Energy Developments Ltd

Electricity Integrated Regional Licence (EIRL1)

2011 Asset Management System Review

January 2012

Limitations of use

This report is made solely to the management of Energy Developments Ltd for the purpose of its reporting requirements under section 14 of the Electricity Industry Act 2004. We disclaim any assumption of responsibility for any reliance on this report to any person other than the management of Energy Developments Ltd, or for any purpose other than that for which it was prepared. We disclaim all liability to any other party for all costs, loss, damages, and liability that the other party might suffer or incur arising from or relating to or in any way connected with the contents of our report, the provision of our report to the other party, or the reliance on our report by the other party.

Deloitte Touche Tohmatsu
ABN 74 490 121 060

Woodside Plaza
Level 14
240 St Georges Terrace
Perth WA 6000
GPO Box A46
Perth WA 6837 Australia

DX: 206
Tel: +61 (0) 8 9365 7000
Fax: +61 (0) 9365 7001
www.deloitte.com.au

Mr Greg Breadsell
General Manager, Australian Operations and Compliance
Energy Developments Ltd
PO Box 4046
Eight Mile Plains QLD 4113

20 January 2012

Dear Mr Breadsell

2011 Asset Management System Review - Electricity Integrated Regional Licence EIRL1

We have completed the Asset Management System Review for EDL NGD (WA) Pty Ltd for the period 1 August 2008 to 31 July 2011 and are pleased to submit our report to you.

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

If you have any questions or wish to discuss anything raised in the report, please contact me on 08 9365 7024.

Yours sincerely

Richard Thomas
Partner

Contents

1 Independent Reviewer's Report

With the Authority's approval, Deloitte Touche Tohmatsu was engaged to conduct a limited assurance review of Energy Developments Ltd's (**EDL**) Electricity Integrated Regional Licence (EIRL1) (**The Licence**) asset management system. Deloitte engaged KT & Sai Associates Pty Ltd to provide advice where technical expertise was required.

The review was conducted in accordance with the specific requirements of the Licence and the August 2010 issue of the *Audit Guidelines: Electricity, Gas and Water Licences* issued by the Authority (**Audit Guidelines**) for the period 1 August 2008 to 31 July 2011.

EDL's responsibility for maintaining an effective asset management system

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

Our 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 Audit Guidelines, in order to state whether, based on the procedures 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, in accordance with the Audit Guidelines. Our engagement provides limited assurance as defined in ASAE 3500.

Our procedures were set out in the Review Plan reviewed and agreed with by the Authority on 17 November 2011, and set out in Appendix A.

Limitations of use

This report is made solely to the management of EDL for the purpose of its reporting requirements under section 14 of the *Electricity Industry Act 2004*. We disclaim any assumption of responsibility for any reliance on this report to any person other than the management of EDL, or for any purpose other than that for which it was prepared. We disclaim all liability to any other party for all costs, loss, damages, and liability that the other party might suffer or incur arising from or relating to or in any way connected with the contents of our report, the provision of our report to the other party, or the reliance on our report by the other party.

Inherent limitations

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

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

Any projection of the evaluation of the level of compliance to future periods is subject to the risk that the systems 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, 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 and in operation during the period 1 August 2008 to 31 July 2011.

Table 3 of this report provides effectiveness ratings for each of the 12 key processes in the asset management life-cycle. 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

Richard Thomas
Partner
Perth, 20 January 2012

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 Energy Developments Ltd (**EDL**) an Electricity Integrated Regional Licence (EIRL1) (**the Licence**).

The licence relates to EDL's operation of generating works at its Broome, Derby, Fitzroy Crossing, Halls Creek and Looma facilities. These power facilities are collectively referred to as the West Kimberley Power Project (**WKPP**). Through a formal Power Purchase Agreement (**PPA**) relevant to the WKPP, EDL has contractual obligations to supply electricity to the Regional Power Corporation trading as Horizon Power (**Horizon Power**).

Section 14 of the Act requires EDL to provide to the Authority with 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. This is the second review of EDL's WKPP asset management system, with the Authority electing to extend the period to be covered by the review to the 36 month period ending 31 July 2011.

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

2.2 Findings

In considering 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:

- EDL has maintained consistent procedures and controls designed to provide for an effective asset management system
- EDL staff appeared to have a clear understanding of the asset management processes within their area of responsibility and were consistent in their reference to relevant corporate information and strategy
- EDL has regularly reviewed the currency and effectiveness of WKPP Asset Management Plan (**AMP**), with the input of competent staff from throughout the organisation, to ensure WKPP assets are managed in accordance with the requirements of the PPA and each of the 12 effectiveness criteria.

This review assessed that:

- All but four of the 55 elements of EDL's asset management system relevant to the WKPP are adequately defined
- All but three of the 48 relevant (i.e. the 55 less the seven classified as 'Not rated') elements are effectively performed
- There are three opportunities for further improvement.

Specific assessments for each criterion are summarised at **Table 3** in the "Summary of findings" section 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 has progressed against the six action plans detailed in the 2008 asset management system review report.

Our assessment of EDL's progress is that:

- Five of the 2008 action plans have been completed
- One action plan has not yet been fully completed and a revised action plan has been devised by EDL to fully address the matter raised in the 2008 review report.

Refer to section 5 of this report for further detail.

2.4 Recommendations and action plans

AMS Key Process and Effectiveness Criteria	Adequacy rating	Performance rating	Issue 1/2011
Asset Maintenance *6(e) Risk management is applied to prioritise maintenance tasks* ***Risk Management*** *8(a) Risk management policies and procedures exist and are being applied to minimise internal and external risks associated with the asset management system*	Requires some improvement (B)	Opportunity for improvement (2)	Prioritisation of WKPP's maintenance works within the Pronto system (and reported via PM Task Master) is currently performed by the relevant operator in consultation with the Plant Manager. The task prioritisation approach can be further enhanced by formally aligning with EDL's risk assessment methodology.
Recommendation 1/2011 Formally align the prioritisation of WKPP's maintenance works with EDL's risk assessment methodology.		**Action Plan 1/2011** The quarterly exception report of maintenance tasks will be extended to include a risk assessment in line with EDL's risk assessment methodology. **Responsible Person:** Mechanical Engineer **Target Date:** 31 March 2012	

AMS Key Process and Effectiveness Criteria	Adequacy rating	Performance rating	Issue 2/2011
Contingency planning *9(a) Contingency plans are documented, understood and tested to confirm their operability and to cover higher risks*	Adequately defined (A)	Opportunity for improvement (2)	In March 2011, the WA Operations Manager and WKPP Facilities Manager undertook a risk analysis of the WKPP contingency planning activities. The risk analysis applied EDL's corporate risk management methodology and was formally recorded in a risk register, which includes 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. The risk analysis appears to address the significant risks to the effectiveness of WKPP contingency plans, however there are further opportunities for other key EDL staff, such as the Manager – Technical to contribute to the identification and analysis of risks to the availability and operation of communications and control systems (for example, loss of the main control room or SCADA room).

