AUDIT REPORT

Asset Management Systems Review for Gas Distributions Licence GDL 2: **Coastal Supply Area for** ALINTA GAS NETWORKS **APPENDICES**

Date:

20 June 2007 Revision: 0 Final Report (Redacted) Document No: 41202-REP-002-A





OSD Energy Services ABN 57 058 047 046

OSD Asset Services ABN 66 117 904 024

PIPEd ABN 82 117 496 741



APPENDIX 1 AUDIT FINDINGS BY OSD APPENDIX 2 ERA APPROVAL OF OSD AUDIT PLAN APPENDIX 3 ALINTA ORGAINSATION STRUCTURES APPENDIX 4 ALINTA PERSONNEL INTERVIEWED OR WHO PROVIDED ASSISTANCE DURING AMS REVIEW APPENDIX 5 DOCUMENTS REVIEWED DURING THE AMS AUDIT



ALINTA GAS NETWORKS ASSET MANAGEMENT SYSTEMS GDL 2 AUDIT REPORT APPENDICES

APPENDIX 1

AUDIT FINDINGS BY OSD



KEY PROCESS #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)

AUDIT OBJECTIVE

Demonstration of integration of asset strategies into operational or business plans to establish a framework for existing and new assets to be effectively utilized and their service potential optimized

EFFECTIVENESS CRITERIA

Do the planning processes and objectives reflect the needs of all stakeholders and are integrated with business planning?

Are service levels defined?

Are lifecycle costs assessed?

Are funding options evaluated?

Are costs justified?

Are cost drivers identified?

Are likelihood and consequences of asset failure predicted?

Do the resulting projects reflect sound engineering and business decisions?

Are the asset management plans are regularly reviewed and updated?

OSD FINDINGS

Do the planning processes and objectives reflect the needs of all stakeholders and are integrated with business planning?

AGN has identified Asset Planning as:

- □ Identification of asset requirements based on security of supply and customer load growth
- □ An option study involving preliminary design and assessment as well as return on investment analysis for some projects.

AGN has in place a number of mature, robust (and recently reviewed) management and engineering processes to deliver the necessary objectives to all



stakeholders involved in gas distribution network in the Coastal supply area the WA gas distribution business. These processes are managed by AAM for AGN.

AGN document AAM-S-09001 outlines the required system strategy for the asset management system in AGN's gas distribution business in WA. This document was recently reviewed as the previous edition was issued in September 2004. This document is directly matched to the requirements stated in the Guidelines for the Preparation of an Asset Management System, pursuant to Section 11Y of the Energy Conservation Act 1994.

The strategy document is underpinned by a number of plans and other documents for asset management, maintenance, operations and risk assessment. The primary documents used by AGN include the following documents:

- □ Asset Management System
- □ Asset Maintenance Plan
- □ High Pressure Development Plans
- MP Development Plans
- Planning Strategy
- □ Asset Replacement Strategy
- Operating Plans
- Network Performance Reviews
- Seasonal Load Factor Reviews
- Domestic Diversified Load Study
- Various Engineering Standards
- Asset specific maintenance manuals
- Management Systems (quality, environmental and safety)

A full list of documents reviewed during the audit is included in Appendix 5.

The asset management system is also stated in, and forms a critical part of, the most current ANH Strategic Plan covering the 2006-2010 period. This document is awaiting ratification by the Alinta Board.

Planning periods applied in the AGN asset management system planning, design and construction, operation and maintenance are as follows:

- □ Network development annual and 5 years
- □ Design specifications 2 years



- □ Asset management plan annually
- Operation and maintenance plans annually

All other documents related to the design and construction as well as operation and maintenance of the network, in line with AGN quality management system, are reviewed annually.

AGN maintains an asset register for the gas distribution networks. This is primarily achieved through the information obtained of the current management information systems maintained by AAM.

These systems are used for monitoring and facilitating network operation and maintenance activities include and are discussed under Key Process #7, Asset management Information Systems.

Service Level Assessment

AGN has stated in the Asset Management Plan that the operation and development of AGN gas distribution network assets should be consistent with the objectives of the asset owners. Under the Operating Services Agreement (OSA) AAM is required to deliver the following agreed service standards in the delivery of services:

- □ In accordance with Good Industry Practice
- □ In a manner which delivers any Guaranteed Service Levels to Customers
- In accordance with an Environmental Management Plan, Business Management System and OH&S Plan
- □ In a manner which achieves the Key Performance Indicators (KPI)
- □ In a timely manner
- □ In a commercial, prudent and reasonable manner
- □ That uses staff for each task that have the requisite level of professional skill, customer service orientation, care and diligence which may reasonably be expected of a skilled, professional person suitably qualified and experienced in the performance of such tasks

In attempting to accomplish these service standards, AGN utilises a number of KPIs to ensure that the nominated levels of service to customers in the supply of gas are achieved – see table below.

These KPIs are an important part of the management of AGN operational activities. They ensure that reliable, high value and high quality construction as well as operation and maintenance solutions provided by AGN to its customers.



The KPIs related to customer service can be divided into the following areas:

- Response times for connections, attendance at faults, as well as customer inquiries
- Reliability and safety of supply (related to faults at customer sites or in the network)
- Security and efficiency of supply (related to planning of network)

The KPIs that are directly related to customer service standards are shown in the table in Section 9.1.3 of this report and cover the requirements of *AG755 (1998)*, all distribution licences, as well as AAM's own internal standards.

Since February 2006, AGN has implemented a Guaranteed Service Level (GSL) scheme for small gas customers. A GSL payment will be made to a customer in the event that AGN do not meet the service level nominated for a particular area of service.

The Guaranteed Service Levels:

Area of Service			GSL Exceptions	
Appointments	 Attendance to Broken Mains & Services within 1 hour. Attendance to Loss of gas supply within 3 hours. If arrival is late by more than 15 minutes of the agreed time. 	\$25 per event	GSLs do not apply to: o Customers other than Small Use Customers: o Force Maleure	
Connections	Connection of a Gas Service and Meter within 5 Business days to an established home where a Gas main runs past the property.	\$40 per day (subject to maximum of \$120)	events; • Planned interruptions effected with the prior agreement of, or appropriate notice to	
Repeat Interruptions	No more than 4 unplanned interruptions in a calendar year resulting from faults in the distribution system.	\$100 for each subsequent event in a calendar year	 an end consumer; Events occurring downstream of the meter; Events occurring in a 	
Lengthy Interruptions	Gas supply interruption resulting from faults in the distribution system to be restored within 12 continuous hours	\$80 per event	 Create sciences of the science of the	

Application Process

AGN will monitor its performance against the GSLs on a monthly basis and instigate payments for compensation to your gas retailer who will forward the payment to you on your next account.

In the event that you wish to query an AGN decision, you should contact your gas Retailer or our Customer Care Coordinator at the following address:

Customer Care Coordinator Alinta Asset Management Pty Ltd GPO Box W2030 PERTH WA 6846



ALINTA GAS NETWORKS ASSET MANAGEMENT SYSTEMS GDL 2 AUDIT REPORT APPENDICES

AAM (2) MONTHLY REPORT							
MONTHLY REPORT FOR: Aug-06							
VOL COMPLETED				% PERCENTAGE			
48	26	54%	48	100%			
284	214	75%	280	99%			
18	6	33%	18	100%			
1436	1073	75%	1416	99%			
32	11	34%	32	100%			
	VOL COMPLETED 48 284 18 1436	Aug-06 VOL VOL SUCCESSFUL COMPLETED WITHIN SAP 48 26 284 214 18 6 1436 1073	Aug-06 VOL VOL SUCCESSFUL % COMPLETED WITHIN SAP PERCENTAGE 48 26 54% 284 214 75% 18 6 33% 1436 1073 75%	Aug-06 VOL VOL SUCCESSFUL % VOL SUCCESSFUL COMPLETED WITHIN SAP PERCENTAGE NPS(WA) 48 26 54% 48 284 214 75% 280 18 6 33% 18 1436 1073 75% 1416			

	VOL	VOL SUCCESSFUL	%	VOL SUCCESSFUL	
NEW SERVICES	COMPLETED	WITHIN SAP	PERCENTAGE	NPS(WA)	% PERCENTAGE
Service Standard - Estab Connections	302	220	73%	298	99%

	VOL	VOL SUCCESSFUL	%	VOL SUCCESSFUL	
MAIN EXTENSIONS	COMPLETED	WITHIN SAP	PERCENTAGE	NPS(WA)	% PERCENTAGE
Service Standard - Main Extensions	4	1	25%	4	100%

NEW MAINS	VOL PLANNED KM	VOL COMPLETED KM
Main Extensions	0.115	0.589
New Sub Divisions	46.953	13.128

OTHER	VOL COMPLETED
Feeder Tasks	202
Alter Mtr Positions (AMP)	49

An example of the monthly GSL report generated by AAM for AGN is shown below.

Guaranteed Service Levels

AAM(2) MONTHLY REPORT - Breaks						
			MONTHLY REPORT FOR:	AUGUST		
	VOL COMPLETED	VOL SUCCESSFUL WITHIN SAP	% PERCENTAGE	VOL SUCCESSFUL AAM(2)	% PERCENTAGE	REASON
BROKEN SERVICES	113	113	100%	113	100%	
BROKEN MAINS	16	16	100%	16	100%	
NO GAS DOMESTIC	107	107	100%	107	100%	

AAM have noted that the security and efficiency of supply is not characterised by specific KPI, but rather is evaluated on an annual basis in the document entitled "*Review of Distribution System Performance*". The long term security and integrity of supply in the gas distribution networks is identified in the documents entitled "*High Pressure Gas Distribution*" and "*Medium Pressure Gas Distribution*" Network Development Plans. The most recent editions of both documents (refer Appendix 5) were reviewed during the audit.

OSD considers that the documented service level standards and associated KPIs are typical of a prudent utility business, and any other business for that matter. The service standards are being met by AAM as noted in the comments under Key Process #5.



Forecasting Effectiveness

AGN undertake system performance forecasting to estimate any specific reinforcement requirements that may be required on the gas distribution networks. AGN conduct the forecasts on the basis that the gas distribution networks will be able to support a 1 in 10 year winter.

For new connections, AGN forecast using economic and historical information and are represented locally on the network models as predicted by the Urban Land Release Plan issued by the Western

Australian Planning Commission. The Urban Release Plan captures information sourced from approval submissions and the developer's intentions survey.

Further to the localised development in fringe high growth suburbs, an increase in peak load of 1.5% per annum is incorporated uniformly to the network model load. AGN has applied this increase based on factors such as infill of existing suburbs, redevelopment of existing lots and increased peak load due to "organic" growth.

AGN evaluate any requirements for reinforcements the year prior to recommendation by installing a temporary pressure monitoring device (PMD) that monitors the system performance. Once the accuracy of the model at that location is confirmed, the project is justified and recommended to proceed. This ensures that projects are not initiated before they are required.

OSD considers this approach to forecasting, logical and prudent.

Lifecycle asset management

Life-cycle asset management requires that the full life-cycle costs of asset acquisition,

operation, maintenance and disposal are taken into account in asset investment decision making.

The maintenance strategies and asset risk matrix are closely integrated to ensure least cost life-cycle alternatives can be identified. This ensures that proposed asset investments form part of a coherent and sustainable network development path.

All investment decisions whether associated with asset replacement, maintenance or new development are made on the basis of assessments of financial and economic return and risk over the long term.



AGN has documented its approach to life cycle management in Section 5 of the AMP and Section 4 of the AMS Strategy document, AAM-S-09001.

Where possible, AGN will integrate any renewal and demand capital programs to ensure that capital expenditure is optimised, based on the premise that AGNs' approach to asset management is to provide a safe, reliable network, operated and maintained on a cost effective basis, which meets the service, safety and environmental expectations of consumers, regulators and the community. The previous 2006 - 2010 AMP and latest AMP documents are fundamental to AGN successfully achieving this objective.

AGN's approach to asset replacements and asset maintenance are discussed in the relevant Key Processes below.

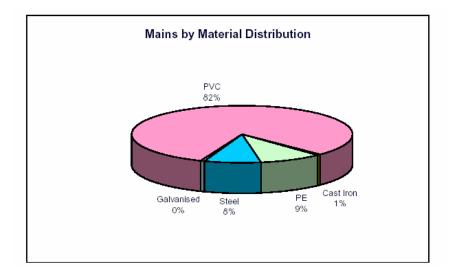
Network Assets

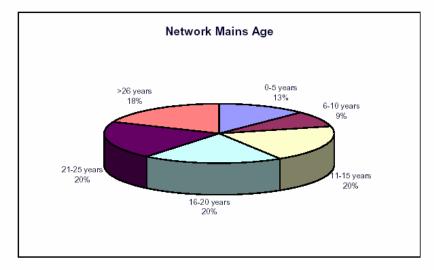
From the 2006-2010 Asset Management Plan, the AGN gas distribution pipes have age and material profiles as shown in the charts below.

Excluding the low-pressure networks, AGN's gas distribution networks are predominantly less than 30 years old, taking into account that natural gas was introduced into WA in 1972 and over 80% of the networks have been installed since that date.

The large quantity of PVC in the Coastal supply area networks reflects the approach taken by the previous asset owners to utilize this material. Polyethylene (PE) was widely used by other gas network owners in other parts of Australasia commencing in the 1970s.







Coastal Gas Distribution Network

All planning activities on the Coastal gas distribution networks are managed by AAM staff based in Perth. The AAM field staff based in throughout the Coastal supply area provides the information for service level results and asset performance back to AAM staff in Jandakot. This information is then fed into the GNIS and SAP systems for reporting and/or analysis as required.

Specific projects are identified following the annual network performance views. Specific projects are identified following the annual network performance views. OSD sighted two projects that had been prepared by AAM operations staff and approved.

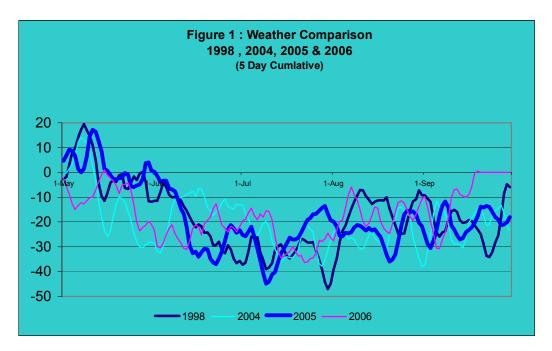
□ Metropolitan MP/Bayswater HP network: \$100,000 for reinforcement work with an effective life beyond 2013.



Baldivis MP network: \$1,080,200 for 5.2km HP PE reinforcement pipeline.

It was noted in the AGN "Review of Distribution System Performance Winter 2005", Rev A, prepared on 7 December 2005 that a number of pressure excursions occurred in 6 sites including the Fremantle low pressure network. These pressure excursions were recorded by the pressure monitoring devices in place at strategic locations in each of the gas distribution networks within the Coastal supply area.

Observation from historical data reveals that peak winter conditions coincided with extended periods of cold weather. Figure 1 gives an indication of the number and severity of extended periods of cold weather experienced by the Perth metropolitan region each winter. It illustrates the 5-day rolling cumulative sum of degree-days over the entire winter period each year.



(AGN - MP Gas Distribution Network Development Plan, 2006-2010)

For planning purposes and assessing gas demand, AGN has classed the winter of 1998 as a severe winter for the purpose of measuring how harsh the following winters are - 24 July 2006 has recorded the highest demand during winter 2006 and has been selected as the peak winter day for 2006.



A severe winter load is used for network modelling. Severe winter conditions are encountered approximately once every ten years, such as the 1998 winter. The winter of 1998 experienced a long period of cold weather lasting over a month leading up to the peak demand day on the 2 August 1998. This differs from the pattern of the past few winters that exhibit warmer breaks between each cold period thus reducing the severity of the winter pattern.

The coldest period of weather experienced in winter 2006 was believed to be milder in comparison to the winter of 2005 and it was considered as less severe than the winter of 1998.

Overall, AGN has stated in the "Medium Pressure Gas Distribution Network Development Plan 2006-2010, AAM 06/05 that the various gas distribution networks through the Coastal supply area are generally robust with planned enhancements noted in the above document and the Asset Management Plans.

The Fremantle low pressure network, the oldest network in the Coastal supply area, is scheduled to undergo a staged cast-iron replacement program through to 2011. The first stage commenced in 2006 and approximately \$14.0 M is budgeted for this replacement program from 2007.

Overall, OSD is fully satisfied that AGN's planning processes are robust and effective, and are now reasonably mature given that these processes have been in use for almost 5 years.

EFFECTIVENESS CRITERIA: 4



KEY PROCESS #2: 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

AUDIT OBJECTIVE

Demonstration of a more economic, efficient and cost-effective asset acquisition framework which reduces demand for new assets, lower service costs and improved service delivery.

EFFECTIVENESS CRITERIA

Are construction/contract management processes and responsibilities clear and well documented?

Does the AGN asset management system provide for competent/effective design and material specifications conform to industry standards?

Are safeguards in AGN asset management system applied to construction, specifications and management of contracted works?

What selection process is used to pre-qualify suppliers and contractors?

What are the competencies of AGN approvers?

Are project evaluations undertaken for all new assets and do they include lifecycle costs?

Are commissioning tests documented and completed?

Does project documentation reflect sound engineering and business decisions?

Does the asset owner of AGN understand ongoing legal/safety/environmental obligations of the network assets?

Does AGN maintain an up-to-date asset register?

OSD FINDINGS

AGN's Asset Management Plans list all projects for new assets (or acquisition of assets) and any replacement of assets in the Appendices to the AMP.

AGN has extensive construction/contract management processes for all projects, including responsibilities (refer table in Section 9.1.2).



