



AUDIT REPORT



Asset Management Systems Review for Gas Distribution Licence GDL 3: Great Southern Supply Area for ALINTA GAS NETWORKS



Date	18 June 2007
Revision	0 FINAL REPORT
Document No	41202-REP-003



- **Services to the Pipeline Industry**

- Consulting
- Engineering and Design
- Project Management
- Operations Support
- Training

- www.osd.net.au

- Level 2
450 St Kilda Road
MELBOURNE VIC 3004

- +61 (0) 3 9866 7900 tel
+61 (0) 3 9866 7901 fax

- OSD Offices:

- **Brisbane**
- **Calgary**
- **Melbourne**
- **Perth**

- OSD Energy Services
ABN 57 058 047 046

- OSD Asset Services
ABN 66 117 904 024

- PIPEd
ABN 82 117 496 741



**ALINTA GAS NETWORKS
ASSET MANAGEMENT SYSTEMS
GDL 3 AUDIT REPORT**


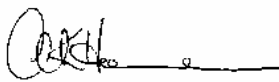
© OSD Asset Management Pty Ltd, 2007

Limitations Statement

This report has been prepared in accordance with the scope of services set out in the contract between OSD and the Client. That scope of services was defined by the requests of the Client, by the time and budgetary constraints imposed by the Client, and by the availability of access to the site.

In preparing this report, OSD has relied upon and presumed accurate certain information (or absence thereof) relative to the site provided by the Client and others identified herein. Except as otherwise noted OSD has not attempted to verify the accuracy or completeness of any such information.

This report has been prepared on behalf of and for the exclusive use of the Client, and is subject to and issued in connection with the provisions of the agreement between OSD and the Client. OSD accepts no liability or responsibility whatsoever for or in respect of any use of or reliance upon this report by any third party.

Revision	Status	Prepared by	Checked by	Date
A	For Review by Client	Barry Parsons	Jodi Hayes	17 April 2007
B	Final Draft	Barry Parsons	Jodi Hayes	26 April 2007
0	Final Report	Barry Parsons	Keith Horstmann	18 June 2007
Signatures:				



CONTENTS

1	EXECUTIVE SUMMARY	3
2	INTRODUCTION.....	7
3	AUDIT REPORT MANDATE	9
4	AUDIT REQUIREMENTS	9
5	AUDIT OBJECTIVES	10
6	METHODOLOGY	10
6.1	Audit Personnel	11
6.2	Audit/Field Review	11
6.2.1	Audit Priority Rating	12
6.3	Report	13
7	PREVIOUS AUDIT	13
8	AGN SAFETY CASE	13
9	SUMMARY OF AUDIT FINDINGS.....	13
9.1	Assess Compliance With Licence Conditions And Requirements;	15
9.1.1	Relationship of Asset Management System to Alinta Business Processes	15
9.1.2	AGN Accountabilities and Responsibilities	16
9.1.3	Performance Analysis	17
9.2	Assess Effectiveness And Implementation Of Business Strategies And Plans For Proper Operation, Maintenance, Construction And Alteration Of Assets.....	22
9.3	Provide An Overall Ranking Of the Compliance Against Reviewed / Audited Items.....	23
9.4	Provide An Overall Ranking Compliance Against Reviewed / Audited Items	25
9.5	Detail Action Items Or Recommendations For Improvement Of The Asset Management System	29
9.6	Post Audit Implementation Plan.....	31
9.6.1	Post Audit Activities	31

APPENDICES – See attached Document: 41202-REP-003A Rev0

1 EXECUTIVE SUMMARY

Alinta Gas Networks Pty Ltd (AGN) has a gas distribution licence to construct, alter, operate and maintain and to transport gas through a distribution system within the licence area specified in Gas Distribution Licence No 3. OSD Asset Services (OSD) carried out a review of the asset management systems in the GDL 3 licensed area, known formally as the Great Southern Supply Area (GDL 3 supply area) during March and April 2007. The Albany gas network is the only gas distribution network supplying LPG to customers within the AGN gas distribution business in Western Australia (WA). Alinta Asset Management (AAM) is the prime contractor for the maintenance and operation of AGN assets in WA.

The asset management system was reviewed using the approved OSD Audit Plan, (OSD Document No: 41202-AP-001 Rev 4 dated 2 March 2007), based on the Economic Regulation Authority's Audit Guidelines: Electricity, Gas and Water Licences.

The OSD Lead Auditor spent a full day in Albany on 22 March 2007. Two AAM staff accompanied the Lead Auditor and were interviewed during the visit. Various network assets including the LPG Storage Facility were inspected during the visit.

All relevant documentation requested was made available to the Lead Auditor. Specific attention was paid to the recent external and internal audits carried out on the LPG Storage Facility, as this is classified as a major hazard facility given its location within Albany's industrial area.

The asset management system operated by AGN in the GDL 3 supply area, and in particular, Albany has now been in place since 2002.

However, since the last asset management systems review in January 2005, Alinta has acquired the AGL business units including Agility that is in the process of being systematically merged with AGN and other Alinta business units elsewhere in Australia. Notwithstanding this activity, the Lead Auditor has focused on the asset management systems currently operating in WA. Many facets of the asset management system are being reviewed across the Alinta businesses so that eventually a common and consistent approach will be applied across Australia.

No actions were outstanding from the previous asset management system review carried out by MC² Pacific P/L in January 2005. (Note: MC² Pacific P/L review team did not visit Albany in January 2005).

Overall, OSD considers that the asset management system in the GDL 3 supply area is being applied in a reasonably effective manner with only a small number of issues that require action as noted in the summary below and in Section 9.4.

The Effectiveness Rating applied for each process for the GDL 3 supply area is shown in the chart below. Refer to Appendix 1 for detailed audit findings by OSD.

