Alinta Energy Transmission (Roy Hill) Pty Ltd

2019 Electricity Integrated Regional Licence (EIRL6) Asset Management System Review

Report

1 October 2016 to 30 September 2019

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Ms Catherine Rousch
Manager Regulatory Compliance
Alinta Sales Pty Ltd, trading as Alinta Energy
Level 18 Raine Square
300 Murray Street
Perth WA 6000

17 December 2019

Dear Catherine

Alinta Energy Transmission (Roy Hill) Pty Ltd – 2019 EIRL6 Asset Management System Review

We have completed the limited assurance engagement on the 2019 EIRL6 Asset Management System review for Alinta Energy Transmission (Roy Hill) Pty Ltd for the period 1 October 2016 to 30 September 2019 and are pleased to submit our report to you.

I confirm that this report is an accurate presentation of the findings and conclusions from our review procedures.

If you have any questions or wish to discuss anything raised in the report, please contact me on 0456 585 247.

Yours sincerely

DELOITTE TOUCHE TOHMATSU

Vincent Snijders
Partner
Chartered Accountants
Perth

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1 Independent assurance practitioner's report

Conclusion

We have undertaken a limited assurance engagement on the compliance of Alinta Energy Transmission (Roy Hill) Pty Ltd's (**AETRH or Alinta**) Asset Management System (**AMS**) effectiveness and performance, in all material respects, as evaluated against its effectiveness criteria in the Electricity Integrated Regional Licence (EIRL6) (the **Licence**) and applicable obligations from the *Audit and Review Guidelines: Electricity and Gas Licences* (the **Guidelines**) released in March 2019, for the period 1 October 2016 to 30 September 2019, for the purpose of assisting AETRH comply with its reporting obligations to the Economic Regulation Authority (the **ERA**).

Based on the procedures we have performed and the evidence we have obtained, except for the effects of the matters described in the 'Basis for qualified conclusion' paragraph below, nothing has come to our attention that causes us to believe AETRH has not established and maintained, in all material respects, an effective AMS for assets subject to the Licence, as measured by the effectiveness criteria in the March 2019 Guidelines issued by the ERA, and the systems have not operated effectively for the review period.

Basis for qualified conclusion

During the period from 1 October 2016 to 30 September 2019, AETRH did not comply with the effectiveness criteria in the following instances:

AMS key process and effectiveness criteria	Issue
Asset planning 1.1 Asset Management Plan covers key requirements 1.9 Plans are regularly reviewed and updated *Review of AMS* 12.1 A review process is in place to ensure that the AMP and the AMS described therein are kept current	The Asset Management Plan (**AMP**) did not contain all the key requirements tailored to Alinta's purposes. In response to recommendation 1/2016 of the previous AMS review, Alinta has included several key requirements but is yet to include a reference to contingency plans in the Newman AMP. The Newman AMP for FY2019 to FY2023 was last reviewed on 2 July 2018, is in draft, with key sections still to be completed.
Risk Management 8.1 Risk management policies and procedures exist and are being applied to minimise internal and external risks associated with the AMS. 8.2 Risks are documented in a risk register and treatment plans are actioned and monitored	There are outdated risks in the InControl Risk Management System (two out of seven samples), as well as risks that require updates, amendments or review (one out of seven samples).
Contingency planning 9.1 Contingency plans are documented, understood and tested to confirm their operability and to cover higher risks	AETRH did not: • Document the testing arrangements of its contingency plan • Perform testing of the contingency plan.

We conducted our engagement in accordance with Standard on Assurance Engagements ASAE 3500 *Performance Engagements* issued by the Auditing and Assurance Standards Board.

We believe that the evidence we have obtained is sufficient and appropriate to provide a basis for our conclusion.

AETRH's responsibility for the AMS

AETRH is responsible for ensuring that it has:

- Complied, in all material respects, with the requirements of its Licence as specified by the Guidelines
- Established and maintained an effective AMS for assets subject to its Licence, as measured by the effectiveness criteria detailed in the Guidelines.

Assurance practitioner's independence and quality control

We have complied with the independence and other relevant ethical requirements relating to assurance engagements, which are founded on fundamental principles of integrity, objectivity, professional competence and due care, confidentiality, and professional behaviour.

The firm applies Auditing Standard ASQC 1 *Quality Control for Firms that Perform Audits and Reviews of Financial Reports and Other Financial Information, and Other Assurance Engagements,* and accordingly maintains a comprehensive system of quality control including documented policies and procedures regarding compliance with ethical requirements, professional standards and applicable legal and regulatory requirements.

Assurance practitioner's responsibilities

Our responsibility is to express a limited assurance conclusion on AETRH's AMS for assets subject to its Licence, based on the procedures we have performed and the evidence we have obtained. We conducted our limited assurance engagement in accordance with Australian Standard on Assurance Engagements ASAE 3500 *Performance Engagements,* issued by the Australian Auditing and Assurance Standards Board, in order to express a conclusion whether, based on the procedures performed and the evidence obtained, anything has come to our attention that causes us to believe that AETRH's AMS for assets subject to its Licence, have not been established and maintained, in all material respects, in accordance with the Licence as measured by the effectiveness criteria in the Guidelines. That standard requires that we plan and perform this engagement to obtain limited assurance about whether the AMS for assets subject to the Licence is materially ineffective.

A limited assurance engagement conducted in accordance with ASAE 3500 involves identifying areas where the AMS for assets subject to a Licence is likely to be materially ineffective, addressing the areas identified and considering the process used to prepare the AMS for assets subject to the Licence. A limited assurance engagement is substantially less in scope than a reasonable assurance engagement in relation to both the risk assessment procedures, including an understanding of internal control, and the procedures performed in response to the assessed risks.

Procedures performed

The procedures we performed were based on our professional judgement and consisted primarily of:

- Utilising the Guidelines as a guide for development of a risk assessment, which involved discussions with key staff and review of documents to perform a preliminary controls assessment
- Development of a Review Plan for approval by the ERA and an associated work program
- Interviews with and representations from relevant AETRH staff to gain an understanding of the development and maintenance of policies and procedural type documentation (a full list of staff engaged has been provided at **Appendix B**)
- Examination of documented policies and procedures for key functional requirements and consideration of their relevance to AETRH's AMS requirements and standards
- Physical visits to operations in Newman
- Consideration of reports and references evidencing activity
- Consideration of activities performed by the AETRH that relate to operation of the assets.

The procedures performed in a limited assurance engagement vary in nature and timing from, and are less in extent than for, a reasonable assurance engagement. Consequently, the level of assurance obtained in a limited assurance engagement is substantially lower than the assurance that would have been obtained had we performed a reasonable assurance engagement. Accordingly, we do not express a reasonable assurance opinion on the effectiveness of AETRH's AMS for assets subject to the Licence.

Inherent Limitations

Because of the inherent limitations of an assurance engagement, together with the inherent limitation of any system of controls there is an unavoidable risk that fraud, error or non-compliance with the requirements of the Guidelines may occur and not be detected.

A limited assurance engagement relating to the period from 1 October 2016 to 30 September 2019 does not provide assurance on whether the effectiveness of AETRH's AMS for assets subject to the Licence will continue in the future.

Restricted use

This report has been prepared for use by AETRH for the purpose of satisfying its obligation under Section 14 of the Electricity Industry Act 2004. We disclaim any assumption of responsibility for any reliance on this report to any person other than AETRH, or for any purpose other than that for which it was prepared. We understand that a copy of the report will be provided to the ERA for the purpose of reporting on the effectiveness of AETRH's AMS. We agree that a copy of this report will be given to the ERA in connection with this purpose, however we accept no responsibility to the ERA or to anyone who is provided with or obtains a copy of our report.

DELOITTE TOUCHE TOHMATSU

Vincent Snijders
Partner
Chartered Accountant
17 December 2019, Perth

2 Executive summary

2.1 Introduction and background

The Economic Regulation Authority (the **ERA**) has under the provisions of the *Electricity Industry Act 2004* (the **Act**), issued to Alinta Energy Transmission (Roy Hill) Pty Ltd (**AETRH or Alinta**) the Electricity Integrated Regional Licence (EIRL6) (the **Licence**).

The Licence relates to AETRH's generation, transmission, and retail activity in relation to its Newman power station.

Section 14 of the Act requires Alinta to provide to the ERA an AMS review (the **review**) conducted by an independent expert acceptable to the ERA not less than once in every 24-month period (or any longer period that the ERA allows). The ERA set the period to be covered by the review as 1 October 2016 to 30 September 2019 (**review period**).

At the request of Alinta, Deloitte Touche Tohmatsu (**Deloitte**) has undertaken a limited assurance review of AETRH's AMS.

The review has been conducted in accordance with the March 2019 issue of the Guidelines.

2.2 Findings

In considering AETRH's internal control procedures, structure and environment, its compliance arrangements, and its information systems specifically relevant to those effectiveness criteria subject to review and with a focus on its electricity generation and transmission activity, we observed AETRH:

- Applies a continuous improvement approach to its asset management practices, with a number of incremental improvements introduced throughout the review period
- Maintained a stable asset management system and applied consistent asset management practices throughout the review period
- Is supported by corporate systems and functions maintained by its parent entity, Alinta Energy
- Partially actioned the four recommendations made in the 2016 AMS review. The remaining components of the 2016 recommendations have been incorporated into updated 2019 recommendations
- Needs to take corrective action in relation to:
    - Updating and expanding the AMP to contain the required elements of an AMP tailored to AETRH's needs
    - Completing the sections in the AMP, which are incomplete and finalise the document.

The following tables summarise the assessments made during the review of AETRH's compliance and the adequacy of controls in place for AETRH to manage its compliance with the conditions of its Licence.

Table 1 sets out the rating scale defined by the ERA in the Guidelines for the assessment of the level of compliance with the conditions of its Licence. For the highest possible compliance rating to be achieved, AETRH was required to demonstrate it has maintained mature processes and controls, which enable compliance with relevant obligations.

Table 1: Control adequacy and compliance rating scale

Adequacy of Controls Rating		Compliance Rating	
Rating	Description	Rating	Description
A	Adequate controls – no improvement needed	1	Compliant
B	Generally adequate controls – improvement needed	2	Non-compliant – minor impact on customers or third parties
C	Inadequate controls – significant improvement required	3	Non-compliant – moderate impact on customers or third parties

D	No controls evident	4	Non-compliant – major impact on customers or third parties
N/P	Not performed – A controls rating was not required	N/R	Not rated – No activity took place during the audit period

Table 5 at section 3 of this report provides further detail on the control adequacy and compliance rating scales. The above rating scale is defined by the Guidelines.

Table 2: Summary of findings by review priority and control adequacy

Audit Priority	Control adequacy rating				NP[1]	Total
	A	B	C	D		
Priority 1	1	-	-	-	-	**1**
Priority 2	1	3	-	-	-	**4**
Priority 3	-	-	-	-	-	**-**
Priority 4	31	-	1	-	-	**32**
Priority 5	18	2	-	-	1	**21**
Total:	**51**	**5**	**1**	**-**	**1**	**58**

Table 3: Summary of findings by review priority and compliance rating

Audit Priority	Compliance rating				NR	Total
	1	2	3	4		
Priority 1	1	-	-	-	-	**1**
Priority 2	1	3	-	-	-	**4**
Priority 3	-	-	-	-	-	**-**
Priority 4	31	-	1	-	-	**32**
Priority 5	18	2	-	-	1	**21**
Total:	**51**	**6**	**-**	-	**1**	**58**

Note that, in accordance with the Guidelines:

- Obligations assessed as being "not applicable" to AETRH's operations have not been included within this report
- A control rating is only provided for those obligations with a Priority 1, 2, or 3 rating, where an obligation is assessed as non-compliant, or where a control improvement opportunity is identified.

