AUDIT REPORT

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

APPENDICES

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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 the gas distribution network in the Great Southern supply area. 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.

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, AAM utilises a number of KPIs to ensure that the nominated levels of service to customers in the supply of gas are achieved.

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.

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.

In OSD's view, 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 AGN 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.

In OSD's view, this approach to forecasting is logical and prudent.

Lifecycle Asset Management

Life-cycle asset management requires that the full life-cycle costs of asset acquisition, operation, maintenance and disposal be 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.

Albany Gas Distribution Network

All planning activities on the Albany gas distribution network are managed by AAM staff based in Perth. The AAM field staff based in Albany 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.

It was noted in the AGN's "Review of Distribution System Performance Winter 2005", Rev A, prepared on 7 December 2005, that the Albany LPG network is generally robust, except that in July 2005, low pressure excursions were reported on 2 days. No other low pressure excursions were reported in Winter 2006.

During the review period, asset planning strategies for the Albany gas distribution network were confined primarily to refurbishment and upgrade of the LPG storage facility and customer demand projects such as new residential estates. No other significant projects have been undertaken in Albany over the review period.

The last major project undertaken in Albany was the conversion of the gas network from TLPG to LPG in 2000. Mains were replaced as part of the conversion of TLP to LPG system. However, galvanised and steel mains that were considered fit for purpose were deferred until such time as replacement can be economically justified.

OSD noted that AAM has not stated in the previous or latest edition of the AGN's Asset Management Plan (AMP) any proposal to consider replacement of the metallic pipes in the Albany gas network. The leakage survey reports viewed during the audit do not reveal any significant problems with these pipes despite their age (> 60 years).

AAM staff have advised OSD that it has a responsibility to spend capital prudently. Given that the survey reports do not reveal any significant problems, it would be difficult for AGN to economically justify replacement of the metallic pipes at present. However, AGN is cognisant of the age of the pipes and will closely monitor leakage survey reports and will undertake to replace the metallic pipes, when it is prudent to do so.

Recommendation GDL3-1:

AGN should continue to monitor the condition of the existing galvanised iron and steel mains in the Albany gas distribution network and closely examine the leakage survey results with a view to replacing the pipes should the results become unacceptable with recognised industry performance/safety standards.

EFFECTIVENESS RATING: 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 life-cycle 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 controlled.

- Engineering design (competency of design staff and processes)
- 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 of;
  - Contract management, performance measurement and audits
  - Financial audits of projects *(comments in Key Process #11)*

However, given that no significant new projects were carried out in Albany over the review period, OSD's effectiveness criteria assessment of AGN's Asset Management Systems is covered in more detail in OSD Audit Report 41202-REP-002 for the Coastal Supply Area.

Albany Gas Distribution Network

During the review period, no significant asset creation projects have been carried out on the Albany gas distribution network except for major upgrade works at the LPG storage facility. This work was initiated following the independent audit of the storage facility by Environmental Risk Solutions in July 2005. (ERS Report J9907-AGN-Albany-MHF, Rev 1, 5 July 2005).

The project has yet to be completed, having been in progress for the past 15 months. Capital expenditure on this project is discussed in Key Process #11.

Two small scale sub-divisional projects have been completed or are in progress at the present time.

AAM utilise an independent civil contractor to assist AAM field staff to undertake capital works on the Albany network. This is confined to mains laying in new subdivisions and service connections to new consumers.

Several samples of work site inspections and audits were viewed and assessed by OSD during the visit to Albany, covering mains laying and service connections. No non-conformances were recorded on the samples viewed.

Several samples of commissioning test documentations for mains and service connections that were viewed by OSD were also found to be complete.

AGN has not carried out separate economic studies for these projects in Albany. No significant projects are planned for Albany through to 2011.

EFFECTIVENESS RATING: 4

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 provide 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.

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

AAM has advised that assets that can not be salvaged, ie 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 advised 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.

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 not considered a proposal to replace any metallic mains in the Albany network. Refer OSD comments in Key Process #1.

Design and Construction

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

Additional documentation covering the design and construction for asset replacement work activities was assessed by OSD during the review; all were sighted at Jandakot where the activities are primarily controlled.

Further discussion on OSD's effectiveness criteria assessment of AGN's Asset Management Systems is covered in more detail in OSD Audit Report 41202-REP-002 for the Coastal Supply Area.

Albany Gas Disribution Network

The replacement of galvanized standpipes on service connections is being undertaken on an "as required" basis. The number of replacement meter jobs in Albany is minimal on a per annum basis.

A number of meter replacement documents were sighted and assessed, predominantly the commercial meter units. No issues were found with the replacement process.

EFFECTIVENESS RATING: 3

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 are 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 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?

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?

Further discussion on OSD's effectiveness criteria assessment of AGN's Asset Management Systems relating to Environmental Analysis is covered in more detail in OSD Audit Report 41202-REP-002 for the Coastal Supply Area.

Albany Gas Distribution Network

The AAM staff based in Albany 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 staff provide 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 responsibility 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 AGN's asset management system that AAM manages under the OSA.

Operation and Maintenance Plans

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

AAM 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.

Further discussion on OSD's effectiveness criteria assessment of AGN's Asset Management Systems is covered in more detail in OSD Audit Report 41202-REP-002 for the Coastal Supply Area, specifically covering the following activities:

- ❑ Approval and review process of the operating envelope
- ❑ Key personnel in the process, responsibilities and accountabilities
- ❑ Performance monitoring

- Work Permit System
- Operating staff resources within AGN and contractors

Albany Gas Distribution Network

Operational activities on the Albany gas distribution network are managed by two AAM field staff based in Albany.

These staff carry out scheduled operational and maintenance activities on the LPG storage facility and the network. The work on the network also includes construction work such as small mains extensions and new service connections.

A single civil contractor is available on contracted rates to assist the AAM field staff for operational tasks including emergency work in addition to construction works.

The AAM field staff based in Albany provide carry out random audits on the contractor's workmanship and general operations. The AAM staff also undertake self-audits of each other's work and from time to time, an AAM auditor will visit Albany to undertake planned audit work. An AAM audit was undertaken in December 2006 on the upgrade and remedial works resulting from the independent audit in July 2005.

