BHP NiW Pty Ltd

2023 Asset Management System Review
Electricity Licence EDL2

Report

Economic Regulation Authority
May 2023

TABLE OF CONTENTS

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Limitations of this Report

This report was prepared for distribution to the Economic Regulation Authority and BHP NiW Pty Ltd ('NiW') for the purpose of fulfilling NiW's asset management system review obligation under its Electricity Licence. We disclaim any assumption of responsibility for any reliance on this report to any persons or users other than the Economic Regulation Authority and NiW' or for any purpose other than that for which it was prepared.

Because of the inherent limitations of any internal control environment, it is possible that fraud, error or non-compliance may occur and not be detected. An audit/review is not designed to detect all instances of non-compliance with the procedures and controls over the licence obligations for Electricity Licence, since we do not examine all evidence and every transaction. The conclusions expressed in this report have been formed on this basis.

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1. Executive Summary

Background

BHP NiW Pty Ltd ('NiW') is the licensee of the Economic Regulation Authority ('ERA') for the Electricity Distribution Licence (EDL2) issued by the ERA under the *Electricity Industry Act 2004*.

NiW operates a small distribution network in the mining town of Leinster – the Northern Electrical System (NES) and a small non-contiguous network to five mining customers in the Kambalda region - the Southern Electrical System (SES). The Northern distribution system is the Leinster town site with less than 300 connections to consumers. However, these connections are not considered to be customers as electricity is not retailed to the consumer.

The power is provided by Southern Cross Energy Partnership (a subsidiary of TransAlta Energy Australia Pty Ltd) (SCE) which owns and operates four gas turbine power stations to provide power to NiW's operations at Mt Keith, Leinster, Kalgoorlie and Kambalda.

This review has been completed to assess the effectiveness of the Licensee's asset management system. The review covers the four years from the previous review, from 1 April 2019 to 31 March 2023.

Conclusion

Through the execution of the Review Plan and assessment and testing of the control environment, the information system, control procedures and compliance attitude, the audit team members have gained reasonable assurance that BHP NiW Pty Ltd has operated the electricity distribution and supply services in a reliable manner and provided a good level of service to the customers.

The review found that NiW has established an adequate control environment for ongoing compliance in respect of the asset management system and has a generally effective asset management system.

For the review period from 1 April 2019 to 31 March 2023, the electricity supply service provided under the Electricity Distribution Licence is considered to be operated with a professional and comprehensive approach.

Out of 12 components of the asset management system, 10 were rated as performing effectively and 2 components (environmental analysis and contingency planning) were rated as opportunities for improvement.

Out of 58 effectiveness criteria for the asset management system, the review found:

- 53 criteria were rated as performing effectively (52 with adequately defined processes and 1 requires some improvement);
- 4 were rated as opportunity for improvement (1 with adequately defined processes and 3 require some improvement);
- 1 was rated as corrective action required (with processes that require some improvement).

There was one recommended improvement relating to the environmental analysis component of the asset management system.

We confirm that the ERA's 2019 Audit and Review Guidelines: Electricity and Gas Licenses have been complied with in the conduct of this audit/review and the preparation of the report, and that the audit findings reflect our professional opinion.

Quantum Assurance

Geoff White CA
Director

22 June 2023

2. Asset Management System Review

2.1 Introduction

BHP NiW Pty Ltd ('NiW') is the licensee of the Economic Regulation Authority ('ERA') for the Electricity Distribution Licence (EDL2) issued by the ERA under the *Electricity Industry Act 2004*.

NiW operates a small distribution network in the mining town of Leinster – the Northern Electrical System (NES) and a small non-contiguous network to five mining customers in the Kambalda region - the Southern Electrical System (SES). The total length of BHP NiW's distribution lines is limited to 72 kilometres. In the Southern system, the distribution system consists of offtakes from another licensee's distribution or transmission system and connections to customers. The Northern distribution system is the Leinster town site with less than 300 connections to consumers. However, these connections are not considered to be customers as electricity is not retailed to the consumer.

