate	Priority 4
11(b)	The plan provides reasons for capital expenditure and timing of expenditure	Minor	Probable	Low	Moderate	Priority 5
11(c)	The capital expenditure plan is consistent with the asset life and condition identified in the asset management plan	Minor	Probable	Low	Moderate	Priority 5
11(d)	There is an adequate process to ensure that the capital expenditure plan is regularly updated and actioned	Minor	Probable	Low	Moderate	Priority 5

12	Review of AMS
Key Process:	The asset management system is regularly reviewed and updated.
Outcome:	Review of the Asset Management System to ensure the effectiveness of the integration of its components and their currency.

Ref	Effectiveness criteria	Consequence	Likelihood	Inherent Risk Rating	Controls Assessment	Review Priority
12(a)	A review process is in place to ensure that the asset management plan and the asset management system described therein are kept current	Moderate	Probable	Medium	Weak	Priority 3
12(b)	Independent reviews (e.g. internal audit) are performed of the asset management system	Moderate	Probable	Medium	Moderate	Priority 4

Appendix 3 – Previous review recommendations

Recommendations are drawn from the BP1 Generation Licence EGL4 Asset Management System Review report dated October 2010. The report includes the following three recommendations, for which the associated action plans were devised by BP1.

Issue 1 – Asset Planning The Asset management Plan (AMP) is the first version of the plan for Bluewaters and needs to reviewed and updated after the April Outage 2010 to better reflect the stakeholder's needs in relation to future asset management.	
Recommendation 1 The Asset Management Plan should be reviewed and updated after the warranty outage in April 2010.	**Action plan 1** As part of their contract obligations, BW1 operators (TWPS) are obliged to review the asset management plan annually and submit a report to Griffin's Executive General Manager Operations and Trading. **Responsible Person:** Executive General Manager Operations and Trading **Target Date:** April 2010

Issue 2 – Asset Planning Business risk profile review by CORPAC included a review of the life cycle costs associated with the operating assets when project was first initiated. These needs to be documented and updated after the first outage.	
Recommendation 2 Document whole of life cycle cost model and review annually.	**Action plan 2** Action Plan not mandatory for inclusion in post review implementation plan as detailed in Audit Guidelines (July 2009) Section 11.9. These items will be reviewed and actioned through internal management systems and will form part of next Audit/Review process.

Issue 3 – Asset Planning The risk report addressed issues related to asset failure prior to start-up of the unit. Since then Griffin and TWPS has been addressing the risk issues but is poorly documented and reviewed and needs to be aligned to the AMP.	
Recommendation 3 Risk Treatment Plans and reports should be reviewed on a more frequent basis, i.e. quarterly	**Action plan 3** Action Plan not mandatory for inclusion in post review implementation plan as detailed in Audit Guidelines (July 2009) Section 11.9. These items will be reviewed and actioned through internal management systems and will form part of next Audit/Review process.

Issue 4 – Asset Management Information System	
Currently the Western Power Sent Out metering is not transmitted to the control room, control room metering is separate. There is no ability for control room staff to verify sent out levels.	
Recommendation 4 Consideration should be given to import Western Power metering data into the control room for cross – checking of service delivery levels.	**Action plan 4** Action Plan not mandatory for inclusion in post review implementation plan as detailed in Audit Guidelines (July 2009) Section 11.9. These items will be reviewed and actioned through internal management systems and will form part of next Audit/Review process.

Issue 5 – Risk Management	
Griffin and TWPS has been addressing the risk issues but is poorly documented and reviewed and needs to be aligned to the AMP.	
Recommendation 5 Risk Register, Treatment Plans and reports should be reviewed on a more frequent basis, i.e. quarterly	**Action plan 5** Action Plan not mandatory for inclusion in post review implementation plan as detailed in Audit Guidelines (July 2009) Section 11.9. These items will be reviewed and actioned through internal management systems and will form part of next Audit/Review process.

Issue 6 – Contingency Planning	
Individual contingency plans /documentation for all fuel and consumables to the Power Stations, operation and maintenance are not integrated.	
Recommendation 6 An over-arching business contingency plan should be developed for the station documenting separate plans for Griffin Power.	**Action plan 6** Action Plan not mandatory for inclusion in post review implementation plan as detailed in Audit Guidelines (July 2009) Section 11.9. These items will be reviewed and actioned through internal management systems and will form part of next Audit/Review process.

Issue 7 – Financial Planning	
Financial planning and business planning processes are evident however documentation of the process was not.	
Recommendation 7 Develop procedural documentation to detail the process in relation to annual budgeting, business planning and the 10 year financial plans.	**Action plan 7** Action Plan not mandatory for inclusion in post review implementation plan as detailed in Audit Guidelines (July 2009) Section 11.9. These items will be reviewed and actioned through internal management systems and will form part of next Audit/Review process.