Recommendation 2/2011	Action Plan 2/2011
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.	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. **Responsible Person:** WA Operations Manager **Target Date:** 29 February 2012

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 2008 to 31 July 2011.

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

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

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

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

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

2.6 Approach

Our approach for this review involved the following activities, which were undertaken during the period October to December 2011:

- Utilising the Audit 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 (see **Appendix A**) for approval by the Authority
- Correspondence and interviews with EDL staff to gain understanding of process controls in functions such as planning, asset operations, finance, internal audit and capital expenditure planning (see **Appendix B** for staff involved)
- Visited the Broome Power Station and Control Room with a focus on understanding the installation, its function at normal modes of operation, its age and an assessment of the installation against the AMS review criteria
- Review of documents, processes and controls to assess the overall effectiveness of EDL's asset management systems (see **Appendix B** for reference listing)
- Reporting of findings to EDL for review and response.

3 Summary of findings

In accordance with the Audit 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 the avoidance of doubt, these ratings do not provide reasonable assurance. Please refer to Section 1 of this report, specifically Inherent Limitations.

Table 1: Asset management process and policy definition adequacy ratings

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

Table 2: Asset management performance ratings

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

This report provides:

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

Note that:

- The risk assessment that was presented in the Review Plan remains unchanged as no issues or concerns were identified that would indicate a need to modify the nature and levels of testing
- For a number of the WKPP asset management system functions, EDL's WKPP operations apply the EDL group business wide policies, procedures and practices
- There are seven elements of the Asset creation & acquisition and Asset disposal processes where the process was either not applied or there was no relevant activity during the review period. In those cases, the asset management performance rating is assessed as 'Not rated'.

Table 3: Asset management system effectiveness summary

Refer to Detailed Findings at section 4 and Review Plan at Appendix A for descriptions of the effectiveness criteria.

						Ratings	
Criteria	Consequence	Likelihood	Inherent Risk	Control Risk	Review Priority	Definition adequacy	Performance
1. Asset planning						**A**	**1**
1(a)	Minor	Probable	Low	Strong	Priority 5	A	1
1(b)	Minor	Probable	Low	Strong	Priority 5	A	1
1(c)	Minor	Probable	Low	Moderate	Priority 5	A	1
1(d)	Moderate	Probable	Medium	Strong	Priority 4	A	1
1(e)	Minor	Probable	Low	Strong	Priority 5	A	Not rated
1(f)	Moderate	Unlikely	Medium	Moderate	Priority 4	A	1
1(g)	Major	Probable	High	Strong	Priority 2	A	1
1(h)	Minor	Unlikely	Low	Strong	Priority 5	A	1
2. Asset creation and acquisition						**A**	**1**
2(a)	Moderate	Unlikely	Medium	Strong	Priority 4	A	Not rated
2(b)	Moderate	Probable	Medium	Moderate	Priority 4	A	Not rated
2(c)	Moderate	Unlikely	Medium	Moderate	Priority 4	A	Not rated
2(d)	Moderate	Unlikely	Medium	Strong	Priority 4	A	Not rated
2(e)	Major	Unlikely	High	Strong	Priority 2	A	1
3. Asset disposal						**A**	**1**
3(a)	Minor	Unlikely	Low	Moderate	Priority 5	A	1
3(b)	Minor	Probable	Low	Moderate	Priority 5	A	Not rated
3(c)	Minor	Probable	Low	Moderate	Priority 5	A	Not rated
3(d)	Moderate	Unlikely	Medium	Moderate	Priority 4	A	1
4. Environmental analysis						**A**	**1**
4(a)	Moderate	Probable	Medium	Strong	Priority 4	A	1
4(b)	Moderate	Probable	Medium	Moderate	Priority 4	B	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	Probable	Medium	Strong	Priority 4	A	1
5(b)	Moderate	Probable	Medium	Moderate	Priority 4	A	1
5(c)	Moderate	Probable	Medium	Moderate	Priority 4	A	1
5(d)	Moderate	Probable	Medium	Moderate	Priority 4	A	1
5(e)	Moderate	Probable	Medium	Moderate	Priority 4	A	1
6. Asset maintenance						**A**	**1**
6(a)	Moderate	Probable	Medium	Strong	Priority 4	A	1
6(b)	Moderate	Unlikely	Medium	Moderate	Priority 4	A	1
6(c)	Moderate	Probable	Medium	Moderate	Priority 4	A	1
6(d)	Moderate	Unlikely	Medium	Strong	Priority 4	A	1
6(e)	Moderate	Probable	Medium	Moderate	Priority 4	B	2
6(f)	Moderate	Unlikely	Medium	Moderate	Priority 4	A	1

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

4 Detailed findings, recommendations and action plans

Summary of generation works subject to review

WKPP operations - system summary

- A PPA has been established between EDL and Horizon Power to supply electricity to the West Kimberly towns of Broome, Derby, Fitzroy Crossing, Halls Creek and Looma
- The terms and conditions of the PPA with Horizon Power require EDL to provide a stable and reliable electrical power supply
- The West Kimberly EDL facilities and assets covered by the Licence consist of the Broome Power Station, Broome underground cabling, Derby Power Station, Fitzroy Power Station, Halls Creek Power Station and Looma Power Station
- The Maitland LNG Plant, Broome Fuel Storage Facility and Broome Pipeline are also part of the WKPP, however these facilities are not the subject of this Licence. Accordingly, the scope of this review was limited to the Power Station and Broome underground cabling facilities only. All Power Stations were assessed as a single operation due to the common supply, operations and maintenance systems used
- The generation capacity and Diesel and LNG storage capacity of the relevant power stations are:
    - Broome: generation capacity 32 – 47MW, Diesel storage 165kL, LNG storage 1950kL
    - Derby: generation capacity 10 – 13MW, Diesel storage 650kL, LNG storage 600kL
    - Fitzroy Crossing: generation capacity 3.4 – 4.8MW, Diesel storage 165kL, LNG storage 400kL
    - Halls Creek: generation capacity 3 – 3.9MW, Diesel storage 150kL, LNG storage 400kL
    - Looma: generation capacity 1 – 1.4MW, Diesel storage 80kL.
- An objective of the WKPP AMS is to provide Horizon Power with appropriate assurance that the power stations' assets are being managed in accordance with Horizon Power's reliability and quality of supply obligations to its customer base.

Business impact

Any failure of EDL to supply power may have direct and immediate impact on the relevant West Kimberly communities as EDL facilities are the primary supplier of electricity to Horizon Power and its customer base in those communities.

EDL and Horizon Power have extensively consulted on the nature of redundancy and backup 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.

The following tables contain:

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

Many of the asset planning processes applied for the WKPP are accommodated through the EDL groupwide business and strategic planning processes.