The power is provided by Southern Cross Energy Partnership (a subsidiary of TransAlta Energy Australia Pty Ltd) which owns and operates four gas turbine power stations to provide power to NiW's operations at Mt Keith, Leinster, Kalgoorlie and Kambalda.

The licence versions in operation during the review period were:

Version	Audit Period	Description of Amendment
9	1 April 2019 to 5 May 2021	Licence renewed for 15 years
10	6 May 2021 to 21 September 2021	Minor amendment to the Southern Cross Goldfields licence area plan ERA-EL-071(b) to remove the reference to retail.
11	22 September 2021 to date	Change to licensee's name from BHP Billiton NiW Pty Ltd to BHP NiW Pty Ltd

Under the Act, electricity services' licensees are required to provide a report on the review of their asset management system ('review') once every 24 months, or another period that has been specified by the ERA. For this review, the period was extended to four years.

NiW engaged Quantum Management Consulting and Assurance ('Quantum Assurance'), with the approval of the ERA, to complete this review of NiW's electricity supply services, to comply with the licensing requirements of the ERA. This review covers the period from 1 April 2019 to 31 March 2023.

The review approach complied with the 2019 Audit and Review Guidelines: Electricity and Gas Licences.

2.2 Objectives and Scope

The objective of the review was to assess the adequacy and effectiveness of the asset management system in place for the undertaking, maintenance and monitoring of the licensee's assets.

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

- Asset planning
- Asset creation/acquisition
- Asset disposal
- Environmental analysis
- Asset operations
- Asset maintenance
- Asset management information system
- Risk management
- Contingency planning
- Financial planning
- Capital expenditure planning

- Review of the asset management system.

The highest priority areas (priority 1, 2 or 3) based on inherent risk and the previous review's effectiveness ratings were:

Priority 2

- Asset Planning *(High inherent risk)*
- Environmental Analysis *(High inherent risk)*
- Contingency Planning *(High inherent risk).*

The status of the previous review recommendations was also reviewed. Refer section 2.5.

As there were no major weaknesses identified in the previous review and no material changes in the asset management system since the previous review , this review is a "limited assurance" engagement rather than a "reasonable assurance" engagement.

A limited assurance engagement is:

"An assurance engagement in which the assurance practitioner reduces engagement risk to a level that is acceptable in the circumstances of the engagement but where that risk is greater than for a reasonable assurance engagement as the basis for expressing a conclusion in a form that conveys whether, based on the procedures performed and evidence obtained, a matter(s) has come to the assurance practitioner's attention to cause the assurance practitioner to believe the subject matter information is materially misstated."

2.3 Asset Management Process and Performance Rating Scales

The adequacy of process policy and definition and the performance of the key processes were assessed using the scales described in the tables below. The overall effectiveness rating for each asset management process is based on a combination of the process and policy adequacy rating and the performance rating.

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 require 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) requires minor improvements (taking into consideration the assets being managed).
C	Requires significant improvement	• Process and policies are incomplete or require substantial improvement. • Processes and policies do not document the required performance of the assets. • Processes and policies are considerably out of date. • The asset management information system(s) requires substantial improvement (taking into consideration the assets 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 being managed).

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 implemented.
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 implemented.
4	Some action required	• Process is not performed, or the performance is so poor that the process is considered to be ineffective.

2.4 Summary of Asset Management System Effectiveness Ratings

The review's assessment of the asset management system process and policy definitions and their effectiveness, based on the ratings scales in Section 2.3, is shown in the table below.

Section 2.6 provides further details of the current rating results for each process in the asset management system.

