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107518-RPT-0001
Revision Number 2

ATCO Gas Australia
Asset Management System Review

Review Report

May 2023

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Revision Status

Revision	Date	Description	Author		Reviewed	
			FirstName LastName	Position Title	FirstName LastName	Position Title
A	03/04/2023	Internal Review	D, Newman	Lead Reviewer	-	-
B	04/04/2023	Client Review	D. Newman	Lead Reviewer	A. Cicchini	Reviewer
C	13/04/2023	ERA Review	D. Newman	Lead Reviewer	A. Cicchini	Reviewer
0	12/05/2023	Approval	D. Newman	Lead Reviewer	A. Cicchini	Reviewer
1	22/05/2023	Final	D. Newman	Lead Reviewer	A. Cicchini	Reviewer
2	23/05/2023	Final	D. Newman	Lead Reviewer	A. Cicchini	Reviewer

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1   Executive Summary

ATCO Gas Australia Pty Ltd (AGA) is part of the ATCO Group which is a diversified, Canadian-based, international group of companies. AGA owns and operates the gas distribution network in Western Australia, delivering gas to approximately 760,000 end users in 18 communities, including metropolitan Perth and surrounding regions of Geraldton, Bunbury, Busselton, Kalgoorlie, Albany, Harvey, Pinjarra, Brunswick Junction and Capel. The AGA gas distribution network consists of approximately 14,000 km of natural gas pipelines.

AGA has a gas distribution licence (GDL 8) issued by the ERA under the provisions contained in the Energy Coordination Act 1994 for distribution system in Western Australia. Section 11Y (1) of the Energy Coordination Act 1994 requires AGA to provide to the Economic Regulatory Authority (ERA), a report, compiled by an acceptable independent expert, as to the effectiveness of the Asset Management System for the gas distribution system. AGA commissioned the previous asset management review conducted by Logicamms during 2020. That review covered the period 1 February 2017 to 31 January 2020 inclusive.

Ausenco conducted an asset management system review (AMS Review) for AGA covering the following period 1 February 2020 to 31 January 2023 to assess the measures taken by AGA for the proper management of assets used in the provision and operation of services and, where appropriate, the construction or alteration of relevant assets in accordance with the Economic Regulation Authority's (ERA) Audit and Review Guidelines: Electricity and Gas Licenses (AMS Review Guidelines) dated March 2019.

Since the previous review, the COVID-19 pandemic has affected AGA's ability to meet it's AMS objectives.

1.1   Summary Assessment of Actions from Previous Review

Actions from the previous review, (2) Corrective Action Recommendations (CAR); (12) Opportunities for Improvement (OFI) were assessed, and their status updated during this 2023 review. Refer Section 5.1 and Section 7 for further detail.

1.2   Summary of Current Review Outcomes

The opinion of the Reviewers on the control environment operated by the licensee is that, overall, it is comprehensive and typically performing effectively. The overall assessment is that the asset management systems are of sufficient definition and adequacy for the assets under management.

However, asset management components 9 – Contingency Planning, and 12 - Review of AMS are identified as deficient (rated C2 and C3 respectively) under the asset management system effectiveness review criteria. Table 1-1 shows the ratings for each asset management area from the 2023 review giving an overall assessment of the effectiveness of the licensee's asset management system. Of the twelve (12) elements:

- five (5) areas are rated A1,
    - four (4) of these include criteria with improvement recommendations.
- two (2) areas are rated deficient (C2 and C3, as described above),
    - all requiring corrective action recommendations.
- the remaining five (5) areas area rated A2, B1 or B2,
    - two (2) of which include criteria requiring corrective action recommendations,
    - all of these include criteria with improvement recommendations.

Refer to Section 2.3 for rating system definitions.

Ten (10) Corrective Action Recommendations (CARs) are summarised by Table 8-1 to address deficiencies identified (rated C, D, 3 or 4 under the asset management system effectiveness review criteria) for asset management components.

Table 1-1: 2023 Review Process Ratings

Process Area	Process & Policy Rating	Performance Rating
1. Asset Planning	A	2
2. Asset creation and acquisition	A	2
3. Asset disposal	A	1
4. Environmental analysis	B	2
5. Asset operations	A	1
6. Asset maintenance	A	1
7. Asset management information system	B	1
8. Risk management	B	2
9. Contingency planning	C	2
10. Financial planning	A	1
11. Capital expenditure planning	A	1
12. Review of AMS	C	3

Refer to Table 6-1: Performance Summary for further detail of effectiveness criteria ratings within each process area.

2 Review Objectives

2.1 Objectives and Purpose

AGA has engaged Ausenco to conduct an Asset Management System (AMS) review of AGA's Western Australia Gas Distribution License (GDL 8). Section 11Y(1) of the energy Coordination Act 1994 requires a gas distribution licensee, not less than once in every 24 months or other approved period, to provide the Economic Regulation Authority (ERA) of Western Australia (WA) with a report by an independent expert acceptable to the ERA as to the effectiveness of the system.

This document presents the Review Report in accordance with the requirements of *"Audit and Review Guidelines: Electricity and Gas Licences"*, published by the ERA. Review Report covers the period of 1 February 2020 to 31 January 2023.

The objectives of this review are to:

- Provide to the Authority an independent assessment of the adequacy and effectiveness of the licensee's asset management system in respect of the assets that are delivering the services covered by GDL8;

- Individually assess the 12 key asset management processes and their effectiveness criteria mandated in the guidelines using the mandated two-dimensional rating scales; and

- Make recommendations to address any asset management deficiencies identified.

2.2 Methodology

The asset management system review includes an assessment of the adequacy and effectiveness of the asset management system by evaluating the 12 key processes of:

1. Asset planning

2. Asset creation/acquisition

3. Asset disposal

4. Environmental analysis

5. Asset operations

6. Asset maintenance

7. Asset management information system

8. Risk management

9. Contingency planning

10. Financial planning

11. Capital expenditure planning

12. Review of the Asset Management System (AMS).

The review was structured and evaluated for each of these twelve components of the Asset Management System (AMS) managed by AGA.

The review includes an assessment of the measures taken by AGA for the proper management of assets used in the provision and operation of services and, where appropriate, the construction or

alteration of relevant assets in accordance with the Economic Regulation Authority's (ERA) Audit and Review Guidelines: Electricity and Gas Licenses (AMS Review Guidelines) dated March 2019.

The review process comprised of the following aspects:

- Approval of Review Plan by AGA

- Approval of Review Plan by ERA

- Ausenco to conduct desktop and field reviews, including a review of documentation and systems, a review of the actions taken in response to the recommendations from the previous review, a review of legislative documentation and interviews with relevant personnel from the AGA business

- Preparation of the Review Report

- Approval of the Review Report by ERA formatted as per Section 5 of the Audit Guidelines.

2.3 Rating System

The rating system used for assessment in accordance with the ERA AMS Review Guidelines is summarised by Table 2-1.

Table 2-1: Rating System

Rating	Description
Process and Policy Rating Scale	
A	Adequately defined
B	Requires some improvement
C	Requires significant improvement
D	Inadequate
Performance Rating Scale	
1	Performing effectively
2	Opportunity for improvement
3	Corrective action required
4	Serious action required

From the ratings, the adequacy of existing controls is determined by the matrix developed by Ausenco in Table 2-2.

Table 2-2: Adequacy of Existing Controls

Performance Rating	Process and Policy Rating			
	A	B	C	D
1	Strong	Strong	Moderate	Weak
2	Strong	Moderate	Weak	Weak
3	Moderate	Weak	Weak	Weak
4	Weak	Weak	Weak	Weak

The inherent risk of each component is assessed, and combined with the determined adequacy of controls, a review priority was determined as per Table 2-3.

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Table 2-3: Review Priority

Inherent Risk	Preliminary Adequacy of Existing Controls		
	Weak	**Moderate**	**Strong**
High	Review priority 1	Review priority 2	
Medium	Review priority 3	Review priority 4	
Low	Review priority 5		

2.4 Definitions and Abbreviations

The definitions and abbreviations used in this document are tabulated below.

Table 2-4: Abbreviations List

Term or Abbreviation	Definition
AA5	Access Arrangement for Mid-West and South-West Gas Distribution Systems (#5 – 1 January 2020 to 31 December 2024)
AA6	Access Arrangement for Mid-West and South-West Gas Distribution Systems (#6 – 1 January 2025 to 31 December 2029)
ACP	Asset Class Plan
AGA	ATCO Gas Australia
AHI	Asset Health Index
ALARP	As Low As Reasonably Practicable (risk)
ALS	Asset Lifecycle Strategy
(S)AMP	(Strategic) Asset Management Plan
AMS	Asset Management System
AMIS	Asset Management Information System
AS	Australian Standard
ASS	Acid Sulphate Soils
BAU	Business As Usual
CA(R)	Corrective Action (Recommendation)
CAPEX	Capital Expenditure
CBD	Central Business District
CEAR	Capital Expenditure Approval Request
CFO	Chief Financial Officer
CMOS	Customer Minutes Off Supply (index)
CPI	Consumer Pricing Index (inflation indicator)
DBYD	Dial Before You Dig

Term or Abbreviation	Definition
DCVG	Direct Current Voltage Gradient
DNV	Det Norske Veritas
E-Safe / SAI360	atco.e360.saiglobal.com (web portal)
EIM	Enterprise Information Management (document control system)
EMT	Emergency Management Team
EOL	End of Life
ERA	Economic Regulation Authority
ER(E)	Emergency Response (Exercise)
ERMP	Emergency Response Management Plan
FCC	Forecast Cost Completion
FERU	Field Emergency Response Unit
FMECA	Failure Mode Effects and Criticality Analysis
FL	Functional Location
FR	First Responder
FSA	Formal Safety Assessment
FTE	Full Time Equivalent
FY(E)	Financial Year (End)
GDL8	Gas Distribution Licence 8
GDS	Gas Distribution System
GIS	Geographical Information System
GM	General Manager
GPS	Global Positioning System
HAZOP	Hazard and Operability Study
HAZID	Hazard Identification Study
HPR	High Pressure Regulator
HSE	Health Safety and Environment
IFC	Issued for Construction
ILI	In Line Inspection
IMT	Incident Management Team
IR	Improvement Recommendation
ISO	International Organization for Standardization
IT	Information Technology
ITP	Inspection Test Plan

Term or Abbreviation	Definition
KPI	Key Performance Indicator
Licensee	AGA
NPV	Net Present Value
MAOP	Maximum Allowable Operating Pressure
MDR	Manufacturers Data Record
MFA	Multi Factor Authentication
MGL	Mandurah Gas Lateral
MLP	Medium-Low Pressure
MOC	Management Of Change
MPR	Medium Pressure Regulator
MWP	Major Work Permit
N2	Nitrogen Gas
NC	Non-Conformance
NR	Not Reviewed
OFI(R)	Opportunity for Improvement (Recommendation)
OPEX	Operational Expenditure
PAC	Project Advice Checklist
PAIP	Post Audit Implementation Plan
PC	Personal Computer
PE	Polyethylene
PMM	Project Management Manual
PMP	Project Management Plan
PRS	Pressure Regulating Station
PSV	Pressure Safety Valve
PTW	Permit to Work
PVC	Polyvinyl chloride (pipe)
PWC	Price Waterhouse Coopers
(This/The/Current) Review Period	1 February 2020 to 31 January 2023
(Previous) Review Period	1 February 2017 to 31 January 2020
RCM	Reliability Centred Maintenance
RMAP	Risk Management Action Plan
RMCC	Risk Management & Compliance Committee
RMF	Risk Management Framework

Term or Abbreviation	Definition
RMP	Risk Management Plan
Salesforce	atco.lightning.force.com (web portal accessed via intranet)
SCADA	Supervisory Control and Data Acquisition
SUS	Start Up Sheet
SWI	Safe Work Instruction
TOR	Terms Of Reference
UAG / UFG	Unaccounted For Gas (calculation)
WA	Western Australia
WBS	Work Breakdown Structure
WI	Work Instruction
WO	Work Order
YTD	Year to Date

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3 Scope of Work

3.1 Review Period

This Asset Management System review covered the period between 1st of February 2020 to 31st of January 2023.

The previous asset management review conducted by Logicamms during 2020 covered the period between 1st of February 2017 to 31st of January 2020. The status of corrective actions arising from the previous review was included in the scope of this review.

3.2 Type of Assurance Engagement

Due to the size, complexity, and maturity of the assets under management and previous review ratings, it is intended to conduct a Reasonable Assurance Engagement, except where the following criteria are all satisfied to justify a Limited Assurance Engagement for the scope of effectiveness criteria (due to the maturity of the Asset Management System and extended review period):

a)   The adequacy of existing controls from the previous review is Strong (refer Table 5-1).

b)   The review priority is 4 or 5 (refer Table 5-1).

c)   The licensee has not made material changes to the relevant components of the asset management system since the previous review, especially where these changes represent corrective action (completed or pending) resulting from a compliance breach occurring during the review period.

Where conditions (a) and (b) are satisfied, but not (c), the scope of Reasonable Assurance Engagement will be appropriate to the scope of changes effected in the asset management system.

The effected type of assurance engagement for each effectiveness criteria is shown by Table 3-1, and may also indicate escalation from the plan, based on reviewer judgement of initial interview observations into AMS definition and adequacy.

3.3 Site Visits

Interviews with AGA staff and systems interrogation were carried out at the AGA Jandakot office, where the Asset Management System is centralised and managed. The onsite review was conducted between 7th and 22nd March inclusive and supplemented with further desktop review.

The review cycle was considered concluded on 30th March 2023, with the report prepared thereafter.

3.4 Personnel and Documentation

Personnel interviews were conducted in Jandakot. Table 3-1 presents the licensee's representatives and the corresponding interview location for each process area in the order the interviews were scheduled.

The interview sessions were supplemented with desktop documentation review from Ausenco Perth office. A list of documents that were cited during the review are listed in Appendix 1.

Table 3-1: Interviewee, Engagement, and Location

ID	Process Area	Interviewee/s	Type of Assurance Engagement	Location
1	9 - Contingency Planning	Stuart Jobling, Manager Technical Compliance Matthew Marshall, Senior Manager Operations Morgan Quinn, Senior Manager Risk & Compliance & Senior Legal Counsel Fabian D'Mello, Manager Risk & Compliance Matthew Marshall, Senior Manager Operations	Reasonable	Jandakot
2	6 - Asset Maintenance	Ann Chong, Manager Network Control Sin Wei Lim, Manager Asset Services Matthew Marshall, Senior Manager Operations Shelene Richards, Manager Planning & Contact Centre	Reasonable	Jandakot
3	5 - Asset Operations	Sin Wei Lim, Manager Asset Services Matthew Marshall, Senior Manager Operations Ann Chong, Manager Network Control Shelene Richards, Manager Planning & Contact Centre	Reasonable	Jandakot
4	8 - Risk Management	Stuart Jobling, Manager Technical Compliance Morgan Quinn, Senior Manager Risk & Compliance & Senior Legal Counsel Fabian D'Mello, Manager Risk & Compliance	Reasonable	Jandakot
5	10 - Financial Planning	Tim Harris, Financial Controller – Gas Christine Hitie, Manager Corporate Development & Planning Yamiko Kambalametore, Manager Finance Operations	Limited	Jandakot
6	11 - Capital Expenditure Planning	Yamiko Kambalametore, Manager Finance Operations	Limited	Jandakot
7	4 - Environmental Analysis	Stuart Jobling, Manager Technical Compliance Fabian D'Mello, Manager Risk & Compliance	4.1 Reasonable 4.2 Limited 4.3 Reasonable 4.4 Limited	Jandakot
8	1 - Asset Planning	Sin Wei Lim, Manager Asset Services Mabel See, Senior Asset Planning Engineer	Limited	Jandakot
9	7 - Asset Management Information System	Sin Wei Lim, Manager Asset Services Chris Marshall, General Manager IT Services	Limited	Jandakot
10	12 - Review of AMS	Sin Wei Lim, Manager Asset Services	Reasonable	Jandakot
11	2 - Asset Creation and Acquisition	Sin Wei Lim, Manager Asset Services Peter Stewert-Dawkins, Manager Engineering Services	Reasonable	Jandakot
12	3 - Asset Disposal	Sin Wei Lim, Manager Asset Services	Limited	Jandakot

3.5 Work Schedule

The review was performed out of the Ausenco Perth office under the management of Michael Sullivan, Principal Pipeline Engineer. Biographies of key review personnel were previously submitted

to the ERA for approval together with the Review Plan. Table 3-2 summarises all the resources utilised and total hours for the generation of the AMS Review Report.

Table 3-2: Review Personnel Resource Hours

Resource Name	Review Role	Hours (up to date of report)
D. Newman	Lead Reviewer	234.00
M. Sullivan	Project Manager / Reviewer	3.00
A. Cicchini	Supplementary Reviewer	96.50
C. Hutchinson	Review Administration	9.75
TOTAL		**343.25**

3.6 Reviewer Independence

Ausenco confirms that each individual participating in the review is compliant with the independence criteria, as described in Section 8 of "*Audit and Review Guidelines: Electricity and Gas Licences March 2019*", Economic Review Authority of Western Australia.

4 Deviations from Review Plan

The order of interview sessions and interviewees deviated slightly from the Plan (Table 3-4) due to the availability of AGA personnel and resources. However, the planned objective of reviewing high priority process areas first was still met.

AGA application for extension of the draft review report due date to 7 March 2023 and subsequently to14 April 2023 (both due to availability of AGA staff) was also approved by ERA during the review.

Determination of the overall process and policy (definition) and performance (adequacy) ratings for each area (107518-PLN-0001 AMS Plan Section 3.1) was revised following ERA review of this report. Refer to Section 7 introduction for the applied method.

No further deviations from Review Plan or *"Audit and Review Guidelines: Electricity and Gas Licences"* occurred during the review process.

5 Previous Reviews

Table 5-1 shows the ratings for each asset management area arising from the Previous Review Period. Adequacy of controls is obtained from Table 2-2 developed by Ausenco to provide guidance for rating between definition, performance, and adequacy of controls. Then in conjunction with Table 2-3 from the guidelines, the review priority was assigned to each element.

Table 5-1: 2020 Review Ratings and Resulting 2023 Review Priority

Asset management process components & effectiveness criteria	Consequence (1=minor, 2=moderate, 3=major)	Likelihood (A=likely, B=probable, C=unlikely)	Inherent Risk (Low, Medium, High)	2020 Process & Policy Rating	2020 Performance Rating	2020 Adequacy of existing controls (S=strong, M=moderate, W=weak)	2023 Review Priority
1 - Asset Planning	**2**	**C**	**Medium**	**B**	**1**	**Strong**	**4**
1.1 Asset management plan covers key requirements.	2	C	Medium	B	1	Strong	4
1.2 Planning process and objectives reflect the needs of all stakeholders and is integrated with business planning.	2	C	Medium	A	1	Strong	4
1.3 Service levels defined.	2	C	Medium	A	1	Strong	4
1.4 Non-asset options are considered.	2	C	Medium	A	1	Strong	4
1.5 Lifecycle costs are assessed and understood.	2	C	Medium	A	1	Strong	4
1.6 Costs are justified and cost drivers identified.	2	C	Medium	A	1	Strong	4
1.7 Funding options are evaluated.	2	C	Medium	A	1	Strong	4
1.8 Likelihood and consequences of failure are predicted	2	C	Medium	A	1	Strong	4
1.9 Plans are regularly reviewed and updated	2	C	Medium	B	2	Moderate	4
2 - Asset Creation and Acquisition	**2**	**C**	**Medium**	**B**	**2**	**Moderate**	**4**
2.1 Full project evaluations are undertaken for new assets, including comparative assessment of non-asset solutions.	2	C	Medium	A	2	Strong	4
2.2 Evaluations include all life-cycle costs.	2	C	Medium	A	1	Strong	4
2.3 Projects reflect sound engineering and business decisions.	2	C	Medium	A	1	Strong	4
2.4 Commissioning tests are documented and completed.	2	C	Medium	A	1	Strong	4
2.5 Ongoing legal/environmental/safety obligations of the asset owner are assigned and understood.	2	C	Medium	B	2	Moderate	4
3 - Asset Disposal	**1**	**B**	**Low**	**A**	**1**	**Strong**	**5**
3.1 Under-utilised and under-performing assets are identified as part of a regular systematic review process.	1	B	Low	A	1	Strong	5
3.2 The reasons for under-utilisation or poor performance are critically examined and corrective action or disposal undertaken.	1	B	Low	A	1	Strong	5

Asset management process components & effectiveness criteria	Consequence (1=minor, 2=moderate, 3=major)	Likelihood (A=likely, B=probable, C=unlikely)	Inherent Risk (Low, Medium, High)	2020 Process & Policy Rating	2020 Performance Rating	2020 Adequacy of existing controls (S=strong, M=moderate, W=weak)	2023 Review Priority
3.3 Procedures for asset decommissioning disposal, sale or transfer to other authority. Disposal alternatives are evaluated.	1	B	Low	A	1	Strong	5
3.4 There is a replacement strategy for assets.	1	B	Low	A	1	Strong	5
4 - Environmental Analysis	**2**	**B**	**Medium**	**A**	**2**	**Strong**	**4**
4.1 Opportunities and threats in the system environment are assessed.	2	B	Medium	A	1	Strong	4
4.2 Performance standards (availability of service, capacity, continuity, emergency response, etc.) are measured and achieved.	2	B	Medium	A	1	Strong	4
4.3 Compliance with statutory and regulatory requirements.	2	B	Medium	B	2	Moderate	4
4.4 Achievement of customer service levels.	2	B	Medium	A	1	Strong	4
5 - Asset Operations	**3**	**C**	**High**	**A**	**1**	**Strong**	**2**
5.1 Operational policies and procedures are documented and linked to service levels required.	3	C	High	A	1	Strong	2
5.2 Risk management is applied to prioritise operations tasks.	3	C	High	A	1	Strong	2
5.3 Assets are documented in an Asset Register including asset type, location, material, plans of components, an assessment of assets' physical/structural condition and accounting data.	3	C	High	A	1	Strong	2
5.4 Accounting data is documented for assets.	3	C	High	A	1	Strong	2
5.5 Operational costs are measured and monitored.	3	C	High	A	1	Strong	2
5.6 Staff receive training commensurate with their responsibilities.	3	C	High	A	1	Strong	2
6 - Asset Maintenance	**3**	**B**	**High**	**A**	**1**	**Strong**	**2**
6.1 Maintenance policies and procedures are documented and linked to service levels required.	3	B	High	A	1	Strong	2
6.2 Regular inspections are undertaken of asset performance and condition.	3	B	High	A	1	Strong	2
6.3 Maintenance plans (emergency, corrective and preventative) are documented and completed on schedule.	3	B	High	A	1	Strong	2
6.4 Failures are analysed and operational/maintenance plans adjusted where necessary.	3	B	High	B	2	Moderate	2
6.5 Risk management is applied to prioritise maintenance tasks.	3	B	High	A	1	Strong	2
6.6 Maintenance costs are measured and monitored.	3	B	High	A	1	Strong	2
7 - Asset Management Information System	**2**	**B**	**Medium**	**A**	**2**	**Strong**	**4**
7.1 Adequate system documentation for users and IT operators.	2	B	Medium	A	1	Strong	4
7.2 Input controls include appropriate verification and validation of data entered into the system.	2	B	Medium	A	2	Strong	4
7.3 Logical security access controls appear adequate, such as passwords.	2	B	Medium	A	1	Strong	4
7.4 Physical security access controls appear adequate.	2	B	Medium	A	1	Strong	4

Asset management process components & effectiveness criteria	Consequence (1=minor, 2=moderate, 3=major)	Likelihood (A=likely, B=probable, C=unlikely)	Inherent Risk (Low, Medium, High)	2020 Process & Policy Rating	2020 Performance Rating	2020 Adequacy of existing controls (S=strong, M=moderate, W=weak)	2023 Review Priority
7.5 Data backup procedures appear adequate.	2	B	Medium	A	2	Strong	4
7.6 Key computations related to licensee performance reporting are materially accurate	2	B	Medium	A	1	Strong	4
7.7 Management reports appear adequate for the licensee to monitor licence obligations.	2	B	Medium	A	1	Strong	4
7.8 Adequate measures to protect asset management data from unauthorised access or theft by persons outside the organisation	2	B	Medium	A	1	Strong	4
8 - Risk Management	**3**	**B**	**High**	**B**	**3**	**Weak**	**1**
8.1 Risk management policies and procedures exist and are being applied to minimise internal and external risks associated with the asset management system.	3	B	High	B	3	Weak	1
8.2 Risks are documented in a risk register and treatment plans are actioned and monitored.	3	B	High	B	3	Weak	1
8.3 The probability and consequences of asset failure are regularly assessed.	3	B	High	B	2	Moderate	2
9 - Contingency Planning	**3**	**C**	**High**	**A**	**2**	**Strong**	**2**
9.1 Contingency plans are documented, understood and tested to confirm their operability and to cover higher risks.	3	C	High	A	2	Strong	2
10 - Financial Planning	**1**	**B**	**Low**	**A**	**1**	**Strong**	**5**
10.1 The financial plan states the financial objectives and strategies and actions to achieve the objectives.	1	B	Low	A	1	Strong	5
10.2 The financial plan identifies the source of funds for capital expenditure and recurrent costs.	1	B	Low	A	1	Strong	5
10.3 The financial plan provides projections of operating statements (profit and loss) and statement of financial position (balance sheets).	1	B	Low	A	1	Strong	5
10.4 The financial plan provide firm predictions on income for the next five years and reasonable indicative predictions beyond this period.	1	B	Low	A	1	Strong	5
10.5 The financial plan provides for the operations and maintenance, administration and capital expenditure requirements of the services.	1	B	Low	A	1	Strong	5
10.6 Significant variances in actual/budget income and expenses are identified and corrective action taken where necessary.	1	B	Low	A	1	Strong	5
11 - Capital Expenditure Planning	**1**	**B**	**Low**	**A**	**1**	**Strong**	**5**
11.1 There is a capital expenditure plan that covers issues to be addressed, actions proposed, responsibilities and dates.	1	B	Low	A	1	Strong	5
11.2 The plan provides reasons for capital expenditure and timing of expenditure.	1	B	Low	A	1	Strong	5
11.3 The capital expenditure plan is consistent with the asset life and condition identified in the asset management plan.	1	B	Low	A	1	Strong	5
11.4 There is an adequate process to ensure that the capital expenditure plan is regularly updated and actioned.	1	B	Low	A	1	Strong	5
12 - Review of AMS	**2**	**B**	**Medium**	**A**	**1**	**Strong**	**4**
12.1 A review process is in place to ensure that the asset management plan and the asset management system described therein are kept current.	2	B	Medium	A	1	Strong	4

Asset management process components & effectiveness criteria	Consequence (1=minor, 2=moderate, 3=major)	Likelihood (A=likely, B=probable, C=unlikely)	Inherent Risk (Low, Medium, High)	2020 Process & Policy Rating	2020 Performance Rating	2020 Adequacy of existing controls (S=strong, M=moderate, W=weak)	2023 Review Priority
12.2 Independent reviews (e.g. internal audit) are performed of the asset management system.	2	B	Medium	A	1	Strong	4

5.1 Previous Review Recommendations and Actions

The corrective action recommendations from the previous review(s) and the status of actions taken to address these recommendations as updated during the review are given in Table 5-2.

Table 5-2: Action Status from Previous Reviews

Recommendation Reference (no./year)	Area Rating / Asset Management Process / AMP Effectiveness Criteria	Review Recommendation	Date Resolved	Further Action (Yes/No) Details of further action required (including current recommendation reference if applicable)
01/2020	B3 8 – Risk Management 8.1 Risk management policies and procedures exist and are being applied to minimise internal and external risks associated with the asset management system.	Permits cited during the review were not signed-off as completed. Ensure sign-off of all risk related assessments is mandatory and implemented.	Sept-2020	Yes. The PTW system was updated in August 2020. However subsequent PTW internal audit reports identify ongoing issues with outstanding action close out. Therefore it appears the control(s) enacted are inadequate. Refer 5.1.1.observations below. Refer 7.8.2 improvement recommendation(s) and 7.8.3 recommendation(s).

Recommendation Reference (no./year)	Area Rating Asset Management Process AMP Effectiveness Criteria	Review Recommendation	Date Resolved	Further Action (Yes/No) Details of further action required (including current recommendation reference if applicable)
02/2020	B3 8 – Risk Management 8.2 Risks are documented in a risk register and treatment plans are actioned and monitored.	The Technical Compliance Register (TCO R0003) contains over 2160 actions; 2110 are closed, 38 are open and not overdue, and 167 actions are listed as overdue (including 161 actions with revised due dates ranging from the year 2017 to 2019). It is recommended that overdue actions be resolved or re-assessed with revised due dates assigned.	Oct-2020	Yes. A 4-tier priority system implemented in the Technical Compliance Register based on type of action (CAR or IR) and risk rating which was included in reporting to management. Subsequently action tracking migrated into the E-Safe system which includes provision for editable trail of current due date, original due date, and number of due date changes (as per ACT-0002282). However E-Safe workflow remains incomplete and there are ongoing issues with outstanding overdue P1 actions. Refer 5.1.2. observations below. Refer 7.8.2 improvement recommendation(s) and 7.8.3 recommendation(s).

5.1.1 Recommendation 01/2020 Follow Up Observations

E-safe action entry cited ACT-0002281 back-to-back with post review implementation plan also presented during interview. Action was completed Sept-2020 through update of the PTW and Control Room Permit Procedure AGA-O&M-PR30, AGA-O&M-PR06, supporting Work Instructions and Forms. However, the E-Safe workflow for this action remains incomplete.

The 2021 PTW Audit report TCO RP 0511 identifies ongoing issues: 6 major NCs, 4 minor NCs, 3 IRs, and 3 observations.

The 2022 PTW Audit report TCO RP 0608 identifies 4 CARs and 2 IRs. The CARs include retrieving 187 outstanding completed permits and interim measures while awaiting PTW E-Safe module implementation. The IRs relate to review of E-Safe PTW module and confined space entry permit review. Back-to-back E-Safe entries cited where IRs due 30/06/2022 remain outstanding.

Refer also 7.8.