AGN's AMS Strategy document AAM-S-09001 and the Asset Management Plan for 2006-2010 specifically state the requirements for network development, design and construction, and testing for fitness for purpose.

Additional documentation covering the following activities was assessed by OSD during the review; all were sighted at Jandakot where the activities are primarily managed.

- □ Engineering design (competency of design staff and processes)
- **L** Engineering evaluation and sign-offs (accountabilities and competencies)
- Specifications to suppliers and contractors
- **Qualification and assessment of suppliers and contractors**
- Contract establishment process and performance measures
- Materials inspection and audits
- Contract management, performance measurement and audits
- □ Financial audits of projects (comments in Key Process #11)

AGN's AMS Strategy document AAM-S-09001, Section 4.2.1 states that:

"Design for major assets in the distribution network is conducted at a conceptual as well as at a detailed design level. Conceptual design includes pipeline route and initial meter set selection".

As noted in Key Process #4, Alinta has as part of the design process, developed and implemented an Environmental Management System that establishes the business responsibility towards managing the environment and the methods employed to prevent or minimise any detrimental environmental effects arising from any of its activities. Pipeline route selection includes consideration for minimising environmental impacts of gas pipelines to sensitive ecosystems, including national parks, reserves and vulnerable flora and fauna, and risk assessments as well as a financial evaluation to determine an optimal pipeline route.

AGN uses various *Design Guidelines* for the detailed design of assets, each of which have been developed for the major asset types including pipelines, meter and regulator sets, high pressure isolation valves, flow computing and telemetry equipment as well as meter stations.



These guidelines outline the general design principles to be employed for each asset as well as the identification and application of the relevant codes and standards as well as acts and regulations.

All of the relevant design guidelines were reviewed by OSD, several which were in the review process.

OSD noted that all AGN documentation is currently being reviewed as part of a company wide rationalisation of documentation.

As part of the design process technical reviews are conducted periodically on the specifications for material and fitting components used in the gas distribution network.

Project Management

AAM staff advised OSD that all AGN projects are carried out through a tender/quotation basis with a scope of work and a Project Management Plan (PMP) managed by AAM Operations in Jandakot.

The PMP reviewed by OSD included a project description, scope of work definition, design basis, detailed design, project schedule and key tasks as well as Process and Instrumentation Diagrams (P&IDs) and general arrangement drawings. The PMP also identified "hold points" where certain key activities are audited and witnessed to ensure they comply with the scope of work.

Construction

AAM Operations assesses all contractors that intend to carry out major projects. This assessment includes:

- an assessment of the contractor's experience
- □ the contractor's ability to carry out the project based on available resources
- a check to prove the accreditation of the contractor's quality systems, and
- □ a check to ensure a copy of the quality manual has been supplied with the tender

During construction, audits/inspections are conducted to ensure that work standards and materials satisfy AGN technical specification, environmental standards and QA system requirements. Regular reviews of construction progress against the project schedule are also conducted throughout the project.

As part of the project, as constructed drawings and Manufacturer Data Reports (MDRs) are submitted at the completion of each project.



OSD reviewed several documents related to major and some smaller scale projects undertaken during the review period, including tender documents and audit reports.

Design and Construction Systems

AGN carries out all design and construction work in respect of the gas distribution networks in accordance with the relevant gas industry codes, standards, guidelines and quality systems. The primary codes used are:

- AS 2885 Pipelines Gas and Liquid Petroleum (code for the design and construction of high pressure pipelines operating above 1,050 kPa);
- AS1697 Installation and Maintenance of Steel Pipe Systems for Gas (code for the design and construction of steel pipelines operating at less than 1,050 kPa);
- AS3723 Installation and Maintenance of Plastic Pipe Systems for Gas

AGN also uses are range of in-house Engineering Standards as noted above and listed in Appendix 5.

AGN uses the following recognised industry standards for piping components and materials for the mains and services:

- API 5L Steel line pipe;
- AS1464 Plastic Pipes and Fittings for Gas Reticulation Unplasticised PVC;
- AS4129 Fittings for polyethylene (PE) pipes for pressure applications
- AS4130 Polyethylene (PE) pipes for pressure applications
- AS4131 Polyethylene (PE) compounds for pressure pipes and fittings

OSD reviewed several AGN material specifications on steel line pipe, gas meters and PE fittings. All purchase documents sighted included the relevant material specifications and random checks of the specific materials confirmed that the correct materials had been purchased by AGN.

AGN maintains Individual project files containing project records including, but not limited to, correspondence, specifications, design as well as drawings, manufacturer's data report (MDR) and as constructed drawings are maintained for each major pipeline asset.



The MDR typically includes:

- certificates for all materials used
- □ copy of weld procedure specification and procedure qualification record (s)
- welder qualification and test results
- □ hydrostatic test results and non-destructive tests and procedures for welds

OSD reviewed two MDRs pertaining to two major projects undertaken during the review period. All were found to be complete.

For all projects, ranging from high to low pressure, quality systems are in place to ensure each asset satisfies its design objective, which is to deliver gas at the required pressures and flows reliably and safely. These quality systems include a *Quality Manual* including detailed work procedures and field bulletins for each field activity, the associated training of field personnel, as well as inspection and audit plans for reviewing materials and workmanship.

As is noted under Key Process #7, a summary of the technical, as well as operational data for each major asset is recorded in the SAP asset database. The location of each asset is recorded in AGN's GNIS.

During the life of an asset it may undergo a number of modifications resulting from activities such as relocation work, relay/replacement programs and upgrades. Relocation requests, which are typically initiated by third party construction activities, are responsible for the majority of changes to AGN's pipeline assets. Asset changes resulting from these activities are managed through a single group.

Staff Competency

OSD reviewed competency documentation for a number of AAM staff involved in project management, design, construction, and commissioning.

Based on the internal assessments carried out by peers, and the degree of training activities undertaken by AAM, as well as the level of experience across the group responsible for these activities, OSD considers that AGN has competent staff engaged in the activities described above.

Issues

OSD were advised at the pre-audit meeting with the Authority and DOCEP (Energy Safety Division) – Energy Safety - that they wished to have three matters investigated as part of OSD's review of AGN's asset creation and acquisition process.



The first matter related to the development, some 50km north of Perth.

The second matter related to the work carried out at the forming part of the South West Metropolitan Railway development near Jandakot.

The third matter related to the minimum depth of cover on copper service riser pipes installed adjacent to protruding building foundations.

These are discussed as follows:

Development

In late 2005, AGN were approached to consider extending the natural gas network to to provide a gas supply to a new residential development in

AGN responded with a cost estimate that involved a 25 km long pipeline which was rejected by the developer. Instead, the developer decided to install common utility trenches in the development, and decided that gas pipes should be included in the trench and that they would have ownership of the gas pipes until such time the gas arrives at

The developer's approach was based on the fact that new sub divisional developments were being constructed progressively along the coastal belt toward . The developer thought that installing gas pipes was a prudent and cost effective measure in anticipation that natural gas would eventually arrive at

The developer installed gas pipes in the sub divisional development with the intent of handing over the "completed" infrastructure to the AGN when gas is eventually made available in

AGN provided assistance to the developer in terms of inspection services of the private reticulation on a fee for service basis as the development progressed. AGN was unaware that the developer had not obtained the requisite licence from the Authority.

AGN agreed that in hindsight, it should have first checked that the developer had obtained the requisite licence for the private gas infrastructure.

Following an audit of the gas infrastructure in the development by Energy Safety in 2006, it was identified in the audit report that the developer required a Gas Distribution Licence under the Energy Coordination Act to install a gas network.



AGN has advised OSD that at this stage it has no intention of acquiring the gas pipes installed in this development in **Example**. However, the situation could change in due course given the expanding sub divisional developments stated earlier.

AGN has advised OSD that the gas pipes would be subjected to normal "due diligence" business acquisition practices in respect of the design and construction phases of the work completed by the developer. However, in OSD's view, this would be largely dependent on the quality of the audit work carried out by AGN during the construction phase.

OSD considers that this issue is a serious one and recommends that AGN needs to have in place:

- a) trained staff that are aware of the legislative issues relating to gas distribution in WA, and
- b) procedures to ensure that any issues similar to this development are properly processed and actioned

Station Development

As part of the South West Metropolitan Railway development in Perth, a new transit railway station was constructed at

The issue of concern is the fact that the gas pipeline passes through a reinforced concrete footing that supports one of the pier structures that in turn supports the elevated platform/concourse area at the station. The pipeline has been encased with concrete for the full length of the crossing under the station complex and the freeway.

The gas pipe has been installed in a specially prepared block out within the concrete footing. A proposal was made during the design phase for the void between the encased concrete gas pipe and the blockout to be filled with a Bentonite compound.

However, AGN did not install the Bentonite compound. AGN's response on this issue following a question from the OSD Lead Auditor was:



ALINTA GAS NETWORKS ASSET MANAGEMENT SYSTEMS GDL 2 AUDIT REPORT APPENDICES

"The bentonite was originally suggested as a flexible conductive medium to possibly provide enhanced CP effect if the concrete casing, double-wrap outer coating and original pipeline FBE coating on the gas pipe where somehow all cracked through/ damaged and the existing CP system was not effective and the annulus filled with water or other corrosive source. Given that the pipeline factory and field applied additional tape over wrap coatings were all pre-checked and professionally installed prior to concrete encasement and the CP testing in this vicinity is readily accessible and regularly tested for effectiveness and there is no permanent ground moisture which might contribute to corrosion, the design was considered to be sound by competent professional engineers representing all parties involved. After further testing, it was determined that containment, drying out and solidification of the bentonite was a very real problem which did not have any practical solutions due to lack of access. Solidified bentonite would result in transmission of vibrations to the pipe and possibly contribute to mechanical damage rather than prevent corrosive damage. It was therefore determined at a series of meetings (24Feb06) between engineers that the problems associated

with bentonite installation where much greater than any perceived benefit and the best solution was to maintain an air gap instead."

The final design prepared by **Exercise** resulted in no direct loading on the pipe from the pier because of the 100mm annular space (air gap) all around the pipe encasement and included two permanent dip-stick check points to monitor the annulus spacing in the future.

also arranged for soil testing to confirm that the pier would not settle as part of the review. The pier structure in question supports a pedestrian walkway with no vibratory or load impact on the pipeline.

Integrity reviews were commissioned by the **determine** to determine the risks associated with the gas pipeline at this location during construction and the post-construction impact of the gas pipe crossing under the station complex. All manner of risks were considered.

Analyses were conducted to determine the impact outcomes of a train impacting the pier structure and an aircraft colliding with the station structure,

carried out the AS2885.1 review and

provided the structural engineering for the bridge and pier. The final results from



the independent integrity review was that the design was acceptable under risk assessment processes in AS2885.1.

The review determined that the impact outcomes were such that the gas pipeline would not be affected.

AAM staff, on behalf of AGN, participated in numerous Hazop meetings and design reviews along with engineers from several engineering consultancy firms.

AGN did consider relocation of the gas pipeline at this location, where would be expected to contribute towards the relocation cost of **Control**. The **Considered** this cost prohibitive and considered moving the pier footing some 5 metres from the gas pipe.

Moreover, AGN expressed the view that given the proximity of the gas pipeline at this freeway crossing, insufficient working space was available to consider pipeline relocation works. We was also unable to relocate the pier footing away from the gas pipeline as this would have entailed a redesign of the station complex in the constrained site.

Therefore, the way forward was to consider an independent integrity review by the engineering consultancy firms referred to above.

Following scrutiny of the engineering documents, OSD considers that the final design is fully risk reviewed by engineers from AAM,

(as independent experts) and that the pipe is fit for purpose and acceptable in terms of the AS2885 requirements.

The primary concern that Energy Safety had in respect of the design was the pipe penetration in the pier support. Normal practice in the gas industry is to avoid such construction.

However, each of these situations is assessed on a case by case basis and as such where the pipe can not be physically removed, or the proposed structure can also not be moved, then a decision is generally taken by the pipeline owner to proceed with an outcome having assessed all of the issues and associated risks.

OSD considers that the best alternative design in this case would have been to design the pier support to straddle, rather than encase, the pipe as eventually constructed. Having said that, the final design adopted by AGN has produced a design that places no direct load on the gas pipe.



Obviously, the best option would have been to relocate either the pipe or the pier support, but as noted above, the constrained site presented difficulties in respect of these options.

Therefore, OSD is of the view that AGN should ensure that similar situations to the Station are avoided where possible.

AGN should also communicate with Energy Safety in the event that practices that are likely to fall outside normally accepted industry standards are addressed at an early stage in the proposed works and approval sought for any departure from the requirements of AS2885.

AGN has advised OSD that Energy Safety has officially closed out this particular issue.

Service Pipes

The third matter raised during the AMS review is that of service pipes, in particular in respect of the installation of copper riser pipes into the gas meter box.

The main issue has been the minimum depth of cover over the riser pipe during the transition from below ground to above ground, particularly in situations where the building foundation protrudes out from the building line.

AGN has previously installed service pipes that followed the contour of the building foundation.

Following advice from Energy Safety, AGN has revised its approach to service pipe installations that are installed in properties where the building foundation protrudes over 100mm beyond the wall. The builder or gas installer is required to break out the foundation in such a manner as to enable the riser pipe to sit vertically below the gas meter.

A "New Gas Connection Alert" was sent out by AGN to all AAM field staff and AGN service installers.

OSD considers that this is an issue for AGN and Energy Safety to resolve in the long term taking into consideration the current code requirements and a cost effective and practical alternative solution.

OSD's only view on this matter is that interfering with building foundations is not good practice and alternatives such as slabbing over the riser pipe should be considered in lieu of this practice.



Recommendation GDL2-2:

- □ AGN needs to have in place:
- □ Trained staff that are aware of the legislative issues relating to gas distribution in WA, and
- Documented procedures to ensure that any issues similar to this development are properly processed and actioned.

Recommendation GDL2-3:

AGN should communicate with Energy Safety Division in situations where alternative design practices are proposed that do not comply with the requirements of AS 2885, and/or normal gas industry practice.

Recommendation GDL2-4:

AGN should resolve the issue of service riser pipes with Energy Safety Division to achieve a practical outcome that satisfies the code and is cost effective.

EFFECTIVENESS RATING: 3



KEY PROCESS #3: ASSET DISPOSAL

Effective asset disposal frameworks incorporate consideration of alternatives for the disposal of surplus, obsolete, under-performing assets.

AUDIT OBJECTIVE

Demonstration of effective management of the disposal process to minimize holdings of surplus and under-performing assets and lowering of service costs.

EFFECTIVENESS CRITERIA

Are regular reviews conducted to identify under-utilised and under-performing assets?

Are the reasons for under-utilised or poor-performing assets assessed and corrective action or disposal undertaken?

Are management processes and responsibilities for asset disposal clear and well understood?

Are safeguards in AGN asset management system applied to asset disposals?

Does the AGN asset management system provide for competent/effective management of asset disposal?

Is there a replacement strategy in place for all network assets?

OSD FINDINGS

Asset Disposal

AGN's AMS Strategy document AAM-S-09001 and the Asset Management Plan for 2006-2010, Section 5.2, specifically state the requirements for asset redundancy, replacement strategy and asset obsolescence. Additional documents entitled "Asset Rationalisation Strategy" and "Asset Replacement Strategy" also provides the criteria for asset disposal or replacement.

AGN's asset replacement strategy provides a framework for capital investment decisions to ensure consistency in AGN's approach to network asset replacement in providing balanced, efficient and effective expenditure.

The strategy sets out the long term replacement guidelines for each major category of asset based on economic as well as safety considerations.



AAM has a policy, where economic to do so, of refurbishing and testing specific high value assets for future service.

AAM staff has advised that assets that can not be salvaged, i.e. buried pipes, are purged in accordance with AAM procedures and made safe. The assets are then recorded on the relevant network plans in GNIS as "abandoned", but ownership is retained by AGN.

AGN's forecast of renewals capital expenditure is based on this strategy and the outcome of the Reliability Centred Maintenance (RCM) analysis on maintenance data for the various asset categories.

AAM states that historically to date, the cast iron replacement program and gas meter replacement were the only significant formal replacement programs undertaken by AGN.

Other less substantial, replacement programs have focused on specific items of concern such as galvanised standpipes in Albany, spring retainers and nylon seats in Fisher 99 regulators, the brass bolts on compression couplings and replacement of various regulators with axial flow valves as part of standardisation process.

OSD reviewed several documents relating to asset replacement, disposal and rationalisation. One is a strategy document entitled "Asset Rationalisation" produced in 2002. Other documents were work instruction covering the meter installation and removals and decommissioning of gas pipes and facilities.

The key area of asset renewal expenditure is mainly in distribution mains involving cast iron and steel mains in the low-pressure networks.

AGN has a major project in progress to replace metallic mains in the Fremantle network.

Refer OSD comments in Key Process #1.

EFFECTIVENESS RATING: 4



KEY PROCESS #4: ENVIRONMENTAL ANALYSIS

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

AUDIT OBJECTIVE

Demonstration that the asset management systems regularly assess external opportunities and threats and corrective actions are taken to maintain performance requirements.

EFFECTIVENESS CRITERIA

Is the asset management system assessed for external opportunities and threats?

Is compliance with statutory and regulatory requirements measured?

Is corrective action taken to maintain the required performance of the asset management system?

Do the performance criteria of the asset management system address stakeholder's needs?

Are asset management system KPIs being measured; being met or exceeded; being reported on to AGN's Board or senior management appropriate and acted on?

OSD FINDINGS

Is the asset management system assessed for external opportunities and threats?

AGN assess all external opportunities and threats to the asset management system through a range of processes as described in other sections of the report.