Issue 8 – Capital Expenditure Planning Capital expenditure planning and business planning processes are evident however documentation of the process was not.	
Recommendation 8 Develop procedural documentation to detail the process in relation to capital budgeting.	**Action plan 8** Action Plan not mandatory for inclusion in post review implementation plan as detailed in Audit Guidelines (July 2009) Section 11.9. These items will be reviewed and actioned through internal management systems and will form part of next Audit/Review process.

Issue 9 – Review of AMS The current AMP was developed prior to commercial operation of the station and has not as yet been updated.	
Recommendation 9 Review and update the AMP after the planned outage in April 2010.	**Action plan 9** Action Plan not mandatory for inclusion in post review implementation plan as detailed in Audit Guidelines (July 2009) Section 11.9. These items will be reviewed and actioned through internal management systems and will form part of next Audit/Review process.

Appendix B – References

BP1 staff and representatives participating in the review

- General Manager Environment Safety & Compliance
- General Manager Operations
- Manager Bluewaters Power Station
- General Manager Finance & Accounting
- General Manager Information Systems

TWPS staff participating in the review

- Power Station Manager
- Maintenance Superintendent
- Production Superintendent
- Mechanical Engineer
- Contract Accountant

Deloitte staff participating in the review

Name	Position	Hours
Richard Thomas	Partner	8.5
Andrew Baldwin	Account Director	29.5
Amit Grover	Senior Analyst	46
Shailesh Tyagi	Principal Engineer	18
Bryn Durrans	Engineer	68
Darren Gerber	QA Partner	2

Key documents and other information sources examined

- Asset Management Plan 2013
- Material balance for plant basic design
- Process flow diagram for the plant
- Risk action plan – examples
- Risk assessment worksheet
- Pressure vessel list as of 15-10-2012 (master)
- Job safety analysis worksheet – inspection of flash transmitters and replacing exhaust valves
- Job ticket – fly ash transmitter monthly maintenance
- Incident record register
- Oil sample analysis report from ALS Laboratory Group
- Bluewaters Oil Sample Points List
- Service manual for dryer
- Maintenance Plans
- Pressure vessel certificates
- Functional location structure list from SAP
- SAP flow chart
- SAP manuals on General Ledger, Accounts Payable and Asset Direct Capitalisation
- Budget instructions
- Cover sheet of O&M agreement amendment deed

- Job safety analysis worksheet – template
- Maintenance Morning Meeting Agenda / Minutes
- Oil & Equipment condition report from Wear Check
- Unit 1 Outage 2013 Report
- Week 1409 Planned Maintenance
- Continuous Emission Monitoring System (CEMS) code for stationary source air emissions
- CEMS Weekly Verification/Calibration Task list
- Screenshot from Cal Station
- Monthly operations and maintenance summary and variance analysis report
- TWPS cost reports and invoice details
- Monthly Report to Bluewaters from TWPS
- Operations incident report – sample
- Integrity investigation report
- Operations task sheet
- Cooling tower check sheet (weekly)
- Screenshot of electronic log of day shifts
- Boiler Blowdown Vessel ERT Rescue Plan
- Emergency Response Plan
- KPI Spreadsheet Audit 260214
- Operations Incident Report Register
- Permit Information screen shots
- Memos on coal, water supply and ash removal
- Metals emissions testing report – November 2013
- RATA sampling program (emissions testing) – November 2013
- Environmental Protection Act 1986 licence
- Bluewaters Power Environmental Report
- Monthly Phased Budget 2013-14 and 2014-15
- Application for expenditure template
- Request for expenditure template
- Forecast financial model
- Delegation of Authority (DOA) matrices
- Bluewaters Power Consolidated Monthly report – January 2014
- Bluewaters Power Consolidated Budget 2011-12, 2013-14 and 2014-15
- Capital Expenditure Budget 2011-12, 2013-14 and 2014-15
- Griffin Power operating and capital budgets 2009-10 and 2010-11
- Bluewaters Training and Certifications Register.

Appendix C – Post Review Implementation Plan

Issue 1/2014

Asset creation and acquisition: 2(e) Ongoing legal/environmental/safety obligations of the asset owner are assigned and understood

Environmental Analysis: 4(a) Opportunities and threats in the system environment are assessed

Environmental Analysis: 4(c) Compliance with statutory and regulatory requirements

Although compliance with BP1's statutory and regulatory requirements (referenced at items 2(e), 4(a) and 4(c)) is subject to regular assessment, a formal management framework has not been established for clarifying roles and responsibilities for ensuring continual monitoring of compliance and changes in legislative requirements.