5.1.2 Recommendation 02/2020 Follow Up Observations

The file '01. Minutes from July 2021 RMCC' reports 60 overdue P1 actions, some being acknowledged as up to 18 months overdue. Minutes include a proposal to postpone 7 of 9 discretionary internal audits in order to redirect resources to action close out. The file '5.1 Audit Action Report March 2023' cited during interview (as part of RMCC meeting) reports tracking of tasks based on priority with definition of criteria for each priority. It shows there is a process in place for overdue P1 actions with due date review evident in action reporting. This report shows 23 overdue P1 actions. 17 closed, 17 open, during period (3 months) of 86 actions being tracked during period.

RMAP and MOC actions are tracked in monthly Technical Compliance management reporting.

While the reporting shows a favourable trend in tracking of actions status and close out performance, it was at the expense of internal audits, and there remain ongoing examples of P1 CAR actions observed during this review period where the action closeout has not occurred until months after the due date. E.g., ACT-0004032 raised 11/01/22, due 30/04/2022, first progress update 13/07/2022, closed 14/07/2022.

Refer also 7.8.

6 Performance Summary – Current Review Period

Table 6-1: Performance Summary

Asset management process components & effectiveness criteria	Process and Policy Rating	Performance Rating
1 - Asset Planning	**A**	**2**
1.1 Asset management plan covers key requirements.	B	1
1.2 Planning process and objectives reflect the needs of all stakeholders and is integrated with business planning.	A	1
1.3 Service levels defined.	A	1
1.4 Non-asset options are considered.	A	1
1.5 Lifecycle costs are assessed and understood.	A	1
1.6 Costs are justified and cost drivers identified.	A	1
1.7 Funding options are evaluated.	A	1
1.8 Likelihood and consequences of failure are predicted	B	2
1.9 Plans are regularly reviewed and updated	B	3
2 - Asset Creation and Acquisition	**A**	**2**
2.1 Full project evaluations are undertaken for new assets, including comparative assessment of non-asset solutions.	A	1
2.2 Evaluations include all life-cycle costs.	A	1
2.3 Projects reflect sound engineering and business decisions.	A	1
2.4 Commissioning tests are documented and completed.	A	3
2.5 Ongoing legal/environmental/safety obligations of the asset owner are assigned and understood.	B	2
3 - Asset Disposal	**A**	**1**
3.1 Under-utilised and under-performing assets are identified as part of a regular systematic review process.	A	1
3.2 The reasons for under-utilisation or poor performance are critically examined and corrective action or disposal undertaken.	A	1
3.3 Procedures for asset decommissioning disposal, sale or transfer to other authority. Disposal alternatives are evaluated.	A	2
3.4 There is a replacement strategy for assets.	A	1
4 - Environmental Analysis	**B**	**2**
4.1 Opportunities and threats in the system environment are assessed.	B	2
4.2 Performance standards (availability of service, capacity, continuity, emergency response, etc.) are measured and achieved.	B	1
4.3 Compliance with statutory and regulatory requirements.	A	2
4.4 Achievement of customer service levels.	B	1

Asset management process components & effectiveness criteria	Process and Policy Rating	Performance Rating
5 - Asset Operations	**A**	**1**
5.1 Operational policies and procedures are documented and linked to service levels required.	A	1
5.2 Risk management is applied to prioritise operations tasks.	A	1
5.3 Assets are documented in an Asset Register including asset type, location, material, plans of components, an assessment of assets' physical/structural	A	1
5.4 Accounting data is documented for assets.	B	1
5.5 Operational costs are measured and monitored.	A	1
5.6 Staff receive training commensurate with their responsibilities.	A	1
6 - Asset Maintenance	**A**	**1**
6.1 Maintenance policies and procedures are documented and linked to service levels required.	A	1
6.2 Regular inspections are undertaken of asset performance and condition.	A	1
6.3 Maintenance plans (emergency, corrective and preventative) are documented and completed on schedule.	A	1
6.4 Failures are analysed and operational/maintenance plans adjusted where necessary.	B	2
6.5 Risk management is applied to prioritise maintenance tasks.	A	1
6.6 Maintenance costs are measured and monitored.	A	2
7 - Asset Management Information System	**B**	**1**
7.1 Adequate system documentation for users and IT operators.	B	1
7.2 Input controls include appropriate verification and validation of data entered into the system.	A	1
7.3 Logical security access controls appear adequate, such as passwords.	A	1
7.4 Physical security access controls appear adequate.	B	2
7.5 Data backup procedures appear adequate.	B	1
7.6 Key computations related to licensee performance reporting are materially accurate	B	1
7.7 Management reports appear adequate for the licensee to monitor licence obligations.	A	1
7.8 Adequate measures to protect asset management data from unauthorised access or theft by persons outside the organisation.	A	1
8 - Risk Management	**B**	**2**
8.1 Risk management policies and procedures exist and are being applied to minimise internal and external risks associated with the asset management	B	3
8.2 Risks are documented in a risk register and treatment plans are actioned and monitored.	A	2
8.3 The probability and consequences of asset failure are regularly assessed.	B	1
9 - Contingency Planning	**C**	**2**
9.1 Contingency plans are documented, understood and tested to confirm their operability and to cover higher risks.	C	2

Asset management process components & effectiveness criteria	Process and Policy Rating	Performance Rating
10 - Financial Planning	**A**	**1**
10.1 The financial plan states the financial objectives and strategies and actions to achieve the objectives.	A	1
10.2 The financial plan identifies the source of funds for capital expenditure and recurrent costs.	A	1
10.3 The financial plan provides projections of operating statements (profit and loss) and statement of financial position (balance sheets).	A	1
10.4 The financial plan provide firm predictions on income for the next five years and reasonable indicative predictions beyond this period.	A	1
10.5 The financial plan provides for the operations and maintenance, administration and capital expenditure requirements of the services.	A	1
10.6 Significant variances in actual/budget income and expenses are identified and corrective action taken where necessary.	A	1
11 - Capital Expenditure Planning	**A**	**1**
11.1 There is a capital expenditure plan that covers issues to be addressed, actions proposed, responsibilities and dates.	B	1
11.2 The plan provides reasons for capital expenditure and timing of expenditure.	A	1
11.3 The capital expenditure plan is consistent with the asset life and condition identified in the asset management plan.	A	1
11.4 There is an adequate process to ensure that the capital expenditure plan is regularly updated and actioned.	A	1
12 - Review of AMS	**C**	**3**
12.1 A review process is in place to ensure that the asset management plan and the asset management system described therein are kept current.	B	3
12.2 Independent reviews (e.g. internal audit) are performed of the asset management system.	C	3

7 Reviewer's Observations

The following sections summarise observations arising from the interviews and review of supplementary documentation conducted as part of this 2023 review. A complete list of documents cited as evidence is included in Appendix 1, including supplementary items requested post-interview as additional document/evidence requests (see Appendix 2).

The overall process and policy (definition) and performance (adequacy) rating for each area, was obtained by averaging the ratings for each review component (based on numerical equivalency for alphabetical ratings), except where an element was rated deficient (policy C, D or performance 3, 4), then the maximum area rating was limited to B, or 2 respectively. Component ratings are assigned considering the observations of the AMS relative to the size and complexity of the assets under management.

7.1 Asset Planning

Key to this process element is that planning strategies are focused on meeting customer needs in the most effective and efficient manner (delivering the right service at the right price).

7.1.1 Observations

7.1.1.1 AMS Planning Framework

The AGA framework reviewed for this element comprises of the following key AMS components:

- GDS Safety Case and FSAs
    - Pipeline Safety Management Study (SMS)
- Strategic Asset Management Plan (SAMP) AGA-S&P-PL01
- Asset Management Plan – Coastal (AMP) AGA-S&P-PL02
- Asset Lifecycle Strategies (ALSs), by asset class:
    - Corrosion Protection Systems AGA-S&P-ST06
    - Metering Facilities AGA-S&P-ST07
    - Pipelines, Mains and Services AGA-S&P-ST08
    - Pressure Regulating Facilities AGA-S&P-ST09
    - SCADA AGA-S&P-ST06
    - Fleet AGA-S&P-ST06
    - Property, Plant & Equipment AGA-S&P-ST06.
- Project Management Manual PMM MA0001
- Capital Contributions Policy AGA-FIN-PC02
- Business Cases (by WBS).

Being that the Safety Case is subject to dedicated reviews, audits, and certification, the focus of this review was directed to other elements of the AMS.

The SAMP supersedes and integrates AMP and asset strategy level documents cited in previous review period. ALSs replaced Asset Class Plans (ACPs) during end of previous review period / beginning of current review period and consolidate other documents such as replacement strategies.

However, these changes are structural, and no material changes to the content are identified in these components of the AMS since the previous review period.

The SAMP defines strategic objectives (section 1.2) which business plans must align with and links to the overall asset management strategy. The SAMP provides interface between top-down corporate objectives and bottom-up operational risks and opportunities. SAMP identifies regulatory and standard requirements and links to governing Safety Cases (section 4.1). Asset management drivers are identified (section 4.2). Stakeholders are identified and their needs/objectives/expectations defined (section 5). Governance processes where Asset Planning links to other components of the AMS are defined for Risk assessment, AMPs, ALS, operational and maintenance requirements and processes (section 6). Continuous improvement objectives are defined (section 7).

Customer stakeholder requirements are informed by the Voice of the Customer Survey presentation 21 April 2021 cited. It reports on SLA KPIs, and comprehensively defines implications for the business, linking to AMS framework for business planning.

Corporate strategy is defined in the SAMP, which also describes the key line of sight for strategic alignment of the overall AMS. Planning processes are summarised by the SAMP (Figure 5) and linked to annual business planning which flows into AMPs, etc.

AMPs exist for various networks, AMP - Coastal covers scope of GDL8. The AMP links to the strategic objectives of the SAMP (section 1.3) then goes onto define the key projects required to meet these objectives over a 10-year horizon. It describes the asset management framework in terms of the feedback loop for informing this and other AMS documents (Figure 1). It links to the ALSs (section 5) which define the lifecycle strategy and condition assessment that underpins the asset planning and investment decisions, along with definition of service levels (section 5), and subsequently these links to definition of KPIs (Table 1). Categories include: customers; Asset Management drivers; Legislation; Strategic and corporate goals; AMS. KPI quantitative targets are set in the AMP (Table 11). Targets are set in AA5 submission based on maintenance of service levels typically aligned with 5-year historical average performance. AGA also sets internal KPIs, where some overlap with ERA KPIs. 2022 Operational KPI targets spreadsheet interrogated showing historical three-year and five-year average, current set KPI (and basis of target), reporting of actual. Reporting of KPIs cited in presentation and review where pass/fail has occurred for current and previous year cited in 2020 Asset management Review presentation. Improvement areas are identified where KPIs are failed year-on-year.

The AMP provides the recommended projects and costs to meet SAMP objectives, underpinned by the lifecycle strategy and condition assessment data from the ALSs. Business Cases provided further detail (as evidenced in sample implementation cases). The Capital Contributions Policy and related framework identify drivers for NPV requirements. Lifecycle costs are evaluated in the AMP and ALSs by asset class. Replacement strategies (replace or maintain assessments) are based on risk and NPV.

Reference to FMECA and RCM is found in the AMP, but there is no process defined.

All CAPEX projects are assessed in a five-tier system 0 - 5. Tier 0 - 2 are assessed in greater detail than for lower tiers. Tier system is defined in the Project Management Manual PMM MA0001 based on cost order of magnitude and risk (Table 1 cites links to Risk Management Matrix). It defines the project management process for each tier level. The business case templates are defined by tier. The primary difference between templates is reduced level of detail for options analysis, particularly cost/benefit.

Asset planning includes asset capacity and performance modelling to recommend network pressure settings, demand, sustaining, and reinforcement programs identified for the AMP and business plan. Planning strategies include impact to network where decommissioning is recommended if impact is determined to be negligible, leak survey frequency increase for the asset class may be recommended to address risk of deferred replacement, physical controls for security of supply reinforcement or increase in patrolling frequency (procedural controls) – as evidenced in the ALS for Pipelines and Mains (section 4.3.2.2) which prescribes daily pipeline patrols to mitigate third party damage risk to ALARP. 1520-GCA1-SM-0010 Security of Supply - Caversham Business Case 29 August 2018 cited as evidence to support the ALS, demonstrating assessment of other options i.e., pipeline duplication. Although this approval of this business case predates the review period, it was considered still relevant as daily pipeline patrol is currently ongoing.

7.1.1.2   Sample Implementation Cases

1520-GCA1-NM-0051 10/11/20 Reinforcement - Doubleview Business Case selected as example implementation of (Tier 0 – 2) project evaluation processes. It cites the forecast hydraulic modelling for the network and risks associated with the resulting network minimum r performance, which was determined to fall below minimum requirements. Five options were evaluated in terms of NPV, value / revenue impact and risk rating. It also identifies that three other options were considered but not progressed for further analysis, being considered not viable. Benefits and adequacy of options are discussed for linkage to AMP objectives. Technical compliance is engaged for risk assessments. There is justification for options not considered viable. The business plan is comprehensive.

1520-GCA1-GN-0122 22/02/2022 Facility Upgrade - Step Touch Hazard Mitigation Business Case cited as another example of high tier project. Investment needs are identified. Options evaluation cited. Linkage to corporate strategies and plans, and key stakeholders' definition cited.

1520-GCA1-GN-0173 07/05/2022 Facility Upgrade - Pressure and Temperature Monitoring Business Case cited as example of lower tier project. It still contains option evaluations and linkage to stakeholder requirements but requires less detail on project definition.

1520-GCA1-GN-0099 Memo cited Metallic Mains replacement Project - Project Scope Change 5 August 2020 cited Unprotected metallic mains crossings are being assessed for decommissioning or replacement. Examples cited with decommissioning, replacement like for like, or replacement with an alternative route. CEAR and business case for base project also cited (as cross referenced in Memo).

Leak Survey Report Sheet 2020 (and 2018) demonstrates that the metallic mains are on a 3 yearly cycle (where mains typically on 5 yearly cycles) to address risk of deferred replacement (due to resource constraints).

1520-GCA1-GN-0105 29/11/2019 PVC EOL Replacement Business Case cited. While the approval date predates the review period, the Asset Planning and execution period is for AA5. Age and condition assessment feeds into lifecycle NPV cost of replacement and maintenance (BAU) option ("do nothing").

TCO RP 0504 EOL Replacement Isolation Valves 2021 Business Case – Risk Assessment cited as example FSA.

MDB models for the MLP Doubleview network cited as examples of SynerGee gas models for peak winter 2021 actual conditions, and severe winter (1-in-20 year) conditions. Mapping of network pressure throughout the network (by colour) and at discrete monitoring locations (quantitative value) is observed.

FMECA – Domestic Meter Units cited as RCM example. The FMECA and RCM structure is evidently well developed, but the qualitative analysis appears to be absent – a criticality assessment has been

made for only 1 of 175 line items, and the "Actions" tab is not populated. The maintenance strategy indicated is run to failure for all line items. The FMECA sample appears very generic, treating all equipment as equal (regardless of manufacturer, duty/standby function etc). Criticality scoring acceptance criteria and linkage to the AGA risk matrices is not evident. There is no indication of the date the analysis was prepared or reviewed.

7.1.2 Effectiveness Rating

The review ratings based on observations for asset management system component 1 (Asset Planning) are listed in Table 7-1.

Table 7-1: Review Rating – Asset Planning

Reference	Review Priority	Asset management process of effectiveness criterion	Findings and OFI Recommendations	Process & Policy	Performance
1 - Asset Planning				**A**	**2**
2023-1.1	4	Asset management plan covers key requirements.	AGA fulfills this requirement. However as per the 2020 observations, Contingency Planning is not (but should be) directly linked to the SAMP.	B	1
2023-1.2	4	Planning process and objectives reflect the needs of all stakeholders and is integrated with business planning.	AGA fulfills this requirement. Business cases for discrete projects are thorough and link to AMS objectives.	A	1
2023-1.3	4	Service levels defined.	AGA fulfills this requirement.	A	1
2023-1.4	4	Non-asset options are considered.	AGA fulfills this requirement.	A	1
2023-1.5	4	Lifecycle costs are assessed and understood.	AGA fulfills this requirement.	A	1
2023-1.6	4	Costs are justified and cost drivers identified.	AGA fulfills this requirement.	A	1
2023-1.7	4	Funding options are evaluated.	AGA fulfills this requirement.	A	1
2023-1.8	4	Likelihood and consequences of failure are predicted	AGA fulfills this requirement. However RCM / FMECA analysis process definition and execution should be reviewed for improvement.	B	2
2023-1.9	4	Plans are regularly reviewed and updated	As observed in the 2020 review, annual review commitment of ALSs is still lagging, typically overdue by more than one review cycle for this review period (up to 5 years for some documents, with critical ALSs being almost 2 years old – Refer Appendix 1 for further detail). It is reported that the 2020 IR was not adopted. Furthermore there is misalignment between review and update commitments for Asset Management Plan level documents (SAMP/AMP/ALSs/ERMP), next revision date defined in the Controlled Document Register, and actual practice. Corrective action recommended. See 7.1.3.	B	3

7.1.3 Recommendations

2023-1.9:

1. AGA should update the controlled document procedure register review frequency to align with practice, or vice versa. i.e., business and risk driver based rather than broad document classes, and bolster controls to these ensure review and update objectives are satisfied (See also 7.12).

7.2 Asset Creation and Acquisition

Key to this process element is that the provision for or improvement of an asset is economic, efficient and cost-effective; it reduces demand for new assets, lowers service costs and improves service delivery.

7.2.1 Observations

7.2.1.1 Asset Creation and Acquisition Framework

The AGA framework reviewed for this element comprises of the following key AMS components:

- Salesforce portal
- Project Management Manual PMM MA0001
  - Project Risk Management ENS PR0038
    - Project Risk Register ENS PR0038 RG01
  - Engineering Services Design Guidelines (by asset class)
- Capital Contributions Policy AGA-FIN-PC02
- Business Cases (by WBS)
  - NPV cost estimate worksheet
- Capital Contributions Procedure AGA-FIN-PR15
- Project Advice Checklist AGA-ENG-PL02-FM01
  - Major Work Permit AGA-R&R-PR06-WI04-FM02
- Project Design Report (by WBS)
- Engineering Deliverables Sign-off Sheet AGA-ENG-PR37-FM01
  - ITPs
  - Pressure test records
  - MDRs.

Salesforce portal (linked to intranet) captures initial enquiry correspondence. Once the customer requirements are defined, the network capacity to deliver the required solution is reviewed, then cost estimates are prepared for customer agreement. Then detailed planning, design and execution proceeds.

PMM MA00001 Project Management Manual outlines the workflow for asset creation. Project planning workflow is presented in the Business Case (as observed during Asset Planning). As for asset planning, a Business Case justifies the need and investment. The PMM also services as a template for projects.

The PMM defines the requirement for developing a business case, objectives, scope and approval requirements (section 3.3). It defines the requirements for developing design output requirements (section 3.3.8.6) including reference to ENS PR0038 Project Risk Management, which was cited and interrogated. Tiers govern level of risk assessment. Tier 0 – 1 must comply with ENS PR0038, whilst Tier 2 and below are to be "*risk assessed at the Project Manager's discretion and should use the principles described*" within ENS PR0038. PR0038 prescribes a project risk register, ENS PR0038 RG01, as the tool for tracking RMAPS. It goes onto describe further project risk assessment requirements.

The basis of CAPEX and operational costs for the life of the asset reported in the Business Case, in addition to forecast revenue generated from the asset, is detailed in supporting NPV cost estimate worksheets.

Mains and meter set design guidelines (AGA-ENG-GL09) was interrogated during the interview. It defines MAOP driven standards tabulated with reference to required design and construction Australian Standards. Defines requirements for risk assessment and detail design of metersets including scoping (basis of design inputs), cost efficiency, monitoring and alarms, sizing guidelines (based on velocity, noise level and vibration), and over pressure protection set pressure metrics.

Engineering Services Design Guideline Pipelines (AGA-ENG-GL11) interrogated during the interview incudes definition of responsibilities and preparation of project work packs, guidelines for design based on MAOP categories, risk assessment requirements as per AS2885, and stakeholder (e.g., Main Roads) engagement processes.

Project packs are prepared in accordance with AGA-ENG-PL02-FM01 Project Advice Checklist (PAC) as part of planning activities where existing SWIs are referenced, and any additional controls or details required to cover all the scope of activities for project execution. The PAC includes reference details back to WBS, client enquiry, SAP, Work Order number, and key contacts. It describes background of project and scope of work with some budget and schedule information, inspection requirements (NDE etc.), safety management and environmental considerations, which may be further defined a Project Design Report.

Inspection Test Plans (ITPs) are prepared for AGA activities, by equipment suppliers, and construction contractors.

All related internal documents are tracked in AGA-ENG-PR37-FM01 Engineering Deliverables Sign-off Sheet which contains details for originator, reviewer, and approver of each document.

Handover to asset services consists of complete start up sheet records. The PMM was cited as governing document for ongoing obligations and handover to asset operations processes. The process described therein is brief, and the document generally assigns responsibility for identification of obligations to the project owners. It cites ENS PR0011 Asset Handover Procedure (now AGA-A&C-PR04), which was also interrogated during interview. It describes the process and responsibilities for asset handover to asset services for the ongoing management of the asset. There are forms and checklists required depending on the project tier. The handover is closed-out via a regular hand-over meetings as described by the procedure. It identifies assets requiring start up sheets and applicable AGA document references. Tier 2 to 4 checklist (AGA-A&C-PR04-FM15) was cited and interrogated during the interview.

7.2.1.2 Sample Asset Creation and Acquisition Project(s)

In addition to examples of project evaluations cited during Asset Planning, a further sample project for Asset Creation and Acquisition was nominated for interrogation: CIC Metersets – Commercial Gas Enquiries Project. It involves acquisition and installation of new meterset, and a new mains extension to fulfil a new customer connection request (and is the basis of the design guidelines sampled in 7.2.1.1). The process varies slightly depending upon tiers thresholds for meter set value

($100k) and pressure (350 kPa). This example sits in the higher tier being a 1,900 kPa meter. In terms of the overall project with respect to PMM requirements, it is a Tier 4 project. EIM WBS directory for 1520-GCA1-GN-0157-6-28 Curtin University was interrogated during the interview.

1520-GCA1-GN-0150-4-14 20/05/2020 Business Case Curtin University Exchange Precinct Development (Date: 20/05/2020) was cited and interrogated. It defines the project as customer-initiated project and provides further background. Identifies asset needs being a 100 m mains extension and a meter set to satisfy the connection request. The Business Case includes estimate of near-term and long-term demand, in order to design / size the asset. Three options were considered including '*do not connect customer*' (non-asset option). Options are evaluated in terms of NPV, CAPEX, value/revenue forecast, and risk. Each option is supported with narrative considering the adequacy of solution, cost/benefit analysis (with NPV including additional operational costs of new asset), and key risks. Selected option bias is based on cost effectiveness (provisional to risk). Selected option detail is further developed including assumptions, project benefits, provisional schedule and expenditure profiles, compliance with gas regulations. Conclusions define how the project satisfies ATCO's strategic principles linked to the SAMP/AMP.

EIM was interrogated for evidence of risk assessments that support the risk ratings in the Business Case. Directory 'HSE & Risk' interrogated. Papers on threats were observed e.g., ASS; water table; TCO RP 0623 HP meterset HAZOP TOR and reporting was interrogated during the interview. IT was observed that risks are evaluated in terms of industry standard key process trigger words, possible cause, consequence, and existing controls. RMAPS are identified where required. In this case four RMAPs were recorded with their closure directory filed alongside HAZOP records. RMAP#2 was sampled for traceability "*confirm separation distance. Confirm adequate workspace*". Evidence of investigations cited including correspondence and drawings/maps of the site arrangement (01B117-A-FP0109 Rev C2 cited). Project risk remains with the project, so RMAP tracking is contained therein. RMAP tracking directory cited with sub-folders for each RMAP and a master list (in correspondence form).

'FET 2020v3 Curtin Uni Option 1 – approved' was cited as cost estimate worksheet supporting the business case. It defined cost breakdown by asset class CAPEX and OPEX, including forecast UAFG, leak survey, and maintenance for the life of the assets – 25 years for the meterset and 60 years for the mains.

The IFC Project Advice Checklist cited appears comprehensive and materially complete. It references equipment datasheets, drawings, and a project design report. Project Design Report – 2022 CIC Meter Set – Curtin Fabrication cited and interrogated. It describes applicable codes and standards, basis of design, sizing and equipment selection, material selection for mains and fittings, extracts/references from relevant technical specifications. NDT prescribed 100% in accordance with Australian Standards Applicable welding specification identified. Requirements for the MDR are defined. Relevant document references are listed.

'ITP – MTS907 Curtin Service Pressure testing' cited and interrogated defining AGA. It was observed to be comprehensive with references to recognised standards and explicit acceptance criteria.

MWP cited and interrogated. Observed appropriate references to SWIs, isolation, emergency planning details. It includes authorised personnel and management sign-off, attachment maps and works procedures, with appropriate drawings and start-up sheets referenced.

Test records template forms filed with ITP interrogated. Pressure Test Records cited for Curtin reference project in accordance with template AGA-A&C-GL06. Contractor test procedure filing cited. 3544-ITP-001 cited (for review/approval i.e. non-executed records). 'ASBUILT – P4-900-1819 – MTS 907' cited during interview and interrogated. Stamped certified as-built standard meter design drawings (project specific). Pressure test records WO6420687 cited for hydro and pneumatic tests. As per template. Hydro test records appear to be complete and appropriately signed off. Signed off workshop checklist for meter set cited.

MDR directories for meter set and mains complied separately. Links in project folder to dedicated MDR filing area. MPI Engineering WO6420687 Revision 1 MPI Job 4534 Meter set cited and interrogated. Records appear comprehensive and materially complete with appropriate level of sign-off. ITP found is contractors ITP only. ENS PR0042 MDR Contents Sign-off sheet cited.

SDD11-AG-215 MDR-01_1 Reviewed cited and interrogated during interview. Steel Diamond Project No SD22-AG-215. Similarly comprehensive to meter set MDR. Process chemicals ITP cited previously found unexecuted. Steel Diamond ITP cited previously found partially executed, with AGA sign-off and initial dates for each activity absent.

There was no evidence of executed AGA ITP records or Asset Handover Checklist for the Curtin University Meterset sample project.

The Curtin project design report identifies responsibility for ongoing asset operation and maintenance at a departmental level. The business case captures project requirements for alignments with regulatory rules (refer to section 4 Consistency with Corporate Strategies and Plans & section 5 Consistency with National Gas Rules). Formerly the MOR, obligations are tracked in E-safe) at a network level as reviewed in previous interview(s).

7.2.2 Effectiveness Rating

The review ratings for asset management system component 2 (Asset Creation and Acquisition) are listed in Table 7-2.

Table 7-2: Review Rating – Asset Creation and Acquisition

Reference	Review Priority	Asset management process of effectiveness criterion	Findings and OFI Recommendations	Process & Policy	Performance
2 – Asset Creation and Acquisition				**A**	**2**
2023-2.1	4	Full project evaluations are undertaken for new assets, including comparative assessment of non-asset solutions.	AGA fulfills this requirement.	A	1
2023-2.2	4	Evaluations include all life-cycle costs.	AGA fulfills this requirement.	A	1
2023-2.3	4	Projects reflect sound engineering and business decisions.	AGA fulfills this requirement. Design guidelines and processes appear comprehensive, mature, and up to date.	A	1
2023-2.4	4	Commissioning tests are documented and completed.	While the ITP templates were comprehensive and explicit in defining inspection test criteria, executed ITP (i.e. test records) were absent from MDRs and project files for AGA scope (pre-site work activities and pressure testing of service), and Contractor mains/service installation scope, despite completion of the MDR Contents sign-off sheet. Corrective action recommended. See 7.2.3.	A	3

Reference	Review Priority	Asset management process of effectiveness criterion	Findings and OFI Recommendations	Process & Policy	Performance
2 – Asset Creation and Acquisition				**A**	**2**
2023-2.5	4	Ongoing legal/environmental/safety obligations of the asset owner are assigned and understood.	AGA fulfills this requirement. However, AGA should review the asset handover (checklist) process performance which appears to be lagging project practical completion and MDR reviews (late 2022) for the sample project Curtin University Meterset and mains installation. AGA should update the PMM to align with latest AMS documentation (numbering etc) and implementation of new systems. E-safe should be leveraged for management of discrete project RMAPS, as well as broader network RMAPS.	B	2

7.2.3 Recommendations

2023-2.4:

1. AGA should conduct a technical compliance audit and review into ITP sign-off (by AGA and its contractors), and AGA MDR contents sign-off as deficiencies in these areas were observed for the reference project (Curtin University Exchange Precinct Development) sampled for this review.

7.3 Asset Disposal

Key to this element is that effective asset disposal frameworks incorporate consideration of alternatives for the disposal of surplus, obsolete, under-performing or unserviceable assets.

7.3.1 Observations

7.3.1.1 Asset Disposal Framework

Replacement strategies are captures in the ALSs for each asset class and criteria for determining where assets should be disposed of, and additional key documentation includes:

The AGA framework reviewed for this element comprises of the following key AMS components:

- Asset Lifecycle Strategies (See 7.1.1.1 AMS Planning Framework)
- SynerGEE software modelling
- Asset Health Index reporting
- Business Cases (by WBS)
- Management of Decommissioned Assets AGA-ENG-GL12
    - Purging Decommissioning of Mains SWI MA 003.
    - As-Built Data NCN GL C0 001.

Annual modelling processes (using SynerGEE software) identify reinforcement requirements i.e. over utilisation of assets. Conversely point performance management issues (typically corrosion) are also flagged e.g. by regulator station inspection. Non-asset options / alternatives to disposal are

considered in Business case cost/risk benefit analysis, and that includes decommissioning and disposal i.e. can the network meet performance targets without asset replacement, reflective of asset under utilisation.

Asset Health Index AHI_2022 spreadsheet cited during the interviews. It is reported internally monthly, and to ERA annually. It is a tool to identify over or under maintenance trends (where the index is greater than 100). Leak survey and water in the mains are identified as the primary causes of lower index results. CMOS output from control room is also captures in AHI reporting (which is the input for network reliability reporting).