ASSET MANAGEMENT SYSTEM		Not performed	Performed informally	Planned and tracked	Well defined	Quantitatively controlled	Continuously improving
		GDL3: Great Southern Supply Area					
Process	Effectiveness rating	0	1	2	3	4	5
Asset Planning						X	
Asset Creation/Acquisition						X	
Asset Disposal					X		
Environmental Analysis					X		
Asset Operations						X	
Asset Maintenance					X		
Asset Management Information Systems							X
Risk Management						X	
Contingency Planning					X		
Financial Planning							X
Capital Expenditure Planning							X
Review of Asset Management System						X	

The basis of the assessed effectiveness ratings for each process is discussed in Section 9.3.

Summary of Issues and Recommendations

Key Process	Issue	Recommendation
<p>#1</p> <p>Asset Planning</p>	<p>OSD noted that AAM has not stated in the previous or latest edition of AGN's Asset Management Plan (AMP) any proposal to consider replacement of the metallic pipes in the Albany gas network. The leakage survey reports viewed during the audit do not reveal any significant problems with these pipes despite their age (> 60 years). AAM staff have advised OSD that it has a responsibility to spend capital prudently. Given that the survey reports do not reveal any significant problems, it would be difficult for AGN to economically justify replacement of the metallic pipes at present. However, AGN is cognisant of the age of the pipes and will closely monitor leakage survey reports and will undertake to replace the metallic pipes, when it is prudent to do so</p>	<p>Recommendation GDL3-1:</p> <p>AGN should continue to monitor the condition of the existing galvanised iron and steel mains in the Albany gas distribution network and closely examine the leakage survey results with a view to replacing the pipes should the results become unacceptable with recognised industry performance/safety standards</p>
<p>#5</p> <p>Asset Operations</p>	<p>An AAM audit was undertaken in December 2006 on the upgrade and remedial works resulting from the independent audit in July 2005. It has been noted that a further independent audit of the upgrade and remedial works at the LPG storage facility has not been completed to date. There was a recommendation in the independent consultant's report that a follow-up be carried out 12 months after the initial audit</p>	<p>Recommendation GDL3-2:</p> <p>AGN should arrange for an independent follow-up audit of the LPG Storage Facility in Albany. This was previously recommended in the 2005 MHF audit report</p>

Key Process	Issue	Recommendation
<p>#6</p> <p>Asset Maintenance</p>	<p>In general, most of the sites were in reasonably good condition, although corrosion on the pipework was visible at several sites. The maintenance inspection records for 3 of the 6 sites were reviewed. Corrosion was stated as an action on two of the reports, but no action has been taken to date</p> <p>A number of post-mounted warning signs were found to be in a damaged state and a number of signs were no longer legible, following prolonged exposure to ultra-violet light</p> <p>Given the importance of these warning signs as the first line of defence against unauthorized third-party works, it is essential that the warning signs are maintained in good condition</p>	<p>Recommendation GDL3-3:</p> <p>AGN shall ensure that corrosion on pipework is properly addressed during scheduled maintenance work on all network assets</p> <p>Recommendation GDL3-4:</p> <p>AGN shall ensure that warning signage (post-mounted or otherwise) is legible at all times – many signs have been damaged and also many have faded from ultra-violet exposure</p>
<p>#9</p> <p>Contingency Planning</p>	<p>No emergency exercises had been conducted on the gas distribution network during the review period, particularly in the areas with high concentrations of people such as the CBD in Albany</p>	<p>Recommendation GDL3-5:</p> <p>AGN should initiate discussions with Energy Safety Division to ascertain an acceptable frequency for emergency exercises in Albany</p>

2 INTRODUCTION

OSD carried out a review of the asset management system in AGN's **GDL 3 licensed area (GDL 3 supply area)**, known formally as the **Great Southern Supply Area** during March and April 2007.

The gas network in Albany is the only gas distribution network in this licensed area and supplies LPG only to approximately 5,800 industrial, commercial and domestic customers.

The Albany area is supplied via an LPG storage facility and regulator set operating at a nominal pressure of 8 kPa. The LPG storage facility has six active and two stand-by, 45 KL LPG storage tanks.

The LPG storage facility is supplied by road tankers.

The gas distribution network consists of approximately 147 km of mains of predominantly PVC construction (89%) ranging from 40 mm to 200 mm diameter. There are, however, some galvanised iron (11.2%), polyethylene (0.15%) and steel (0.1%) mains operated at this pressure.

The gas distribution network was previously converted from TLPG to LPG in 1998.

GDL 3 is one of three licensed supply areas within AGN's gas distribution business in Western Australia (WA). The remaining licensed supply areas are GDL 1: Goldfields – Esperance Supply Area and GDL 2: Coastal Supply Area.

OSD has produced separate audit reports for the asset management systems in these two licensed areas.

The review covered the 24 month period ending 31 January 2007 and followed the processes outlined in Appendices 1, 2 and 3 of *Audit Guidelines: Electricity, Gas and Water Licences*, Economic Regulation Authority (the Authority), WA.

The asset management system was reviewed using the approved OSD Audit Plan, (OSD Document No: 41202-AP-001 Rev 4 dated 2 March 2007), based on the Economic Regulation Authority's *Audit Guidelines: Electricity, Gas and Water Licences*.

The review also complied with the following standards:

- Risk evaluation model set out in AS/NZS 4360:2004
- AUS 402 – Risk Assessment and Internal Controls

- ❑ AUS 502 – Audit Evidence
- ❑ AUS 806 – Performance Auditing
- ❑ AUS 808 – Planning Performance Audits
- ❑ AUS 810 – Special Purpose Reports on the Effectiveness of Control Procedures

The asset management system operated by AGN in the GDL 3 supply area, and in particular, Albany has now been in place since 2002.

However, since the last review in January 2005, Alinta has acquired the AGL business units including Agility that is in the process of being systematically merged with the AGN and other Alinta business units elsewhere in Australia. Notwithstanding this activity, the Lead Auditor has focused on the asset management systems currently operating in WA. Many facets of the asset management system are being reviewed across the Alinta businesses so that eventually a common and consistent approach will be applied across Australia.