It has been noted that a further independent audit of the upgrade and remedial works at the LPG storage facility has not been completed to date. There was a recommendation in the independent consultant's report that a follow-up be carried out 12 months after the initial audit.

The information for service level results and asset performance is sent 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.

As part of the operational activities, AAM monitors the performance from the regulator set and the pressures in the network from the PMD and excursion reports generated for out-of-specification tolerances. The network is also operated at the lowest sustainable pressure while at the same time ensuring network integrity. This also mitigates UAFG and limit gas loss during a network mains break. This reflects the prudent and efficient operation of the network.

It was noted in the AGN "Review of Distribution System Performance Winter 2005", Rev A, prepared on 7 December 2005, that the Albany LPG network is

generally robust, except that in July 2005, low pressure excursions were reported on 2 days. No other low pressure excursions were reported in Winter 2006.

Photograph Removed by Alinta

[redacted]

Gas Quality

AGN has documented the gas quality requirements for the in the Albany network in Section 3.7.2 of the *Network Asset Management Operating Plan* as noted in the excerpt below:

> **3.7.2 LPG Systems**
>
> AlintaGas Networks' LPG distribution networks in The Vines and Albany provide customers with reticulated LPG vapour. Quality control of the delivered product relies on the quality of the liquid LPG purchased under contract from Kleenheat Wesfarmers. The contract requires that the gas composition comply with the requirements of the *Gas Standards (Gas Supply and System Safety) Regulations 2000 (Part 2, Division 3).* In addition it is also agreed that the gas supplied shall not exceed 10% by volume of propene.

Section 7.4.2 of the *Network Asset Management Operating Plan* states the responsibility for the gas quality of the delivered LPG as noted in the excerpt below:

> **7.2.4 Albany**
>
> *7.2.4.1 Hydrocarbon Composition*
>
> The LPG supplier is responsible for ensuring that the LPG delivered meets the statutory requirements. As the LPG supply is from a large bulk storage system ex the WLPG plant, it is well monitored and excursions are very rare.
>
> If AlintaGas becomes aware of a quality excursion as a result of our sampling processes or other means we shall isolate the offending tank(s) (if it is limited to only one or two tanks) and contact Kleenheat to initiate corrective action. This could be dilution of the off spec product with on spec LPG or in an extreme case, removal of the offending LPG and replacement with on spec LPG.
>
> As appliances are formally approved for operation on a wide range of LPG mixes it is unlikely that minor quality excursions are detrimental to consumer safety.

AAM staff interviewed by the Lead Auditor stated that no gas quality excursions have occurred during the review period. Kleenheat delivery documentation inspected by the Lead Auditor confirmed this.

LPG deliveries

The LPG storage facility stores LPG to supply the Albany gas distribution network. LPG is delivered to the site on a frequency to match demand. Over the summer period, the frequency is 3 x 33 KL tanker deliveries a week where daily usage is normally around 3% of available tank capacity.

During the winter months this daily usage increases to around 11% of available tank capacity, the frequency is the same but utilising 1 x 60 KL and 2 x 33 KL tanker units.

The delivery threshold for ensuring the storage tanks have sufficient capacity to supply the demand from the network is 50% in each tank. The threshold previously was 35%.

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.*

Records taken of odorant levels at two locations in the Albany network over the review period indicate that the levels fluctuate considerably, but are at such levels that detection by the public is not an issue.

AGN has set a minimum odorant level for the Albany gas distribution network of 35mg/m^3, which is within the acceptable odorant level limits for an LPG gas distribution network of 24-100mg/m^3.

Seymour st Albany	7/01/2005	29	Seymour st Albany	4/01/2006	53
Seymour st Albany	4/02/2005	28	Seymour st Albany	7/02/2006	51
Seymour st Albany	2/03/2005	29	Seymour st Albany	7/03/2006	43
Seymour st Albany	6/04/2005	47	Seymour st Albany	7/04/2006	41
Seymour st Albany	10/05/2005	64	Seymour st Albany	11/05/2006	44
Seymour st Albany	10/06/2005	54	Seymour st Albany	9/06/2006	42
Seymour st Albany	1/07/2005	52	Seymour st Albany	7/08/2006	24
Seymour st Albany	1/08/2005	53	Seymour st Albany	7/08/2006	25
Seymour st Albany	1/09/2005	39	Seymour st Albany	1/09/2006	42
Seymour st Albany	13/10/2005	51	Seymour st Albany	21/11/2006	51
Seymour st Albany	4/11/2005	64	Seymour st Albany	15/12/2006	26
Edinburgh rd Albany	7/01/2005	31	Edinburgh rd Albany	4/01/2006	57
Edinburgh rd Albany	4/02/2005	33	Edinburgh rd Albany	7/02/2006	52
Edinburgh rd Albany	2/03/2005	31	Edinburgh rd Albany	7/03/2006	51
Edinburgh rd Albany	6/04/2005	49	Edinburgh rd Albany	7/04/2006	42
Edinburgh rd Albany	10/05/2005	74	Edinburgh rd Albany	11/05/2006	44
Edinburgh rd Albany	10/06/2005	51	Edinburgh rd Albany	9/06/2006	45
Edinburgh rd Albany	1/07/2005	43	Edinburgh rd Albany	7/08/2006	24

Edinburgh rd Albany	1/08/2005	49	Edinburgh rd Albany	4/10/2006	9
Edinburgh rd Albany	1/09/2005	87	Edinburgh rd Albany	21/11/2006	47
Edinburgh rd Albany	13/10/2005	83	Edinburgh rd Albany	15/12/2006	25
Edinburgh rd Albany	4/11/2005	72			

Section 7.1.4.2 of the *Network Asset Management Operating Plan* states the requirements for odorant content in the gas networks as noted in the excerpt below:

7.1.4.2 Odorant Content

Three processes are used to verify the odorant content of Albany LPG:

- "Certificates of Quality" (showing the full analysis) for randomly selected 5 % sample of the LPG delivered to the plant will be obtained from the supplier. The purpose of this process is to ensure that LPG delivered to the plant meet the contractual obligations, particularly in respect of hydrocarbon composition and odorisation.
- LPG samples will be drawn from each of the plant's tanks on a monthly basis, for hydrocarbon and odorant analyses. The purpose of this process is to ensure that the feedstock enables the delivered gas meet statutory requirements, particularly in respect of hydrocarbon composition and odorisation.
- Four District odorant samples are taken monthly. The purpose of this process is to verify that the delivered gas meet statutory requirements in respect of odorisation.

