McGill Engineering Services Pty Ltd

Engineering, Adjudication & Arbitration Services ABN 45 106 691 169

Asset Management System Review Report
GDL6
Esperance Power Station Pty Ltd

Prepared By Kevan McGill
Date 13 September 2007

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Mr John Ovenden
General Manager
Worley Parsons Asset Management
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Dear John

Asset Management System Review Gas Distribution Licence GDL6

The fieldwork on the asset management system review of Gas Distribution Licence GDL6 for the period to 31 August 2007 is complete and I am pleased to submit the report to you

In my opinion, the licensee maintained, in all material aspects, effective control procedures in relation to the Distribution Licence (GDL6) for the period to 31 August 2007 based on the relevant clauses referred to within the scope section of this report. The systems are appropriate for a system of this size and complexity.

Yours sincerely

Kevan McGill
Director

13 September 2007

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Executive Summary

Background

Under the *Energy Coordination Act 1994* (the Act) section 11Y, the licensee must develop and maintain an asset management system to manage the significant asset base for ongoing service delivery to its customers. The Act requires a review of the asset management system every two years (or other time approved by the Economic Regulation Authority - *Authority).*

The *Authority* has prepared a set of guidelines[1] for reviewing the effectiveness of asset management for water, electricity and gas business licences. These have been applied in this review.

This review covers the period up to 31 August 2007 and was conducted by McGill Engineering Services Pty Ltd. It was undertaken during August and September 2007 with the final review to be submitted to the Authority by 30 November 2007.

Overall conclusion

In my opinion, the licensee maintained, in all material aspects, effective control procedures in relation to the Distribution Licence (GDL6) for the period to 31 August 2007 based on the relevant clauses referred to within the scope section of this report. The systems are appropriate for a system of this size and complexity.

Findings

The conclusions of each of the elements of the licence are summarised in the following table. The audit risk as determined for each licence condition is also shown.

Asset management process	Review risk assessment	Rating	
Asset planning	2	Well defined	3
Asset creation/ acquisition	2	Well defined	3
Asset disposal	4	Well defined	3
Environmental analysis	4	Well defined	3
Asset operations	2	Quantitatively controlled	4
Asset maintenance	2	Quantitatively controlled	4
Asset Management Information System	2	Quantitatively controlled	4
Risk management	4	Well defined	3
Contingency planning	4	Planned and tracked	2
Financial planning	4	Well defined	3
Capital expenditure planning	4	Planned and tracked	2
Review of AMS	4	Planned and tracked	2

[1] Audit Guidelines: Electricity, Gas and Water Licences, September 2006

Ratings

The Authority guidelines require the asset management review report will provide a table that summarises the auditor's assessment of the effectiveness ratings for each key process in the licensee's asset management system using the 6-point scale described below.

Asset management review effectiveness rating scale

Effectiveness	Rating	Description
Continuously improving	5	Continuously improving organisation capability and process effectiveness
Quantitatively controlled	4	Measurable performance goals established and monitored
Well-defined	3	Standard processes documented, performed and coordinated
Planned and tracked	2	Performance is planned, supervised, verified and tracked
Performed informally	1	Base practices are performed
Not performed	0	Not performed (indicate if not applicable)

The overall effectiveness rating for each licence condition is based on an assessment of the effectiveness of the licensee's existing control procedures to manage its assets.

The following table is a summary of the review findings.

Asset management effectiveness summary

ASSET MANAGEMENT SYSTEM	Not performed	Performed informally	Planned and tracked	Well defined	Quantitatively controlled	Continuously improving
Process Effectiveness rating	0	1	2	3	4	5
Asset planning				☑		
Asset creation/ acquisition				☑		
Asset disposal				☑		
Environmental analysis				☑		
Asset operations					☑	
Asset maintenance					☑	
Asset Management Information System					☑	
Risk management				☑		
Contingency planning			☑			
Financial planning				☑		
Capital expenditure planning			☑			
Review of AMS			☑			

Audit priority

The *Authority* guideline for asset management system reviews sets out a rating for audit priority based on inherent risk and existing controls. The following priorities were

determined in accordance with the guidelines and audit plan and accepted by the licensee.