It should also be noted that the Alinta Network Services (ANS)/ National Power Services (NPS) WA Alliance Agreement expired on 31 March 2006, and a combined Alinta Asset Management (AAM) group was established effective 1 April 2006.

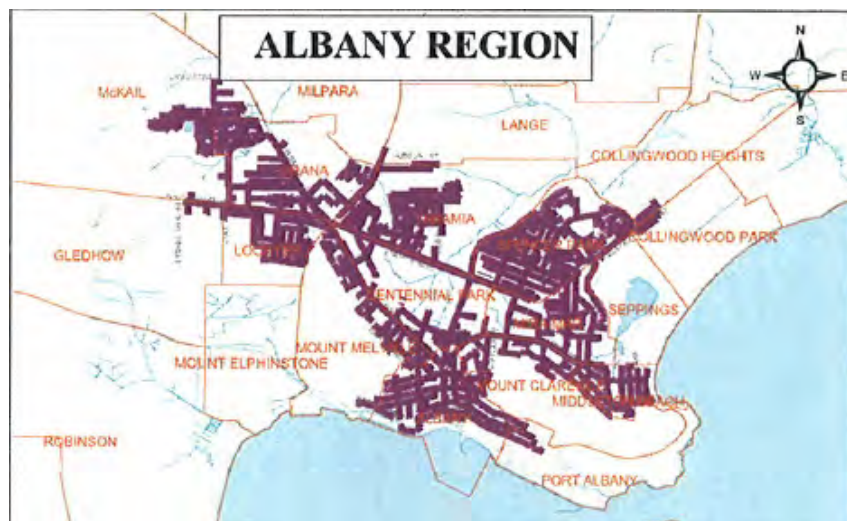


Figure 2.1: Extent of Albany gas distribution network

3 AUDIT REPORT MANDATE

Specific activities within AGN are subject to gas distribution licences under the Energy Conservation Act 1994 (WA), (the Act).

Section 11Y of the Act states that:

“it is a condition of every distribution licence that the licensee provides an asset management system”.

A condition of the licence is that the licensee must provide the Authority with a **report** on the **effectiveness** of the asset management system not less than once in every 24 month period, prepared by an independent expert.

The Authority has approved OSD as an independent expert to carry out the review of the AGN asset management system and provide the effectiveness report.

The review has been undertaken in accordance with the Authority's *Audit Guidelines: Electricity, Gas and Water Licences*.

The Act, the Audit Guidelines and the Gas Distribution Licences provide the mandate for this Audit Report.

4 AUDIT REQUIREMENTS

The purpose of the asset management system review/audit was to assess the measures taken by the licensee for the proper management of assets used in the provision and operation of services and, where appropriate, the construction and alteration of relevant assets.

In accordance with the Authority's Audit Guidelines, the asset management system review/audit focused on the asset management system, including asset management plans, which set out the measures that are taken by the licensee for the proper operation and maintenance of the assets.

The plans are required to convey the licensee's business strategies to ensure the effective management of assets over at least a five year period.

The Audit Guidelines stipulate that the primary purpose of the review/audit is to assess the effectiveness of measures taken by the licensee to ensure compliance with licence conditions or effectively manage its assets respectively.

The Authority requires all audits to utilise a risk based approach to planning and conducting the audit/review. In accordance with AS/NZS 4360:2004, there

should be more extensive audit testing of higher risk areas to provide sufficient assurance of compliance or effective control.

The scope of the review/audit is detailed in Section 7 of the OSD Audit Plan.

5 AUDIT OBJECTIVES

The objectives of the audit were to:

- Assess compliance with licence conditions and requirements
- Assess effectiveness and implementation of business strategies and plans for proper operation, maintenance, construction and alteration of the assets
- Provide an overall ranking of the compliance against reviewed/audited items
- Detail action items or recommendations for improvement of the asset management system

6 METHODOLOGY

OSD prepared an Audit Plan, (OSD Document No: 41202-AP-001 Rev 4 dated 2 March 2007), based, based on the Authority's Audit Guidelines: Electricity, Gas and Water Licences.

The Audit process comprised the following aspects:

- Approval of Audit Plan by AGN
- Approval of Audit Plan by the Authority
- OSD conducting audit/field reviews, including a review of documentation and systems, a review of legislative documentation and interviews with relevant personnel from AGN's business
- Preparation of the Audit Report, incorporating an agreed post-audit implementation plan
- Approval of the Audit Report and post-audit implementation plan by Authority; and
- Implementation or actioning of Audit Report action items or non-compliances

A meeting was undertaken with the Authority and Energy Safety WA on 28 February 2007 in conjunction with an AGN representative to discuss the Audit Plan and to ensure that the Audit Plan meets the requirements of the Authority.

The Authority approved the Audit Plan on 6 March 2007.

The audit review field work was undertaken as follows:

- Perth, WA on 6-9 March and 23 March
- Melbourne, VIC on 15 & 16 March
- Jandakot, WA on 19 & 20 March and 23 March
- Albany WA on 22 March

6.1 AUDIT PERSONNEL

The Audit was conducted by the following OSD personnel:

- Barry Parsons – Lead Auditor (full time)
- Jodi Hayes – Assistant Auditor (part time)
- Keith Horstmann – Project Director (part time/overview only)

6.2 AUDIT/FIELD REVIEW

OSD carried out a review of the asset management systems in the GDL 3 supply area, known formally as the Great Southern Supply Area during March and April 2007.

The OSD Lead Auditor spent a full day in Albany on 22 March 2007. Two AAM staff accompanied the Lead Auditor and were interviewed during the visit. Various network assets including the LPG Storage Facility were inspected during the visit.

All relevant documentation requested was made available to the Lead Auditor. Specific attention was paid to the recent external and internal audits carried out on the LPG Storage Facility, as this is classified as a major hazard facility given its location within Albany's industrial area.

