EDL NGD (WA) Pty Ltd

Electricity Integrated Regional Licence (EIRL1)

2014 Asset Management System Review

January 2015

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Mr Geoff Hobley
Senior Commercial Manager
EDL NGD (WA) Pty Ltd
PO Box 4046
Eight Mile Plains QLD 4113

19 January 2015

Dear Geoff

Electricity Integrated Regional Licence (EIRL1) Asset Management System Review

We have completed the Electricity Integrated Regional Licence Asset Management System Review for EDL NGD (WA) Pty Ltd for the period 1 August 2011 to 31 July 2014 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 audit procedures.

If you have any questions or wish to discuss anything raised in the report, please contact Ben Fountain on 9365 7270 or myself on 9365 7200.

Yours sincerelv

Darren Gerber
Partner
Deloitte Touche Tohmatsu

Contents

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 relating to EDL NGD (WA) Pty Ltd's (**EDL**) Electricity Integrated Regional Licence (EIRL1) (the **Licence**) asset management system.

The review was conducted as a limited assurance engagement in accordance with the specific requirements of the Licence and the April 2014 issue of the *Audit and Review Guidelines: Electricity and Gas Licences* (**Guidelines**).

EDL's responsibility for maintaining an effective asset management system

EDL is responsible for establishing and maintaining an effective asset management system for assets subject to the Licence, as measured by the effectiveness criteria in the Guidelines.

Deloitte's responsibility

Our responsibility is to express a conclusion on the effectiveness of EDL'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 Guidelines, in order to state whether, in all material respects, based on the work performed, anything has come to our attention to indicate that EDL had not established and maintained an effective asset management system for assets subject to the Licence, as measured by the effectiveness criteria in the Guidelines and in operation for the period 1 August 2011 to 31 July 2014.

ASAE 3500 also requires us to comply with the relevant ethical requirements of the Australian professional accounting bodies.

Our procedures consisted primarily of:

- Utilising the 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 programme
- Interviews with and representations from relevant EDL staff to gain an understanding of the development and maintenance of policy and procedural type documentation
- Examination of documented policies and procedures for key functional requirements and consideration of their relevance to EDL's asset management system requirements and standards
- Physical visit to the Broome Power Station
- Consideration of reports and references evidencing activity
- Consideration of the installation's function, normal modes of operation and age
- Reporting of findings to EDL for review and response.

Limitations of use

This report is made solely for the information and internal use of EDL 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 this report will be provided to the Authority for the purpose of reporting on the asset management system review for EDL's electricity integrated regional licence. We agree that a copy of this report may be provided to the Authority for its information in connection with this purpose but 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 EDL, 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 EDL had not established and maintained an effective asset management system for assets subject to the Licence, as measured by the effectiveness criteria in the Guidelines and in operation during the period 1 August 2011 to 31 July 2014.

Table 3 of this report provides effectiveness ratings for each of the 12 key processes in the asset management life-cycle assessed by this engagement. For those aspects of EDL'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

Darren Gerber
Partner
Perth, January 2015

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 EDL NGD (WA) Pty Ltd (**EDL**) an Electricity Integrated Regional Licence (EIRL1) (the **Licence**) to operate a natural gas power station, which is connected to the North West Interconnected System (**NWIS**). EDL has a Power Purchase Agreement (**PPA**) with Horizon Power to supply electricity to the Broome town site and surrounding areas.

All generation units under the West Kimberly Power Project (WKPP), except for the Broome Power Station, were removed from EDL's licence following a request from EDL. Under the *Electricity Industry Exemption Order 2005* (the Order), these generation units, each of which produced less than 30 MW of electricity per connection point, were exempt from the requirement to be licensed. Also, as a result of the order published by the Office of Energy on 9 October 2009 removing the transmission line component of EDL's Broome operations, the Licence only relates to EDL's generation works at the Broome Power Station. Note that EDL currently operates its West Kimberly power stations as a portfolio; known as the West Kimberly Power Project (**WKPP**).

Section 14 of the Act requires EDL 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). With the Authority's approval, Deloitte Touche Tohmatsu (**Deloitte**) has been appointed to conduct the audit for the three year period 1 August 2011 to 31 July 2014.

2.2 Findings

In considering EDL'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, EDL had maintained consistent procedures and controls within its asset management system
- EDL 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 of the 55 elements of EDL's asset management system:

- For the asset management process and policy definition adequacy ratings:
    - 50 are rated as "Adequately defined"
    - Three are rated as "Requires some improvement"
    - Two elements are not rated
- For the asset management performance ratings:
    - 42 are rated as "Performing effectively"
    - Three are rated as "Opportunity for improvement"
    - Ten elements are not rated.

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 EDL's response to previous review recommendations

This review considered how EDL's progress in completing the action plans detailed in the 2011 assessment management system review.

Based on our examination of relevant documents, consideration of our findings from the 2012 Post Review Implementation assessment, discussions with staff and the results of this review's testing against the associated criteria, we determined that:

- Two of the three recommendations were addressed during the review period, and each element of the action plan is now considered complete
- One recommendation raised during the 2008 review (relating to EDL's contingency processes) remained outstanding at the end of the current review period. This recommendation has been closed out in this review as the action is no longer relevant.

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">Asset maintenance 6(b)
Regular inspections are undertaken of asset performance and condition

Asset maintenance 6(c)
Maintenance plans (emergency, corrective and preventative) are documented and completed on schedule</td><td>B</td><td rowspan="3">Based on a walkthrough of EDL’s maintenance scheduling processes and discussions with relevant staff, we identified that some maintenance tasks (including pressure safety valve testing) have not been completed on schedule. Some of these tasks are overdue due to the design of the plant not allowing these tasks to be undertaken without a partial or full plant outage, which does not support EDL’s operating philosophy given the PPA with Horizon Power. We noted that:
EDL has planned for a range of maintenance activities to be performed with an allocated budget to address the outstanding items through the installation of three way valves and dual PSVs or testing of valves that can be tested without modification
Per the October 2014 maintenance backlog spreadsheet, nine items were outstanding since 2009 and five since 2010. We do acknowledge that EDL has been clearing the backlog of maintenance tasks in November 2014, with three valves from 2009 and three since 2010 still outstanding
The maintenance tasks are due to for completion by the end of the 2014 calendar year, with the exception of those valves that require the gas units to be shutdown. EDL has yet to determine when the shutdown will be performed (if needed at all). EDL will however endeavour to perform as much of this work as possible during periods of lower load (night time), in order to minimise the impact to customers.</td></tr>
<tr><td>Performance rating</td></tr>
<tr><td>2</td></tr>
<tr><td colspan="2">Recommendation 1/2014
EDL should:
(a) Finalise the plan for completion of the maintenance tasks, including a schedule for timely completion
(b) Confirm with Horizon Power a suitable time for shutdown of the gas units, so that the remaining PSVs can be tested and/or replaced with three-way valves. Consider performing a formal risk review to support decisions being made around timing
(c) Report status to management periodically to ensure completion of the programme.</td><td>Action Plan 1/2014
EDL will:
(a) Finalise the plan for completion of its maintenance tasks, including a schedule for timely completion
(b) Confirm with Horizon Power a suitable time for shutdown of the gas units, so that the remaining PSVs can be tested and/or replaced with three-way valves and dual PSVs. Further, EDL will consider performing a formal risk review to support decisions being made around timing
(c) Report status to management periodically to ensure completion of the programme.
Responsible person: Tony Manning
Target date: 28 February 2015</td></tr>
</table>

AMS Key Process and Effectiveness Criteria	Adequacy rating	Issue 2/2014
Asset maintenance 6(e) Risk management is applied to prioritise maintenance tasks	B **Performance rating** 2	We observed that: • The exception report (a list of work orders in Pronto that have passed scheduled due dates) is not complete (e.g. not all rows have been risk assessed) • The maintenance tasks in the exception report that have been risk assessed appear to be only those that have been rescheduled to a specific date, thereby indicating that at the risk assessment is only applied as the work is rescheduled, not as a proactive measure. A risk assessment should be performed up-front to determine the reschedule date • No formal responsibilities have been assigned to conduct risk assessments and for which tasks risks assessments are required • No formal procedure has been developed that links the assessed risk of the overdue maintenance item and the maximum permissible delay to complete the maintenance task.

Recommendation 2/2014	Action Plan 2/2014
EDL should: (a) Formalise its overdue maintenance risk assessment process and exception reporting into the its operational and maintenance procedures The procedure should expand on EDL's existing risk assessment framework to provide guidance on the acceptable level of maintenance delay based upon the assessed level of risk. E.g. risk level 24 = maximum of 12 month delay acceptable, risk level 1 = maximum of 24 hours delay acceptable, etc. (Note these values given here are arbitrary only to give an example, and actual values should be determined by EDL based on detailed understanding and risk assessment of the plant) (b) Update the procedure to include clear responsibilities and accountabilities for performing the risk assessment activities, including consideration of who can accept the level of risk and what is deemed tolerable (c) Review the exception report and ensure that all items are appropriately risk assessed.	EDL will: (a) Formalise its overdue maintenance risk assessment process and exception reporting into the its operational and maintenance procedures as recommended (b) Update the procedure to include clear responsibilities and accountabilities for performing risk assessment activities, including consideration of who can accept the level of risk and what is deemed tolerable (c) Review the exception report and ensure that all items are appropriately risk assessed. **Responsible person:** Gavin Blakeman **Target date:** 30 January 2015

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 EDL's assets subject to EDL's electricity integrated regional licence for the period 1 August 2011 to 31 July 2014.