<table>
<tr><th>No</th><th>Effectiveness criteria</th><th colspan="2">Findings</th></tr>
<tr><td rowspan="2">1(a)</td><td rowspan="2">Planning process and objectives reflect the needs of all stakeholders and is integrated with business planning</td><td colspan="2">EDL forecasts future generation capacity requirements in consultation with Horizon Power and in accordance with the PPA. As a result, an Asset Management Plan (AMP) is 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 discussion with the WA Operations Manager and the WA Management Accountant, we determined that the asset planning process also involves:
• Consideration of life-cycle costs including the incorporation of overhaul requirements (as specified by the manufacturer) of engines and all other plant
• NPV in evaluations
• Business drivers identified and used to determine the asset management needs of the plant controlled by EDL
• WKPP asset management planning to be completed by April each year for inclusion in the EDL planning process.
The WA Operations Manager confirmed EDL had no planned requirement to commission or decommission any generation assets for the audit period 1 August 2008 to 31 July 2011.</td></tr>
<tr><td>Adequacy Rating: Adequately defined (A)</td><td>Performance Rating: Performing effectively (1)</td></tr>
<tr><td rowspan="2">1(b)</td><td rowspan="2">Service levels are defined</td><td colspan="2">Clauses 15 and 16 and item 3 of the PPA detail the service levels required of EDL. EDL’s WKPP AMP defines the measures of performance to be reported in two categories:
1) Horizon Power Support Performance KPIs (as per the PPA)
2) Operations and Maintenance Deed – Performance Criteria.</td></tr>
<tr><td>Adequacy Rating: Adequately defined (A)</td><td>Performance Rating: Performing effectively (1)</td></tr>
<tr><td rowspan="2">1(c)</td><td rowspan="2">Non-asset options (e.g. demand management) are considered</td><td colspan="2">As WKPP assets were recently created, with a 20 year contract life, asset planning has focussed on establishing and maintaining operations in accordance with the PPA. The WA Operations Manager confirmed that considerations of efficiency of expansions and the full utilisation of existing assets are taken into consideration in the WKPP’s asset planning processes.</td></tr>
<tr><td>Adequacy Rating: Adequately defined (A)</td><td>Performance Rating: Performing effectively (1)</td></tr>
</table>

No	Effectiveness criteria	Findings	
1(d)	Lifecycle costs of owning and operating assets are assessed	The WKPP AMP addresses maintenance lifecycle needs over a ten year period. Section 4 of the AMP provides a general overview of the relevant power facilities, details the asset management strategies and highlights any known critical issues resulting in future anticipated costs relating to the assets during the period to 2016. Through discussion with the WKPP Management Accountant, we understand that project costs are justified by the EDL 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 WKPP Management Accountant and WA Operations Manager, we note that: • No further funding decisions were required during the period • The process for considering funding options (where relevant) has not changed since the 2008 audit.	
		Adequacy Rating: Adequately defined (A)	**Performance Rating:** Not rated
1(f)	Costs are justified and cost drivers identified	Through discussions with the WKPP Management Accountant and WA Operations Manager, we note that: • Information relating to the identification of cost drivers is found in the WKPP AMP, which details any known issues for all WKPP power facilities assets for the period to FY16 • Project costs are justified by the EDL Corporate Finance division, using NPV and carrying value analysis.	
		Adequacy Rating: Adequately defined (A)	**Performance Rating:** Performing effectively (1)
1(g)	Likelihood and consequences of asset failure are predicted	Through consideration of EDL's risk management practices as applied to WKPP assets and discussions with the WA Operations Manager, WKPP Facilities Manager and Mechanical Engineer, we observed that EDL has applied the following mechanisms for identifying consequences and likelihood of WKPP 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. • Use of Operations Safety Cases, which are designed to identify a broad range of operational risks using appropriate hazard identification techniques and risk assessment methodologies. Individual risk and consequence assessments, formal safety assessments and verification of such assessments have been conducted on EDL's Western Australia power facilities. Estimation of the likelihood of asset failure is conducted and a failure frequency database constructed. We sighted a number of safety case reports prepared for WKPP equipment, which include individual risk likelihood and consequence assessments in line with EDL's risk management practices.	
		Adequacy Rating: Adequately defined (A)	**Performance Rating:** Performing effectively (1)

No	Effectiveness criteria	Findings	
1(h)	Plans are regularly reviewed and updated	The WKPP AMP is scheduled to be reviewed yearly and completed by April. It is the responsibility of the WKPP Power Facilities Manager to arrange for updating and timely reviews of the AMP each year. The WKPP Supplier Facilities Plan is also scheduled to be updated annually and otherwise as required by the PPA. The WKPP Supplier Facilities Plan identifies the plant, equipment, metering, supply monitoring and control systems operating or to be installed or established at the Fuel Facilities and Power Facilities. The plan also identifies the monitoring and control systems that are necessary if there are planned additions or changes to the plant, equipment, systems and processes that will occur during the 5-year period of currency of the Supplier Facilities Plan that will or may influence the performance of the Power Facilities in accordance with the terms of the Agreement. EDL reviews forecast demand for electricity against generation capacity in consultation with Horizon Power. For the review period 1 August 2008 to 31 July 2011, no assets were commissioned or decommissioned.	
		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.

The WKPP Management Accountant and WA Operations Manager confirmed that during the period 1 August 2008 to 31 July 2011, EDL did not plan for, create or acquire any major generation assets.

No	Effectiveness Criteria	Findings	
2(a)	Full project evaluations are undertaken for new assets, including comparative assessment of non-asset solutions	Through discussion with the WKPP Management Accountant and consideration of the project evaluation processes performed by EDL in establishing a project, we observed that: • EDL complete a carrying value analysis through modelling by the corporate finance division • A detailed project evaluation is conducted • Independent engineers and industry experts may be contracted to assist in assessing capital costs and costing analyses • Request for tenders are released and evaluations conducted using relevant factors including performance • EDL will follow the above process in evaluating projects going forward. As EDL has not acquired, evaluated or planned for any new generation assets for the review period 1 August 2008 to 31 July 2011, 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 WKPP Management Accountant, we understand that in accordance with the project evaluation process as described above, EDL's project evaluation process provides for life cycle costs to be considered in evaluations through the incorporation of overhaul requirements (as specified by the manufacturer) of engines and all other plant. As EDL has not acquired, evaluated or planned for any new generation assets for the review period 1 August 2008 to 31 July 2011, the performance of this element of the Asset Management System cannot be rated.	
		Adequacy Rating: Adequately defined (A)	**Performance Rating:** Not rated
2(c)	Projects reflect sound engineering and business decisions	Through discussion with the WKPP Management Accountant, we determined that for new asset projects: • In-house (EDL) expertise is leveraged wherever possible and if there is additional value to be gained, external experts are engaged • 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 2008 to 31 July 2011, 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(d)</td><td rowspan="2">Commissioning tests are documented and completed</td><td colspan="2">Through discussion with the WKPP Management Accountant, we understand that:
Engineering procurement tests were conducted upon initial commissioning of the power stations and related facilities. For example:
Seven day tests were required by Horizon Power where EDL was required to run the WKPP plant for seven days with no failures
60 day tests were done at a later stage in the establishment of the WKPP
EPC (performance measures) tests were conducted on the performance of specific assets once installed.
As EDL has not acquired or commissioned any new generation assets for the review period 1 August 2008 to 31 July 2011, 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(e)</td><td rowspan="2">Ongoing legal/environmental/safety obligations of the asset owner are assigned and understood</td><td colspan="2">The WKPP PPA outlines the obligations of EDL as an asset owner, including ongoing legal, environmental and safety obligations. Through examination of EDL’s organisation chart, position descriptions and discussions with the Environmental Scientist, we determined that the 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 WKPP operations:
WA Operations Manager
WKPP Power Facilities Manager
Manager Shared Services
Environmental Scientist
Senior Health & Safety Advisor.
Examination of the WKPP Environmental Management Plan, EDL Occupational Health & Safety Manual, EDL Safety Management Plan and WKPP Hazard register indicates that EDL has identified and assigned responsibility for managing the legal, environmental and safety obligations relevant to the WKPP.</td></tr>
<tr><td>Adequacy Rating: Adequately defined (A)</td><td>Performance Rating: Performing effectively (1)</td></tr>
</table>