Management of Decommissioned Assets (AGA-ENG-GL12) defines procedures for physical implementation of disposals. It outlines options and criteria for reuse or transfer of ownership (Section 4). It cites SWI MA 003 for purging and decommissioning of mains, and NCN GL CO 001 for As-built records criteria. Disposal method for non-linear assets is scrapping. Meters are rendered inoperable prior to disposal (since their accuracy is no longer verifiable). Project managers are responsible for physical disposal arrangements of removed assets.

7.3.1.2   Sample Asset Disposal Project(s)

Metallic Mains replacement 2022 cited as example of railway crossings assessed as reaching EOL (through corrosion assessments). Memorandum 11 January 2022 Subject Supporting Information CR002 – EOL Replacement – metallic Mains – Business Case – Scope Change (railway crossings) cited. It discusses changes from the previously approved business case.

1520-GCA1-GN-0152 EOL Replacement – MPR Business Case 24/3/2020 cited. Options show decommissioning option however in this case it was not considered as the best option after examination of reasons for underperformance (and was also cited in Asset Operations item 3.1 session). This business case covers a rolling program through to 2024.

Metallic Mains disposal at railway crossing selected as sample disposal. Planning documents cited based on IBIS maps, showing cut-and-cap locations for DN80 70 kPa (MLP) steel mains (made redundant by new PE cased PVC). Project Advice Checklist (PAC) 2022 – EOL Replacement MM 20/6/22 Rev 0 1520-GCA1-GN-0139-3 cited. It forms the work pack collating relevant planning documents (maps), procedures etc. and further detail design drawings issued for construction. The DN80 mains disposal method was in-situ abandonment, with proactive decommissioning of the CP system for the it's DN200 sleeve.

Correspondence cited for CP test point to be removed 10/10/2022, hyperlinked to start-up sheet in Salesforce – workflow and records interrogated. SUS-00170 WO6402335. Includes GPS location reporting. AsCON drawing hyperlink (redline of IBIS maps ASCON – 6402335 cited). Salesforce workflow evidence propagation of asset decommissioning through SAP and maintenance records.

Minor Work Permit MN062 cited as sample regulating facility disposal Permit number 212488 FL405885. SAP notification 6405616. Notification of site works completion cited (email correspondence). GIS interrogated to evidence removal of the asset. Retired date field was observed as being blank in Lantis asset attributes. SUS Notification 6405616 2/12/2022 "offline services record sheet" retrieved and cited with verification MN062 removed and confirming piping arrangement.

It is reported that: MN062 was removed from site on completion of works by AGA crews, dismantled (metal removed) and disposed of the AGA depot. Concrete placed on the rubble pile, which is removed by contractor (ECT) when the rubble bay is full. Metal scrap is removed by Sims Metal and recycled. Invoice for ECT Contractors for 'waste disposal' cited as evidence. The date 8/01/2023 appears consistent with the project timeline for MN062, but otherwise is not directly traceable.

7.3.2 Effectiveness Rating

The review ratings for asset management system component 3 (Asset Disposal) are listed in Table 7-3.

Table 7-3: Review Rating – Asset Disposal

Reference	Review Priority	Asset management process of effectiveness criterion	Findings and OFI Recommendations	Process & Policy	Performance
3 – Asset Disposal				**A**	**1**
2023-3.1	5	3.1 Under-utilised and under-performing assets are identified as part of a regular systematic review process.	AGA fulfills this requirement.	A	1
2023-3.2	5	3.2 The reasons for under-utilisation or poor performance are critically examined and corrective action or disposal undertaken.	AGA fulfills this requirement.	A	1
2023-3.3	5	3.3 Procedures for asset decommissioning disposal, sale or transfer to other authority. Disposal alternatives are evaluated.	AGA fulfills this requirement. However AGA should review update of GIS systems performance which appears to be lagging for the sample project MN062.	A	2
2023-3.4	5	3.4 There is a replacement strategy for assets.	AGA fulfills this requirement.	A	1

7.3.3 Recommendations

No process deficiencies rated C, D, 3 or 4 have been identified, and therefore mandatory corrective action recommendations not required.

7.4 Environmental Analysis

Key to this element is that it examines the asset management system environment and assesses all external factors affecting the asset management system.

7.4.1 Observations

7.4.1.1 Environmental Analysis Framework

The AGA framework reviewed for this element comprises of the following key AMS components:

- GDS Safety Case and FSAs
  - o Pipeline Safety Management Study (SMS)
- Risk Management and Compliance Committee (RMCC)
  - o Regulatory changes reporting
  - o Risk summary reporting
  - o Compliance (breach) reporting
  - o Rolling Performance Data reporting

- o KPI reporting
- E-Safe
  - o Obligations Register
  - o RMAP Register
- Compliance Practice AGA-GRC-PC05
  - o Compliance Procedure AA-GRC-PL04
  - o Compliance Calendar Checklist
  - o Compliance Attestation
  - o Regulatory Change Work Instruction AA-GRC-WI01
  - o Gas-Distribution-License-Performance-Reporting-Datasheets
- Risk Management Policy AA-GRC-PO04
  - o Risk Management Framework   AA-GRC-PL05
  - o Technical Compliance Risk Management Guideline AGA-R&R-GL01
- Asset Lifecycle Strategies (See 7.1.1.1 AMS Planning Framework)
- SAP operational and maintenance inspection reporting
- Business Case FSAs (by WBS).

The Compliance Practice (AA-GRC-PC05) cites compliance with ISO 19600. It describes the process for periodic review commitments and leadership as being achieved through the RMCC (Risk Management Compliance Committee) which reports to the ATCO Executive Committee.

The RMMC convenes tri-annually to review prescribed reporting. Regulation change papers reported to management provide detail on regulatory changes as threats for management assessment. The regulation change assessments are updated with actions outcomes detailing AGA response where appropriate. Opportunities to comply with new standards are not formally flagged by RMCC until they are triggered by the regulatory change. Although subscription notifications are received by the team.

The Compliance Procedure (AA-GRC-PL04) outlines process for identification of compliance obligations and evaluating of compliance risks. The current revision (5) is not reflective of recent changes such as E-Safe implementation. Draft revision (6) cited references E-Safe obligations module as live register for applicable requirements (superseded the Master Obligations Register Excel Spreadsheet). Regulatory changes are tracked via subscription alert systems and AGA executive committee awareness processes.

The Regulatory Change Work Instruction (AA-GRC-WI01) is cited by the compliance procedure is also draft and pending implementation. It defines the procedure for responding to identified environment changes. It was initiated early 2023 in response to staffing risk to ensure essential 'how-to' is retained within the business especially with respect to implementation within E-Safe.

RMCC risk summary reporting identifies new, emerging, escalated, downgraded and removed risk identification. Risks are assessed and management strategies proposed for presentation to the RMCC. Back-to-back entries in E-Safe are created relating to RMCC risk summary reports.

Each AS2885 Pipeline Safety Management Study (SMS) is reviewed 5 yearly and initiated for all new pipelines. Pipeline patrols are conducted as part of operations for pipelines and critical mains as per AS2885 guidelines (even where pipelines/mains strictly fall within the Gas Distribution Standard AS464 scope rather than AS2885). Records from patrols are reported in SAP. Data is used for planning such for clearing of excessive vegetation growth maintenance activity along pipelines.

Asset health risks are addressed by asset class in the ALSs (asset characteristics and statistics).

Annual performance reports are submitted to the ERA (Gas-Distribution-License-Performance-Reporting-Datasheets). Reports include Gas Consumption, Leaks, Network Reliability, Complaints, Call Centre, Distribution Mains Installed. Variance of indicators by 10% or more from the previous period require commentary.

Achievement of customer Service Level Agreements (SLAs) is also monitored by annual ERA reporting and supplemented with live online tools for public outage notifications. Customer service levels are monitored in Overall Performance and Call Centre data. KPIs are set below license thresholds so corrective action can be implemented to avoid a compliance breach if issue is endemic.

Rolling Performance Data reporting includes overall performance standards and standards for various services metrics, connections, gas consumption, leak repair, network reliability, complaints, call centre, distribution mains (makeup).

KPIs are defined in ALSs, by asset class. KPIs are monitored and reported monthly, with metrics for rolling 12 months, quarterly and year to date, as well as target. It is advised that KPIs have not changed during the review period.

E-safe captures obligations elements for individual regulatory and statutory requirements. Entries links to parent/child obligations to assign responsibilities and stakeholders at granular level with monitoring of actions.

The Compliance Calendar Checklist (excel spreadsheet) works in conjunction with E-safe obligations register for planning and monitoring of obligation actions. The spreadsheet includes details of Obligation Title, Subject, Frequency, Month Due & Explanatory Notes.

Compliance papers are produced to report breaches (annually) with corrective action plans and near misses. Cause and proposed treatment action commentary is provided for immediate corrective action and follow up with measures to prevent recurrence. Responses are typically discrete and not captured back-to-back in E-safe unless they prompt a more global review action.

During the previous review period ATCO made use of Compliance Attestation Statements, which were signed off every 6 months by individual senior managers with ownership of compliance obligations. The attestation would confirm they had reviewed and updated the Master Obligations Register (prior to E-Safe) and have either met their respective obligations or reported non-compliances to the Risk and Compliance Team. It is reported that some managers are continuing to use the Attestation Statements during this review period. However, the implementation of E-Safe with its obligation element tracking makes the Attestation Statements obsolete, and the intention is for the use of these to be discontinued.

7.4.1.2   RMCC Reporting and Records

EIM directory cited with evidence of RMCC occurring 3 times throughout the year throughout the review period.

03.3 Regulatory Changes Paper (RMCC meeting No.16) retrieved from EIM March 2020 package directory. Summarises and details pending/imminent changes in legislative environment.

Sept 2022 4.2 Statutory and Regulatory Changes Report no. 24 cited and interrogated. Also includes updates on previously reported changes. Identification of new elements.

1.1 Minutes from March 2022 RMCC reviewed and interrogated during review where RMCC assess recommended responses to opportunities and threats.

02.1 Risk Summary Report_Mar2021, 3.1 Risk Summary Report September 2022 interrogated during interview. Risk heat map shows where risks sit on the risk matrix. Back-to-back entries in E-Safe relating to RMCC risk summary reports e.g. RSK-0000398 with risk rating. and assessment (frequency and consequence) leading into treatment plans.

03.3 Regulatory Changes Paper (RMCC meeting No.16) retrieved from EIM March 2020 package directory. Summarises and details pending/imminent changes in legislative environment. Updated with actions outcomes detail ATCO response where appropriate.

1.1 Minutes from March 2022 RMCC reviewed and interrogated during review where RMCC assess recommended responses to opportunities and threats.

Sept 2022 4.2 Statutory and Regulatory Changes Report no. 24 cited and interrogated. Also includes updates on previously reported changes and identification of new elements.

2020-Gas-Distriubtion-License-Performance-Reporting-Datasheets cited and interrogated during the interview. (Report contained sections Gas consumption, Leaks, Network Reliability, Complaints, Call Centre, Distribution Mains Installed). Variance of indicators by 10% or more from the previous period require commentary. Gas Distribution License Performance Reporting datasheets cited for 2021 and 2022 were subsequently provided. Network reliability observed consistently high. >99.99%, zero customers affected by 5 or more unplanned interruptions during any given reporting year.

Rolling Performance Data 2022 cited and interrogated during interview.

7.4.1.3 Compliance Risk Case Studies

Compliance risk for two case studies within the review period cited.

Critical Infrastructure Reform 2021 directory was found populated with numerous reference papers and some informal AGA email exchanges. There was no evidence of a formal and cohesive analysis or outcomes assessment by AGA.

2020 Review of Gas Licenses. This was a file of numerous reference files. - ATCO Issues Log cited demonstrates a clause-by-clause assessment, GDL Review -Offer to Connect - Capital Contributions Issue cited demonstrates a cohesive assessment, the outcomes of which are also communicated to ERA as cited in ATCO Gas Australia - Gas Distribution Licenses letter.

7.4.1.4 Compliance and Obligations Reporting

Obligations in E-Safe were interrogated during interviews. E-safe OBL-0000025 (*Gas Standards Regulations 2000 (WA) ECA 17*) cited an interrogated as example. Observed definition of requirement, controls, affected locations, responsible people. reporting type, source references (e.g. reference to legislation), and amendment date (audit trail for obligation history). The Obligations register (export from E-Safe) appears to be comprehensively defined and referenced demonstrating sound understanding.

Compliance Calendar Checklist (excel spreadsheet) 2023 and 2022 interrogated during interview. 2020 and 2021 Compliance Calendar also reviewed. No compliance breaches for 2020-2021 relating to the GDS observed in this reporting.

2020 Compliance Report_ATCOGasAustralia cited as compliance breach register for 2020. 3 (minor) NCs observed against licensing obligation: [230] 2 of almost 10,000 reconnections were not performed within the required timeframe. Circumstantial commentary given and considered isolated and detection controls effective; [254] 1 instance of incorrect handling of a customer complaint. Rectified retrospectively: [255A] 2 complaints not responded to within 20 business days. Some

commentary provided. ATCO has provided additional resourcing to Customer relations team from April 2020.

2021 Compliance report cited, 26/08/2020. 3 (minor) NCs observed against obligations: [255A] 19 complaints were not acknowledged within 10 business days. Commentary given. Considered isolated and detection control effective; [254] 17 customers did not receive their autogenerated acknowledgement email. However their complaints are reported to be resolved by the time the issue was identified; [230B]1 instance where a retailer was not advices of unauthorised gas utilisation. To avoid recurrence, a new communication template is reportedly developed to improve process adherence.

2022 Compliance report cited. 30/08/2022. 2 (minor NCs observed against obligations: [255A] 2 complaints not acknowledged within 10 business days. Deemed isolated; [255] 1 complaint where customer was not advised of their right to escalate. Controls deemed generally effective and evolving.

4.1 Compliance Report September 2022 (RMCC) cited and interrogated during interview. Breaches and near misses reported include: AEMO Retail market procedure -delay in providing data to market reported; License obligation [255] breach reported; failure to provide 24-hour emergency contact line; Late notification to Dept of Home Affairs on Changes to Company Directorships.

Five Compliance Attestations from 2020 were cited. It is observed that S. Oler Compliance Attestation statement 04.11.2020 has not been signed off.

CR Monthly complaints report Sept 2022 cited and interrogated during interview including Salesforce.com portal (atco.lightning.force.com) dashboard for service console. Service Level Agreement (SLA) violations are tracked and reported. Linkage of these as a total percentage and then to a KPI was not clear during the interview.

7.4.1.5   Operational KPI Reporting

2021 Operational KPI Performance excel reporting cited, measuring only Leaks, New mains construction rate, new connections rate, GDS throughput. Traceability to the scope of the relevant effectiveness criteria '*4.2 Performance standards (availability of service, capacity, continuity, emergency response, etc.) are measured and achieved*' and customer SLAs is not evident. 2022 Monthly KPIs interrogated during interview. December reporting interrogated. Reporting appeared incomplete and alternative reporting sources were not readily identified during the interview.

Veg Clearing_SAP Notifications cited as examples for vegetation clearing work orders created in SAP, with entries shown for 2020, 2021 and 2023.

7.4.1.6   Safety Management Study Records

HP102 AS2885 SMS 2022 Terms of Reference (TOR) and workshop record TCO RP 0579_01 cited as example FSA (HP102 Geraldton Lateral), and to demonstrate adoption of current standard revisions (i.e. AS2885 Part 1 / Part 6 – 2018). The TOR is merely a slide presentation, not a revision-controlled document. Neither the TOR or the workshop worksheets indicate the date which the SMS was conducted or who was expected to attend the SMS. Interviewees advise AGA has moved away from stand-alone formally approved TORS. While it is presumed the final report documentation will close out these matters, the Reviewers opinion is that critical traceability information should be carried through all stages of documentation.

While the TOR references the latest version of AS2885 applicable to SMSs i.e. Part 6 – 2018 the records fail to meet the requirements of this standard. Input information is limited to: year of installation; material and grade; CP system; external coating type; Location Classes (supplemented

with KP specific references in the worksheets); License; 4.7 kW/m^2 measurement length; route overview; MAOP; wall thickness (with reference to a 2015 MAOP report); size; length.

As per AS2885 Part 6, required SMS input omissions include: design factor; minimum depth of cover; positive identification i.e. controlled document number(s) for previous SMS documentation; external coating thickness; PIMP; fracture resistance assessment and/or damage resistance calculation results summary i.e. penetration resistance and credible rupture/leak scenarios; 12.6 kW/m^2 radiation distance; assessment of conformance with maximum energy release rate; pipeline isolation plan and/or procedures (with potential volumes of release). For periodic operation SMS updates mandatory inputs should be supplemented by: details of any newly identified threats; reports on any incidents involving pipeline damage or near misses; evidence of close-out for actions recommended by previous SMS reports; PMS (or in this case AMS) reviews or audit reports; Integrity management plans and activities; summary of current pipe integrity data; performance audits results for the effectiveness of existing controls (particularly procedural); details of encroachments since last SMS; asset modification or change records since the last SMS.

While some of these requirements are satisfied by references in the worksheet "pre-requisites" tab, they should be included in the TOR for review and validation, and in any case some gaps remain between the two sources. The SMS worksheet "pre-requisite" references do not align with the TOR, referring to AS2885.1 Appendix B (2012) instead of AS2885.6 (2018). It cites references that appear to satisfy some of the input criteria omitted from the TOR: Operating plans; isolation plans; HAZOPs; Fracture Control Plans; Penetration resistance; as-built drawings; previous SMS reports.

Neither the TOR or the SMS worksheets indicate the date these documents were produced, reviewed, or subsequently revised.

The SMS worksheet fails to reference any vehicle load assessments for road crossing threats stating only "*Must already have completed vehicle load stress calculation to support*" with no follow up action recorded.

7.4.2 Effectiveness Rating

The review ratings for asset management system component 4 (Environmental Analysis) are listed in Table 7-4.

Table 7-4: Review Rating – Environmental Analysis

Reference	Review Priority	Asset management process of effectiveness criterion	Findings and OFI Recommendations	Process & Policy	Performance
4 - Environmental Analysis				**B**	**2**
2023-4.1	4	Opportunities and threats in the system environment are assessed.	AGA fulfills this requirement. However, AGA should review technical compliance of assessment processes, and ensure that critical traceability information is carried through all stages of documentation. There appears to be no evidence of a formal and cohesive analysis and assessment of compliance risk by AGA in relation to the Critical Infrastructure Reform 2021. Therefore, AGA should review this analysis. The Internally prepared SMS (update) TOR for HP102 Geraldton Lateral presented during the review is non-compliant with AS2885 input requirements that ensure the effectiveness of an SMS workshop. The workshop records are misaligned with AS2885.6 cited in the TOR. Neither the TOR or the SMS worksheets indicate any evidence of compliance with document control procedures. They are deficient in essential traceability for planned workshop date, attendees, and facilitator nomination. The workshop records are deficient in assessment of vehicle loads or any RMAP to address this gap - further highlighting the importance of a comprehensive ToR to facilitate an effective SMS. Therefore, AGA should review its approach to SMS/ToR for quality control and compliance with AS2885.	B	2
2023-4.2	4	Performance standards (availability of service, capacity, continuity, emergency response, etc.) are measured and achieved.	AGA fulfill this requirement. However, KPI reporting appears fragmented in various manual spreadsheet and/or incomplete in some cases. Therefore, AGA should: 1. review KPI reporting processes and consider consolidation into a single source e.g. software dashboard and/or SAP integration, to avoid conflicting reporting streams and human error in their collation. 2. conduct an audit of KPI reporting completeness and performance levels.	B	1
2023-4.3	4	Compliance with statutory and regulatory requirements.	AGA fulfills this requirement. However, the AMS is lagging implementation of new tools and systems such as E-safe. Improvement recommendations from the previous review have been inherently satisfied through the implementation of E-Safe. Patterns in obligation breaches and their corrective action may be obscured by the nature of their discrete reporting within periodic RMCC reports. Therefore, AGA should consolidate reporting of breaches and corrective actions into E-safe alongside obligations and other action tracking. AGA	A	2

Reference	Review Priority	Asset management process of effectiveness criterion	Findings and OFI Recommendations	Process & Policy	Performance
4 - Environmental Analysis				**B**	**2**
			should log breaches against Obligation entries, with links to separate entries for treatment plans (corrective actions).		
2023-4.4	4	Achievement of customer service levels.	AGA fulfils this requirement. However, AGA should review KPI reporting for customer service levels, which was not readily visible during the review and appears disconnected from SLA reporting.	B	1

7.4.3 Recommendations

No process deficiencies rated C, D, 3 or 4 have been identified, and therefore mandatory corrective action recommendations not required.

7.5 Asset Operations

Key to this process element is demonstration that operation functions relate to the day-to-day running of assets and adequately document the processes and knowledge of staff in the operation of assets so service level can be consistently achieved.

7.5.1 Observations

7.5.1.1 Asset Operations Framework

The AGA framework reviewed for this element comprises of the following key AMS components:

- GDS Safety Case
- Strategic Asset Management Plan (SAMP) AGA-S&P-PL01
- Asset Management Plan – Coastal (AMP) AGA-S&P-PL02
- Asset Lifecycle Strategies (See 7.1.1.1 AMS Planning Framework)
  - o KPI reporting
  - o SAP
- Purchasing Policy AA-SC-PR01
- Accounting Policy FIN PR0021
- Permit to Work System AGA-R&R-PR06
  - o Major Work Permit AGA-R&R-PR06-WI04-FM02
  - o Control Room Permit Procedure AGA-O&M-PR30
    - - Network Control Permit AGA-O&M-PR30-WI04
- Safe Work Instructions (SWIs)
- Training Management Process TRN PR0001
- Field Mobility and Operations Console

o   Field reporting (turn-around sheets etc.).

7.5.1.2   Operational Processes and Service Levels

Operating strategies are defined in the SAMP. ALSs describe the justifications for specific operational activities.

SWIs are the primary document for day-to-day operational procedures in the field, and the call centre for customer enquiries and incident handling (covered in maintenance). SWIs are assigned owners and flagged for review every 2 – 5 years with retraining commensurate with extent of any changes. Notifications sent via EIM document control when reviews are due (as per examples cited in Maintenance interviews). The Controlled Document Register (AGA-GRC-PR02-RG01) cited and interrogated on EIM during interview.

The Control room handles dispatch of field recourses and permits as well and field support (enquiries) and network reliability.

Neon Data Visualisation (NDV) software is used for tracking field crew locations from the control room, to assist in planning and priority dispatch. Field Mobility and Operations Console is used to distribute permits/SWIs and work packs etc., per SAP notification and record returning inspection and close out data e.g. field reports (asset condition reporting), turnaround sheets, HSE reporting, permits.

Primary KPIs are defined in the ALSs e.g. ALS Pipelines, Mains and Services (AGA-S&P-ST08) Table 1. KPIs include Priority response attendance e.g. broken mains greater than 98% within 1 hour; Attendance to gas smells in a public area greater than 98% within 2 hours. Etc. KPI performance is reported to the regulator. UFAG data is documented for assets with other metrics reported to the ERA.

Report RIN 2022 KPI_Network for 2020 to 2024 (AA5 period) cited with actual showing that attendance rate exceeds the KPI requirement for broken mains/services 99.9%. Attendance to loss of supply within 3 hours 100% for Period 2020-2024 AA5.

Work orders and operational activity planning is executed through SAP maintenance plans. SAP Interrogated for HP018. Tab for SAP cited where assets can be searched by open notification or functional location numbers which was tested during interview. SAP drill down brings up list of notification for the asset. Interrogated during interview for notification number associated with HP018 EMT response (dent repair) for functional location FL00817966.

7.5.1.3   Task Prioritisation

Maintenance plans are managed in SAP. Refer 7.6.1 for further detail on Maintenance Planning criteria.

Identification of defects on high pressure pipeline operation example of risk based operational task prioritisation e.g. dig-ups and DCVG or relocation projects.

Sample case for HP018 2" mains in Pinjarra cited. Scheduled maintenance (5 yearly MAOP review) found a coating defect arising from DCVG survey. Indication from survey resulted in dig-up. Email 7/12/22 reporting cited during interview as evidence of EMT formation. Incident reported as appeared to be unreported third party damage, possibly by an excavator. Photos of incident investigation presented during interview. Mitigation was derating from 900 to 720 kPa until the pipe could be repaired (in accordance with B31G calculation). ASIF (asset services investigation form) – Replacement of HP018 due to F3 issued 20/12/22 cited during interview shows decision making traceability for incident response fault code 3, MAOP review number. SAP notification number. 302727543 cited and interrogated log during interview with limited notes.

High risk non-routine work is managed by Major Work Permit (MPW, AGA-R&R-PR06-WI04-FM02), executed MWP WO7537261 cited during interview with SAP notification number cross referenced. MWP includes review of impact to network and emergency planning details. The process is governed by the Permit to Work Procedure (AGA-R&R-PR06) which outlines requirements and guidelines for managing risk to ALARP.

EMT#3 meeting email cited 8/12/22 cited as close out of EMT formation summarising the actions leading up to issue of MWP. E-Safe email notification also cited 7/12/22 INC-0002228 relating to HP018 incident and confirming immediate action was notification of Asset services and EMT has been raised. Cross reference to SAP number evident.

7.5.1.4 Asset Register

Assets are registered in SAP and GIS systems. Each asset is assigned a FL (Functional Location) unique identification number that links their location in SAP and maintenance plans to their physical in GIS systems (Lantis, recently migrated from IBIS).

Condition notes are logged in SAP from Turnaround sheets (to inform asset health check index and performance reporting metrics for Asset Maintenance and Disposal planning). Asset materials e.g. mains steel or PCV etc logged in SAP and GIS. Plans of components are logged in GIS.

Pressure Vessel asset register is maintained outside of SAP with Worksafe registration numbers. Maintenance plans and condition reports are still managed through SAP inspection by third-parties, with reports issued and filed in EIM. ATCO Gas Australia – Pressure Vessel Register spreadsheet cited accessed from EIM and interrogated during interview. Asset number links each vessel to SAP. EIM directory AMS/Asset Information/Data and Information/Asset Data/Equipment cited during interview as location for condition inspection reports, R-ATCO-1609 cited and interrogated as example.

7.5.1.5 Cost Control

The Purchasing Procedure (AA-SC-PR01) hyperlinks to the Purchasing Practice (policy) which now exists in the intranet rather than as a discrete document in EIM. Table 1 defines thresholds for quotation and spend channels based on purchase value. It outlines required terms and conditions to be proposed. It is reported that WBS is used for project cost tracking, OPEX uses maintenance activities, for accounting of costs to be recorded against assets in SAP, however this process is not captured in the purchasing procedure content or references.

The Capital Expenditure Procedure (FIN PR0021) cited as defining the accounting procedures for costs incurred. It defines the process for interfacing with SAP for incurred costs, and the accounting procedure for other allocations such as overheads.

Asset value is kept with the finance team and accounted by asset class. Value is assigned by asset class through access arrangement based on asset life. Cost of replacement programs is added to accounting data in SAP. Volume data operational reports and KPI tracking used (in conjunction with Asset Maintenance processes) to inform resource planning in the business. Costs are measured and monitored in conjunction with the same for maintenance – refer 7.6.1 Asset Maintenance for further detail. Service groups have cost centres to manage and track operational costs which is monitored monthly.

SAP was interrogated for corrective action maintenance task (SLP) 7521898. Costs for labour and materials booked for this planned maintenance activity were recorded, and drill down into component numbers and quantities.

150223_Maintenance South_drm Feb23 spreadsheet interrogated with operational cost breakdowns e.g. travel, admin, repairs, for current month, YTD and full year. Actual/budget/variance.

Predominantly spent on Variable Volume maintenance tasks. Regional centres have dedicated cost centres e.g. Albany. Coastal is divided into 52 cost centres.

7.5.1.6   Training

The Training Management Process (TRN PR0001) defines work-flow chart for determining and implementing training profiles from senior management team through to Training Coordinator. Direct employees are managed in SAP and contractors in a separate matrix. The process includes procedures for delivery training and criteria for trainers, assessors, and record keeping, and well as training feedback and review processes. ATCO achieved formal Registered Training Facility status during the review period. Dedicated training facilities are maintained at the Jandakot depot.

The Permit to Work system (AGA-R&R-PR06) defines training and competency requirements for permit process responsibilities and by specialist type of work (Appendix B) e.g. confined space, hot work, deep excavation, FERU etc.

Staff training is based on workstream e.g. maintenance for large bore mains repair, trucks/vans staff for smaller mains, corrosion preventions, and so on across approximately 10 streams. Training and competency plans are mapped out for each stream. Typically maintenance staff competency path duration is 12 – 14 months, developing skills such as excavation operations, installing new utilities. First Responders candidates are typically identified from G-class ticket holding gas fitters (e.g. plumbers), with subsequent training path of approximately 6 months. Personnel are not dispatched without supervision until at Band 3 competency.

Monthly training meetings with managers of training streams are held to review training and emerging requirements. Annually each package is reviewed with each stream manager, including any new SWIs and/or assets added (such as Hydrogen cited in training profiles register). Training plans are managed and tracked in SAP registered against activity category, type, related SWI etc.

When procedures, SWI's, etc are updated, within the document the type of update must be nominated as minor requiring issue of only a toolbox, or major which requires retraining. Cited Section 11 "*Training Required*" for an example SWI. Retraining is commensurate with extent of any changes.

While EMT may get training through supplementary training emergency response exercises, there will be a lot of BAU responses where FR and IMT require training/competency in the escalation criteria and response procedures. SAP view for personnel qualifications interrogated. Training applicable to ERMP includes AA-HSE-PR20 incident reporting and ERMP – Awareness training under group name 'Technical Compliance'.

ATCO Training Profiles_2023 spreadsheet interrogated during interview. It shows a matrix presented by training stream of staff teams that require the type of training down to individual training elements within profiles for all staff Perquisite Site Safety and environment, includes "*dealing with aggressive people*" i.e. members of the public added in recent years. Legislation training profiles. Tooling and equipment. 20 different staff profiles e.g. inspectors; equipment and calibration; meterset fabrication; field emergency response etc. 30 different training streams identified. 2023 additions cited. TRN MA00003 Site Safety and Environment – Perquisite Course cited and interrogated.