Specific assessments for each criterion are summarised at **Table 7** in section 3 "Summary of ratings" of this report. Detailed findings, including relevant observations, recommendations and action plans are located in section 4 "Detailed findings, recommendations and action plans" of this report.

2.3 AETRH's response to previous review recommendations

This review considered AETRH's progress in completing the action plans detailed in the 2016 AMS report.

Based on our examination of relevant documents, discussion with staff and consideration of the results of this review's testing against the criteria, we determined that the four action plans from the 2016 AMS Review were partially completed and remain valid. The remaining elements from the 2016 findings requiring action have been included in and superseded by Action Plan 1/2019. Further recommendations were provided directly to AETRH.

[1] Refers to the obligations for which a control assessment was not required to be performed (obligations with an audit priority of 4 or 5 and a compliance rating of 1, or which were not rateable).

Refer to section 5 of this report for further detail.

2.4 Recommendations and action plans

<table>
<tr><th>AMS Key Process and Effectiveness Criteria</th><th>Adequacy rating</th><th>Issue 1/2019</th></tr>
<tr><td rowspan="2">Asset planning
1.1 Asset Management Plan covers key requirements
1.9 Plans are regularly reviewed and updated

Review of AMS
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</td><td>Requires significant improvement (C)
Performance rating
Corrective action required (3)</td><td>The AMP does not include the following mandatory elements of an effective AMP:
Contingency arrangements
Future demand and forecast (demand drivers highlighted)
Arrangements for review and update of the AMP.
The Newman AMP for FY2019 - FY2023 was last reviewed on 2 July 2018, is still in a draft iteration with the following sections remaining to be completed:
4.1.2 Basis of Operation and Maintenance Program - Asset Strategy
4.1.3 Basis of Operation and Maintenance Program - Risk and Opportunities
5.1 Key Assets
5.2 Historical Asset Performance</td></tr>
<tr><td colspan="2">Recommendation 1/2019
Alinta should expand the AMP to include:
The following elements:<ol type="a">
Contingency arrangements (Section 9)
Future demand and forecast (Section 10).
Arrangements for review and update of the AMP (Section 12)
Ideally the AMP would reference the 12 key processes in the asset management lifecycle
Guidance on processes utilised in the below sections, which are currently incomplete:<ol type="a">
4.1.2 Basis of Operation and Maintenance Program - Asset Strategy
4.1.3 Basis of Operation and Maintenance Program - Risk and Opportunities
5.1 Key Assets
5.2 Historical Asset Performance
Once the above recommendations have been completed, Alinta should endorse and approve the AMP which is currently in a draft iteration.</td><td>Action Plan 1/2019
Alinta will:
Consider updating the AMP to reflect the 12 key processes in the asset management effectiveness criteria by referencing:<ol type="a">
Contingency arrangements (Section 9)
Future demand and forecast (Section 10).
Arrangements for review and update of the AMP (Section 12)
Complete the following sections in the AMP which are currently not finalised:<ol type="a">
4.1.2 Basis of Operation and Maintenance Program - Asset Strategy
4.1.3 Basis of Operation and Maintenance Program - Risk and Opportunities
5.1 Key Assets
5.2. Historical Asset Performance
Endorse and approve the finalised iteration of the AMP.
Responsible Person:
Head of Operations
Target Date:
30 June 2020</td></tr>
</table>

2.5 Scope and objectives

The objective of the review was to independently examine the effectiveness and performance of the AMS established for assets subject to AETRH's Licence during the review period.

In accordance with the Guidelines, the review considered the effectiveness of AETRH's existing control procedures within the following 12 key processes in the asset management life-cycle.

Table 4 – AMS key processes and effectiveness criteria

#	Key processes	Effectiveness criteria
1	Asset planning	1. Asset management plan covers the processes in this table 2. Planning processes and objectives reflect the needs of all stakeholders and are integrated with business planning 3. Service levels are defined in the asset management plan 4. Non-asset options (e.g. demand management) are considered 5. Lifecycle costs of owning and operating assets are assessed 6. Funding options are evaluated 7. Costs are justified and cost drivers identified 8. Likelihood and consequences of asset failure are predicted 9. Asset management plan is regularly reviewed and updated.
2	Asset creation and acquisition	1. Full project evaluations are undertaken for new assets, including comparative assessment of non-asset options 2. Evaluations include all life-cycle costs 3. Projects reflect sound engineering and business decisions 4. Commissioning tests are documented and completed 5. Ongoing legal/environmental/safety obligations of the asset owner are assigned and understood.
3	Asset disposal	1. Under-utilised and under-performing assets are identified as part of a regular systematic review process 2. The reasons for under-utilisation or poor performance are critically examined and corrective action or disposal undertaken 3. Disposal alternatives are evaluated 4. There is a replacement strategy for assets.
4	Environmental analysis (all external factors that affect the system)	1. Opportunities and threats in the asset management system environment are assessed 2. Performance standards (availability of service, capacity, continuity, emergency response, etc.) are measured and achieved 3. Compliance with statutory and regulatory requirements 4. Service standard (customer service levels etc) are measured and achieved.
5	Asset operations	1. Operational policies and procedures are documented and linked to service levels required 2. Risk management is applied to prioritise operations tasks 3. Assets are documented in an asset register, including asset type, location, material, plans of components, and an assessment of assets' physical/structural condition 4. Accounting data is documented for assets 5. Operational costs are measured and monitored 6. Staff resources are adequate and staff receive training commensurate with their responsibilities.

#	Key processes	Effectiveness criteria
6	Asset maintenance	1. Maintenance policies and procedures are documented and linked to service levels required 2. Regular inspections are undertaken of asset performance and condition 3. Maintenance plans (emergency, corrective and preventative) are documented and completed on schedule 4. Failures are analysed and operational/maintenance plans adjusted where necessary 5. Risk management is applied to prioritise maintenance tasks 6. Maintenance costs are measured and monitored.
7	Asset management information system	1. Adequate system documentation for users and IT operators 2. Input controls include appropriate verification and validation of data entered into the system 3. Security access controls appear adequate, such as passwords 4. Physical security access controls appear adequate 5. Data back-up procedures appear adequate and backups are tested 6. Computations for licensee performance reporting are accurate 7. Management reports appear adequate for the licensee to monitor licence obligations 8. Adequate measures to protect asset management data from unauthorised access or theft by persons outside the organisation.
8	Risk management	1. Risk management policies and procedures exist and are being applied to minimise internal and external risks 2. Risks are documented in a risk register and treatment plans are implemented and monitored 3. The probability and consequences of asset failure are regularly assessed.
9	Contingency planning	1. Contingency plans are documented, understood and tested to confirm their operability and to cover higher risks.
10	Financial planning	1. The financial plan states the financial objectives and identifies strategies and actions to achieve the objectives 2. The financial plan identifies the source of funds for capital expenditure and recurrent costs 3. The financial plan provides projections of operating statements (profit and loss) and statement of financial position (balance sheets) 4. The financial plan provide firm predictions on income for the next five years and reasonable predictions beyond this period 5. The financial plan provides for the operations and maintenance, administration and capital expenditure requirements of the services 6. Large variances in actual/budget income and expenses are identified and corrective action taken where necessary.
11	Capital expenditure planning	1. There is a capital expenditure plan covering works to be undertaken, actions proposed, responsibilities and dates 2. The capital expenditure plan provides reasons for capital expenditure and timing of expenditure 3. The capital expenditure plan is consistent with the asset life and condition identified in the asset management plan 4. There is an adequate process to ensure that the capital expenditure plan is regularly updated and implemented.
12	Review of AMS	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. Independent reviews (e.g. internal audit) are performed of the asset management system.

Each key process and effectiveness criterion is applicable to Alinta's Licence and as such was individually considered as part of the review. The Review Plan, set out at Appendix A, details the risk assessments made for and review priority assigned to each key process and effectiveness criterion.

2.6 Approach

Our approach for this review involved the following activities, which were undertaken during August to October 2019:

- Utilising the Guidelines, development of a risk assessment, which involved discussions with key staff and review of documents to undertake a preliminary assessment of relevant controls
- Development of a Review Plan (see **Appendix A**) for approval by the ERA
- Correspondence and interviews with Alinta staff to gain an understanding of process controls in place (see **Appendix B** for staff involved)
- Visited the power station operations with a focus on understanding the generation and transmission network assets, their function, normal mode of operation, age and an assessment of the facilities against the AMS review criteria
- Review of documents, processes and controls to assess the overall effectiveness of Alinta's AMS (see **Appendix B** for reference listing)
- Consideration of the resourcing applied to maintaining those controls and processes
- Reporting of findings to Alinta for review and response.

3 Summary of ratings

In accordance with the Guidelines, the assessment of both the process and policy definition adequacy rating (refer to **Table 2**) and the performance rating (refer to **Table 3**) for each of the key AMS processes is performed using the below ratings.

For the avoidance of doubt, these ratings do not provide reasonable assurance.

Table 5: Asset management process and policy definition adequacy ratings

Rating	Description	Criteria
A	Adequately defined	• Processes and policies are documented • Processes and policies adequately document the required performance of the assets • Processes and policies are subject to regular reviews, and updated where necessary • The asset management information system(s) are adequate in relation to the assets that are being managed.
B	Requires some improvement	• Process and policy documentation requires improvement • Processes and policies do not adequately document the required performance of the assets • Reviews of processes and policies are not conducted regularly enough • The asset management information system(s) require minor improvements (taking into consideration the assets that are being managed).
C	Requires significant improvement	• Process and policy documentation is incomplete or requires significant improvement • Processes and policies do not document the required performance of the assets • Processes and policies are significantly out of date • The asset management information system(s) require significant improvements (taking into consideration the assets that are being managed).
D	Inadequate	• Processes and policies are not documented • The asset management information system(s) is not fit for purpose (taking into consideration the assets that are being managed).

Table 6: Asset management performance ratings

Rating	Description	Criteria
1	Performing effectively	• The performance of the process meets or exceeds the required levels of performance • Process effectiveness is regularly assessed and corrective action taken where necessary.
2	Opportunity for improvement	• The performance of the process requires some improvement to meet the required level • Process effectiveness reviews are not performed regularly enough • Process improvement opportunities are not actioned.
3	Corrective action required	• The performance of the process requires significant improvement to meet the required level • Process effectiveness reviews are performed irregularly, or not at all • Process improvement opportunities are not actioned.
4	Serious action required	• Process is not performed, or the performance is so poor that the process is considered to be ineffective.

This report provides:

- A breakdown of each function of the AMS into sub-components as described in the Guidelines. This approach is taken to enable a more thorough review of key processes where individual components within a larger process can be of greater risk to the business therefore requiring different review treatment
- A summary of the ratings applied by the review (**Table 7**) for each of:
    - Asset management process and policy definition adequacy (**definition adequacy rating**)
    - Asset management performance (**performance rating**).
- Detailed findings, including relevant observations, recommendations and action plans (Section 4). Descriptions of the effectiveness criteria can be found in section 4 and the Review Plan at Appendix A.