In accordance with the Guidelines, the review considered the effectiveness of EDL's existing control procedures within the following 12 key processes in the asset management life-cycle. Each key process and effectiveness criterion is applicable to EDL's Licence and as such was individually considered as part of the review.

#	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.
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.

2.6 Approach

Our approach for this review involved the following activities, which were undertaken during the period of August to November 2014:

- Utilising the Guidelines and Reporting Manual 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 for approval by the Authority
- Correspondence and interviews with EDL staff to gain understanding of process controls in place (see Appendix A for staff involved)
- Visited EDL's Broome Power Station 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 EDL's asset management systems (see Appendix A for reference listing)
- Consideration of the resourcing applied to maintaining those controls and processes
- Reporting of findings to EDL for review and response.

3 Summary of ratings

In accordance with the Guidelines, the assessment of both the process and policy definition 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 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 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.

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	NR	NR
1(d)	Moderate	Unlikely	Medium	Moderate	Priority 4	A	1
1(e)	Minor	Unlikely	Low	Moderate	Priority 5	A	NR
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**	**NR**
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	A	1
3. Asset disposal						**A**	**NR**
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	NR
4. Environmental analysis						**A**	**1**
4(a)	Moderate	Probable	Medium	Moderate	Priority 4	A	1
4(b)	Moderate	Probable	Medium	Moderate	Priority 4	A	1
4(c)	Moderate	Probable	Medium	Moderate	Priority 4	A	1
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

						Ratings	
Criteria	Consequence	Likelihood	Inherent Risk	Control Risk	Review Priority	Definition adequacy	Performance
6. Asset maintenance						**B**	**2**
6(a)	Moderate	Probable	Medium	Moderate	Priority 4	A	1
6(b)	Moderate	Probable	Medium	Moderate	Priority 4	B	2
6(c)	Moderate	Probable	Medium	Moderate	Priority 4	B	2
6(d)	Moderate	Probable	Medium	Moderate	Priority 4	A	1
6(e)	Moderate	Probable	Medium	Moderate	Priority 4	B	2
6(f)	Minor	Probable	Low	Moderate	Priority 5	A	1
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						**A**	**1**
8(a)	Moderate	Likely	High	Moderate	Priority 2	A	1
8(b)	Moderate	Probable	Medium	Moderate	Priority 4	A	1
8(c)	Moderate	Probable	Medium	Moderate	Priority 4	A	1
9. Contingency planning						**A**	**1**
9(a)	Major	Probable	High	Moderate	Priority 2	A	1
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						**A**	**1**
12(a)	Moderate	Probable	Medium	Weak	Priority 3	A	1
12(b)	Moderate	Probable	Medium	Moderate	Priority 4	A	1

4 Detailed findings, recommendations and action plans

Summary of generation works subject to review

WKPP operations - system summary

- The Broome Power Station is part of the West Kimberly Power Project (WKPP), a portfolio of power generation assets owned and operated by EDL. Operations at the Derby, Fitzroy Crossing, Halls Creek and Looma sites were removed from EDL's Licence in 2012, leaving just the Broome Power Station subject to the Licence
- The Maitland LNG Plant, Broome Fuel Storage Facility and Broome Pipeline form part of the WKPP, however these facilities are not the subject of this Licence
- As a result of the exemption amendment order published by the Office of Energy on 9 October 2009 removing the transmission line component of EDL's Broome operations, the Licence only relates to EDL's generation works at the Broome Power Station
- EDL has a Power Purchase Agreement (**PPA**) with Horizon Power to supply electricity to the Broome town site and surrounding areas. The terms and conditions of the PPA with Horizon Power require EDL to provide a stable and reliable electrical power supply
- An objective of the WKPP AMS is to provide Horizon Power with appropriate assurance that the power station's assets are being managed in accordance with Horizon Power's reliability and quality of supply obligations to its customer base.
- The generation capacity of the power station is 34MW. Diesel and LNG storage capacity of the Broome Power Stations are 165kL and 1950kL's respectively:

Business impact

Any failure of EDL's asset may have a direct and immediate impact on the West Kimberly community as EDL is the primary electricity supplier to Horizon Power and its customer base in the Broome locality.

EDL and Horizon Power have extensively consulted on the nature of redundancy and back-up generator capabilities required to minimise the risk of failure to supply power, particularly during summer peak periods where there is greatest pressure on units to remain operational. Continued demand/availability analysis and assessment of redundancy requirements are key components of EDL's power supply arrangements with Horizon Power. Additional diesel generators are installed by Horizon Power in the summer months to support any growth in demand.

We note that EDL and Horizon Power continue to consult over any future expansion activities and EDL provide updated forecasts and predictions of its capacity to meet future demand requirements.

The following tables contain:

- *Findings*: the reviewer's understanding of the process and any issues that have been identified during the review
- *Recommendations* (where applicable): recommendations for improvement or enhancement of the process or control
- *Action plans* (where applicable): EDL'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

Overall Adequacy/Performance rating: Adequately defined (A) / Performing effectively (1)

No	Effectiveness criteria	Findings	
1(a)	Planning process and objectives reflect the needs of all stakeholders and is integrated with business planning	In accordance with the PPA, EDL forecasts future generation capacity requirements for five years in consultation with Horizon Power. As a result, EDL's Asset Management Plan (AMP) has been designed to meet the needs of Horizon Power and EDL including the provision of a clear forward plan for maintenance and enhancement strategies and expenditure profiles. Through discussions with the Asset Manager, we determined that EDL has the following processes in place to support asset planning: • Consideration of life-cycle costs, including the incorporation of overhaul requirements (as specified by the manufacturer) of engines and all other plant • Consideration of contingency options available in times of emergency • Discussions with Horizon Power on possible options for demand management (such as installation of diesel generators by Horizon Power to meet any shortfall) • NPV calculations used for life-cycle and operating costs • Business drivers identified and used to determine the asset management needs of the plant controlled by EDL • WKPP asset management planning, which includes separate projections for the Broome Power Station, is completed by April each year for inclusion in the EDL planning process. Note that Horizon Power has requested EDL to increase is output so as to meet greater demand. However, as EDL is currently operating at Reliable Generation Capacity (RGC) maintenance philosophy, for EDL to meet the higher demand investment will be required to upgrade its assets. The Asset Manager confirmed that EDL had no planned requirement to commission or decommission any generation assets for the audit period 1 August 2011 to 31 July 2014.	
		Adequacy Rating: Adequately defined (A)	**Performance Rating:** Performing effectively (1)
1(b)	Service levels are defined	Clauses 15 and 16 and item 3 of the PPA detail the service levels required of EDL. EDL's AMP defines the measures of performance to be reported in accordance with Horizon Power's Support Performance KPIs. During the review period, EDL's operations and maintenance division was internalised (previously a separate entity) resulting in the Operations and Maintenance Deed no longer being applicable and as such has been superseded to reflect its current organisational structure. All service level requirements under the Deed have been captured in individual KPIs for operations and maintenance staff.	
		Adequacy Rating: Adequately defined (A)	**Performance Rating:** Performing effectively (1)

No	Effectiveness criteria	Findings	
1(c)	Non-asset options (e.g. demand management) are considered	As the Broome Power Station assets were recently created, with a 20 year contract life to 2027, asset planning has focussed on establishing and maintaining operations in accordance with the PPA. The Asset Manager advised that: • Considerations of efficiency of expansions and the full utilisation of existing assets are taken into consideration in asset planning processes • Demand management is provided per the PPA with Horizon Power, based on engine utilisation analyses and factors in forecasted run time figures.	
		Adequacy Rating: Not rated	**Performance Rating:** Not rated
1(d)	Lifecycle costs of owning and operating assets are assessed	The AMP addresses maintenance lifecycle needs over a five year period. Section 4 of the AMP provides a general overview of the forecasted demand, including an analysis of the expansions required for EDL to meet Horizon Power's increased demand figures. Section 6 of the AMP outlines a detailed maintenance plan for each component of the power station, as well as scheduled intervals for when maintenance is required to be performed. Through discussion with the Asset Manager and Financial Controller, we understand that lifecycle costs are justified by the Asset Planning and Corporate Finance division, using NPV and carrying value analysis.	
		Adequacy Rating: Adequately defined (A)	**Performance Rating:** Performing effectively (1)
1(e)	Funding options are evaluated	Through discussions with the Asset Manager, we noted that: • The Broome Power Station is partly funded via debt facilities, which is ring-fenced to WKPP projects • No further funding decisions were required during the review period, as all funding for the Broome Power Station is provided by EDL • The process for considering funding options (where relevant) has not changed since the 2011 audit.	
		Adequacy Rating: Adequately defined (A)	**Performance Rating:** Not rated
1(f)	Costs are justified and cost drivers identified	Through discussions with the Asset Manager and Financial Controller, we noted that: • Forecasted Operations and Maintenance (O&M) costs are summarised in the AMP for a five year period to 2019 • A full summary of all maintenance activities required to be performed are included in the AMP. Costs associated with the maintenance activities are quantified and form part of the rolling five year forecast • Cost drivers relate to the operation and running of the plant, including the fuel used to generate electricity. Drivers for fuel costs are based on demand predictions provided by Horizon Power every year, which are quantified and included in rolling five year budgets • O&M costs are justified by the EDL Asset Planning and Corporate Finance division, using NPV and carrying value analysis.	
		Adequacy Rating: Adequately defined (A)	**Performance Rating:** Performing effectively (1)