The Field Operations Manual Index (AGA-GRC-RG02) was cited. Examples references interrogated confirmed the index is current: AGA-ENG-GL21 and AGA-SWI-CO31 (Installing a Plastic Gas service) content interrogated. Type of training required for update cited in SWI content. SL1 level training records evidence requested. J. Gill records cited and interrogated as example during interview. Employee Qualifications view in SAP presented. SWI-CO31 training cited competent 22/8/209. Trained and competent proficiency logged, where competent requires an assessment of field execution. 138 entries cited for J. Gill, employed from 2019 including expired items with subsequent row showing renewal of training element.

7.5.2 Effectiveness Rating

The review ratings for asset management system component 5 (Asset Operations) are listed in Table 7-5.

Table 7-5: Review Rating – Asset Operations

Reference	Review Priority	Asset management process of effectiveness criterion	Findings and OFI Recommendations	Process & Policy	Performance
5 – Asset Operations				**A**	**1**
2023-5.1	2	Operational policies and procedures are documented and linked to service levels required.	AGA fulfills this requirement.	A	1
2023-5.2	2	Risk management is applied to prioritise operations tasks.	AGA fulfills this requirement.	A	1
2023-5.3	2	Assets are documented in an Asset Register including asset type, location, material, plans of components, an assessment of assets' physical/structural condition and accounting data.	AGA fulfills this requirement.	A	1
2023-5.4	2	Accounting data is documented for assets	AGA fulfills this requirement. However, AGA should update the purchasing procedure AA-SC-PR01 to reference FIN PR0021 Capital Expenditure Process.	B	1
2023-5.5	2	Operational costs are measured and monitored.	AGA fulfills this requirement.	A	1
2023-5.6	2	Staff receive training commensurate with their responsibilities.	AGA fulfills this requirement.	A	1

7.5.3 Recommendations

No process deficiencies rated C, D, 3 or 4 have been identified, and therefore mandatory corrective action recommendations not required.

7.6 Asset Maintenance

Key to this process element is demonstration that maintenance functions relating to the upkeep of assets are defined in asset maintenance plans that cover the scheduling and resourcing of maintenance tasks so work can be done on time and on cost.

7.6.1 Observations

7.6.1.1 Asset Maintenance Framework

The AGA framework reviewed for this element comprises of the following key AMS components:

- GDS Safety Case and FSAs
- Strategic Asset Management Plan (SAMP) AGA-S&P-PL01

- Asset Management Plan – Coastal (AMP) AGA-S&P-PL02
- Asset Lifecycle Strategies (See 7.1.1.1 AMS Planning Framework)
  - KPI reporting
  - SAP
- Pipeline Integrity Management Plans
- Mains Replacement Prioritisation tool
- OPEX Variable Volume Budget and reporting
- Permit to Work System AGA-R&R-PR06
  - Major Work Permit AGA-R&R-PR06-WI04-FM02
  - Control Room Permit Procedure AGA-O&M-PR30
    - Network Control Permit AGA-O&M-PR30-WI04
- Safe Work Instructions (SWIs)
- Field Mobility and Operations Console
  - Field reporting (turn-around sheets etc.).

7.6.1.2 Maintenance Processes and Service Levels Definition

The SAMP (AGA-S&P-PL01) defines the maintenance objectives and forecast horizon requirements for the AMS e.g. 10 year forecast for ALS maintenance.

The Asset Management Plan (AMP) – Coastal (AGA-S&P-PL02) governs Asset Maintenance planning. Alignment to business objectives cited in Section 1.3 and asset management framework in Figure 1 in terms of informing and feedback loop with other AMS documents. It defines the annual KPI targets (Table 1) which are reviewed annually with strategy of maintaining current levels of performance. This strategy is informed by calculation of 3 – 5 year historical averages.

Project based asset management objectives are defined in the AMP (Table 2) which link Business Plan (CAPEX forecasts) with execution strategies. ALS documents linked to the AMP (section 5) describe the justification criteria for maintenance activities, including links to relevant regulatory or code obligations.

Pipeline integrity management plans have been progressively introduced in response to updated AS2885 requirements, and also decommissioning requirements development/clarification ongoing with respect to latest AS4645 editions.

The ALSs define Preventative maintenance (SM); Corrective Maintenance (SP) and Fault Management (SF) requirements.

7.6.1.3 Asset Performance and Condition Monitoring

Scheduled inspections are managed as preventative maintenance tasks. The ALSs define the preventative maintenance activities required and minimum frequency requirement for each asset class.

SCADA monitoring alarms are based on network modelling and hard-set limits depending on asset; Maintenance plans are derived documented in SAP by Functional Location as prescribed by the applicable ALS.

AS2885 pipelines are subject to ILI where required, typically 5-yearly. Strictly ILI occurs under Operational budgets, however condition data feedback informs maintenance planning and future inspection schedules.

SAP was interrogated during the interviews for leak survey activities. FL01287137 cited as example Maintenance plan 3522. 60 months i.e. 5-yearly interval observed as linked to ALS requirements. Work Order number is used to capture costs. Field report example for leak survey notification 302703106 interrogated where a Class 3 leak was reported from a regular leak survey. Resulting notification in SAP for corrective maintenance interrogated. Assessment 15/02/23 upgraded to class 2 (as observed in SAP log), meaning it must be rectified or reassessed within 7 days (as opposed to monitored). SAP log evident of reassessment eventuating in replacement between this date and 22/2/23. SAP information is extracted from Turnaround sheets which are completed electronically on-site, and example relating this situation was cited.

6-monthly plan for FL00468601 HS083 cited as example HPR. SAP maintenance plans and records were interrogated. Turn around sheet cited with process date, back-to-back entries in SAP, and record of completion date cited.

7.6.1.4   Maintenance Task Management

Maintenance plans are forecast through and extracted from SAP, with a monthly horizon for planning field resources with supervisors. That is then distributed electronically to field personnel. Example extraction exercise witnessed during interview for In Process / Outstanding items. Dispatched jobs are shown in Operator Console also witnessed during interview. Operator Console is linked directly to SAP for job completion notification by field operator.

Pipeline ILI schedules are defined in the ALS (AGA-S&P-ST08) through a 10-year horizon, currently 2014 – 2024 (Appendix B Table 19). Update of this ALS is in progress.

Operational Financial Reporting cited for schedule monitoring. Completions versus planned maintenance are reported monthly. Example report for date 3/7/2 with planned vs actual activities quantities.

Snapshot of notifications in open status for current date interrogated 'Scheduled Maintenance Report' highlights tasks within 7 days of required end date. Example shows outstanding tasks for March all with planned due dates in March. SAP records required end dates and actual completion dates. Budget versus actual maintenance is reported monthly along with monitoring of outstanding tasks. Example for May 2022 '05. May 2022 Net Mon Planning Report GM01' cited and interrogated during interview.

Leak Survey Report Sheet 2020 sampled to demonstrate planned vs actual completion performance. The overall leak survey campaign scope includes thousands of functional locations. The schedule was maintained with all surveys shown as completed within the planned campaign dates (Jan through Dec 2020), despite a minority of locations slipping by up to two months in the suburbs (typically highlighted in orange presumably for reporting purposes), and a handful of anomalies:

- Country Suburbs (5Y) WITHERS FL01287248, planned for FEB, started 17/03/2020, but not completed until 28/10/2020. Not highlighted.

- MIPD (5Y) 106 MNDHURH TCE FL01330674, planned for APRIL, started, 12/05/2020, not completed until 04/11/2020. Highlighted in red.

- CCA Meter Positions PIER ST 70 FL 01288224 planned MARCH, started 06/07/2020, completed 02/10/2020. Not highlighted. (It is noted other FLS completed well ahead of schedule indicates a change in planning).

- HP Pipelines > 1900kpa BSTN, CAUSEWAY RD 28 FL00504181, planned for July, completed 12/10/20. Not highlighted (and doesn't appear to be reflected in the HP Pipelines Report).

MPR and HPR maintenance schedules are optimised by a feedback loop from inspection data. During the review period data has shown few faults, so the maintenance period has been extended. Data is analysed annually and formalised in Asset Condition Report (broken down by asset class).

Semi-quantitative risk tools are used to determine replacement program rates, including the Mains Replacement Prioritisation (MRP) tool which was developed with DNV. The MRP tool is also used to guide maintenance plans (as evidenced in revision history). Inputs to the tool include age of asset, environmental conditions, and international data for mains material performance. Output from the tool is a risk and condition score. As per ALS (AGA-S&P-ST08) appendices "*The MRP tool is to be used to assist in identifying which meter positions in older PVC areas should be targeted to better inform the FSA for future leak survey risk mitigation strategies.*" Meter positions are targeted for surveys in these areas. MRP AA6_Discussion_2702_Final slides interrogated showing inputs flow chart and output interpretation matrix.

Kenwick MRP Analysis sample implementation output (map) cited showing leak locations and mains highlighted as 'intermediate risk'. MRP Output – 2023 was also cited, showing full data set of mains with quantified risk (of failure) calculated.

7.6.1.5   Maintenance Planning and Failure/Condition Analysis

ALS for Pipelines for Mains (AGA-S&P-ST08) defines the Asset Sampling and Testing regime for technical investigation of aging PVC pipes evidencing failure (or potential failure mechanism analysis). Outcomes showed some assets had reached end-of-life (EOL) and others had not. However very low network pressure resulted in different behaviour to other industries (e.g. water) such that it's not significantly effecting integrity. Consequently, further investigations have been recommended. PVC mains within the network are being systematically replaced. This activity guides whether preventative or corrective maintenance strategies are most appropriate. SAP leak data is used to determined trends e.g. larger diameter PVC is showing higher leak rates.

Regulator Sets maintenance schedule cited, adjusted based on analysis of failure data (or lack of failure). Implementation in ALS (AGA-S&P-ST09) is pending its next revision. While 9-6100-11674 FFP Assessment Report and SAP extract maintenance plan 10033 were cited as implementation of the change, no evidence of conformance with MoC procedures (AGA-R&R-PR02) was provided. E.g. completion and approval of a change request form (AGA-R&R-PR02-FM01), entries in AGA-R&R-PR-RG01 Technical Compliance MoC Register, AGA-R&R-PR02-FM03 Change Assessment Checklist, AGA-R&R-PR02-FM05 MoC Final Approval (close out).

MGL ILI extended to 7 years as indicated by the ALS (AGA-S&P-ST08) Appendix B. Other mains are yet to undergo more than one ILI to substantiate changes from the 5-yearly baseline. ILI inspection data is cited in the Pipeline Integrity Management Plan (AGA-ENG-PL03). Fitness for purpose review 2021 report by Rosen (9-6100-11674) cited, and recommendation for 7-yearly inspection frequency verified. SAP extra Maintenance Item 10203 HP1207 7Y inline inspection cited, as per Rosen report (9-6100-11674) recommendations. However, there is no traceability cited of when the change was implemented.

The Pipelines ALS (AGA-S&P-ST08) implemented a 3-tier grading for isolation valves replacement strategy (section 3.3.2.3), which has been implemented as a drop-down input field on Turnaround sheets.

The previous review observed that "*Clear linkages between specific equipment criticality and risk (such as the organisation risk matrix) could be improved through comprehensive failure mode effects and criticality assessment (FMECA) which links risk assessment to SAP entries, documented in a database.*" AGA considered the improvement action recommendation as a continuous improvement

item cited in the Pressure Regulating Facilities ALS (AGA-S&P-ST09) 'improvement initiatives' (Table 18), rather than an RMAP or E-Safe action. Failure modes are being recorded in SAP via turnaround sheets. Defect Process Cheat Sheet cited during interview. It is advised that most analysis is suggesting run to failure is recommendation rather than increasing maintenance frequency inspection. The outcome is that some inspection intervals have been extended. The process is reportedly ongoing with further information gathering to inform maintenance plans. Asset Defect Process Guidelines Established, cited in EIM master copy (AA-GRC-PR02-TM31 SPL-SPM-SPN). RCM report with Availability Work Bench (FMEA software) data. See 7.1 Asset Planning (effectiveness criteria 1.8) for further detail.

7.6.1.6   Cost Control

AMP is linked to business plan and defines the forecast maintenance expenditure for various asset management objectives and asset classes. Preventative, corrective, and fault maintenance forecasts are defined over a 10-year horizon. Corrective and fault maintenance forecasts are based on historical data averages extracted from SAP and adjusted for growth factors where appropriate.

ALSs are linked to investment and maintenance strategies. SAP work order numbers are used to capture and monitor maintenance costs. Maintenance items are reported based on volume and unit rate budget vs actual, monitored monthly and reported quarterly by finance.

2023 Opex Variable Volume Budget – Meeting 09-02-23 spreadsheet interrogated as example of tracking to monitor and manage costs across the asset portfolio within the overall budget. It is advised that typical variation from well established historical data is negligible, due to maintenance costs rates being relatively static. It is advised the spreadsheet system will be imminently superseded by new Oracle system. OPEX Variable Volume File – Jan 23 – Snapshot excel reporting provided. Significant variance was pervasive on reporting tab VV – Total, ranging from -450% (overbudget), to 238% (underbudget) with some commentary on the majority of overbudget (by 50% or more) line items. The net variance was determined to be greater than -30% (overbudget). However, that is only for the Calendar YTD (January), where the variance observed accounts for less than 2% of the total budget. Costs are built up from time-sheeting, materials, contractors, traffic management, and reinstatement.

OPEX per kilometre and per customer are tracked KPIs in annual ERA reporting. Report RIN 2022 KPI_Network for 2020 to 2024 (AA5 period) cited including these and other KPIs.

7.6.2   Effectiveness Rating

The review ratings for asset management system component 6 (Asset Maintenance) are listed in Table 7-6.

Table 7-6: Review Rating – Asset Maintenance

Reference	Review Priority	Asset management process of effectiveness criterion	Findings and OFI Recommendations	Process & Policy	Performance
6 – Asset Maintenance				**A**	**1**
2023-6.1	2	Maintenance policies and procedures are documented and linked to service levels required.	AGA fulfils this requirement. AMS documents are mature and appear current with respect to actual maintenance practise.	A	1

Reference	Review Priority	Asset management process of effectiveness criterion	Findings and OFI Recommendations	Process & Policy	Performance
6 – Asset Maintenance				**A**	**1**
2023-6.2	2	Regular inspections are undertaken of asset performance and condition.	AGA fulfils this requirement.	A	1
2023-6.3	2	Maintenance plans (emergency, corrective and preventative) are documented and completed on schedule.	AGA fulfils this requirement.	A	1
2023-6.4	2	Failures are analysed and operational/maintenance plans adjusted where necessary.	AGA fulfils this requirement. However, management of change processes do not appear to have been followed in examples of maintenance plan adjustments. Therefore, AGA should conduct a technical compliance audit into MOC for Asset Maintenance.	B	2
2023-6.5	2	Risk management is applied to prioritise maintenance tasks.	AGA fulfils this requirement.	A	1
2023-6.6	2	Maintenance costs are measured and monitored.	AGA fulfils this requirement. AGA should review whether corrective action is warranted to address an emerging trend in variable volume budget overruns during January 2023.	A	2

7.6.3   Recommendations

No process deficiencies rated C, D, 3 or 4 have been identified, and therefore mandatory corrective action recommendations not required.

7.7   Asset Management Information System

Key to this process element is demonstration that the combination of processes, data and software effectively support the asset management functions through provision of authorised, complete and accurate information for the day-to-day running of the asset management system.

7.7.1   Observations

7.7.1.1   Asset Management Information Systems (AMIS) Framework

The AGA framework reviewed for this element comprises of the following key AMS components:

- IT Access Controls Practice AA-IT-PC-02

- Backup and Retention Practice AA-IT-PC04

- IT Acceptable Use Practice AA-IT-PC-07

- Information Technology Asset Strategy AST ST00015

- AGA Business Continuity Plan AGA-GRC-PL01

- Cyber Security Practice AA-GRC-GL12

  o   Cyber Security Incident Response Plan AA-IT-PL01

- Backup and Retention Practice AA-IT-PC04
  - Application Disaster Recovery Practice AA-IT-PC-10
- Document Control Procedure AGA-GRC-PR02
  - Document Naming Procedure QLT PR0001
  - EIM Master Copy
  - Controlled Document Register AGA-GRC-PR02-RG01
- AGA Intranet "insiteOZ" and linked software
  - Safetrac
  - E-Safe
  - SAP
  - GIS
  - DBYD
- Business Cases (for discrete AMIS projects).

The Information Technology Asset Strategy (AST ST00015) is significantly out of date. Last issued 2018 for the AA5 submission. It still refers extensively to WIPRO master services agreement, which is obsolete following a change to IBM in August 2021. It is due for revision with AA6 but in the auditor's opinion should have been subject to an interim update as part of MoC for change of the service provider, even though the MoC procedure scope excludes IT systems not directly related to network monitoring. Being an Asset Lifecycle strategy (self identified by Figure 1.1), it is also subject to annual review objectives according to Document Control procedures, and Table 3.6 indicates the IT systems it governs are also subject to annual reviews in line with the business plan cycle. It is also observed that authorisation dates for this document are absent.

In response to findings of the previous review, AGA aspire to streamline document registration and have widely adopted PDF signatures in line with common industry practice.

7.7.1.2   User and IT Operator Resources

EIM master copy is the storage directly for all controlled documents, named in accordance with QLT PR0001.

The IT service provider (IBM) provides Application Information Documents for each system module/application for its IT operators. EIM directory for IBM services interrogated. EIM directory of AA-IT-PC documents interrogated with processes and procedures for the suite of IT operations observed.

IT Acceptable Use training module cited in Safetrac.com ATCO Lantis Intranet website cited. It contains training modules and "how-to" guides. Typically, user manual guidance material is embedded within each system itself, and context specific. E.g. EIM shows content specific process flow charts in directory headers.

ATCO.Sharepoint intranet "InsiteOZ" is the user information centre. Learning E-Safe page cited with comprehensive video and quick reference guides. Action management, incident management, general access guides cited. QR codes applicable link to mobile downloads. Current interface published 11/3/2022. It is advised the learning E-Safe page was implemented shortly before that.

For safety registers and toolbox records of attendance are kept but not strictly kept for other training campaigns. M. Beers recent trip to Karratha was for E-safe training, using the Learning E-Safe SharePoint module resources.

Safetrac.com interrogated during interview. "*IT Acceptable Use*" training module includes security aspects. Similarly "*ATCO Cybersecurity Awareness Training*" cited which are distributed for annual refreshers during "*Cyber Security Week*".

Our Company Information Management also cited on the intranet with user information for EIM and IT. These resources are used to support induction training.

GIS project cited and interrogated with overview for new Lantis and GeoHUB systems.

Business Case: Implementation of ESRI GIS Upgrade from 10.2.0 to 10.8.1 cited as planning for GIS upgrade implementation, later named LANTIS by ATCO Gas GIS User engagement. Change management is limited to GIS and business systems integration and appears to overlook the AMS.

Key systems include DBYD, EIM (Document Management System), SynerGEE (network modelling tool); Field mobility devices (Lantis GIS maps, safety manual access, Turn around sheets communication with SAP); GNIS is the amalgamation of several components; Gas Distribution billing data verification systems; SAP; Interval metering data website, Network data visualisation (Neon service), Network management information system / Hansen Hub.

While there have been some changes to platform for interfacing information, the functionality and processes are reported to be unchanged during the review period.

In terms of master asset data EIM, GIS and SAP are the key systems. Module access is restricted based on user permission profiles. Onboarding form is used to define this profile. Employee onboarding request is managed through Service Now web portal available via intranet Employee Onboarding Request module to establish network permissions (multi-choice selection of applicable systems, and also option to mirror/replicate similar user access). Access can be requested by system e.g. SAP profiles are also determined by roles and responsibilities cited.

SAP fields are drop downs for input verification. For instance, materials and equipment are predefined selections based on approved materials (via stock numbers). There are field validations in place such as validation of entries required to be numeric, and sanity checks for input strings. Screen of field input validation fields from SAP presented during SAP. GIS is read-only except for specialist personnel. Field modules also have input controls in forms.

7.7.1.3   Security

Cybersecurity policy adopted from ATCO Canada cited (AA-GRC-GL12). The Cyber Security Practice links this document and any exceptions of the Canadian policy (to align with specific Australian requirements).

The IT Access Controls Practice (AA-IT-PC-02) cited defines access controls, user account expiry, privileged access, remote access, external access, network access, strong password and MFA requirements/controls. It appears to be current. The IT Acceptable Use Practice (AA-IT-PC07) supplements this document with additional user controls. Passwords require updating every 45 days. OCTA is used for MFA and password management across the system.

The Cyber Security Incident Response Plan (AA-IT-PL01) cited has been newly created during the review period (2022).

Physical access to Jandakot facilities and printers are key card controlled. Regular access card control audits are conducted. Access cards are permission controlled with restricted access to critical areas e.g. control room.

Key card site security audits planning appears to be stand-alone, not appearing in the ATCO Australia GBU Audit Plan 20-21-22. Audit trail evidence cited is correspondence based planning with

an attached register reporting status of each card. The 2022 audit completion is outstanding. 8 of 29 cards cited as missing or permanently lost. Presumably there are effective controls in place to deactivate missing cards, but this does not appear to be formally documented in references cited. Contact details are recorded including name and mobile phone for traceability.

7.7.1.4   Backup and Recovery

Weekly backup reports produced and distributed by email notification with link to EIM. Example email and directory interrogated for 2022. Example report Aug -22 cited and interrogated during review. SLAs and KPIs defined and reported. Commentary is provided on backup statistics, failures, and resolution summaries. Similarly monthly reports are provided. No major recoveries known to have been required during the review period.

AGA Business Continuity Plan (AGA-GRC-PL01) defines the IT disaster recovery process and summarises the AGA IT systems (section 3.2). However it still references WIPRO and (presumably) their "*ATCO Disaster Recovery Plan*". Other anomalies in software references are observed in "*Critical IT Systems*" (section 3.4) e.g. IBIS (now Lantis), reference to E-Safe is absent. Etc. It is advised that disaster recovery processes have changed since the previous review.

In ATCO Australia GBU Audit Plan 20-21-22 It is also observed that the internal audit into disaster recovering / Business Continuity (item 4 2022) has been deferred from Q3 2022 to Q4 2023, as has the IBM Contract Compliance audit (Item 7) slipped from Q3 2022 to Q2 2023.

Backup and Retention Practice (AA-IT-PC04) cited as implemented in response to the findings of the previous review. It defines recovery testing on a regular basis at least once per annum (section 6 item 4). Commvault verification jobs are executed and reported weekly, and monthly. Various IBM Backup reports cited for 2021 and 2022. No errors in backup verification observed. The Backup and Retention Practice (AA-IT-PC04) references Application Disaster Recovery Practice (AA-IT-PC-10). However there is misalignment here with the BCP (AGA-GRC-PL01), as it describes IT disaster recovery processes but does not reference AA-IT-PC-10 (or other) recovery practice. Daily, weekly, monthly, and yearly backups are stipulated with retention cycles from 30 days to 10 years.

7.7.1.5   Reporting

AEMO provide the computation of UAFG for AGA review to the agreed method defined in the basis of preparation ("*BAR file*"). It was noted that all computations are compared to benchmarks and rolling averages. Any significant movements in values must be commented upon by ATCO.

RIN annual reporting to ERA is supported with a basis of preparation which is subject to external audits. Interrogated PWC review of RIN EIM directory of working files for RIN preparation. Basis of preparation (RIN 2019-2021) April 2022 cited and interrogated. It identifies the source of information and factors e.g. CPI, actual versus estimate, method and assumptions defined. Examples of actual data reporting are costs and service levels. UAFG is example where estimates may be used. The basis of preparation ensures consistency the method of consecutive key computations. PWC audit the basis of preparation and validate the key computations against the stated basis. Audit report for RIN April RIN 2022 cited during interview. Findings observed. No material exceptions noted.

Average percentage of time that gas has been supplied to customer premises during the reporting year (network reliability performance) appears to be a manual entry text number only. There is no traceability evident in 2020 – 2022 Gas Distribution Licence Performance Reporting Datasheets spreadsheets to enable verification of the reported numbers.

Annual reports of performance and compliance data is presented internally to management for feedback prior to ERA submission. RMCC reporting (Reviewed in 4 -Environmental Considerations) provides visibility on any obligation compliance breaches and corrective actions. Compliance

reporting on EIM interrogated. 2022 ATCO Gas ERA Compliance Report – Due Diligence 24 August 2022 presentation cited. It defines compliance reporting requirements, and obligations, with commentary for the report period (assessment of compliance or non-compliance, and near misses where appropriate). Results of incident investigations also presented particularly to review outlier data which represent potential exceptions or emerging breaches. There is a section dedicated to complaints.

20201_22 ATCO Performance Reporting – final presentation interrogated. Reports current year and historical figures to monitor trends – similarly to compliance reporting the reports appear comprehensive and complete with sufficient breakdown to understand cause and trend driver distinctions.

7.7.2 Effectiveness Rating

The review ratings for asset management system component 7 (Asset Management Information System) are listed in Table 7-7.

Table 7-7: Review Rating – Asset Management Information System

Reference	Review Priority	Asset management process of effectiveness criterion	Findings and OFI Recommendations	Process & Policy	Performance
7 – Asset Management Information System				**B**	**1**
2023-7.1	4	Adequate system documentation for users and IT operators.	AGA fulfills this requirement. However documented management of change planning (e.g. identification of risks and AMS impact scoping) and implementation within the AMS appears to be lacking for the AMIS service provider change and roll out of new systems - reflective in that the ALS for IT strategy is significantly out of date. Also there was no evidence of AMS MoC with respect to the impact of the LANTIS (GIS) implementation cited during the review. Therefore, AGA should review the MOC procedure (exclusions) such that MOC should also apply to IT system changes that directly impact the AMS. The process should be reviewed accordingly to ensure there are adequate controls in place for keeping the AMS (AMIS components) current and aligned with new system implementation. See also 7.12.	B	1
2023-7.2	4	Input controls include appropriate verification and validation of data entered into the system.	AGA fulfills this requirement.	A	1
2023-7.3	4	Logical security access controls appear adequate, such as passwords.	AGA fulfills this requirement.	A	1
2023-7.4	4	Physical security access controls appear adequate.	AGA fulfills this requirement. AGA should consider formalising access card audit planning and the card expiry policy, with defined objectives in AMS e.g. frequency and scope. Then subsequent integration in audit planning schedules.	B	2

Reference	Review Priority	Asset management process of effectiveness criterion	Findings and OFI Recommendations	Process & Policy	Performance
7 – Asset Management Information System				**B**	**1**
2023-7.5	4	Data backup procedures appear adequate.	AGA fulfills this requirement in practise. The IT recovery plans are comprehensive and current but require better integration with the broader AMS, especially the BCP. The AMS is out-of-date with respect to IT service provider, IT disaster recovery, and latest IT systems, being last issued in 2020. AGA should review: 1. the AMS, particularly AGA-GR-PL01, to align with the current processes and service providers i.e. IBM and implementation (approx. 12 months ago) of new software systems e.g. E-safe, LANTIS (instead of IBIS) etc . 2. the BCP (AGA-GRC-PL01), Backup and Retention Practice (AA-IT-PC04), and Application Disaster Recovery Practice (AA-IT-PC-10) for linkage and content alignment.	B	1
2023-7.6	4	Key computations related to licensee performance reporting are materially accurate	AGA fulfills this requirement. However, AGA should review the lack of definition traceability evident in 2020 - 2022 Gas Distribution Licence Performance Reporting Datasheets spreadsheets to enable verification of the reported numbers for average percentage of time that gas has been supplied.	B	1
2023-7.7	4	Management reports appear adequate for the licensee to monitor licence obligations.	AGA fulfills this requirement.	A	1
2023-7.8	4	Adequate measures to protect asset management data from unauthorised access or theft by persons outside organisation	AGA fulfills this requirement.	A	1

7.7.3 Recommendations

No process deficiencies rated C, D, 3 or 4 have been identified, and therefore mandatory corrective action recommendations not required.

7.8 Risk Management

Key to this process element is demonstration that risks are identified and managed to an acceptable risk level.

7.8.1 Observations

7.8.1.1 Risk Management Framework

The AGA framework reviewed for this element comprises of the following key AMS components:

- GDS Safety Case and FSAs
    - o Failure Mode and Effect Analysis (FMEA)
    - o Material Management Register AGA-ENG-PR22-RG01
- Risk Management and Compliance Committee (RMCC)
    - o Risk summary reporting
- E-Safe
- Risk Management Policy AA-GRC-PO04
    - o Risk Management Framework (RMF) AA-GRC-PL05
        - ATCO Australia GBU – Audit Plan
        - Internal Audit Reports
    - o Technical Compliance Risk Management Guideline AGA-R&R-GL01
        - Management of Change AGA-R&R-PR02
        - Project Risk Management Procedure ENS PR0038
            - Business Case FSAs (by WBS)
- Permit to Work System TCO PR0007
    - o Major Work Permit (MWP) AGA-R&R-PR06-WI04-FM02
- Safe Work Instructions (SWIs).

7.8.1.2 Risk Management Policies and Procedures

The Safety Case is the primary document for risk compliance management. However, being that the Safety Case is subject to dedicated reviews, audits, and certification, the focus of this review was directed to other elements of the AMS.

Risk Management Policy (AA-GRC-PO04) interrogated during interview citing references to ISO 31000, AS2885.1, and AS4645. ATCO and employee responsibilities are defined.

Risk Management Framework (AA-GRC-PL05) defines risk management plans, the current revision was interrogated, and next revision (4) draft was also cited. Risk tolerance is defined (section 3.2) and linked to governing standards, particularly AS4645. ALARP definition cited (section 3.3). All risks, assessments and outcomes are all monitored in E-Safe, from top down i.e. including Operational Risks. Inherent risk is qualitatively evaluated in terms of likelihood and consequence. Inherent risk is loosely linked to FSAs (operational risk) but may be aggregated with other risk(s) being that this element is at corporate level. The AGA Technical Compliance group are not directly using E-safe for risk assessments, only tracking of action outcomes, as E-safe is reportedly not (yet) configured for this. Therefore, the Technical Compliance Risk Management Guideline has not adopted E-safe yet. Risk assessment reports are filed in EIM (designation TCO RP).