Item	Discussion
Asset Planning	Asset planning strategies are focused on meeting customer needs in the most effective and efficient manner (delivering the right service at the right price). The probability that an investment of this size is low and as a quality assured company the likelihood of not planning is unlikely but the consequence would affect the whole network so the consequences are major.
Asset Creation acquisition	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. The probability that an investment of this size is low and as a quality assured company the likelihood of not procuring correctly is unlikely but the consequence would affect the whole network so the consequences are major.
Asset disposal	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. The network is new so the areas of the network that would be considered for disposal will be limited in area/time giving a moderate consequence. It is possible that there could be disposal action for redundant areas so the likelihood is possible.
Environmental analysis	Environmental analysis examines the asset system environment and assesses all external factors affecting the asset system. Environmental matters are likely to be localised and not affect the network as a whole so the consequences are moderate. As a quality assured company the likelihood of not undertaking environmental is unlikely
Asset operations	Operations functions relate to the day-to-day running of assets and directly affect service levels and costs and accordingly affect the whole network giving major consequences. Giving the immediate consequences of not operating a gas system correctly it is unlikely that operations would be incorrect, giving unlikely as the risk dimension.
Asset maintenance	Maintenance functions relate to the upkeep of assets and directly affect service levels and costs. Failure to maintain could affect the network as a whole giving major consequences. Maintenance of an underground gas system is low and it is possible that it could be neglected.
Asset management information system	An asset management information system is a combination of processes, data and software that support the asset management functions. An asset management information system would affect the whole network giving major consequences and IT systems are known to fail giving possible as the likelihood as the risk dimension.
Risk management	Risk management involves the identification of risks and their management within an acceptable level of risk. Risk management is essential for distribution of gas as it is a significant investment that has commercial risks as a discretional item and has safety risks. It is possible that such events could occur but would be localised giving moderate consequences. As a quality assured company the likelihood of not undertaking risk management is unlikely.
Contingency planning	Contingency plans document the steps to deal with the unexpected failure of an asset. Given the risk discussion above contingency planning is essential. It is possible that such events could occur but would be localised giving

	moderate consequences and possible as likelihood risk dimensions.
Financial panning	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. As a quality assured company the likelihood of not undertaking financial planning is unlikely. Any shortfalls is planning would be localised giving moderate consequences.
Capital Expenditure planning	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. The system is new, meaning that major capital investments in extending the small use network will be remote in time. Projects for connecting major customers will be evaluated as part of the connection costs. Any impact would be localised giving moderate consequences. As a quality assured company the likelihood of not undertaking capital expenditure planning is unlikely.
Review of AMS	The asset management system is regularly reviewed and updated. As a quality assured company the likelihood of not undertaking capital expenditure planning is unlikely. Any impact would be localised giving a moderate consequence.

This gives the review priorities being as follows.

Item	Licence obligation	Consequence	Likelihood	Inherent Risk	Controls risk requirement	Review priority	Rating
1	Asset planning	Major	Unlikely	High	Strong	2	
2	Asset creation/ acquisition	Major	Unlikely	High	Strong	2	
3	Asset disposal	Moderate	Possible	Medium	Moderate	4	
4	Environmental analysis	Moderate	Unlikely	Medium	Moderate	4	
5	Asset operations	Major	Unlikely	High	Strong	2	
6	Asset maintenance	Major	Possible	High	Strong	2	
7	Asset Management Information System	Major	Possible	High	Strong	2	
8	Risk management	Moderate	Unlikely	Medium	Moderate	4	
9	Contingency planning	Moderate	Possible	Medium	Moderate	4	
10	Financial planning	Moderate	Unlikely	Medium	Moderate	4	
11	Capital expenditure planning	Moderate	Unlikely	Medium	Moderate	4	
12	Review of AMS	Moderate	Unlikely	Medium	Moderate	4	

Use of Audit Processes and Practices

Accepted audit processes and practices have been used to complete the review. These include the sampling techniques associated with process reviews such as interviews to define accountability, observations, document sighting and testing of users.

The review has addressed four key elements of successful delivery of asset management to allow the assessment of the effectiveness of the asset management system. These elements are:

- Process – the existence of a suitable process for activities
- Documentation – the existence of a document defining a process
- Availability/accessibility/understanding – the process is understood, available to those required to use it and accessible to them
- Use- confirmation the process is used consistently

The audit priorities are set out above and the audit activities are as in the table below.

The review was conducted by McGill Engineering Services Pty Ltd during August and September 2007 with the final audit report to be submitted to the Authority by 30 November 2007.

Recommendations

1. While the asset management system is small it should be periodically reviewed. The licensee should put in place a scheduled review of the AMS.