Table 7: AMS effectiveness summary

			Ratings	
Ref	Effectiveness criteria	Review Priority	Definition Adequacy	Performance
1. Asset planning			**B**	**2**
1.1	Asset management plan covers the processes in this table	Priority 4	C	3
1.2	Planning processes and objectives reflect the needs of all stakeholders and are integrated with business planning	Priority 5	A	1
1.3	Service levels are defined in the asset management plan	Priority 5	A	1
1.4	Non-asset options (e.g. demand management) are considered	Priority 5	A	1
1.5	Lifecycle costs of owning and operating assets are assessed	Priority 4	A	1
1.6	Funding options are evaluated	Priority 5	A	1
1.7	Costs are justified and cost drivers identified	Priority 4	A	1
1.8	Likelihood and consequences of asset failure are predicted	Priority 4	A	1
1.9	Asset management plan is regularly reviewed and updated	Priority 5	B	2
2. Asset creation and acquisition			**A**	**1**
2.1	Full project evaluations are undertaken for new assets, including comparative assessment of non-asset options	Priority 4	A	1
2.2	Evaluations include all life-cycle costs	Priority 4	A	1
2.3	Projects reflect sound engineering and business decisions	Priority 4	A	1
2.4	Commissioning tests are documented and completed	Priority 4	A	1
2.5	Ongoing legal/environmental/ safety obligations of the asset owner are assigned and understood	Priority 2	A	1
3. Asset disposal			**A**	**1**
3.1	Under-utilised and under-performing assets are identified as part of a regular systematic review process	Priority 5	A	1
3.2	The reasons for under-utilisation or poor performance are critically examined and corrective action or disposal undertaken	Priority 5	A	1
3.3	Disposal alternatives are evaluated	Priority 5	A	1
3.4	There is a replacement strategy for assets	Priority 4	A	1
4. Environmental analysis			**A**	**1**
4.1	Opportunities and threats in the asset management system environment are assessed	Priority 4	A	1

Ref	Effectiveness criteria	Review Priority	Ratings	
			Definition Adequacy	Performance
4.2	Performance standards (availability of service, capacity, continuity, emergency response, etc.) are measured and achieved	Priority 4	A	1
4.3	Compliance with statutory and regulatory requirements	Priority 4	A	1
4.4	Service standard (customer service levels etc) are measured and achieved	Priority 4	A	1
5.	**Asset operations**		**A**	**1**
5.1	Operational policies and procedures are documented and linked to service levels required	Priority 4	A	1
5.2	Risk management is applied to prioritise operations tasks	Priority 4	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 condition and accounting data	Priority 4	A	1
5.4	Accounting data is documented for assets	Priority 4	A	1
5.5	Operational costs are measured and monitored	Priority 4	A	1
5.6	Staff resources are adequate and staff receive training commensurate with their responsibilities	Priority 4	A	1
6.	**Asset maintenance**		**A**	**1**
6.1	Maintenance policies and procedures are documented and linked to service levels required	Priority 4	A	1
6.2	Regular inspections are undertaken of asset performance and condition	Priority 4	A	1
6.3	Maintenance plans (emergency, corrective and preventative) are documented and completed on schedule	Priority 4	A	1
6.4	Failures are analysed and operational/maintenance plans adjusted where necessary	Priority 4	A	1
6.5	Risk management is applied to prioritise maintenance tasks	Priority 1	A	1
6.6	Maintenance costs are measured and monitored	Priority 4	A	1
7.	**Asset management information system**		**A**	**1**
7.1	Adequate system documentation for users and IT operators	Priority 5	A	1
7.2	Input controls include appropriate verification and validation of data entered into the system	Priority 4	A	1
7.3	Security access controls appear adequate, such as passwords	Priority 5	A	1
7.4	Physical security access controls appear adequate	Priority 5	A	1
7.5	Data backup procedures appear adequate	Priority 4	A	1
7.6	Computations for licensee performance reporting are accurate	Priority 5	NP	NR
7.7	Management reports appear adequate for the licensee to monitor licence obligations	Priority 5	A	1
7.8	Adequate measures to protect asset management data from unauthorised access or theft by persons outside the organisation	Priority 5	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	Priority 2	B	2

Ref	Effectiveness criteria	Review Priority	Ratings	
			Definition Adequacy	Performance
8.2	Risks are documented in a risk register and treatment plans are implemented and monitored	Priority 2	B	2
8.3	The probability and consequences of asset failure are regularly assessed	Priority 4	A	1
9. Contingency planning			**B**	**2**
9.1	Contingency plans are documented, understood and tested to confirm their operability and to cover higher risks	Priority 2	B	2
10. Financial planning			**A**	**1**
10.1	The financial plan states the financial objectives and identifies strategies and actions to achieve the objectives	Priority 4	A	1
10.2	The financial plan identifies the source of funds for capital expenditure and recurrent costs	Priority 5	A	1
10.3	The financial plan provides projections of operating statements (profit and loss) and statement of financial position (balance sheets)	Priority 5	A	1
10.4	The financial plan provides firm predictions on income for the next five years and reasonable predictions beyond this period	Priority 5	A	1
10.5	The financial plan provides for the operations and maintenance, administration and capital expenditure requirements of the services	Priority 4	A	1
10.6	Large variances in actual/budget income and expenses are identified and corrective action taken where necessary	Priority 4	A	1
11. Capital expenditure planning			**A**	**1**
11.1	There is a capital expenditure plan covering works to be undertaken, actions proposed, responsibilities and dates	Priority 4	A	1
11.2	The capital expenditure plan provides reasons for capital expenditure and timing of expenditure	Priority 5	A	1
11.3	The capital expenditure plan is consistent with the asset life and condition identified in the asset management plan	Priority 4	A	1
11.4	There is an adequate process to ensure that the capital expenditure plan is regularly updated and implemented	Priority 5	A	1
12. Review of AMS			**B**	**2**
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	Priority 5	B	2
12.2	Independent reviews (e.g. internal audit) are performed of the asset management system	Priority 5	A	1

4 Detailed findings, recommendations and action plans

The following tables contain:

- *Findings:* the reviewer's understanding of the process and any issues that have been identified during the review
- *Recommendations (where applicable):* recommendations for improvement or enhancement of the process or control
- *Action plans (where applicable):* Alinta's formal response to review recommendations, providing details of action to be implemented to address the specific issue raised by the review.

4.1 Asset Planning

Key process: Asset planning strategies are focused on meeting customer needs in the most effective and efficient manner (delivering the right service at the right price)

Expected outcome: Integration of asset strategies into operational or business plans will establish a framework for existing and new assets to be effectively utilised and their service potential optimised

Overall Adequacy/Performance rating: Requires some Improvement (B) / Opportunity for Improvement (2)

<table>
<tr><th>Effectiveness Criteria</th><th colspan="2">Findings</th></tr>
<tr><td rowspan="3">1.1 Asset management plan covers the processes in this table</td><td colspan="2">We examined Alinta's Asset Management Plan – Newman, FY2019 (AMP) and determined the AMP:
• Provides guidance between the day-to-day activities within the Newman operation and Alinta Energy's strategic direction, including an overview of the major elements of the power generation assets within Alinta's Newman operation. It was last revised on 2 July 2018
• Incorporates key elements required by AMPs, including: scope and purpose, description of operations and assets, levels of service (responsibilities and legislative requirements), Whole of Life (WOL) management plan, improvement plans (overview of ERA auditing improvements and safety management system), financial forecasts, service levels, performance monitoring, and legislative and other compliance obligations.
However, we found the AMP:
• Does not include key requirements as required by the guideline, including contingency arrangements, future demand and forecast (highlighting the demand drivers) and arrangements for review and update of the AMP.
• Is still in a draft iteration with the following sections to be completed:
a) 4.1.2 Basis of Operation and Maintenance Program - Asset Strategy (4.1.2)
b) 4.1.3 Basis of Operation and Maintenance Program - Risk and Opportunities (4.1.3)
c) 5.1 Key Assets (5.1)
d) 5.2. Historical Asset Performance (5.2).</td></tr>
<tr><td>Adequacy Rating: Requires significant improvement (C)</td><td>Performance Rating: Corrective action required (3)</td></tr>
<tr><td>Recommendation 1/2019
Alinta should finalise the AMP by including:
1. The following elements:
a) Contingency arrangements (Section 9)
b) Future demand and forecast (Section 10).
c) Arrangements for review and update of the AMP (Section 12)
2. Ideally the AMP would reference the 12 key processes in the asset management lifecycle Guidance on processes utilised in the below sections, which are currently incomplete:</td><td>Action Plan 1/2019
Alinta will:
1. Consider updating the AMP to reflect the 12 key processes in the asset management effectiveness criteria by referencing:
a) Contingency arrangements (Section 9)
b) Future demand and forecast (Section 10).
c) Arrangements for review and update of the AMP (Section 12)
2. Complete the following sections in the AMP which are currently not finalised:</td></tr>
</table>

<table>
<tr><th>Effectiveness Criteria</th><th colspan="2">Findings</th></tr>
<tr><td></td><td>a) 4.1.2 Basis of Operation and Maintenance Program - Asset Strategy
b) 4.1.3 Basis of Operation and Maintenance Program - Risk and Opportunities
c) 5.1 Key Assets
d) 5.2. Historical Asset Performance
Once the above recommendations have been completed, Alinta should endorse and approve the AMP which is currently in a draft iteration.</td><td>a) 4.1.2 Basis of Operation and Maintenance Program - Asset Strategy
b) 4.1.3 Basis of Operation and Maintenance Program - Risk and Opportunities
c) 5.1 Key Assets
d) 5.2. Historical Asset Performance
3. Endorse and approve the finalised iteration of the AMP.
Responsible Person:
Head of Operations
Target Date:
30 June 2020</td></tr>
<tr><td rowspan="2">1.2 Planning processes and objectives reflect the needs of all stakeholders and are integrated with business planning</td><td colspan="2">Through discussions with the Head of Operations and consideration of Alinta’s business planning processes, we determined Alinta’s business planning model accommodates its operation and maintenance of the Newman power station and related transmission assets considering its contractual arrangements and regulatory requirements.
From a business planning perspective, we determined that Alinta has established asset management processes and mechanisms to incorporate the requirements of its various stakeholders. In particular, we observed that Alinta has:
• Developed an asset management system (which aligns with ISO55000:2014, ISO 55001:2014 and ISO 55002:2014 and the and the British Publicly Available Specification (PAS) Asset Management Standard PAS 55-1:2008)
• Developed a Strategic Asset Management Plan (SAMP) and supporting draft Asset Management Plan for operating and maintaining the various components of the power station and the related transmission network to achieve performance over the life of those assets. The AMP defines Alinta’s short to medium term plans, and is reviewed on a periodic basis, with the last update performed on 2 July 2018
• Established a Power Purchase Agreement (PPA) with its customer, outlining Alinta’s responsibilities for operating the power station and transmission network assets
• A formal delegation of authority framework in place across the stakeholder functions (operations, finance, and compliance) integrated into its SharePoint information storage portal for project task and expenditure approval.</td></tr>
<tr><td>Adequacy Rating: Adequately defined (A)</td><td>Performance Rating: Performing effectively (1)</td></tr>
<tr><td>1.3 Service levels are defined in the asset management plan</td><td colspan="2">Through discussions with the Head of Operations and examination of Alinta’s AMP and contractual documentation, we determined that the plant’s required service levels have been:
• Summarised in the draft AMP, which are updated on a periodic basis to facilitate any changes of those service levels. The AMP references relevant operational information for each key item of equipment
• Defined in Alinta’s maintenance standards (e.g. High Voltage Asset Maintenance Standard) maintained on SharePoint and integrated into the maintenance management system
• Programmed into the Ellipse asset management work order system to track routine maintenance requirements across all asset components.</td></tr>
</table>