Two examples of tests undertaken by AAM field staff and the subsequent analysis by an independent laboratory confirmed that LPG delivered to the Albany storage facility met the required gas quality specifications.

Training of AAM Staff and Contractors

Both AAM field staff based in Albany have undergone a range of training during the review period. The sole contractor engaged in Albany has also undergone training under the AAA CCF program.

AAM supplied evidence of training for both the AAM field staff and the contractor over the review period. Both AAM staff are current in first aid.

It should be noted that the Albany Supervisor, [redacted], has also received training as an incident investigator covering the Albany area.

Whilst there are only two AAM staff based to cover the operational duties in Albany, additional resources from the other AAM WA bases can be brought in at short notice if required to cover sickness and any emergency situations.

Operational Base and Vehicles

The AAM operational base is situated around 1.5km from the Albany CBD. The base houses office facilities and has capacity for storage of plant and materials as shown in the photos below.

AAM vehicles used by the staff in Albany are in excellent condition and fully equipped for the operational tasks they are required to cover. Photos of the main distribution vehicle are shown below.

Emergency Response and Incidents

No major incidents have occurred on the Albany gas distribution network over the period. Most of the incidents have resulted from damage to mains and services as discussed in Key Process #6. The network has been designed to enable isolation by "critical" valves especially on the 150 mm and above PVC mains. This facilitates the response capability for AAM's Albany personnel which further mitigates the gas loss and reduce the hazard associated with escaping LPG.

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.

Alinta

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:

1. **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
2. **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
3. **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.
4. **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:

1. **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
2. **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.

- **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 ▾	3rd Party Damage	Vandals	Forces of Nature	Beyond Capacity	Equipment Failure	Operator Error	Caused by 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)[1]	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	Average	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	9.25	12.35	11.37	12.83	9.56
Kalgoorlie- Boulder	0.248	0.217	0.221	0.197	0.152	0.121
Albany	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

Recommendation GDL 3.2:

AGN should arrange for an independent follow-up audit of the LPG Storage Facility in Albany. This was previously recommended in the 2005 MHF audit report and is required by the approved Safety Case for the facility.

EFFECTIVENESS RATING: 4

PHOTOS OF VARIOUS SITES/ASSETS VISITED [redacted]

[redacted]

[redacted]

[redacted]

[redacted]

[redacted]

Typical pressure monitoring installation [redacted]

AGN's Albany base

Storage area

Fully equipped 7 tonne truck used by AGN on Albany gas network

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. It refers 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 Key Performance Indicators

KPI	Parameters	Targ	Freq	Reporting
Pipelines / Laterals				
Damage to a HP pipeline	Instances per 100km of main	1	3 m	SAP Report Asset Management
Damage to a PEHP pipeline	Instances per 100km of main	1	3 m	SAP Report Asset Management
Damage to a MP/LP Pipeline	Instances per 100km of main	3	3 m	SAP Report Asset Management
Defects (Leaks) per km of main	Defects per 100km of mains	20	3 m	SAP Report Asset Management
Damaged Warning Signs	% of signs damaged	5 %	3 m	SAP Report Asset Management
CP Test Points Voltage Potential	% of test point voltage potential's higher than –0.85V potential	5 %	3 m	SAP Report Asset Management
Regulator Sets / PRS				
PRS Failures	% of PRS failures	2 %	3 m	SAP Report Asset Management
HP Regulator Set Failures	% of HP regulator set failures	2 %	3 m	SAP Report Asset Management
MP Regulator Set Failures	% of MP regulator set failures	5 %	3 m	SAP Report Asset Management
Meter Sets (M30AI and above)				
Meter Set Failures	% of meter set failures	2 %	3 m	SAP Report Asset Management
Domestic & Commercial Meter Installations (M12AL and below)				
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 Development				
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

Further discussion on OSD's effectiveness criteria assessment of AGN's Asset Management Systems is covered in more detail in OSD Audit Report 41202-REP-002 for the Coastal Supply Area.

Albany Gas Distribution Network

All maintenance activities on the Albany gas distribution network are scheduled through SAP and coordinated by AAM staff based in Perth. The AAM field staff based in Albany carry out the scheduled maintenance and complete the relevant maintenance check sheets 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.

Apart from the LPG storage facility, 6 meter installations were also inspected during the visit.

In general, most of the sites were in reasonably good condition, although corrosion on the pipework was visible at several sites. The maintenance inspection records for 3 of the 6 sites were reviewed. Corrosion was stated as an action on two of the reports, but no action has been taken to date.

A picture of one of the sites inspected is shown below.

During the site visit, 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 unauthorised third-party works, it is essential that the warning signs are maintained in good condition.

In respect of the LPG storage facility, several maintenance inspection reports were reviewed for 2005 and 2006. All of the scheduled checks and tests were completed in accordance with the requirements as set out in Section 6.8 of the Asset management Plan (excerpt below for reference).

It was noted that the maintenance form still refers to AS 1596-1997; this should read AS 1596-2002. AAM has attended to this matter.