Post Review implementation plan

Item	Action	Responsible	When
1	The licensee should put in place a scheduled review of the AMS.	General Manager	March 2008

Objectives

Under the *Energy Coordination Act 1994* (the Act) section 11Y, the licensee must develop and maintain an asset management system to manage the significant asset base for ongoing service delivery to its customers. The Act requires a review of the asset management system every two years (or other time approved by the Economic Regulation Authority - *Authority).*

An asset management system is to set out the measures to be taken by the licensee for the proper maintenance of assets used in the supply of gas and in the operation and maintenance of, and, where relevant, the construction or alteration of, the distribution system.

Review Results and Recommendations

Asset Planning	Effectiveness rating Well defined - 3
1. Asset planning Asset planning strategies are focused on meeting customer needs in the most effective and efficient manner (delivering the right service at the right price).	

Observations							
Process	☑	Documentation	☑	Availability	☑	Use	NO[2]
The licensee has good documentation of its asset management system. The process used for the implementation of the system was sound.							
Issues							
The distribution system is in place and distribution mains are not currently being extended, so there is no planning taking place to form an opinion about complying with the documented processes. The Licensee's distribution system has been designed and planned to maximise the number of small use customer connections within a pre-defined boundary of the Licence Area. Whilst there was some minor localised planning for relatively short gas main extensions to some customers, the Licensee has no broader planning at this point in time due to the static nature of the network. Further planning will be dictated by economics/funding for system augmentation or after high customer penetration has been achieved in the current reticulated area. Customers are being connected and these are subject to case by case analysis. The existing system is well planned using appropriate materials such as PE piping and distribution pressures of 200 kPa. The piping is sized to allow maximum flows and maintain pressure within allowances.							
Rating							
The system is well defined - rating 3							

Asset Creation	Effectiveness rating Well defined - 3
Asset creation and acquisition 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.	
Observations	
Process ☑ Documentation ☑ Availability ☑ Use NO	
The licensee has good documentation of its asset management system. The process used for the implementation of the system was sound. The network is well planned using appropriate materials such as PE piping and distribution pressures of 200 kPa. The piping is sized to allow maximum flows and maintain pressure within allowances and also to accommodate for any future gas system expansion.	
Issues	
The distribution system is in place and distribution mains are not currently being extended, so there is no asset creation taking place to form an opinion about complying with the documented processes. The documented asset creation processes are required for projects over $50,000. Customers are being connected and these are subject to case by case analysis.	
Rating	
The system is well defined - rating 3	

[2] No opinion able to be formed

Asset Disposal	Effectiveness rating Well defined - 3

3. Asset disposal

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.

Observations

Process	☑	Documentation	☑	Availability	☑	Use	NO

The licensee has good documentation of its asset management system. As the system is new there is no items that are obsolete or under performing required disposal.

Issues

The system is new, so there is no asset disposal taking place to form an opinion about complying with the documented processes.

Rating

The system is well defined - rating 3

Environmental analysis	Effectiveness rating Well defined - 3

4. Environmental analysis

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

Observations

Process	☑	Documentation	☑	Availability	☑	Use	NO

The licensee has good documentation of its environmental analysis process. As there is no activity there is no environmental analysis currently occurring.

Issues

The system is static with no activities requiring environmental analysis taking place to form an opinion about complying with the documented processes.

Rating

The system is well defined - rating 3

Asset operations	Effectiveness rating Quantitatively controlled - 4

5. Asset operations

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

Observations

Process	☑	Documentation	☑	Availability	☑	Use	☑

The licensee has good documentation of its asset operation system. The operations are contracted to a major competent organisation (Alinta) with good controls over performance.

System pressure and flows are constantly monitored and are kept in acceptable ranges.

Gas quality and odorant levels are monitored regularly. Leakage surveys are carried out periodically.
Issues
The process is currently operating effectively but is under resourcing stresses which is typical for this industry today.
Rating
The system is Quantitatively controlled - rating 4

Asset Maintenance							Effectiveness rating Quantitatively controlled - 4
6. Asset maintenance Maintenance functions relate to the upkeep of assets and directly affect service levels and costs.							
Observations							
Process	☑	Documentation	☑	Availability	☑	Use	☑
The licensee has good documentation of its asset maintenance system. Maintenance of the system is contracted to a major competent organisation (Alinta) with good controls over performance. The documentation sets out maintenance philosophy which ranges from continuously monitored with predictive and preventative maintenance for critical items to periodic maintained for lower risk and operate to failure for lowest risk/consequences.							
Issues							
The system is new with low maintenance needs on the distribution system and higher maintenance needs on the Kalgoorlie –Esperance pipeline which are being maintained in accordance with the policy.							
Rating							
The system is Quantitatively controlled - rating 4							