As noted in Section 9.1.2, the AAM teams have the ultimate responsibility for the implementation, monitoring and evaluation of the AGN asset management system. The various job functions within AAM that is responsible for the management of various aspects of AGN's Asset Management System are shown in the following table:



Job Function	Responsibility
General Manager Asset Services	Overall Responsibility for Asset Services
General Manager Operations	Overall Responsibility for Operations
Manager Asset Management Gas	Strategic, Opex, Capex and Asset Management Plans
Manager Technical Compliance	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

Each of these positions has a responsibility to identify, assess and manage threats in their particular environments.



The Asset Management System Strategy and the Asset Management Plan (AMP) are the primary documents that AGN has developed to address threats associated with the management of the gas distribution network assets. The AMP in particular identifies and addresses specific projects to mitigate any threats and these are also addressed in more detail in the specific network development plans.

The plans require AAM staff assigned to manage the projects to monitor and report on progress from establishment to completion. These plans are also linked to the high-level corporate Strategic Plan in respect of opportunities and threat mitigation – Reference "*Alinta Network Holdings Strategic Plan 2006-2010*".

Is compliance with statutory and regulatory requirements measured?

AGN's business charter requires continuous monitoring to maintain compliance with statutory and regulatory requirements across the gas distribution business in WA. The AGN Safety Case (when approved) will provide the principal vehicle in respect of compliance demonstration in relation to the asset management system. During the review period, compliance requirements are specifically laid out in the AGN Asset Management System Strategy document that was reviewed and updated by AGN in January 2007.

Where non-compliance with regulatory requirements is found, AGN places responsibility on all AAM employees to report and take the appropriate action on the non-compliant issue.

As noted under Key Process #2, an issue of non-compliance relating to a new subdivisional development did arise during the review period. Reference OSD Recommendation GDL2.2.

Is corrective action taken to maintain the required performance of the asset management system?

AGN does take corrective action to maintain the required performance of the asset management system, whether initiated externally by other parties or internally.

This is discussed in more detail under Key Processes #1, #2, #5, #6, #8 and #9.

Do the performance criteria of the asset management system address stakeholder's needs?

AGN has established performance criteria that address all stakeholders' needs.



As discussed under Key Process #6, AGN need to review the performance criteria to reflect the ongoing state of the gas distribution business, so that asset performance is optimized rather than provide a margin of comfort so that the performance is under a more proactive stance rather than reactive.

Are asset management system KPIs being measured; being met or exceeded; being reported on to AGN's Board or senior management appropriate and acted on?

See comments above.

Coastal Gas Distribution Networks

Overall, OSD considers that AGN has in place asset management system processes that demonstrate that the asset management systems regularly assess external opportunities and threats and corrective actions are taken to maintain performance requirements.

The AAM staff based in Perth and Jandakot have the first level of responsibility in assessing opportunities and threats as well as statutory/regulator compliance and network performance, on the basis that they are "on the ground" in reacting to any specific situations.

The Jandakot field-based staff provides the first response and report back to the Jandakot Base where the information received is assessed and analysed and incorporated in any action plans as required.

The OSD assessments relating to this first level of responsibilities are also covered in other sections of this report.

EFFECTIVENESS RATING: 3



KEY PROCESS #5: ASSET OPERATIONS

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

AUDIT OBJECTIVE

Demonstrate that operations plans adequately document the processes and knowledge of staff in the operation of assets to enable service levels to be consistently achieved.

EFFECTIVENESS CRITERIA

Is there management accountability for setting and reviewing appropriate operating and service level parameters?

Do the operating parameters meet appropriate standards?

Is the network being operated in a reliable manner?

Is risk management applied to prioritise operations tasks?

Is the network being operated in an efficient manner and on a cost effective basis?

Is the Asset Register maintained and updated regularly?

Is there a training program appropriate for different levels of responsibility?

Ensure AGN has clear procedures to manage notification, investigation and reporting of incidents. For example, how does AGN investigate and report on notifiable incidents as required under the Gas Standards (Gas Supply and Systems Safety) Regulations 2000?

OSD FINDINGS

AGN asset management system

The asset management system that has been in place since 2002 complies with the Gas Standards (Gas Supply and System Safety) Regulations 2000.

This was stated in the 2005 review of the asset management system.

OSD notes that final approval of the Safety Case will underpin the asset management system that AAM manages under the OSA with AGN.



Operation and Maintenance Plans

AGN's strategies and philosophies applied in the operation and maintenance of AGN gas distribution network are described in the documents entitled "Distribution Network Asset Management Operating Plan" and "Distribution Network Asset Maintenance Plans".

AAM staff advised that the objectives of these plans are to provide a pro-active maintenance and operating strategy to facilitate the reliable and safe operation of the gas distribution network assets, in a cost effective manner.

The introduction to the current "Distribution Network Asset Management Operating Plan" states the following:

The purpose of this Operating Plan is to document how Alinta Network Services (ANS) manages AlintaGas Networks' (AGN) distribution assets in Western Australia to ensure the safe and reliable operation of the gas distribution networks through its principal contractor NPS (WA).

AG 606 - 1997 Code of Practice describes the fundamental elements to be addressed in the preparation of a Safety and Operating Plan (Safety Case) by a distribution network operator for the safe and reliable operation of new and/or existing gas distribution networks. Whilst the Safety Case provides the overall assurance of management of risk and the mitigation of hazards, this Operating Plan focuses on the operation of AGN distribution networks.

Coastal Gas Distribution Networks

General

Operational activities on the Coastal gas distribution networks are managed by approximately 125 AMM field staff based in Jandakot, Geraldton and Bunbury. A range of AAM approved contractors on contracted rates also carries out construction works as and when directed by AAM. These contractors are available to assist the AMM field staff for operational tasks including emergency work.

AAM field staff based in Geraldton and Bunbury (and Jandakot) compile the information for service level results and asset performance and send these back to AAM staff in Jandakot, similar to those based on the other GDL supply areas. This information is then fed into the GNIS and SAP systems for reporting and/or analysis as required. Specific projects are identified following the annual network performance views.



Approval and review process of the operating envelope

The operating parameters for the AGN gas distribution networks are documented in the Operating Plan. This is also underpinned by the annually reviewed Asset Management Plans in addition to separate network performance reviews. Significant changes to the operating parameters are required to go through a rigorous change approval process before acceptance.

Key personnel in the process, responsibilities and accountabilities

The key AAM personnel involved in this process are the Perth based asset management and risk management teams, together with the engineering services group based at Jandakot. Other AAM staff can be brought into the process, or outside independent advice has been sought as required.

Performance monitoring

AAM staff carries out performance monitoring on a 24/7 basis on all AGN gas distribution networks in WA. Pressure data is gathered from approximately 140 pressure monitoring devices (PMDs) and from high pressure regulator sets and gate stations. These devices are monitored and data collected by the AGN Control Room at Jandakot. The PMDs also set off an alarm when a critical pressure is reached.

The primary aim of the performance monitoring is to identify any critical sections of the network that fall below the minimum pressure settings established for a particular network. Apart from any emergency situation that arises, the data gathered is then used as part of an annual system performance review, particularly over the winter periods.

The data can then be used to model the problem and provide a solution on the Synergee modeling software. Refer comments in Key Process #7.

Work Permit System

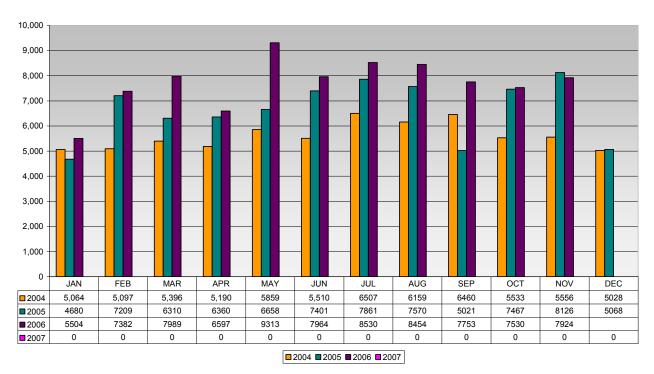
Section 4.3 in AGN's Operating Plan outlines the current requirements for work permits for controlling activities on or near AGN's network assets.

Detailed instructions for AAM staff are provided in Field Bulletin DD-F-09101.

OSD reviewed several work permits including planned works near high pressure pipelines.



One-call activity is for the review period is shown in the chart below. The level of one-call requests handled by AAM staff is significant.

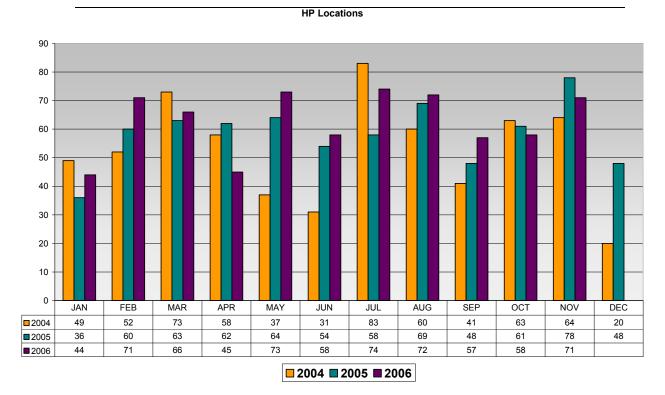


ONE CALL REQUESTS

AAM staff have also recorded the number of location activities carried out for other parties on its high pressure gas distribution networks. This is shown in the chart below.



ALINTA GAS NETWORKS ASSET MANAGEMENT SYSTEMS GDL 2 AUDIT REPORT APPENDICES



Gas Quality

AAM has documented the gas quality requirements for the AGN's Coastal gas distribution networks in Section 7.1.1.1 of the Network Asset Management Operating Plan and the Gas quality is monitored by the principal pipeline operators using gas chromatographs. The pipeline operators routinely take gas samples. AAM also routinely takes gas samples for analysis and to compare the test results with those produced by the pipeline operators. AAM staff interviewed by the Lead Auditor stated that no gas quality excursions had occurred during the review period.

Odorant Levels

Section 7.1.1.2 of the *Network Asset Management Operating Plan* states the requirements for odorant content in the gas networks as noted in the excerpt below:



7.1.1.2 Odorant Content

The Director of Energy Safety has effectively endorsed the odorant levels maintained by AlintaGas' predecessor SECWA:

- ➢ For industrial consumers, where residence times are low and odorant degradation is less likely, a level of 5 mg/m3 of a TBM based odorant.
- For networks supplying residential consumers, where residence times are high and odorant degradation is more likely, a level of 15 mg/m3 of a TBM based odorant.

Odorant content is monitored by both Epic Energy and CMS at their Gate Stations and through sampling by NPS (WA) from within the Networks. NPS (WA) takes samples from designated locations nominated by ANS within the distribution system in accordance with procedure *DD-P-10201 Sampling of Natural Gas and LPG for Odorant Monitoring.*

AAM staff advised that a THT based, and very pungent, odorant called Scentinel TB is used in the gas distribution network. Records taken of odorant levels at one location in the southern Perth network over the review period indicate that the levels fluctuated considerably in 2006, but were more consistent in 2005. The overall average for each calendar year is above the AGN threshold level of 8mg/m3, such that detection by the public is not an issue.

(2005 = 12.45 mg/m3; 2006 = 14.5 mg/m3).

The threshold level picked by AGN for this network is based on the same odorant type used across the eastern states of Australia. The level established by AGN for odorant has been supported by odorimeter tests performed by an independent consultant in Kalgoorlie.

AAM have stated that they are currently reviewing these minimum levels.

Pinjarra No 38 Forrest rd Pinjarra	19/01/2005	17
Pinjarra No 38 Forrest rd Pinjarra	21/02/2005	12
Pinjarra No 38 Forrest rd Pinjarra	21/03/2005	18
Pinjarra No 38 Forrest rd Pinjarra	18/04/2005	10
Pinjarra No 38 Forrest rd Pinjarra	18/05/2005	12
Pinjarra No 38 Forrest rd Pinjarra	20/06/2005	11
Pinjarra No 38 Forrest rd Pinjarra	13/07/2005	13
Pinjarra No 38 Forrest rd Pinjarra	17/08/2005	10



Pinjarra No 38 Forrest rd Pinjarra	19/09/2005	11
Pinjarra No 38 Forrest rd Pinjarra	19/10/2005	11
Pinjarra No 38 Forrest rd Pinjarra	13/12/2005	12
Pinjarra No 38 Forrest rd Pinjarra	30/01/2006	7
Pinjarra No 38 Forrest rd Pinjarra	30/01/2006	22
Pinjarra No 38 Forrest rd Pinjarra	22/02/2006	11
Pinjarra No 38 Forrest rd Pinjarra	21/03/2006	15
Pinjarra No 38 Forrest rd Pinjarra	21/04/2006	5
Pinjarra No 38 Forrest rd Pinjarra	9/05/2006	14
Pinjarra No 38 Forrest rd Pinjarra	15/06/2006	14
Pinjarra No 38 Forrest rd Pinjarra	18/07/2006	10
Pinjarra No 38 Forrest rd Pinjarra	16/08/2006	12
Pinjarra No 38 Forrest rd Pinjarra	18/08/2006	9
Pinjarra No 38 Forrest rd Pinjarra	27/09/2006	16
Pinjarra No 38 Forrest rd Pinjarra	16/10/2006	26
Pinjarra No 38 Forrest rd Pinjarra	27/10/2006	15
Pinjarra No 38 Forrest rd Pinjarra	24/11/2006	19
Pinjarra No 38 Forrest rd Pinjarra	22/12/2006	22

Training of AAM Staff and Contractors

All AMM field staff based in the Coastal supply area have undergone a range of training during the review period. This also includes the AMM approved contractors engaged by AMM and including those associated with CCF program.

AAM staff supplied evidence of training for both the AAM field staff and the contractor over the review period. AMM has also produced a Gas Field Employees Training Plan that is scheduled to be introduced in 2007.



Operational Base and Vehicles

The AAM operational base at Jandakot is situated around 20km from the Perth CBD. The base houses office facilities and has capacity for storage of plant and materials. An aerial photograph of the site is shown in the photograph below. The bases at Geraldton and Bunbury were not visited by the OSD Lead Auditor during the field visit.

A vehicles used by the all staff in the sites visited are generally in excellent condition and fully equipped for the operational tasks they are required to cover. Several new replacement trucks were viewed at the Jandakot base on 23 March.



Alinta operations base at

Emergency Response and Incidents

Emergency response is discussed in Key Process #9. AGN document "Notifiable Incident Reporting" Section 2 outlines the requirements when AGN must report any significant incident on the gas distribution networks in WA. This is shown below for reference.



2. Purpose,

The purpose of this procedure is to detail the steps to be followed for any incident that falls within the categories of an Advisable, Notifiable or Reportable incident.

AlintaGas Networks Pty Ltd (AGN) as a gas supplier is obligated to fulfil the requirements of:

- > AGN Gas Distribution Licenses, issued by the Office of Energy (Coordinator of Energy)
- Gas Standards Act (1972)
- Gas Standards (Gas Supply and Systems Safety) Regulations 2000
- Gas Standards (Gasfitting and Consumer Gas Installations) Regulations 1999.

Alinta Asset Management (AAM) as the operator of the AGN gas distribution system is required to:

- Notify incidents to the Director of Energy Safety as stipulated in the above mentioned regulations
 Investigate all incidents to determine the cause and minimise the potential for incident
- recurrence and therefore reduce the risk to the gas distribution system, our employees, contractors, the public and the environment
- Submit reports of investigations to the Director of Energy Safety in accordance with the above mentioned regulations for distribution incidents and AGN Inspection Plan for installation incidents.

3. Scope,

This procedure applies to the AlintaGas Distribution Networks in Western Australia.

For the review period, OSD noted that for calendar year 2005, 52 notifiable incidents were reported by AGN to the Director of Energy Safety. In 2006, (except there is no data for December), 28 notifiable incidents were reported by AGN, a reduction of almost 47%. Based on 2004 data shown in the chart, the 2006 figure is some 50% below the 2004 data which indicates that the trend in these types of incidents is trending downwards.

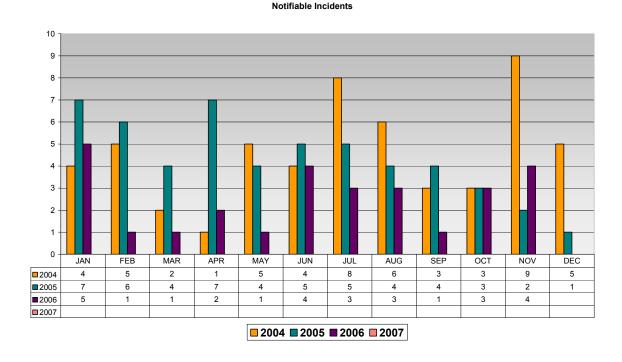
Examples from the AGN GDW Operations Monthly Report for November 2006 indicate the type of

Notifiable Incidents that are reported by AGN:

- Notifiable Incident 01/11/06: PLS on fire Lot 662/663 Tip Dray Terrace, West Busselton. Broken by 'Nielson Electrics' with an Oxy set. No customers affected. Incident # 2006/028 – Category 1 and 5 – Notification # 300648415. Worker on site sustained minor burn injuries.
- Notifiable Incident 13/11/06: 160 St Georges Tce, Perth. Uncontrolled release of gas inside building. Inspectors to investigate. Category 'C'. Incident #2006/0029. Not: 300650203.
- Advisable Incident 15/11/06: Damaged Meter: 17 Preston Road, Parmelia. Damaged by a vehicle. Reported by Police Operations. Category "E". No injuries. Notification 300651142.
- Advisable Incident 26/11/06: Damaged Meter: 17 Gentilli Way, Salter Point. Damaged meter M30AL374 and compound by vehicle. Category "E". One customer affected CMOS 210mins. No injuries. Notification 300653289.



AMM staff have advised that most of the incidents, notifiable or otherwise, have resulted from damage to mains and services as discussed in Key Process #6.