OSD also sourced and reviewed relevant documentation relating the GDL 3 supply area from AGN offices in Perth and Jandakot in WA and Melbourne in Victoria.

The asset management system was reviewed using the Protocol outlines in Section 3 of the Audit Plan which is based on the criteria outlined in Table 12, Appendix 3 (A Guide to the AMS Effectiveness Framework), Audit Guidelines, Electricity, Gas and Water Licences, Economic Regulation Authority, WA.

The audit incorporated a review of documentation and systems, a review of legislative documentation and interviews with relevant personnel from the AGN business, in the various locations stated above.

The audit also included a review of the previous audit action plan to verify that actions have been completed; considered actions that are not yet complete and these actions have been incorporated into the current audit review action plan where required.

6.2.1 Audit Priority Rating

The review/audit priority rating detailed below has been determined based on the management system risk of each key process combined with the deficiencies identified in the previous audit conducted in January 2005.

Key Process	Inherent Risk	Adequacy of Previous Controls (based on previous audit action items)	2007 Audit Priority
Asset Planning	Medium	Strong	4
Asset creation and acquisition	Medium	Moderate	3
Asset disposal	Low	Strong	4
Environmental analysis	Medium	Moderate	3
Asset operations	High	Moderate	2
Asset maintenance	High	Moderate	2
Asset management information system	Medium	Strong	4
Risk management	High	Weak	1
Contingency planning	High	Strong	4
Financial planning	Low	Strong	4
Capital expenditure planning	Low	Strong	4
Review of AMS	Low	Strong	4

6.3 REPORT

Following completion of the field review, OSD discussed the findings with AGN and prepared this Report and a Post Audit Implementation Plan based on our discussions with AGN.

7 PREVIOUS AUDIT

The previous asset management system audit undertaken in January 2005 produced an Implementation Plan detailing corrective actions in respect of the asset management system processes reviewed by the previous auditor(s).

The Implementation Plan and the corrective actions required and the status of the actions as of the time of the 2007 review were assessed by the OSD Lead Auditor.

For the GDL 3 supply area, no specific actions were outstanding from the previous asset management system review carried out by MC² Pacific P/L in January 2005. (Note: MC² Pacific P/L review team did not visit Albany in January 2005).

However, a number of generic actions were prepared for action by AGN. The status of these actions is discussed in the GDL 2, Coastal Supply Area report.

8 AGN SAFETY CASE

The Safety Case for the AGN asset management system, as required by the Gas Standards (Gas Supply and System Safety) Regulations 2000, has yet to be approved by the Director of Energy Safety.

As agreed with the Authority and the Director of Energy Safety, this review has not considered the Safety Case in respect of the asset management system. A draft version of the Safety Case currently awaiting approval from the Director of Energy Safety was reviewed by the Lead Auditor for information purposes only.

However, the asset management system has been reviewed in terms of compliance with the recognised codes and standards stated in Schedule 2 of the Gas Standards (Gas Supply and System Safety) Regulations 2000.

9 SUMMARY OF AUDIT FINDINGS

As stated in Section 5 above, the objectives of the audit were to:

- Assess compliance with licence conditions and requirements

- ❑ Assess effectiveness and implementation of business strategies and plans for proper operation, maintenance, construction and alteration of the assets
- ❑ Provide an overall ranking of the compliance against reviewed/audited items
- ❑ Detail action items or recommendations for improvement of the asset management system

In terms of determining whether AGN met the audit objectives, it was necessary for OSD to determine whether the AGN asset management system was effective in itself.

AUS 806, *"Performance Auditing"*, defines effectiveness as the achievement of objectives or other intended effects of activities.

In most cases, intended outcomes are usually measured by Key Performance Indicators (KPIs) that are documented in various business plans.

From this perspective, OSD has focused on the outcomes intended by AGN in their asset management strategies, plans and procedures, and specifically on the KPIs established by AGN for, and the outcomes achieved at certain times throughout the review period.

OSD has also reviewed several plans that have been prepared by AAM for 2007 and beyond in terms of KPI's

OSD's assessment of AGN's compliance and effectiveness in respect of the objectives is as follows.

9.1 ASSESS COMPLIANCE WITH LICENCE CONDITIONS AND REQUIREMENTS;

9.1.1 Relationship of Asset Management System to Alinta Business Processes

A specific requirement in the Licence is that:

“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 or provision of gas and where relevant, the construction, operation and disposal of these assets.”

AGN has a formal strategy document entitled “Asset Management System” AAM-S-09001 that provides the framework for AGN to deliver the required obligations to AGN under the operating services agreement between the two parties and to satisfy the licence requirements.

AGN has stated that the primary focus of the asset management system strategy is to provide a safe, reliable and cost effective delivery of natural gas to the energy consumers of Western Australia.

This document was originally approved by the Coordinator of Energy in May 2002. AGN has recently revised this document in January 2007.

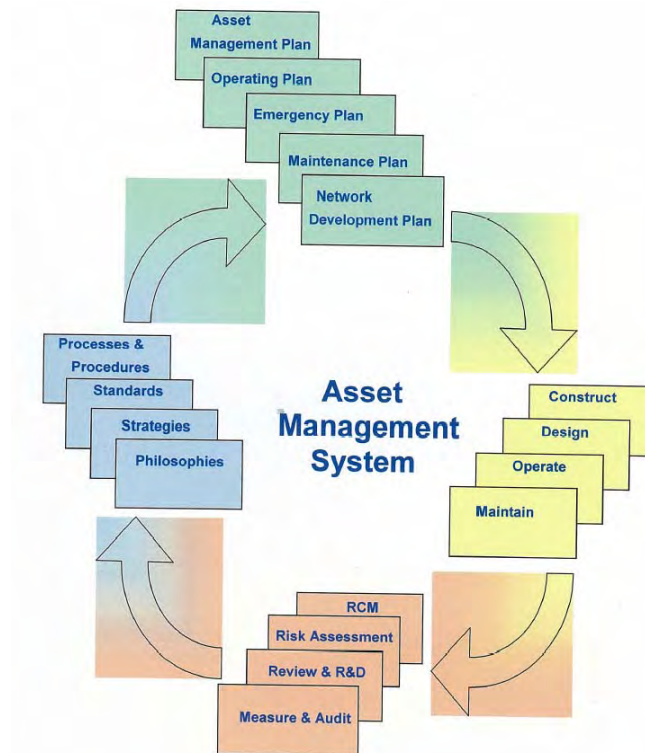
AGN has developed a holistic approach to asset management that is described by a system that integrates the key business elements in the network asset life cycle, and the critical mass support required at different levels of the organisation to implement this system.