Effectiveness Criteria	Findings	
	Adequacy Rating: Adequately defined (A)	**Performance Rating:** Performing effectively (1)
1.4 Non-asset options (e.g. demand management) are considered	Through discussions with the Head of Operations we determined that Alinta had considered non-asset options for the Newman Power Station, however those options are not relevant in the current circumstances where Alinta is contractually obliged to generate power to meet its customers' requirements.	
	Adequacy Rating: Adequately defined (A)	**Performance Rating:** Performing effectively (1)
1.5 Lifecycle costs of owning and operating assets are assessed	Through discussions with the Head of Operations and examination of Alinta's draft AMP, SAMP, and Project Management Framework, we determined that assessment of lifecycle costs of owning and operating the assets is undertaken by means of Alinta's AMP that considers each major equipment component and provides specific details, including: • Operating and maintaining philosophy • Key life cycle issues and how they are addressed • Life cycle plan and critical outages • Performance improvement opportunities • Critical reinvestments • Retirement/disposal consideration at end of plant life • Capex and Opex forecast for a five-year period.	
	Adequacy Rating: Adequately defined (A)	**Performance Rating:** Performing effectively (1)

1.6 Funding options are evaluated	Through discussions with the Head of Operations and examination of Alinta's AMP and contractual documentation, we determined that:
	• Day-to-day operating expenses are funded from operating cash flows
	• Funding options are considered and evaluated by means of the Request for Commitment on the AMP Expenditure Project Delivery Site (integrated within SharePoint), which details:
	  ○ Expenditure description relative to plan (i.e. budget vs unbudgeted)
	  ○ Expenditure type (Opex / Capex).
	• A Delegated Financial Authority matrix and automated workflow system within the 'Request for Commitment' approval process (SharePoint) helps drive fund requests above specified levels are required to be authorised by the appropriate level of management.	

	Adequacy Rating: Adequately defined (A)	**Performance Rating:** Performing effectively (1)
1.7 Costs are justified and cost drivers identified	Through discussions with the Head of Operations and consideration of Alinta's AMP strategy and model, we determined: • The AMP includes a detailed life cycle plan that identifies and assesses all life cycle costs and cost drivers associated with the power station • Power station assets are managed using Ellipse, which records maintenance tasks and associated costs. Financial reporting is generated from Ellipse with budget vs actual analysis performed quarterly.	
	Adequacy Rating: Adequately defined (A)	**Performance Rating:** Performing effectively (1)

Effectiveness Criteria	Findings	

1.8 Likelihood and consequences of asset failure are predicted	Through discussion with the Regulatory Compliance Manager and Head of Operations and examination of Alinta's AMP and relevant supporting documentation, we determined the SAMP and AMP are tools used for predicting the likelihood and consequences of asset failure. Specifically, we observed that:
	• The AMP considers:
	  ○ Previous historic maintenance issues of assets, and provides details of the operational and maintenance strategy, as well as the risk mitigation actions
	  ○ Primary and specific asset risk analysis, with risk mitigation action. This is supported by risk management system Incontrol, which contains risk treatment plans.
	• Alinta's operations and maintenance staff operate the plant and perform routine and first line intervention maintenance on a scheduled basis controlled by work orders generated through Ellipse
	• Condition monitoring techniques are employed on a frequent basis to identify defects, including oil analysis, vibration analysis, and radiography and thermography to identify any surface or internal defects
	• During scheduled outages (e.g. long-term shutdowns), main components of the facility's plant are inspected for defects by site staff and external contractors.	

	Adequacy Rating: Adequately defined (A)	**Performance Rating:** Performing effectively (1)
1.9 Asset management plan is regularly reviewed and updated	Through discussions with the Head of Operations, Plant Manager – Newman Power Station and consideration of Alinta's AMP and relevant supporting asset planning documentation, we determined: • The Newman Power Station AMP has been reviewed and revised, but is still in draft format • Alinta has a SAMP in place that was drafted in March 2015. The SAMP covers a five-year period, from FY2016 - FY2020. This will then be updated for FY2021 – FY2025 • The detailed maintenance program is maintained as a forward-looking document to avoid unplanned outages and is revised in accordance with continuous improvement principles, with a view to maximising availability and aligning outages to coincide with off-peak and off-season periods • Operational and capital expenditure budgets are tracked on a monthly and quarterly basis with any variances analysed to determine impact on the scheduled maintenance and outage plans. In response to recommendation 1/2016, Alinta has updated the draft AMP to include known and significant risks relating to the key assets and legal and compliance requirements. However, Alinta is yet to include contingency planning requirements into the document. *Refer to recommendation and action plan 1/2019.*	
	Adequacy Rating: Requires some improvement (B)	**Performance Rating:** Opportunity for improvement (2)

4.2 Asset Creation and acquisition

Key process: Asset creation/acquisition means the provision or improvement of an asset where the outlay can be expected to provide benefits beyond the year of outlay

Expected outcome: A more economic, efficient, and cost-effective asset acquisition framework, which will reduce demand for new assets, lower service costs, and improve service delivery.

Overall Adequacy/Performance rating: Adequately defined (A) / Performing effectively (1)

<table>
<tr><th>Effectiveness Criteria</th><th colspan="2">Findings</th></tr>
<tr><td rowspan="2">2.1 Full project evaluations are undertaken for new assets, including comparative assessment of non-asset solutions</td><td colspan="2">Examination of the Project Management Framework, Procurement Standards, other relevant documents and discussion with the Head of Operations, we determined Alinta has developed expenditure approval procedures, which outline the requirement for project evaluations to be undertaken prior to seeking funds approval.
As part of the project evaluation process, Alinta requires the following to be completed:
• A full business case, which provides approval criteria for instigating new projects including, financial and capital requirements, current state assessment, asset/non-asset alternatives, and timeline
• Financial modelling in support of the business case. The modelling utilises a standard set of high-level economic assumptions to assess the cost associated with the overall plant life and generate cost predictions over the 20-30 years of plant life
• Consideration of non-asset options where applicable.
We obtained and examined an approved Request for Commitment (RFC) for warehouse and control room roof repairs which took place during the period subject to review, and included:
• Business case
• Commercial sign-off
• Financial impact analysis (costings and required Capex)
• Assessment of non-asset solutions.</td></tr>
<tr><td>Adequacy Rating: Adequately defined (A)</td><td>Performance Rating: Performing effectively (1)</td></tr>
<tr><td>2.2 Evaluations include all life-cycle costs</td><td colspan="2">Through discussions with the Head of Operations and an examination of the procedures for expenditure approval and associated forms and templates, we determined Alinta has the following process in place to assess lifecycle costs of owning and operating assets:
• Lifecycle costs of owning and operating assets is detailed in the AMP and considers each major piece of equipment and provides specific details, including:
○ Operating and maintenance philosophy
○ Key lifecycle issues and how they are addressed
○ Lifecycle plan and critical outages
○ Performance improvement opportunities
○ Critical reinvestments
○ Retirement/disposal consideration at end of plant life.</td></tr>
</table>

Effectiveness Criteria	Findings	
	• Financial modelling is also utilised as part of budgeting and forecasting process to assess the cost associated with the overall plant life and forecast expenditure up to FY 2040 • Project evaluations provide for estimates of the amount of investment required as well as identifying the source of funds. We obtained and examined an approved RFC from the period subject to review, which contained project documentation for the warehouse and control room roof repairs.	
	Adequacy Rating: Adequately defined (A)	**Performance Rating:** Performing effectively (1)
2.3 Projects reflect sound engineering and business decisions	Through discussions with the Head of Operations and contractual documentation, procurement standards and associated forms and templates, we determined Alinta has the following procedures in place to assess the commercial and technical merits of projects: • Project evaluations are performed with the input from both engineering and finance personnel and with evaluation results detailed and approved by relevant department stakeholders to ensure all engineering, finance, environmental, health and safety aspects are addressed • Project modelling tools are applied to project evaluations, considering relevant economic measures • Commercial sign off is required, which incorporates the above considerations and addresses any potential contract risks when engaging external parties. We obtained and examined an approved RFC from the period subject to review, which contained project documentation for the warehouse and control room roof repairs.	
	Adequacy Rating: Adequately defined (A)	**Performance Rating:** Performing effectively (1)
2.4 Commissioning tests are documented and completed	Through discussions with the Head of Operations and Plant Manager – Newman Power Station, and consideration of the Project Management Framework, we observed commissioning tests form part of the project lifecycle, which is recorded on SharePoint. Where Alinta engages external contractors to perform commissioning tests: • Testing reports are prepared by the site engineering team and stored on SharePoint • Handover to operations only occurs when the requirements for practical completion have been met and are approved by the Project Manager. The Project Manager must then gain a clearance certificate from the relevant operations manager before handover to operations.	
	Adequacy Rating: Adequately defined (A)	**Performance Rating:** Performing effectively (1)
2.5 Ongoing legal/environmental/safety obligations of the asset owner are assigned and understood	Through discussion with the Head of Operations and Plant Manager – Newman Power Station, and examination of relevant supporting documentation, we determined, for the purpose of its ongoing asset management obligations, Alinta has: • Processes to identify legal, environmental and safety obligations relating to its power station and transmission network assets • Applied the Alinta Energy (group-wide) Occupational Health and Safety Management Framework and Environmental Management Framework to its Newman and Roy Hill Power Station and transmission facilities • Assigned responsibilities to staff on site and in the Perth office for managing Alinta's environmental and safety obligations in accordance with OHS and Environmental management plans	

Effectiveness Criteria	Findings	
	• Implemented an organised document management system within SharePoint for housing regulatory obligations such as licences, related management plans and monitoring/compliance reports • The Environmental Management Framework references the Alinta Energy Safety and Sustainability Committee (AESSC) and the Corporate Risk and Assurance Group are assigned responsibilities for monitoring any updates or changes to regulatory obligations and reporting requirements. We sighted evidence of: • Alinta's identification, assessment and treatment of risks relating to its legal, environmental and safety obligations within the AMP • Site skills and training matrix, which contains the relevant safety training staff need to complete • Actions and reports prepared in accordance with the Environmental Management Plan.	
	Adequacy Rating: Adequately defined (A)	**Performance Rating:** Performing effectively (1)

4.3 Asset disposal

Key process: Effective asset disposal frameworks incorporate consideration of alternatives for the disposal of surplus, obsolete, under-performing or unserviceable assets. Alternatives are evaluated in cost-benefit terms.

Expected outcome: Effective management of the disposal process will minimise holdings of surplus and under-performing assets and will lower service costs.