Reporting Issues

Energy Safety Division had expressed concern that AGN's reporting format did not properly address the cause of the notifiable incidents and the follow-up action or analysis of the causes and mitigate ongoing recurrences.

A sample of 18 notifiable incident reports relating to the GDL 2 supply area were assessed during the audit. All of the reports sighted by OSD contained a conclusion which stated what had contributed to the specific incident. All of the reports also contained a recommendation stating who and what actions should be taken to mitigate a similar incident arising in the future, and in some cases targeting specific companies or industry groups that were "regularly" involved in such incidents.

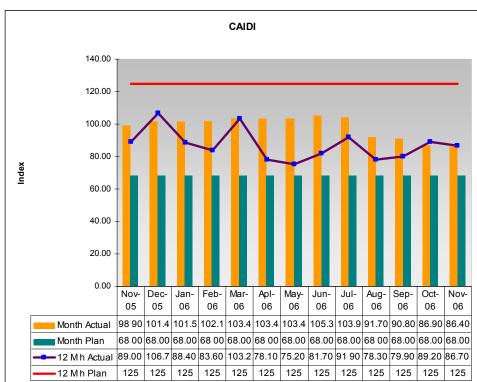
OSD found no evidence that AGN had undertaken or acted upon the recommendations.



To ensure that these matters are properly closed out, AGN should include a section in the notifiable incident report that states the actions taken by whom and when, and signed off by the relevant persons and their supervisor.

Corrective Action Reports

A sample of six Corrective Action Reports (CARs) for AGN Non-conformances issued by Energy Safety Division (ES) for 2005 were sighted by OSD. The AAM response to each of the Non-conformances was noted on the CAR. In each of the reports sighted, a Status section was included which indicated whether the CAR had been actioned and closed out or if further issues or actions were pending. In the case of these CARs, all actions had been completed.



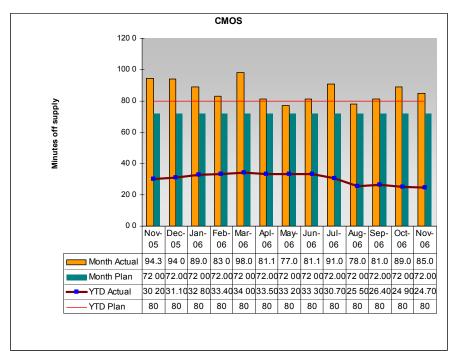
CUSTOMER AVERAGE INTERRUPTION DURATION INDEX (CAIDI)

A snapshot of the CAIDI KPI reported by AGN is shown in the chart above. Whilst the monthly recorded index is above plan, the rolling annual index is tracking below plan.



A snapshot of the CMOS KPI is shown in the chart below. The same comment applies to this index.





CMOS (Customer Minutes Off Supply)

Operational Information

AAM issue on a daily basis, and consolidate into a weekly report, all operational activities including incidents that have occurred over the week. This information is then consolidated into the monthly Operations Report that is provided to the AAM and Alinta Executives. An example of a weekly report is shown below for reference.

In addition, AAM operations group produce a comprehensive monthly report for the AGN executive. OSD reviewed copies of the July, August, November and February editions of this report.





Weekly Network Operations Bulletin Week ending 8 AM Saturday 24th June 2006

Major Events and Incidents

There were six broken mains during the week. Four mains above 100mm were involved:

- Broken 100ml PVC MLP Main Angelo Street, South Perth. Broken by Australian Directional Drilling whilst carrying out works for underground power. No customers affected. #300621328
- Notifiable Incident: Broken 160ml MP PE Main Connolly Drive, Clarkson. Broken by Briety Contractors with an excavator while laying underground power. Category 3, Incident # 2006/0016 – Permit was opened to repair main – Permit # 0674/06. No customers affected. #300621223
- Notifiable Incident: Broken 150ml MP PVC Main Yale Road, Canning Vale. Broken by the City of Gosnells with an excavator whilst installing new drainage pipes. This is on the intersection of Yale Road, Nicholson Road and Garden Road. No customers affected. Permit open to repair main – 0683/06 – Category 3, Incident # 2006/0017. #300621563.
- Broken 100 PVC MP Main Campbell Rd, Canning Vale. Broken by BC Drainage with an excavator while doing drainage work. No customers affected as bypass was fitted. # 300622530.

There were two Notifiable Incidents for the week:

- Notifiable Incident: Broken 160ml MP PE Main Connolly Drive, Clarkson. Broken by Briety Contractors with an excavator while laying underground power. Category 3, Incident #2006/0016 – Permit was opened to repair main – Permit # 0674/06. No customers affected. #300621223
- Notifiable Incident: Broken 150ml MP PVC Main Yale Road, Canning Vale. Broken by the City of Gosnells with an excavator whilst installing new drainage pipes. This is on the intersection of Yale Road, Nicholson Road and Garden Rcad. No customers affected. Permit open to repair main – 0683/06 – Category 3, Incident #2006/0017. #300621563.
- System Performance
- · There was no low-pressure alarm received from the system.
- · There was no "operating outside the expected range" report from the system.

Supply Interruptions & Faults

- · Thirty-five customers experienced unplanned interruption for a total of 2735 CMOS.
- On an annual basis, the level of unplanned interruptions experienced this week translates to 3.41
 interruptions per 1000 customers and an interruption time of 16.0 seconds.
- On a rolling 52-week basis, the level of unplanned interruptions experienced this week translates to 5.3 interruptions per 1000 customers and an interruption time of 33.3 seconds.
- There was 231- reported smell of gas at meters, a decrease of 12%.

Supply Interruptions & Faults Cause * Type & Impact *	3 rd Party Damage	Vandak	Forces of Nature	Beyond Capacity	Equipment Failure	Operator Error	Customer	Nuisance Compliant
Broken Mains	6	0	0	0	0	0	0	0
Broken Services	16	1	0	0	0	0	5	0
No Gas Commercial	0	0	0	0	3	0	0	0
No Gas Domestic	0	4	0	0	12	0	0	0
SOG at Meter	0	0	0	0	231	0	0	0
SOG in Public area	0	0	0	0	5	0	0	4
Other Faults	0	0	0	0	41	0	0	0
Customers affected	11	4	0	0	15	0	5	0
Time lost (CMOS)	1195	240	0	0	900	0	400	0



Flow Data (TJ/day)	This Week	(Verified)	Last Week	(Verified)	This Month Last Year		
Network	Max Day	Average	Max Day	Awrage	Max Day	Average	
Metropolitan 2	61.42	57.61	59.17	58.03	57.55	46.63	
Mid-West 3	3.69	3.30	3.96	3.25	4.07	3.31	
South West 4	10.97	925	12.35	11.37	12.83	9.56	
Kalgoorlie- Boulder	0.248	0.217	0.221	0.197	0.152	0.121	
Albeny	0.407	0.355	0.414	0.316	0.293	0.239	
All Networks	75.74	70,74	74.18	73.17	73.61	59.87	

In summary, OSD considers that AGN demonstrate that operational plans adequately document the processes and knowledge of staff in the operation of assets to enable service levels to be consistently achieved across the GDL 2 supply area, with one recommendation required as stated below.

Recommendation GDL 2-5:

AGN should include a section in the notifiable incident report that states the actions taken by whom and when, and signed off by the relevant persons and their supervisor.

EFFECTIVENESS RATING: 4



PHOTOS OF VARIOUS SITES VISITED



Underground "Cornelius" type HP/MP pressure regulator





Pressure monitoring device cabinet for #HS26



Another view towards #HS26 - note legible marker sign

Revision 0



Photo removed by Alinta – Contact Manager, Emergency & Security Systems

Another view of _____ – cover raised



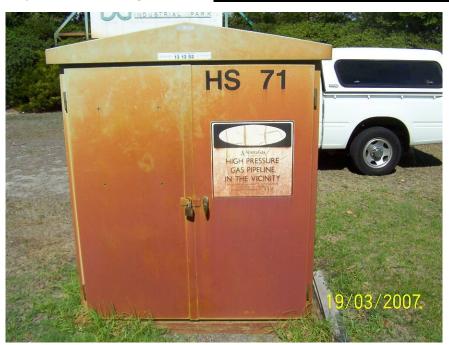


Another views of MP/LMP regulator set - Note faded marker sign





Typical pressure monitoring installation



Above ground HP/MP Regulator set

Photo removed by Alinta – Contact Manager, Emergency & Security Systems



#HS71 regulator set – note disk; records last maintenance inspection date Photo removed by Alinta – Contact Manager, Emergency & Security Systems

Regulator set #HS89, Cocon 13 type underground unit



Cathodic protection test point (typical)





Regulator meter set



Small commercial meter set





Larger commercial meter set - bakery



Another meter set - bakery





Typical MP/LMP underground regulator set



KEY PROCESS #6: ASSET MAINTENANCE

Maintenance functions relate to the upkeep of assets and directly affect service levels and costs

AUDIT OBJECTIVE

Demonstrate that maintenance plans cover the scheduling and resourcing of the maintenance tasks to enable work to be done on time and on cost.

EFFECTIVENESS CRITERIA

Is there management accountability for setting and reviewing appropriate asset maintenance and service level parameters?

Do the asset maintenance parameters meet appropriate standards?

Is the network being maintained in a reliable manner?

Is the network being maintained in an efficient manner and on a cost effective basis?

Are maintenance policies and procedures documented and linked to required service levels?

Are regular inspections undertaken of asset performance and condition?

Are failures analysed and appropriate adjustments made to operational/maintenance plans?

Is risk management applied to prioritise tasks?

OSD FINDINGS

Maintenance Philosophy

AGN has adopted a risk and reliability based maintenance philosophy and maintenance frequency(s) for all individual network assets that references back to the relevant codes, regulations and operational history. An optimal preventative maintenance program for assets that balances risk and maintenance expenditure is then established.



Maintenance Plan

The Introduction and Objectives stated in the 2006 Asset Maintenance Plan states the following:

1.0 SCOPE

This Network Asset Maintenance Plan provides the basis for the scheduled and planned maintenance of all major components of the AlintaGas Networks (AGN) gas distribution system. The Plan also set the fault criteria of various assets before any reactive maintenance is carried out. The Plan applies to all assets extending from the "physical gate point" of each gate station on the respective transmission pipelines to each customer meter set and gas plant facilities.

The Plan outlines the overall maintenance philosophy adopted, the maintenance frequencies and the required maintenance activities for individual network assets based on risk and reliability centred maintenance (RCM) principles and references to the relevant codes, regulations and operational history.

The Plan also requires that the performance of the various network assets be monitored against identified Key Performance Indices (KPI's). The subsequent assessment of these KPI's ensures the continuous improvement of this plan.

The Plan includes a scope of work required for the maintenance of the individual asset detailing the extent and in some cases, the acceptable criteria of these activities. The scope of work were historically identified with the development of specified annual quantities (SAQ) carried out by AAM Operations, Gas Distribution West.

For the purpose of this Plan, high pressure pipelines include those sections of the Gas Distribution System (GDS) of steel construction designed with a maximum allowable operating pressure of between 300 kPa and 6900 kPa and operated at any pressure below 6900 kPa. Medium pressure pipelines are those that are operated below 300 kPa.

2.0 OBJECTIVE

The objective of this Plan is to provide a pro-active maintenance strategy that reduces asset life cycle costs, while maintaining a high level of security of supply and ensuring the safe, efficient and reliable operation of the GDS and associated network assets.

This plan also includes the management of gas meters through statistical sampling programme for the field life extension of the domestic and the AL12 commercial gas meters.

Section 7 of the Asset Maintenance Plan sets the KPI requirements as follows:



7.1 Key Performance Indicators

Table 12 contains a comprehensive list of key performance indicators (KPI's) to be reported on by AAM Operations personnel. The Asset Management System (AMS) has set some of the KPI targets, which also requires that they be monitored on a regular basis.

Other KPI's have been set by this plan to enable an informative system analysis during the annual review of the Asset Maintenance Plan.

	Table 12 Rey Periorina	ice inu	icators	
KPI	Parameters	Targ	Freq	Reporting
Pipelines / Laterals	5			
Damage to a HP	Instances per 100km of main	1	3 m	SAP Report
pipeline				Asset Management
Damage to a PEHP	Instances per 100km of main	1	3 m	SAP Report
pipeline				Asset Management
Damage to a MP/LP	Instances per 100km of main	3	3 m	SAP Report
Pipeline				Asset Management
Defects (Leaks) per	Defects per 100km of mains	20	3 m	SAP Report
km of main				Asset Management
Damaged Warning	% of signs damaged	5 %	3 m	SAP Report
Signs				Asset Management
CP Test Points	% of test point voltage	5%	3 m	SAP Report
Voltage Potential	potential's higher than –0.85V potential			Asset Management
Regulator Sets / PRS	5			
PRS Failures	% of PRS failures	2 %	3 m	SAP Report
				Asset Management
HP Regulator Set	% of HP regulator set failures	2 %	3 m	SAP Report
Failures				Asset Management
MP Regulator Set	% of MP regulator set failures	5%	3 m	SAP Report
Failures				Asset Management
Meter Sets (M30AI a	nd above)			
Meter Set Failures	% of meter set failures	2 %	3 m	SAP Report
				Asset Management

Table 12	Key Performance Indicators
----------	----------------------------



KPI	Parameters	Targ	Freq	Reporting
Domestic & Commer				
Domestic Meter Defects	% of defects reported on domestic meter installations	2 %	3 m	SAP Report Asset Management
Small Commercial Meter Defects	% of defects reported on small commercial meter installations	8 %	3 m	SAP Report Asset Management
Meter Installations Damaged	% of meter installations damaged	1%	3 m	SAP Report Asset Management
Business Developme	ent			
Odorant Level Compliance	% of samples with odorant levels below the allowable limits	5 %	3 m	Reported by Business Development
Composition Level Compliance	% of samples with composition levels outside the allowable limits	5 %	3 m	Reported by Business Development

Coastal Gas Distribution Networks

General asset maintenance

All maintenance activities on the Coastal gas distribution networks are scheduled through SAP and coordinated by AAM staff based in Perth.

The AAM field staff based in Jandakot, Geraldton and Bunbury carry out the scheduled maintenance and complete the relevant maintenance checksheets and return these to Jandakot for processing. This information is then fed into the SAP and GNIS (if required) systems for reporting and/or analysis as required. The relevant information in SAP is then incorporated in any specific projects that may be required or identified following the annual network performance views.

Four Pressure Regulator sites were inspected during a site visit in Canning Vale. Also inspected were one large industrial meter/regulator site and four smaller commercial meter sites.

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 all of the 9 sites were reviewed. All of the sites visited had been last inspected late 2006 or early 2007. Corrosion was not stated as an action on one of the reports where rust is prevalent on the pipework at a bakery meter set - see picture below. No action has been taken to date.





During the site visits, 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.

Maintenance KPIs

A snapshot of maintenance KPIs extracted from AGN's third quarter report for 2006 is shown in the tables below. All KPIs recorded in the table were met except for broken services.

It was also noted that data for Items 27-35 was not completed.

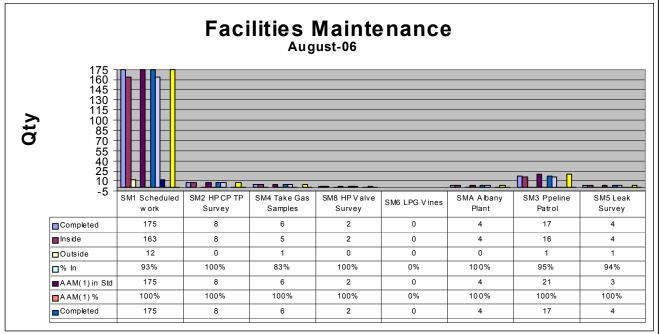


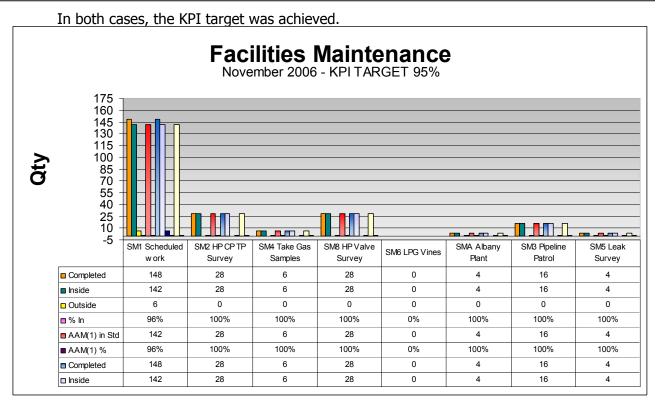
	KPI Title	Parameters		y Measure	KPI				Comments / Actions
		where the state of the state of the	Result	Base	Quarter	Annual	Target		
	Pipelines								
1	Damage to a HP pipeline	Instances per 100km of main	0	776	0.0	0.0	1	Pass	
	Damage to a PEHP pipeline	Instances per 100km of main	4	644	0.6	2.5	5	Pass	
2	Damage to a MP/LP Pipeline	Instances per 100km of main	54	10,731	0.5	2.0	3	Pass	
3	Defects per km of main	Defects per 100km of mains	78	12,154	0.6	2.6	20	Pass	
4	Damaged Warning Signs	% of signs damaged	40	2,200	1.8%	1.8%	5%	Pass	
5	CP Test Points Voltage Potential	% of test point voltage potential's higher than -0.85V potential	1	1,835	0.1%	0.1%	5%	Pass	
	Regulator Sets / PRS				1	:	1 1		
6	PRS Failures	% of PRS failures	0	12	0.0%	0.0%	2%	Pass	
7	HP Regulator Set Failures	% of HP regulator set failures	0	146	0.0%	0.0%	2%	Pass	
8	MP Regulator Set Failures	% of MP regulator set failures	0	301	0.0%	0.0%	5%	Pass	
	Meter Sets								
9	Meter Set Failures	% of meter set failures	2	729	0.3%	1.1%	2%	Pass	
10	Meter Set Meter Accuracy	% of meters found operating outside prescribed meter accurracy of 3%	0	729	0.0%	0.0%	5%	Pass	
	Isolation Valves								
	Isolation Valves not Operational	% of isolation valves not operational	0	232	0.0%	0.0%	5%	Pass	
	Domestic and Commercial	Meter						1	
2		% of defects reported on domestic meter installations	1539	535,157	0.3%	1.2%	2%	Pass	
		% of defects reported on small commercial meter installations	76	8,697	0.9%	3.5%	8%	Pass	
4	Meter Installations Damaged	% of meter installations damaged	59	543,854	0.0%	0.0%	1%	Pass	
		No of Populations failing statistical sampling.	0	330	0.0%	0.0%	2%	Pass	