The full life-cycle cost of asset purchase, operation, maintenance and disposal is taken into account in asset investment decision making.

The asset management system employed by AGN encompasses all elements required to achieve a complete approach to asset management.

Accordingly the key business elements need to be identified independently of the current business processes.

Based on a complete examination of the asset life cycle the key business elements that facilitate the asset management system are shown in the chart below.



AGN Asset Management System Improvement Cycle

9.1.2 AGN Accountabilities and Responsibilities

AAM is responsible for maximising the return on investment for assets in AGN's gas distribution network while:

- Ensuring a high level of service, security and reliability of supply to gas consumers
- Minimising the financial, safety and environmental risks associated with managing these assets
- Meeting all legal and regulatory requirements

The effectiveness of the asset management system in achieving these requirements is determined from the Key Performance Indicators (KPIs) shown in the table below.

The AAM teams have the ultimate responsibility for the implementation, monitoring and evaluation of the asset management system. The job functions within AAM that are responsible for the management of various aspects of AGN's Asset Management System are shown in the following table:

Job Functions	Responsibility
General Manager Asset Services	Overall Responsibility for Asset Services
General Operations Manager	Overall Responsibility for Operations
Manager Management Gas Asset	Strategic, Opex, Capex and Asset Management Plans
Manager Compliance Technical	Manage statutory and regulatory Technical compliance requirement of operating the network.
Asset Manager AGN WA	Asset management and performance. Network planning and integrity. Asset Management, Network Development and Maintenance Plans
Manager Gas Distribution West	Management of the Maintenance, Construction and Field Activities. Ensure emergency preparedness and response system of the network
Principal Engineer – Engineering Services	Project Management Plan. Construction and Facility Design
Safety & Risk Engineer	Safety Case, QA system, DMS system, Safety Case system audits
GNIS Coordinator	Asset Register in GNIS
Field Auditor	QA and Safety Case Systems Audit

9.1.3 Performance Analysis

AGN annually review the improvement in the development of the gas distribution networks as well as the outcomes from the scheduled and unscheduled asset maintenance activities.

The results of these reviews are documented in the following documents:

- “High Pressure Gas Distribution” and “Medium Pressure Gas Distribution” Network Development Plans, which have details of the system enhancements carried in the preceding and previous year(s)
- “Review of Distribution System Performance”, which evaluate the effectiveness of the enhancement program implemented in the preceding year
- “Distribution Network Asset Management Maintenance Plan”, which has detailed maintenance activities and new maintenance strategies from the previous year’s plan.

AGN also evaluates and makes comparisons of actual performance on an annual basis against performance targets for each indicator, which are listed in the table below. If necessary, a more in depth review of the background information is conducted to achieve overall performance improvements in these indicators.

From the review of these indicators and related background information new improvement initiatives are developed which cover areas such as:

- Improved work procedures
- New construction as well as maintenance and operation techniques
- New materials/designs or improved technologies to be used in the network

The tools/triggers utilised for identifying possible improvements in the design or materials for network assets or for established operational activities include:

- Fault analysis in the RCM analysis
- Review of technical specifications and design guidelines
- Feedback from field personnel
- Annual review of quality systems (work procedures etc.)

Performance Indicators for the Asset Management System

Performance Indicator	Parameter	Target	Data Recorded (where/who)	Monitoring (frequency / how)
Design and Planning				
No. of "Low-Pressure Alarm" Instances	Total No.	<10/year	Control Room	Weekly Network Operations Bulletin
No. of "Operating Outside Expected Range" Instances	Total No.	<20/year	Control Room	Weekly Network Operations Bulletin
Commissioning				
HP Pipeline	Complete Manufactures Data Report	< 7 Days of completion	Contracts & Resource Management	Monthly Report
Maintenance Pipelines / Laterals				
Instances of Damage to HP Pipelines	Total km of Main per Instance of Damage per Year	>100 km per Instance per Year	SAP/R3 - PM Module Asset Management	A - Maintenance Plan
Instances of Damage to MP/LP Pipelines	Total km of Main per Instance of Damage per Year	>30 km per Instance per Year	SAP/R3 - PM Module Asset Management	A - Maintenance Plan
Instances of Damage to Warning Signs	Total Instances per Year	<100 Instances per Year	SAP/R3 - PM Module Asset Management	A - Maintenance Plan
Defects (Leaks) per km of main	Total km of Main per Instance of Defect per Year	>5 km per Instance per Year	SAP/R3 - PM Module Asset Management	A - Maintenance Plan
No. of Test Points with potential higher (worse) than -0.85V	No. of Test Points per Total No. of Test Points per Year	<5% per Year	SAP/R3 - PM Module Asset Management	A - Maintenance Plan
Maintenance Regulator Sets				
No. of HP Regulator Set Failures	No of Failures per 100 HP Regulator Sets per Year	<2 Failures per 100 HP Regulator Sets per Year	SAP/R3 - PM Module Asset Management	A - Maintenance Plan