Overall Adequacy/Performance rating: Adequately defined (A) / Performing effectively (1)

Effectiveness Criteria	Findings	

3.1 Under-utilised and under-performing assets are identified as part of a regular systematic review process	Through discussions with the Head of Operations, Regulatory Compliance Manager, examination of relevant supporting documentation and walkthrough of the InControl risk management system for Newman, we determined Alinta has applied the following mechanisms for identifying under-utilised and under-performing assets:
	• The AMP considers each major item of equipment and provides specific details of the facility's operations and maintenance strategy, key life cycle issues and remedial plans
	• A detailed forward maintenance program in accordance with manufacturer's guidelines and expert experience is maintained for the plant that is reviewed daily
	• The following review processes are in place:
	  ○ Condition monitoring techniques are employed on a frequent basis to identify defects and are stored in Ellipse including: Oil analysis, vibration analysis, and radiography and thermography to identify any surface or internal defects
	  ○ During scheduled outages, main components of the facility's plant are inspected for defects by external consultants
	  ○ The operational performance of the Newman facility is monitored through the Honeywell Experion system, with weekly and monthly performance dashboard reports presented to management for review, showing asset generational performance against benchmarked targets
	  ○ Unexpected asset failures are logged in the InControl System which details:
	  ▪ Incident description
	  ▪ Relevant Workgroup responsible
	  ▪ Incident Type (e.g. equipment, environmental etc.)
	  ▪ Incident Status.
	  ○ Results of these assessments and inspections are included in the rolling five-year plans	

	Adequacy Rating: Adequately defined (A)	**Performance Rating:** Performing effectively (1)

Effectiveness Criteria	Findings	
3.2 The reasons for under-utilisation or poor performance are critically examined and corrective action or disposal undertaken	Through discussions with the Head of Operations and examination of relevant supporting documentation, we determined Alinta has applied the mechanisms at Asset Disposal (s.3.1) to facilitate the examination of under-utilised and under-performing assets by: • Undertaking root cause analyses of underutilisation or poor performance of power station assets in the InControl Risk Management System • Applying a project evaluation approach as part of the capital expenditure approval process, which requires a justification of why the upgrade/purchase of equipment is crucial to the condition of the asset • Incorporating assessments into rolling five-year plans that detail the major capital projects planned for the coming financial year.	
	Adequacy Rating: Adequately defined (A)	**Performance Rating:** Performing effectively (1)
3.3 Disposal alternatives are evaluated	Through discussions with the Head of Operations and examination of supporting documentation, we determined Alinta's processes require: • Consideration of alternatives for decommissioning, removal or storage of key plant • The AMP provide details of the major projects planned for each asset in the coming financial year, including any equipment replacement requirements • Asset disposals to be performed in accordance with Project Management processes (including the Management of Change system process) and the AMP • Spare parts are re-utilised or stored to be used again on existing assets.	
	Adequacy Rating: Adequately defined (A)	**Performance Rating:** Performing effectively (1)
3.4 There is a replacement strategy for assets	Through discussions with the Head of Operations and consideration of Alinta's AMP and SAMP, we observed: • The AMP considers each major item of equipment and provides specific details of the facility's operations and maintenance strategy, key life cycle issues and remedial plans • Rolling five-year plans in the AMP provide details of the major projects planned for each asset in the coming financial year, including any equipment replacement requirements.	
	Adequacy Rating: Adequately defined (A)	**Performance Rating:** Performing effectively (1)

4.4 Environmental analysis

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

Expected outcome: The AMS regularly assesses external opportunities and threats and takes corrective action to maintain performance requirements.

Overall Adequacy/Performance rating: Adequately defined (A) / Performing effectively (1)

Effectiveness Criteria	Findings	
4.1 Opportunities and threats in the asset management system environment are assessed	Through discussion with the Head of Operations and consideration of relevant supporting documentation, we determined Alinta identifies and assesses opportunities and threats within its AMS through records of: • Applicable legal and regulatory obligations are documented in the AMP under the Regulatory Compliance Summary • Risks and threats to the asset's operations in the AMP • Environmental and safety related incidents in its InControl Risk Management System.	
	Adequacy Rating: Adequately defined (A)	**Performance Rating:** Performing effectively (1)
4.2 Performance standards (availability of service, capacity, continuity, emergency response, etc.) are measured and achieved	Through discussion with the Head of Operations and supporting documentation, we determined that: • The tracking of work orders and performance KPIs on site is controlled through Ellipse, which reports on the key performance aspects of the plant. The monthly reports include aspects such as availability and production losses, maintenance costs, Environmental Occupational Health and Safety (**EOHS**) incidents and Sulphur oxides (**SOx**) emission breaches. Any deviations from budget or contractual KPIs are highlighted and explained, where appropriate • Alinta has emergency response processes in place in case of an environmental incident, with Site Managers being responsible for the investigation and analysis of the incident • Alinta is required to report Nitrogen oxides (**NOx**) and Carbon Monoxide (**CO**) emissions quarterly. It must also provide NOx, CO and SOx emission sample readings annually. All non-continuous sampling and analysis is to be performed by a holder of a NATA accreditation.	
	Adequacy Rating: Adequately defined (A)	**Performance Rating:** Performing effectively (1)
4.3 Compliance with statutory and regulatory requirements	Through discussion with the Head of Operations and consideration of relevant supporting documentation, we determined that Alinta operates and monitors its operations in accordance with the following statutory and regulatory requirements: • Newman Power Station AETRH Environmental Licence, which include NOx, CO and SOx emissions targets and requirements. Alinta is required to report NOx and CO emissions quarterly and annually. It must also provide an annual SOx emission sample reading • All non-continuous sampling and analysis is to be performed by a holder of a NATA accreditation • Alinta Energy's Environmental Management Framework accommodates Alinta's commitment to environmental protection • Greenhouse gas emissions obligations under the *National Greenhouse and Energy Reporting Act* (**NGER Act**) • The *Occupational Safety and Health Act 1984* and supporting Regulations, enabled through Alinta Energy's group-wide health and safety management framework.	
	Adequacy Rating: Adequately defined (A)	**Performance Rating:** Performing effectively (1)

Effectiveness Criteria	Findings	
4.4 Service standard (customer service levels etc) are measured and achieved	Through discussion with the Head of Operations and consideration of the Purchase Power Agreement, we determined that Alinta's customer service levels and performance requirements are defined in the PPA. The service levels are monitored in the weekly and monthly performance reports that are provided to management. In relation to community obligations, Alinta operates and monitors its operations in accordance with 4.3 above.	
	Adequacy Rating: Adequately defined (A)	**Performance Rating:** Performing effectively (1)

4.5 Asset operations

Key process: Operational functions relate to the day-to-day running of assets and directly affect service levels and costs.

Expected outcome: Operations plans adequately document the processes and knowledge of staff in the operation of assets so that service levels can be consistently achieved.

Overall Adequacy/Performance rating: Adequately defined (A) / Performing effectively (1)

Effectiveness Criteria	Findings	
5.1 Operational policies and procedures are documented and linked to service levels required	Through discussion with the Head of Operations, inspection of relevant documentation and site visit, we determined that: • Operational policies and procedures are documented collectively through the AMP, the PPA, and the Power Generation Operational Plan • The service levels requirements are either defined explicitly (e.g. firm or non-firm purchase) or derived from these documents and documented in the AMP • Operational procedures and manuals are kept on site as well as on the shared drive • Reliability and maintenance requirements are also set up in the Operations FY20 Game Plan.	
	Adequacy Rating: Adequately defined (A)	**Performance Rating:** Performing effectively (1)

5.2 Risk management is applied to prioritise operations tasks	Through discussion with the Head of Operations, examination of relevant documentation and a site visit, we determined Alinta has demonstrated:
	• There is an established risk management framework and process i.e., prior to initiating changes in management of change, planned outages, as well as lower level (work order level) execution
	• The risk management information is used to guide operational decisions e.g. dispatching, or any changes initiated through management of change
	• The Maintenance Work Process Manual document defines how the maintenance tasks are given priority ratings. They are assigned a priority from 1-5 based on a defined risk matrix
	• The timelines defined for maintenance task priorities are:
	  ○ Priority 1 (Extreme - Starts Immediately - Breaks Daily Schedule)
	  ○ Priority 2 (High - Starts within 1 week - Breaks Weekly Schedule and Finishes within 2 weeks of start)
	  ○ Priority 3 (Medium - Starts within 3 weeks - Finishes within 4 weeks of start)
	  ○ Priority 4 (Low - Starts within 7 weeks - Finishes within 20 weeks of start)
	  ○ Priority 5 (Planned Outage Activity included in the scope of work).	

	Adequacy Rating: Adequately defined (A)	**Performance Rating:** Performing effectively (1)

Effectiveness Criteria	Findings	
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	Through discussion with the Head of Operations, inspection of relevant documentation and site visit, we determined Alinta has demonstrated: • Assets are registered in fixed assets and equipment register in Ellipse, which details the asset type, location, material, and drawings • Asset's physical and structural conditions are recorded in the plant condition dashboard • A three weekly review meeting is held involving head of operations, engineering, planning and finance, for capital projects and asset condition review.	
	Adequacy Rating: Adequately defined (A)	**Performance Rating**: Performing effectively (1)
5.4 Accounting data is documented for assets	Through discussion with the Head of Operations and the Finance Manager – Projects; and examination of a generated asset valuation report, we determined that Alinta has maintained an asset database that includes: • Acquisition and retirement date • Original, historic and current capital cost • Depreciation rate • The written down value after depreciation as at the start of the period • Total depreciation in years previous • Depreciation in the current year • The closing written down value at the end of the year • Book status describing if depreciation is capitalised or fully written down.	
	Adequacy Rating: Adequately defined (A)	**Performance Rating**: Performing effectively (1)
5.5 Operational costs are measured and monitored	Through discussion with the Head of Operations and the Plant Manager – Newman Power Station, examination of relevant documentation and site visit, we determined that Alinta has applied processes to measure and monitor operational costs, that include: • Monthly profit and loss extracts provided to the Head of Operations, with analysis on total operational costs and variances between budgeted costs and actuals • Costs are assigned to assets automatically based on allocated work orders, with external costs charged to associated cost centres • Recording operational spending in Ellipse, the Computerised Maintenance Management System (**CMMS**).	
	Adequacy Rating: Adequately defined (A)	**Performance Rating**: Performing effectively (1)

Effectiveness Criteria	Findings	
5.6 Staff resources are adequate and staff receive training commensurate with their responsibilities	Through discussion with the Head of Operations and the Plant Manager – Newman Power Plant, examination of relevant documentation and site visit, we determined Alinta has demonstrated: • Staff have detailed job descriptions with defined responsibilities • Staff's mandatory training for work is registered in the skills/training matrix • Contractor training and competence is managed using Rapid Global system • Alinta maintains records of all personnel and contractors inducted as appropriate to their role on site. For example, a maintenance contractor is required to undergo a more detailed induction than an escorted visitor to ensure they understand the procedures for working on site, such as work permit procedures • The training officer plans the training together with the plant manager • There is a competency framework developed and implemented • Non-mandatory training is registered in staff personal development plans and KPIs • Staff resources are adequate for Alinta's current operational activities.	
	Adequacy Rating: Adequately defined (A)	**Performance Rating**: Performing effectively (1)

4.6 Asset maintenance

Key process: Maintenance functions relate to the upkeep of assets and directly affect service levels and costs.

Expected outcome: Maintenance plans cover the scheduling and resourcing of the maintenance tasks so that work can be done on time and on cost.