Asset Management Information System							Effectiveness rating Quantitatively controlled - 4
7. Asset Management Information System (MIS) An asset management information system is a combination of processes, data and software that support the asset management functions.							
Observations							
Process	☑	Documentation	☑	Availability	☑	Use	☑
The licensee uses a spreadsheet for his asset register and uses a geographical information system (GIS) to display the network assets. The spreadsheet and GIS are linked to transfer data so that there are no transcription errors.							
Issues							
The system has been developed to an adequate level of sophistication appropriate for a network of this scale and complexity.							

Rating
The system is Quantitatively controlled - rating 4

Risk management	Effectiveness rating well defined - rating 3

8. Risk management

Risk management involves the identification of risks and their management within an acceptable level of risk.

Observations

Process	☑	Documentation	☑	Availability	☑	Use	NO

The licensee has good documentation of its risk management plan. As there is no activity there is no risk management analysis currently occurring.

Issues

The system is static with no activities requiring environmental analysis taking place to form an opinion about complying with the documented processes.

Rating

The system is well defined - rating 3

Contingency planning	Effectiveness rating Planned and tracked - rating 2

9. Contingency planning

Contingency plans document the steps to deal with the unexpected failure of an asset.

Observations

Process	☑	Documentation	☑	Availability	☑	Use	☒

The risk management plan identifies the types of risk the system faces but with such a new system there is no explicit contingency plan.

Issues

The licensee has such a small system relative to the resources of the owner and there is no risk identified that requires contingency planning hence no contingency plan.

Rating

The system is planned and tracked - rating 2

Financial planning	Effectiveness rating well defined - rating 3

10. Financial planning

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.

Observations

Process	☑	Documentation	☑	Availability	☑	Use	☒

The system documentation makes provision for a financial management plan. The financial management of the system is appropriate but there is not an explicit financial

management plan.
Issues
The system is small and not complex and is well managed financially so the need for a financial management plan is not high.
Rating
The system is well defined - rating 3

Capital expenditure planning	Effectiveness rating Planned and tracked - rating 2

11. Capital expenditure planning

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.

Observations

Process	☑	Documentation	☑	Availability	☑	Use	☒

The system documentation makes provision for a capital expenditure plan as a commercial development plan.

Issues

The licensee has such a small system relative to the resources of the owner and there is no likely development until the utilization of the system is higher, hence the need for a capital expenditure plan is currently low.

Rating

The system is planned and tracked - rating 2

Review of AMS	Effectiveness rating Planned and tracked - rating 2

12. Review of AMS

The asset management system is regularly reviewed and updated.

Observations

Process	☑	Documentation	☑	Availability	☑	Use	☒

The AMS is simple straightforward but there are no explicit reviews planned.

Issues

The licensee has such a small system and the AMS is appropriate for system but should be periodically reviewed.

Recommendation

While the asset management system is small it should be periodically reviewed. The licensee should put in place a scheduled review of the AMS.

Rating
The system is planned and tracked - rating 2

Audit Evidence

The following evidence was gathered for the audits and asset management system review.

1. Legislation and standards
   - *Energy Coordination Act 1994*
   - *Gas Standards Act 1972*
   - *Gas Standards (Gas Supply and System Safety) Regulations 2000*
   - *AG 755 1998 Natural Gas Customer Service Code*
   - Auditing and Assurance handbook
   - Gas Distribution Licence 6
   - Gas Trading Licence 6

2. Licensee's documents
   - Balance sheets and financial indicators
   - Gas quality samples
   - Prospective customers package
   - Asset management system
   - Asset management philosophy and strategy
   - Asset management maintenance plan
   - Asset management operating plan
   - Risk management plan
   - Emergency response plan
   - Environmental management plan
   - Gas modelling spreadsheet
   - Customer safety awareness program
   - Customer service charter
   - Standard form contract
   - Complaints handling system
   - Certificate of insurance currency
   - Authority matrix Esperance
   - Esperance project compliance register
   - Samples of marketing information - sighted
   - Notices of completion file – sighted

- Asset register and geographic display – sighted
- Websites – Esperance–energy.com and WorleyParsons share point – viewed.

Audit Time

The audits and asset management review were undertaken by Kevan McGill and took approximately 130 hours aggregate for the 3 reviews.