Performance Indicator	Parameter	Target	Data Recorded (where/who)	Monitoring (frequency / how)
No. of MP Regulator Set Failures	No of Failures per 100 MP Regulator Sets per Year	<5 Failures per 100 MP Regulator Sets per Year	SAP/R3 - PM Module Asset Management	A - Maintenance Plan
Maintenance Pressure Reducing Stations				
No. of PRS Failures	No of Failures per 100 PRS' per Year	<2 Failures per 100 PRS' per Year	SAP/R3 - PM Module Asset Management	A - Maintenance Plan
Maintenance Isolation Valves				
No of Valves not operational	No. of Valves per Total No. of Valves per Year	<1% per Year	SAP/R3 - PM Module Asset Management	A - Maintenance Plan
Maintenance Industrial/Commercial Meter Sets (AL30 and above)				
No of Meter Set Failures	No of Failures per 100 Meter Sets per year	<2 Failures per 100 Meter Sets per year	SAP/R3 - PM Module Asset Management	A - Maintenance Plan
No of Meter found Operating Outside Prescribed Accuracy	No of Meter found Operating Outside Prescribed Accuracy per 100 Meter Sets per Year	<5% per Year	SAP/R3 - PM Module Asset Management	A - Maintenance Plan

Maintenance Domestic/Small Commercial Meter Sets (AL12 and below)				
No. of Defects per Total No. of Domestic Meter Installations	No. of Defects per 100 Domestic Meter Installations per Year	<2 Defects per 100 Domestic Meter Installations per Year	SAP/R3 - PM Module Asset Management	A - Maintenance Plan
No. of Defects per Total No. of Small Commercial Meter Installations	No. of Defects per 100 Small Commercial Meter Installations per Year	<8 Defects per 100 Small Commercial Meter Installations per Year	SAP/R3 - PM Module Asset Management	A - Maintenance Plan



**ALINTA GAS NETWORKS
ASSET MANAGEMENT SYSTEMS
GDL 3 AUDIT REPORT**

No. of Instances of Damage per Total No. of Meter Installations	No of Instances of Damage per 100 Meter Installations per Year	<1 Instance of Damage per 100 Meter Installations per Year	SAP/R3 - PM Module Asset Management	A - Maintenance Plan
No. of Meter Population failing Statistical Sampling	No of populations	All population pass	Outcome Report Asset Management	A – Statistical Sampling
Operations Major Events and Incidents				
No. of Broken Mains	Total No.	2.5 per 1000km of Main	Control Room	Weekly Network Operations Bulletin
No. of Broken Services	Total No.	0.25 per 1000 Delivery Points	Control Room	Weekly Network Operations Bulletin
Operations System Performance				
Unaccounted For Gas (UAFG)	% of Total GJ	Coastal Network 2.6%	Network Monitoring	A – UAFG Report
Minutes per customer lost due to unplanned supply interruptions	<u>CMOS</u> Avg. No. of customers	0.66 mins/cust/year	Control Room	Weekly Network Operations Bulletin
Supply interruptions per 1000 customers	$\frac{\text{No incidents}}{1000} /$ Avg. No. of customers	6 / 1000 customers	Control Room	Weekly Network Operations Bulletin
Decommissioning				
Demolitions	% completed and “made safe” (within 7 working days)	100%	SAP/R3 – PM Module Field Services	M-Networks Report
Auditing				
No. of audits and non-conformances	Total No of Audits conducted per Month and no. of non-conformances	As per Annual Internal Quality Audit Plan	Quality Assurance Section	M – Technical Compliance
Customer Service Standards				
Customer Connection Time	% of Services Connected to established LOM within 7 days	95%	SAP R/3 Field Services Section	F - Branch Meetings M - Networks Report A - Annual Report

Attendance to Broken Mains and Services	% of Faults attended to within 1 Hour	95%	SAP R/3 Field Services Section	M - Networks Report
Attendance to Gas Smells in a Public Area	% attended to within 2 Hours	95%	SAP R/3 Field Services Section	M - Networks Report
Attendance to Gas Smells at Meter – Standard Response	% attended to within 48 Hours	95%	SAP R/3 Field Services Section	M - Networks Report
Attendance to Gas Smells at Meter – Urgent Response Urgent Response is set at the discretion of the Faults Call Centre Operator.	% attended to within Specified Time	95%	SAP R/3 Field Services Section	M - Networks Report
Attendance to No Gas (Commercial)	% attended to within 2 Hours	95%	SAP R/3 Field Services Section	M - Networks Report
Attendance to No Gas (Domestic)	% attended to within 3 Hours	95%	SAP R/3 Field Services Section	M - Networks Report

The requirements in relation to performing maintenance activities within the pre-requisite time frames and to the specified standards are set to maximise resource utilisation within AAM and to an agreed two weeks window prior to the activity requiring to start.

In summary, OSD considers that AGN's asset management system of its gas distribution networks in Albany demonstrates compliance with the conditions and requirements as stated in the GDL 3 supply area licence.

This is discussed in further detail under the Audit Findings for each process.

9.2 ASSESS EFFECTIVENESS AND IMPLEMENTATION OF BUSINESS STRATEGIES AND PLANS FOR PROPER OPERATION, MAINTENANCE, CONSTRUCTION AND ALTERATION OF ASSETS

The implementation of business strategies and plans is documented in the Alinta Network Holdings "Strategic Plan 2006-2010" issued in November 2005. This document is still in "draft" form, and still awaits formal approval from the Alinta Board.

As noted in the excerpt from the Preface to the Strategic Plan below, this Plan is underpinned by the Asset Management Plan that is reviewed annually by AAM, which provides the major long term strategy for the AGN gas distribution business in WA.

The business strategies and plans that AGN and AAM had in place over the review period and those in place going forward are being reviewed continuously, particularly in view of the ongoing integration of the AGL/Agility businesses into the Alinta group.

Obviously, this is necessary to enable Alinta and its operating subsidiaries to satisfy the various stakeholders and to maintain a sustainable gas distribution business in WA and elsewhere in Australia in the long term.