6.8 Albany LPG Plant

AAM Operations will be responsible for setting up a maintenance plan in SAP for all maintenance activities on the various assets at the gas plant. The maintenance of the LPG plants at Albany based on *AS/NZS 1596:2002* and *AS/NZS 3788:2006* and applicable procedures should be conducted as follows:

- On a daily basis;
  - each tank shall have the level checked on a daily basis and an additional delivery should be arranged if deemed necessary;
  - all tanks shall be equalised and balanced.
- On a weekly basis;
  - fire protection system shall be tested and the operation of the alarm transmitting equipment confirmed to WAFBB.
  - check the nitrogen supply storage bottle and replaced as necessary;
  - stand by stream on the meter set shall be operationally checked;
  - emergency dump valve for the tank isolation valve shall be tested;
  - check the paint condition of the tanks and pipework and touch up as required.
- On a fortnightly basis;
  - operate dump valve to test deluge system;
- On a three weekly basis:
  - spare tank pressure check shall be conducted to ensure minimum nitrogen pressure;
- On a monthly basis;
  - emergency shut-off valves shall be operated
  - transfer hoses shall be inspected as required by AS 1596-2002;
  - filter unloading station shall be cleaned;
  - Above ground pipework at the unloading station shall be inspected for coating faults and repaired as required;
  - LPG sample shall be taken from the tank monthly;
  - Check all LPG gauges are readable and registering.

- On an annual basis;
  - transfer hoses shall be hydrostatically tested as required by AS 1596;
  - pressure relief valves on the tanks shall be bubble tested and rotated;
  - identify and record the pressure relief valves test date and next due date tag;
  - Lightning Protection Earthing system to be inspected in accordance with AS 1768;
  - prior to winter the vaporiser shall be operated and set point verified;
  - the weather vane shall be checked for operability and lubricated if required.
- In addition the following shall be conducted;
  - fire extinguishers shall be inspected in accordance with AS 1851.1-2005;

Pressure relief valves (PRV) shall be removed, tested for operation and, if necessary, overhauled. The pressure relief valves shall be tested at periods not exceeding the internal inspection of the vessel or five years, whichever is less. It is Asset Services' intention to test the PRV regularly every 5 years so that history and documentary evidence is built up to demonstrate that dismantling of the PRV is not warranted and the testing period extended.

PRV shall be tested in accordance to AS 3788:2006. All pressure relief valves that return a final "Start to Discharge" pressure between the set pressure and 110% of set pressure will be deemed to pass the test.

Where a PRV fails the test, the cause will be investigated and, where practicable, the cause eliminated or the testing period shall be reduced. Principal Engineer, Engineering Services will be responsible for reviewing the results and determine the actions to be taken.

Test one PRV from each of the six tanks per year to complete the inspection of all 18 PRVs within the next three years.

All LPG deliveries to site shall be attended and supervised by an AAM Operations person. Delivery frequencies vary from two deliveries per week during the warmer months and increase to three deliveries per week during the colder months. Attendance times can vary from between 3 to 6 hours dependent on tanker loads.

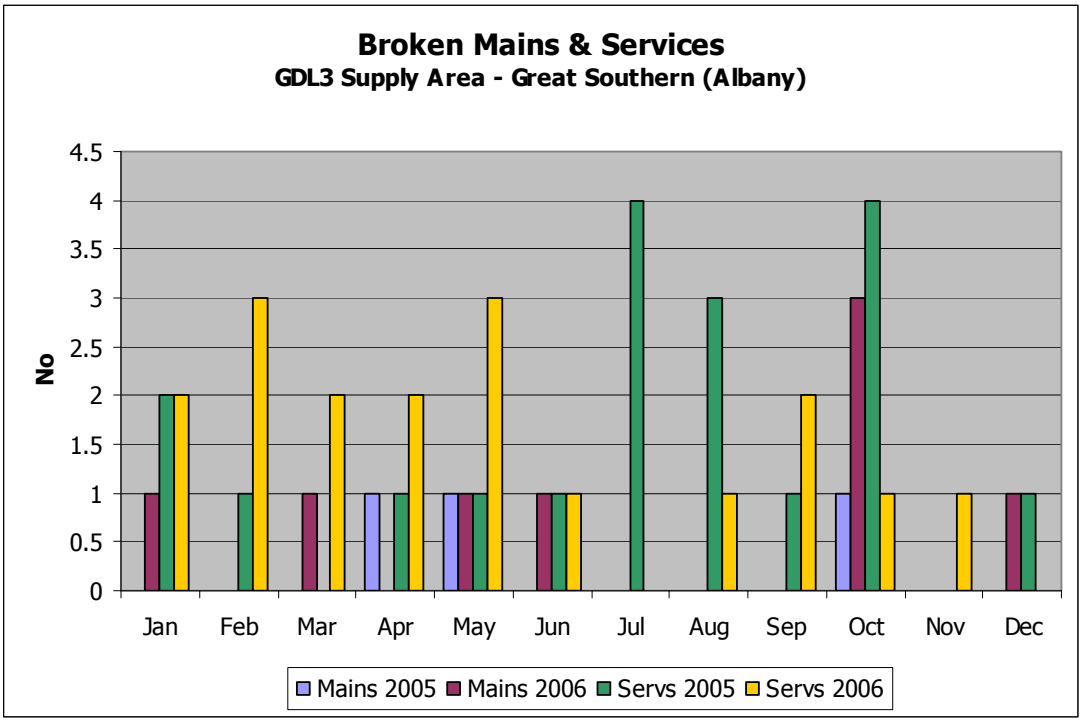
All checks and inspections carried out shall be logged on the provided checklists and sent up to AAM Operations Jandakot for recording with a copy retained on site. AAM Operations will also advise AAM Asset Management West on the results of the pressure relief valves tag recording.

Gas meter set at [redacted]

Note corrosion on pipework – maintenance inspection carried out in October 2006

Breaks on Mains and Service Connections

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



In 2005, the total number of mains breaks at 3 registered as 2/100 km of main. In 2006 the total number of breaks at 8 registered as 5.4/100 km of main. The total for 2005 is within AGN's internal maximum KPI target of 3/100 km main, but the 2006 total is above that.

As noted in the chart above, all of the total breaks that occurred over the review period were predominantly services (37). 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 relatively small, and as such is significantly below the KPI threshold set by AGN.

However, OSD believes that the ongoing situation should continue to be monitored by local AAM staff. AGN staff should consider additional education measures for customers in conjunction with the current gas retailer, should the level of service breaks increase in the future.