The RMF (AA-GRC-PL05) stipulates that internal auditing is conducted. The annual rolling internal audit schedule cited (ATCO Australia GBU – Audit Plan) is reported annually. Program and example audits interrogated during interview. The Audit Plan spreadsheet provides definition for each planned audit. Risk matrices exist for both AGA and AA to suit the regulatory framework each entity operates in.

A consultant has been engaged to review risk management processes, in the context of recent regulation updates for alignment with AGA and AA (power) divisions. ATCO ISO Certification support draft proposal (Ernst & Young) 17 February 2023 cited as evidence. It describes the scope of consultancy services for gap analysis / pre-audit, development of risk management related deliverable, and surveillance audits for ISO 9001, 14001, and 45001 certifications. Although

technically this proposal post-dates the review period, it is reasonably assumed that AGA's planning of this engagement occurred within the scope of the review period.

The Risk Management and Compliance Committee (RMCC) meets 3 times annually. Example RMCC minutes interrogated during interview. Attendance is General Manager level. Risk Summary reporting, audits, and arising actions are reviewed during RMCC meetings. Example cited and interrogated during interview.

E-Safe has superseded the RMAP register (and Technical Compliance Register TC0 R0003 cited in the previous review) for tracking, monitoring, and reporting of risks and associated actions / treatment plans, including RMAPs arising from incident response investigations (also forming part of Contingency Planning). Its implementation began early 2021 appears to have been rolled-out early 2022. Risks are entered, with due dates and action priorities. Extending this process to FSAs is reported to be an ongoing work in progress. E-Safe roll-out is purported to be staged based on best value / criticality of modules. However, no reference to E-Safe found in current risk management procedures. E-Safe citation within the RMF (AGA-GRC-PL05) draft revision (4) is currently limited. It establishes a linkage to the AMS (Appendix A flow chart) but there is no linkage to planning documents related to the implementation of E-Safe itself.

Business case risk assessments are carried out for projects. The Permit to Work (PTW) system cited (TCO PR0007) as controlling document for activity specific risks, which require assessment as part of Major Work Permit (MWP) preparation. Regular operational activity risk mitigation is addressed in the AGA suite of Safe Work Instructions. MWPs identify SWIs applicable to their scope of work, and risk assessments for activities outside the scope of existing SWIs. Based on correspondence cited for updates of the PTW system documents (AGA-R&R-PR06, WI04, FM02, FM04, and presumably AGA-R&R-PR30), it is observed they are on a 5-year review cycle.

The risk register function is fulfilled by the aggregate of various FSA registers consolidated under the Safety Case. These risk registers associated with FSAs demonstrate assessment of risk consequence and likelihood. For corporate level risks likelihood and consequence is also documented in E-Safe entries.

Action tracking and continuous improvement initiatives (e.g. lessons learned, OFI) arising from incident response reviews is limited to third-party damage protection engagement. This current approach is considered by AGA to be ALARP. The MoC process (AGA-R&R-PR02) also compliments continuous improvement processes. MoC E-Safe entries cross reference relevant incident numbers where applicable.

7.8.1.3   Action Metrics Monitoring

Monthly metrics for actions are reviewed and reported in the RMCC with high level details. Reporting includes overdue actions, status of audit actions, and actions relating to new and emerging Risks. The RMCC considers any required mitigation strategy and/or recovery plan for addressing high overdue actions load resulting in AGA not meeting close-out objectives.

01.1 Minutes from July 2021 RMCC (meeting No. 20) were cited and interrogated. It reports approximately 60 overdue P1 actions, acknowledging there is a trend in overdue audit actions requiring correction. It proposes that 7 of 9 internal audits (mostly impacting AGA) to be postponed to allow the business to focus on the overdue audit actions and work on E-Safe implementation. It acknowledges that if a P1 action has been overdue for 18 months, the business needs to question whether the action is high priority or critical, then goes on to acknowledge that being P1 actions are to address control gaps, they are generally required to be completed.

AGA reports that E-Safe has a notification capability, which can inform individuals of late / open actions, and also escalate actions (to a manager) as required. This functionality is reported to be

currently turned off due to the large number of open / overdue actions. Intention is for this function to be reinstated once backlog is cleared and/or E-Safe system is fine tuned.

7.8.1.4 Sample FSA Risk Reporting

RSK-0000292 interrogated as example of operational risk relating to tampering with a feed PRS (Geraldton). RSK-0000149 interrogated as example of a treatment plan arising from an FSA.

EIM filing of risk assessments was interrogated during interviews. FMEA conducted for non-standard equipment. AS2885 SMSs campaign underway currently. TCO RP 0577 HP 047 cited as example in-progress with draft risk register.

TCO RP0606 for hydrogen blending project cited as finalised during the review period. 12 RMAPS observed in it's risk register, some completed at the time of issuing the report. E-Safe was interrogated for a sample of actions where close did/will occur after the report. A number of actioned items were cited and a link to the report (TCO RP 0606) observed. ACT-0004289 was interrogated during interview as example. ACT-0004287 cited as overdue P1 action, action is to create SAP maintenance plans. ACT-0004292 cited as closed (due date 30/6/23). Interrogated during interview. Action was to implement revised leak survey program. Action completion notes "*SKSU Maintenance Plans crated in SAP*" with screen shot image showing plan numbers 9509 and 9764. Closed out 14/12/22, and action review closed 11/01/23.

7.8.1.5 Sample Audit RMAP Reporting

TCO RP 0465 Inspection policy statement and plan audit 2020 cited. Findings include 2 IRS, and a further 2 minor NCs, 1 observation, not resulting in actions. E-Safe implementation cited: ACT-0002567 corresponding to IR1. Closed 7/1/22. Found E-Safe entry ACT-0002568 corresponding to IR2. The action does not appear to be closed at the time of this review, with Action Owner Acceptance outstanding. However, Action Progress comments indicate Percentage Complete at 100.

TCO RP 0554 repeat inspection audit in 2021. Findings include 2 IRs only. E-Safe implementation cited: Found E-Safe entry ACT-0004182 corresponding to IR1. Closed 9/11/22. Found E-Safe entry ACT-0004183 corresponding IR2. Closed 10/11/22.

Found E-Safe entry ACT-0004032 corresponding to CAR3 arising from PTW system audit TCO RP 0511 observed as a P1 action raised 1/1/2022, due 30/4/2022, but not closed until 14/07/2022. Both IRs ACT-0004033 and ACT-0004034 due 30/06/2022 remain outstanding.

TCO RP 0608 repeat inspection audit in 2022 cited. Findings include 2 IRs. Found E-Safe entry ACT-0004331 corresponding to IR1. P4 Due 30/06/2023. Found E-Safe entry ACT-0004332 corresponding to IR2 P4 due 31/01/2024.

Business Case and supporting FSA (TCO RP 0504) cited for example project EOL Replacement - Isolation Valve 2021 WBS 1520-GCA1-GN-0147-5. The FSA and business case are observed to be well aligned.

7.8.1.6 Failure Modes and Effects Analysis (FMEA)

AGA advise that FMEAs are conducted (only) for equipment not manufactured to a recognised standard. AGA has conducted FMEA on an increasing scope of equipment during the review period, evidence of which was cited during interviews. TCO RP 0228 nonstandard materials report identifies scope of equipment subject to FMEA including 16 different material types. Actual FMEA registers are attached. Materials management register identifies material approvals / compliance standards and/or FMEA requirement. TCO RP 0459 for non-standard equipment (tools) cited and interrogated. TCO 0536 Rogan Flow Stopping non-standard equipment cited and interrogated. Methodology references recognised international standard(s) and AGA procedure.

AGA-ENG-PR22-RG01 Material Management Register interrogated during interview. Cited columns populated with design standards. Filtering N/A and Blank items reveals 183 of 1019 entries.

7.8.2 Effectiveness Rating

The review ratings for asset management system component 8 (Risk Management) are listed in Table 7-8.

Table 7-8: Review Rating – Risk Management

Reference	Review Priority	Asset management process of effectiveness criterion	Findings and OFI Recommendations	Process & Policy	Performance
8 - Risk Management				**B**	**2**
2023-8.1	1	Risk management policies and procedures exist and are being applied to minimise internal and external risks associated with the asset management system.	Risk management framework of the AMS is lagging E-Safe practice (where it should be leading). Risk action tracking especially rolling metrics appears fragmented across various management reports based on manual data exports from E-Safe, trends perhaps requiring escalation are obscured between reporting periods. Adoption of latest versions of standards e.g. AS2885 appears to be limited to consultant services. The improvement recommendation from the previous review does not appear to have been adopted internally. MOC procedures do not appear to be applied to critical risk management systems i.e. E-Safe. Corrective action recommended. See 7.8.3. AGA should also: 1. Follow up 2021 internal audit on Permit to Work to verify current state of approvals and risk management compliance. 2. Implement centralised reporting with a live dashboard of risk management action tracking which can be monitored against KPIs for close out. 3. Perform a technical compliance audit into MoC processes for critical risk management system implementation e.g. E-Safe and review the MoC procedure. Perform a gap analysis between E-Safe and previous risk tracking registers i.e. RMAP register. See also Review of Asset Management System 7.12.	B	3

Reference	Review Priority	Asset management process of effectiveness criterion	Findings and OFI Recommendations	Process & Policy	Performance
8 - Risk Management				**B**	**2**
2023-8.2	1	Risks are documented in a risk register and treatment plans are actioned and monitored.	AGA fulfills this requirement. Following the CAR from the previous review (refer 1.1, Table 5-2, 02/2020) there is evidence of corrective action and a resulting favourable trend in action close out performance. However it was realised at the expense of internal audit schedules, and escalation of E-Safe overdue actions seems to be lacking (notifications have been deliberately turned off due to all items being newly created in E-Safe). There are ongoing issues with outstanding overdue P1 actions (refer 5.1.2). Therefore, AGA should review notification and escalation processes for overdue E-Safe actions, and effectiveness of priority rating system in expediting action close out.	A	2
2023-8.3	2	The probability and consequences of asset failure are regularly assessed.	While FMEA is still not undertaken across all plant and equipment, the scope of FMEA for non-standard materials and equipment has evidently expanded since the previous review. However the purported linkage from approved materials matrix to FMEA of non-standard materials doesn't appear to explicitly exist. Therefore, AGA should bolster the linkage between approved materials matrix and FMEA i.e. add data entry with FMEA report number or similar instead of N/A or blank where applicable.	B	1

7.8.3   Recommendations

2023-8.1: Note these recommendations also follow from the further action requirement identified in Table 5 2: Action Status from Previous Reviews.

1.   AGA should conduct a system wide status review of outstanding E-Safe Action closure, especially where Progress states 100% and in some cases appears to be implemented in practise, but Action Owner Acceptance and subsequent workflow appears incomplete. e.g. ACT-002568 due 31/8/2021, ACT-0002281 due 31/08/2020, ACT-0002282 due 31/08/2020.

2.   AGA should review outstanding action close out ACT-0004033 and ACT-0004034 due 30/06/2022 arising from 2022 PTW internal audit (TCO RP 0511 IR1 and IR2).

7.9   Contingency Planning

Key to this process element is demonstration that contingency plans document the steps to effectively deal with the unexpected failure of an asset.

7.9.1   Observations

7.9.1.1   Contingency Planning Framework

The AGA framework reviewed for this element comprises of the following key AMS components:

• Emergency Response Management Plan (ERMP) AGA-R&R-PL01

- o   Emergency and Operational Contacts (register) AGA-R&R-PL01-FM04

- o   Request for Emergency Order AGA-R&R-PL01-FM08

- o   Emergency Response Action Checklist AGA-R&R-PL01-FM14

- o   Emergency Planning Response Checklist AGA-R&R-PL01-FM16

- o   Emergency Response Exercises AGA-R&R-PL01-WI02

  - -   E-Safe Emergency Exercise RMAPs

  - -   Monthly management reporting

- o   Distribution Incident Notification Form TCO PR0003 RF02

- o   Incident Report Template TCO PR0003 WI001 RT01

- o   Incident Escalation Process Map AGA-R&R-PL01-FM11

- o   HSE Incident Notification - Control Room AGA-HSE-PR07-FM01

- o   Incident Reporting Investigation Procedure AA-HSE-PR20

  - -   Notification of Incidents to Executive Management AGA-HSE-PR07-FM02

- • Business Continuity Plan (BCP) AGA-GRC-PL01

- • Crisis Management Plan (CMP) AGA-GRC-PL06

- • Cyber Security Incident Response Plan ATCO Australia AA-IT-PL01

- • Gas Distribution Jandakot Communications Contingency AGA-O&M-PR01

  - o   Responding to a High Influx of Customer Calls at Gas Distribution Jandakot CCT PR0001 WI001

  - o   Responding to a Loss of Phone Operation at Gas Distribution Jandakot AGA-O&M-PR01-WI02

  - o   Routine Testing of Gas Distribution Jandakot Communication Contingencies AGA-O&M-PR01-WI03

- • Third Party Damage Prevention Guidelines AGA-O&M-GL09

  - o   Damage Prevention Register NCO MA00001 RG01

- • Notifiable Incident Reporting AGA-R&R-PR03

  - o   Notifiable Incident Details - Initial Notification AGA-R&R-PR03-FM01

- • Processing of Notifiable Incidents AGA-O&M-PR02

- • Safe Work Instruction: Attending Gas Escapes AGA-SWI-GE01.

7.9.1.2   Emergency Response Management Plan (ERMP)

The ERMP (AGA-RR-PL01) was last issued in 2019, so it is observed that the 2 yearly review objective is overdue. However, the next draft revision (7A) work in-progress was cited, including minor updates to ER exercise criteria. The current revision (2019) was interrogated.

AGA-R&R-PL01-WI03 afterhours call out register citation hyperlink tested and observed to fail (cause undetermined, could be permissions or relocated file). However, the relevant file was readily retrieved in the AMS system (EIM 'Master Copy' directory). It is distributed via email list "*call out notifications*" weekly, Supervisors, managers, and control room. Current weeks email cited to period 08.03.2023. Email history interrogated to evidence weekly distribution. Complemented with 8 weekly forecast and change notification (not normally permitted from weekly except for extenuating circumstances e.g. medical). 8-week cycle to 01.02.23 example cited for interrogations. Damage prevention

documented, logs third party responsible for damage for patterns and third parties engaged where required.

HSE PR0017 link tested while the link was active the document status was found to be superseded. Updated reference AA-HSE-PR20 cited in draft revision (7A) was this document subsequently provided. ERMP Appendix B emergency contacts phonebook link tested, current as of Aug-22. Minor updates pending next scheduled update. The control room is responsible for updating annually or more often as required. Roles are documented which can be cross referenced to latest organisational chart where personnel might have changed between revisions. The ERMP further identifies specific response plans and contingency procedures in place for a variety of high-risk short term events (Table 3).

AGA-R&R-PL01-FM04 emergency and operational contacts testing found that one of two direct contacts (one of seven overall), were out of date. The 24/7 contact number for Manager Communications (Pauline Kirk) was found to be disconnected.

AGA-R&R-PL01-FM16 Emergency Planning and Response Checklist appears to be out of date based last issue date being 2019 and superseded references: TCO PL00001 RF22 Incident Escalation Process Map; HSE PR0017 HSE Hazard and Incident Notification; TCO PL00001 RF02 Emergency Contacts Phonebook; TCO PR0003 Notifiable Incident Reporting.

AGA-R&R-PL01-WI02 Emergency Exercises appears out of date being last issued in 2019 and containing superseded reference TCO RG0003 for Corrective Action Tracking. It describes a commitment to annual review of ERE lessons learnt.

7.9.1.3   Emergency Response Exercises

It is reported that not all Emergency Response Exercises (ERE) for 2021-22 objectives met, due to logistical restrictions of pandemic and pending changes in ERMP resulting from implementation of new systems e.g. Table 3 of ERMP is being revised in draft revision (7A) cited above.

The ERE plan for 2019 was cited (AGA-R&R-PL01-WI02). Following each ERE a debrief report is prepared. E-Safe has replaced RMAP for tracking of actions arising. The 5 yearly DBNGP Mandurah Gate Station - Mandurah Gas Lateral ERE is observed as overdue. Also, the 2 yearly Perth Metropolitan Area exercise overdue. EIM interrogated during interview for evidence of exercises that have been conducted over the review period (2022) found to be: 1. Busselton; 2. Kalgoorlie; 3. Geraldton; 4. Albany; 5. CBD Isolation; 6. MGL Desktop. Anecdotally Planned for 2023: MGL (motor vehicle and serious injury of fatality) coastal area (curtailment simulation from Bunbury lateral).

"Regional Emergency Exercises 2022 - Open Actions.ppx"- (REE 2022 Open Actions PPX) observed in ERE reports EIM directory and interrogated during interview. Found to be a tool for updating debrief reports and expediting open/outstanding actions (also mitigating lagging in user training for E-Safe system). Includes open actions from previous exercises 2021. These actions are all tracked by E-Safe which is populated from Action Tracking Register (although there was a separate ERE action register that was not yet captured in E-Safe). 2022 actions not yet due or entered E-safe. Emergency Exercise Planning Register cited. Records absent for 2022 exercises. While actions are covered in the Open Actions presentation slides, no formal reporting was cited. Therefore 2021 ERE actions interrogated (via hyperlinked E-Safe register number item in the Open Actions.ppx file).

TCO RP 0573 EIM ERE Geraldton 2021 report cited and interrogated during interview reports 3 findings, 1 CAR and 3 IR reported. It aligns well and is cross referenced by ERE 2022 Open Actions presentation slides which has been used to expedite action tracking update in E-Safe.

7.9.1.4 E-Safe ERE Action Tracking

E-Safe workflow interrogated further with respect to ERE actions. It is reported that action monitoring is still coming up to speed with new E-Safe system commissioned since the previous review period. Various actions interrogated and observed as technically overdue, however typically there was evidence of practical close-out. It is reported that E-Safe automatically notifies action owners of overdue actions but that E-Safe doesn't escalate up to actionee managers (whereas under the older RMAP system outstanding actions register and metrics were reviewed at monthly management meetings).

It is observed that Actionee's must accept assigned actions, they or their manager can close out actions. There is also an action review loop built into E-Safe. Relevant managers to verify actions closure. Deficiencies would be picked up by auditing activies only. Actions are prioritised 1 - 4 based on CAR or IR and open or overdue status. It is unclear who action review responsibility is assigned to. Ability to filter E-Safe reporting by action source "*Emergency Response*" observed and 41 entries returned. However, correlation to management reporting was not clear - AGA Monthly report Chapter 5 Jan 2023 FINAL cited during interview showing tracking metrics of outstanding actions (Open/Overdue/Total/Closed this period). Currently report shows 94 overdue of 106 total (10 closed this period). But explicit identification of ERE actions was not observed in this reporting. AGA Monthly Report Chapter 5 A&E pages 29-30 cited as reporting of outstanding actions for the period November 2022. Actions are found to be categorised by responsible business unit and priority. ERE actions are not specifically identified.

E-Safe actions corresponding with the Geraldton 2021 ERE report (TCO RP 0573) were interrogated:

- ACT-0004023 (CAR) hydraulic rams requested to be placed on annual SAP inspection schedule per email 4/3/22 from Bouwer, Arnold. PDF linked with further email trail "RE: Exercise Report" confirms the hydraulic ram will be serviced yearly. Workflow shows completed 4/3/22. However Evidently close out of ACT-0004023 (i.e. formalisation of any regular periodic (annual) inspection schedule) is outstanding. Correspondence "RE: Evidence for item #1 and #30: Asset Management Review Information Requests 27/03/2023" was provided. This correspondence cites Equipment Calibration and Servicing Guideline (AGA-ENG-GL16), which defines criteria for squeeze of tools checks as before and after use only (Table 3).

- ACT-0004024 IR1 (related to CAR 4023) interrogated as example of closed action. Close out evidence attached "RE:Hydraulic Rams -225 Squeeze Offs.msg" with attached procedure for AGA-ENG-GL16 Issued Rev 6 2021 updated accordingly.

- ACT-0004025 IR2 (Priority 2) action due 29/1/22 interrogated. Progress notes identified regional teams to meet as of 8/3/22 and it is verbally reported during the interview that the review is complete. It appears the action acceptance and uploading of evidence is lagging practical execution.

- ACT-0004026 IR3 interrogated. Open and overdue as of 29/1/21.

7.9.1.5 Incident Response

Interviewees report leak/break rate of approximately 600-700 per annum, where IMT response is required only (BAU e.g. smell of gas near meter), most in minor a few in major categorisation, with impact to supply being the most common consequence, and people/environment the least common. No incidents known to have escalated to emergency status during the review period. It is reported that cyclone Seroja was managed under EMT procedures as a precaution, although it eventuated that there was no real threat to the asset or security of supply to Geraldton.

Customer service (first responders) escalation to IMT criteria was anecdotally described, as judgement based on extent of issue e.g. spreading beyond a single customer connection and if repair/maintenance crews or more resources are required. AGA-SWI-GE01 defines KPIs for incident

response times (Table 1) and criteria for escalation when attending gas escapes. It is observed that AGA-SWI-GE-001 is not currently referenced by current ERMP. It is reported that training in SWIs includes being assessed on a minimum number of real incidents before being signed-off as competent.

Escalation criteria from IMT to EMT was anecdotally defined as situations where additional infrastructure is impacted e.g. road closures, media communications required etc. Incidence classification matrix and flowchart cited (extract from ERMP) observed as broadly describing escalation criteria (Flow chart Fig 1 in plan/procedure). Further definition of criteria for incident classification cited in ERMP Section 4.2.

Running log sheet for response is maintained in SAP. Classified by incident type (e.g. mains break reportable or non-reportable, injury etc.). E-safe logs incidents and responsibilities for any follow up actions (examples cited during the interview).

A real time incident (fire near meter set) email notification was cited during interview INC-0002310 (with SAP notification number and notes). Notifications go to all management which serves to give visibility of incident to assess appropriateness of response.

The Incident Reporting Investigation Procedure (AA-HSE-PR20 - formerly HSE PR0017 as cited in the ERMP), defines root cause and corrective action incident investigation requirements to reduce the likelihood of recurrence. It implies that all incidents including hazards or near miss should be investigated, and that events with actual or potential severity of Extreme of High shall be subject to an Incident Review forum to review recommendations and finalise the agreed CARs.

The contingency procedure Responding to a Loss of Phone Operation at Gas Distribution Jandakot (AGA-O&M-PR01-WI02) is similarly out of date, where 'Diversion by ATCO's Service Desk' (section 4.5.4) also prompts users to "*quote the CTR PR0007 WIPRO Disaster Recovery Procedure*" (WIPRO references obsolete as of late 2021, refer 7.7 AMIS). The related documents list (section 6) also appears significantly out of date.

The contingency procedure Responding to a High Influx of Customer Calls at Gas Distribution Jandakot (CCT PR0001 WI001) appears out of date being last issued in 2016 and containing superseded references throughout e.g. TCO PL00001 ERMP; Emergency Contacts Phonebook TCO PL00001 RF02; references to WIPRO IT service centre and related processes.

The Jandakot Communications Contingency Procedure (AGA-O&M-PR01) was rebranded/renumbered in 2020 but the last material update observed in the revision history was 2017. However, it appears to be current as it simply establishes the framework for other subordinate work instructions cited therein.

The Distribution Incident Notification Form is cited as AGA-R&R-PR03-FM02 in the ERMP, but the controlled copy has not yet adopted this (new) number and is filed in Master Copy as TCO PR0003 RF02 (last modified 04/02/2016).

Third Party Damage Prevention Guideline (AGA-O&M-GL09) cited. It defines the process for post event controls i.e. investigation of third-party damage, monitoring and reporting, and escalation. The process requires that top offenders and third-party sites visited by ATCO are reported monthly, and contractors with a high likelihood of reoffending or patterns of repeat offending are served an escalation letter (by prescribed template). The Damage Prevention Register (NCO MA00001 RG01) demonstrates evidence of tracking and reporting. Damage to services represents 1641 / 1817 records 2021 through 2023. Approximately half of these observed as by (land) owner.

The Cyber Security Incident Response Plan (AA-IT-PL01) cited as being newly implemented during the review period (2022). It appears sound.

TCO RP 0596 cited as example reportable incident investigation report 2022. It's findings and recommendations appear sound.

7.9.1.6 Business Continuity Plan (BCP)

The BCP (AGA-GRC-PL01 - formerly RMT ST00001 as cited in the ERMP) defines business continuity procedures following emergency or crisis management, and that BCP testing shall be performed at desktop level at least annually, and simulation level at least every second year. It also defines IT disaster recovery strategies. The BCP is significantly out of date being last issued in 2020, and the document history indicates it has not undergone a "*full review*" since 2012. As the BCP defines annual testing requirements, 2 yearly simulation requirements, and stipulates "*regular review of the BCP*" (Appendix A), there should be better evidence of continuous improvement for the BCP. Furthermore, identification of Critical IT Systems is out of date. Refer 7.7 AMIS (criteria 7.5) for further detail.

7.9.1.7 Crisis Management Plan (CMP)

The CMP (AGA-GRC-PL06) current revision (10) issued 2021 and draft revision (11) in-progress were interrogated during interview. It is observed the updates capture changes in business structure (typically titles and office logistics, Appendix A cited with updates to responsible personnel and contact details). Updates also include pandemic crisis management and event classification. Crisis simulations exercises are conducted 2 yearly. The last exercise was a simulated cyber security incident.

There is misalignment observed between the CMP and ERMP incident event classifications:

- Emergency environmental consequences criteria: CMP less than 2 years versus ERMP less than 1 year (and <0.1ha). Note long term is defined (within crisis classification of both) as 2 years or more.

- Crisis supply consequence criteria: CMP greater than 5000 customers versus ERMP greater than 10,000 customers (or greater than 10,000 consumer weeks).

7.9.2 Effectiveness Rating

The review ratings for asset management system component 9 (Contingency Planning) are listed in Table 7-9.

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Table 7-9: Review Rating – Contingency Planning

Reference	Review Priority	Asset management process of effectiveness criterion	Findings and OFI Recommendations	Process & Policy	Performance
9 - Contingency Planning				**C**	**2**
2023-9.1	2	Contingency plans are documented, understood, and tested to confirm their operability and to cover higher risks.	Despite opportunities for improvement, there appears to be robust ERP, training, competency and exercises resulting in effective contingency planning and practical close out of actions. There is no known evidence of incident escalation due to inappropriate contingency response. However, there does not appear to be any formal incident tracking down below reportable incidents (down to near-miss type incidents) to then derive actions for informing future risk management strategies (prevention vs contingency). It appears to be happening but not via a formal process, instead relying on experience of responders and supervisors. Corrective action is recommended. Refer 7.9.3. AGA should also: 1. Expedite overdue update of ERMP (AGA-R&R-PL01) review and updates to ensure current with respect to supplementary/supporting documents, out of date references, links and responsibilities. Ensure ongoing review cycle objectives are met in future. 2. Add SWI-GE-001 ERMP references being the primary guidance for what a first responder is authorised to deal with alone, and when escalation for additional resources is required. 3. Add the Cyber Security Incident Response Plan AA-IT-PL01 to ERMP references. 4. Review CMP (AGA-GRC-PL06) and EMRP (AGA-R&R-PL01) for better alignment of incident classification, reviewing any changes for alignment with the AGA risk matrix. 5. Improve the visibility of outstanding ERE actions in monthly reporting (being critical to Contingency Planning) to ensure appropriate escalation of overdue actions. They are currently obscured by being rolled up into Business Unit categories.	C	2

7.9.3 Recommendations

2023-9.1:

1. Critical Contingency Planning documents are materially out of date. The Business Continuity Plan (AGA-GRC-PL01) is significantly out of date being last issued in 2020, and more critically the document history indicates it has not undergone a "*full review*" since 2012, nor is does it appear to have been updated with lessons learned arising from BCP testing actions. AGA should review and update the AMS contingency planning documents, ensure it's testing schedule, reporting, references and improvement updates are kept current i.e. review controls to prevent recurrence. Including but not limited to:

- o Emergency Response Management Plan (ERMP) AGA-R&R-PL01
  - - Emergency and Operational Contacts (register) AGA-R&R-PL01-FM04
  - - Emergency Planning Response Checklist AGA-R&R-PL01-FM16
  - - Emergency Response Exercises AGA-R&R-PL01-WI02
- o Business Continuity Plan (BCP) AGA-GRC-PL01
- o Responding to a Loss of Phone Operation at Gas Distribution Jandakot AGA-O&M-PR01-WI02
- o Responding to a High Influx of Customer Calls at Gas Distribution Jandakot CCT PR0001 WI001.

2. AGA should expedite update of the Equipment Calibration and Servicing Guideline (AGA-ENG-GL16) and SAP with regular periodic inspection requirements for squeeze-off equipment, to satisfy ACT-0004023 (CAR) which is significantly overdue (raised following 2021 ERE).

7.10 Financial Planning

Key to this process element is demonstration that the financial planning component of the AMP effectively brings together the financial elements of the service delivery to ensure its financial viability over the long term.

7.10.1 Observations

The AGA framework reviewed for this element comprises of the following key AMS components:

- Access Arrangement (5-yearly ERA approved), which comprises of:
  - o Access Arrangement for the Mid-West and South-West Gas Distribution Systems AGA-REG-CH03
  - o Access Arrangement Information for the Mid-West and South-West Gas Distribution Systems AGA-REG-CH06
  - o Core Energy customer / gas demand (forecast) reports
- Annual Budgets
- Rolling 5-yearly plan (financial modelling)
- Program Governance Committee (PGC) reporting
- Asset Management Plan – Coastal (AMP) AGA-S&P-PL02
- Asset Lifecycle Strategies (See 7.1.1.1 AMS Planning Framework)
- Third-Party works program
- Variable volume CAPEX/OPEX projects
- Monthly, quarterly, and annual reporting.

The 5-yearly Access Arrangement (approved by ERA) is the primary financial plan. The annual budgets preparation must be consistent with ERA approved 5-year plan. A rolling 5-year plan is also prepared which extends beyond the Access Arrangement timeframe as the term progresses. Financial modelling used for predictions beyond these periods. AMS does not appear to have materially changed during the review period with respect to financial planning process.