Summary of Asset Management Performance Ratings

Process and Policy Definition – Adequacy Rating	Performance Rating for Effectiveness Criteria					
	Rating	1 Performing effectively	2 Opportunity for improvement	3 Corrective action required	4 Some action required	Total
	A -Adequately defined	52	1		-	**53**
	B – Requires some improvement	1	3	1	-	**5**
	C – Requires significant improvement	-	-	-	-	**-**
	D – Inadequate	-	-	-	-	**-**
	Total	**53**	**4**	**1**	**-**	**58**

Asset Management System Performance Ratings

ASSET MAN/AGEMENT SYSTEM COMPONENT & EFFECTIVENESS CRITERIA	Process and Policy rating				Performance rating				
	Adequately defined	Requires some improvement	Requires significant improvement	Inadequate	Performing effectively	Opportunity for improvement	Corrective action required	Serious action required	Not Rated
	A	B	C	D	1	2	3	4	NR
1. Asset planning	**A**				**1**				
1.1 Asset management plan covers the processes in this table.	✓				✓				
1.2 Planning process and objectives reflect the needs of all stakeholders and are integrated with business planning.	✓				✓				
1.3 Service levels are defined in the asset management plan.	✓				✓				
1.4 Non-asset options (e.g. demand management) are considered.	✓				✓				
1.5 Lifecycle costs of owning and operating assets are assessed.	✓				✓				
1.6 Funding options are evaluated.	✓				✓				
1.7 Costs are justified and cost drivers identified.	✓				✓				
1.8 Likelihood and consequences of asset failure are predicted.	✓				✓				
1.9 Asset management plan are regularly reviewed and updated.	✓				✓				
2. Asset creation/ acquisition	**A**				**1**				
2.1 Full project evaluations are undertaken for new assets, including comparative assessment of non-asset solutions.	✓				✓				
2.2 Evaluations include all life-cycle costs.	✓				✓				
2.3 Projects reflect sound engineering and business decisions.	✓				✓				
2.4 Commissioning tests are documented and completed.	✓				✓				
2.5 Ongoing legal/environmental/safety obligations of the asset owner are assigned and understood.	✓				✓				
3. Asset disposal	**A**				**1**				

ASSET MAN/AGEMENT SYSTEM COMPONENT & EFFECTIVENESS CRITERIA	Process and Policy rating				Performance rating				
	Adequately defined	Requires some improvement	Requires significant improvement	Inadequate	Performing effectively	Opportunity for improvement	Corrective action required	Serious action required	Not Rated
	A	B	C	D	1	2	3	4	NR
3.1 Under-utilised and under-performing assets are identified as part of a regular systematic review process.	✓				✓				
3.2 The reasons for under-utilisation or poor performance are critically examined and corrective action or disposal undertaken.	✓				✓				
3.3 Disposal alternatives are evaluated.	✓				✓				
3.4 There is a replacement strategy for assets.	✓				✓				
4. Environmental analysis	**A**					**2**			
4.1 Opportunities and threats in the asset management system environment are assessed.	✓				✓				
4.2 Performance standards (availability of service, capacity, continuity, emergency response, etc) are measured and achieved.		✓					✓		
4.3 Compliance with statutory and regulatory requirements.	✓				✓				
4.4 Achievement of customer service levels.	✓				✓				
5. Asset operations	**A**				**1**				
5.1 Operational policies and procedures are documented and linked to service levels required.		✓			✓				
5.2 Risk management is applied to prioritise operations tasks.	✓				✓				
5.3 Assets are documented in an Asset Register including asset type, location, material, plans of components, and an assessment of assets' physical/structural condition.	✓				✓				
5.4 Accounting data is documented for assets.	✓				✓				
5.5 Operational costs are measured and monitored.	✓				✓				
5.6 Staff resources are adequate and staff receive training commensurate with their responsibilities.		✓				✓			
6. Asset maintenance	**A**				**1**				
6.1 Maintenance policies and procedures are documented and linked to service levels required.		✓				✓			