No	Effectiveness criteria	Findings	
1(g)	Likelihood and consequences of asset failure are predicted	Examination of EDL's risk management practices as applied to the Broome Power Station and discussions with the Asset Manager, we observed that EDL has applied the following mechanisms for identifying the consequences and likelihood of asset failure: • EDL's approved risk calculator, which is based on guidelines provided in ISO31000:2009, categorises risk by considering the consequences and likelihood of failure in a matrix, which allocates values to each risk: o The consequences of failure are assessed by considering the following aspects: (a) injury to people (b) impact on assets (c) impact on the environment (d) effect on company image (e) (generation) financial impact o The likelihood of failure is categorised in the following range: (a) practically impossible (b) not likely to occur (c) could occur (d) known to occur (has happened) (e) common or occurs frequently. • The AMP was updated in August 2014 to reflect the financial impact of certain risks • EDL utilises a proactive approach to maintenance via routine condition monitoring aimed at preventing asset failure.	
		Adequacy Rating: Adequately defined (A)	**Performance Rating:** Performing effectively (1)
1(h)	Plans are regularly reviewed and updated	Through discussions with the Asset Manager, we understand that EDL undertakes the following plan review processes: • The performance of EDL's assets are reviewed and reported to management by April each year. The AMP will be updated to accommodate any impacts current performance has on the plan. Specifically: o It is the responsibility of the Asset Management division to arrange for the update and timely review of the AMP each year o The AMP is updated to accommodate any changes to the asset management system identified from the annual performance reviews. • The WKPP Supplier Facilities Plan is also scheduled to be updated annually and otherwise as required by the PPA. Clause 13.1(d) states that the Supplier Facilities Plan is subject to review an update following any expansion decision • EDL reviews forecast demand for electricity (provided each year) against RGC in consultation with Horizon Power.	
		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

Overall Adequacy/Performance rating: Adequately defined (A) / Not rated

No	Effectiveness Criteria	Findings	
2(a)	Full project evaluations are undertaken for new assets, including comparative assessment of non-asset solutions	Through discussions with the Asset Manager, we understand that EDL apply the following processes for evaluating project options: • A carrying value analysis through modelling by the corporate finance division • A detailed project evaluation is conducted, including financial analysis conducted on whole-of-life costs. Independent engineers and industry experts may be contracted to assist in assessing capital costs and costing analyses • The Procurement Team will issue requests for tender to potential contractors for the completion of the asset upgrade. As EDL has not acquired, evaluated or planned for any new generation assets for the review period 1 August 2011 to 31 July 2014, the performance of this element of the Asset Management System cannot be rated.	
		Adequacy Rating: Adequately defined (A)	**Performance Rating:** Not rated
2(b)	Evaluations include all life-cycle costs	Through discussion with the Asset Manager, we understand that in accordance with the project evaluation process as described above, EDL's processes provides for the following examples of life-cycle costs to be considered in evaluations: • Overhaul requirements (as specified by the manufacturer) of engines and other assets • Depreciation of the asset • Fuel costs used for the life of the asset, including any potential increase in costs of fuel • Personnel costs, including routine maintenance of the assets according the EDL's maintenance philosophy. As EDL has not acquired, evaluated or planned for any new generation assets for the review period 1 August 2011 to 31 July 2014, the performance of this element of the Asset Management System cannot be rated.	
		Adequacy Rating: Adequately defined (A)	**Performance Rating:** Not rated

<table>
<tr><th>No</th><th>Effectiveness Criteria</th><th colspan="2">Findings</th></tr>
<tr><td rowspan="2">2(c)</td><td rowspan="2">Projects reflect sound engineering and business decisions</td><td colspan="2">Through discussions with the Asset Manager, we determined that for new asset projects:
EDL’s Commercial Team will provide input on the potential projects to be conducted
Engineering assessments and studies will be conducted on the proposed asset
Detailed forecasts will be provided by the Commercial Team, which will be entered in an input sheet that feeds into the project business case.
Project decisions are evaluated on the basis of advice from consultants, NPV, IRR and certain value hurdles set by the board.
As EDL has not acquired, evaluated or planned for any new generation assets for the review period 1 August 2011 to 31 July 2014, the performance of this element of the Asset Management System cannot be rated.</td></tr>
<tr><td>Adequacy Rating: Adequately defined (A)</td><td>Performance Rating: Not rated</td></tr>
<tr><td rowspan="2">2(d)</td><td rowspan="2">Commissioning tests are documented and completed</td><td colspan="2">Through discussions with the Asset Manager, we understand that:
Engineering procurement tests were conducted upon initial commissioning of the power station and related facilities. The following activities conducted for the commissioning of the power station form part of future processes to be applied in the event a new asset is to be created:
Seven day tests were mandated by Horizon Power where EDL was required to run the Broome Power Station for seven days with no failures
60 day tests were undertaken during the latter stages of the asset establishment process
Tests were conducted on the performance of specific assets once installed.
The above processes will be applied on commissioning any new asset.
As EDL has not acquired, evaluated or planned for any new generation assets for the review period 1 August 2011 to 31 July 2014, the performance of this element of the Asset Management System cannot be rated.</td></tr>
<tr><td>Adequacy Rating: Adequately defined (A)</td><td>Performance Rating: Not rated</td></tr>
</table>

No	Effectiveness Criteria	Findings	
2(e)	Ongoing legal/environmental/safety obligations of the asset owner are assigned and understood	The WKPP PPA outlines the obligations of EDL as an asset owner, including ongoing legal, environmental and safety obligations. Examination of EDL's organisation chart, position descriptions and discussions with the Environment and Compliance Advisor, confirmed that legal, environmental and safety obligations outlined in the PPA have been communicated and understood by the following employees who have responsibility for those obligations relevant to EDL operations: • Operations Manager – Remote Energy • WKPP Power Facilities Manager • Manager Shared Services • Environment and Compliance Advisor • Senior Health & Safety Advisor. Examination of the WKPP Environmental Management Plan, EDL Broome Power Station safety case and WKPP Hazard register indicates that EDL has identified and assigned responsibility for managing the legal, environmental and safety obligations relevant to the Broome Power Station.	
		Adequacy Rating: Adequately defined (A)	**Performance Rating:** Performing effectively (1)

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

Overall Adequacy/Performance rating: Adequately defined (A) / Not rated

No	Effectiveness Criteria	Findings	
3(a)	Underutilised and underperforming assets are identified as part of a regular systematic review process	The Broome Power Station AMP outlines: • Procedures and work methods for condition monitoring, inspection and testing of Broome Power Station assets • EDL's plant maintenance strategies for the individual assets including information on frequency of tests, compliance with Australian Standards and statutory requirements and details of tests and monitoring to be conducted. EDL conducts routine condition monitoring on its assets to identify signs of asset under-performance or under-utilisation. If any instances are identified, maintenance plans are implemented to improve asset performance. The Asset Manager confirmed that during the period 1 August 2011 to 31 July 2014, no assets were identified to be under-utilised or underperforming.	
		Adequacy Rating: Adequately defined (A)	**Performance Rating:** Performing effectively (1)

<table>
<tr><th>No</th><th>Effectiveness Criteria</th><th colspan="2">Findings</th></tr>
<tr><td>3(b)</td><td>The reasons for under-utilisation or poor performance are critically examined and corrective action or disposal undertaken</td><td colspan="2">The Broome Power Station was commissioned in 2007 and as a result, no future plans have been made to dispose of the asset. Due to the long term nature of EDL's PPA with Horizon Power and its operating philosophy, we determined that the likelihood of EDL disposing of its assets in the short-term is low.
The Broome Power Station's PPA outlines EDL's obligations regarding the under-utilisation of its assets. Specifically, in accordance with clause 17 of the PPA, EDL is required upon the occurrence of any Supply Interruption or Out of Limit Event to provide Horizon Power with a Rectification Plan, which must be consistent with Good Industry Practice and must:
• Identify the cause
• Specify the steps to address the cause
• Identify the timing and duration of the steps
• Describe any changes to operating procedures, policies or practices necessary to address the cause of the Supply Interruption or Out of Limit Event or minimise the risk of such cause resulting in a similar Supply Interruption or Out of Limit Event.
The WKPP Decommissioning Plan C outlines the requirements for decommissioning WKPP assets in accordance with the following strategies and practices:
• Having regard to all relevant local and national regulations
• Minimising disruption and impact to new operations
• Minimising disruption and impact to public infrastructure
• Maximising obtainable salvage value realised for equipment.</td></tr>
<tr><td></td><td></td><td>Adequacy Rating: Adequately defined (A)</td><td>Performance Rating: Not rated</td></tr>
<tr><td>3(c)</td><td>Disposal alternatives are evaluated</td><td colspan="2">Due to the age of the asset (commissioned in 2007) and the long term nature of EDL's PPA with Horizon Power, EDL has not had a need to evaluate any disposal alternatives. The Asset Manager advised that, at five years from the end of the PPA, EDL will begin an analysis of the following options:
• Expansion and upgrade of current generating facilities
• Disposal of generating facilities
• Extension of the PPA with Horizon Power.
During the period 1 August 2011 to 31 July 2014, as no assets were planned or required to be disposed in relation to the EDL plant, the above processes were not required to be performed.</td></tr>
<tr><td></td><td></td><td>Adequacy Rating: Adequately defined (A)</td><td>Performance Rating: Not rated</td></tr>
</table>