Leakage Surveys

Leakage surveys have been completed on the Albany gas distribution network over the period.

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

Recommendation GDL 3.3:

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

Recommendation GDL 3.4:

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.

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 advised 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 slam shut 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 slam shut 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.

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

AAM has prepared this document for AGN 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 under-maintained or over-maintained.

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

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

Albany Gas Distribution Network

The LPG storage facility presents the greatest risk of all the gas distribution network assets in Albany. This facility is classified as a Major Hazard Facility given its location within an industrial/commercial area in Albany. See aerial image under Key Process #5.

The strategies that AGN is adopting are more than adequate for managing the risks associated with a facility such as this. The 2005 independent audit of this facility has resulted in a mitigation of a number of risks that were found, following remedial and upgrade work. A further independent audit of this site is recommended in Key Process #5.

The level of risk from the piped network are relatively low, given that all of the piping is buried with no aboveground piping, except for gas meter sets.

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?

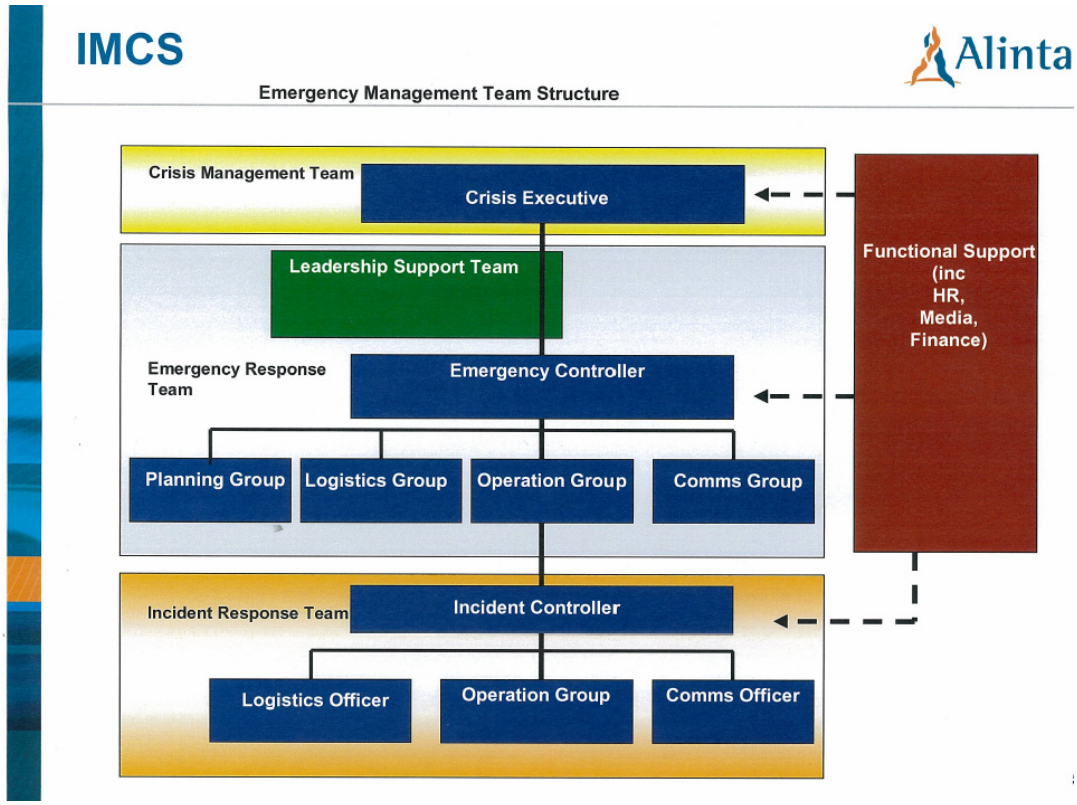
Are contingency plans capable of covering significant risks?

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 AAM in WA which provides operational services for AGN.

The proposed emergency management structures for notification and escalation as required will be as shown in the charts below.



Crisis management chart removed by Alinta

Further discussion on OSD's effectiveness criteria assessment of AGN's Asset Management Systems is covered in more detail in OSD Audit Report 41202-REP-002 for the Coastal Supply Area, specifically covering the following activities:

Emergency Response Plan
Crisis Management Plan
One Call System

Albany Gas Distribution Network

The only notifiable incident recorded on the Albany gas distribution network occurred just prior to the review period on 29 December 2004.

This involved a broken service pipe that ultimately resulted in a fire to the property.

A full report was sent to Energy Safety in early 2005; reference report no. NPS 2004/0111.

No notifiable incidents have been recorded during the review period.

OSD also noted that an emergency exercises had been conducted at the LPG storage facility on 25 August 2005 and on 24 November 2006.

The resulting debrief sessions conducted by AAM with the participating parties resulted in a number of actions requiring attention. The actions from the 2005 exercise have been completed by AAM.

OSD has not received the outcomes from the debriefing session for the November 2006 exercise.

OSD noted that no emergency exercises had been conducted on any sections of the gas distribution network during the review period, particularly in the areas with high concentrations of people such as the CBD in Albany.

OSD considers that an annual emergency exercise on the Albany gas distribution network should be held to ensure that all parties likely to be involved in such emergencies are familiar with the procedures and protocols to achieve a satisfactory outcome for all concerned.

However, OSD suggests that this is a matter for AGN to resolve with Energy Safety Division. Therefore, OSD recommends that AGN should initiate discussions with Energy Safety Division to ascertain an acceptable frequency of emergency exercises in Albany.

Recommendation GDL3-5:

AGN should initiate discussions with Energy Safety Division to ascertain an acceptable frequency for emergency exercises in Albany.

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.

Further discussion on OSD's effectiveness criteria assessment of AGN's financial planning is covered in more detail in OSD Audit Report 41202-REP-002 for the Coastal Supply Area

Albany Gas Distribution Network

No significant operating and capital expenditure is planned for the Albany gas distribution network through to 2009 except for demand capital on small subdivisions and service connection. See Key Process #11.

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 ANH 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 AGN 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 the 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.