ASSET MAN/AGEMENT SYSTEM COMPONENT & EFFECTIVENESS CRITERIA	Process and Policy rating				Performance rating				
	Adequately defined	Requires some improvement	Requires significant improvement	Inadequate	Performing effectively	Opportunity for improvement	Corrective action required	Serious action required	Not Rated
	A	B	C	D	1	2	3	4	NR
6.2 Regular inspections are undertaken of asset performance and condition.	✓					✓			
6.3 Maintenance plans (emergency, corrective and preventative) are documented and completed on schedule.	✓				✓				
6.4 Failures are analysed and operational/maintenance plans adjusted where necessary.	✓				✓				
6.5 Risk management is applied to prioritise maintenance tasks.	✓				✓				
6.6 Maintenance costs are measured and monitored.	✓				✓				
7. Asset Management Information System	**A**				**1**				
7.1 Adequate system documentation for users and IT operators.	✓				✓				
7.2 Input controls include appropriate verification and validation of data entered into the system.	✓				✓				
7.3 Security access controls appear adequate, such as passwords.	✓				✓				
7.4 Physical security access controls appear adequate.	✓				✓				
7.5 Data backup procedures appear adequate and backups are tested.	✓				✓				
7.6 Computations for licensee performance reporting are accurate.	✓				✓				
7.7 Management reports appear adequate for the licensee to monitor licence obligations.	✓				✓				
7.8 Adequate measures to protect asset management data from unauthorised access or theft by persons outside the organisation.	✓				✓				
8. Risk management	**A**				**1**				
8.1 Risk management policies and procedures exist and are being applied to minimise internal and external risks associated with the asset management system.	✓				✓				

ASSET MAN/AGEMENT SYSTEM COMPONENT & EFFECTIVENESS CRITERIA	Process and Policy rating				Performance rating				
	Adequately defined	Requires some improvement	Requires significant improvement	Inadequate	Performing effectively	Opportunity for improvement	Corrective action required	Serious action required	Not Rated
	A	B	C	D	1	2	3	4	NR
8.2 Risks are documented in a risk register and treatment plans are actioned and monitored.	✓				✓				
8.3 The probability and consequences of asset failure are regularly assessed.	✓				✓				
9. Contingency planning		**B**				**2**			
9.1 Contingency plans are documented, understood and tested to confirm their operability and to cover higher risks.		✓				✓			
10. Financial planning	**A**				**1**				
10.1 The financial plan states the financial objectives and identifies strategies and actions to achieve those.	✓				✓				
10.2 The financial plan identifies the source of funds for capital expenditure and recurrent costs.	✓				✓				
10.3 The financial plan provides projections of operating statements (profit and loss) and statement of financial position (balance sheets).	✓				✓				
10.4 The financial plan provides firm predictions on income for the next five years and reasonable indicative predictions beyond this period.	✓				✓				
10.5 The financial plan provides for the operations and maintenance, administration and capital expenditure requirements of the services.	✓				✓				
10.6 Large variances in actual/budget income and expenses are identified and corrective action taken where necessary.	✓				✓				
11. Capital expenditure planning	**A**				**1**				
11.1 There is a capital expenditure plan covering works to be undertaken, actions proposed, responsibilities and dates.	✓				✓				
11.2 The capital expenditure plan provides reasons for capital expenditure and timing of expenditure.	✓				✓				
11.3 The capital expenditure plan is consistent with the asset life and condition identified in the asset management plan.	✓				✓				
11.4 There is an adequate process to ensure that the capital expenditure plan is regularly updated and implemented.	✓				✓				

ASSET MAN/AGEMENT SYSTEM COMPONENT & EFFECTIVENESS CRITERIA	Process and Policy rating				Performance rating				
	Adequately defined	Requires some improvement	Requires significant improvement	Inadequate	Performing effectively	Opportunity for improvement	Corrective action required	Serious action required	Not Rated
	A	B	C	D	1	2	3	4	NR
12. Review of asset management system	**A**				**1**				
12.1 A review process is in place to ensure that the asset management plan and the asset management system described in it remain current.	✓				✓				
12.2 Independent reviews (e.g., internal audit) are performed of the asset management system.	✓				✓				

2.5 Status of Previous Review Recommendations

The previous review covered the period from 1 April 2016 to 31 March 2019 and was reported in July 2019. The previous review of the NiW asset management system identified that all the asset management processes were rated B2 or better.