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.

The WKPP Management Accountant and WA Operations Manager confirmed that during the period 1 August 2008 to 31 July 2011, EDL did not dispose of any major WKPP generation asset.

<table>
<tr><th>No</th><th>Effectiveness Criteria</th><th colspan="2">Findings</th></tr>
<tr><td rowspan="2">3(a)</td><td rowspan="2">Underutilised and underperforming assets are identified as part of a regular systematic review process</td><td colspan="2">The WKPP AMP outlines:
Procedures and work methods for condition monitoring, inspection and testing of WKPP assets
EDL's plant maintenance strategies for the individual WKPP assets including information on frequency of tests, compliance with Australian Standards and statutory requirements and details of tests and monitoring to be conducted.
The WA Operations Manager confirmed that during the period 1 August 2008 to 31 July 2011, no WKPP assets were identified to be under-utilised or underperforming.</td></tr>
<tr><td>Adequacy Rating: Adequately defined (A)</td><td>Performance Rating: Performing effectively (1)</td></tr>
<tr><td rowspan="2">3(b)</td><td rowspan="2">The reasons for under-utilisation or poor performance are critically examined and corrective action or disposal undertaken</td><td colspan="2">The WKPP PPA outlines EDL’s obligations regarding the under-utilisation or poor performance of WKPP 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.
As EDL had not identified any WKPP asset to be under-utilised or underperforming during the period 1 August 2008 to 31 July 2011, 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	
3(c)	Disposal alternatives are evaluated	The WKPP Decommissioning Plan C (February 2007) 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. As EDL had not disposed of WKPP generation assets during the period 1 August 2008 to 31 July 2011, the performance of this element of the Asset Management System cannot be rated.	
		Adequacy Rating: Adequately defined (A)	**Performance Rating:** Not rated
3(d)	There is a replacement strategy for assets	The WKPP Spares Management Plan outlines the procedures and strategies to be followed to ensure that the required spares are available in the event of major failures as well as for preventative maintenance, to ensure minimum disruption to the WKPP Power Facilities.	
		Adequacy Rating: Adequately defined (A)	**Performance Rating:** Performing effectively (1)

4.4 Environmental analysis

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

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

<table>
<tr><th>No</th><th>Effectiveness Criteria</th><th colspan="2">Findings</th></tr>
<tr><td>4(a)</td><td>Opportunities and threats in the system environment are assessed</td><td colspan="2">Through discussion with the Environmental Scientist and examination of the WKPP Operations Environmental Management Plan (EMP), environmental compliance reports and other supporting documentation, we observed the following:
The EDL Occupational Health & Safety Manual outlines the procedures for undertaking Hazard IDs, Risk Assessments, Job Safety Analyses and Safe Work Instructions, within the established EDL corporate risk management process
WKPP’s environmental management processes provide for:
Impact assessments to be completed for each site (e.g. cultural heritage, buildings, land clearing permits)
Environmental approvals to be obtained from relevant authorities and maintained in manual form for each site
Monthly review of environmental checklists, which are tailored to each site
Environmental compliance audits, performed by environmental specialists (last performed by the Environmental Scientist)
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.
A WKPP Hazard register is maintained, containing identified environmental risks (e.g. diesel spillages and loss of containment of LNG)
Refresher courses have been presented to operators on environmental compliance requirements (evidenced via minutes of attendees and certificates of completion)
The WKPP EMP:
States the WKPP environmental policy
Outlines the environmental management processes required to minimise the potential impacts for all key operational activities for the WKPP under all likely conditions
Incorporates the established EDL corporate risk management framework and matrix
Is scheduled to be reviewed on an annual basis and is subject to continual modification.</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	
4(b)	Performance standards (availability of service, capacity, continuity, emergency response, etc) are measured and achieved	Through examination of the WKPP EMP and relevant performance reports prepared and discussion with the Environmental Scientist, we observed 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. Where applicable, the goals of ecological sustainable development have been incorporated into these objectives • The WKPP's performance standards such as availability of service, capacity, continuity and emergency response are measured • Environmental monitoring is performed and monthly emissions monitoring for each WKPP power station units is identified in Pronto Asset Management System. In relation to the Diesel Shelf Life issues referenced at item 2/08 of the 2008 AMS review report, diesel operational holding levels are now included in the WKPP Supply Interruption Contingency Plan, however the Plan does not address shelf life tracking and management. *Refer to Revised Action Plan 2/2008 at Section 5 of this report.*	
		Adequacy Rating: Requires some improvement (B)	**Performance Rating:** Performing effectively (1)
4(c)	Compliance with statutory and regulatory requirements	Through discussions with the Environmental Scientist and walkthrough testing of environmental compliance processes applied for the WKPP, we observed that: • Licence conditions are considered for each site's environmental compliance requirements and approved by the site operator, operations supervisor, operations manager and environmental group. Any issues deemed significant are escalated to the board for actioning • Environmental compliance audits have been performed to assess the level of compliance at WKPP power stations and associated facilities • Annual emissions testing reports are prepared for the Broome and Derby Power Stations • No incidents have been noted in the period 1 August 2008 to 31 July 2011 to indicate any non-compliance with environmental requirements (such as fuel spills, noise complaints, hazardous waste disposal) • The Environmental Scientist maintains a log of compliance issues identified throughout the year, including remedial action, planned and taken.	
		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.	
		Adequacy Rating: Adequately defined (A)	**Performance Rating:** Performing effectively (1)