No	Effectiveness Criteria	Findings	
3(d)	There is a replacement strategy for assets	The Broome Power Station assets were commissioned in 2007 with an expected life of 20 years. As the power station assets are only seven years old, no formal plans and procedures have been created to provide for disposal of the assets. The Asset Manager advised that when EDL's assets are within five years of their expected lives, EDL will develop a formal replacement strategy, which will assess two main options: a) Extending the current PPA with Horizon Power b) Disposing of the assets (including the creation of a disposal plan). Further, EDL conducts routine condition monitoring of its assets to prevent early degradation and to extend the life of the assets. Spare engines are also accessible from its portfolio of assets in Western Australia and Queensland in times of contingency.	
		Adequacy Rating: Adequately defined (A)	**Performance Rating:** Not rated

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

Overall Adequacy/Performance rating: Adequately defined (A)/ Performing effectively (1)

No	Effectiveness Criteria	Findings
4(a)	Opportunities and threats in the system environment are assessed	Through discussions with the Environment and Compliance Advisor and examination of the WKPP Environmental Management Plan (**EMP**), environmental compliance reports and other supporting documentation, we observed that: • The EDL Safety Case outlines the procedures for undertaking Hazard IDs, Risk Assessments, Job Safety Analyses and Safe Work Instructions, within the established EDL corporate risk management processes for its pipeline (which connects its gas storage facilities to its power station) • New updates to legislation are captured via regular emails from SAI Global o New legislation will be captured by the Environment and Compliance Advisor in relevant systems o Changes will then be made to relevant plans, procedures and documents where necessary. • EDL's Corporate Risk Register, which contains details of the key risks faced by its operations (broken down by site). We noted that: o The risk ratings used in the register are based on the standard five-by-five risk matrix methodology o The Audit and Risk Committee (ARC) conduct a quarterly review of risks faced by each of its sites o EDL discuss current and emerging risks during weekly operations meetings, attended by relevant site and Corporate representatives o EDL's internal audit department conduct annual audits on selected WKPP sites on risks identified in the Risk Register o Any changes to its risk register, identified during the ARC quarterly review, weekly operations meetings or the annual risk based audits, will be updated in the risk register and reported to the Board. • EDL's environmental management processes provide for: o Impact assessments to be completed for each site (e.g. cultural heritage, buildings, land clearing permits) o Environmental approvals to be obtained from relevant authorities and maintained in manual form for each site o Monthly review of environmental checklists, which are tailored to each site o Significant environmental issues to be escalated to the Board and all other issues to be documented in the monthly EDL Australia Report as well as EDL's monthly Global Compliance Report. • Scheduled audits are conducted every year on Broome Power Station's pipeline licence and EDL's compliance with its EMP • A WKPP Hazard register is maintained, containing identified environmental risks specific to the Broome Power Station (e.g. diesel spillages and loss of containment of LNG)

No	Effectiveness Criteria	Findings	
		• Annual refresher courses on environmental compliance requirements are to be completed by operators using the new online training system, with one course to be completed at least once a year (scheduled by staff themselves) • EDL's Environment Policy, applicable to its Australian operations, can be accessed by all staff and is reviewed every two years • The WKPP EMP: o Under Section 1.1, states alignment to EDL Australia environmental policy o Outlines the environmental management processes required to minimise the potential impacts for all key operational activities for the WKPP under all likely conditions o Incorporates the established EDL corporate risk management framework and matrix o Is scheduled to be reviewed, within its SharePoint based compliance scheduling system, on an annual basis and is subject to continual modification.	
		Adequacy Rating: Adequately defined (A)	**Performance Rating:** Performing effectively (1)
4(b)	Performance standards (availability of service, capacity, continuity, emergency response, etc.) are measured and achieved	Examination of the WKPP EMP and relevant performance reports and discussions with the Environment and Compliance Advisor, confirmed that: • Objectives have been established for the WKPP's environmental outcomes. Targets have been set to minimise (and where possible prevent) environmental nuisance and harm from the operation of the project and, where applicable: o The goals of ecological sustainable development have been incorporated into these objectives o Performance targets are captured in EDL's AMP. • The WKPP's performance standards, such as availability of service, capacity, continuity and emergency response, are measured • Monthly checklists are prepared by the Station Manager for each site, which includes statements for key compliance requirements • Environmental monitoring is performed and monthly emission monitoring for each of the WKPP power station units is identified in Pronto Asset Management System.	
		Adequacy Rating: Adequately defined (A)	**Performance Rating:** Performing effectively (1)
4(c)	Compliance with statutory and regulatory requirements	Through discussions with the Environment and Compliance Advisor and walkthrough testing of environmental compliance processes applied for the Broome Power Station, we observed that: • Licence conditions are considered for each site's environmental compliance requirements and approved by the Site Operator, Station Manager, Operations Supervisor, Operations Manager – Remote Energy and the environmental team. Any issues deemed significant are escalated to the EDL Board for actioning • Environmental compliance audits have been performed to assess the level of compliance at the Broome Power Station and associated LNG pipeline facilities • No significant environmental issues have been identified during the review period. However, should a significant	

No	Effectiveness Criteria	Findings	
		event be identified, EDL has processes in place for reporting of incidents to the Environment and Compliance Advisor, who will notify the regulator (in the absence of the Senior Environment and Compliance Advisor) • Annual emissions testing reports are prepared for the Broome Power Station • EDL get frequent updates on new legislation through subscription to the SAI Global newsletter and general awareness of staff interacting with relevant regulators • The Environment and Compliance Advisor maintains a log of compliance issues identified throughout the year, including remedial action, planned and taken. Discussions with the Environment and Compliance Advisor indicated that no incidents have been noted in the period 1 August 2011 to 31 July 2014 to indicate any non-compliance with environmental requirements (such as fuel spills, noise complaints, hazardous waste disposal).	
		Adequacy Rating: Adequately defined (A)	**Performance Rating:** Performing effectively (1)
4(d)	Achievement of customer service levels	The WKPP PPA outlines EDL's obligations for achieving a range of service levels, as a supplier to Horizon Power (EDL's sole customer). Horizon Power and EDL have established processes for monitoring EDL's compliance with the requirements of the PPA. The Asset Manager confirmed that no significant changes have been made to its PPA with Horizon Power that would have an effect on its service levels it is required to meet.	
		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

Overall Adequacy/Performance rating: Adequately defined (A) / Performing effectively (1)

<table>
<tr><th>No</th><th>Effectiveness Criteria</th><th colspan="2">Findings</th></tr>
<tr><td>5(a)</td><td>Operational policies and procedures are documented and linked to service levels required</td><td colspan="2">Through discussions with the Operations Manager – Remote Energy, WKPP Power Facilities Manager and other relevant site staff at the Broome Power Station, examination of the WKPP AMP, and walkthrough of WKPP asset operations, we observed that:
• Operational policies, work instructions and protocols are documented and aligned with the PPA and the AMP to achieve defined service levels. Where appropriate, Safe Work Instructions (SWI) and operating protocols are applied, taking account of the specific set-up and operation of the gas and diesel fuelled generator sets
• The following processes apply to EDL’s operation of the plant:
o Pronto notifications for work to be completed
o Priority discussion and decision making to prioritise maintenance tasks
o Daily meetings to discuss work for the upcoming shift
o Preparation of a work pack that includes SWI and Job Safety Analysis (JSA) templates (where applicable, such as if a SWI does not yet exist)
o Technical completion of work orders after tasks are completed
o Maintenance of a weekly schedule, including new tasks, backlog and formal work orders
o Maintenance of a quarterly exception report of work not completed.
• The WKPP AMP provides strategic level information on the operational requirements of WKPP assets.</td></tr>
<tr><td></td><td></td><td>Adequacy Rating: Adequately defined (A)</td><td>Performance Rating: Performing effectively (1)</td></tr>
<tr><td>5(b)</td><td>Risk management is applied to prioritise operations tasks</td><td colspan="2">Through discussions with the Operations Manager – Remote Energy, WKPP Power Facilities Manager, and other relevant site staff at the Broome Power Station, examination of the WKPP AMP and consideration of WKPP asset operations, we observed that:
• Plant assets are managed by EDL using risk-based processes
• An operations meeting is held daily with applicable staff to review and decide on the priority of operational tasks for the day. The daily meeting is undertaken in conjunction with weekly planning to track all tasks for the current period.
• Any alerts raised during the night operation will be given priority, to ensure any alarms have been addressed so that the unit is back to normal operation before the daily electrical peak starts (i.e. around 10am when all units may be required).</td></tr>
<tr><td></td><td></td><td>Adequacy Rating: Adequately defined (A)</td><td>Performance Rating: Performing effectively (1)</td></tr>
</table>