Overall Adequacy/Performance rating: Adequately defined (A) / Performing effectively (1)

Effectiveness Criteria	Findings	
6.1 Maintenance policies and procedures are documented and linked to service levels required	Through discussion with the Head of Operations and the Plant Manager – Newman Power Plant, inspection of relevant documentation and site visit, we determined: • The maintenance policies and procedures are documented in the power station AMP, maintenance standards, work scheduling and ultimately in Ellipse. Ellipse is the main computerised Resource Planning tool used by Alinta. It consists of a database of information and a controlled front end that will manage Work Orders to specify what work must be done on a piece of equipment, how, who by and when • The service levels requirements are either defined explicitly (e.g. firm or non-firm purchase) or derived from these documents • The statutory work is dictated by the regulatory requirements • Weekly and monthly performance reports have KPI's directly linked to service level requirements.	
	Adequacy Rating: Adequately defined (A)	**Performance Rating**: Performing effectively (1)
6.2 Regular inspections are undertaken of asset performance and condition	Through discussion with the Head of Operations and the Plant Manager – Newman Power Plant, inspection of relevant documentation and site visit, we determined: • Regular inspections are carried out at the plant in forms of daily rounds, statutory inspections and planned outages • Any changes required on the inspections are implemented in the maintenance standards • Condition-based inspection are carried out • Regular reviews of plant/asset conditions are carried out and the plant condition dashboard updated.	
	Adequacy Rating: Adequately defined (A)	**Performance Rating**: Performing effectively (1)
6.3 Maintenance plans (emergency, corrective and preventative) are documented and completed on schedule	Through discussion with the Head of Operations and the Plant Manager – Newman Power Plant, inspection of relevant documentation and site visit, we determined: • Maintenance Plans for preventive tasks are well documented in the maintenance standards, AMP and Ellipse • The completion of work is recorded and summarised in the operations game plan • The annual work plan compliance is >95% • All work orders are registered in the Ellipse.	
	Adequacy Rating: Adequately defined (A)	**Performance Rating**: Performing effectively (1)

Effectiveness Criteria	Findings	
6.4 Failures are analysed and operational/maintenance plans adjusted where necessary	Through discussions with the Head of Operations and the Plant Manager – Newman Power Plant, inspection of documents received and site visits, we determined: • Alinta has a function within InControl to record root cause analysis and key learnings on asset failures, such as corrective or emergency work • An example of an abnormal incident file showed the process followed by staff to analyse the root cause of the malfunction, and how the maintenance and operation plans were adjusted to prevent any further malfunctions • Alinta has demonstrated how results of failure analysis has been used to initiate changes on operation and maintenance, as well as engineering/asset renewal.	
	Adequacy Rating: Adequately defined (A)	**Performance Rating**: Performing effectively (1)

6.5 Risk management is applied to prioritise maintenance tasks	Through discussions with the Head of Operations and the Plant Manager – Newman Power Plant, inspection of the documents received and site visits, we determined:
	• Any change to the maintenance plans is based on risk assessments and the plant conditions dashboard
	• Prioritisation is made in the power station work scheduling following a predefined ranking defined in the PPA and other associated documents
	• Alinta applies the following risk management approach to schedule tasks in the Ellipse maintenance system:
	  ○ All Ellipse jobs have associated risk that is determined on a risk rating matrix from the Maintenance Work Process Manual, using likelihood and consequence to determine the risk score
	  ○ Once the risk rating has been determined on the risk matrix, the timeframes for actioning these priorities are listed as follows:
	  ▪ Priority 1 (Extreme - Starts Immediately - Breaks Daily Schedule)
	  ▪ Priority 2 (High - Starts within 1 week - Breaks Weekly Schedule and Finishes within 2 weeks of start)
	  ▪ Priority 3 (Medium - Starts within 3 weeks - Finishes within 4 weeks of start)
	  ▪ Priority 4 (Low - Starts within 7 weeks - Finishes within 20 weeks of start)
	  ▪ Priority 5 (Planned Outage Activity included in the scope of work)
	  ○ All projects contain risk assessments
	  ○ Plant condition dashboard is regularly reviewed, updated, and used in planning operations and maintenance activities
	  ○ Weekly scheduling meetings are used to set work time frames based on work order prioritisation and scheduled outages.
	Through testing a sample of 10 scheduled maintenance tasks over the review period, we determined:
	• All samples were given a risk priority rating, and high priority tasks were completed within the required timeframe
	• All maintenance tasks were started within the required timeframes based on risk prioritisation.
	• All maintenance tasks were completed within the required timeframes based on the risk prioritisation attached.	

	Adequacy Rating: Adequately defined (A)	**Performance Rating**: Performing effectively (1)

Effectiveness Criteria	Findings	
6.6 Maintenance costs are measured and monitored	Through discussion with the Head of Operations, inspection of relevant documentation and site visit, we determined that Alinta has demonstrated: • Operational spending is recorded in the Ellipse • The Head of Operations gets regular extracts from finance team on the Opex, Capex and EBITA • Project cost and standard costs (work orders) are accrued down to turbine and sublevels • Benchmarking is performed on maintenance costs.	
	Adequacy Rating: Adequately defined (A)	**Performance Rating**: Performing effectively (1)

4.7 Asset Management Information System

Key process: An asset management information system is a combination of processes, data and software that support the asset management functions.

Expected outcome: The asset management information system provides authorised, complete and accurate information for the day-to-date running of the AMS. The focus of the review is the accuracy of performance information used by the licensee to monitor and report on service standards.

Overall Adequacy/Performance rating: Adequately defined (A) / Performing effectively (1)

Effectiveness Criteria	Findings	
7.1 Adequate system documentation for users and IT operators	From our discussions with the Operations and Platforms Manager, and the Head of Operations, we determined: • Alinta utilises the Ellipse computerised maintenance management system • Asset live performance is monitored through Honeywell Experion software. Through discussions with the above personnel and consideration of relevant system documentation, we observed that: • Alinta staff are responsible for operating the Ellipse system in line with Alinta's business wide IT policy, comprising general IT policies such as internet usage policy, remote access policy and mobile communications policy • Alinta has an internal support team for maintaining the Ellipse system (based in South Australia and stationed in Western Australia) • IT policies are stored on Alinta's SharePoint site and are readily accessible for all users • Honeywell Experion is administered on site with oversight by the site manager.	
	Adequacy Rating: Adequately defined (A)	**Performance Rating:** Performing effectively (1)
7.2 Input controls include appropriate verification and validation of data entered into the system	Through discussion with the Operations and Platforms Manager and consideration of Alinta's Cybersecurity Policy and Identity and Access Management Standard, we determined: • Input controls are managed through built-in checks in Ellipse and aligned to Alinta's overall IT policy • Processes are in place to verify and validate data entered into the system. This includes data reconciliation between old and new systems, checking data transferred between one system to another is accurate, timely and complete and validating data as close as possible to the point of origin, which includes the ability to trace data back to the source document • Alinta's central IT helpdesk processes user requests, with user access is based on roles and positions. Access is granted only on receipt of a request form duly signed by relevant departmental head • Ellipse has multiple points of security tied to user position. Employee IDs are attached to positions within a hierarchy within Ellipse • Global profile security profiles are tied to positions • Financial Delegations are tied to positions, are district specific, and requires approval from Alinta's finance function • Within Ellipse, work functions can be restricted through menu visibility (i.e. programs will not appear without access) • Site management approval is required for user profile updates • A work order number is primary identifier in the Ellipse system that cannot be modified. Users have restricted access to the equipment register (limited to site personnel) • District security settings requires a Newman login. Higher management have multiple level district access.	
	Adequacy Rating: Adequately defined (A)	**Performance Rating:** Performing effectively (1)

Effectiveness Criteria	Findings	
7.3 Security access controls appear adequate, such as passwords	Through discussions with the Operations and Platforms Manager and consideration of Alinta's Cybersecurity Policy and Identity and Access Management Standard, we determined: • The process of granting and managing access is undertaken online through Alinta's IT helpdesk. Access requests are required to be approved by the relevant departmental head prior to being processed by IT • End-users are granted the minimum level of access privileges required to perform their job function and to prevent segregation of duties conflicts • Password requirements are maintained to authenticate user access to the Alinta network and the Ellipse system, including a minimum number of characters and type of characters and restrictions on use of most recent passwords • An audit of management's email folders is undertaken periodically to ensure that only relevant personal assistants have access to those folders • Ellipse authenticates from the active employee directory and can track when users last logged in • Remote user access requires RSA token authentication. We noted that the Cybersecurity policy outlines consequences for breach of policy and misuse of user privileges.	
	Adequacy Rating: Adequately defined (A)	**Performance Rating:** Performing effectively (1)
7.4 Physical security access controls appear adequate	Through discussions with the Operations and Platforms Manager and Head of Operations, consideration of the Identity and Access Management Standard and observations made during our visits to Alinta premises, we determined: • Processes and procedures relating to the access of facilities and the physical protection of information assets and systems are in use, both at the head office as well as on site • Site access is restricted by security fencing and swipe card entry to the premises • Physical security for the head office location in Perth is maintained by the relevant building services company, including the provision of swipe card access to the building and restricted lift access. From discussions with Operations and Platforms Manager in the context of access to computer server rooms on site, we determined: • Access swipe cards are used to restrict and record physical access to the computer server rooms. On employee termination, an exit checklist is completed whereby phones, cards, and laptops are required to be returned and access is revoked • Visitors are required to sign in and out at reception and required to be accompanied by an Alinta employee • Access to the building is monitored by CCTV. We also noted that general safety precautions appear to have been instigated to contain fire and other damaging events in computer rooms on site.	
	Adequacy Rating: Adequately defined (A)	**Performance Rating:** Performing effectively (1)

Effectiveness Criteria	Findings	
7.5 Data backup procedures appear adequate and backups are tested	Through discussions with the Operations and Platforms Manager and consideration of the Business Continuity Management Standard, we determined procedures for managing data backup and data restore of servers have been established. We observed: • The main on-site data centre is in Adelaide • Nightly backups are performed through UNIX commands • Regular backups are performed in accordance with defined schedules and media rotation rules. A full backup is performed every weekday and a weekly backup is performed each Friday • Backup tapes are stored securely and protected from environmental harm and unauthorised access • End of calendar year and end of financial year backups are maintained indefinitely • Recall has been engaged to manage off-site backup tapes at a secure location • Testing of backups is performed on a quarterly basis with archived emails being more commonly tested We also noted that access to the backup tapes is limited to a sub-set of IT Operations personnel and examined quarterly.	
	Adequacy Rating: Adequately defined (A)	**Performance Rating**: Performing effectively (1)
7.6 Computations related to licensee performance reporting are accurate	Alinta's asset management information system does not directly provide data used in any computation related to Alinta's licence performance reporting.	
	Adequacy Rating: Not performed	**Performance Rating**: Not rated
7.7 Management reports appear adequate for the licensee to monitor licence obligations	Through discussions with the Operations and Platforms Manager, and consideration of relevant supporting documentation and management reporting procedures, we determined site management is undertaken by Alinta staff. We also observed the Experion and Ellipse systems can generate a variety of scheduled reports. We determined: • Management reports are generated to provide performance information on plant operations and routine and first line intervention maintenance in the form of a plant Condition Dashboard • A daily generation report is produced for daily operator meetings on site, and weekly and monthly generation reports are produced for management and contains relevant information on the volume of MW hours produced and the quantity of fuel consumed • The finance team also prepares a monthly management pack to monitor costs from a financial perspective.	
	Adequacy Rating: Adequately defined (A)	**Performance Rating**: Performing effectively (1)

Effectiveness Criteria	Findings	
7.8 Adequate measures to protect asset management data from unauthorised access or theft by persons outside the organisation	Through discussions with the Operations and Platforms Manager, and consideration of the Cybersecurity policy and Identity and Access Management Standard, we determined: • Master service agreements and non-disclosure agreements are in place prior to sharing restricted or confidential data with third parties • Unique identifier (UID) are created for an individual accessing a system or application • Permissions are assigned to personnel based on their position • Log and monitor vendor remote access accounts when in use. The Cybersecurity policy outlines consequences for breach of policy and misuse of user privileges.	
	Adequacy Rating: Adequately defined (A)	**Performance Rating**: Performing effectively (1)

4.8 Risk management

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

Expected outcome: An effective risk management framework is applied to manage risks related to the maintenance of service standards.