4.5 Asset operations

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

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

No	Effectiveness Criteria	Findings	
5(a)	Operational policies and procedures are documented and linked to service levels required	Through discussion with the WA Operations Manager, WKPP Facilities Manager and Mechanical Engineer, examination of the WKPP AMP and consideration of WKPP asset operations and relevant documents, we observed that: • Operational policies, work instructions and operating protocols for the Broome, Halls Creek, Derby and Fitzroy Crossing and Looma power stations are documented. Where appropriate, unique work instructions and operating protocols are applied to each power station and their respective service level requirements, taking account of the specific setup and operation of the gas fuelled generator sets (relevant to all power stations except Looma) and diesel fuelled generator sets (relevant to all power stations, with Broome power station diesel engines setup in standby capacity only) • The WKPP AMP provides strategic level information on the operational requirements of WKPP assets • Operating protocol documents reference the required service levels with respect to reliability and availability.	
		Adequacy Rating: Adequately defined (A)	**Performance Rating:** Performing effectively (1)
5(b)	Risk management is applied to prioritise operations tasks	Through discussion with the WA Operations Manager, WKPP Facilities Manager and Mechanical Engineer, consideration of WKPP asset operations and examination of the WKPP AMP, we observed that: • EDL uses its established risk management practices (as described at "8. Risk Management" below) as the basis for driving actions associated with critical operational tasks • Each power station maintains a change request register and a non-conformance register. The items on the non-conformance register, which still had an "open" status at the time of the 2008 performance audit, have now been closed out.	
		Adequacy Rating: Adequately defined (A)	**Performance Rating:** Performing effectively (1)
5(c)	Assets are documented in an Asset Register including asset type, location, material, plans of components, an assessment of assets' physical/structural condition and accounting data	We observed that the Pronto Asset Maintenance Management module is used as the Asset Register for WKPP assets. Items of equipment are listed in the Pronto system database, including details of asset type, location and relevant operational and maintenance 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.	
		Adequacy Rating: Adequately defined (A)	**Performance Rating:** Performing effectively (1)

No	Effectiveness Criteria	Findings	
5(e)	Staff receive training commensurate with their responsibilities	We observed that a Site Personnel Training Matrix and Training Status report is 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. At the time of this review, the Site Personnel Training Status report included some overdue training courses, which are no longer considered necessary and are to be removed from the Training Matrix. Through discussion with the WA Operations Manager and Manager Shared Services, 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. For example, EDL's Technical Services Group based in Appin, NSW is recognised as having the expertise to apply the safe work instructions and embedded standard operating procedures relevant to the CAT ET engines, which are used throughout EDL's operations, including the WKPP.	
		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.

No	Effectiveness Criteria	Findings	
6(a)	Maintenance policies and procedures are documented and linked to service levels required	Through discussion with the WKPP Power Facilities Manager and Mechanical Engineer and examination of documented policies, procedures and protocols, we observed that EDL's WKPP asset maintenance: • Policies and procedures are documented, with reference to the service levels defined in the WKPP PPA • 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)
6(b)	Regular inspections are undertaken of asset performance and condition	We observed that Westrac was contracted to maintain WKPP power station equipment until 30 September 2008, after which EDL's Field Service & Operator Maintenance Crew took on the responsibility of equipment maintenance. We sighted evidence of routine servicing of generating units occurring at scheduled intervals and recorded in the maintenance system. We also sighted evidence of daily EGM checks performed by WKPP operations and evidence of regular oil checks performed by Oil Check Pty Ltd.	
		Adequacy Rating: Adequately defined (A)	**Performance Rating:** Performing effectively (1)
6(c)	Maintenance plans (emergency, corrective and preventative) are documented and completed on schedule	Through discussion with WKPP operational staff and examination of EDL's maintenance system, we observed that: • A detailed asset management plan is available for all power stations • A weekly work schedule captures all routine maintenance activities (such as spark plug replacement, normal tune-ups, oil change), which are linked to hours of operation for each unit • No major inspections/overhauls have been required to date. Evidence of routine engine service was reviewed.	
		Adequacy Rating: Adequately defined (A)	**Performance Rating:** Performing effectively (1)
6(d)	Failures are analysed and operational/maintenance plans adjusted where necessary	Through discussion with WKPP operational staff and walkthrough of WKPP operations and maintenance procedures, we observed that: • All maintenance work undertaken is recorded in the maintenance database • Failure reports demonstrated that analysis for the failure was undertaken and action plans were put in place to prevent re-occurrence in the future • Operational and maintenance plans were adjusted where necessary.	
		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 rowspan="3">6(e)</td><td rowspan="2">Risk management is applied to prioritise maintenance tasks</td><td colspan="2">Through walkthrough of WKPP operations and maintenance procedures and discussion with the WA Operations Manager, WKPP Facilities Manager and Mechanical Engineer, 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 maintenance priorities, based on the importance of the equipment and on the nature of the maintenance task to be performed.
However, Prioritisation of WKPP’s maintenance works within the Pronto system (and reported via PM Task Master) is currently performed by the relevant operator in consultation with the Plant Manager. The task prioritisation approach can be further enhanced by formally aligning with EDL’s risk assessment methodology.</td></tr>
<tr><td>Adequacy Rating: Requires some improvement (B)</td><td>Performance Rating: Opportunity for improvement (2)</td></tr>
<tr><td colspan="2">Recommendation 1/2011
Formally align the prioritisation of WKPP’s maintenance works with EDL’s risk assessment methodology.</td><td>Action Plan 1/2011
The quarterly exception report of maintenance tasks will be extended to include a risk assessment in line with EDL’s risk assessment methodology.
Responsible Person: Mechanical Engineer
Target Date: 31 March 2012</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 via Direct Operating Cost (DOC) reports 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.

No	Effectiveness Criteria	Findings	
7(a)	Adequate system documentation for users and IT operators	Through discussion with the IS Supervisor and consideration of EDL's Pronto support arrangement with an external vendor, 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 is in place to cover the services provided by the external vendor to EDL • A dedicated team within the IS team is available to support Pronto users.	
		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 discussion with the IT Supervisor and consideration of documentation, we determined that documentation and data entered onto the EDL network (including WKPP 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)
7(c)	Logical security access controls appears adequate, such as passwords	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 request must be approved by the employee's direct manager and the relevant system owner • Each authorised user is assigned with a unique individual user id and password • Password policy is enforced on Pronto and various other systems and the strength of the policy changes dependent upon the sensitivity of the data held within the system.	
		Adequacy Rating: Adequately defined (A)	**Performance Rating:** Performing effectively (1)
7(d)	Physical security access controls appear adequate	Through discussions with the IT Supervisor and consideration of EDL's IS policy, we observed that: • All servers are located in a server room located within EDL's head office in Brisbane • Physical access to the data centre is restricted to the IT team only and logged through the use of swipe cards • The server room has environmental controls such as temperature sensors and smoke detectors • The building which the server room is located is equipped with surveillance camera.	
		Adequacy Rating: Adequately defined (A)	**Performance Rating:** Performing effectively (1)