16 No of "Low Pressure Alarm"								
Instances	Total No.	0	152	0	0	10	Pass	
17 No of "Operating Outside Expected Range" Instances	Total No.	0	152	0	0	20	Pass	
Commissioning								
20 High Pressure Pipelines	Data Report received within 7 days							
		0	0	#DIV/0	#DIV/0!	100%	N/A	
Operations Major Events	and Incidents							
21 No. of Broken Mains	No. per 100 km main	54	12,154	0.4				
		54	12,104	0.4	1.8	2.5	Pass	
22 No. of Broken Services	No. per 100 installations	373	543,854	0.07	0.27	0.25	Fail	Increase activity subdivision where pre-lay services are installed
Operations System Perfo	rmance				-			, y contest are motalica
23 Unaccounted for Gas								
	% of network throughput	1.9%	N/A	1.9%	1.9%	2.7%	Pass	
24 Customer Minutes off Supply	SAIDI - Customer Minutes off Supply /	12.000						
statute of oupply	Average No Cust	17,890	543,854	0.03	0.13	0.66	Pass	
25 Supply Interruptions	% of customers effected	576	E40.05 :	0.115				
	in or outloners chected	576	543,854	0.11%	0.42%	0.6%	Pass	
Decommissioning					1		1	
26 Demolitions	% completed within 7 days							
	% completed within 7 days	451	465	97.0%	97.0%	95%	Pass	
Auditing								
27 Progress of Internal Quality								
Audit Program	No. Audits per quarter	0	0	#DIV/0!	#DIV/0!	5%	#DIV/0!	
Customer Service Standa								
9 Customer Connection Time	% of Services Connected to established	0	0	#DIV/0!	#DIV/0!	95%	#DIV/0!	
0 Attendence to Decker 11	LOM within 7 days					5070		
O Attendance to Broken Mains and Services	% of Faults attended to within 1 Hour	0	0	#DIV/0!	#DIV/0!	95%	#DIV/0!	
1 Attendance to Gas Smells in a	9/ etteradada 2011 - 2011							
Public Area	% attended to within 2 Hours	0	0	#DIV/0!	#DIV/0!	95%	#DIV/0!	
	% attended to within 48 Hours							
Meter – Standard Response	/ altenueu to within 48 Hours	0	0	#DIV/0!	#DIV/0!	95%	#DIV/0!	
	% attended to within Specified Time							
Meter – Urgent Response	anonadu to within opechied Time	0	0			95%		To be confirmed
	% attended to within 2 Hours	0	0	#500.000				
		0	0	#DIV/0!	#DIV/0!	95%	#DIV/0!	
(Commercial)								
(Commercial)	% attended to within 3 Hours	0	0	#DIV/0!		95%	#DIV/0!	



A snapshot of facilities maintenance KPIs is shown in the charts below; the first chart is for the month of August 2006 (winter month) and the next for November 2006 heading into the summer months.

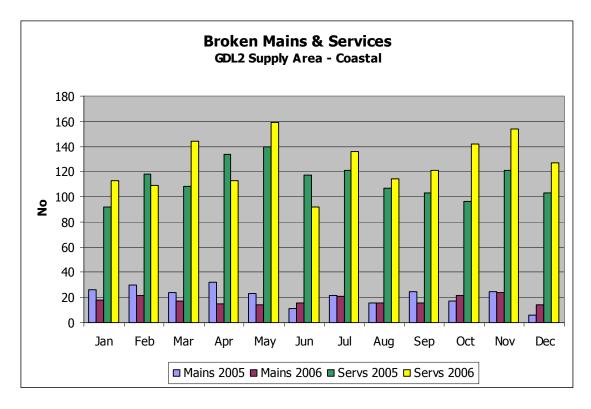


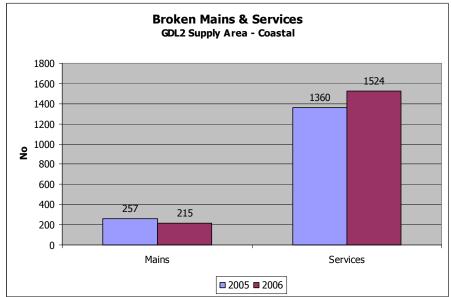




Breaks on Mains and Service Connections

The number of breaks recorded on the Coastal gas distribution networks over the review period is shown in the graph below.



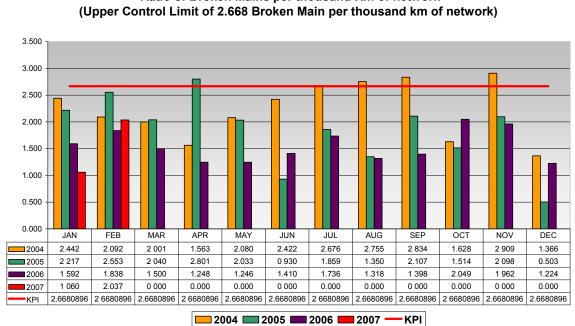




ALINTA GAS NETWORKS ASSET MANAGEMENT SYSTEMS

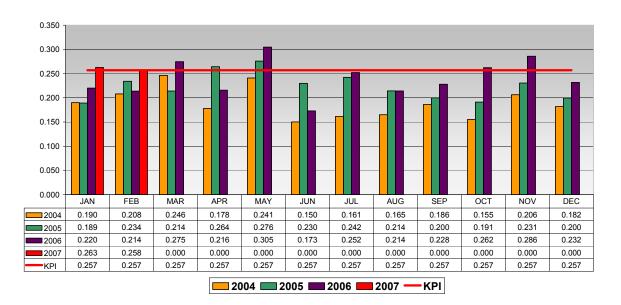
GDL 2 AUDIT REPORT

APPENDICES



Ratio of Broken Mains per thousand Km of network

Ratio of Broken Services per thousand customers on the Distribution network (Upper Control Limit 0.257 broken services per thousand customer)





The mains breaks recorded in the Coastal gas distribution networks are **well below** AGN's internal maximum KPI target of 3/100 km main; 0.025 for 2005 and 0.018 for 2006.

In OSD's view, AGN should review the KPI target for the level of mains breaks to reflect more closely the actual number of mains breaks occurring on a monthly basis. This action may result in AGN taking a more proactive approach to controlling the level of mains breaks including further education programs with the relevant parties undertaking works over the gas distribution networks in the GDL 2 supply area. OSD notes that AGN has an established awareness program.

The majority of the breaks that occurred over the review period were predominantly services as noted in the chart above - (2,884). This translates into an average monthly total of 120, which is the internal AGN KPI target.

AMM staff advised that the OneCall Dial-before-U-Dig is widely promoted by all utilities (gas, water, electricity and telcos). AGN believes the promotion is very effective, which if evident from the fact that there was only one incident of damage to mains.

AAM contends that it is not practical to promote OneCall Dial-before-U-Dig to customers to reduce the number of breaks on service connections within private properties.

OSD's view is that the total service breaks over the period are significant and are on average matching the KPI threshold set by AGN.

OSD's assessment is that additional, specific education measures for customers are required to reduce the number of breaks on gas services within customer's properties. This may best be achieved via the customer's gas retailer.



Above ground installations

AGN has a major pipeline crossing installed on the Mount Henry Bridge crossing the Canning River in Perth.

A bridge inspection was completed in September 2006.

The inspection highlighted surface rust on the pipework and pipe supports.



Remedial work is planned to be completed in 2007.

Leakage Surveys

Leakage surveys have been completed on the Coastal gas distribution networks over the period.

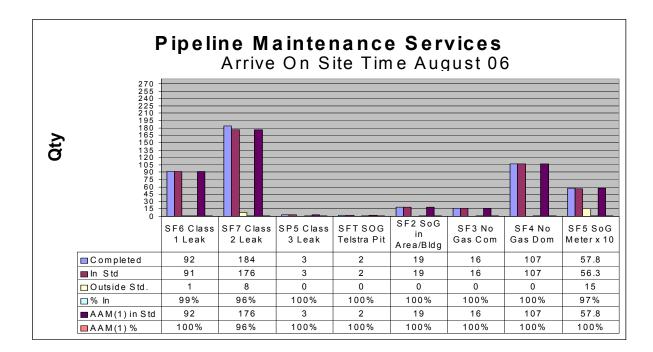
No significant leaks were recorded during the last survey in 2006.

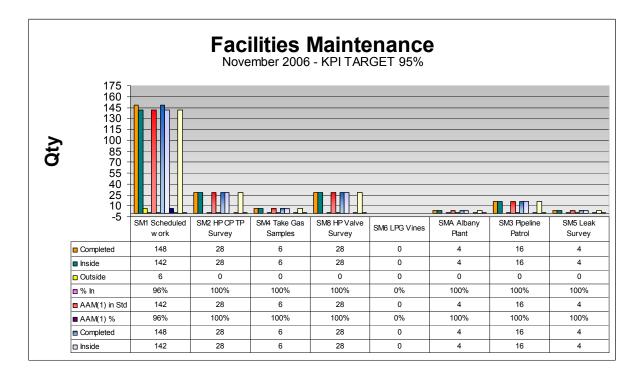
Gas Leaks/Escapes

A snapshot of AGN attendance to reported gas leaks is shown in the charts below.

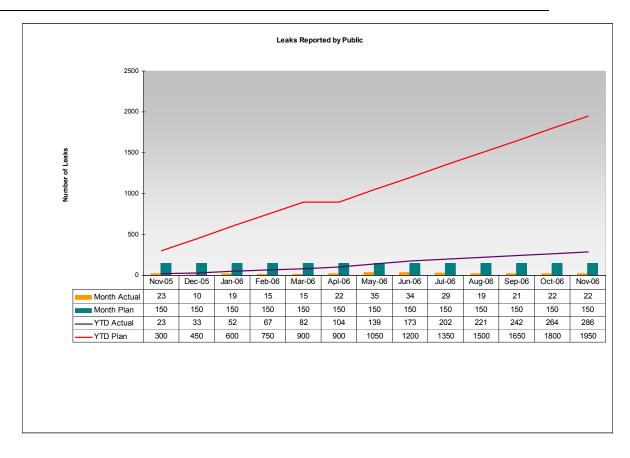
The KPI target is 95%. In both months the target was exceeded.











A snapshot of gas leaks or escapes reported by the public in the period is shown in the chart above. Actual reported escapes are well down on what was planned. Obviously, AGN need to reassess the plan for 2007 to reflect the current trend in reported leaks or gas escapes.

Recommendation GDL2-6:

AGN shall ensure that corrosion on pipework is properly addressed during scheduled maintenance work on all network assets.

Recommendation GDL2-7:

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.

Recommendation GDL2-8:



AGN should reassess the target KPI for mains breaks and consider specific additional education measures to reduce the number of mains breaks in the Coastal gas distribution networks.

Recommendation GDL2-9:

AGN should consider specific additional education measures (give greater emphasis to prevention of damage to gas services in its information bulletins) to reduce the number of breaks on service connections in the Coastal gas distribution networks.

Recommendation GDL2–10:

AGN should reassess the target KPI for publicly reported gas leaks or escapes to reflect current reporting trends.

EFFECTIVENESS RATING: 3



KEY PROCESS #7: ASSET MANAGEMENT INFORMATION SYSTEMS (MIS)

An asset management system is a combination of processes, data and software that support the asset management functions

AUDIT OBJECTIVE

Demonstrate that the asset management information system provides authorized, complete and accurate information for the day to day running of the asset management system.

EFFECTIVENESS CRITERIA

Are all MIS documentation is available and suitable for users and IT operators?

Are security controls (logical and physical) adequate and in place?

Are data backup procedures in place and fully understood by all staff and contractors?

Are management reports adequate to monitor against licence obligations?

OSD FINDINGS

Alinta manages all Information Technology applications for its subsidiary companies including AGN and AAM from its Mt Waverley office in Victoria.

AAM advise that the information management systems used for monitoring and facilitating network operation and maintenance activities include:

- GNIS for identifying an asset's geographical location as well as basic asset details;
- SAP Computerised Maintenance Management System for asset technical data sheets, maintenance plans, and for creating and capturing fault work conducted in the network;
- SynerGee network flow and pressure modelling information system;
- Pressure Monitoring Devices (PMD), High Pressure Regulator (HPR) logging data and slamshut activation alarm (at selected locations in the network);
- Quality Manual outlining work procedures for maintenance activities in the network;
- Process Flow Diagrams for major activity types in the network.



GNIS and SAP Asset Register

GNIS is a system for displaying network assets such as pipelines, regulator and meter sets and meters overlayed on a cadastral base. In this system only essential data is recorded against each asset such as equipment identification number, asset distribution level (high or low pressure), as well as address and installation date.

All assets on this graphical system are directly linked to AAM's SAP database. In the SAP database a more detailed description of the asset's technical details are given as well as any maintenance plans, if applicable.

The GNIS controls, at the top level, the removal and addition of assets from AGN's gas distribution network. Business process scripts, master asset lists as well as policies (*Regulator Set Numbering and Relocation Policy*) have been developed for managing the GNIS and SAP asset register.

All "as-built" information for construction activities such as new main extensions in sub-divisions, new pipelines etc. is forwarded by Operations and this information is then entered into GNIS.

Details of service work conducted on an asset are recorded in the SAP database by selecting the appropriate asset in the GNIS and drilling down to SAP to create a work order. The information that can be recorded in the work order includes the address, fault type (damage or corrective work), and the cause of the fault and object part that needs to be repaired.

Through SAP all operational and maintenance activities conducted by AAM operations staff are recorded. Accordingly SAP is used to audit the level of compliance in achieving the operational and maintenance strategies and plans. Through the closure of notification, SAP is also used to identify the completion of activities for payment purposes.

The GNIS system is maintained by the *GIS Drafting Team Leader WA* who is responsible for any requested system changes as well as managing the maintenance of the system and the periodic updating of the GNIS cadastral base from the Department of Land and Administration (DOLA). Annual reviews of GNIS are also conducted to ensure that the network details used for modelling purposes (SynerGee linked to GNIS for network information) are accurate.

The as constructed details for assets in the network (pipelines, regulator and meter sets, etc.) are also recorded in GNIS within 10 days from their commissioning date.



AAM Asset Services manages the SAP database technical records while SAP system changes and performance (improvements in work flow processes, accuracy and effectiveness of data captured etc.) are managed through the Business Systems section. The accuracy of technical data stored in SAP for assets on maintenance plans, are continuously reviewed based on work sheet updates (current technical details in SAP are outlined on this sheet) provided by field personnel. Annual reviews are conducted to ensure all asset types identified in the *Distribution Network Asset Management Maintenance Plan* are on maintenance plans in SAP.

The Information Services (IS) group at Mt Waverley has advised that GNIS is currently being upgraded at present, as it was implemented in Alinta in 1998. Go live is scheduled on the current release for May 2007.

IS group has advised that SAP 4.0B was implemented around 1998 as well, and is currently slated for an upgrade around May – Nov 2008.

System Monitoring Systems and SynerGee

The operational performance of the network is primarily monitored through Pressure Monitoring Devices (PMD) and HPR sites.

A PMD site is typically installed on domestic meter installations that are located at the extremities of the gas distribution network. PMDs consist of a single data logger, pressure transmitter, electrical barriers, modem and power supply and are used for monitoring pressures in the system. Low pressure alarms are set for each PMD site depending on its location in the network, refer table 6.

HPR sites are installed at high-pressure regulator sets with the equipment at these locations consisting typically of a single data logger, barriers, transmitters, modem and power supply. At HPR sites both pressures and flow measurements are recorded. At HPR sites with slamshut activation, the inlet pressure is also alarmed.

Flow and pressure data that is recorded at PMD and HPR sites is then used to refine AGN network flow and pressure model managed in the SynerGee software package.

MIS policies and procedures

MIS policies are documented in a range of documents. A list of these documents was provided by the Information Services group at Mt Waverley.



IT service and licence documents were provided for inspection during the visit to the Mt Waverley office on 14 March. No IT licence failures or corrective actions have arisen over the review period.

IT service failures and corrective actions are recorded in spreadsheet form. No significant issues were recorded against the AMS MIS systems described above.

Back-up processes for all MIS systems used by Alinta are in place. Any failures and remedial actions are recorded.

Alinta has tight security processes in place on all MIS systems. No reports of significant breaches were recorded during the review period.

OSD's assessment is that the management information systems as described above are fully integrated and well suited to the current AGN asset management system requirements. Planned upgrades to the GNIS and SAP systems will enhance the overall management and quality of the data captured by these systems.

EFFECTIVENESS RATING: 5



KEY PROCESS #8: RISK MANAGEMENT

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

AUDIT OBJECTIVE

Demonstrate that an effective risk management framework is applied to manage risks related to the maintenance of service standards.

EFFECTIVENESS CRITERIA

Are all operations carried out within framework of effective risk management?

Are there adequate plans/procedures in the event of an incident?