As there were no recommendations in the previous review that were rated as process C or D or effectiveness 3 or 4[1] the recommendations are improvement opportunities and are not required to be included in the report.

Reference (no./year)	**Previously Assessed Process and Policy Deficiency** (Rating, Asset management process, Details)	**Previous Recommendation and *Action Taken***	**Date Resolved**	**Further action required** Details of any further action required
A. Resolved before end of previous review				
	Nil			
B. Resolved during current review period				
	Nil			

[1] *Note: As per the 2019 Audit and Review Guidelines, recommendations from the previous review that were rated as process C or D and/or effectiveness of 3 or 4 are listed in the following table together with the current status of actions to address the recommendations. Recommendations for improvements at higher ratings are no longer required to be reported in this report.*

2.6 Detailed Review Observations

Item no.	Review Priority (1 High to 5 Low)	Component and Effectiveness Criteria (per Audit Guidelines)	Observations and results (including any potential improvements)	Process and Policy Rating	Performance Rating
1		**ASSET PLANNING**		A	1
1.1	2	Asset management plan covers the processes in this table.	NiW has an overall Asset Management Plan (AMP) related to its distribution and retailing of electricity, as required by its electricity distribution and retail licences. The AMP is included in NiW's Electrical Distribution Licence Asset Management System Manual. The document also includes the Financial Management and Risk Management Plans. NiW's assets are clearly defined in the schematic drawings included in the Appendices. The AMP is the responsibility of the Principal Energy and Production Integration. The AMP has been updated during the review period, with the current document dated August 2022. NiW's AMP describes the systematic and coordinated activities and practices through which NiW manage its distribution network assets and asset systems, their associated performance, risks and expenditures over the life cycle of the assets. It also ensures regulatory requirements and contractual requirements for supplying power to customers are met. The prime purpose of NiW's AMP is to ensure specific objectives related to the distribution and retail activities are achieved and hence, compliance with the requirements of its two electricity licences.	A	1
1.2	4	Planning processes and objectives reflect the needs of all stakeholders and are integrated with business planning.	BHP uses a 5-year strategic asset planning process that includes the definition of objectives and activities needed in order to deliver the required level of service. The plan and budget requirements are reviewed and updated annually. The data collected in the 1SAP system is used to enhance the planning and budgeting process. This approach is consistent with the above AMP.	A	1
1.3	4	Service levels are defined in the asset management plan.	Service level targets are set out in Section 5.6.2 (table 3) of NiW's Asset Management System Manual. The performance targets have been designed to meet NiW's business values and legislated requirements and reflect the service levels included in each of NiW's Power	A	1

Item no.	Review Priority (1 High to 5 Low)	Component and Effectiveness Criteria (per Audit Guidelines)	Observations and results (including any potential improvements)	Process and Policy Rating	Performance Rating
			Purchase Agreements (PPAs). They include service level targets for Reliability, Capacity, Quality, Safety, Customer Service and Environment.		
1.4	4	Non-asset options (e.g. demand management) are considered.	With only a minor forecast of growth expected over the next 5 years at the time of updating the AMP, the non-asset option of demand management is not considered necessary. Future demand may be subject to change if mining activities change and this is monitored by NiW as stated in the AMP. Other non-asset options are considered, as additional assets are unlikely in the current forecast, therefore making improved utilisation of existing assets the preferred solution. In addition, demand management is a preferred function of NiW's customers, most of who are on two part tariffs.	A	1
1.5	4	Lifecycle costs of owning and operating assets are assessed.	NiW's AMP represents only a small part of Nickel West's greater electrical network. NiW has one division responsible for the operation of the total electrical system and no clear distinction is made between budgets. For this reason, the operational budget for the distribution part of the network is an estimation derived from the total operational budget. NiW's AMP specifies activities, resources, responsibilities and timescales for improving the long-term optimisation of delivering the business objectives associated with the network distribution activities. Each of the life cycle activities (acquisition, operation, maintenance, renewal/replacement and disposal), has been assessed and outlined in the AMP, allowing NiW to develop plans based on the results of a risk management process and existing maintenance programs. Potential projects are risk assessed against others at a high level with other NiW sites and rolled up to whole of BHP to prioritise proposed expenditure at an organisation level. Capital planning is very well defined in terms of the scope for each project. The provides a transparent approach to BHP whole-of-business capital planning that includes NiW's electrical business in WA as well as all of its other sites. As noted above, the asset planning activities, including project justification, risk assessments, option analysis and funding options are generally taken with	A	1