No	Effectiveness Criteria	Findings	

7(e)	Data backup procedures appear adequate	Through discussions with the 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
		• 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 1 year and the 6 monthly tapes are kept permanently.
		We noted that data restoration testing from the back-up tapes is performed every 3 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 WKPP Reporting Specification document details procedures to be followed in calculating and reporting on quality and reliability of supply performance as per requirements of the WKPP PPA. The document also contains procedures for operational reporting, which requires EDL management to set and monitor Key Performance Indicators that are in line with the annual business plan and targets set by the General Manager Operations. Those procedures rely on the collection of data from Remote Telemetry Units and Power Quality Meters and as recorded in EDL's SCX6 SCADA Historian system. EDL's PSMWeb corporate reporting system is used to interrogate and analyse that data, before performance reports are prepared for management and the Authority.	
		Adequacy Rating: Adequately defined (A)	**Performance Rating:** Performing effectively (1)
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 Operations Managers and State Operations Managers. 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.

Risk management processes applied to WKPP operations are guided by EDL's corporate risk management policy and framework

<table>
<tr><th>No</th><th>Effectiveness Criteria</th><th colspan="2">Findings</th></tr>
<tr><td>8(a)</td><td>Risk management policies and procedures exist and are being applied to minimise internal and external risks associated with the asset management system.</td><td colspan="2">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 WKPP 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.
We also observed evidence of risk management activities being applied to WKPP activities through:
• A number of safety case reports prepared for WKPP equipment where individual risk and consequence assessments, formal safety assessments and verification of such assessments have been conducted on WKPP's power facilities. The purpose of these assessments is to identify as broad a range of operational risks as possible using appropriate hazard identification techniques and risk assessment methodologies. Estimation of the likelihood of asset failure is conducted and a failure frequency database constructed
• A risk analysis of WKPP contingency planning activities, prepared by the WA Operations Manager and WKPP Power Facilities Manager. The risk analysis applied EDL's corporate risk management methodology and was formally recorded in a risk register, which includes 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. Refer to *9(a)* below for details of the opportunity for EDL to further strengthen this risk analysis through the contribution of other key EDL staff, to the identification and analysis of risks
• The use of a hazard report and register for each WKPP site, which in conjunction with Safety Cases also inform the development of risk treatment plans
• The use of risk management techniques in the prioritisation of operational and maintenance tasks. Refer to *6(e)* above for details of the opportunity for EDL to further enhance its maintenance task prioritisation by formally aligning with EDL's risk assessment methodology.</td></tr>
<tr><td></td><td></td><td>Adequacy Rating: Requires some improvement (B)</td><td>Performance Rating: Opportunity for improvement (2)</td></tr>
</table>

<table>
<tr><th>No</th><th>Effectiveness Criteria</th><th colspan="2">Findings</th></tr>
<tr><td rowspan="2">8(b)</td><td rowspan="2">Risks are documented in a risk register and treatment plans are actioned and monitored</td><td colspan="2">Through discussions with the WA Operations Manager, WKPP Power Facilities Manager and Environmental Scientist and examination of available documentation, we observed that:
A hazard report is maintained for each WKPP site. The report acts as a risk register by listing and assessing risks based on the corporate risk rating matrix
Treatment plans are developed based on hazard reports, safety cases and the risk analysis of WKPP contingency planning activities
Critical control protocols are maintained and critical performance standards developed
Risks and risk treatment plans are regularly monitored and revisited.</td></tr>
<tr><td>Adequacy Rating: Adequately defined (A)</td><td>Performance Rating: Performing effectively (1)</td></tr>
<tr><td rowspan="2">8(c)</td><td rowspan="2">The probability and consequences of asset failure are regularly assessed.</td><td colspan="2">Through consideration of EDL’s risk management practices as applied to WKPP assets and discussions with the WA Operations Manager, we observed that EDL has applied the following mechanisms for identifying consequences and likelihood of WKPP 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:
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
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.
Use of Operations Safety Cases, which are designed to identify a broad range of operational risks using appropriate hazard identification techniques and risk assessment methodologies. Individual risk and consequence assessments, formal safety assessments and verification of such assessments have been conducted on WKPP’s power facilities. Estimation of the likelihood of asset failure is conducted and a failure frequency database constructed.
We also sighted a number of safety case reports prepared for WKPP equipment.</td></tr>
<tr><td>Adequacy Rating: Adequately defined (A)</td><td>Performance Rating: Performing effectively (1)</td></tr>
</table>

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.

<table>
<tr><th>No</th><th>Effectiveness Criteria</th><th colspan="2">Findings</th></tr>
<tr><td>9(a)</td><td>Contingency plans are documented, understood and tested to confirm their operability and to cover higher risks.</td><td colspan="2">In addition to guidance provided through the WKPP AMP, EDL’s contingency planning strategies for the WKPP are captured in the following two key documents:
WKPP LNG Supply Interruption Contingency Plan (last revised December 2009). 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
WKPP Emergency Response Plan (last revised May 2011). 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 discussion with the WA Operations Manager, we understand that:
The three staff members with intimate knowledge of these plans are the WA Operations Manager, WKPP Power Facilities Manager and Manager – Technical. Each of these people have the ability to promptly respond to incidents which trigger the execution of the relevant plan and to initiate required action
Staff are trained to understand and apply those elements of the plans that relate to their roles (we sighted the WKPP training matrix, which evidences training on emergency response roles)
Horizon Power was and will remain closely involved in the review and implementation of EDL’s contingency planning activities.
We also observed that:
The WKPP Emergency Response Plan was activated during the cyclonic activity and flooding that occurred during the 2010/2011 summer period
The WKPP LNG Supply Interruption Contingency Plan and WKPP Emergency Response Plan have been subject to testing, the most recent being in 2011
Engine and LNG storage redundancies are built into power station operations
EDL has identified additional contingencies for its WKPP operations. For example, N+2 generation capacity, spares vulnerability, maintenance contracts, service contracts (alternative supplier listings)
In March 2011, the WA Operations Manager and WKPP Facilities Manager undertook a risk analysis of the WKPP contingency planning activities. The risk analysis applied EDL’s corporate risk management methodology and was formally recorded in a risk register, which includes 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.
<u>Opportunity for improvement</u>
The WKPP contingency planning risk analysis appears to address the significant risks to the effectiveness of WKPP contingency plans, however there are further opportunities for other key EDL staff, such as the Manager – Technical to contribute to the identification and analysis of risks to the availability and operation of communications and control systems (for example, loss of the main control room or SCADA room).</td></tr>
<tr><td></td><td></td><td>Adequacy Rating: Adequately defined (A)</td><td>Performance Rating: Opportunity for improvement (2)</td></tr>
</table>