Is a risk assessment database maintained for all network assets?

Does the risk database include treatment plans, including action items and monitoring of completion of actions?

Are the risk management policies and procedures applied to both internal and external risks?

Are the probability and consequences of asset failure regularly assessed and recorded?

OSD FINDINGS

Risk Management

AGN's Asset management Plan for 2006-2010 has established the criteria and basis on which risk is managed in the gas distribution business in WA.

An excerpt from Section 8 of the AMP is reproduced below for reference.



8.0 RISK MANAGEMENT

8.1 Introduction

Alinta adopted the AS 4360:1999 as a benchmark and guidance to establish its risk management framework. The aim of an effective organisational risk management is to build a risk environment that exhibits the following features:

- the key stakeholders and senior management are in a position to confidently make informed decisions relating to the trade off between risk and consequence. Daily business decisions at the operating level are made within the context of the organisation's risk management philosophy.
- the risks relating to the value of assets (eg, an organisation's customer base, its supply chain, its intellectual and knowledge capital, its processes and systems) are acknowledged and optimised as fully as its physical and financial assets.
- the need for operational control is balanced with entrepreneurial empowerment.
- risks are systematically identified and managed on an aggregated basis by a senior management that is accountable for its decisions.
- new and existing investments are evaluated on both a stand alone and a
 portfolio basis.
- the organisation understands its risk management capabilities thoroughly, its processes are well aligned, and it can move quickly on opportunities that would cause consternation or failure in less sophisticated organisations.

Alinta recognises risk management as an integral part of its business operation and strategic planning and adopt a common approach to the management of risks. The foundation of the risk management policy is the obligation and desire to protect:

- Alinta's people and its customers;
- · The environment in which Alinta operates; and
- Alinta's position as provider of the highest quality products and related services.

Alinta's policy in respect of these foundation attributes is that physical, financial and human resources will be applied to ensure Alinta's standards of product and services achieve and exceed expectations.

To achieve the economic expectation of Alinta' shareholders, the organisation must pursue opportunities involving some degree of risk. Alinta's policy is to give full and due consideration to the balance of risk and reward, as far as practicable, to optimise the rewards gained from its business activities.

Given Alinta's dynamics business operations, the risk management framework and risk identification is reviewed as necessary.

Risk assessments are also carried out when there are significant changes to processes, equipment or materials, as a part of change management. All significant projects also undergo a risk assessment phase. Risk management concepts



influence all decision-making processes within AGN, including contractor management. The contractors' field based activities are monitored through targeted, risk-based audits.

The concept of risk greatly influences the development of AGN Asset management strategies.

8.2 Strategic Risk

The following are some of the significant strategic risks facing the business.

- Mergers and acquisitions/divestment activity eg. inadequate business plans and markets change;
- Demand drop following market subsidies provided for other energy sources such as solar;
- Unfavourable findings of the Regulator eg. pricing or access arrangements;
- Uncompromising technical/safety requirements by the Energy Safety;
- Failure to improve or maintain sales profitability of gas;
- Aggressive competition from Western Power.

Various business units have the responsibility of mitigating and managing the various risks.

8.3 Operational Risk

These risks have been reviewed using the new classification and rating process and action plans are in place. The risks have also been reorganised, assessed and categorised in terms of strategic and operational and the extent to which the risk may be controlled and influenced by Alinta. As a result of the classification review there no operational risks that are rated as extreme.

8.3.1 Environment

The environmental policy of the company and its implementation is outlined in this report in Section 10 of this report.

8.3.2 Reliability of Supply

The system reliability is monitored through the following indices, which reflect the performance at the customer's premise.

- · Priority one faults (percentage of faults responded to within 60 minutes)
- CAIFI (total average number of interruptions to customers interrupted)
- SAIFI (the average frequency of unplanned interruptions per 1000 customers)

Effective asset inspection and maintenance programs are being implemented. These, together with good network planning and reinforcement ensure the high standard of network reliability performance is maintained. Interruptions affect system reliability and are normally caused by third party that is beyond AGN control.



8.4 Catastrophic Risks

Catastrophic risks generally tend to have a very low likelihood combined with very severe consequences. Control measures against these risks tend to be extremely expensive, thus emphasis is placed on a cost benefit approach, with due emphasis placed on contingency measures.

Risks of a catastrophic nature on AGN assets generally relate to damage to high pressure pipeline assets and the potential severe impact on the public in the vicinity of the incident.

8.4.1 Pipeline Failure

High pressure pipeline failure can lead to intense fire with sufficient radiant heat to cause combustion of surrounding buildings and severe injury or fatalities to people with short exposure times within several hundred metres.

The risk associated with high pressure including transmission pipelines is managed through compliance to industry codes in relation to protective measures such as depth of cover, pipeline wall thickness, warning tapes and markers as well as proactive support for programs to educate parties likely to damage pipelines and promotion of industry based one-call systems.



Risk criteria tables removed by Alinta

In addition, AGN has also issued a document entitled "RCM and Risk Analysis for Distribution Assets – 2005/06, Doc No ANS 06/08, Rev C, 11 August 2006."

AGN has prepared this document to allow a review of the performance history of all network assets that will assist AGN in developing new cost-effective maintenance strategies, and addressing issues where assets have been undermaintained or over-maintained.

As noted in the excerpt from the Asset Management Plan above, AGN is now focusing on the RCM principle of asset maintenance, which most utility operators are now adopting to varying degrees to optimise the asset's performance and reduce operating costs over the life of the asset. The RCM performance targets are annually compared against operational data collected from planned as well as fault work. This RCM and Risk analysis forms part of an overall Asset Maintenance Management Process and provides feedback to develop effective maintenance plans as well as strategies and philosophies.

Consideration to change maintenance frequencies as well as assigned asset performance targets are based on this risk assessment.

OSD also notes that final approval of the Safety Case will underpin the asset management system that AAM manages under the OSA with AGN, specifically in operational risks covered by the aforementioned AGN documents.

Overall, OSD considers that the risk management processes in AGN are sound, and with ongoing performance assessment of the gas distribution networks, the degree of risk will be more manageable.

EFFECTIVENESS RATING: 4



KEY PROCESS #9: CONTINGENCY PLANNING

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

AUDIT OBJECTIVE

Demonstrate that contingency plans have been developed and tested to minimize any significant disruptions to service standards.

EFFECTIVENESS CRITERIA

Are the protections built into the AGN asset management system being monitored and reviewed?

Are contingency plans documented, understood and tested and operable?

Are contingency plans capable of covering significant risks?

OSD FINDINGS

Emergency Management Review

Alinta currently has a range of emergency procedures covering preparedness, response and recovery, depending on the scale of the emergency. Most cover the network assets, but also include corporate requirements in the face of a significant crisis facing the company.

Currently all Alinta emergency and crisis management documentation has been under review to take account of changes in the company structure and recent acquisitions. This review is scheduled for completion in October 2007.

The outcome from this review will be a common suite of emergency and crisis management documents across the Alinta businesses, including AGN and AAM in WA.

Emergency Response Plan

AGN currently maintain an Emergency Procedures Manual (EPM) that provides guidance to all AGN staff in handling emergencies on the WA gas distribution networks. Seven primary procedures incorporated in the EPM are:

- □ "Emergency Prevention" Doc No DD-P-22110
- □ "Emergency Preparedness" Doc No DD-P-22120
- □ "Emergency Response" Doc No DD-P-22130

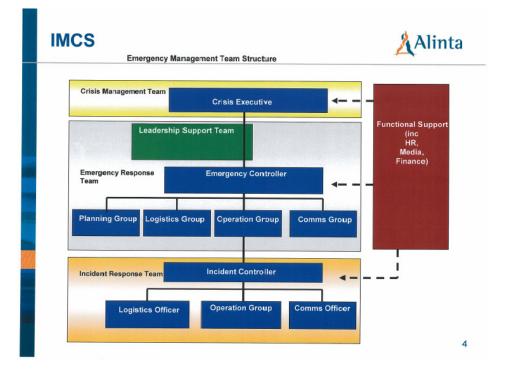


- □ "Emergency Recovery" Doc No DD-P-22140
- □ "Curtailment" Doc No DD-P-22161
- Gas Supply System Emergency" Doc No DD-P-22162
- "Emergency Response Roles" Doc No DD-P-22133

These documents were originally prepared some 7-9 years ago and have periodically undergone general revisions to reflect changes in company structures and personnel.

As stated above, a comprehensive review is being carried out by Alinta that will obviously introduce a new suite of documentation pertaining to emergency management in the early part of 2008.

The planned emergency management structure is as shown in the chart below. For the most part Alinta has stated that it is a refinement of the existing structure in place across the various subsidiary companies, including AGN.



The chart below (excerpt from DD-P-22130) outlines the current process used by AGN to respond to incidents or emergencies on the gas distribution networks.



Incident/emergency response chart removed by Alinta

The planned incident and/or emergency response process envisaged by Alinta following the review is shown in the charts below. The chart also shows the management level at which a crisis will be handled by Alinta and its subsidiary companies.

Crisis management chart removed by Alinta

Alinta has also produced a document entitled "*Emergency Risk Management Framework*", *February 2007*, which is currently in draft form for review.

This document is intended to underpin all emergency response management across Alinta and its subsidiary companies, including AGN.

Crisis Management Plan

Refer comments under Emergency Management Review above.

One Call System

Refer comments under Key Process #5.



Coastal Gas Distribution Networks

General comments

AAM staff have advised that a new emergency room is planned for completion at the Jandakot base in 2007. AAM expects that this will improve the coordination of response team(s) and communications between all parties involved in the management of incidents and/or emergencies of AGN.

Notifiable incidents

Refer comments under Key Process #5.

Emergency Exercises

AAM conducted several planned emergency exercises in AGN's Coastal supply area during the review period.

One important exercise was carried out in the Perth CBD area on 9 August 2006 to test the efficiency of the CBD Sectionalisation Plan originally developed in the 1990s. A full report incorporating the debrief with all emergency agencies was prepared on 10 September 2006 and a copy sent to each party involved in the exercise.

A number of actions were prepared following the debrief. All have completion dates varying from March through to December 2007.

Other planned emergency exercises conducted were as follows:

Exercise "Neptune" – gas transmission pipeline exercise; 10 March 2005

Emergency Exercise "Mungara" – desktop exercise centred on Geraldton; 10/11 May 2005.

Alinta Crisis Management exercise "Boyne 05" – desktop exercise involved Alinta executive management and Queensland government officials as exercise was focused on the Queensland Gas Pipeline. Exercise tested the CMT systems.

Exercise "Merlot" – desktop exercise based on an incident on the Dampier-Bunbury Pipeline (DBP) primarily to train the DBP management team and DBP CMT.

OSD observed that in Section 5.6.2 of the unapproved Safety Case, testing and evaluation for emergency preparedness would be carried out at least annually. The tests are stated as being field exercises.

It is not stated if the tests will be conducted annually in each of the licensed supply areas.

AGN is of the view that one field exercise conducted annually within the gas distribution business is sufficient given that actual incidents requiring a level of



planned response occur on an occasional basis, in some cases daily. AGN believes that these incidents that may involve external emergency services provide a high degree of testing of the AGN emergency preparedness capability.

OSD is of the view that AGN should consider the approach that a test of the emergency preparedness capability should be conducted annually within each of the licensed supply areas, including GDL 2 supply area. Testing should be conducted on a rotating schedule in other significant urban areas within the GDL 2 supply area so that all areas are tested within a 5 year period. AGN should consider whether more frequent tests are carried out particularly in highly populated areas where large evacuations may be required.

AGN must ensure that actions derived from the debriefing sessions following planned emergency exercises are followed through and completed to the agreed timelines and AGN should review the emergency testing program to ensure adequate field based testing is carried on an annual basis in each of the licensed supply areas as noted above.

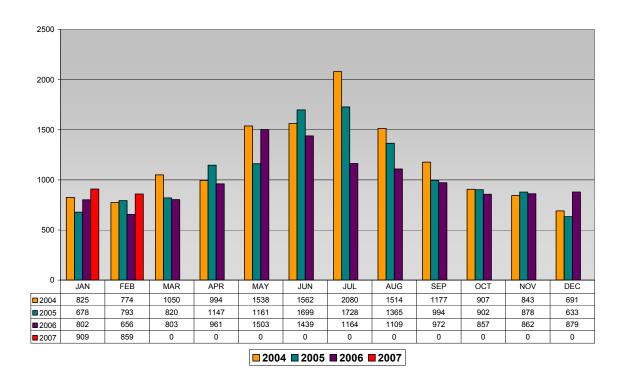
Emergency Resources

In addition to the trained field staff, AAM also maintain a High Pressure Gas Leak Team (HPGLT) at Jandakot. The HPGLT is specifically trained to respond to incidents or emergencies involving gas escapes from the high pressure pipeline assets in the Coastal gas supply area.

Network faults

An extract from the AGN Operations report for February 2007 provides an indication of the number of faults on the network handled by AAM staff. As can be observed the highest numbers of faults occur during the winter period, obviously related to the cold wet weather that prevails at that time.





Total reactive fault work received monthly the GDW Control Room

Issues

OSD were advised at the pre-audit meeting with the Authority and DOCEP (Energy Safety Division) – "Energy Safety" - that one particular issue was of concern to them.

This issue related to an incident that occurred in March 2007 where water entered the gas mains at Willetton. This incident falls outside the review period, but in Energy Safety's view was serious enough to warrant investigation as part of the AMS review.

OSD was not able to review any report pertaining to the above incident because AGN advised that none was available. OSD was advised by AGN that water got into the gas main as a result of a water jet from a water service impinging on an adjacent gas service. The incident impacted 7 customers. AAM cleaned out water from the main and issued Inspector Orders to the affected customers for cleaning out their installations using a gas fitter.



The affected customers engaged the services of a gas fitter who charged an unreasonable rate for clearing the water form the customers' installation. As a result a customer made a complaint to Energy Safety.

AGN conducted an assessment of the incident. At a meeting between AAM and Energy Safety, it was agreed AGN would pay for the cost of removing the water from the affected installations.

AGN advised OSD that this type of incident (water entering into in a customer's installations from gas mains) has not occurred previously and as such AGN has no documented policy and operational procedures for handling situations where water enters the gas distribution networks that affects one or more customers supplied off that section of the network.

AAM advised OSD that they are in the progress of developing a policy and procedures document to deal with such an incident. The policy and procedures document is expected to be implemented by September 2007.

In summary, OSD considers that the current documentation and processes with regard to contingency planning cover to a reasonable degree the requirements for emergency planning and response on the gas distribution networks in the GDL 2 supply area. However, OSD recommends that further improvements are required as noted above and as noted in the recommendations below.

OSD envisage that the documentation and processes will be enhanced following the current review of policies and operational documentation by the parent company.

Recommendation GDL2-11:

AGN should review the current testing program for emergency preparedness capability within each of the licensed supply areas, with a minimum requirement of at least one field exercise carried out annually. AGN should initiate discussions with Energy Safety Division to ascertain an acceptable frequency for emergency exercises in the Coastal supply area.

Recommendation GDL2-12:

AGN should consider whether more frequent tests are carried out particularly in highly populated areas where large evacuations may be required. AGN should initiate discussions with Energy Safety Division to ascertain an acceptable frequency for emergency exercises in the Coastal supply area.



Recommendation GDL2-13:

AGN should ensure that all actions arising from completed planned emergency exercises are followed through and completed to the agreed timelines.

Recommendation GDL2-14:

AGN must develop a policy and operational procedures for handling situations where water enters the gas distribution networks that affects one or more customers supplied off that section of the network.

EFFECTIVENESS RATING: 3



KEY PROCESS #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

AUDIT OBJECTIVE

Demonstrate that a financial plan is reliable and provides for the long term financial viability of the services.

EFFECTIVENESS CRITERIA

Does the asset management system enable AGN to operate the network on a commercially sustainable basis?

Is the financial performance of the network cost effective and efficient?

Who is accountable for the financial planning process?

Are the reasonableness of the Opex and Capex programs such to maintain and enhance the network?

Does the financial plan states:

- Objectives
- Strategies
- Actions to achieve the objectives
- Projections of operating statements
- □ Statement of financial position
- □ Predictions of income for next 5 yrs?

Does the financial plan identify the source of funds for capital expenditure and recurrent costs?

Are significant variances in actual/budget income and expenses identifies and corrective action taken where necessary?



OSD FINDINGS

Access Arrangement

The spending levels for operating and capital expenditure on the AGN networks are submitted to and approved by the Economic Regulation Authority (ERA).

The current Access Arrangements were originally approved by the ERA on 18 July 2000. A revision to the Access Arrangements was submitted to the ERA on 31 March 2004.

The revision was approved on 29 July 2005.

The current Access Arrangements cover the period 2005 through 2009.

The approved levels of capital expenditure are shown in the tables extracted from the Access Arrangements Information document as follows.



4.2.9 Capital Works and Capital Investment

Section 8.20 of the Code permits forecast capital expenditure on new facilities to be taken into account in determining Reference Tariffs, provided that expenditure is reasonably expected to pass the requirements in section 8.16 when the New Facilities Investment is forecast to occur.

AGN's forecast capital expenditure on new facilities taken into account in determining Reference Tariffs is summarised in Table 4.12.