Item no.	Review Priority (1 High to 5 Low)	Component and Effectiveness Criteria (per Audit Guidelines)	Observations and results (including any potential improvements)	Process and Policy Rating	Performance Rating
			consideration to specific core business mining projects and functions rather than being related to the planning requirements and lifecycle management of the electrical assets themselves. Mining companies operate under different circumstances and, as a result, the economic lifespan of distribution assets is directly related to the profitable operation of the mine. Economic lifespan will, therefore, need to be determined for each specific situation/asset. The capital expenditure forecasts are drawn from mining projects, and although asset life is considered in the process, the life of the assets usually exceeds that of the overall mining project. NiW's capital expenditure estimates for major items follow a rigorous process defined in BHP's Engineering Standards. NiW standards and specifications are listed in the AMP.		
1.6	4	Funding options are evaluated.	No funding or financial support is required for the operation, maintenance and future investment for the Leinster electrical systems. The core business of NiW is mining, and the provision of electrical services is to enable the maintenance of mining operations and supporting sites within reasonable proximity to its mining operations. As such, the cost of delivery of these services is operational expenditure.	A	1
1.7	4	Costs are justified and cost drivers identified.	The understanding of costs and cost drivers is demonstrated in the financial management section 6 of the AMP. The AMP requires forecasting of capital and operational expenditure for the next 5 years.	A	1
1.8	4	Likelihood and consequences of asset failure are predicted.	The risk management process is set out in Section 7.2 of the AMP, including assessing the likelihood and consequences of risks. The assessments are completed in accordance with the requirements of the NIW-IOPS-STD-0001. This process is consistent with the BHP global risk management principles outlined in 'Risk Management – Our Requirements'. The combination of consequence and likelihood results in a risk level of low, moderate, high or extreme. Risks that are high or above require an action to reduce the risk to as low as reasonably practicable.	A	1

Item no.	Review Priority (1 High to 5 Low)	Component and Effectiveness Criteria (per Audit Guidelines)	Observations and results (including any potential improvements)	Process and Policy Rating	Performance Rating
1.9	4	Asset management plan is regularly reviewed and updated.	NiW has a requirement to review its Asset Management System Manual at least every 5 years or if any significant change occurs. The AMP has been updated during the review period, with the current document dated August 2022.	A	1
2		**ASSET CREATION/ ACQUISITION**		A	1
2.1	4	Full project evaluations are undertaken for new assets, including comparative assessment of non-asset solutions.	Asset Creation and Acquisition is briefly described in Section 5.3 of the AMP. NiW follows a structured approach to developing capital programs and budgets. The document BHP Capital Projects - Our Requirements describes the "phase" requirements for major capital projects with the evaluation activities needed to be complete to pass through the gateways from project initiation, identification, selection, definition and execution. The main function of the NiW's distribution network is to provide sufficient electrical power to the NiW operations and customers. Therefore, the network will only grow based on demand due to expansion of operational and/or customer activities. As a result, NiW's controls that are in place to manage future demand versus available capacity are based on demand planning. The Power Purchase Agreements between NiW and its electricity customers require a capacity plan to be provided by NiW's individual customers. During the review period, NiW has not created or acquired any major new assets. Project evaluations will be prepared for any projects to form the capital proposal put forward for inclusion in the capital program. NiW uses Australian Standard engineering specifications to detail the technical design for the procurement of major components in its network. These specifications are reviewed regularly. NiW has in-house resources and access to external contactors to ensure that any asset creation projects will reflect sound engineering and business decisions. Examples were sighted in the review. Assets that are created or acquired go through normal NiW project initiation processes and some qualification work done on site. NiW undertakes its asset procurement activities under the BHP Billiton procurement framework. The 1SAP Basic Procurement Guide provides detailed information related to all steps in the procurement process. Asset procurement for larger value	A	1