	Recommendation 2/2011 EDL 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.	**Action Plan 2/2011** 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. **Responsible Person:** WA Operations Manager **Target Date:** 29 February 2012

4.10 Financial planning

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

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

No	Effectiveness Criteria	Findings	
10(a)	The financial plan states the financial objectives and strategies and actions to achieve the objectives	Through discussions with the WKPP Management Accountant and consideration of EDL's financial planning mechanisms as applied to WKPP operations, we observed that: • The WKPP 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 before April each year • A review of the WKPP financial plan can also be triggered at the request of senior management.	
		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 WKPP Management Accountant 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 • Recurrent costs is identified through the annual budget process. As described at 1(e) in the 2008 AMS review report, EDL applied a detailed process to secure initial funding for the WKPP.	
		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 WKPP Management Accountant and consideration of EDL's financial planning mechanisms, we observed that: • A forecast of demand and generation requirements and financial budget for the WKPP is developed on an annual basis (reviewed and updated by April each year) • Horizon Power provides five year forecasts of monthly demand in June/July each year. Although specific balance sheets are not prepared at a project level, financial projections relevant to the WKPP consider the project's long term financial viability.	
		Adequacy Rating: Adequately defined (A)	**Performance Rating:** Performing effectively (1)
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 WKPP Management Accountant and consideration of EDL's financial planning mechanisms, we understand that those mechanisms provide five year predictions and 20 year projections of demand and generation requirements. Those predictions and projections are provided by Horizon Power and considered by EDL on an annual basis and are used to calculate indicative predictions of income. 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)

No	Effectiveness Criteria	Findings	
10(e)	The financial plan provides for the operations and maintenance, administration and capital expenditure requirements of the services	Through discussions with the WKPP Management Accountant and consideration of the WKPP's financial planning and monitoring mechanisms, we observed that those mechanisms accommodate the annual operating and capital expenditure requirements of the project, particularly the workforce, maintenance, day-to-day operational requirements and capital expenditure plans.	
		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 WKPP Management Accountant, consideration of EDL's financial reporting mechanisms and examination of DOC reports, we observed that the mechanisms applied to the WKPP 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 to discuss issues arising, potential issues that may arise in coming months, potential cost increases, and the justification of such and potential cost savings / cost saving strategies.	
		Adequacy Rating: Adequately defined (A)	**Performance Rating:** Performing effectively (1)

4.11 Capital expenditure planning

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

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

No	Effectiveness Criteria	Findings	
11(a)	There is a capital expenditure plan that covers issues to be addressed, actions proposed, responsibilities and dates	Through discussions with the WA Operations Manager and WKPP Management Accountant and consideration of EDL's capital budgeting mechanisms relevant to WKPP operations, we observed that in line with the provisions of the WKPP PPA, current procedures provide for capital expenditure requirements (including expansion plans) to be included within WKPP's annual financial plans, including details of specific actions planned. We note that during the review period, the project's power stations were not subject to expansion plans.	
		Adequacy Rating: Adequately documented (A)	**Performance Rating:** Performing effectively (1)
11(b)	The plan provides reasons for capital expenditure and timing of expenditure	Through discussions with the WKPP Management Accountant and consideration of EDL's capital budgeting mechanisms, we observed that those mechanisms provide for: • Capital expenditure requirements to be based on the budgeting process and forecasts of maximum contract demand (MCD) • Expansions to be planned and implemented if forecast MCD reaches pre-defined trigger points • Justification of capital expenditure is obtained through net present value analysis and in conjunction with Horizon Power's requirements.	
		Adequacy Rating: Adequately documented (A)	**Performance Rating:** Performing effectively (1)
11(c)	The capital expenditure plan is consistent with the asset life and condition identified in the asset management plan	As described at 1(d) above, the WKPP AMP addresses asset management strategies and maintenance lifecycle needs. Through discussions with the WKPP Management Accountant, we understand that the carrying value model prepared through EDL's Corporate Finance division includes asset life and condition data.	
		Adequacy Rating: Adequately documented (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 WKPP Management Accountant 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 three year forecast and budget, both of which are updated on an annual basis • On a monthly basis and in accordance with EDL's asset capitalisation policy, capitalised items and relevant works in progress costs are reviewed against the relevant Authority for expenditure details.	
		Adequacy Rating: Adequately documented (A)	**Performance Rating:** Performing effectively (1)

4.12 Review of Asset Management System

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

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

No	Effectiveness Criteria	Findings	
12(a)	A review process is in place to ensure that the asset management plan and the asset management system described therein are kept current	The WKPP AMP is scheduled to be reviewed on an annual basis, for completion in April. The WKPP Power Facilities Manager is responsible for arranging timely reviews of the AMP each year. The current version of the WKPP AMP was issued in February 2011. Section 1.5 "Timeframe" of the Plan states that: • "The Asset Management Plan covers a period of 6 years" • "The Asset Management Plan is to be considered a live document to be revised annually and issued prior to the end of April for inclusion in EDL business planning processes".	
		Adequacy Rating: Adequately documented (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 has previously undertaken internal audits on WKPP Power Generation activities, including an emphasis on contractual and regulatory compliance. 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. The WA Operations Manager advised that an internal audit has not been performed on WKPP Power Generation activities during 2011. 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. The February 2011 version of the AMP was reviewed by the Engineering Manager and Mechanical Engineer, who are both based in Brisbane • 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. In future, EDL may choose to formalise this element of the independent review process.	
		Adequacy Rating: Requires some improvement (B)	**Performance Rating:** Performing effectively (1)

5 Follow-up of previous review action plans

Rec. No	Ref	Recommendation	Previous Review Action Plan	Status	Revised action plan (if applicable)
1/08	4(a)	The WKPP Environmental Management Plan be further enhanced to align policies and actions for identified hazards and risks with EDL's corporate risk matrices.	In the next review of the WKPP Environmental Management Plan, consideration will be given to explicitly incorporating EDL's corporate risk management process and related matrices. **Responsible Person:** OH&S/Training Manager **Target Date:** 31 December 2009	***Complete*** EDL has conducted a comprehensive review of the WKPP Remote Power Stations Environmental Management Plan and provides an explicit incorporation of EDLs corporate risk management process and related matrices as well as a review and update of all information contained in the document.	N/A
2/08	4(b)	Ensure that Diesel Shelf Life issues at Broome, Derby, Fitzroy Crossing and Halls Creek are formally resolved.	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. **Responsible Person:** WKPP Power Facilities Manager **Target Date:** 31 July 2009	***In progress*** The WKPP LNG Supply Interruption Contingency Plan does reference diesel holding levels at each site, however does not address shelf life tracking and management. The EDL memorandum outlining diesel operational holding levels for each site, which was issued on 16 June 2008 has not yet been formally appended to the WKPP LNG Supply Interruption Contingency Plan (Rev 5). The Plan is next due for revision in December 2011.	**Revised Action Plan 2/2008** (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. **Responsible Person:** WKPP Power Facilities Manager **Target Date:** 29 February 2012