No	Effectiveness Criteria	Findings	
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	We observed that the Pronto Asset Maintenance Management module is used as the Asset Register for its assets. Items of equipment are listed in the Pronto system database, including details of asset type, location and relevant operational strategies.	
		Adequacy Rating: Adequately defined (A)	**Performance Rating:** Performing effectively (1)
5(d)	Operational costs are measured and monitored	We observed that operational costs have been itemised and identified within the WKPP budget and are reported and monitored on a monthly basis (actual vs. budgeted).	
		Adequacy Rating: Adequately defined (A)	**Performance Rating:** Performing effectively (1)
5(e)	Staff receive training commensurate with their responsibilities	We observed that a Site Personnel Training Matrix and a Training Status report are maintained to track training required and received by staff. A variety of training is available to staff depending on their operational functions. Training is also dependent on staff levels. We note that EDL has recently upgraded its training system to the new "Safer" system, which outlines annual training modules required to be completed by staff. The system sets different modules required to be completed by different levels of staff (e.g. General Managers will receive a broader range of training modules). Through discussions with the Operations Manager – Remote Energy and WKPP Facilities Manager we also determined that EDL has chosen to make use of specialist capabilities within the organisation to manage the operation of the more complex and specialised equipment, limiting the need for broader training of operators.	
		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

Overall Adequacy/Performance rating: Requires some improvement (B) / Opportunity for improvement (2)

No	Effectiveness Criteria	Findings	
6(a)	Maintenance policies and procedures are documented and linked to service levels required	Through discussions with the WKPP Power Facilities Manager and other relevant site staff at the Broome Power Station, and consideration of relevant supporting documentation, we observed that: • Policies and procedures are documented, with reference to the service levels required • Strategies are selected to deliver functional equipment service levels and are consistent with good industry practice.	
		Adequacy Rating: Adequately defined (A)	**Performance Rating:** Performing effectively (1)

No	Effectiveness Criteria	Findings	
6(b)	Regular inspections are undertaken of asset performance and condition	Through discussions with the WKPP Power Facilities Manager and other relevant site staff at the Broome Power Station, and consideration of relevant supporting documentation, we observed that: • As part of normal operations and control of the plant, asset performance is monitored on a continual basis by the plant operators to help ensure that the asset is operating at an optimal efficiency level. Any deviations from normal operations are reported to relevant site personnel and investigated • Third party inspections of key high risk equipment (such as LNG tanks and pressure vessels) are performed, when required • EDL use 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 the equipment, which may require attention/maintenance. Examination of inspection reports and EDL's maintenance activities highlighted that during the audit period (1 August 2011 to 31 July 2014): • Some maintenance tasks (including pressure safety valve testing) have not been completed on schedule. Some of these tasks are overdue due to the design of the plant not allowing these actions to be undertaken without a partial or full plant outage, which does not support EDL's operating philosophy given the PPA with Horizon Power. We noted that: o EDL has planned for a range of maintenance activities to be performed with an allocated budget to address the outstanding items through the installation of three way valves and dual PSVs or testing of valves that can be tested without modification o The maintenance tasks are due to for completion by the end of the 2014 calendar year, with the exception of those valves that require the gas units to be shutdown. EDL has yet to determine when the shutdown will be performed (if needed at all). EDL will however endeavour to perform as much of this work as possible during periods of lower load (night time), in order to minimise the impact to customers. • A third party inspector was engaged to perform statutory testing of the LNG tanks. The inspector identified findings in April 2014 that were raised in the April 2012 inspection. One of the findings was listed as not being detrimental to the integrity of the vessel at the time of the inspection, however requiring rectification as soon as possible to ensure further deterioration does not occur. EDL had not actioned the outstanding item during the audit period. However, we do acknowledge that EDL has since addressed the item in September 2014. *Refer to findings 1/2014 detailed at criteria 6(c) below.*	
		Adequacy Rating: Requires some improvement (B)	**Performance Rating:** Opportunity for improvement (2)

<table>
<tr><th>No</th><th>Effectiveness Criteria</th><th colspan="2">Findings</th></tr>
<tr><td>6(c)</td><td>Maintenance plans (emergency, corrective and preventative) are documented and completed on schedule</td><td colspan="2">Through discussions with WKPP operational staff and examination of EDL's maintenance system, we observed that:
An AMP is maintained for the WKPP portfolio (including the Broome Power Station), outlining EDL's assets and how the assets should be maintained
A weekly work schedule captures routine maintenance activities (such as spark plug replacement, normal tune-ups, oil change etc.), which are linked to hours of operation for each unit
No major overhauls of the Broome gas units have been required to date
To ensure continuity of supply, diesel backup generators were being maintained. The units were pre-existing when EDL took over the plant from Horizon Power and a major overhaul was performed for several of the diesel units (to provide continued, reliable back-up should one of the gas units fail).
Based on a walkthrough of EDL's maintenance scheduling processes and discussions with relevant staff, we identified that some maintenance tasks (including pressure safety valve testing) have not been completed on schedule. Some of these tasks are overdue due to the design of the plant not allowing these tasks to be undertaken without a partial or full plant outage, which does not support EDL's operating philosophy given the PPA with Horizon Power. We noted that:
EDL has planned for a range of maintenance activities to be performed with an allocated budget to address the outstanding items through the installation of three way valves and dual PSVs or testing of valves that can be tested without modification
Per the October 2014 maintenance backlog spreadsheet, nine items were outstanding since 2009 and five since 2010. We do acknowledge that EDL has been clearing the backlog of maintenance tasks in November 2014, with three valves from 2009 and three since 2010 still outstanding
The maintenance tasks are due to for completion by the end of the 2014 calendar year, with the exception of those valves that require the gas units to be shutdown. EDL has yet to determine when the shutdown will be performed (if needed at all). EDL will however endeavour to perform as much of this work as possible during periods of lower load (night time), in order to minimise the impact to customers.</td></tr>
<tr><td></td><td></td><td>Adequacy Rating: Requires some improvement (B)</td><td>Performance Rating: Opportunity for improvement (2)</td></tr>
<tr><td></td><td colspan="2">Recommendation 1/2014
EDL should:
(a) Finalise the plan for completion of the maintenance tasks, including a schedule for timely completion
(b) Confirm with Horizon Power a suitable time for shutdown of the gas units, so that the remaining PSVs can be tested and/or replaced with three-way valves. Consider performing a formal risk review to support decisions being made around timing
(c) Report status to management periodically to ensure completion of the programme.</td><td>Action plan 1/2014
EDL will:
(a) Finalise the plan for completion of its maintenance tasks, including a schedule for timely completion
(b) Confirm with Horizon Power a suitable time for shutdown of the gas units, so that the remaining PSVs can be tested and/or replaced with three-way valves and dual PSVs. Further, EDL will consider performing a formal risk review to support decisions being made around timing
(c) Report status to management periodically to ensure completion of the programme.
Responsible person: Tony Manning
Target date: 28 February 2015</td></tr>
</table>

No	Effectiveness Criteria	Findings	
6(d)	Failures (including the significance of the failure) are analysed and operational/maintenance plans adjusted where necessary	Through discussions with WKPP operational staff and walkthrough of WKPP operations and maintenance procedures, we observed that: • EDL staff at the Broome Power Station are aware of the responsibilities for ensuring reliable electricity supply to the City of Broome • Plant alerts or faults are monitored to ensure action is taken to prevent re-occurrence or escalation of any issues • Where appropriate, plant issues seen on one generating unit are assessed to determine if the issue could be affecting all similar units. Where necessary, work would be performed on all units to prevent the issue from occurring on other assets.	
		Adequacy Rating: Adequately defined (A)	**Performance Rating:** Performing effectively (1)
6(e)	Risk management is applied to prioritise maintenance tasks	Through discussions with WKPP operational staff and walkthrough of WKPP operations and maintenance procedures, we observed that: • The Pronto Asset Maintenance Management system records prioritisation of scheduled maintenance works (assigned as 1 to 7, or "C" for statutory compliance works) • Provision is made for priorities to be allocated in instances where defect or breakdown work orders are raised • Risk management techniques have been applied to scheduled maintenance priorities, based on the importance of the equipment and on the nature of the maintenance task to be performed • Risk management techniques have also been applied to overdue scheduled maintenance tasks, based on the importance of the equipment and on the nature of the maintenance task to be performed. Based on our walkthrough of EDL's maintenance risk management processes applied to maintenance tasks and discussions with relevant staff, we identified that: • The exception report (a list of work orders in Pronto that have passed scheduled due dates) is not complete (e.g. not all rows have been risk assessed) • The maintenance tasks in the exception report that have been risk assessed appear to be only those that have been rescheduled to a specific date, thereby indicating that the risk assessment is only applied as the work is rescheduled, not as a proactive measure. A risk assessment should be performed up-front to determine the reschedule date • No formal responsibilities have been assigned to conduct risk assessments and for which tasks risks assessments are required • No formal procedure has been developed that links the assessed risk of the overdue maintenance item and the maximum permissible delay to complete the maintenance task.	
		Adequacy Rating: Requires some improvement (B)	**Performance Rating:** Opportunity for improvement (2)