TABLE 4.12 - FORECAST CAPITAL EXPENDITURE FOR THE

SECOND ACCESS ARRANGEMENT PERIOD

		YEAR E	NDING 31 DI	ECEMBER	
	2005	2006	2007	2008	2009
Mains:					
High pressure	0.66	0.83	0.83	0.74	3.32
Medium pressure	5.57	5.20	4.38	4.96	4.35
Medium low pressure	1.76	1.85	1.80	2.06	2.06
Low pressure	0.00	0.00	0.00	0.00	0.00
Secondary Gate Stations	0.01	0.01	0.01	0.01	0.01
Regulators	0.08	0.07	0.07	0.09	0.09
Meters and Service pipes	19.71	18.97	14.81	17.39	17.42
Equipment and vehicles	0.36	0.35	0.33	0.40	0.40
Information Technology	3.30	2.85	2.39	3.46	2.23
FRC	0.00	0.00	0.00	0.00	0.00
Buildings	0.01	0.01	0.01	0.01	0.01
Land	0.09	0.09	0.09	0.11	0.11
Total	31.53	30.24	24.73	29.23	29.99

(REAL \$ MILLION AT DECEMBER 2004)

4.2.9.1 Nature of planned new facilities investment

Planned New Facilities Investment mainly comprises:

- investment required to maintain the safety and integrity of the AGN GDS, to maintain Service levels, and to comply with regulatory requirements; and
- · investment to extend the network to meet new User demand.



The main items of New Facilities Investment are shown in Table 4.13.

TABLE 4.13 - FORECAST CAPITAL EXPENDITURE FOR THE

SECOND ACCESS ARRANGEMENT PERIOD: BY TYPE OF INVESTMENT

(REAL \$ MILLION AT DECEMBER 2004)

	YEAR ENDING 31 DECEMBER								
Category of Expenditure	2005	2006	2007	2008	2009				
User Initiated	23.88	21.53	17.67	18.24	18.27				
Renewals	3.01	3.63	3.32	4.67	3.53				
Demand	1.24	2.18	1.35	2.90	6.01				
Other	3.40	2.90	2.19	3.42	2.18				
Total	31.53	30.24	24.53	29.23	29.99				

Further statements and tables in the Access Arrangements Information document prepared by Alinta also state that AGN's KPIs compare favourably to other Australian as follows:

4.3.11 External Assessment of AGN's efficiency

In the preparation of this Access Arrangement AGN has engaged consultants to review its unit costs and overall operating forecasts. AGN engaged PA Consulting to review the company's budgeted O&M, to assess whether these would exceed the costs that would "be incurred by a prudent Service Provider, acting efficiently" (in accordance with clause 8.37 of the Access Code). PA Consulting concluded that:

"the forecast Non-Capital costs proposed by AGN meet the requirements of section 8.37 of the Code."

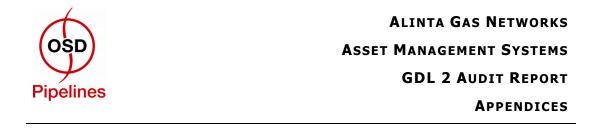
In addition to PA Consulting, GTL International was also engaged to review the unit costs of 19 field operations encompassing both capital and operating cost categories. This was to ensure that the unit costs used in these forecasts (both capital and operating) have been assessed as comparable and/or more competitive than UK benchmarks.

Table 4.21 below summarises the Key Performance Indicators (KPI) computed by PA Consulting. TABLE 4.21 - UNIT PERFORMANCE MEASURES FOR A SAMPLE OF FIVE

KPI's	AGN	Multinet	Envestra	TXU	Envestra
			(Vic)		(Qld)
\$M/100 Km Main	3424	4524	4843	5170	5670
\$/O & M Costs per Customer	76.6	63.0	78.3	84.4	164.4
\$/GJ	1.32	0.86	1.11	1.38	2.22
Customers/Main (km)	44.5	71.8	61.8	61.2	34.5

AUSTRALIAN GAS DISTRIBUTORS

The two independent unit cost analyses both indicate that AGN is efficient compared to its domestic peers.



7.1 Operating and Maintenance Cost per Kilometer of Main

AGN's operating and maintenance cost per kilometre of main compares favourably against that of other Australian Gas distribution businesses. The comparison is presented graphically in Figure 7.1. Operating and maintenance cost per kilometre of main is the most important of the available measures for assessing the reasonableness of Non-Capital costs because network size is a fundamental cost driver.

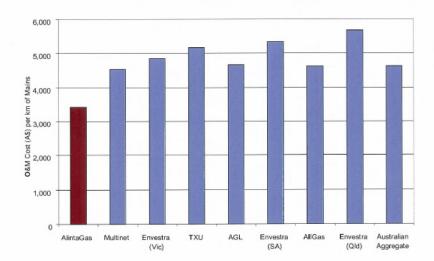
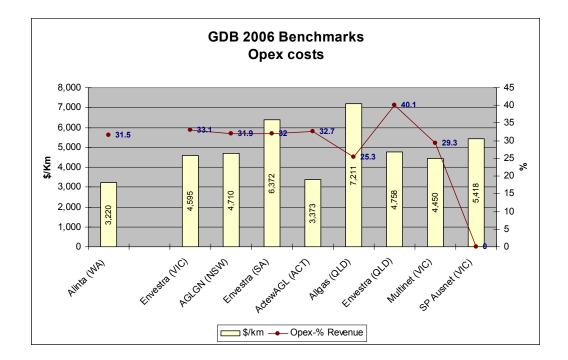


Figure 7.1: Operating and Maintenance Cost per Kilometre of Main

Further independent reviews of performance benchmarking has confirmed that AGN has the lowest operating and maintenance costs per kilometre compared to other Australian gas distribution businesses.

This is shown graphically in the chart below.





Financial planning process

The ANH/AGN Financial group advised the OSD Lead Auditor that the level of capital expenditure within AGN is a critical issue for the business in regards the growth of the WA economy, the maintenance of existing infrastructure, and the level of funding required to complete various works programs.

The capital expenditure approval process is discussed in Key Process#11, capital Expenditure Planning.

AGN financial reports

An extract from the Alinta Network Holdings Pty Ltd's (the parent company) Annual Financial Report to 31 December 2006 is shown for reference in respect of demonstrating the ongoing financial sustainability for the WA gas distribution business.

Extract removed by Alinta – commercially sensitive information



OSD has noted that profitability for 2006 is down on the level achieved for 2005, although the cost of materials and services for 2006 was up 12% on the 2005 costs. Details are shown in the table below.

Table removed by Alinta – commercially sensitive information

An extract from the ANH Financial KPI Report for July 2005 is shown for reference below. These reports are produced monthly by the ANH Financial Team.



Extracts removed by Alinta - commercially sensitive information





AGN-AAM Operator Services Agreement (OSA)

An extract of the financial performance achieved by AAM in the Operations Monthly Report for November 2006 is shown below for reference.

Extract removed by Alinta – commercially sensitive information

It is noted that whilst actual costs were above the AMP budget, for the month and year-to- date, all are within the re-forecasted costs to the end of 2006.

OSD's assessment is that the asset management system does provide AGN with the ability to operate the network on a commercially sustainable basis.

OSD also notes that the levels of expenditure are controlled to a significant degree by the Access Arrangements currently in place from 2005-2009 and approved by the Economic Regulation Authority.

Whilst the actual expenditures may fluctuate from year to year, the overall total approved amount is what is targeted for by AGN through the asset management plans.

AGN has a proactive approach to significant variances in actual/budget income and expenses and the ANH financial team quickly identifies and requires corrective actions or explanations from the parties incurring the expenditure.



AGN's operating and maintenance costs together with the capital expenditure outlays are contributing significantly to the maintenance and enhancement of the networks in the Coastal supply area (and the other licensed supply areas).

OSD has noted elsewhere in this report that the average age of the AGN's networks is less than 30 years old and those sections that are older are progressively planned for replacement by 2010.

As identified at the time of the approval of the current Access Arrangement regime, AGN's costs are among the lowest in Australia for gas distribution businesses.

EFFECTIVENESS RATING: 5



KEY PROCESS #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

AUDIT OBJECTIVE

Demonstrate that a capital expenditure plan 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.

EFFECTIVENESS CRITERIA

Is there a capital expenditure plan that details issues to be addressed, proposed actions, responsibilities and dates?

Does the capital expenditure plan provide reasons for capital expenditure and timing?

Is the capital expenditure plan consistent with the asset life and condition as per the asset management plan?

Is there an adequate process to ensure that the capital expenditure plan is regularly updated and actioned?

OSD FINDINGS

The ANH Financial group advised the OSD Lead Auditor that the level of capital expenditure within AGN is a critical issue for the business in regards the growth of the WA economy, the maintenance of existing infrastructure, and the level of funding required to complete various works programs.

At present, the following process occurs in terms of the AGN capital expenditure budget:

Under the Operating Services Agreement, AAM Program Management prepare forecasts of Capex projects, programs, and requirements, based primarily on the Asset Management Plan, which is linked back to the Access Arrangement agreed to for the period



- □ These are presented to "ANH" Energy Investments staff, initially, for review, comment, etc
- Once these staff have confidence in the numbers, they are presented to the "Asset Owners" – GM Energy Investments on behalf of the Alinta equity stakeholder, and senior financial staff representing the DUET equity stakeholders
- Approval of the annual program is the subject of Board submission.

The information gathered is then modelled in the ANH/AGN Business Model, where requirements for funding, and the impact of the forecasts are reviewed, initially by the Financial Controller and representatives of Alinta Treasury and Alinta Investment Analysis.

The final recommendation on any funding issues and the financial forecasts of the business are then submitted through to the representatives of the Asset equity stakeholders prior to submission to the Board for approval.

From the available information provided, and the discussions with ANH management Accountant, OSD's assessment is that AGN's approach to capital expenditure planning is robust and sustainable, and in line with the limits set by the current Access Arrangements.

Extracts from the AGN 2006-2010 Asset Management Plan on capital expenditure are shown below for reference.

The AGN capital expenditure budget is heavily influenced by customer growth forecasts.

AGN engaged an economic consultant in July 2005 to address long term customer growth, and the outcome is as noted in the extract below.



1.7 Financial Summary

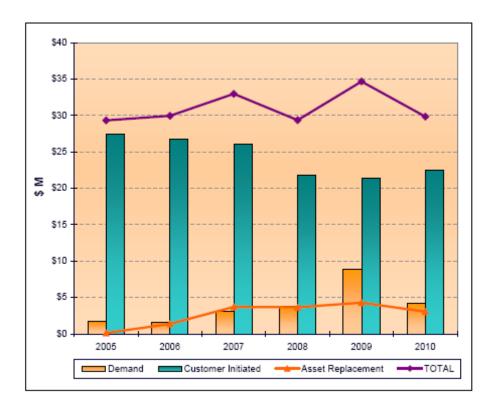
Capital expenditure is dominated by the mains extension and new connection rate of the network, which is highly influenced by economic conditions. The current expectation is for a continued high connection rate into 2007 followed by a considerable decrease and settling period over the remainder of the period.

Capital Type	2005 ('000)	2006 ('000)	2007 ('000)	2008 ('000)	2009 ('000)	2010 ('000)
Demand	\$ 1,656	\$ 1,631	\$ 3,120	\$ 3,767	\$ 8,909	\$ 4,171
Customer Initiated	\$ 27,391	\$ 26,738	\$ 26,076	\$ 21,880	\$ 21,402	\$ 22,553
Asset Replacement	\$ 119	\$ 1,370	\$ 3,705	\$ 3,645	\$ 4,285	\$ 3,050
Performance	\$ 151	\$ 220	\$73	\$73	\$ 73	\$73
TOTAL	\$ 29,317	\$ 29,959	\$ 32,974	\$ 29,365	\$ 34,670	\$ 29,847

Table 1: Total CAPEX for 2005 to 2010

Note:

The 2005 figure was reforecast as at 30 September 05.







4.5 Projected Demand Capital Expenditure

Projected demand growth capital expenditure summarized in the following table provides for items in the following categories:

- High Pressure and Transmission Mains Reinforcements;
- Distribution Mains Reinforcements;
- Facilities Reinforcements.

Table 7: Demand Reinforcement CAPEX Summary Table 2006 - 2010:

Activity	2006 (*000)	2007 (*000)	2008 ('000)	2009 ('000)	2010 (*000)
High Pressure Capital	\$239	\$2,177	\$3,188	\$8,430	\$3,580
Distribution Capital	\$1,392	\$943	\$579	\$479	\$591
TOTAL	\$ 1,631	\$ 3,120	\$ 3,767	\$ 8,909	\$4,171

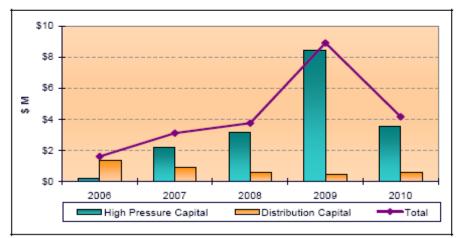


Figure 20: Demand Reinforcement CAPEX Summary Table 2006 – 2010



4.6 Projected Customer Initiated Capital Expenditure

Projected Customer Initiated Capital Expenditure is summarized in the following table and provides for items in the following categories:

- Pipeline Construction Services;
- Gas Supply Services;
- · Inspection and Audit Services;
- Retail Support Services;



Activity	2006	2007	2008	2009	2010
	('000)	('000)	('000)	('000)	('000)
Customer Initiated Capital	\$ 26,738	\$ 26,076	\$ 21,880	\$ 21,402	\$ 22,553

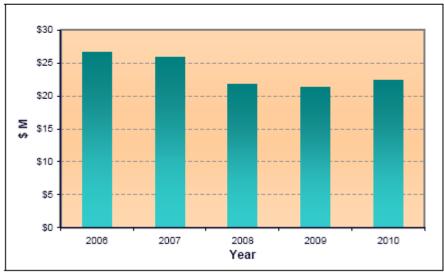


Figure 21: Customer Initiated CAPEX Summary Table 2006 – 2010

An extract from the ANH Consolidated accounts for July 2006, shows overall capital expenditure for the year tracking in line with the budget previously approved in the Access Arrangements document.

Other reports viewed by the OSD Lead Auditor generally showed the same outcomes, although monthly actual costs exceeded budget in a number of reports.

Extract removed by Alinta – commercially sensitive information



OSD considers that AGN's capital expenditure process is robust and is in line with the approved capital expenditure budget in the Access Arrangement for the period 2005-2009.

EFFECTIVENESS RATING: 5



KEY PROCESS #12: REVIEW OF ASSET MANAGEMENT SYSTEM

The asset management system is regularly reviewed and updated

AUDIT OBJECTIVE

Demonstration of the review of the asset management system to ensure the effectiveness of the integration of its components and their currency.

EFFECTIVENESS CRITERIA

Is the asset management system well implemented within AGN and its major contractors?

Are the information systems supporting the asset management system in place and secure?

Are the documents referenced in the asset management system current?

Does the document review and approval process include review/comment by major contractors (critical and relevant documents)?

Is the "critical mass buy-in" process effective?

Are asset management system records current, comprehensive and complete?

OSD FINDINGS

Extracts from the AGN 2006-2010 Asset Management Plan on the asset management system and improvements is shown below for reference.



7.0 PLAN IMPROVEMENT AND MONITORING

7.1 Network Performance Management

As part of AGN distribution licence, the Asset Management System (AMS) 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 the distribution system. AGN facilitates the continuous improvement and development of the AMS through the continuous review of the systems and processes that underpin it, these include:

- Network development strategies in relation to security of supply and network growth to ensure a high level of security of supply to cater for peak load for existing and new consumers;
- Network operating strategies to ensure that the network is operated safely, reliably and efficiently;
- Safety Case to ensure that risks associated with operating the network are reduced to a level that is As Low As Reasonably Practicable (ALARP);
- Customer service standards to ensure that our products and services are delivered to customer expectations as well as efficiently and at best cost;
- Information management systems and their application to streamline business
 processes and therefore reduce operating costs;
- Data management systems in terms of their effectiveness, accuracy and value for the business.

The monitoring of the AMS performance is achieved through periodic as well as ongoing:

- regular monitoring of the KPI's;
- independent third party audit acceptable to the Economic Regulation Authority;
- reviews of various supporting documentations;
- audits of construction as well as maintenance and operation field activities;
- · review of material specifications and audits of materials used in the network;
- review of business processes and systems;
- · comparison of business performance against the targets.

Key Performance

Indicators

An extract from the AGN Operations Report for November 2006 provides a snapshot as to KPI performance. Apart from the UAFG KPI, all other KPIs are being met by AGN.

Contractual KPIs

			November 2006				Annual		
Objective	Activity	Measure	Actual	Target		Actual	Target		Target
Maximise cash / distributions	UAFG	UAFG Rolling 12 Months % (4mths lag)				2.6%	2.5%	×	2.5%
		Health & Safety Index				90.8%	77.9%	<	85.0%
Manage Operational	Health & Safety	LTI (AAM Only)	0	0	•	0	0	٢	0.0%
Risk		Lost Days (AAM Only)	0	2	<	0	22	٢	24
	Environment	Environmental Performance Index				83.1	77.1	<	100
Provide good	od Network	Breaks Response	99.4%	95.0%	<	99.9%	95.0%	٢	95.0%
customer service	Performance	SAIFI (accidental sustained)	0.36	0.75	>	4.26	8.25	>	9.00



			No	vember 20	006		YTD		Annual
Objective	Activity	Measure	Actual	Target		Actual	Target		Target
Maximise cash / distributions	UAFG	Rolling 12 Months % (4mths lag)	2.6%	2.5%	×				
Estabilsh good corporate reputation	Back Office / Market Interface	% reads collected on time	99.3%	98.0%	>	98.8%	98.0%	>	98.0%
		HSQ&E Index				90.8%	82.5%	>	90.0%
		LTI: AAM	0	0	>	0	o	>	0
	Health & Safety	LTI: Contractors	0	O	<	0	1	۲	1
Manage		Lost Days: AAM	0	O	<	0	O	٢	O
Operational Risk		Lost Days: Contractors	0	1	~	0	11	~	12
	Public	Network incidents	1	2	~	14	25	•	27
	Safety	Notifications or Directives from OGS	0	D	~	0	٥	•	0
	Environment	Environmental Index				83.1	77.1	>	100
	Network	Breaks Response	99.4%	98.0%	~	99.9%	98.0%	>	98.0%
	Performance	SAIFI (per 1000)	0.36	0.58	~	4.26	6.42	>	7 Interruptions
Provide Good		Customer Complaints	1	4	~	39	46	~	50
Customer Service		Ombudsman Cases	0	0	>	0	2	>	2
	Customer Service	% Customer Satisfaction	99	97	>	98	97	>	Satisfaction Level of 97
		New Connections on time	99.1%	92.0%	>	98.3%	92.0%	>	92.0%

Based on the foregoing comments for each respective key process, OSD considers that AGN's asset management system in the GDL 2 supply area is effective and satisfies the GDL 2 licence requirements.