Annual budgets subject to review and approval. Memos are distributed annually with prompts and guidance for annual budget preparation (including metrics for inflation etc.) During the budget year

actuals are reported (internally and to ERA) and monitored. These feed into the AMP through team engagement in the context of satisfying objectives of the AMP and ALSs. The Program Governance Committee (PGC) presentation is prepared incorporating objectives from AMP team for discussion and review (and challenge prompting actions in minutes to change the business plan where appropriate e.g. based work force resource availability review), then ultimately approve the direction recommendation to board and CFO.

2022 Business Plan Draft - PGC Out of Cycle 15072021 presentation cited and presented. Elements reviewed include growth objectives, residential/industrial, with projections leading into 5-year projections, third party works program, variable volume CAPEX/OPEX projects. Once provisionally approved the presentation is reworked with current inflation and agreed approach to determine earnings. Cited 2022 Business Plan (Gas Division) 080921 presentation. Financial controller (global) approves final business plan by email. Cited 2023 email approval 16 November 2022. The business plan (Table 3) outlines the components of financial planning and how they link to the AMS and generally satisfy the financial planning elements required by the AMS review effectiveness criteria.

The approved business plans (spreadsheets) feed into the ALSs where the objectives are described. Cited 2022 - 2024 Business Plan Economic Indicators (tabulated data). Cited IGB BP22 macro position for feedback 300321 v3 (BP 2022 initiation IGB Meeting) presentation. It defines the proposed strategy for CAPEX and OPEX approach, seeking feedback to finalise. It describes the process from IGB consultation to PGC consultation and final approval.

Business plan spreadsheets are prepared for business subsets, e.g. CAPEX. Evidence cited during CAPEX planning.

AGA report that sources of funds was identified in revenue planning as part of AA submission. Retail tariff's cover CAPEX spending. CAPEX spending is steady and is not subject to large swings requiring additional funds.

Cost centres are monitored and reported by cost centre managers monthly (circa 52 cost centres). Cost centre metrics are rolled up into monthly PGC meetings for quarterly forecasts, with commentary provided for management review.

PGC meetings YTD actuals reviewed with commentary on variations. Cited 20220824 - PGC Meeting #48 Presentation Pack presentation during interview. Includes approval of previous minutes. Forecasts for period. Quarterly Reporting Package_ATCO Australia.pdf cited during interview for Quarter ended 31 December 2022, and interrogated. Actual forecast target (either budget or revised budget direction from corporate) and prior year reported for quarter and full year for controllable earnings summary, Regulated - Gas expands further. Financial summary presented as revenue/expenses/earnings i.e. Profit and Loss. Adjusted earnings - Variance to Target drill down cited used to justify variances in high level reporting.

Statement of financial position is described by the balance sheet cash flow report which is prepared monthly. Example AGA_FR Dec-2022_Snapshot_V3 spreadsheet cited and interrogated during interview with asset and liability valuations. AGA_FR Dec-2022_Snapshot also cited. Includes commentary on major changes in balance sheet line items. Accounting standards prescribe depreciation requirements and asset value is assessed in terms of overall GDS to verify security against financial position of AGA, which is also covered in balance sheet.

Cited 20230118 - PGC Meeting #53 Presentation Pack - DEC Financials 18/01/23 as another example of reporting.

Cited 210713 PGC Minutes Meeting No.34 with commentary appropriate to review and justify variance.

ATCO Gas Model 2022 BP 110221 spreadsheet cited for year ending 31 December 2022. 5 year rolling budget input with assumptions produces projections out to 2040. Presents P&L statement, statement of financial position, cashflow projections.

Core Energy produce customer / gas demand reports for each Access Arrangement. For annual budgeting projections are updated based on this for the rolling 5-year period.

Business Plan details CAPEX/OPEX spending at a granular level to be fed into the AMP and subsequently ALSs for each asset class. 2022 Business Plan Draft - PGC Out of Cycle 15072021 cited and presented during interview.

Annual business plans and ERA reporting address variances from AA submission to emerging requirements for annual planning. Tariff variation reports are submitted to ERA where appropriate.

WANH Dec 22 P&L Report snapshot spreadsheet cited during interview presented as the company level actual vs budget for month, YTD income statement.

Cost centre reports for each department discuss justifications for actual vs budget within departments. Any significance variance is monitored at cost centre level. February Operations Summary comms cited and presented during interview, monthly reporting highlighting variances for the period with links to financial spreadsheets e.g. 02223 - Finance Operations Projects Summary - Snapshot. Evidence of variance tracking. Example line item for IT cited as underspend variance identification for upward reporting. Example observed with commentary of justifications for variance CAPEX Summary for February 2023 Monthly Report correspondence cited. The variance is reported to GMs to inform there forward planning i.e. corrective action if required such as deferring a low risk project. Operations Summary Feb 2023 Snapshot spreadsheet interrogated with variance monitoring and reporting. Consolidation of all the cost centres tracking actual vs budget with commentary on variance explaining and reporting of recommended corrective action where appropriate. Covers FTE, Operations, Construction Cost Centre, variable volume, OPEX etc. This tool is used to test business plan assumptions for resourcing to inform corrective action or updates to business plan targets. Similar example cited in Feb 2023 reporting.

The same was verified during interviews with versions technically within review period for December 2022, and the directory with cost centre report filing cited:

- Operations Summary Dec 2022 Snapshot spreadsheet.

- December 2022 Operations Summary comms.

- 122 CAPEX Summary Graphs and Variance Analysis - snapshot spreadsheet.

- Example 150239_Marketing_rdm Nov22 spreadsheet also cited with actual vs budget variance analysis.

7.10.2 Effectiveness Rating

The review ratings for asset management system component 10 (Financial Planning) are listed in Table 7-10.

Table 7-10: Review Rating – Financial Planning

Reference	Review Priority	Asset management process of effectiveness criterion	Findings and OFI Recommendations	Process & Policy	Performance
10 - Financial Planning				**A**	**1**
2023-10.1	5	The financial plan states the financial objectives and strategies and actions to achieve the objectives.	AGA fulfills this requirement.	A	1
2023-10.2	5	The financial plan identifies the source of funds for capital expenditure and recurrent costs.	AGA fulfills this requirement.	A	1
2023-10.3	5	The financial plan provides projections of operating statements (profit and loss) and statement of financial position (balance sheets).	AGA fulfills this requirement.	A	1
2023-10.4	5	The financial plan provide firm predictions on income for the next five years and reasonable indicative predictions beyond this period.	AGA fulfills this requirement.	A	1
2023-10.5	5	The financial plan provides for the operations and maintenance, administration, and capital expenditure requirements of the services.	AGA fulfills this requirement.	A	1
2023-10.6	5	Significant variances in actual/budget income and expenses are identified and corrective action taken where necessary.	AGA fulfills this requirement.	A	1

7.10.3 Recommendations

No process deficiencies rated C, D, 3 or 4 have been identified, and therefore mandatory recommendations not required.

7.11 Capital Expenditure Planning

Key to this process element is demonstration that the 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. Projections are normally expected to extend to at least ten years or longer where capital investments are large and with an irregular frequency, with projections over the first five years typically based on firm estimates.

7.11.1 Observations

CAPEX expenditure planning overlaps significantly (as an element within) Asset Planning and Financial planning.

The AGA framework reviewed for this element comprises of the following key AMS components:

- Strategic Asset Management Plan (SAMP) AGA-S&P-PL01

- Asset Management Plan – Coastal AGA-S&P-PL02

- Asset Lifecycle Strategies (See 7.1.1.1 AMS Planning Framework)

- Business Case(s) and CEARs, typically by WBS

- Program Governance Committee (PGC) reporting

- CAPEX Construction program

- Project Change Request Form PMM MON RF01.

Asset Management Plan – Coastal (AGA-S&P-PL02) defines the planned CAPEX expenditure within a rolling 10-year forecast updated annually to meet the evolving technical objectives (Table 3). The 10-year forecast is defined for each asset class which links into the Asset Lifecycle Strategies (ALSs) and capital expenditure strategy outlined in the SAMP. The investment driver is defined by row item e.g. risk mitigation, asset condition, compliance etc. This data is rolled up for the GDS (Table 31). The AMP and ALSs are reviewed and revised annually with updated CAPEX forecast for rolling 10-year period.

Capital Construction File June 2022 - Snapshot cited as evidence of capital Projects (GCA1) works program. It defines the WBS, project name, project manager, CEAR status, cost centres (by WBS) with tracking of costs and forecasts for project duration.

ALSs typically reference business cases with detailed justification for expenditure and forecast timing. 1520-GCA1-NM-0039 example of business case justification (proposal) and fully approved. Links to AMP and 2020 Business plan observed. The complete business case was found attached to the CEAR for initial works. It includes option trade-off analysis and tabulation of key project milestones that outline the timing of expenditure. Links found to detailed cost estimate and risk assessments. However, in this example records of total project cost found in Project management EIM directory could not be readily reconciled with the CEAR or business plan. Further examples sought from Metering facilities ALS. Commercial Meter - new customers Project interrogated for 2020. WBS 1520-GCA1-GN-0157. Total cost estimate circa $2M. Feb 2021 CEAR estimate circa $3M (gross) with detailed appropriation breakdown.

CAPEX planning is linked to the PGC for governance. 20230118 - PGC Meeting #53 Presentation Pack - DEC Financial cited as evidence of tracking capital projects, where Forecast Cost Completion (FCC) is greater than 105% of the CEAR (observed 11 projects meeting the criteria initiated between 2018 and 2022), and less than 80% of CEAR (observed 2 projects meeting the criteria initiated 2021 and 2022).

Other reporting includes 122 CAPEX Summary Graphs and Variance Analysis - Snapshot which reports variance by project type category: Sustaining; Growth; IT; Structures and equipment. Commentary is observed for each.

ALSs defined the asset life and condition with objectives for management to be met by CAPEX planning. Business Cases and CEARs provide investment justification for discrete capital projects. Asset life and condition is informed by operations and maintenance programs.

PGC meetings review and monitor capex and provide guidance for annual plan updates, in conjunction with overall Financial Planning.

Total project costs are filed in Project Management EIM directories for capital projects (along with Business Plans as referenced above). Example for GCA1-NM-0039 interrogated. Business plan recommended option circa $275k CAPEX, with a CEAR of initial works for $9.9k.

Project change request form (PMM MON RF01) for HP091 ILI Facility upgrade 2020 allocated budget release cited and HOP091 ILI facility upgrade-Engineering cost over run as examples of CAPEX change management / update. Technical reasons for change are reported and updated capital forecast given at 135% of original cost. As the project included 30% contingency budget actual overrun was limited to 5%. The project management EIM directory was interrogated, and monitoring of actual costs found. Monitoring included comparison to CEAR budget for WBS 1520-GCA1-GN-0100.

7.11.2 Effectiveness Rating

The review ratings for asset management system component 11 (Capital Expenditure Planning) are listed in Table 7-11.

Table 7-11: Review Rating – Capital Expenditure Planning

Reference	Review Priority	Asset management process of effectiveness criterion	Findings and OFI Recommendations	Process & Policy	Performance
11 - Capital Expenditure Planning				A	1
2023-11.1	5	There is a capital expenditure plan that covers issues to be addressed, actions proposed, responsibilities and dates.	AGA fulfills this requirement. However, AGA should review tracking of CAPEX works programs scheduling (milestone and completion dates) which appears to be lacking in the evidence cited.	B	1
2023-11.2	5	The plan provides reasons for capital expenditure and timing of expenditure.	AGA fulfills this requirement.	A	1
2023-11.3	5	The capital expenditure plan is consistent with the asset life and condition identified in the asset management plan.	AGA fulfills this requirement.	A	1
2023-11.4	5	There is an adequate process to ensure that the capital expenditure plan is regularly updated and actioned.	AGA fulfills this requirement.	A	1

7.11.3 Recommendations

No process deficiencies rated C, D, 3 or 4 have been identified, and therefore mandatory corrective action recommendations not required.

7.12 Review of Asset Management System

Key to this process element is demonstration that the Asset Management System (AMS) is regularly reviewed and updated.

7.12.1 Observations

7.12.1.1 Review of Asset Management System (AMS) Framework

The AGA framework reviewed for this element comprises of the following key AMS components:

- Asset Management Practice AGA-S&P-PC01

- Document Control Procedure AGA-GRC-PR02
  - o Controlled Document Register AGA-GRC-PR02-RG01
- Strategic Asset Management Plan (SAMP) AGA-S&P-PL01
- IMS Management Review Procedure AGA-GRC-PR04
  - o Integrated Management System Manual AGA-GRC-MA01
  - o Annual Management Review reporting
- Internal Auditing of the Internal Management System Procedure (QLT PR0004).
  - o ATCO Australia GBU Audit Plan 20-21-22
  - o Internal Audit reporting.

Asset Management Practice (AGA-S&P-PC01) is cited as overarching policy document establishing a commitment to maintain the AMS. Implementation of this commitment is controlled by the Controlled Document Register (AGA-GRC-PR02-RG01) which defines the required review cycle period and next review date (year). Document controllers trigger reviews by communication with responsible persons, in accordance with the Document Control Procedure (AGA-GRC-PR02). Example cited email attachment AGA Outstanding Comms - Feb 2023.xls distributed from Document Control to interviewee "Controlled Document Comms" 02/3/23.

Document Control Procedure (AGA-GRC-PR02) issued 28/02/23 was cited during interview. No material changes from the revision issued 9/2/2022 were evident in the revision history so the current version was accepted as evidence. It defines requirements for reviewing controlled documents in accordance with ISO 9001 (section 4.6.2). The default review period prescribed is 12 months or 5 years. Document owners may specify a different review cycle but must advise the Document Controllers in writing, for alignment with the Controlled Document Register (AGA-GRC-PR02-RG01). The SAMP prescribes that asset planning documents (AMP, ALS etc.) are reviewed annually (Table 3).

Changes to relevant regulations and standards are reported to RMCC 3-times yearly, subscription notifications are sent to responsible managers. Both of which support the review process in place to keep the AMS current. Refer 7.4 Environmental Analysis for further detail.

It is reported that document reviews are escalated in Management Reviews to satisfy ISO accreditation, in accordance with the IMS Management Review Procedure (AGA-GRC-PR04). It outlines scope in reference to ISO accreditation holdings and aspirations, responsibilities (by position in the business), and process definition (which also references the RMCC aligning with other interview observations). It references the AGA-GRC-MA01 Integrated Management System Manual, which defines procedure requirements for internal audit processes, including reference to the Internal Auditing of the Internal Management System Procedure (QLT PR0004).

Management review report 2020 Annual Management Review Presentation cited with document review and performance metrics. It quantifies number of controlled documents with review completed and outstanding by department e.g. Assets and Engineering. Subsequent reporting by Plan, Procedure, Guideline, Manual by age of document is reported with review of documents that are over 5 years old. It is observed that at the time of this reporting, Assets and Engineering have approximately 20 documents of age 5 - 7 years, and a further 10 greater than 7 years. It is reported that typically approximately 50% of reviews are overdue across all departments.

Various internal audits conducted annually such as inspections regime and Safety Cases for GDL and MGL. Internal audits relating to AMS are conducted by the Technical Compliance team, registered as Safety Case audits within the ATCO Australia GBU Audit Plan 20-21-22.

7.12.1.2 Internal Audit Reporting

Cited TCO RP 0457 Pressure Safety Valve Maintenance Audit 2020:

- 2 CARs observed.

Cited TCO RP 0465 Inspection Plan Audit 2020:

- 2 IRs observed, one resulting in update to NOC inspection plan. The other relating to document control for an AMS checklist,
- Further 2 minor NCs not resulting in action recommendation and one observation) The observation echoes observations of this review that components of the AMS (in this case work instructions) have exceeded their review requirement (in this case by approximately 4 years). 2021 folders interrogated. Observed PTW system audit, GDS Safety case and inspection plan audit.

TCO RP 0554 2021 Inspection Plan Audit interrogated:

- No NCs identified;
- 2 IRs arising, the second echoes overdue review (or in this case even superseded) of work instructions. 2022 directory interrogated, Safety case and inspection plan audits observed.

TCO RP 0608 2022 Inspection Plan Audit interrogated, observed findings are:

- No NCs identified;
- 2 IRS, one relating Class G installation inspections procedure scope update, and the other clerical errors in document control.

There is no direct indication of Technical Compliance audits into CAPEX projects within the ATCO Australia GBU Audit Plan 20-21-22. However, the scope of some example GDS Safety Case Audit reports cover elements related to CAPEX projects.

TCO RP0406 27/02/2020 cited as internal GDS Safety case audit. While it's scope does include "Quality Control (Procurement to Specification)" with reference to the PMM and specifically MDR requirements, the audit was conducted in 2019 therefore not within scope of this review. It identifies a high rate of non-compliance. Three CARs and one IR are reported relating to this portion of the scope. CAR3 is retrospective. CAR4 requires revision of the PMM - which is evidently outstanding since the PMM was last issued in 2018. CAR5 identifies that the Asset Handover Process (ENS PR0011) is outdated by 8 years being last revised October 2011. This which appears to have been actioned, the Asset Handover Process was last issued in 2021 (now AGA-A&C-PR04). IR2 recommends developing and implementing a process to complete outstanding actions identified from independent reviews of MDRs by external contractor(s).

TCO RP 0433 11/09/2020 2020 internal Safety Case audit cited. The scope includes Asset Handover Process against the Safety Case, PMM and Asset Handover Process (ENS PR0011 – now AGA-A&C-PR04) requirements. The findings include two major NCs and one observation, relating to misalignment of processes with actual practice, and asset handover checklist completion performance. It cites the 2019 Safety Case audit actions as outstanding (in-progress) except IR where 'no progress' is reported. Major Work Permits and Welding Checklists Review non-conformances in MDRs are also reported in the scope of this audit (arising from consultant reviews).

See also 7.2.1.2 Sample Asset Creation and Acquisition Project(s) for further examples of non-conformances relating to CAPEX project execution.

7.12.2 Effectiveness Rating

The review ratings for asset management system component 12 (Review of AMS) are listed in Table 7-12.

Table 7-12: Review Rating – Review of AMS

Reference	Review Priority	Asset management process of effectiveness criterion	Findings and OFI Recommendations	Process & Policy	Performance
12 - Review of AMS				**C**	**3**
2023-12.1	4	A review process is in place to ensure that the asset management plan and the asset management system described therein are kept current.	Performance objectives from the SAMP (AGA-S&P-PL01) and Document Control Procedure (AGA-GRC-PR02) are not being met and are not strictly reflected by the Controlled Document Register AGA-GRC-PR02-RG01. AMP level documents 2022 revisions are typically overdue and nearly a whole cycle out of step. These and other AMS documents evidently account for a significant proportion of critical AMS documents. Significant changes in the AMS have occurred during the review period, which are not reflected in the AMS documentation, nor through evidence of MOC procedure compliance (see also observations in 7.6.1 Asset Maintenance, 7.7.1.1 AMIS, and the respective findings in Table 7-6 criteria 6.4 and Table 7-7 criteria 7.1). Corrective action is recommended. Refer 7.12.3.	B	3
2023-12.2	4	Independent reviews (e.g. internal audit) are performed of the asset management system.	Overdue Review of the AMS and related documents including Work Instructions is endemic over the review period, despite audit reporting overdue CARs prompting updates. There is a lack of (follow up) auditing cited for full technical compliance into CAPEX projects beyond 2020 during the review period. Corrective action is recommended. Refer 7.12.3.	C	3

7.12.3 Recommendations

2023-12.1:

1. AGA should conduct a review to ensure appropriate corrective action is made for alignment of the review cycle commitment between and within the SAMP (AGA-S&P-PL01), Controlled Document Register (AGA-GRC-PR02-RG01), Document Control Procedure (AGA-GRC-PR02), and practice (i.e. actual revision cycles of the AMP, ALSs, SWIs, WIs etc.).

2. AGA should review the effectiveness of controls and processes in place to ensure the AMS remains current. AGA should focus this review on escalation processes for overdue reviews. AGA should ensure processes include requirements for clear notification and reporting to upper management and direct managers of document owners where rolling document review targets are missed and pervasively outstanding - especially for documents with last revision date more than 5 years old.

3. AGA should conduct a review of MOC processes and an audit into MOC implementation compliance which was observed as deficient for examples of significant change sampled in this review e.g. changes to maintenance schedules for Regulator Sets and MGL ILI (See 7.6.1.5). Ensure update of key AMS documents is a lead (instead of lag) indicator for significant changes, and that MOC processes are applied to all changes that directly impact the AMS, including IT and critical risk management systems e.g. IT Service provider, Lantis GIS and E-Safe (See 7.7.2).

2023-12.2:

1. AGA should escalate outstanding audit actions relating to AMS updates, review tracking and reporting of such actions to prevent recurrence of overdue actions, and conduct regular follow up internal audit into Asset Creation (CAPEX) projects to confirm effectiveness of corrective action controls. Audit scope should include Asset Handover records e.g. MDRs, with a focus on inspection test records (e.g. ITP execution).

8 Recommendations

Corrective Action Recommendations (CARs) are summarised by Table 8-1 to address deficiencies identified (rated C, D, 3 or 4 under the asset management system effectiveness review criteria) for asset management components.

Opportunity for improvement (OFI) recommendations arising from the current review observations are discretionary, to be summarised separately at licensee request.

Table 8-1: Recommendations to address current system deficiencies.

Recommendation Reference	Area Rating Asset Management Process AMP Effectiveness Criteria	Review Recommendation	Action taken by the licensee by end of review period
01/2023 (2023-1.9/1)	B3 1.9 Plans are regularly reviewed and updated.	AGA should update the controlled document procedure register review frequency to align with practice, or vice versa. i.e. business and risk driver based rather than broad document classes, and bolster controls to these ensure review and update objectives are satisfied (See also 7.12).	The recommendation has not been addressed.
02/2023 (2023-2.4/1)	A3 2.4 Commissioning tests are documented and completed.	AGA should conduct a technical compliance audit and review into ITP sign-off (by AGA and its contractors), and AGA MDR contents sign-off as deficiencies in these areas were observed for the reference project (Curtin University Exchange Precinct Development) sampled for this review.	The recommendation has not been addressed.
03/2023 (2023-8.1/1)	B3 8.1 Risk management policies and procedures exist and are being applied to minimise internal and external risks associated with the asset management system.	AGA should conduct a system wide status review of outstanding E-Safe Action closure, especially where Progress states 100% and in some cases appears to be implemented in practise, however Action Owner Acceptance and subsequent workflow appears incomplete. e.g. ACT-002568 due 31/8/2021, ACT-0002281 due 31/08/2020, ACT-0002282 due 31/08/2020. This recommendation also follows from the further action requirement identified in Table 5-2: Action Status from Previous Reviews [02/2020].	The recommendation has not been addressed.
04/2023 (2023-8.1/2)		AGA should review outstanding action close out ACT-0004033 and ACT-0004034 due 30/06/2022 arising from 2022 PTW internal audit (TCO RP 0511 IR1 and IR2). This recommendation also follows from the further action requirement identified in Table 5-2: Action Status from Previous Reviews [01/2020 and 02/2020].	The recommendation has not been addressed.

Recommendation Reference	Area Rating Asset Management Process AMP Effectiveness Criteria	Review Recommendation	Action taken by the licensee by end of review period

05/2023
 	
(2023-9.1/1)
	C2
	
	9.1
	
	Contingency plans are documented, understood and tested to confirm their operability and to cover higher risks.
		AGA should review and update the AMS contingency planning documents, ensure its testing schedule, reporting, references and improvement updates are kept current i.e. review controls to prevent recurrence. Including but not limited to:
		
		• Emergency Response Management Plan (ERMP) AGA-R&R-PL01
		   o Emergency and Operational Contacts (register) AGA-R&R-PL01-FM04
		   o Emergency Planning Response Checklist AGA-R&R-PL01-FM16
		   o Emergency Response Exercises AGA-R&R-PL01-WI02
		• Business Continuity Plan (BCP) AGA-GRC-PL01
		• Responding to a Loss of Phone Operation at Gas Distribution Jandakot AGA-O&M-PR01-WI02
		• Responding to a High Influx of Customer Calls at Gas Distribution Jandakot CCT PR0001 WI001.
			The recommendation has not been addressed.

06/2023 (2023-9.1/2)		AGA should expedite update of the Equipment Calibration and Servicing Guideline (AGA-ENG-GL16) and SAP with regular periodic inspection requirements for squeeze-off equipment, to satisfy ACT-0004023 (CAR) which is significantly overdue (raised following 2021 ERE).	The recommendation has not been addressed.
07/2023 (2023-12.1/1)	B3 12.1 A review process is in place to ensure that the asset management plan and the asset management system described therein are kept current.	AGA should conduct a review to ensure appropriate corrective action is made for alignment of the review cycle commitment between and within the SAMP (AGA-S&P-PL01), Controlled Document Register (AGA-GRC-PR02-RG01), Document Control Procedure (AGA-GRC-PR02), and practice (i.e. actual revision cycles of the AMP, ALSs, SWIs, WIs etc).	The recommendation has not been addressed.
08/2023 (2023-12.1/2)		AGA should review the effectiveness of controls and processes in place to ensure the AMS remains current. AGA should focus this review on escalation processes for overdue reviews. AGA should ensure processes include requirements for clear notification and reporting to upper management and direct managers of document owners where rolling document review targets are missed and pervasively outstanding - especially for documents with last revision dates more than 5 years old.	The recommendation has not been addressed.
09/2023 (2023-12.1/3)		AGA should conduct a review of MOC processes and an audit into MOC implementation compliance, which was observed as deficient for examples of significant change sampled in this review e.g. changes to maintenance schedules for Regulator Sets and MGL ILI (See 7.6.1.5). Ensure update of key AMS documents is a lead (instead of lag) indicator for significant changes, and that MOC processes are applied to all changes that directly impact the AMS, including IT and critical risk management systems e.g. IT service provider, Lantis GIS and E-Safe (See 7.7.2).	The recommendation has not been addressed.

Recommendation Reference	Area Rating Asset Management Process AMP Effectiveness Criteria	Review Recommendation	Action taken by the licensee by end of review period
10/2023 (2023-12.2/1)	C3 12.2 Independent reviews (e.g. internal audit) are performed of the asset management system.	AGA should escalate outstanding audit actions relating to AMS updates, review tracking and reporting of such actions to prevent recurrence of overdue actions; and conduct regular follow up internal audit into Asset Creation (CAPEX) projects to confirm effectiveness of corrective action controls. Audit scope should target Asset Handover records e.g. MDRs, with a focus on inspection test records (e.g. ITP execution).	The recommendation has not been addressed.

9 Approval of the Report

9.1 Compliance Statement

This review report was prepared by Ausenco for AGA as per the requirements of *"Audit and Review Guidelines: Electricity and Gas Licences"*, published by the ERA, March 2019.

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10 Conclusions

Based on evidence cited and interviews conducted with AGA staff, the opinion of the Reviewers is that overall AGA is operating an asset management system that is comprehensive, fit for purpose and typically has sufficient controls to maintain an adequate level of effectiveness.

However, the opinion of the Reviewers is that the asset management system is not being effectively used as a lead indicator and planning tool for significant changes to GDS management processes, particularly for changes in risk management processes. Management of change processes do not appear to be effectively applied to ensure appropriate planning, risk management, and scoping impact to AMS, resulting in the AMS severely lagging implementation of significant changes to business management processes during the review period. For example, the AMS typically still does not reflect implementation of E-Safe, which began early 2021. Also, the effectiveness of controls implemented to address previous review recommendations should be subject to further review by AGA.

The 12 asset management processes effectiveness ratings shown in Table 1-1, when converted to qualitative ratings per Table 2-2, illustrate that AGA achieved:

- eight (8) Strong ratings,
    - two (2) of which include criteria with correction action recommendations,
    - seven (7) of which include criteria with improvement recommendations.
- two (2) Moderate ratings,
    - one (1) of which include criteria with corrective action recommendations,
    - all of which include criteria with improvement recommendations.
- two (2) Weak ratings,
    - all of which include criteria with corrective action recommendations.

There were ten (10) corrective action recommendations resulting from effectiveness and performance ratings of C, D; or 3, 4 respectively, as summarised by Table 8-1. Improvement recommendations resulting from effectiveness and performance ratings of B or 2 respectively are considered discretionary, therefore may be summarised separately for AGA information.