<table>
<tr><th>No</th><th>Effectiveness Criteria</th><th colspan="2">Findings</th></tr>
<tr><td></td><td colspan="2">Recommendation 2/2014
EDL should:
(a) Formalise its overdue maintenance risk assessment process and exception reporting into the its operational and maintenance procedures The procedure should expand on EDL's existing risk assessment framework to provide guidance on the acceptable level of maintenance delay based upon the assessed level of risk. E.g. risk level 24 = maximum of 12 month delay acceptable, risk level 1 = maximum of 24 hours delay acceptable, etc. (Note these values given here are arbitrary only to give an example, and actual values should be determined by EDL based on detailed understanding and risk assessment of the plant)
(b) Update the procedure to include clear responsibilities and accountabilities for performing the risk assessment activities, including consideration of who can accept the level of risk and what is deemed tolerable
(c) Review the exception report and ensure that all items are appropriately risk assessed.</td><td>Action plan 2/2014
EDL will:
(a) Formalise its overdue maintenance risk assessment process and exception reporting into the its operational and maintenance procedures as recommended
(b) Update the procedure to include clear responsibilities and accountabilities for performing risk assessment activities, including consideration of who can accept the level of risk and what is deemed tolerable
(c) Review the exception report and ensure that all items are appropriately risk assessed.
Responsible person: Gavin Blakeman
Target date: 30 January 2015</td></tr>
<tr><td rowspan="2">6(f)</td><td rowspan="2">Maintenance costs are measured and monitored</td><td colspan="2">We observed that:
• Costs for planned maintenance are itemised and identified within the WKPP annual budget
• Costs for unplanned maintenance works are also provided for based on historical cost data per event and probability of occurrence
• Maintenance costs are reported for each site and monitored on a monthly basis.</td></tr>
<tr><td>Adequacy Rating: Adequately defined (A)</td><td>Performance Rating: Performing effectively (1)</td></tr>
</table>

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

Overall Adequacy/Performance rating: Adequately defined (A) / Performing effectively (1)

No	Effectiveness Criteria	Findings	
7(a)	Adequate system documentation for users and IT operators	Through discussions with the IS Supervisor and consideration of EDL's Pronto support arrangement with Pronto Hosted Services Pty Ltd (PHS), we observed that: • Pronto-Xi Solutions overview documentation is available covering the maintenance management module and associated equipment register, which is maintained and updated in-house by the Engineering Department • Pronto Help Manuals for most major operations are available from within the Pronto system • A service level agreement with PHS is in place to cover the services provided to EDL • A dedicated team within the IS team is available to support Pronto users. This only consists of two people onsite, while other support is available from PHS.	
		Adequacy Rating: Adequately defined (A)	**Performance Rating:** Performing effectively (1)
7(b)	Input controls include appropriate verification and validation of data entered into the system	Through discussions with the IT Supervisor and consideration of documentation, we determined that documentation and data entered onto the EDL network (including Broome Power Station asset operations and maintenance records) contains document number and version control information, with provision for appropriate sign-offs and approvals.	
		Adequacy Rating: Adequately defined (A)	**Performance Rating:** Performing effectively (1)

<table>
<tr><th>No</th><th>Effectiveness Criteria</th><th colspan="2">Findings</th></tr>
<tr><td>7(c)</td><td>Logical security access controls appears adequate, such as passwords</td><td colspan="2">Through discussions with the IS Supervisor and consideration of EDL's IS policy, we observed that:
Access to EDL's network or systems is restricted to authorised personnel only
Access requests must be approved by the employee's direct manager and the relevant system owner
Each authorised user is assigned a unique individual user ID and password
Password policy is enforced on Pronto and various other systems, including:
Passwords must be at least eight characters long and have two or more of the following characteristics:
Contain lower case alpha characters
Contain upper case alpha characters
Contain numeric character(s)
Contain special characters (e.g. !, @, #, $, %).
Passwords must be changed every 90 days.
User accounts will be locked out after five failed attempts. Accounts can only be unlocked once by the IT Help Desk
Password history is reset every 720 days (every 2 years)
Good practice rules around logical access are outlined in Password Policy for staff, including:
Lock computer when leaving computer unattended
Don't use "Remember Password" feature for any application (e.g. web browser)
Change password when prompted
Don't use an online password generator tool.</td></tr>
<tr><td></td><td></td><td>Adequacy Rating: Adequately defined (A)</td><td>Performance Rating: Performing effectively (1)</td></tr>
<tr><td>7(d)</td><td>Physical security access controls appear adequate</td><td colspan="2">Through discussions with the IT Supervisor and consideration of EDL's IS policy, we observed that:
All servers, related to the EDL Pronto application, are now hosted by PHS
Services for EDL are to be provided by Pronto for no less than 99.99% of the calendar year without financial penalty (e.g. loss of connectivity for a period greater than 1 hour in a calendar month with result in compensation of 100% monthly cost of service)
Physical security of Pronto services is restricted to PHS employees and contractors. EDL and its employees have not been granted access to the servers held by PHS
PHS restricts physical access to their servers via swipe cards and logging of access. Access is restricted to the building and to the location of the servers.</td></tr>
<tr><td></td><td></td><td>Adequacy Rating: Adequately defined (A)</td><td>Performance Rating: Performing effectively (1)</td></tr>
</table>

No	Effectiveness Criteria	Findings	
7(e)	Data backup procedures appear adequate	Through discussions with the IS Supervisor and consideration of EDL's backup and recovery procedures, we observed that: • All server data, which includes Pronto, is backed up on a daily basis. Pronto data is backed up by PHS while the rest of EDL information is performed in house • The backup schedules for EDL servers are: o Daily incremental back-ups performed every Monday to Thursday o Weekly full back-ups occur every Friday o Monthly full back-ups occur on the first Friday of every month. • Back-ups are written to tapes and the tapes are taken for off-site storage by an external contractor • End of month backups are kept for one year and the six monthly tapes are kept permanently. We noted that data restoration testing from the back-up tapes is performed every three months as part of the requirement for EDL's Disaster Recovery Plan.	
		Adequacy Rating: Adequately defined (A)	**Performance Rating:** Performing effectively (1)
7(f)	Key computations related to licensee performance reporting are materially accurate	EDL's asset management information system does not directly provide data used in any computation related to EDL'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	We observed that monthly operational performance reports are produced for each facility to assess performance against target Key Performance Indicators. Monthly reports are prepared by the Site Operators and approved by the Operations Manager – Remote Energy. The monthly operational performance reports detail the key performance criteria of out of limit summaries, electrical performance, engine performance, key maintenance activities, inventory usage and levels, safety and environmental issues as required in the WKPP PPA.	
		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
Overall Adequacy/Performance rating: Adequately defined (A) / Performing effectively (1)

No	Effectiveness Criteria	Findings
8(a)	Risk management policies and procedures exist and are being applied to minimise internal and external risks associated with the asset management system.	We observed that EDL models its risk policies against guidelines provided in ISO31000:2009 *Risk Management – principles and guidelines*, with the EDL Risk Management Policy outlining the criterion for risk assessments and the steps in the risk management framework. EDL has specifically applied its risk management framework to its operations through: • The WKPP Safety Management Plan, which references the approved Risk Calculator (failure likelihood, consequence and risk value/severity matrix), based on AS31000 guidelines. As the purpose of EDL's Safety Management Plan is to establish and maintain an effective Safety Management System, EDL demonstrates a commitment to the continuous improvement of the Safety Management System so that it will achieve a consistently high standard of safety performance • The WKPP AMP, which outlines the importance of risk identification, assessment and control as foundations for proactive asset management, providing for the protection of existing and future revenue streams and avoiding penalties for non-conformance particularly with regard to personnel safety, environment protection and some PPA contracts • EDL's Corporate Risk Register, which contains details of the key risks faced by its operations (broken down by site). We noted that: o The risk ratings used in the register are based on the standard five-by-five risk matrix methodology o The Audit and Risk Committee (ARC) conduct a quarterly review of risks faced by each of its sites o EDL discuss current and emerging risks during weekly operations meetings, attended by relevant site and Corporate representatives o EDL's internal audit department conduct annual audits on selected WKPP sites on risks identified in the Risk Register o Any changes to its risk register, identified during the ARC quarterly review, weekly operations meetings or the annual risk based audits, will be updated in the risk register and reported to the Board. Through discussions with the Manager Shared Services and consideration of EDL's risk management practises, we identified that EDL currently undertake the following risk management activities in relation to its Broome Power Station: • Safety case reports prepared for power station equipment, where individual risk and consequence assessments, formal safety assessments and verification of such assessments are conducted. We noted that: o The purpose of these assessments is to identify a broad range of operational risks using appropriate hazard identification techniques and risk assessment methodologies o Estimation of the likelihood of asset failure is conducted through routine condition monitoring tests. • A risk analysis of WKPP contingency planning activities has been prepared by the Operations Manager – Remote
8(b)	Risks are documented in a risk register and treatment plans are actioned and monitored	