Further discussion on OSD's effectiveness criteria assessment of AGN's capital expenditure planning is covered in more detail in OSD Audit Report 41202-REP-002 for the Coastal Supply Area.

Albany Gas Distribution Network

During the audit, the only major capital (and some operating) expenditure was on the Albany LPG storage facility. This was confined to the replacement of corroded underground LPG pipework and maintenance to fire fighting & safety systems.

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

Based on the foregoing comments for each respective key process, OSD's considers that AGN's asset management system in the GDL 3 supply area is effective and satisfies the GDL 3 licence requirements.

The systems and processes in place for the GDL 3 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 field-based staff in Albany (and elsewhere in Alinta) provide a reasonable degree of confidence in the effectiveness of AGN's asset management system.

EFFECTIVENESS RATING: 4

APPENDIX 2

ERA APPROVAL FOR OSD AUDIT PLAN

Economic Regulation Authority
WESTERN AUSTRALIA

Level 6, Governor Stirling Tower
197 St Georges Terrace
Perth Western Australia 6000

GPO Box B469
Perth Business Centre
Western Australia 6849

Telephone (61 8 9213 1900)
Facsimile (61 8 9213 1999)
Email (enquiry@era.wa.gov.au)
Website (www.era.wa.gov.au)

Our Ref: G1241

6 March 2007

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

Received 6/3/07

Dear Mr Moorthy

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.

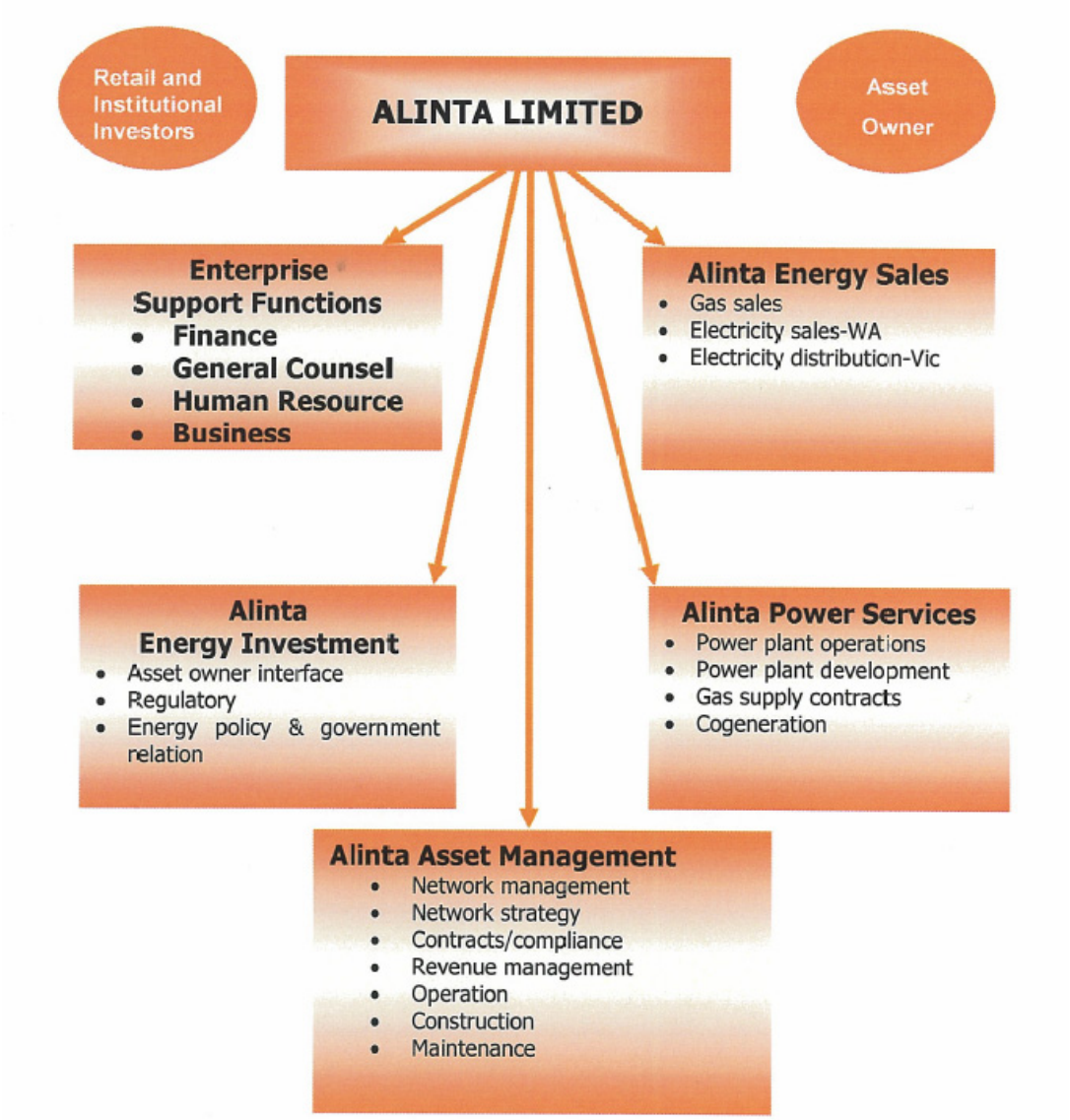
If you have any queries with regard to the audit please contact Peter Rixson on 9213 1968 or Paul Reid on 9213 1976.