Overall Adequacy/Performance rating: Requires some improvement (B) / Opportunity for improvement (2)

Effectiveness Criteria	Findings
8.1 Risk management policies and procedures exist and are being applied to minimise internal and external risks 8.2 Risks are documented in a risk register and treatment plans are implemented and monitored	*Criteria 8.1 and 8.2* Through discussion with the Head of Operations, Plant manager – Newman Power Station and consideration of relevant supporting documentation, we determined that: • Alinta Energy's Enterprise Risk Management Framework applies throughout Alinta Energy's business structure, including Alinta Energy Transmission Roy Hill • Application of Alinta's risk management policies and procedures to minimise internal and external risks associated with the AMS is evidenced in its use of the InControl system, which captures all key risks relating to Alinta's operations, including asset specific risks • A risk register is maintained in the InControl risk management system. Details captured for each risk include: ○ Risk description ○ Consequence/Impact ○ Risk treatment plan ○ Scenario reporter ○ Inherent risk rating ○ Risk related documentation ○ Person Responsible ○ Current Controls ○ Reviews ○ Business objective ○ Residual risk rating ○ Additional actions • All maintenance activities are based on a risk management approach, whereby the maintenance tasks addressing higher risk issues are performed first in order of high priority tasks, followed by lower priority tasks • The AMP is reviewed and revised if required, on an annual basis, using a risk based approach to prioritise medium to long term maintenance tasks, and associated capital expenditure projects. The tasks are listed and rated by risk in order to prioritise the urgency in which they are actioned • Daily meetings are used to arrange daily work plans, plans for upcoming work, and outage plans for major scheduled outages • In March 2016, Alinta initiated an update of its risk assessment for maintenance activities. This update involved conversion of the previous excel model extracted from Ellipse (risk assessments were completed on an ad-hoc basis) to the InControl Risk Management System. The new risk management system, InControl, has been implemented and replaced the old KMI Incident Management System in 2017. Through testing a sample of seven risk treatments, we determined: • One of the seven samples did not have evidence that it was monitored. This sample also had a status of "Adjustments required", meaning that the risk had not been reviewed in the recommended time frame. • Two of seven samples had no treatment plans. However, these risks had numerous controls and were documented in the risk register as not being relevant to the Newman Power Station. In response to recommendation 2/2016, Alinta has built out its risk assessments in the InControl Risk Management System and continues to populate it as required. However, due to a sample scenario status being "Adjustment required",

Effectiveness Criteria	Findings	
	and two risks no longer being relevant to the Newman power station or Roy Hill transmission network, a more frequent review process may be required.	
	Adequacy Rating: Requires some improvement (B)	**Performance Rating:** Opportunity for improvement (2)
8.3 The probability and consequences of asset failure are regularly assessed	Through discussions with the Head of Operations, Plant Manager – Newman Power Station and consideration of Alinta's asset planning and risk management practices, we determined that Alinta has applied the following mechanisms for identifying and assessing the consequence and likelihood of power station asset failure: • That the SAMP and AMP are major tools used for predicting the likelihood and consequences of asset failure • The AMP considers each major item of equipment and provides specific details of its operation and maintenance strategy and key life cycle issues and remedial plans • A detailed maintenance program in accordance with the manufacturer's guidelines and expert experience is maintained for the plant. The program is executed daily and updated as needed • Alinta's operations and maintenance staff operate the plant and perform routine and first line intervention maintenance on a scheduled basis controlled by work orders generated through Ellipse • External contractor maintenance standards/requirements are governed by specific contract arrangements • Condition monitoring techniques are employed on a frequent basis to identify defects, including oil analysis, vibration analysis, and radiography and thermography to identify any surface or internal defects • During scheduled outages, main components of the facility's plant are inspected for defects by site staff and external consultants • The management and maintenance of the plant assets is reviewed on a day-to-day basis at an operational level and on an annual basis, primarily through the review of the AMP • Any asset failures or related incidents are recorded online through the InControl Risk Management System • A high level of priority is accorded to minimising instances of asset failure and the duration of any such failure. The management structures, skills and resources assigned to the asset management processes appear to be appropriate for enabling the regular assessment of the probability and consequences of asset failure.	
	Adequacy Rating: Adequately defined (A)	**Performance Rating**: Performing effectively (1)

4.9 Contingency planning

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

Expected outcome: Contingency plans have been developed and tested to minimise any significant disruptions to service standards.

Overall Adequacy/Performance rating: Requires some improvement (B) / Opportunity for improvement (2)

Effectiveness Criteria	Findings
9.1 Contingency plans are documented, understood and tested to confirm their operability and to cover higher risks	Through discussion with the Head of Operations and consideration of relevant supporting documentation we determined: • Alinta has generated a Business Continuity Plan for its sites which encompasses the major risks and the strategies in place to address them. It outlines the testing that should be conducted. From discussions however, it was confirmed that no business continuity testing had been performed during the review period. • Alinta maintains an emergency response plan for the Newman Power Station • The emergency response plan incorporates training and drills that include: • Emergency exercises that are undertaken twice each year; one a desktop exercise and a "live" exercise with emergency services involved. These simulate credible scenarios and the results of exercises are documented in Alinta's SharePoint system ○ Monthly alarm testing ○ Six monthly evacuation procedure testing ○ Employee training. • Duty officers (on a rolling schedule basis) are responsible for plant operations and addressing any alarms, including when onsite during office hours via the control system, and afterhours remotely by phone alarms. When the duty officer receives an alarm, they are required to investigate and take appropriate remedial action based on their understanding of the cause of the alarm the related risk. Minor alarms may be left to the next day shift, while high risk alarms require immediate attention. The plant manager would also be contacted as appropriate. Contingency planning is inherent in the design and setup of the plant, contractual agreements in place with third parties and as referenced in the Alinta Sites – Business Continuity plan, contingencies are in place for major business operational risks of: ○ Fuel supply: ▪ Gas is the primary fuel for the power station and is sourced via pipeline ▪ In the case of gas failure, the site uses diesel with the three GE turbines operating at Newman Power Station capable of firing on diesel ▪ Diesel is stored in two large tanks at Newman, with arrangements in place with local suppliers to provide additional diesel if required. Contractual arrangements with AETRH's customer require at least one million litres to be maintained, of the possible 1.2 million litre tank capacity ○ Water supply: ▪ Water is supplied via a shared services agreement with BHPB ▪ A water tank is located onsite for firefighting purposes ▪ A water treatment plant is located onsite for deionisation of water, for turbine cleaning etc. with a small tank acting as a buffer ▪ Water is not a key input to the process as the plant is air cooled (i.e. not water cooled) ○ Turbine failure/error: ▪ The Newman Power Station comprises four gas turbines (three GE units and one large Trent/Rolls Royce/Siemens unit) and three smaller diesel generators at the Roy Hill mine site

Effectiveness Criteria	Findings	
	▪ The typical demand on the power station is generally much less than the rated capacity of all four turbines and diesel generators combined, and two to three turbines can generally handle the load should one turbine trip or have a failure ▪ The Newman Power Station has a large battery storage that assists in mitigating the loss of power due to turbine failure, by picking up the load temporarily before other turbines can get online. ○ Transmission line failure ▪ Three smaller diesel generators located at the Roy Hill mine site can meet the essential load of Roy Hill. • Normal operation processes and procedures used to maintain, control and operate the plant include contingency aspects to allow the plant personnel to react to emergencies and implement necessary actions to limit the emergency's impact and recurrence. • In addition to the normal operational processes and procedures for the plant (as described above) risks relating to operational emergencies (such as catastrophic failure of plant) are managed by: ○ Using regular inspections of key high-risk equipment (such as pressure vessels, and turbines, etc.) and undertaking preventative maintenance on those items, where required. ○ Implementing a condition-based maintenance regime, whereby oil samples from key equipment are taken regularly and sent to an external lab for analysis. Any contaminants identified in the oil samples could indicate undue wear and tear of the item and a timely maintenance action is then initiated. • Alinta Energy also has a Cybersecurity Business Continuity Management Standard in place. In response to recommendation 3/2016, Alinta has prepared an over-arching "umbrella" document to capture all contingency plans in place for each of the key risks to each Unit's operations and availability. However, the document does not establish any testing arrangements, and no tests were planned.	
	Adequacy Rating: Requires some improvement (B)	**Performance Rating:** Opportunity for improvement (2)

4.10 Financial planning

Key process: The financial planning component of the AMP brings together the financial elements of the service delivery to ensure its financial viability over the long term.

Expected outcome: A financial plan that is reliable and provides for the long-term financial viability of the services.

Overall Adequacy/Performance rating: Adequately defined (A) / Performing effectively (1)

Effectiveness Criteria	Findings	
10.1 The financial plan states the financial objectives and identifies strategies and actions to achieve the objectives	Through consideration of Alinta's asset and financial planning processes and inspection of Alinta's AMP, we determined: • Alinta's financial plan takes the form of an operational budget that is prepared on a rolling five-year basis, reflecting its financial objectives and strategies that are driven by its contractual agreements for generation and supply of electricity • The financial plan puts together the financial elements of the plant's operations to reflect its financial viability over the long term which is reflected in the Asset Model stretching out to FY2040 • The AMP reflect the business objectives outlined in its business plans.	
	Adequacy Rating: Adequately defined (A)	**Performance Rating:** Performing effectively (1)
10.2 The financial plan identifies the source of funds for capital expenditure and recurrent costs	Through consideration of Alinta's asset and financial planning processes and inspection of the AMP, we determined that operational cash flows are retained for budgeted maintenance and capital expenditure, based on retained funds or by submission through the Alinta Group corporate structure for non-budgeted expenditure.	
	Adequacy Rating: Adequately defined (A)	**Performance Rating:** Performing effectively (1)
10.3 The financial plan provides projections of operating statements (profit and loss) and statement of financial position (balance sheets)	Through consideration of Alinta's asset and financial planning processes and inspection of Alinta's five-year plan, profit and loss report and the AMP, we determined that: • Alinta's financial plan constitutes a summary of budgeted income and expenses from the supply of electricity under its contractual agreements, which is prepared and updated annually and includes a rolling forecast for the next five years • Alinta's business planning process analyses and forecasts the lifecycle cost of owning and operating assets until FY2040 • An income statement and a position statement are prepared as part of statutory financial statements on a six-monthly and annual basis • A monthly Profit and Loss report is generated which provides a detailed breakdown of financial projections.	
	Adequacy Rating: Adequately defined (A)	**Performance Rating:** Performing effectively (1)
10.4 The financial plan provides firm predictions on income for the next five years and reasonable predictions beyond this period	Through consideration of Alinta's asset and business planning processes and inspection of Alinta's supporting asset lifecycle models, we determined that Alinta forecasts generation volumes and associated revenue until FY2040, with firm predictions forecast over a five-year period.	
	Adequacy Rating: Adequately defined (A)	**Performance Rating:** Performing effectively (1)

Effectiveness Criteria	Findings	
10.5 The financial plan provides for the operations and maintenance, administration and capital expenditure requirements of the services	Through consideration of Alinta's asset and financial planning processes and inspection of Alinta's annual budget and AMP, we determined: • The profit and loss statement provide a detailed monthly view of operational expenditure i.e. operations maintenance and administration expenses for the financial year • Includes a summary of current and planned capital expenditure projects over the following five years, with a brief description of each project's purpose and assumptions.	
	Adequacy Rating: Adequately defined (A)	**Performance Rating**: Performing effectively (1)

10.6 Large variances in actual/budget income and expenses are identified and corrective action taken where necessary	Through discussions with the Head of Operations and Finance Manager – Projects and examination of Alinta's financial planning mechanisms, we observed that:
	• On a monthly basis, a variance analysis report is produced in a management package to:
	  ○ Assess actual versus budgeted income and expenditure
	  ○ Identify areas that are over budget or problematic and determine necessary corrective action.
	• Finance holds quarterly discussions with site personnel to analyse site expenditure and determine whether forecast adjustments are required
	• Financial statements are audited annually and reviewed six-monthly as part of statutory requirements.	