No	Effectiveness Criteria	Findings	
		Energy and WKPP Power Facilities Manager The risk analysis applies EDL's corporate risk management methodology, which has been formally captured in its Corporate Risk Register, together with details of each identified risk event and associated risk levels, current and potential control strategies, reduced risk levels and any strategies available to further mitigate those risks • Hazard identification reports and registers have been developed, which in conjunction with the Safety Case also inform the development of risk treatment plans o A tracking program has been developed by the Financial Controller to track the status of any risk treatment plans or outstanding actions from audits o If an action or plan is identified as outstanding, the Financial Controller will notify the relevant staff member of the outstanding action to be completed. A new target date will be developed and agreed on. • EDL's insurer (AON) conducts annual reviews on risk management practices o A report, together with actions, will be developed by AON and issued to EDL o Actions are entered into EDL's tracking program to monitor completion.	
		Adequacy Rating: Adequately defined (A)	**Performance Rating:** Performing effectively (1)
8(c)	The probability and consequences of asset failure are regularly assessed.	Through consideration of EDL's risk management practices as applied to its assets and discussions with the Manager Shared Services, we observed that EDL has applied the following mechanisms for identifying the consequence and likelihood of asset failure: • EDL's approved Risk Calculator, which is based on guidelines provided in ISO31000:2009, categorises risk by considering the consequence and likelihood of failure in a matrix, which allocates values to each risk: o The consequences of failure consider the following aspects: (a) injury to people (b) impact on assets (c) impact on the environment (d) effect on company image (e) (generation) financial impact o The likelihood of failure is categorised in the following range: (a) practically impossible (b) not likely to occur (c) could occur (d) known to occur (has happened) (e) common or occurs frequently. • EDL conduct routine condition monitoring to proactively identify any maintenance requirements not originally scheduled. A risk based approach to maintenance scheduling is used by EDL in order to prioritise its critical maintenance tasks. Based on our walkthrough of maintenance tasks performed on site, we confirmed that the above approach is followed.	
		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

Overall Adequacy/Performance rating: Adequately defined (A) / Performing effectively (1)

No	Effectiveness Criteria	Findings
9(a)	Contingency plans are documented, understood and tested to confirm their operability and to cover higher risks.	In addition to guidance provided through the Broome Power Station AMP, EDL's contingency planning strategies for the Broome Power Station are captured in the following two key documents: • WKPP LNG Supply Interruption Contingency Plan (revised annually, last in September 2014). This plan outlines how EDL will respond to an LNG supply interruption, which has the capacity to threaten EDL's ability to provide sufficient power to meet the customer demands. The plan considers multiple events that have the possibility to cause a delay in the supply of LNG (e.g. severe weather or corrosion of pipeline) • WKPP Emergency Response Plan, last updated in 2014. This plan is designed to help prevent an incident from becoming a disaster, to save lives, prevent injuries and minimise damage to property and the environment. Through discussions with the Operations Manager – Remote Energy, we understand that: • All front line managers within EDL are required to complete training on emergency response (including the use of the Emergency Response Plans) • A new staff training program (Safer) is currently being implemented, whereby staff Broome power station staff will be required to conduct certain training modules each year based on their role o Completion of training is tracked within a training matrix o Training modules that have not been completed will be highlighted to bring to the attention of the Training Team • Horizon Power was and will remain closely involved in the review and implementation of EDL's contingency planning activities as a requirement of the PPA • EDL's Corporate Risk Register, which contains details of the key risks faced by its operations (broken down by site). We noted that: o The risk ratings used in the register are based on the standard five-by-five risk matrix methodology o The Audit and Risk Committee (ARC) conduct a quarterly review of risks faced by each of its sites o EDL discuss current and emerging risks during weekly operations meetings, attended by relevant site and Corporate representatives o EDL's internal audit department conduct annual audits on selected WKPP sites on risks identified in the Risk Register o Any changes to its risk register, identified during the ARC quarterly review, weekly operations meetings or the annual risk based audits, will be updated in the risk register and reported to the Board. We also observed that: • No event has occurred during the review period for which the Emergency Response plan was required to be activated • The WKPP LNG Supply Interruption Contingency Plan and WKPP Emergency Response Plan have been subject to testing, the most recent being in October 2014 • Road transport exercises are conducted to scenario test the WKPP LNG Supply Interruption Contingency Plan. We observed: o Local emergency services personnel are involved within the scenario test o A report is generated following the test to highlight any possible improvements

No	Effectiveness Criteria	Findings	
		○ The last scenario test was conducted in October 2014. • Engine and LNG storage redundancies are built into power station operations, including maintenance of a spare generator on site, for impacts from severe weather and unexpected asset failure events • EDL has identified additional contingencies for its WKPP operations. For example, N+2 generation capacity, spares vulnerability, maintenance contracts, service contracts (alternative supplier listings). Based on our findings from the 2012 Post Audit Implementation review, we identified that EDL has further strengthened its contingency planning processes by addressing action plan 2/2011 from the 2011 asset management system review. The action plan specifically addressed the gap within EDL's contingency planning risk analysis where input from the Manager – Technical had not been obtained.	
		Adequacy Rating: Adequately defined (A)	**Performance Rating:** Performing effectively (1)

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

Overall Adequacy/Performance rating: Adequately defined (A) / Performing effectively (1)

No	Effectiveness Criteria	Findings	
10(a)	The financial plan states the financial objectives and strategies and actions to achieve the objectives	Through discussions with the Financial Controller and consideration of EDL's financial planning mechanisms as applied to its operations, we observed that: • The annual budget and forecast provide a clear link to the strategies and objectives of the project • The budget and forecast is to be reviewed and updated every quarter • A review of the financial plan can also be triggered at the request of senior management or should any significant changes to forecasted figures arise.	
		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 discussions with the Financial Controller and consideration of EDL's financial planning mechanisms, we understand that: • The source of funds for capital investment is considered by EDL's Corporate Finance division once approval for expenditure is obtained • WKPP project funding is through a debt facility that is ring fenced to prevent use of funds for other ventures • Recurrent costs are identified through the annual budget process.	
		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 discussions with the Financial Controller and consideration of EDL's financial planning mechanisms, we observed that: • A forecast of demand and generation requirements and financial budget for the WKPP (which includes the Broome Power Station) is developed on an annual basis and reviewed and updated every quarter • Horizon Power provides one year forecasts of monthly demand in June/July each year • WKPP financial statements are prepared every six months and audited by an external auditor • Financial projections relevant to the WKPP consider the project's long term financial viability.	
		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 Financial Controller and consideration of EDL's financial planning mechanisms, we understand that those mechanisms provide five year rolling forecasts of demand and generation requirements. Predictions and projections of demand are provided by Horizon Power every year and are incorporated into EDL's budget. Demand projections are used by EDL to calculate indicative predictions of income and expenditure, based on planned run hours and associated maintenance costs. Accordingly, EDL will reassess the Maximum Contract Demand on an annual basis, per Section 12.1 and Schedule 13 of the PPA.	
		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 Financial Controller and consideration of the WKPP's financial planning and monitoring mechanisms, we observed that the mechanisms applied accommodate the following annual costs: • Workforce costs • Maintenance costs • Operational expenditure (OPEX) • Capital expenditure (CAPEX) • Corporate overhead costs (via a standard service charge).	
		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 Financial Controller, consideration of EDL's financial reporting mechanisms and examination of DOC reports, we observed that the mechanisms applied provide for: • Overhead cost variance analysis to be conducted and reported in the monthly DOC reports for each site • Operational overspend to be analysed and consumption of fuel to be analysed against generation output • Monthly management meetings with the Corporate Finance team to discuss potential issues that may arise in coming months, potential cost increases(with justifications) and potential cost savings / cost saving strategies • Monthly reports on variances are prepared and sent to Operational Managers and the Board o No significant variances have been identified during the period 1 August 2011 to 31 July 2014 o Variances are mostly due to the impact of unexpected asset failure, which tend to be resolved in a timely manner.	
		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

Overall Adequacy/Performance rating: Adequately defined (A)/ Performing effectively (1)

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 Financial Controller and consideration of EDL's capital budgeting mechanisms relevant to its operations, we observed that: • In line with the provisions of the WKPP PPA, current procedures provide for expansion related capital expenditure (CAPEX) requirements (including expansion plans) to be included within the WKPP annual financial plan, including details of specific actions planned • EDL has established a tracking spreadsheet to monitor all CAPEX projects, including details of timeframes and actions to be completed. The spreadsheet has been separated to report on: o Major overhaul work required o Other planned CAPEX projects. • During the review period, EDL did not establish any expansion plans in relation to its assets.	
		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 Financial Controller and consideration of EDL's capital budgeting mechanisms, we observed that those mechanisms provide for: • CAPEX requirements to be based on the budgeting process and forecasts of Maximum Contract Demand (MCD) • Expansions to be planned and implemented if forecast MCD exceeds RGC for the plant • Justification of capital expenditure is obtained through net present value analysis and in conjunction with Horizon Power's requirements • All CAPEX projects are entered via a SharePoint based online form, which has fields for reasons for capital spend and workflow approval processes. We note that EDL is currently in negotiations with Horizon Power regarding potential expansion options should Horizon Power continue to increase demand forecasts.	
		Adequacy Rating: Adequately defined (A)	**Performance Rating:** Performing effectively (1)

No	Effectiveness Criteria	Findings	
11(c)	The capital expenditure plan is consistent with the asset life and condition identified in the asset management plan	Through discussions with the Financial Controller, we understand that the carrying value model prepared through EDL's Corporate Finance division includes asset life and condition data. Further, input from internal engineering experts is sought when conducting forecasts of future CAPEX costs to be incurred.	
		Adequacy Rating: Adequately defined (A)	**Performance Rating:** Performing effectively (1)
11(d)	There is an adequate process to ensure that the capital expenditure plan is regularly updated and actioned	Through discussions with the Financial Controller and consideration of WKPP's financial planning and monitoring mechanisms, we observed that: • The review and update of capital budgets is considered in the WKPP operations five year rolling forecast and budget, both of which are updated on an annual basis • EDL monitors capitalisation of CAPEX projects on a monthly basis to track completed project and works in progress.	
		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