Yours Sincerely

LYNDON ROWE
CHAIRMAN

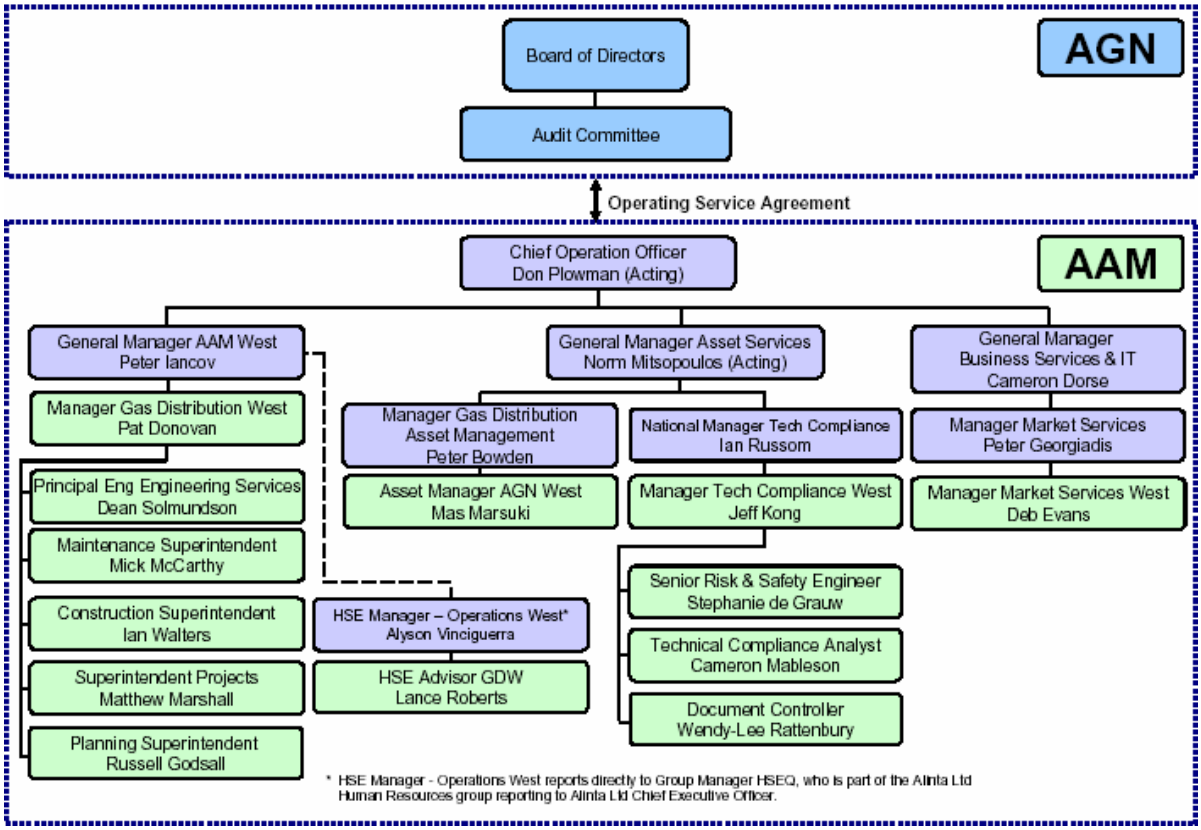
APPENDIX 3

ALINTA ORGANISATION STRUCTURES



Alinta Corporate Structure

Alinta Asset Management Structure, Western Australia



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

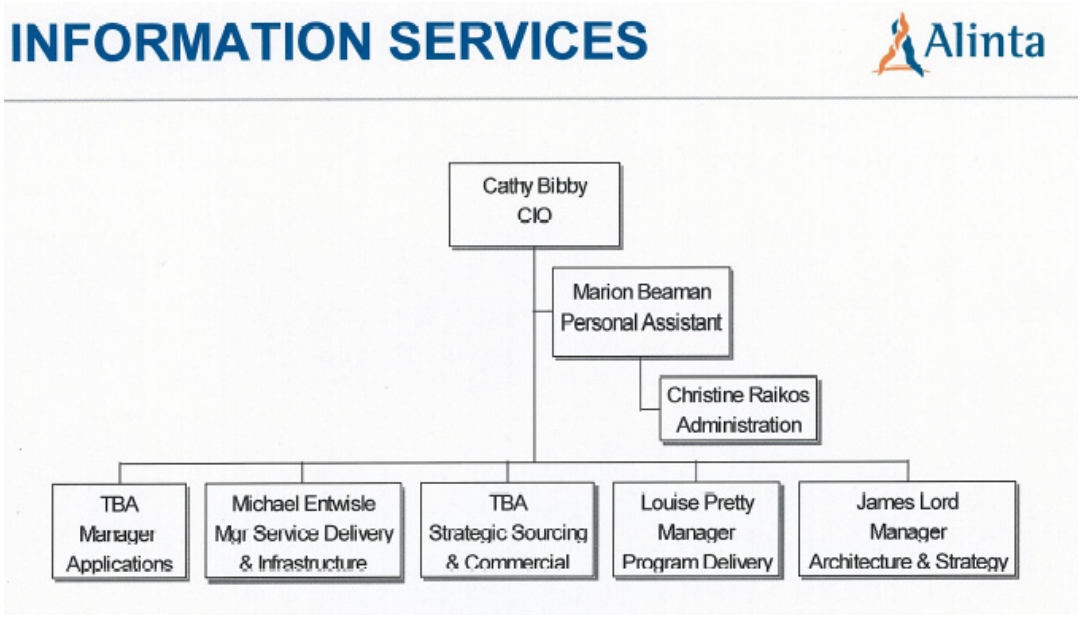
These support staff are responsible for the ongoing performance of the entities, and negotiate with AAM regarding the OSA, preparation of Business Plans, etc.

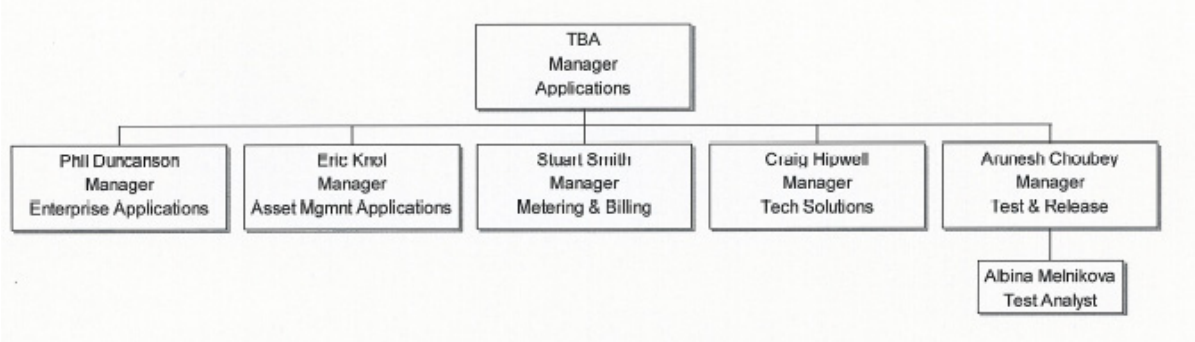
Financial Controller, is responsible for all Finance requirements of AGN.