	Adequacy Rating: Adequately defined (A)	**Performance Rating**: Performing effectively (1)

4.11 Capital expenditure planning

Key process: The capital expenditure plan provides a schedule of new works, rehabilitation and replacement works, together with estimated annual expenditure on each over the next five or more years. Since capital investments tend to be large and lumpy, projections would normally be expected to cover at least 10 years, preferably longer. Projections over the next five years would usually be based on firm estimates

Expected outcome: A capital expenditure plan that provides reliable forward estimates of capital expenditure and asset disposal income, supported by documentation of the reasons for the decisions and evaluation of alternatives and options.

Overall Adequacy/Performance rating: Adequately defined (A) / Performing effectively (1)

Effectiveness Criteria	Findings	
11.1 There is a capital expenditure plan covering works to be undertaken, actions proposed, responsibilities and dates	Through discussions with the Financial Manager – Projects and consideration of Alinta's capital planning procedures and examination of the capital expenditure plan and the AMP, we determined: • A capital expenditure plan is included in the annual financial plan • Capital expenditure planning is undertaken along with financial planning on a rolling five-year basis and is included in the AMP • The annual plan provides information on the amount, purpose and description of budgeted capital expenditure • The plan does not provide information on roles and responsibilities, but they can be found in Alinta's business plans and work orders.	
	Adequacy Rating: Adequately defined (A)	**Performance Rating:** Performing effectively (1)
11.2 The capital expenditure plan provides reasons for capital expenditure and timing of expenditure	Through discussions with the Financial Manager – Projects and consideration of Alinta's asset and business planning processes and inspection of Alinta's AMP, Capital Expenditure Plan and supporting asset lifecycle models, we determined the annual AMPs outline capital expenditure requirements, including reasoning and timeframes for relevant refurbishment or upgrade activity.	
	Adequacy Rating: Adequately defined (A)	**Performance Rating:** Performing effectively (1)
11.3 The capital expenditure plan is consistent with the asset life and condition identified in the asset management plan	Through discussions with the Financial Manager – Projects, consideration of Alinta's capital planning procedures and examination of the capital expenditure plan, we determined: • Alinta's procedures require life cycle costs of assets to be assessed and recorded in the AMP for each major equipment, including key life cycle issues, critical outages and operating & maintenance philosophy • The capital expenditure plan concurs with the assessed life cycle costs of the plant's assets.	
	Adequacy Rating: Adequately defined (A)	**Performance Rating:** Performing effectively (1)
11.4 There is an adequate process to ensure that the capital expenditure plan is regularly updated and implemented	Through discussion with the Head of Operations and consideration of Alinta's asset and business planning processes and inspection of Alinta's Capital Expenditure Plan, AMP and supporting asset lifecycle models, we determined that Alinta's capital expenditure requirements are reviewed and updated where relevant on an annual basis.	
	Adequacy Rating: Adequately defined (A)	**Performance Rating:** Performing effectively (1)

4.12 Review of AMS

Key process: The AMS is regularly reviewed and updated.

Expected outcome: Review of the AMS to ensure the effectiveness of the integration of its components and their currency.

Overall Adequacy/Performance rating: Requires some improvement (B) / Opportunity for improvement (2)

Effectiveness Criteria	Findings	
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	From our discussions with the Head of Operations and the Plant Manager – Newman Power Station, and review of Alinta's Asset Management system documentation, we observed: • The AMP, which is the main reference to the asset management system, has been reviewed and updated (where necessary) on an annual basis. With the support of an assigned Mechanical Engineer, the Asset Engineer and the Head of Asset Management have the primary responsibility for that annual review, with the Head of Operations responsible for approving the revised version. However, the AMP has sections that remain incomplete and remains in a draft iteration • Alinta Energy's Asset Management Framework provides for asset management activities to be subject to performance assessment and continuous improvement. *Refer to recommendation and action plan 1/2019*	
	Adequacy Rating: Requires some improvement (B)	**Performance Rating:** Opportunity for improvement (2)
12.2 Independent reviews (e.g. internal audit) are performed of the asset management system	Components of Alinta's asset management system are subject to regular review and update as noted in section 12.1. In response to Recommendation 4/2016 of the previous audit, Alinta has had an independent review of its asset management system. We sighted the most recent independent review of Alinta's Asset Management Framework issued by Wave International on 12 April 2018. However, Alinta have not established a register or record to capture the reviews conducted on its asset management system and the independence of the associated reviewer. Alinta are currently compliant as they are performing independent reviews of the AMS, however a register or record would improve the documentation in relation to the external reviews.	
	Adequacy Rating: Adequately defined (A)	**Performance Rating:** Performing effectively (1)

5 Follow-up of previous review action plans

Reference (no./year)	(Asset management effectiveness rating/ AMS Component & Criteria / details of the issue)	Reviewer's recommendation or action planned	Further action required
A. Resolved at end of current review period			
n/a	n/a	n/a	n/a
B. Unresolved at end of current review period			
1/2016	***Asset Planning*** *1.8 Plans are regularly reviewed and updated* *2.5 Ongoing legal / environmental / safety obligations of the asset owner are assigned and understood* Although the Newman Power Station and Roy Hill Transmission Line SAMP and supporting AMP generally reflect AETRH's expectations and requirements for managing the relevant facilities' assets, they can be further improved.	**Recommendation and action plan 1/2016** AETRH explicitly incorporate the following elements of its Asset Management Framework and EIRL obligations into the Newman Power Station and Roy Hill Transmission Line SAMP and supporting AMP: • Contingency plans • Known and significant risks relating to the key assets • Legal and compliance requirements. **Status** Alinta has added risk and compliance recommendations to the AMP and SAMP in July 2018. The contingency arrangements haven't been added to the Asset Management Plan	Yes. Refer to Recommendation and Action Plan 1/2019
2/2016	***Asset management and Risk maintenance*** *6.5 Risk management is applied to prioritise maintenance tasks* *8.1 Risk management policies and procedures exist and are being applied to minimise internal and external risks associated with the asset management system* *8.2 Risks are documented in a risk register and treatment plans are actioned and monitored* Alinta had not retained clear evidence of some of those risk management activities to demonstrate that	**Recommendation and action plan 2/2016** Alinta will establish a clear: • Timeframe for completing its program of populating risk assessments within the SPM Asset software • Approach and timeframe for assessing risks, implementing treatment plans and monitoring status on a more frequent basis than the annual review of the AMP. **Status** Alinta had completed its program of populating its risk assessments into SPM by October 2017.	Yes. Recommendations were provided directly to AETRH

Reference (no./year)	(Asset management effectiveness rating/ AMS Component & Criteria / details of the issue)	Reviewer's recommendation or action planned	Further action required
	its risk management philosophies and approach are consistently applied.	However, it is not clear that they regularly review the risk register.	
3/2016	***Asset Disposal*** *9.1 Contingency plans are documented, understood and tested to confirm their operability and to cover higher risks* As Alinta's contingency plans and arrangements are currently maintained/described in different processes and documents, Alinta has the opportunity to further ensure the completeness and consistency of its contingency planning arrangements by capturing all of its plans and processes in one single reference. Such an approach would be consistent with Alinta Energy's Asset Management Framework.	**Recommendation and action plan 3/2016** 1. Establish a formal process for ensuring that contingency arrangements in place for all key risks to the Power Station's operations and availability are rigorously challenged and tested 2. Prepare a clear over-arching "umbrella" document to capture all contingency plans in place for each of the key risks to each Unit's operations and availability. **Status** Alinta has completed the umbrella document, however it is not clear that this has been tested regularly, or that records have been kept.	Yes. Recommendations were provided directly to AETRH
4/2016	***Review of AMS*** *12.2 Independent reviews (e.g. internal audit) are performed of the asset management system* Although components of Alinta's asset management system are subject to regular review and update, Alinta has not applied a formal process for ensuring a sufficient degree of independence in any regular review of the asset management plan and underlying asset management system.	**Recommendation and action plan 4/2016** • The requirement for its asset management system to be subject to an independent review on a regular basis • A register or record to capture the reviews conducted on its asset management system and the independence of the associated reviewer. **Status** As disclosed in the January 2018 Post Review Implementation Plan Update to the ERA, Alinta engaged an external company to perform an audit of Alinta's AMF, with a register created to captured details of the audit conducted. The January 2019 Post Review Implementation Plan Update showed these as closed out. However, Alinta has not shown us that they have developed a register	No. Recommendations were provided directly to AETRH

Appendix A - Review plan

Appendix B - References

Alinta staff participating in the review

- Head of Operations – Power Generation
- Regulatory Compliance Manager
- Finance Manager – Projects
- Plant Manager – Newman Power Station
- Senior Analyst, Finance – Merchant Energy

Deloitte staff participating in the review		Hours
Vincent Snijders	Partner	11
Maria Moreano	Senior Manager	7
Lyle Stewart	Senior Analyst	24
Morgan Jones	Analyst	70
Alexis Lefebvre	Analyst	27
Ben Fountain	Technical QA Director	3
Peter Rupp	Partner (Quality Assurance Review)	2

Sites visited by the auditor during the review

- Alinta Energy's Perth Head Office
- Newman Power Station

Key documents and other information sources examined

- Newman FY2019 Asset Management Plan
- Newman Strategic Asset Management Plan
- Asset Management Policy
- Asset Management Framework
- Project Management Framework
- Alinta Energy Risk Management Framework
- Roy Hill Purchase Agreement
- Newman five year plan
- Newman Capex FY2021-FY2024
- Asset Modelling to FY2040
- Newman SIB CapEx
- Request for Commitment process screenshots
- Ellipse Screenshots of CapEx and task prioritisation
- Newman Detailed Profit and Loss
- Procurement Standards
- Delegations of Authority
- Wave International AM Framework Audit Report 2018
- Outage Management Framework
- Management of Change
- List of maintenance tasks - Ellipse
- Newman equipment list
- Newman fixed asset register
- Maintenance Work Process Manual
- Maintenance Standards

- Health and Safety Policy
- Alinta Energy OHS Management Framework
- Environmental Management Framework
- AETRH Annual Environmental Report
- AETRH FY19 Emissions Testing
- Newman Station Environmental License
- InControl Risk Management System
- Newman Performance Reports
- Cybersecurity policies
- Identity and Access Management Standards
- Newman Risk Register and samples
- Newman Emergency Response Plan
- Alinta Sites Business Continuity Plan
- Business Continuity Management Standard
- Alinta Energy Australia Training Matrix
- Alinta Energy Position Descriptions
- Power Generation Operational Plan