Overall Adequacy/Performance rating: Adequately defined (A) / Performing effectively (1)

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	The WKPP AMP is scheduled to be reviewed on an annual basis. The Operations Manager – Remote Energy, together with input from the Station Manager and Asset Manager, is responsible for arranging timely review of the AMP each year. The date for review of the AMP has been included in the new SharePoint based compliance scheduling system, implemented in 2012, which will provide alerts to relevant staff to commence review. In addition, the Environment and Compliance Advisor sends out emails to relevant staff on compliance tasks due within the coming month, which includes the review of the AMP. We obtained a copy of the current AMP and identified that it had been recently reviewed in August 2014, to accommodate updates to financial forecasts. Further, the Asset Manager confirmed that no significant changes have been made to the AMP or EDL's asset management system during the period 1 August 2011 to 31 July 2014.	
		Adequacy Rating: Adequately defined (A)	**Performance Rating:** Performing effectively (1)
12(b)	Independent reviews (e.g. internal audit) are performed of the asset management system	EDL's internal audit function undertakes internal audits on WKPP Power Generation activities, with an emphasis on contractual and regulatory compliance applied at the Broome Power Station. The last review undertaken by the internal audit function was in early 2014. Although the internal audit function has not specifically subjected the WKPP AMP and asset management system to a focussed internal audit, elements of the plan and function have been subject to review as part of a broader internal audit. However, EDL does subject its asset management system to external review by independent third party contractors. EDL's current approach to subjecting the WKPP AMP and asset management system to independent review is through the participation of technically competent and experienced staff from EDL's national operations in: • The annual review and update of the WKPP AMP • Sharing their learnings on the management of specific assets such as the 3520 gen sets. The intention of this approach is to drive a continuous improvement program for the better management of engines, particularly as many of the WKPP power station engines are reaching lives of 20,000 to 23,000 operating hours and are expected to require more maintenance attention. EDL has further strengthened its controls for review of its asset management system by formalising the above review process into its scheduling system.	
		Adequacy Rating: Adequately defined (A)	**Performance Rating:** Performing effectively (1)

5 Follow-up of previous review action plans

Reference (no./year)	Asset management effectiveness component & criteria	Auditors' Recommendation	Previous audit action plan	Date Resolved	Further action required (Yes/No/Not required) and details of reasons
A. Resolved before end of previous audit period					
n/a	n/a	n/a	n/a	n/a	n/a
B. Resolved during current audit period					
2/2011	***Contingency planning*** *9(a)*	Review the WKPP contingency planning risk analysis, with input from the Manager-Technical and any other key staff who are in a position to contribute.	EDL will adopt the following approach: The WKPP contingency planning risk analysis will be reviewed, with input from the Manager-Technical and potentially other key staff who are able to effectively contribute.	February 2012	No - We evidenced the input of the Manager-Technical and other key staff in the most recent review of the WKPP contingency planning risk analysis.
3/2008	***Environmental analysis*** *4(b)*	The resolution of Diesel Shelf Life issues with Horizon Power is addressed in an EDL memorandum outlining diesel operational holding levels for each site. This memorandum will be formally appended to the next revision of the WKPP LNG Supply Interruption Contingency Plan	a) A preventative maintenance task will be established to sample diesel holdings prior to expected peak demand periods. This task will be designed to enable any potential shelf life issues to be managed b) The next revision of the WKPP LNG Supply Interruption Contingency Plan will refer to this new measure.	n/a	Action closed out due to change in current diesel arrangements (decision to switch to a higher quality diesel that has a longer storage shelf life). We note that the shelf life on the new diesel fuel far outlives the expected usage time of the fuel itself. Further, EDL has implemented a new diesel sampling process to manage shelf life issues before it arises. Therefore the action is no longer relevant.
C. Unresolved at end of current audit period					
1/2011	***Asset Maintenance*** *6(e)* ***Risk Management*** *8(a)*	Formally align the prioritisation of WKPP's maintenance works with EDL's risk assessment methodology.	The quarterly exception report of maintenance tasks will be extended to include a risk assessment in line with EDL's risk assessment methodology.	n/a	Yes – refer to new recommendations and action plans under section 6.

Appendix A – References

Key EDL contacts

The key contacts for this review are:

- Senior Commercial Manager
- Operations Manager – Remote Energy
- Asset Manager
- Environment and Compliance Advisor
- IS Supervisor
- WKPP Power Facilities Manager
- Manager Shared Services.

Deloitte Staff

Deloitte staff who will be involved with this assignment are:

• Darren Gerber	Partner	4 hours
• Ben Fountain	Account Director	35 hours
• Emlyn King	Senior Analyst	71.5 hours
• Jared Shaw	Senior IT Analyst	15 hours
• Carmen Grant	Analyst	30 hours
• Shailesh Tyagi	Principal Engineer	4 hours
• Bryn Durrans	Engineer	37.5hours
• Richard Thomas	Partner (Quality Assurance Review).	2 hours

Key documents and other information sources examined

- WKPP Facilities Management Plan
- WKPP PPA
- Broome Power Station AMP
- Rolling 5 year budget
- Variance analyses
- Supplier Facilities Plan
- LNG Supply Interruption Contingency Plan
- List of outages
- Sample outage report for Broome Power Station
- Safe Work Instructions
- Password Policy documentation
- Pronto hosting contract
- IT Backup Policy
- Contingency response exercise report
- Maintenance exception reports
- Global Organisation chart
- KPI reports
- WKPP EMP
- Risk register
- WKPP Safety Management Plan.

Appendix B – Post Review Implementation Plan

Issue 1/2014

Based on a walkthrough of EDL's maintenance scheduling processes and discussions with relevant staff, we identified that some maintenance tasks (including pressure safety valve testing) have not been completed on schedule. Some of these tasks are overdue due to the design of the plant not allowing these tasks to be undertaken without a partial or full plant outage, which does not support EDL's operating philosophy given the PPA with Horizon Power. We noted that:

- EDL has planned for a range of maintenance activities to be performed with an allocated budget to address the outstanding items through the installation of three way valves and dual PSVs or testing of valves that can be tested without modification
- Per the October 2014 maintenance backlog spreadsheet, nine items were outstanding since 2009 and five since 2010. We do acknowledge that EDL has been clearing the backlog of maintenance tasks in November 2014, with three valves from 2009 and three since 2010 still outstanding
- The maintenance tasks are due to for completion by the end of the 2014 calendar year, with the exception of those valves that require the gas units to be shutdown. EDL has yet to determine when the shutdown will be performed (if needed at all). EDL will however endeavour to perform as much of this work as possible during periods of lower load (night time), in order to minimise the impact to customers.

Recommendation 1/2014	**Action Plan 1/2014**
EDL should: (a) Finalise the plan for completion of the maintenance tasks, including a schedule for timely completion (b) Confirm with Horizon Power a suitable time for shutdown of the gas units, so that the remaining PSVs can be tested and/or replaced with three-way valves. Consider performing a formal risk review to support decisions being made around timing (c) Report status to management periodically to ensure completion of the programme.	EDL will: (a) Finalise the plan for completion of its maintenance tasks, including a schedule for timely completion (b) Confirm with Horizon Power a suitable time for shutdown of the gas units, so that the remaining PSVs can be tested and/or replaced with three-way valves and dual PSVs. Further, EDL will consider performing a formal risk review to support decisions being made around timing (c) Report status to management periodically to ensure completion of the programme. **Responsible person:** Tony Manning **Target date:** 28 February 2015

Issue 2/2014

We observed that:

- The exception report (a list of work orders in Pronto that have passed scheduled due dates) is not complete (e.g. not all rows have been risk assessed)
- The maintenance tasks in the exception report that have been risk assessed appear to be only those that have been rescheduled to a specific date, thereby indicating that at the risk assessment is only applied as the work is rescheduled, not as a proactive measure. A risk assessment should be performed up-front to determine the reschedule date
- No formal responsibilities have been assigned to conduct risk assessments and for which tasks risks assessments are required
- No formal procedure has been developed that links the assessed risk of the overdue maintenance item and the maximum permissible delay to complete the maintenance task.

Recommendation 2/2014

EDL should:

(a) Formalise its overdue maintenance risk assessment process and exception reporting into the its operational and maintenance procedures The procedure should expand on EDL's existing risk assessment framework to provide guidance on the acceptable level of maintenance delay based upon the assessed level of risk. E.g. risk level 24 = maximum of 12 month delay acceptable, risk level 1 = maximum of 24 hours delay acceptable, etc. (Note these values given here are arbitrary only to give an example, and actual values should be determined by EDL based on detailed understanding and risk assessment of the plant)

(b) Update the procedure to include clear responsibilities and accountabilities for performing the risk assessment activities, including consideration of who can accept the level of risk and what is deemed tolerable

(c) Review the exception report and ensure that all items are appropriately risk assessed.

Action Plan 2/2014

EDL will:

(a) Formalise its overdue maintenance risk assessment process and exception reporting into the its operational and maintenance procedures as recommended

(b) Update the procedure to include clear responsibilities and accountabilities for performing risk assessment activities, including consideration of who can accept the level of risk and what is deemed tolerable

(c) Review the exception report and ensure that all items are appropriately risk assessed.

Responsible person: Gavin Blakeman

Target date: 30 January 2015