Recommendation 1/2014

BP1 implement an effective statutory and regulatory management and compliance framework to enable:

- All relevant staff to recognise:
  - Key compliance requirements
  - The impact of any breach or near breach of those compliance requirements
  - Key roles and responsibilities for meeting statutory and regulatory requirements
- Key dates and actions required to be monitored and addressed
- Any breach or near breach to be adequately investigated and any subsequent learnings to be applied to operational procedures to reduce the risk of the recurrence
- Formal periodic monitoring of statutory and legislative requirements for any changes.

Action Plan 1/2014

BP1 will:

1. Implement an excel based compliance management process to:
   - Capture key statutory and regulatory compliance requirements relevant to the management of its power station operations, including relevant dates and actions required
   - Track the completion of those actions
   - Record the details of any breach or near breach, including the results of any investigation.
2. Develop a guidance document, which outlines:
   - BP1's key statutory and regulatory obligations relevant to the management of its power station operations
   - Roles assigned to relevant staff for recognising, recording and investigating any breach or near breach.

   The guidance document will be communicated to relevant staff.

Responsible person: General Manager Environment Safety & Compliance

Target date: 31 March 2015

Issue 2/2014

Risk Management: 8(a) Risk management policies and procedures exist and are being applied to minimise internal and external risks associated with the asset management system

Although BP1's operational risk management activities appear to be generally understood and applied by BP1 and TWPS staff, BP1 has not applied a formal process to its risk management activities to ensure its risk management philosophies and approach are consistently applied. For example, a consistent timeframe has not been designed for reviewing risk treatment plans and reports, other than through the annual review of the AMP (which also refers to the use of TWPS's Risk Assessment Worksheet and Risk Action Plan).

Recommendation 2/2014	Action Plan 2/2014
BP1 formalise its processes for assessing risks, implementing treatment plans and monitoring status on a more frequent basis than the annual review of the AMP.	In addition to the operational risk assessment activities performed by TWPS, Bluewaters Power has recently initiated a strategic risk assessment and management process within its five year business planning cycle. The overarching risk management process to be applied across Bluewaters Power's management of its power station operations will be formalised to recognise all key risk management requirements, activities and timeframes. **Responsible Person:** Chief Executive Officer **Target Date:** 31 December 2014

Issue 3/2014

Contingency Planning: 9(a) Contingency plans are documented, understood and tested to confirm their operability and to cover higher risks

A number of contingency arrangements are in place, inherent within the design of the plant and within contractual arrangements. However an over-arching contingency plan has not been established to ensure all contingency arrangements have been clearly identified, documented and rigorously challenged and tested.

Recommendation 3/2014	Action Plan 3/2014
BP1: 1. Establish a formal process for ensuring that emergency management plans and contingency arrangements in place for all key risks to the Unit's operations and availability (such as coal supply, water supply, water disposal and ash disposal) are rigorously challenged and tested 2. Prepare a clear over-arching "umbrella" document to capture all contingency plans in place for each of the key risks to each Unit's operations and availability.	In March 2014, Bluewaters Power formally reviewed its contingency arrangements as part of its five year business planning cycle. The overarching contingency planning process to be applied to the management of all key risks to the plant's operations and availability will be formalised. This process will accommodate the need for regular testing of contingency plans, where appropriate, including emergency management plans. **Responsible Person:** Chief Executive Officer **Target Date:** 31 December 2014

<table>
<tr><td colspan="2">Issue 4/2014
Review of AMS: 12 (a) A review process is in place to ensure that the asset management plan and the asset management system described therein are kept current

Review of AMS: 12(b) Independent reviews (e.g. internal audit) are performed of the asset management system

BP1’s AMP, which is the main reference to the asset management system, is reviewed and updated (where necessary) on an annual basis. However, a formal process has not been established for ensuring the currency of the asset management system, including the need for independent review of the AMP and any other references which describe the asset management system, or feed into the AMP.

We note that previous versions of the AMP had described the SAP computerised maintenance management systems deployed by TWPS (as a key aspect of the asset management system), however the current version of the AMP does not clearly reference the key components of BP1’s asset management system.</td></tr>
<tr><td>Recommendation 4/2014
BP1 establish a formal review process for ensuring the currency of its asset management system, including the relevant references (including but not restricted to the AMP), which make up that system.

Such a review process should accommodate the need for a sufficient degree of independence in the review.</td><td>Action Plan 4/2014
BP1 will add a step to the annual review and update of the AMP to ensure all components of its asset management system (including the relevant version and active modules of the SAP system) are adequately documented and kept up to date. Sufficient independence in this review process is achieved through the preparation of the plan by TWPS staff and approval by BP1 staff.

Responsible Person: General Manager Operations
Target Date: 31 March 2015</td></tr>
</table>