In summary, OSD considers that AAM demonstrates a reasonably high level of effectiveness with the asset management system used on the AGN gas distribution networks in Albany to ensure that the asset owner's business objectives are met and the gas distribution networks are operated, maintained, constructed and altered in accordance with accepted industry practice.

This is discussed in further detail under the Audit Findings for each process.

9.3 PROVIDE AN OVERALL RANKING OF THE COMPLIANCE AGAINST REVIEWED / AUDITED ITEMS

The previous January 2005 review of the asset management system did not provide a numerical ranking for the various processes or elements. The assessment terminology used was inadequate, largely adequate, adequate and excellent.

The OSD ranking is shown in the chart below.

PREFACE

The following plan sets out the five-year forward strategy and corresponding financial forecasts for Alinta Network Holdings Pty Ltd (ANH).

An important part of the plan for the ANH business is the Asset Management Plan – which sets out the long term strategy for management of the distribution network which underpins the capital and maintenance spend planned for the forthcoming five year period. That plan has been prepared by Alinta Network Services (ANS), under the Operating Services Agreement and represents a “sub-plan” under this overarching strategic plan. A number of other key aspects of the business need similar such sub-plans that form part of the five year strategic plan and financial forecasts. These plans include:

- Information Technology strategy and plan; and
- Occupational, Health and Safety and Environmental plans.

These sub-plans are also keys to the management of the Operating Services Agreement with ANS, providing a clear and agreed plan for how the business is to be operated in the various areas.

This plan has been developed for ANH, but as most of the company's business occurs in the AlintaGas Networks subsidiary, with very little at the holding company level, most of the discussion in the plan refers to the operating subsidiary.

The business strategies and plans that AGN and AAM had in place over the review period and those in place going forward are being reviewed continuously, particularly in view of the ongoing integration of the AGL/Agility businesses into the Alinta group.

Obviously, this is necessary to enable Alinta and its operating subsidiaries to satisfy the various stakeholders and to maintain a sustainable gas distribution business in WA and elsewhere in Australia in the long term.

In summary, OSD considers that AAM demonstrates a reasonably high level of effectiveness with the asset management system used on the AGN gas distribution networks in Albany to ensure that the asset owner's business objectives are met and the gas distribution networks are operated, maintained, constructed and altered in accordance with accepted industry practice.

This is discussed in further detail under the **Audit Findings** for each process.

9.4 PROVIDE AN OVERALL RANKING COMPLIANCE AGAINST REVIEWED / AUDITED ITEMS

The previous January 2005 review of the asset management system did not provide a numerical ranking for the various processes or elements. The assessment terminology used was inadequate, largely adequate, adequate and excellent.

The OSD ranking is shown in the chart below.

ASSET MANAGEMENT SYSTEM		Not performed	Performed	Planned and	Well defined	Quantitatively	Continuously
		GDL3: Great Southern Supply Area					
Process	Effectiveness rating	0	1	2	3	4	5
Asset Planning						X	
Asset Creation/Acquisition						X	
Asset Disposal					X		
Environmental Analysis					X		
Asset Operations						X	
Asset Maintenance					X		
Asset Management Information Systems							X
Risk Management						X	
Contingency Planning					X		
Financial Planning							X
Capital Expenditure Planning							X
Review of Asset Management System						X	

The following table provides a description of the compliance status and the relative rating.

Compliance status	Rating	Description of compliance
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)

OSD has also attempted to determine if AGN has improved its performance in respect of the asset management system since the previous 2005 review. Whilst the processes/elements have been revised, it is possible to gauge what processes/elements have seen an improvement during the current review period. This is shown in the table below:

Process/Element	2005 AMS Review	2007 AMS Review	OSD assessment
Asset Planning	Adequate (3)	Quantitatively controlled (4)	AGN regularly monitors and reviews the planning process
Asset Creation & Acquisition	Largely Adequate (4)	Quantitatively controlled (4)	AGN is moving progressively toward a continuously improving AMS asset creation and acquisition process
Asset Disposal	Adequate (3)	Well defined (3)	AGN has no major asset disposal issues

Process/Element	2005 AMS Review	2007 AMS Review	OSD assessment
			in GDL3, following upgrading of the LPG storage facility. Future replacement of steel pipes in the network to be considered.
Environmental Analysis	<i>Not measured</i>	Well defined (3)	AGN has defined processes (Refer GDL 2 report)
Asset Operations	Adequate (3)	Quantitatively controlled (4)	AGN is moving progressively toward a continuously improving AMS asset operations process
Asset Maintenance	Adequate (3)	Well defined (3)	AGN needs to improve on the maintenance processes
Asset MIS	Largely Adequate (4)	Continuously improving (5)	AGN has a robust asset MIS that is scheduled for further enhancements
Risk Management	Adequate (3)	Quantitatively controlled (4)	AGN is moving progressively toward a continuously improving risk management process
Contingency Planning	Largely Adequate (4)	Well defined (3)	AGN needs to improve on the contingency planning

Process/Element	2005 AMS Review	2007 AMS Review	OSD assessment
			process
Financial Planning	Adequate (3)	Continuously improving (5)	AGN has a robust financial planning process in conjunction with the parent company
Capital Expenditure Planning	Adequate (3)	Continuously improving (5)	AGN has a robust capex planning process in conjunction with the parent company
Review of AMS	Adequate (3)	Quantitatively controlled (4)	AGN undertakes annual reviews of the AMS

The OSD assessment recognises that the Albany gas distribution network is a mature network that was converted from tempered LPG gas to LPG almost 10 years ago. Whilst the Albany network is also relatively small in size, the principal issues are more related to fuel storage and managing escapes given the characteristics of LPG compared to natural gas used in the other AGN licensed areas in WA.