The systems and processes in place for the GDL 2 supply area are well established, and fully documented, and are subject to ongoing review, particularly more so in the current period following the integration of the former AGL/Agility gas business into the existing Alinta businesses in WA and elsewhere in Australia.

Interviews conducted with key Alinta staff in Perth, Jandakot in WA and Mt Waverley in Victoria provide a reasonable degree of confidence in the effectiveness of AGN's asset management system.

EFFECTIVENESS RATING: 4



APPENDIX 2

ERA APPROVAL OF OSD AUDIT PLAN



Economic Regulation Authority

evel 6, Governor Stiding Tower. 197 St Goorges Terrace with Western Acetralia 6/2/2

GPO Box 8469 Perth Business Centre Western Australia 6849
 Telephone
 61
 8
 9213
 1900

 Facsimile
 61
 8
 9213
 1990

 Email
 engdery@era.wo.gov.au

 Website
 www.ocu.vet.gov.au

Our Ref: G1241

6 March 2007

Mr Siva Moorthy Network Regulations Manager AlintaGas Networks Pty Ltd GPO Box W2030 PERTH WA 6846

Dear Mr Moorthy

D

)

APPROVAL OF THE AUDIT PLANS FOR THE 2007 ASSET MANAGEMENT SYSTEM REVIEWS OF LICENCES GDL1, GDL2 AND GDL3

I am pleased to advise that the Authority has approved the audit plan for the 2007 asset management system reviews provided to the Authority on 5 March 2007.

As discussed with Peter Rixson at the meeting of 27 February 2007, the audit report, including a post-audit implementation plan, is now due to be provided to the Authority by 30 April 2007.

If you have any queries with regard to the audit please contact Peter Rixson on 9213 1968 or Paul Reid on 9213 1976.

Yours Sincerely

LYNDON ROWE



APPENDIX 3

ALINTA ORGAINSATION STRUCTURES





Alinta Corporate Structure





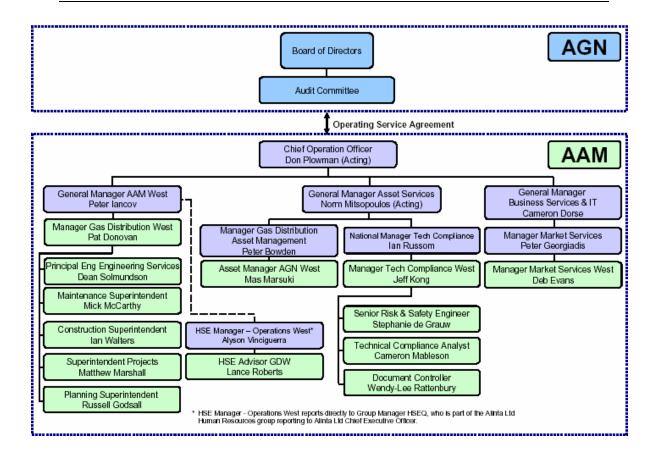
Alinta Asset Management Structure, Western Australia



ASSET MANAGEMENT SYSTEMS

GDL 2 AUDIT REPORT

Appendices



AlintaGas Networks and Alinta Asset Management, Western Australia

Financial Support to AGN and AAM

AGN is a business that is managed through an Operating Services Agreement (OSA) with AAM, a fully owned Alinta Subsidiary. There are no employees in AGN. All staff provide services through the OSA, and whilst most reside in AAM, some corporate activities are undertaken by Alinta Limited staff on behalf of AAM.

General Manager, Energy Investments: is responsible for the Operations of AGN and is a Director. His support staff include:

- Manager, Asset Owner Interface
- Manager Energy Investments

These support staff are responsible for the ongoing performance of the entities, and negotiate with AAM regarding the OSA, preparation of Business Plans, etc

Financial Controller, is responsible for all Finance requirements of AGN.

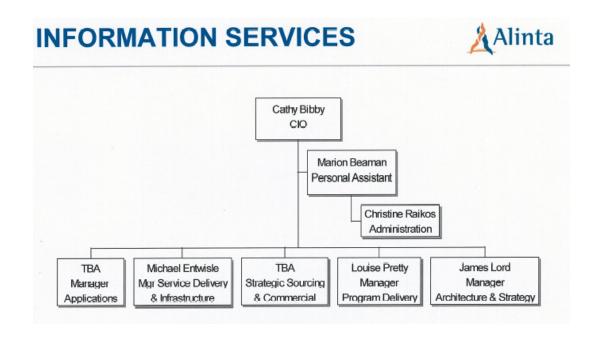


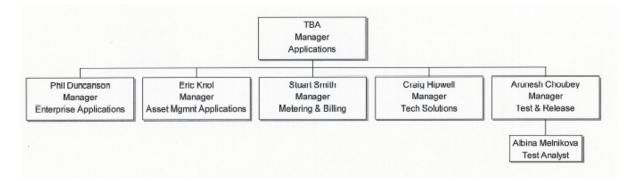
This includes staff preparing Tariff Management plans, Financial Accounts, Licence Accounts, Management Accounts and Business Reporting. His support staff include:

- Finance Manager
- Financial Accountant
- Management Accountant

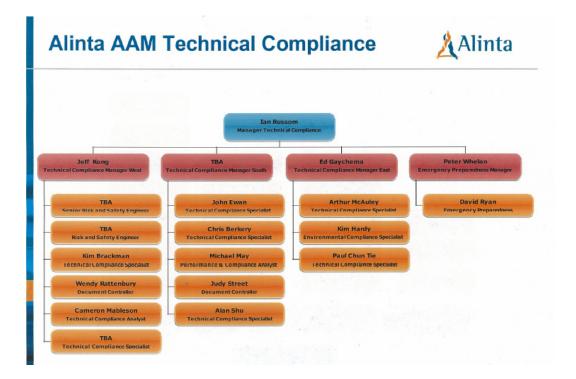
Support Staff in Alinta Treasury, Alinta Tax, Alinta Investment Analysis, and Alinta Financial Control provide specialist services to the entities through the Financial Controller.













APPENDIX 4

ALINTA PERSONNEL INTERVIEWED OR WHO PROVIDED ASSISTANCE DURING AMS REVIEW



LOCATION	TITLE
Perth, WA	Asset Manager AGN WA
Perth, WA	Technical Compliance Manager West
Perth, WA	Senior Performance Engineer
Perth, WA	Senior Advisor, Heritage & Environmental
Perth, WA	Management Accountant, AGN & ANH
Perth,WA	Financial Controller UEDH/MGH/ANH
Perth, WA	Market Development Executive
Jandakot, WA	Manager Gas Distribution West
Jandakot, WA	Principal Engineer, Engineering Services
Jandakot, WA	Superintendent Maintenance
Jandakot, WA	Superintendent Construction
Jandakot, WA	Superintendent Planning
Jandakot, WA	Project Officer
Jandakot, WA	Contracts Administrator
Jandakot, WA	Team Leader Control Room
Jandakot, WA	HSE Adviser - Gas Distribution West
Jandakot, WA	Auditor
Jandakot, WA	Business Support Officer



LOCATION	TITLE
Jandakot, WA	Supervisor, Gas Distribution West
Mt Waverley, VIC	Network Regulations Manager
Mt Waverley, VIC	Manager Emergency Management
Mt Waverley, VIC	Manager – Asset Management Applications
Mt Waverley, VIC	Manager – Enterprise Applications



APPENDIX 5

DOCUMENTS REVIEWED DURING THE AMS AUDIT



WA Legislation

GSR2000 Gas Standards (Gas Supply and System Safety) Regulations 2000

Gas Pipelines Access (Western Australia) Act 1998

Gas Distribution Licence – GDL2 Coastal Supply Area,

20 December 2000

Australian Standards

AG 606 – 1997: Code of Practice for the Preparation of a Safety and Operating Plan for Gas Networks

AG 755 – 1998: Natural Gas Customer Service Code

AS 1697 - 2005: Installation and maintenance of steel pipe systems for gas

AS 2885.1 – 2001	Pipelines – Gas and Liquid Petroleum - Design & Construction
AS 2885.3 – 2002	Pipelines – Gas and Liquid Petroleum – Operation & Maintenance

AS 3723 - 2005 Installation & Maintenance of Plastics Pipe Systems for Gas AS/NZS 4360:2004 – Risk Management

AS 4645-2005: Gas Distribution Network Management

AS/NZS ISO 9001-1994 Quality Systems – Model for quality assurance in design, development, production, installation and servicing

AS/NZS ISO 14001-1996 Environmental Management Systems – Specifications with guidance for use



Miscellaneous Documents

Audit Guidelines, Electricity, Gas and Water Licences, Economic Regulation Authority, WA, September 2006

AMS Effectiveness Audit Report for AlintaGas Networks Pty Ltd – MC^2 Pacific Pty Ltd - 24 February 2005

AMS Effectiveness Audit Report – Action Plan – MC² Pacific Pty Ltd

AARF/A&ASB: AUS 302 – Planning, October 1995

AARF/A&ASB: AUS 402 - Risk Assessment and Internal Controls, July 2002

AARF/A&ASB: AUS 502 - Audit Evidence, October 1995

AARF/A&ASB: AUS 806 - Performance Auditing, July 2002

AARF/A&ASB: AUS 808 - Planning Performance Audits, October 1995

AARF/A&ASB: AUS 810 – Special Purpose Reports on the Effectiveness of Control Procedures, July 2002

Alinta Network Services: Connections Forecast Analysis – July 2005

Economics Consulting Services

Metropolitan Development Program, Urban Land Release Plan 2003/2004 to 2007/08 - Western Australian Planning Commission, 2003.

Utility Providers Code of Practice for Western Australia, Utility providers Services Committee, Main Roads WA, 1 November 2002

WorleyParsons: New Metrorail - Thomson Lake Station: Integrity Review of Alinta High Pressure Main at the Crossing of the Station – Final Report - 400/09256/A04 – 18 Nov 05

Alinta Documents

Alinta Limited – Vision, Mission & Values Policy

Alinta Ltd- Health, Safety & Environmental Policy

Alinta Asset Management – Quality Policy

Alinta Ltd – 2006 Annual Report



Alinta Ltd – 2005 Concise Annual Report

Alinta Ltd – Consolidated Risk Management Charter, Issue 1, November 2004

Alinta Ltd - Integrated Risk Management Model, Issue 1, November 2004

Introduction to Alinta's Health, Safety & Environment Management System, October 2006

Alinta Network Holdings, Strategic Plan 2006-2010, November 2005

Alinta Network Services - Environmental Management System Manual, Doc No 4346, Issue 4, 29 June 2004

Environmental Management System Manual, Document No 4346, Issue 4, 29 June 2004

Alinta Ltd – Management Procedures Manual

AlintaGas Networks – Access Arrangement Information for the Mid-West and South-West Gas Distribution Systems

Amended AAI 29 July 2005 – AlintaGas Networks Pty Ltd

Asset Management System Strategy: Doc No AAM-S-09001, Rev B, 19 January 2007

Asset Management System Strategy: Doc No ANS-S-09001, Rev A, 22 September 2004

Asset Rationalisation Strategy: Doc No DD-S-04004, Rev 0, 16 May 2002

Network Planning Strategy: Doc No DD-S-04002, Rev 0, 16 May 2002

Asset Replacement Strategy; Doc No ANS 04/06, Rev B, 15 March 2004

AGN Asset Management Plan 2007-2011, Doc No ANS 06/09, Rev B, 30 October 2006

AGN Asset Management Plan 2006-2010, Doc No ANS 05/12, Rev 0, 24 October 2005

RCM and Risk Analysis for Distribution Assets – 2005/06, Doc No ANS 06/08, Rev C, 11 August 2006



Description of the Gas Distribution Network - Report No. AGN 02/15, Rev 1, 14 February 2003.

Distribution Network Asset Management Operating Plan, Doc No ANS 04/08, Rev A, April 2004

Risk Management Policy for Supply Facilities, Report No. AGN 01/43, Rev 1, December 2001.

AGN Distribution Network Asset Maintenance Plan 2007, Doc No ANS 06/10, Rev B, 17 October 2006

AGN Distribution Network Asset Maintenance Plan 2006, Doc No ANS 05/13, Rev 0, 8 December 2005

AGN Audit Plan, 2006.V1 (Excel spreadsheet)

Schedule of Documentation – Status report as to revisions, reviews and replacements as of 19 March 2007

Alinta Network Services: Review of Distribution System Performance Winter 2005 – Report No. ANS 05/11, Rev A, 7 December 2005

Winter 2001, Seasonal Load Factor Review, Report No. AGN 02/11, Rev 1, No final issue date.

High Pressure Gas Distribution Network Development Plan 2005 to 2009 – Report No. ANS 05/01, Rev 0, 19 May 2006.

Medium Pressure Gas Distribution Network Development Plan 2006 to 2010 – Report No. AAM 06/05, Rev 0, 19 May 2006.

Medium Pressure Gas Distribution Network Development Plan 2005 to 2009 – Report No. AGN 04/09, Rev 1, 2005.

2003 Peak Winter Models for the Gas Distribution System – Report No. ANS 03/04, October 2003.

Description of the AlintaGas Networks Gas Distribution Network – Report No. ANS 03/02, February 2003.

Winter 2001 Domestic Diversified Unit Load Study - Report No. AGN01/09, April



2002.

Use of Under Pressure Shut Off (UPSO) Protection on Distribution Regulator Sets – Report No. GD 98/36, December 1998.

Domestic Meter Management Plan – Alinta Network Services, March 2004

Domestic Meter Replacement Management Plan – Alinta Network Services, November 2004

Commercial Meter Management Plan – Alinta Network Services, September 2004

Letter: Alinta to ERA, Status of Actions on Implementation of AMS Effectiveness Audit Report – Action Plan – MC^2 Pacific Pty Ltd, 22 June 2005

Email correspondence between Marc Stubbs (AAM) & Ron Gerritsen (Office of Energy, WA) on Tokyu Corporation and Capricorn Village Joint Venture – Development – 20 February 2007

Emergency Management Manual review

Emergency Risk Management Framework, DRAFT, February 2007

Competency Based Emergency Risk Management Training – August 2006

Debrief on Exercise Wellington 06, Perth CBD, 10 September 2006

Debrief on Exercise Boyne 05, Alinta Crisis Management Team, 9 November 2005

Exercise Merlot 06 for DBP Crisis Team – 30 June 2006

Exercise Mungara, Geraldton, 10/11 May 2005

Procedure – Operation of the ANS "One Call" System, Doc No ANS-PR-08300, Rev 1, 5 January 2005

Alinta –Civil Contractors Federation, Gas Pipelaying Accreditation Course, GDW MA 0020, Version 8, August 06

Listing of GDW Mains and Services Contractors (Excel spreadsheet)

Listing of GDW Common Trench Contractors (Excel spreadsheet)



NPS Laying of Mains and Services in Common Trenching Subdivision Developments, WAGAS-03-03, 1 March 2004

Procedure – Design Control & Project Management, Doc No ANS-PR-04000, Rev 0, 11 October 2005

Contractor Module Training Records (Excel spreadsheet)

Agility Site Instruction Pack – July 2006

Connection Process Handbook, March 2005

Work Training Matrix, MCM 3.2

Contractor ID Cards – Peter Jeffery, AGN Trained

Contractor ID Cards – Brant Ruul, AAM Trained

Contractor ID Cards – Standard template

Miscellaneous AGN performance appraisal documents and training records

Gas Distribution West, AAM Operational Reports for July, August and November 2006

Asset Services: Monthly Operations Report, September 2006

Gas Distribution West, AAM Operational Reports for February 2007

UAFG Field Test Report – Report No. 02/16, May 2002.

2006 Cathodic Protection Annual Report, Rep No 2006-CP Rpt RO (AGN CP Maintenance)

2005 Cathodic Protection Annual Report, Rep No 2005-CP Rpt RO (NPS)

Leakage Survey Report: 4 year rolling average 2002-2006

Ultrasonic Inspection Report No 000003, Rev 1, HP13 Pipeline Extension, 9 June 2006

AGN – Environmental Performance Index, December 2006



AGN – Environmental Performance Index, September 2006

AGN – Environmental Performance Index, March 2006

Odorant Level Results - all networks 2006 (excel spreadsheet)

Odorant Level Results – all networks 2005 (excel spreadsheet)

Work Instruction: Decommissioning of Gas Pipes and Facilities, Doc No CS MCSC 09712, 27 May 2004

Work Instruction: Installation and Removal of Meter Sets, Doc No CS MCSC 09217, 20 June 2003

Work Instruction: Pipeline Patrols, Doc No CS MCSC 09823, 27 July 2004

New Gas Connection Alert for installation of gas services to new homes – December 2006

GNIS Service Calls for 2006 (Excel spreadsheet)

IS Systems Access request

System Improvement Request

Alinta Information Services Organisation Chart, 13 February 2007

Alinta Annual Reports for 2005 and 2006

ANH Financial Reports for February 2005, July 2005, February 2006 and July 2006

ANH Financial KPI Reports for February 2005, July 2005, February 2006 and July 2006

ANH Final Signed Accounts for December 2005