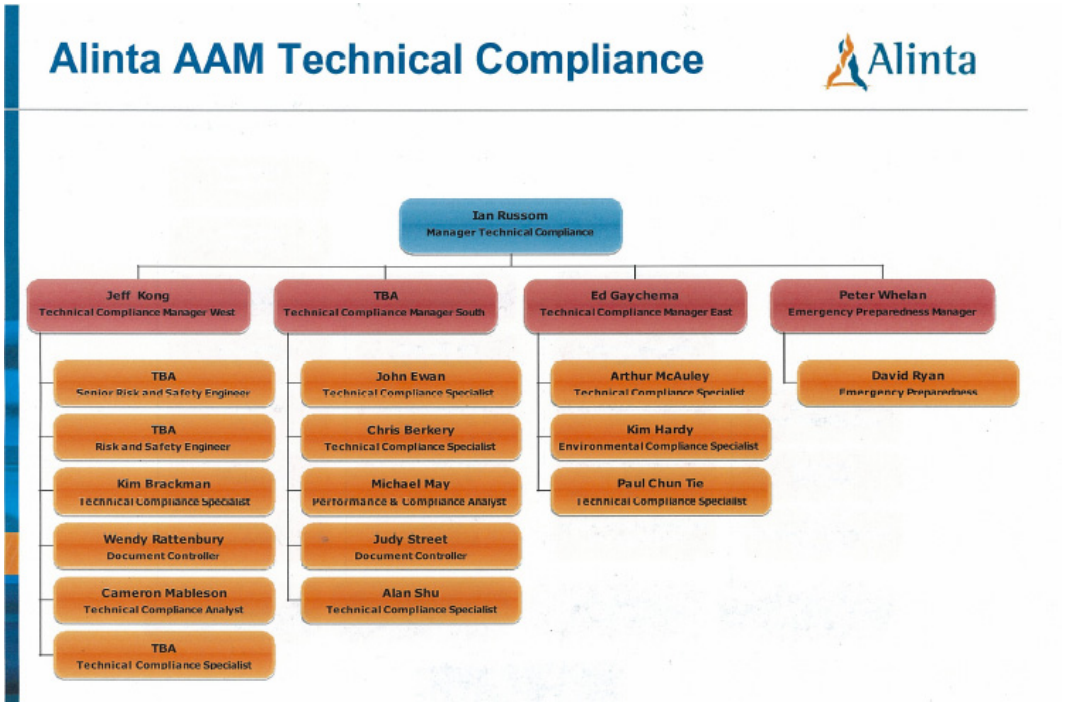
This includes staff preparing Tariff Management plans, Financial Accounts, Licence Accounts, Management Accounts and Business Reporting. His support staff include:

- 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.






Alinta AAM Technical Compliance
Alinta
Ian Russom
Manager Technical Compliance
Jeff Kong
Technical Compliance Manager West
TBA
Technical Compliance Manager South
Ed Gaychema
Technical Compliance Manager East
Peter Whelan
Emergency Preparedness Manager
TBA
Senior Risk and Safety Engineer
TBA
Risk and Safety Engineer
Kim Brackman
Technical Compliance Specialist
Wendy Rattenbury
Document Controller
Cameron Mableson
Technical Compliance Analyst
TBA
Technical Compliance Specialist
John Ewan
Technical Compliance Specialist
Chris Berkery
Technical Compliance Specialist
Michael May
Performance & Compliance Analyst
Judy Street
Document Controller
Alan Shu
Technical Compliance Specialist
Arthur McAuley
Technical Compliance Specialist
Kim Hardy
Environmental Compliance Specialist
Paul Chun Tie
Technical Compliance Specialist
David Ryan
Emergency Preparedness

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
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
Albany, WA	Supervisor, Albany
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 REVIEW

WA Legislation
GSR2000 Gas Standards (Gas Supply and System Safety) Regulations 2000
Gas Pipelines Access (Western Australia) Act 1998
Gas Distribution Licence – GDL3 Great Southern Supply Area, 6 September 2001
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 – MC^2 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
Environmental Risk solutions – AlintaGas Networks P/L, Albany 2005 MHF Audit, Doc No J9907-AGN-ALBANY-MHF, Rev 1, 5 July 2005
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
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
Draft Audit Report, Albany Gas Plant, Doc No AR-20071214, 9 January 2007
Letter: Alinta to ERA, Status of Actions on Implementation of AMS Effectiveness Audit Report – Action Plan – MC^2 Pacific Pty Ltd, 22 June 2005
Emergency Management Manual Review
Emergency Risk Management Framework, DRAFT, February 2007
Debrief on Exercise Albany 05, Albany LPG Storage Facility, 20 October 2005
Debrief on Exercise Wellington 06, Perth CBD, 10 September 2006
Procedure – Operation of the ANS "One Call" System, Doc No ANS-PR-08300, Rev 1, 5 January 2005
Alinta –Civil Contractors Federation, Gas Pipe laying 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 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
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: Collection of LPG and natural gas samples from Gas Distribution Systems, Doc No CS MCSC 10201, Rev 0, 28 April 2006
Work Instruction: Collection of LPG samples from vessels, Doc No CS MCSC 10202, Rev 0, 28 April 2006
Work Instruction: LPG delivery – Albany, Doc No CS MCSC WI 02, Rev 0, 28 April 2006
Work Instruction: LPG Tank Level Equalisation – Albany, Doc No CS MCSC WI 05,

Rev 0, 28 April 2006
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
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