Ausenco

Appendix 1 – Table of Documents and Information Cited

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Ref No.	Document Number	Document Title	Revision	Issue Date	Date Received / Accessed	Remarks
1	AA-GRC-PC05	Compliance Practice	7	16-Jul-20	22-Feb-23	
2	AA-GRC-PO04	Risk Management Policy	1	17-Apr-20	22-Feb-23	
3	AGA-ENG-GL01	Engineering Services Design Guideline Multistorey Piping	8	28-Mar-22	22-Feb-23	
4	AGA-ENG-GL06	Engineering Services Design Guideline High Rise	1	7-Dec-21	22-Feb-23	
5	AGA-ENG-GL09	Meter Set Design Guidelines	11	10-Feb-22	22-Feb-23	
6	AGA-ENG-GL10	Valves Design Guideline	5	9-Dec-21	22-Feb-23	
7	AGA-ENG-GL11	Engineering Services Design Guidelines Pipelines	14	31-Mar-22	22-Feb-23	
8	AGA-ENG-GL17	Regulator Set Design Guidelines - Standard Designs	11	25-Feb-22	22-Feb-23	
9	AGA-ENG-GL19	Pipeline Alignment & As-Built Drawings Design Guideline	0	13-Jul-20	22-Feb-23	
10	AGA-R&R-PL01	Emergency Response Management Plan	7	9-Dec-19	22-Feb-23	Revision cycle overdue (2 yearly objective). Currently in progress (Rev 7A draft cited)
11	AGA-S&P-PC01	Asset Management Practice	8	1-Jul-21	22-Feb-23	Revision cycle overdue (annual objective).
12	AGA-S&P-PL01	Strategic Asset Management Plan (SAMP)	1	22-Sep-20	22-Feb-23	Revision cycle overdue (annual objective).
13	AGA-S&P-PL02	Asset Management Plan - Coastal	7	21-Feb-22	22-Feb-23	Revision cycle overdue (annual objective).
14	AGA-S&P-ST06	Asset Lifecycle Strategy - Corrosion Protection Systems	10	9-Jun-21	22-Feb-23	Revision cycle overdue (annual objective).
15	AGA-S&P-ST07	Asset Lifecycle Strategy - Metering Facilities	12	29-Jun-21	22-Feb-23	Revision cycle overdue (annual objective).
16	AGA-S&P-ST08	Asset Lifecycle Strategy - Pipelines, Mains and Services	10	25-Jun-21	22-Feb-23	Revision cycle overdue (annual objective).
17	AGA-S&P-ST09	Asset Lifecycle Strategy - Pressure Regulating Facilities	10	25-Jun-21	22-Feb-23	Revision cycle overdue (annual objective).
18	AGA-S&P-ST10	Asset Lifecycle Strategy - SCADA	9	29-Jun-21	22-Feb-23	Revision cycle overdue (annual objective).
19	AST ST00013	Asset Lifecycle Strategy - Fleet	1	31-Aug-18	22-Feb-23	Revision cycle overdue (annual objective), although DCR cites 2023 as next required review date
20	AST ST00014	Asset Lifecycle Strategy - Property, Plant & Equipment	1	31-Aug-18	22-Feb-23	Revision cycle overdue (annual objective), although DCR cites 2023 as next required review date
21	-	3.1 Compliance Report June 2022 (2)	-	Jun-22	8-Mar-23	RM&C committee meeting #23 reporting
22	-	4.1 Compliance Report September 2022 (1)	-	Sep-22	8-Mar-23	RM&C committee meeting #24 reporting
23	-	4.1 Compliance Report - March 2023	-	Mar-23	8-Mar-23	RM&C committee meeting #25 reporting
24	AA-GRC-PL05	Risk Management Framework	3	3-Apr-19	8-Mar-23	Rev 4 DRAFT subsequently provided
25	AA-GRC-PL04	Compliance Procedure	5	19-Sep-19	8-Mar-23	Rev 6 draft interrogated during interview
26	AGA-A&C-MA04	Project Management Manual	5	29-Jun-18	8-Mar-23	Content Doc Code PMM MA00001 mis-matched file name and out of date content references.
27	AGA-R&R-GL01	Technical Compliance Risk Management Guideline	6	10-Mar-21	8-Mar-23	
28	AGA-R&R-PL01-FM14	Emergency Response Action Checklist	1	16-Oct-19	7-Mar-22	Interrogated during interview, and subsequently provided
29	TCO RP 0573	Emergency Response Exercise Report - Geraldton 2021	0	1-Mar-22	7-Mar-22	Interrogated during interview, and subsequently provided. Exercise date 11/12/21.
30	ACT-0004023	E-safe action record 4023 item arising from Geraldton ERE 2021 report		-	7-Mar-22	Interrogated during interview, as per ERE report
31	ACT-0004024	E-safe action record 4024 item arising from Geraldton ERE 2021 report		-	7-Mar-22	Interrogated during interview, as per ERE report
32	ACT-0004025	E-safe action record 4025 item arising from Geraldton ERE 2021 report		-	7-Mar-22	Interrogated during interview, as per ERE report
33	ACT-0004026	E-safe action record 4026 item arising from Geraldton ERE 2021 report		-	7-Mar-22	Interrogated during interview, as per ERE report
34	AGA-R&R-PL01-WI03	After Hours Call Out Roster	6	23-Mar-21	7-Mar-22	Interrogated during interview, and provided subsequently
35	-	05. May 2022 Net Mon Planning Report GM01	-	May-22	9-Mar-23	Interrogated during interview
36	-	AGA Outstanding Comms - Feb 2023	-	Feb-23	9-Mar-23	Interrogated during interview, technically outside scope of review period, content is retrospective so accepted as evidence
37	AGA-ENG-PL03	Pipeline Integrity Management Plan MGL	0	-	9-Mar-23	Interrogated during interview
38	9-6100-11674	FFP Assessment Report - 08" Mandurah Gas Pipeline (HP120) GS025 Station to PRS015 Station	0	18-May-21	9-Mar-23	Interrogated during interview, and subsequently provided
39	-	2023 Opex Variable Volume Budget - Meeting 09-02-23	-	Feb-23	9-Mar-23	Interrogated during interview, technically outside scope of review period, content is retrospective so accepted as evidence
40	-	Report RIN 2022 KPI_Network for 2020 to 2024 (AA5 period)	-		9-Mar-23	Interrogated during interview, and subsequent interviews
41	AA-GRC-PR02-TM31 SPL-SPM-SPN	Asset Defect Process Guidelines			9-Mar-23	Interrogated during interview
42	TCO RP 0511	Permit to Work System Internal Audit	0	22-Dec-21	13-Mar-23	Interrogated during interview, Supplementary copy received 15-Mar, and 21-Mar.
43	TCO RP0606	Hydrogen Blending Project Report	0	7-Oct-22	13-Mar-23	Interrogated during interview
44	-	5.1 Audit Action Report March 2023	-	Mar-23	13-Mar-23	Interrogated during interview, technically outside scope of review period, content is retrospective so accepted as evidence
45	-	AGA Monthly Report Chapter 5 A&E - February 2023	-		13-Mar-23	Interrogated during interview
46	TCO RP 0228	FMEA Non-Standard materials	4	4-Aug-21	13-Mar-23	Interrogated during interview
47	TCO RP 0459	FMEA Non-Standard Equipment	0	9-Nov-21	13-Mar-23	Interrogated during interview
48	TCO RP 0536	FMEA Rogan Flow Stopping Non-Standard Equipment	0	16-May-22	13-Mar-23	Interrogated during interview
49	AGA-ENG-PR22-RG01	Material Management Register	-		13-Mar-23	Interrogated during interview
50	-	2022 Business Plan Draft - PGC Out of Cycle 15072021	-	Jul-21	14-Mar-23	Interrogated during interview, and subsequently provided
51	-	2022 Business Plan (Gas Division) 080921	-	Sep-21	14-Mar-23	Interrogated during interview
52	-	20220824 - PGC Meeting #48 Presentation Pack	-	Aug-22	14-Mar-23	Interrogated during interview
53	-	AGA_FR Dec-2022_Snapshot_V3	-	Dec-22	14-Mar-23	Interrogated during interview
54	-	AGA_FR Dec-2022_Snapshot	-	Dec-22	14-Mar-23	Interrogated during interview
55	-	ATCO Gas Model 2022 BP 110221	-	Feb-21	14-Mar-23	Interrogated during interview
56	-	WANH Dec 22 P&L Report snapshot	-	Dec-22	14-Mar-23	Interrogated during interview
57	-	February Operations Summary	-	Feb-23	14-Mar-23	Interrogated during interview, communications. Technically outside scope of review period, subsequent entries cited accordingly
58	-	02223 - Finance Operations Project Summary - Snapshot	-	Feb-23	14-Mar-23	Interrogated during interview, technically outside scope of review period, subsequent entries cited accordingly
59	-	CAPEX Summary for February 2023 Monthly Report	-	Feb-23	14-Mar-23	Interrogated during interview, technically outside scope of review period, subsequent entries cited accordingly
60	-	Operations Summary for Feb 2023 Snapshot	-	Feb-23	14-Mar-23	Interrogated during interview, technically outside scope of review period, subsequent entries cited accordingly
61	-	Operations Summary for Dec 2022 Snapshot	-	Dec-22	14-Mar-23	Interrogated during interview
62	-	December 2022 Operations Summary	-	Dec-22	14-Mar-23	Interrogated during interview, communications
63	-	122 CAPEX Summary Graphs and Variance Analysis - snapshot	-	Dec-22	14-Mar-23	Interrogated during interview, and subsequently provided
64	-	150239_Marketing_rdm Nov22	-	Nov-22	14-Mar-23	Interrogated during interview
65	96791005 (1520-GCA1-NM-0038)	Business Case HPR Capacity Upgrade - HN041 2019	-	10-Jun-19	14-Mar-23	Interrogated during interview
66	1520-GCA1-NM-0039	Business Case HPR Capacity Upgrade - HN041 2020	-	2020	14-Mar-23	Interrogated during interview
67	PMM MON RF01	Project change request form HP091 ILI Facility upgrade 2020 allocated budget release	-	2020	14-Mar-23	Interrogated during interview
68	PMM MON RF01	Project change request form HP091 ILI facility upgrade -engineering cost overrun.	-	2020	14-Mar-23	Interrogated during interview

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Ref No.	Document Number	Document Title	Revision	Issue Date	Date Received / Accessed	Remarks
69	-	03.3 Regulatory Changes Paper (RMCC meeting No. 16)	-	Mar-20	14-Mar-23	Interrogated during interview
70	-	Sept 2022 4.2 Statutory and Regulatory Changes Report (RMCC meeting No. 24)	-	Sep-22	14-Mar-23	Interrogated during interview
71	-	1.1 Minutes from March 2022 RMCC	-	Mar-22	14-Mar-23	Interrogated during interview
72	-	02.1 Risk Summary Report_Mar2021	-	Mar-22	14-Mar-23	Interrogated during interview, and subsequently provided
73	-	3.1 Risk Summary Report September 2022	-	Sep-22	14-Mar-23	Interrogated during interview
74	-	2020-Gas-Distribution-License-Performance-Reporting-Datasheets	-	2020	14-Mar-23	Interrogated during interview, and subsequently provided
75	-	Rolling Performance Data 2022	-	2022	14-Mar-23	Interrogated during interview
76	-	Compliance Calendar Checklist	-		14-Mar-23	Interrogated during interview
77	-	CR Monthly Complaints Report Sept 2022	-	Sep-22	14-Mar-23	Interrogated during interview
78	AGA-REG-CH03	Access Arrangement for the Mid-West and South-West Gas Distribution Systems	-	15-Nov-19	14-Mar-23	AA5 submission applicable 2020 - 2024. Supplementary information request
79	AGA-REG-CH06	Access Arrangement Information for the Mid-West and South-West Gas Distribution Systems		15-Nov-19	14-Mar-23	AA5 submission applicable 2020 - 2024. Supplementary information request
80	TCO RP 0579_01	HP102 (Geraldton Lateral) AS2885 Pipeline SMS (update)	E	2022	15-Mar-23	Supplementary information request. No record of date workshop was conducted.
81	-	HP102 AS2885 SMS 2022 Terms of Reference	-	2022	15-Mar-23	Presentation. Supplementary information request. No revision control or date.
82	EPPS-ENG-RP-PIPE-0008	EPPS Detailed Design AS2885 Preliminary SMS Terms of Reference	A	10-Dec-20	15-Mar-23	Prepared by consultant for AGA review, returned Code 3 Revise as Noted and resubmit. Request evidence of approval prior to SMS.
83	-	1520-GCA1-NM-0051 Reinforcement - Doubleview Business Case	-	10-Nov-20	16-Mar-23	Interrogated during interview
84	-	1520-GCA1-GN-0122 Facility Upgrade - Step Touch Hazard Mitigation Business Case	-	22-Feb-22	16-Mar-23	Interrogated during interview
85	-	1520-GCA1-GN-0173 Facility Upgrade - Pressure and Temperature Monitoring Business Case	-	7-May-22	16-Mar-23	Interrogated during interview
86	-	2022 Operational KPI Targets spreadsheet	-	2022	16-Mar-23	Interrogated during interview
87	-	2020 Asset Management Review presentation	-	2022	16-Mar-23	Interrogated during interview
88	-	1520-GCA1-GN-0099 Metallic Mains Replacement Project - Scope Change Memo	-	Aug-22	16-Mar-23	Interrogated during interview
89	-	1520-GCA1-SM-0010 Security of Supply - Caversham Business Case	-	29-Aug-18	16-Mar-23	Interrogated during interview. Project implementation ongoing during review period therefore accepted as evidence
90	-	1520-GCA1-GN-0105 PVC EOL Replacement Business Case	-	29-Nov-19	16-Mar-23	Interrogated during interview. Project implementation ongoing during review period.
91	-	1520-GCAN-GN-0105-5-08 Growth Development Busmeand Estate CEAR	-	7-May-21	16-Mar-23	Interrogated during interview
92	AGA-FIN-PC02	Capital Contributions Practice (Policy)	8	13-Feb-23	16-Mar-23	Interrogated during interview. Also cited Rev 7 24/02/2020 for example within review period
93	AGA-FIN-PR15	Capital Contributions Procedure	5	1-Apr-22	16-Mar-23	Interrogated during interview
94	AGA-GRC-PR02-RG01	Controlled Document Register	-	2023	16-Mar-23	Interrogated during interviews, live document with historical data so accepted as evidence
95	-	Cyber Security Policy (ATCO Canada)	-	2022	16-Mar-23	Interrogated during interview
96	AA-GRC-GL12	Cyber Security Practice (AGA)	-	1-Oct-22	16-Mar-23	Interrogated during interview
97	-	Basis of (RIN) Preparation April 2022	-	Apr-22	16-Mar-23	Interrogated during interview
98	-	Audit Report for RIN April 2022	-	Apr-22	16-Mar-23	Interrogated during interview
99	-	2022 ATCO Gas ERA Compliance Report - Due Diligence Presentation	-	24-Aug-22	16-Mar-23	Interrogated during interview
100	-	20201_22 ATCO Performance Reporting - final presentation	-	2022	16-Mar-23	Interrogated during interview
101	AGA-GRC-PR02	Document Control Procedure	19	28-Feb-23	16-Mar-23	Interrogated during interview, document history reviewed, no material changes from 9/2/2022 so accepted as representative for review period
102	AGA-GRC-PR04	IMS Management Review Procedure	9	2-Feb-22	16-Mar-23	Interrogated during interview
103	-	2020 Annual Management Review Presentation	-	2020	16-Mar-23	Interrogated during interview
104	-	1520-GCA1-GN-0150-4-14 Business Case Curtin University Exchange Precinct Development	-	20-May-20	17-Mar-23	Interrogated during interview
105	TCO RP 0623	HP Meterset HAZOP (TOR and reporting)	0	10-Mar-21	17-Mar-23	Interrogated during interview
106	01B117-A-FP0109	HP meterset project drawings	C2	2021	17-Mar-23	Interrogated during interview
107	ENS PR0038	Project Risk Management Procedure	0	2018	17-Mar-23	Interrogated during interview
108	-	FET 2022v3 Curtin Uni Option 1 - approved (cost estimate)	-	2022	17-Mar-23	Interrogated during interview
109	AGA-ENG-PL02-FM01	Project Advice Checklist	-	22-Dec-22	17-Mar-23	Interrogated during interview
110	-	Project Design Report - 2022 CIC Meter Set - Curtin Fabrication	0	22-Dec-22	17-Mar-23	Interrogated during interview
111	AGA-ENG-PR31-FM01	Engineering Deliverables Sign-off Check Sheet	-	-	17-Mar-23	Interrogated during interview
112	-	ITP - MTS907 Curtin Service Pressure Testing (unexecuted copy)	-		17-Mar-23	Interrogated during interview
113	AGA-R&R-PR06-WI04-FM02 (Curtin)	Major Work Permit (executed for HP meterset project)	12	9-Sep-22	17-Mar-23	Interrogated during interview as executed 2022 project example
114	AGA-A&C-GL06	Pressure Test Records Guideline (template and executed records for WO6420687)	-		17-Mar-23	Interrogated during interview, template and executed project examples
115	P4-900-1819	ASBUILT MTS 907 (meterset) drawings	0	20-Dec-22	17-Mar-23	Interrogated during interview
116	-	MDR MPI Engineering WO6420687 MPI Job 4534 Meter Set	1	2022	17-Mar-23	Interrogated during interview
117	ENS PR0042	MDR Contents Sign-off sheet	-		17-Mar-23	Interrogated during interview as executed project example
118	SDD11-AG-215	MDR-01_1 Steel Diamond Project No SD22-AG-215 (Curtin University Mains extension)	1	2022	17-Mar-23	Interrogated during interview
119	AGA-A&C-PR04	Asset Handover Procedure	3	21-Jun-21	17-Mar-23	Interrogated during interview, referenced in PMM as ENS PR0011 (out of date)
120	-	150223_Maintenance South_drm Feb23	-	Apr-22	15-Feb-23	Interrogated during interview
121	AGA-GRC-PL06	Crisis Management Plan	0	14-Apr-20	20-Mar-23	Supplementary information request
122	AA-HSE-PR05	Workplace Injuries & Manage Return to Work	5	7-Nov-19	20-Mar-23	Presumed to supersede HSE PR0014 cited in ERMP
123	AA-HSE-PR20	Incident Reporting Investigation Procedure	5	10-Sep-20	20-Mar-23	Supplementary information request
124	AA-HSE-PR23	Identifying Hazards in the Workplace	3	11-Mar-20	20-Mar-23	Supplementary provision. N/A to AMS, not reviewed
125	AGA-GRC-PL01	ATCO Gas Business Continuity Plan	9	5-May-20	20-Mar-23	Supplementary. Presumed to supersede RMT ST00001 cited in ERMP. Content out of date.
126	AGA-HSE-PR07-FM02	Notification of Incidents to Executive Management	6	16-Jan-20	20-Mar-23	Supplementary. Template only.
127	AGA-HSE-PR12	Depot Emergency Evacuation Procedure	8	12-Mar-20	20-Mar-23	Supplementary provision. N/A to AMS, not reviewed
128	AGA-HSE-PR12-FM03	Albany Depot Emergency Evacuation Guidelines	-		20-Mar-23	Supplementary provision. N/A to AMS, not reviewed
129	AGA-HSE-PR12-FM04	Bunbury Depot Emergency Evacuation Guidelines	-		20-Mar-23	Supplementary provision. N/A to AMS, not reviewed
130	AGA-HSE-PR12-FM05	Geraldton Depot Emergency Evacuation Guidelines	-		20-Mar-23	Supplementary provision. N/A to AMS, not reviewed
131	AGA-HSE-PR12-FM06	Jandakot Depot Emergency Evacuation Guidelines	-		20-Mar-23	Supplementary provision. N/A to AMS, not reviewed
132	AGA-HSE-PR12-FM07	Joondalup Depot Emergency Evacuation Guidelines	-		20-Mar-23	Supplementary provision. N/A to AMS, not reviewed
133	AGA-HSE-PR12-FM08	Kalgoorlie Depot Emergency Evacuation Guidelines	-		20-Mar-23	Supplementary provision. N/A to AMS, not reviewed

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134	AGA-HSE-PR12-FM11	Mandurah Depot Emergency Evacuation Guidelines	-	-	20-Mar-23	Supplementary provision. N/A to AMS, not reviewed
135	AGA-HSE-PR12-FM12	Busselton Depot Emergency Evacuation Guidelines	-	-	20-Mar-23	Supplementary provision. N/A to AMS, not reviewed
136	AGA-HSE-PR12-FM13	Malaga Depot Emergency Evacuation Guidelines	-	-	20-Mar-23	Supplementary provision. N/A to AMS, not reviewed
137	AGA-HSE-PR12-WI02	Depot Emergency Control Organisation	4	12-Mar-20	20-Mar-23	Supplementary information request
138	AGA-O&M-FM02	Standard Operating Procedures - Control Room and Field Services	23	11-Nov-21	20-Mar-23	Supplementary provision. Register of documents only. Supersedes CTR RF01 cited in the ERMP.
139	AGA-O&M-PR01-WI03	Routine Testing of Gas Distribution Jandakot Communication Contingencies	5	13-Dec-21	20-Mar-23	Supplementary information request. Supersedes CCT PR0001 WI004 cited in the ERMP.
140	AGA-O&M-PR01-WI02	Responding to a Loss of Phone Operation at Gas Distribution Jandakot	5	6-May-21	20-Mar-23	Supplementary information request. Supersedes CCT PR0001 WI003 cited in the ERMP. Content Out of date.
141	AGA-O&M-PR02	Processing of Notifiable Incidents	6	19-Dec-19	20-Mar-23	Supplementary provision
142	AGA-O&M-PR03	ESNO Communications	5	19-Dec-19	20-Mar-23	Supplementary provision
143	AGA-O&M-WI07	Gas Distribution Trunk Radios	7	19-Dec-19	20-Mar-23	Supplementary information request. Supersedes CTR WI005 cited in the ERMP.
144	AGA-R&R-PL01-FM02	Message Form - Gas Division	2	11-Oct-19	20-Mar-23	Supplementary provision. Template only.
145	AGA-R&R-PL01-FM03	Manual Notification Record Sheet - Gas Division	3	16-Oct-19	20-Mar-23	Supplementary provision. Template only.
146	AGA-R&R-PL01-FM04	Emergency and Operational Contacts	13	15-Jul-22	20-Mar-23	Supplementary provision. Reference number for Manager Communications found to be disconnected. Presumed to supersede TCO PL00001 RF02 cited in the EPR Checklist
147	AGA-R&R-PL01-FM07	Functional Log Form	2	16-Oct-19	20-Mar-23	Supplementary provision. Template only.
148	AGA-R&R-PL01-FM08	Request for Emergency Order	-		20-Mar-23	Supplementary provision. Template only.
149	AGA-R&R-PL01-FM09	Emergency Isolation Request Form DBNGP Mandurah Gate Station	8	14-May-21	20-Mar-23	Supplementary provision. Template only.
150	AGA-R&R-PL01-FM11	ATCO - Gas division incident Escalation Process Map	15	22-Sep-21	20-Mar-23	Supplementary provision. Supersedes TCO PL000001 RF22 cited in the Emergency Planning and response checklist
151	AGA-R&R-PL01-FM15	Emergency Pressure Reduction Request Form DBNBP Mandurah Gate Station	1	14-May-21	20-Mar-23	Supplementary provision
152	AGA-R&R-PL01-FM16	Emergency Planning Response Checklist	3	16-Oct-19	20-Mar-23	Supplementary provision. Content out of date.
153	AGA-R&R-PL01-FM18	Emergency Pressure Reduction Request Form AGIG DBNGP Gate Station	0	14-May-21	20-Mar-23	Supplementary provision. Template only.
154	AGA-R&R-PL01-WI01	Emergency Control Request Transmission Operator Gate Station	10	21-Jun-21	20-Mar-23	Supplementary information request
155	AGA-R&R-PL01-WI02	ATCO - Gas Division Emergency Exercises	6	20-Nov-19	20-Mar-23	Supplementary information request. Content out of date.
156	AGA-R&R-PL01-WI04	CBD Emergency Isolation	5	14-Jun-21	20-Mar-23	Supplementary information request
157	AGA-R&R-PR03-FM01	Notifiable Incident Details - Initial Notification	4	18-Jan-19	20-Mar-23	Supplementary information request. Template only. Supersedes TCO PR0003 RF01.
158	AGA-R&R-PR03-FM04	Rule of Thumb for Notifiable Gas Release and Chart for Lost Gas	8	30-Jul-21	20-Mar-23	Supplementary information request. Supersedes TCO PR0003 RF04.
159	AGA-R&R-PL01-FM17	Emergency Isolation Request Form AGIG DNGP Gate Station	0	14-May-21	20-Mar-23	Supplementary provision. Template only.
160	AGA-SWI-GE01	Safe Work Instruction: Attending Gas Escapes	8	13-Jul-21	20-Mar-23	Supplementary information request.
161	CCT PR0001 WI001	Responding to a High Influx of Customer Calls at Gas Distribution Jandakot	3	30-Mar-16	20-Mar-23	Supplementary information request. Content out of date.
162	-	02.1 Risk Summary Report - Jul 2021 - RMCC Meeting No.20	-	Jun-21	21-Mar-23	Supplementary provision
163	-	02.1 Risk Summary Report September 2021 - RMCC Meeting No. 21	-	Sep-21	21-Mar-23	Supplementary provision
164	AGA-R&R-PR02	Management of Change	10	20-Apr-22	21-Mar-23	Supplementary information request.
165	AGA-R&R-PR06	Permit to Work System	13	25-Aug-20	21-Mar-23	Supplementary information request. Supersedes TCO PR0007 cited during interviews.
166	-	ATCO Australia GBU Audit Plan 20-21-22	-	2022	21-Mar-23	Spreadsheet based schedule. Supplementary information request.
167	-	ATCO ISO Certification support draft proposal for discussion	-	17-Feb-23	21-Mar-23	Supplementary information request. Presume planning of this engagement occurred during the review period so accepted as evidence
168	-	ATCO_AMS_Post-Review Implementation plan_October update	-	2020	21-Mar-23	Supplementary information request.
169	TCO RP 0465	Inspection Policy Statement and Plan Audit 2020	0	12-Nov-20	21-Mar-23	Supplementary information request.
170	ACT-0002567	TCO RG0003-A2518. TCO RP 465 back-to-back e-safe entry	-	12-Nov-20	21-Mar-23	Supplementary information request.
171	ACT-0002568	TCO RG0003-A2519. TCO RP 465 back-to-back e-safe entry	-	12-Nov-20	21-Mar-23	Supplementary information request.
172	TCO RP 0554	Inspection Policy Statement and Plan Audit 2021	0	24-Jan-21	21-Mar-23	Supplementary information request.
173	ACT-0004182	TCO RP 0554 back-to-back action e-safe entry IR1	-	31-Dec-21	21-Mar-23	Supplementary information request.
174	ACT-0004183	TCO RP 0554 back-to-back action e-safe entry IR2	-	31-Dec-21	21-Mar-23	Supplementary information request.
175	ACT-0004029	2021 PTW Audit TCO RP 0511 back to back e-safe action entry CAR1	-	11-Jan-22	21-Mar-23	Supplementary information request.
176	ACT-0004030	2021 PTW Audit TCO RP 0511 back to back e-safe action entry CAR2a	-	11-Jan-22	21-Mar-23	Supplementary information request.
177	ACT-0004031	2021 PTW Audit TCO RP 0511 back to back e-safe action entry CAR2b	-	11-Jan-22	21-Mar-23	Supplementary information request.
178	ACT-0004032	2021 PTW Audit TCO RP 0511 back to back e-safe action entry CAR3	-	11-Jan-22	21-Mar-23	Supplementary information request.
179	ACT-0004033	2021 PTW Audit TCO RP 0511 back to back e-safe action entry IR1	-	11-Jan-22	21-Mar-23	Supplementary information request. Close out overdue
180	ACT-0004034	2021 PTW Audit TCO RP 0511 back to back e-safe action entry IR2	-	11-Jan-22	21-Mar-23	Supplementary information request. Close out overdue
181	TCO RP 0608	Inspection Policy Statement and Plan Audit 2022	0	11-Nov-22	21-Mar-23	Supplementary information request.
182	ACT-0002281	2020 AMS review E-safe action 01/2020 (criteria 8.1)	-	25-May-20	21-Mar-23	Supplementary information request. Workflow incomplete
183	ACT-0002282	2020 AMS review E-safe action 02/2020 (criteria 8.2)	-	25-May-20	21-Mar-23	Supplementary information request. Workflow incomplete
184	AGA-O&M-PR30	Control Room Permit Procedure	1	7-Oct-20	21-Mar-23	Supplementary information request, evidence of ACT-0002281 implementation
185	AGA-O&M-PR30-WI04	Network Control Permit	5	25-Aug-20	21-Mar-23	Supplementary information request, evidence of ACT-0002281 implementation
186	AGA-O&M-PR30-WI04-FM04	Works Procedure Form	1	25-Aug-20	21-Mar-23	Supplementary information request, evidence of ACT-0002281 implementation. Template only.
187	-	Correspondence: Notice of Revisions to PTW system documents (and attached presentation)	-	25-Aug-20	21-Mar-23	Supplementary information request, evidence of ACT-0002281 implementation. Template only.
188	-	2020 Compliance Report_ATCOGasAustralia	-	27-Aug-20	21-Mar-23	Supplementary information request. ERA reporting.
189	-	ATCO Gas 2021 Compliance Report (signed)	-	26-Aug-21	21-Mar-23	Supplementary information request. ERA reporting.
190	-	2022 Compliance Report - ATCO Gas Australia	-	30-Aug-22	21-Mar-23	Supplementary information request. ERA reporting.
191	-	2021-Gas-Distribution-Licence-Performance-Reporting-Datasheets	-	2021	21-Mar-23	Supplementary information request
192	-	2022-Gas-Distribution-Licence-Performance-Reporting-Datasheets	-	2022	21-Mar-23	Supplementary information request
193	-	All_Obligations_-_Reporting_20230314_172320089	-	2023	21-Mar-23	Supplementary information request. E-Safe export.
194	AST ST00015	Information Technology Asset Strategy	1	31-Aug-18	22-Mar-23	Supplementary information request. Content out of date and revision cycle overdue (annual objective being an ALS).
195	AA-IT-PC-02	IT Access Control Practice	0	2-Sep-21	22-Mar-23	Supplementary information request
196	AA-IT-PC-07	IT Acceptable Use Practice	1	16-Mar-23	22-Mar-23	Supplementary provision
197	AA-IT-PL01	Cyber Security Incident Response Plan ATCO Australia	0	7-Oct-21	22-Mar-23	Supplementary provision
198	AA-IT-PC04	Backup and Retention Practice	0	7-Sep-21	22-Mar-23	Supplementary information request
199	-	FW 2022_3 Access Card Audit	-	17-Nov-22	22-Mar-23	Supplementary information request. Correspondence trail includes update 21/03/2023, Audit ongoing.
200	-	FW: Access Cards Report	-	27-Jan-23	22-Mar-23	Supplementary information request. Correspondence trail includes attachment Access Cards Register 27.01.23
201	AGA-O&M-PR01	Gas Distribution Jandakot Communications Contingency	8	31-Jan-20	22-Mar-23	Supplementary information request. Supersedes CCT PR0001 cited in the ERMP.