Rec. No	Ref	Recommendation	Previous Review Action Plan	Status	Revised action plan (if applicable)
3/08	4(c)	Ensure staff are adequately trained to accurately complete environmental compliance checklists and demonstrate an effective remedial response to identified issues.	Refresher training will be provided to WKPP staff on the environmental awareness module (available on EDL's intranet), which includes the completion of compliance checklists. **Responsible Person:** WKPP Power Facilities Manager **Target Date:** 30 April 2009	***Complete*** Refresher training has been provided to WKPP staff on the environmental awareness module (available on EDL's intranet), which includes the completion of compliance checklists.	N/A
4/08	5(b)	Determine risk levels for those items listed in the Non-Conformance register and close out within reasonable timeframes.	Risk levels for the remaining items listed in the Non-Conformance register will be determined and timeframes assigned for their close out. **Responsible Person:** WKPP Power Facilities Manager **Target Date:** 30 April 2009	***Complete*** All non-conformances have been closed out.	N/A
5/08	5(e)	Training provided to site personnel be kept more up-to-date and appropriate for personnel function and level.	Company wide training requirements, including expiry timeframes were re-assessed in December 2008. WKPP is in the process of appointing a professional training service provider to manage WKPP personnel training requirements. **Responsible Person:** WKPP Operations Manager **Target Date:** 31 March 2009	***Complete*** Training program is in place and the training status matrices are up-to-date.	N/A

Rec. No	Ref	Recommendation	Previous Review Action Plan	Status	Revised action plan (if applicable)
6/08		Incorporate existing contingency planning strategies and practices (in the event of unexpected and unrecoverable power station asset failure) into the WKPP Asset Management Plan. These strategies and practices should include a mechanism for ensuring contingency plans are reviewed and tested.	The WKPP Asset Management Plan will be revised to incorporate the contingency planning strategies and practices already established and in operation. Provision will be made for the review and testing of contingency plans. **Responsible Person:** WKPP Operations Manager **Target Date:** 30 June 2009	***Complete*** EDL has incorporated contingency planning strategies that are documented, reviewed and are maintained in EDLs document control system, including ERP, AMP and LNG Supply Interruption Contingency Plan (LNGSICP) • The ERP applies to all sites and is reviewed annually • The AMP is a live document and is the blue print for all assets. The document assists decision making around the repair, modification, relocation or replacement of assets. • EDL procures annual insurance audits to maintain comprehensive insurance cover • All documents are held in EDLs document management system and in the offices of the WA Operations Manager and WKPP Power Facilities Manager.	N/A

Appendix A – Review plan

Appendix B – References

EDL staff participating in the review

- WA Operations Manager
- West Kimberly Power Project Facilities Manager
- Environmental Scientist
- Manager Engineering
- Manager - Technical
- Mechanical Engineer
- WA Management Accountant
- Information Systems Supervisor.

Deloitte staff participating in the review

Name	Position	Hours
Richard Thomas	Partner	4.5
Andrew Baldwin	Account Director	71.5
Jin Sua	Senior Analyst – IT	24
Michael Genever	Analyst	29.5
Emlyn King	Analyst	15
Matt Thomson	Partner - QA Review	2
Don Gillespie	QA	1

KT & Sai staff participating in the review

Name	Position	Hours
Tanuja Sanders	Principal Engineer & Director	47
Keith Sanders	Principal Engineer & Director	2

Key documents and other information sources examined

- WKPP Asset Management Plan
- WKPP Supplier Facilities Plan
- WKPP Decommissioning Plan C (February 2007)
- WKPP Safety Management Plan
- WKPP LNG Supply Interruption Contingency Plan
- Risk analysis - WKPP LNG Supply Interruption Contingency Plan
- Pipeline Licence Safety Cases
- Site monthly environmental compliance checks
- Site DOC reports
- Emissions testing reports
- 2011 internal environmental compliance audit Broome, Looma and Derby
- WKPP Remote Power Stations Environmental Management Plan (August 2011)
- Safe Work Instruction - Black Start Looma Power Station
- Derby and Broome First Step reports
- Training Status report
- WKPP Training Skills Matrix
- WKPP Root Cause Analysis and Second Step report (Derby and Broome)
- Critical Backlog report template
- Detailed Incident Investigation – Proactive Load Shed 24 December 2010
- 2011 gas composition Certificate of Analysis
- Broome Power Station Black Incident report

- PPA reporting specification
- Standing order Gas Analyser Critical Alarms Broome Power Station
- Summary of Broome outages
- Broome site visit notes – LNG Supply Interruption Contingency Plan
- Minutes of meeting – WK Power Facilities Health & Safety Committee
- Example Pronto Reorder Report
- Screen shot of routine maintenance activities linked to hours of operation
- Example of routine check records
- Example PM task master
- Example of weekly work schedule
- Various correspondence between EDL and the Authority.

Appendix C – Post Review Implementation Plan

2011 audit

Issue 1/2011

Asset Maintenance: 6(e) Risk management is applied to prioritise maintenance tasks

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

Prioritisation of WKPP's maintenance works within the Pronto system (and reported via PM Task Master) is currently performed by the relevant operator in consultation with the Plant Manager. The task prioritisation approach can be further enhanced by formally aligning with EDL's risk assessment methodology.

Recommendation 1/2011	Action Plan 1/2011
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. **Responsible Person:** Mechanical Engineer **Target Date:** 31 March 2012

Issue 2/2011

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

In March 2011, the WA Operations Manager and WKPP Facilities Manager undertook a risk analysis of the WKPP contingency planning activities. The risk analysis applied EDL's corporate risk management methodology and was formally recorded in a risk register, which includes 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.

The risk analysis appears to address the significant risks to the effectiveness of WKPP contingency plans, however there are further opportunities for other key EDL staff, such as the Manager – Technical to contribute to the identification and analysis of risks to the availability and operation of communications and control systems (for example, loss of the main control room or SCADA room).

Recommendation 2/2011	Action Plan 2/2011
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.	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. **Responsible Person:** WA Operations Manager **Target Date:** 29 February 2012

2008 audit

Issue 2/2008

Environmental analysis: 4(b) Performance standards (availability of service, capacity, continuity, emergency response, etc) are measured and achieved.

The 08/09 financial year Budget Summary and Assumptions Report for Broome, Derby, Fitzroy Crossing and Halls Creek indicated Diesel Shelf Life issues required resolution. The WA Operations Manager confirmed that agreement on diesel operational holding levels has since been reached with Horizon Power, however that agreement has not yet been formalised through the PPA or WKPP LNG Supply Interruption Contingency Plan.

Original Action Plan 2/2008	Revised Action Plan 2/2008
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. **Responsible Person:** WKPP Power Facilities Manager **Target Date:** 31 July 2009	(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. **Responsible Person:** WKPP Power Facilities Manager **Target Date:** 29 February 2012