As the previous AMS review was focused solely on the GDL 2 Coastal supply area, the improvements noted are an assessment by OSD of what may have been assigned at that time. However, OSD is of the opinion that with the integration of the AGL business into Alinta, and the current reviews of all documentation and processes across Alinta, it is envisaged that the AGN asset management system in the GDL 3 supply area should reach a level of capability that is continuously improving over time and providing a high level of process effectiveness.

9.5 DETAIL ACTION ITEMS OR RECOMMENDATIONS FOR IMPROVEMENT OF THE ASSET MANAGEMENT SYSTEM

OSD has identified the following issues and the recommended actions required for the GDL 3 supply area following the assessment of the asset management system processes used by AAM on the AGN gas distribution network assets in Albany.

Key Process	Issue	Recommendation
#1 Asset Planning	OSD noted that AAM has not stated in the previous or latest edition of AGN's Asset Management Plan (AMP) any proposal to consider replacement of the metallic pipes in the Albany gas network. The leakage survey reports viewed during the audit do not reveal any significant problems with these pipes despite their age (> 60 years). AAM staff have advised OSD that it has a responsibility to spend capital prudently. Given that the survey reports do not reveal any significant problems, it would be difficult for AGN to economically justify replacement of the metallic pipes at present. However, AGN is cognisant of the age of the pipes and will closely monitor leakage survey reports and will undertake to replace the metallic pipes, when it is prudent to do so	Recommendation GDL3-1: AGN should continue to monitor the condition of the existing galvanised iron and steel mains in the Albany gas distribution network and closely examine the leakage survey results with a view to replacing the pipes should the results become unacceptable with recognised industry performance/safety standards
#5 Asset Operations	An AAM audit was undertaken in December 2006 on the upgrade and remedial works resulting from the independent audit in July 2005. It has been noted that a further independent audit of the upgrade and remedial works at the LPG storage facility has not been completed to date. There was a recommendation in	Recommendation GDL3-2: AGN should arrange for an independent follow-up audit of the LPG Storage Facility in Albany. This was previously recommended in the 2005 MHF audit report

	the independent consultant's report that a follow-up be carried out 12 months after the initial audit	
#6 Asset Maintenance	In general, most of the sites were in reasonably good condition, although corrosion on the pipework was visible at several sites. The maintenance inspection records for 3 of the 6 sites were reviewed. Corrosion was stated as an action on two of the reports, but no action has been taken to date	Recommendation GDL3-3: AGN shall ensure that corrosion on pipework is properly addressed during scheduled maintenance work on all network assets
#6 Asset Maintenance	A number of post-mounted warning signs were found to be in a damaged state and a number of signs were no longer legible, following prolonged exposure to ultra-violet light. Given the importance of these warning signs as the first line of defence against unauthorized third-party works, it is essential that the warning signs are maintained in good condition	Recommendation GDL3-4: AGN shall ensure that warning signage (post-mounted or otherwise) is legible at all times – many signs have been damaged and also many have faded from ultra-violet exposure
#9 Contingency Planning	No emergency exercises had been conducted on the gas distribution network during the review period, particularly in the areas with high concentrations of people such as the CBD in Albany	Recommendation GDL3-5: AGN should initiate discussions with Energy Safety Division to ascertain an acceptable frequency for emergency exercises in Albany

9.6 POST AUDIT IMPLEMENTATION PLAN

9.6.1 Post Audit Activities

OSD issued a Final Draft of the audit report for the GDL 3 supply area to AGN on 26 April 2007.

OSD then prepared and issued a post-audit implementation plan for review by AGN.

AGN agreed with the OSD recommendations stated in this audit report and has agreed to complete the actions required in this post-audit implementation plan as stated in the following table.

<p>#1 Asset Planning</p>	<p>Recommendation GDL3-1:</p> <p>AGN should continue to monitor the condition of the existing galvanised iron and steel mains in the Albany gas distribution network and closely examine the leakage survey results with a view to replacing the pipes should the results become unacceptable with recognised industry performance/safety standards</p>	<p>Action: AGN will continue to closely monitor leakage survey results and plan for the replacement of the galvanised pipes should the need arise</p> <p>Responsibility: <i>Gas Asset Manager West</i></p> <p>Due Date: This is an ongoing action</p>
<p>#5 Asset Operations</p>	<p>Recommendation GDL 3.2:</p> <p>AGN should arrange for an independent follow-up audit of the LPG Storage Facility in Albany. This was previously recommended in the 2005 MHF audit report and is required by the approved Safety Case for the facility</p>	<p>Action: AGN will identify and confirm follow-up work to be carried out</p> <p>Responsibility: Gas Asset Manager West</p> <p>Due Date: July 2007</p>

#6 Asset Maintenance	<p>Recommendation GDL 3.3:</p> <p>AGN shall ensure that corrosion on pipework is properly addressed during scheduled maintenance work on all network assets</p>	<p>Action: Implement a process for capturing pipework corrosion during maintenance activity and a plan to address the item</p> <p>Responsibility: Gas Asset Manager West</p> <p>Due Date: Oct 2007</p>
#6 Asset Maintenance	<p>Recommendation GDL 3.4:</p> <p>AGN should ensure that warning signage (post-mounted or otherwise) is legible at all times – many signs have been damaged and also many have faded from ultra-violet exposure</p>	<p>Action: A plan to replace damaged and illegible signs will be implemented. The Gas Asset Manager West will assign responsibility of individual AMS element to the relevant Manager as they have the authority to decide and take action</p> <p>Responsibility: Gas Asset Manager West</p> <p>Due Date: Dec 2007</p>
#9 Contingency Planning	<p>Recommendation GDL3-5:</p> <p>AGN should initiate discussions with Energy Safety Division to ascertain an acceptable frequency for emergency exercises in Albany</p>	<p>Action: An emergency exercise in Albany will be scheduled as part of the emergency exercise register. The Gas Asset Manager West will assign responsibility to the relevant Manager as they have the authority to decide and take action</p> <p>Responsibility: Gas Asset Manager West</p> <p>Due Date: December 2007</p>