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Ref No.	Document Number	Document Title	Revision	Issue Date	Date Received / Accessed	Remarks
202	-	Memorandum: Supporting Information CR002 - EOL Replacement - Metallic Mains - Business Case - Scope Change (railway Crossings)	-	11-Jan-22	22-Mar-23	Interrogated during interview
203	-	AHI_2022 (Asset Health Index) spreadsheet	-	2022	22-Mar-23	Interrogated during interview
204	-	1520-GCA1-GN-0152 EOL Replacement - MPR Business Case	-	24-Mar-20	22-Mar-23	Interrogated during interview
205	AGA-ENG-GL12	Management of Decommissioned Assets	1	26-Aug-19	22-Mar-23	Interrogated during interview
206	-	Project Advice Checklist 2022 - EOL Replacement - Metallic Mains	0	20-Jun-22	22-Mar-23	Interrogated during interview
207	-	ASCON - 6402335....	-	2022	22-Mar-23	Interrogated during interview
208	-	Minor Work Permit MN062 Permit Number 212488.	-	2022	22-Mar-23	Interrogated during interview
209	-	SUS Notification 6405616 Offline Services Record Sheet (MN062)	-	2-Dec-22	22-Mar-23	Interrogated during interview
210	AA-SC-PR01	Purchasing Policy	1	13-Apr-22	22-Mar-23	Interrogated during interview, Supplementary copy received 27/03/23.
211	-	Incident Reporting Form (atco.e360.saiglobal.com/prod/new/Incident)	-	-	24-Mar-23	Supplementary information request, supersedes AGA-HSE-PR07-FM04 cited in ERMP.
212	AGA-R&R-PR03	Notifiable Incident Reporting	11	9-Nov-22	24-Mar-23	Supplementary information request
213	TCO PR0003 WI001 RT01	Incident Report Template	0	29-May-15	24-Mar-23	Supplementary information request, content out of date
214	AGA-HSE-PR07-FM01	HSE Incident Notification - Control Room	12	22-Apr-21	24-Mar-23	Supplementary information request, supersedes HSE PR0017 RF04 cited in ERMP.
215	AGA-R&R-PL01-FM06	ERMP Index to Documentation	14	22-Sep-11	24-Mar-23	Supplementary information request, content out of date
216	AGA-R&R-PR03-WI01	Reportable Incident Investigation	1	9-Nov-22	24-Mar-23	Supplementary information request. Supersedes TCO PR0003 WI001 cited by ERMP.
217	TCO PR0003 RF02	Distribution Incident Notification Form	-	4-Feb-16	24-Mar-23	Supplementary information request, cited in EIM only (not interrogated). Referenced in ERMP as AGA-R&R-PR03-FM02. Evidently out of date
218	-	01.1 Minutes from July 2021 RMCC (1) - meeting No.20	-	1-Jul-21	24-Mar-23	Supplementary information request.
219	-	K. Grace- Final Signed DocuSign Compliance Attestation 09.09.2020	-	9-Sep-20	24-Mar-23	Supplementary information request.
220	-	K. Newton - Final Signed DocuSign Compliance Attestation 03.09.2020	-	3-Sep-20	24-Mar-23	Supplementary information request.
221	-	M. Turner - Final Signed DocuSign Compliance Attestation 08.10.2020	-	12-Oct-20	24-Mar-23	Supplementary information request.
222	-	R. Godsall - Final Signed DocuSign Compliance Attestation 12.10.2020	-	20-Oct-20	24-Mar-23	Supplementary information request.
223	-	S. Oler - Final Signed DocuSign Compliance Attestation 04.11.2020	-	4-Nov-20	24-Mar-23	Supplementary information request. Signature and declaration date absent.
224	-	Kenwick MRP Analysis	-	24-Mar-23	27-Mar-23	Supplementary information request. Example of MRP output.
225	2043	ECT Contracting Invoice	-	8-Jan-23	27-Mar-23	Supplementary information request
226	-	Metallic Mains LS (spreadsheet)	-		-	Supplementary information request
227	-	Leak Survey Report Sheet 2020	-	2020	27-Mar-23	Supplementary information request
228	-	2021 Operational KPI Performance	-	2021	27-Mar-23	Supplementary information request
229	-	MLP Doubleview 21 - Peak Winter 079.MDB	-	2021	27-Mar-23	Supplementary information request, SynerGEE gas model screenshot (actual winter condition)
230	-	MLP Doubleview 21 - Severe Winter.MDB	-	2021	27-Mar-23	Supplementary information request, SynerGEE gas model screenshot (1 in 20 year severe winter condition)
231	-	Leak Survey Report Sheet 2018	-	2018	27-Mar-23	Supplementary information request. Predates review period but relevant to demonstrate frequency of leak surveys
232	TCO RP 0504	EOL Replacement Isolation Valves 2021 Business Case - Risk Assessment	2	14-Jun-21	27-Mar-23	Supplementary information request
233	-	MRP Output - 2023	-	2023	27-Mar-23	Supplementary information request
234	-	OPEX Variable Volume File - Jan 23 - Snapshot	-	Jan-23	27-Mar-23	Supplementary information request
235	AGA-R&R-PR06-WI04-FM02 (HP049)	Major Work Permit (authorised for HP049)	12	9-Sep-22	27-Mar-23	Supplementary information request. MWP example. Authorised 17/2/23 but not yet executed. Technically outside of review period
236	EPPS-ENG-RP-PIPE-0010	EPPS Detail Design AS2885 Safety Management System Study Terms of Reference	0	18-May-21	27-Mar-23	Supplementary information request
237	EPPS-ENG-RP-PIPE-0011	EPPS AS2885 Detailed Design Safety Management Study Closeout Report	0	24-Aug-21	27-Mar-23	Supplementary information request
238	AGA-O&M-GL09	Third Party Damage Prevention Guideline	1	6-Sep-21	27-Mar-23	Supplementary information request
239	NCO MA00001 RG01	Damage Prevention Register		2023	27-Mar-23	Supplementary information request
240	-	Emergency Exercise Planning Register	-	2023	28-Mar-23	Supplementary information request
241	-	Regional Emergency Exercises 2022 - Open Actions	-	2022	28-Mar-23	Supplementary information request
242	TCO RP 590	Albany LPG Network Emergency Exercise - Debrief Report 2021	0	1-Mar-22	28-Mar-23	Supplementary information request. Exercise date 11/12/21. Content shows document number TCO RP 0573, which is duplicate of Geraldton.
243	TCO RP 0406	Internal GDS Safety Case Audit 2019	0	27-Feb-20	28-Mar-23	Supplementary provision.
244	-	Business Case: Implementation of ESRI GIS Upgrade from 10.2.0 to 10.8.1 WBS 1520-GCIT-GN-0077	-	17-Mar-21	28-Mar-23	Supplementary information request
245	-	20230118 - PGC Meeting #53 Presentation Pack -DEC Financials	-	18-Jan-23	28-Mar-23	Supplementary provision
246	-	210713 PGC Minutes meeting No.34	-	15-Jul-21	28-Mar-23	Supplementary information request
247	-	2022 - 2024 Business Plan Economic Indicators	-	2022	28-Mar-23	Supplementary information request
248	-	IBG BP22 macro position for feedback 300321 v3 (BP2022 initiation IGB Meeting)	-	7-Apr-21	28-Mar-23	Supplementary information request
249	TCO RP 0443	Internal GDS Safety Case Audit 2020	0	11-Sep-21	28-Mar-23	Supplementary information request
250	-	EOL Replacement - Isolation Valve Approved Business Case 1520-GCA1-GN-0147-5	-	12-Aug-21	28-Mar-23	Supplementary information request
251	-	AGA Monthly Report Chapter 5 A&E - November 2022 FINAL	-	Nov-22	28-Mar-23	Supplementary information request
252	TCO RP 0596	Incident Investigation - Major Discharge -Broken DN155 Main Corner of Resolution Drive and Marina Drive, Ascot	1	13-May-22	28-Mar-23	Supplementary information request
253	-	GIS Application Naming Email	-	16-Feb-22	28-Mar-23	Supplementary information request
254	-	Licence Review - ATCO issues log	-	2020	28-Mar-23	Supplementary information request. 2020 Review of Gas Licenses
255	-	GDL Review - Offer to Connect - Capital Contribution Issue	-	2020	28-Mar-23	Supplementary information request. 2020 Review of Gas Licenses
256	-	ATCO Australia - Gas Distribution Licence Issues	-	30-Apr-20	28-Mar-23	Supplementary information request. 2020 Review of Gas Licenses
257	-	RE: Evidence for Item #1 and #30: Asset Management Review information requests	-	27-Mar-23	28-Mar-23	Supplementary information request. Note correspondence title does not match reviewer document request numbering.
258	AGA-ENG-GL16	Asset Engineering: Equipment Calibration And Servicing Guideline	6	21-Jul-21	28-Mar-23	Supplementary information provision
259	-	Capital Construction File June 2022 - snapshot	-	Jun-22	28-Mar-23	Supplementary information request
260	FIN PR0021	Capital Expenditure Process	1	2022	28-Mar-23	Supplementary information request
261	-	FMECA - Domestic Meter Units	-		-	Supplementary information request
262	-	Veg Clearing_SAP Notifications (export)	-	2023	29-Mar-23	Supplementary information request
263	1520-GCA1-GN-0157-6-28 ITP	Curtin - DN50 Steel Service Pressure Test	A	7-Dec-22	29-Mar-23	Supplementary information request. Draft (non-executed) AGA records.
264	MPI-ITP-4534-01	ITP - WO - 6420687 - Curtin University - Bespoke Meter Set Fabrication	0	22-Nov-22	29-Mar-23	Supplementary information request. Executed (signed and dated) test records. MPI Engineering.
265	3544-ITP-001	ITP - Curtin University DN50 Gas Main - Pre-cleaning, Flooding, Hydrostatic Testing and Drying	-	16-Jan-23	29-Mar-23	Supplementary information request. Draft (non-executed). Process Chemicals

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Ref No.	Document Number	Document Title	Revision	Issue Date	Date Received / Accessed	Remarks
266	SD22-AG-215-ITP-01	50Nb HP steel line and hot tap - Curtin Uni	0	17-Jan-23	29-Mar-23	Supplementary information request. Partially-executed. Steel Diamond. Line-item initialling dates absent AGA sign-off absent.
267	AGA-A&C-PR04 FM15	Asset Handover Checklist - Tier 2 to 4: 1520-GCA1-GN-0109-06 Vehicle Protection	0	28-Feb-23	29-Mar-23	Supplementary information request. Outside scope of review period therefore not accepted as evidence of implementation.
268	-	Voice of the Customer - Final	-	21-Apr-21	29-Mar-23	Supplementary information request
269	AA-GRC-WI01	Regulatory Change Work Instruction	DRAFT	Pending	29-Mar-23	Cited during interviews
270	-	ATCO Gas Australia - Pressure Vessel Register	-		10-Mar-23	Interrogated during interviews
271	TRN MA00003	Site Safety and Environment - Prerequisite Course	4	13-Apr-21	10-Mar-23	Interrogated during interviews
272	TRN PR0001	Training Management Process	8	15-Feb-22	10-Mar-23	Interrogated during interviews
273	AGA-GRC-RG02	Field Operations Manual Index	-		10-Mar-23	Interrogated during interviews
274	R-ATCO-1609	Pressure Vessel Condition Inspection Report	0	-	10-Mar-23	Interrogated during interviews
275	-	05 May 2022 Net Mon Planning Report GM01	-		9-Mar-23	Interrogated during interviews
276	-	MRP AA6_Discussion_2702_Final	-		9-Mar-23	Interrogated during interviews
277	-	Defect Process Cheat Sheet	-		9-Mar-23	Interrogated during interviews
278	QLT PR0001	Document Naming Procedure	-		16-Mar-23	Cited during interviews
279	AA-IT-PC-10	Applicatoin Disaster Recovery Practice	-		16-Mar-23	Cited during interviews
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Appendix 2 – Table of Document Information Requests

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#	Session	Documentation / Evidence Request	Requested	Doc Number	Remarks	Received/Closed
1	9 - Contingency Planning	Third Party incident log to evidence assessment of trends in damage protection measures (e.g. trigger third party engagement)	09-Mar-23	AGA-OM-GL09 / NCO MA00001 RG01	Third Party Damage Prevention guideline and register provided	27-Mar-23
2	9 - Contingency Planning	Crisis Management Plan	09-Mar-23	AGA-GRC-PL06	-	20-Mar-23
3	9 - Contingency Planning	ERP references:	09-Mar-23	Various listed below:		-
3.01	9 - Contingency Planning	Hazard and incident notification	09-Mar-23	AA-HSE-PR20	Supersedes referenced HSE PR0017	20-Mar-23
3.05	9 - Contingency Planning	Emergency Exercises	09-Mar-23	AGA-R&R-PL01-WI02	-	20-Mar-23
3.06	9 - Contingency Planning	ATCO Gas Division Business Continuity Strategy	09-Mar-23	RMT ST00001	Presumed superseded by supplied AGA-GRC-PL01	20-Mar-23
3.07	9 - Contingency Planning	State Hazard Plan - Energy Supply Disruption	09-Mar-23	AGA-O&M-PL05	**Advised these are restricted, request unable to be fulfilled**	**23-Mar-23**
3.08	9 - Contingency Planning	Emergency Contacts Phonebook	09-Mar-23	AGA-R&R-PL01-FM01	**Advised these are restricted, request unable to be fulfilled**	**23-Mar-23**
3.18	9 - Contingency Planning	Depot Emergency Control Organisation	09-Mar-23	AGA-HSE-PR12-WI02	-	20-Mar-23
3.23	9 - Contingency Planning	Distribution Incident Notification	09-Mar-23	AGA-R&R-PR03-FM02	Clarification: Still filed in Master Copy as TCO PR0003 RF02.	24-Mar-23
3.25	9 - Contingency Planning	Gas Loss Guidelines	09-Mar-23	AGA-R&R-PR03-FM04	Now Titled Rule of Thumb for Notifiable GasRelease and Chart for Gas lost	20-Mar-23
3.26	9 - Contingency Planning	HSE Incident Notification - Control Room Instructions	09-Mar-23	HSE PR0017 RF04	Presumed superseded by AGA-HSE-PR07-FM01 provided	20-Mar-23
3.28	9 - Contingency Planning	Incident Report Form	09-Mar-23	AGA-HSE-PR07-FM04	Clarification, now obsolete to E-safe form (screenshot provided)	24-Mar-23
3.29	9 - Contingency Planning	Manual Emergency Notification Record Sheet	09-Mar-23	AGA-R&R-PL01-FM03	Title omits the word emergency	20-Mar-23
3.31	9 - Contingency Planning	Emergency Control Request Transmission Operator Gate Station	09-Mar-23	AGA-R&R-PL01-WI01	-	20-Mar-23
3.36	9 - Contingency Planning	Gas Distribution Jandakot Communications Contingency	09-Mar-23	CCT PR0001	Found to be superseded by AGA-O&M-PR01	22-Mar-23
3.37	9 - Contingency Planning	Emergency and Operational Contacts	09-Mar-23	AGA-R&R-PL01-FM04	-	20-Mar-23
3.38	9 - Contingency Planning	ERMP Index to Documentation	09-Mar-23	AGA-R&R-PL01-FM06	-	20-Mar-23
3.41	9 - Contingency Planning	CBD Emergency Isolation	09-Mar-23	AGA-R&R-PL01-WI04	-	24-Mar-23
3.42	9 - Contingency Planning	Standard Operating Procedures - Control Room and Field Services	09-Mar-23	CTR RF01	Found to be superseded by AGA-O&M-FM02	20-Mar-23
3.44	9 - Contingency Planning	Responding to a very high influx of customer calls at Gas Distribution Jandakot	09-Mar-23	CCT PR0001 WI001	-	20-Mar-23
3.45	9 - Contingency Planning	Responding to a loss of phone operation at Gas Distribution Jandakot	09-Mar-23	CCT PR0001 WI003	Found to be superseded by AGA-O&M-PR01-WI02	20-Mar-23
3.46	9 - Contingency Planning	Routine Testing of Gas Distribution Jandakot Communication Contingencies	09-Mar-23	CCT PR0001 WI004	Found to be superseded by AGA-O&M-PR01-WI03	20-Mar-23
3.47	9 - Contingency Planning	Gas Distribution Trunk Radio	09-Mar-23	CTR WI005	Superseded by supplied AGA-O&M-WI07	20-Mar-23
4	9 - Contingency Planning	2021 exercise reports and E-safe reports	09-Mar-23	TBC	Debrief reports provided, but no E-safe records	28-Mar-23
5	9 - Contingency Planning	AMSR presentation references:	09-Mar-23	Various listed below:		-
5.01	9 - Contingency Planning	Notifiable Incident Reporting	09-Mar-23	TCO PR0003	Superseded by AGA-R&R-PR03.	24-Mar-23
5.02	9 - Contingency Planning	Attending Gas Escapes	09-Mar-23	SWI GE 001	-	20-Mar-23
5.03	9 - Contingency Planning	Rule of Thumb for Notifiable Gas Release and Chart for Gas Lost	09-Mar-23	TCO PR0003 RF04	Suspect presentation out of date, that current document number is AGA-R&R-PR03.	20-Mar-23
5.04	9 - Contingency Planning	Incident Escalation Process Map	09-Mar-23	TCO PL00001 RF2	Suspect presentation out of date, that current document number is AGA-R&R-PL01-FM11.	20-Mar-23
5.05	9 - Contingency Planning	Notifiable Incident Details - Initial Notification	09-Mar-23	TCO PR0003 RF01	Suspect presentation out of date, that current document number is AGA-R&R-PR03-FM01.	20-Mar-23
5.06	9 - Contingency Planning	Incident Report Template	09-Mar-23	TCO PR0003 WI001 RT01	-	24-Mar-23
5.07	9 - Contingency Planning	Gas Distribution Notifiable Incident Reporting	09-Mar-23	TCO PR0003 WI001	Superseded by AGA-R&R-PR03-WI01	24-Mar-23
6	9 - Contingency Planning	Regional Emergency Exercises 2022 - Open Actions'	09-Mar-23	N/A	Includes 2021 actions also	28-Mar-23
7	9 - Contingency Planning	Inspection and Calibration register to confirm practical close-out of ACT-0004023 for hydraulic ram annual inspection (and inspection report if past due)	09-Mar-23	N/A	Communications RE: Evidence for Item #1 and #30: Asset Management Review information requests provided- **Requested evidence is not available**	**28-Mar-23**
8	9 - Contingency Planning	Table of emergency exercise record 2020-2023 i.e. the review period.	09-Mar-23	N/A	AMSR presentation table is for 2017-2020 i.e. Previous review period. Emergency Exercise Planning Register provided.	28-Mar-23
9	6 - Asset Maintenance	SAP data dump for review period, sample of maintenance activities (leak survey proposed) showing planned vs actual completion.	10-Mar-23	N/A	#23 Leak Survey Report Sheet 2020 provided	28-Mar-23
10	6 - Asset Maintenance	Any evidence of MoC for change in maintenance schedule resulting from failure data analysis / ILI e.g. Regsets, MGL ILI frequency	10-Mar-23	FFP assessment report & SAP extract maintenance plan 10033 provided	Documents provided do no not substantiate MoC, only investigation and implementation.	29-Mar-23
11	6 - Asset Maintenance	MRP output file example	10-Mar-23	N/A	#24 Kenwick Map and MRP Output - 2023 provided	27-Mar-23
12	6 - Asset Maintenance	January version of OPEX Variable Volume Budget showing actual costs data for January.	10-Mar-23	N/A	OPEX Variable Volume File - Jan 23 - Snapshot	27-Mar-23
13	6 - Asset Maintenance	RCM report with Availability Work Bench (FMEA software) data to be provided as evidence of close out date for previous review IR	10-Mar-23	N/A	FMECA Domestic Meter Units provided	29-Mar-23
14	5 - Asset Operations	Evidence of asset performance data records, underperforming asset assessments, register remaining life assessment data, and linkage to AMS components such as SAP, Business Plans etc.	15-Mar-23	Various	Request with respect to item 5.4 Accounting data for assets. Was later covered under Asset Disposal element 3.1.	22-Mar-23
15	8 - Risk Management	Permit To Work System	15-Mar-23	TCO PR0007	Superseded by supplied AGA-R&R-PR06	21-Mar-23
16	8 - Risk Management / 2 - Asset Creation and Acquisition	Business case for example project and supporting risk assessment (FSA) justifying the proposed project option against alternatives	15-Mar-23	N/A	EOL Replacement - Isolation Valve 2021 WBX 1520-GCA1-GN-0147-5 Business Case Supporting FSA provided as per Request #44	28-Mar-23
17	8 - Risk Management	MoC procedure	15-Mar-23	AGA-R&R-PR02	-	21-Mar-23
18	8 - Risk Management	ATCO Australia GBU - Audit Plan	15-Mar-23	N/A	Spreadsheet ATCO Australia GBU Audit Plan 20-21-22	21-Mar-23
19	8 - Risk Management	2022 Internal Audit Report example(s) and evidence of back-to-back e-safe action entry (status monitoring)	15-Mar-23	Various	Various audit report and E-safe action reports provided 2020 through 2022	21-Mar-23
20	8 - Risk Management	Evidence of consultant engagement for risk management process review e.g. SoW, proposal.	15-Mar-23	-	ATCO ISO Certification support draft proposal for discussion	21-Mar-23
21	8 - Risk Management	2020 AMS review post-implementation plan	15-Mar-23	-	October update version provided	21-Mar-23
22	8 - Risk Management	Risk Management Framework draft WIP revision	15-Mar-23	AA-GRC-PL05	Seeking evidence of E-safe implementation linkage to AMS	21-Mar-23
23	8 - Risk Management	Evidence of guidelines or project records citing adoption of execution practice as per latest edition of standards e.g. AS2885	15-Mar-23	EPPS-ENG-RP-PIP-0008_A EPPS-ENG-RP-PIP-0010_0	Evidence cited left is by a consultant and not strictly part of the AGA AMS.	28-Mar-23
24	8 - Risk Management	New documents created arising from ACT-0002281 (previous audit recommendations)	15-Mar-23	Various files prefixed with action number 2281	To clarify in fact the evidence is updates to existing documents	21-Mar-23
25	8 - Risk Management	Examples of recently executed work permits, MWP etc	15-Mar-23	N/A	Note example MWP cited during Asset Creation interview after this request (Curtin Uni Meter Set) 2022. Further example HN049 provided for 2023 technically outside review period.	27-Mar-23
26	8 - Risk Management	Emerging Risks Paper 2021 (as part of RMCC reporting)	15-Mar-23	N/A	Evidence of recommendation pause to discretionary audits in order to redirect resources to close out of outstanding actions. 01.1 Minutes from July 2021 RMCC	24-Mar-23
27	10 - Financial Planning	Access Arrangement AA5 submission	15-Mar-23	AGA-REG-CH06 & CH03	-	15-Mar-23
28	10 - Financial Planning	PGC meeting minutes	15-Mar-23	N/A	Various presentation packs and minutes provided	28-Mar-23
29	10 - Financial Planning	PGC financial planning memo	15-Mar-23	N/A	2022 - 2024 Economic Indicators and IBG BP22 macro position... provided	28-Mar-23
30	11 - CAPEX Planning	CAPEX works program (with responsibilities and dates for expenditure management)	15-Mar-23	N/A	Capital Construction File June 2022- Snapshot	28-Mar-23
31	11 - CAPEX Planning	Evidence of PGC or similar management reporting of cost monitoring for CAPEX projects, specifically example 2021 Commercial Meter - new customers	15-Mar-23	N/A	20230118 - PGC Meeting #53 presentation Pack - DEC Financials	28-Mar-23
32	4 - Environmental Analysis	Example(s) of analysis and evaluation of identified compliance risk(s)	15-Mar-23	N/A	Various files provided in folders 2020 Review of Gas Licenses"; " Critical Infrastructure Reform 2021". Note "Harmonised WHS Law in WA" also provided but being from 2019 is outside the review period	28-Mar-23
33	4 - Environmental Analysis	E-safe export of obligations	15-Mar-23	N/A	All_Obligations_-_Reporting_20230314_172320089	21-Mar-23
34	4 - Environmental Analysis	Business case for ongoing OPEX program clearing of excessive vegetation growth along pipelines	15-Mar-23	N/A	Subsequent advice is that there is no business case. SAP notification export provided	29-Mar-23
35	4 - Environmental Analysis	TOR and/or populated workshop worksheets for SMSs conducted during the review period	15-Mar-23	HP102 AS2885 SMS TOR presentation & TCO RP 0579_01	Document controlled version of TOR does not exist	15-Mar-23

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#	Session	Documentation / Evidence Request	Requested	Doc Number	Remarks	Received/Closed
36	4 - Environmental Analysis	Annual ERA reports for each year of the review period	15-Mar-23	N/A	GDL performance reporting datasheets provided	21-Mar-23
37	4 - Environmental Analysis	KPI reporting to satisfy 4.2 Performance standards (availability of service, capacity, continuity, emergency response) etc. are measured and monitored	15-Mar-23	N/A	2021 Operational KPI Performance reporting provided	27-Mar-23
38	4 - Environmental Analysis	KPI reporting to satisfy 4.4 Achievement of customer service levels	15-Mar-23	N/A	2021 Operational KPI Performance reporting provided	27-Mar-23
39	4 - Environmental Analysis	Register of breaches (RMCC reporting) for the review period	15-Mar-23	N/A	Compliance reports submitted to ERA provided	21-Mar-23
40	8 - Risk Management / 4 - Environmental Analysis	Evidence of SMS ToR approval prior to conducting the workshop for EPPS PRS Detailed Design Project	15-Mar-23	Approved EPPS-ENG-RP-PIP-0008 and workshop report	Document uploaded to Share Core is still the Rev A IFR copy. Approved ToR and Workshop report outstanding. Instead EPPS-ENG-RP-PIP-0010 for the detail design phase was provided (0008 document scope was for preliminary SMS).	27-Mar-23
41	8 - Risk Management	Evidence status of CARs arising from 2021 PTW Internal Audit TCO RP 0511_0	15-Mar-23	ACT-0004029 through 4034	CARs (4029 through 4032) closed. IRs (4033 - 4034) overdue as of 30/06/2022	21-Mar-23
42	4 - Environmental Analysis	Attestation Statements	15-Mar-23	N/A	Various statements provided	24-Mar-23
43	1 - Asset Planning	Evidence of increase in leak survey frequency of metallic mains from 5 to 3 yearly as mitigation of deferred replacement risk(s)	20-Mar-23	N/A	Leak Survey Report Sheet 2020 provided in response to request #9 indicates Metallic mains on 3 yearly survey where others on 5 year. Leak Survey Report sheet 2018 provided.	27-Mar-23
44	1 - Asset Planning	EOL FSA examples	20-Mar-23	TCO RP 0504	EOL 2021 FSA provided.	28-Mar-23
45	1 - Asset Planning	RCM examples	20-Mar-23	N/A	FMECA Domestic Meter Units provided	29-Mar-23
46	1 - Asset Planning	1 in 20 year severe winter analysis/modelling (traceable reinforcement strategies)	20-Mar-23	N/A	1 in 20 year winter file provided containing Synergi extracts and commentary	27-Mar-23
47	1 - Asset Planning	Voice of Customer Survey Results	20-Mar-23	N/A	Voice of the Customer - Final (presentation)	29-Mar-23
48	7 - AMIS	IT asset strategy	20-Mar-23	AST-ST00015	-	22-Mar-23
49	7 - AMIS	Practice or procedure document that defines the password update and MFA requirements	20-Mar-23	AA-IT-PC-02	-	22-Mar-23
50	7 - AMIS	Evidence of key card audits	20-Mar-23	N/A	Correspondence provided	22-Mar-23
51	7 - AMIS	IT backup procedures	20-Mar-23	AA-IT-PC-04	In fact this document is a policy/practice	22-Mar-23
52	7 - AMIS	Details on software system which has replaced GNIS, and it's implementation	20-Mar-23	N/A	Business Case Implementation of 2021 ESRI GIS Upgrade provided, but this still refers to IBIS which was reported to be superseded by LANTIS during the interviews. Supplemented with internal communications regarding naming of the system.	28-Mar-23
53	9 - Contingency Planning	Management reporting examples identifying status of ERE actions, especially those outstanding.	20-Mar-23	N/A	AGA Monthly Report Chapter 5 A&E cited	28-Mar-23
54	9 - Contingency Planning	Incident response investigation reviews, and evidence on reporting in a manner to inform review of the AMS.	20-Mar-23	TCO RP 0596	-	28-Mar-23
55	2 - Asset Creation & Acquisition	Executed copy of Process Chemicals ITP for Curtin University meter set project WBS 1520-GCA1-GN-0150-4	20-Mar-23	3544-ITP-001	**Advised the requested evidence is not available**	**29-Mar-23**
56	2 - Asset Creation & Acquisition	Executed copy of AGA ITP for Curtin University meter set project WBS 1520-GCA1-GN-0150-4	20-Mar-23	N/A	**Advised the requested evidence is not available**	**29-Mar-23**
57	2 - Asset Creation & Acquisition	Executed copy of Asset Handover Checklist for Curtin University meter set project WBS 1520-GCA1-GN-0150-4	20-Mar-23	TBC	**Advised the requested evidence (or draft) is not available.** **20230323 1520-GCA1-GN-0109-06 subsequently provided not accepted as evidence as dated outside the review period**	**29-Mar-23**
59	2 - Asset Creation & Acquisition / 12 - AMS Review	Evidence of internal audits (or lack of) into technical compliance for CAPEX projects, particularly for new asset creation. i.e. Tech Compliance Audit Schedule and any internal audits into asset creation CAPEX projects.	20-Mar-23	TCO RP 0443 GDS	The 2019 Safety Case internal audit provided falls outside the review period. GDS Safety Case Audit 2020 provided.	28-Mar-23
62	5 - Asset Operations	Purchasing Policy (with respect to accounting purchases to assets per Effectiveness Criteria 5.4)	22-Mar-23	AA-SC-PR01	-	27-Mar-23
63	5 - Asset Operations	Accounting Policy (with respect to accounting costs i.e. labour to assets per Effectiveness Criteria 5.4 e.g. pipeline patrols)	22-Mar-23	FIN PR0021	Capital Expenditure Process cited	28-Mar-23
64	7 - AMIS	Evidence of (annual or more) regular backup recovery testing as per AA-IT-PC04 Backup and Retention Practice requirements	22-Mar-23	N/A	Commvault verifies backup file integrity weekly	28-Mar-23
65	3 - Asset Disposal	Evidence of physical disposal of MN062 after decommissioning and removal from the network (from Project Manager)	22-Mar-23	N/A	#18 ECT invoice provided for 'waste disposal'.	27-Mar-23