Item no.	Review Priority (1 High to 5 Low)	Component and Effectiveness Criteria (per Audit Guidelines)	Observations and results (including any potential improvements)	Process and Policy Rating	Performance Rating
			assets is managed by NiW's procurement team. Where appropriate, preferred vendors have been set up by the procurement team. New assets are entered into the asset maintenance register (1SAP) on completion of any new project. Procedures are in place to maintain and update these records in case of acquisition of new assets or decommissioning/disposal of existing assets.		
2.2	4	Evaluations include all life-cycle costs.	Section 5.1.7 of the AMP requires assessment of the lifecycle costs from acquisition, utilisation, maintenance, renewal to disposal.	A	1
2.3	4	Projects reflect sound engineering and business decisions.	The electrical distribution assets viewed during the site visit were in good condition and the project documentation sighted indicated sound engineering and business decisions.	A	1
2.4	4	Commissioning tests are documented and completed.	NiW uses Australian Standard engineering specifications to detail the technical design for the procurement of major components in its network. These specifications are reviewed regularly. NiW has in-house resources and access to external contactors to ensure that any asset creation projects will reflect sound engineering and business decisions, including documentation and completion of commissioning tests.	A	1
2.5	4	Ongoing legal/environmental/safety obligations of the asset owner are assigned and understood.	All NiW projects require environmental assessments and clearance which are covered under the project approval process. Ongoing legal / environmental / safety obligations are assigned to the asset manager and understood. The obligations are key components of new projects and are specifically addressed in the project requirements. These obligations are detailed in the AMP (Section 7).	A	1

Item no.	Review Priority (1 High to 5 Low)	Component and Effectiveness Criteria (per Audit Guidelines)	Observations and results (including any potential improvements)	Process and Policy Rating	Performance Rating
3		**ASSET DISPOSAL**		A	1
3.1	4	Under-utilised and under-performing assets are identified as part of a regular systematic review process.	Section 5.5 of the AMP (Asset Disposal) sets out the disposal principles. This is supported by the detailed Disposal Procedure. NiW's asset disposal processes include the disposal of redundant plant. However, the most likely reason for asset disposal is asset failure as the nature of the mining industry means that it is likely that assets may be under-utilised for long periods due to production demand. Therefore, asset disposals are driven by lack of need for the asset rather than renewal of an asset at the end of its life. Under-utilised assets would be expected to be retained for future use and increases in mining production rather than being identified for removal and either disposal or replacement with an asset more suited to the lower NiW's replacement strategy is also focused on asset failure. However, predicted demand and expansion of NiW's and its customers' mining operations are also considered. NiW has a Disposal Procedure that sets out the processes for disposing of assets from its sites. Specific areas outlined in the procedure include the methods of disposal available and the responsibilities and authorisations required to carry out this process.	A	1
3.2	4	The reasons for under-utilisation or poor performance are critically examined and corrective action or disposal undertaken.	Condition assessments from NiW's annual asset inspection program is also used to identify assets for replacement. When asset failures occur, they are critically examined as part of the replacement process. The review sighted examples of work orders for corrective action.	A	1
3.3	4	Disposal alternatives are evaluated.	The Disposal Procedure states that in conjunction with the Disposals Officer, the End User will determine the most appropriate method of disposal. In order of priority assets may be disposed of in the following ways; • Return to Vendor; • Transfer to another business unit / operation; • Sale or auction of the asset; or • Scrapping the asset.	A	1

Item no.	Review Priority (1 High to 5 Low)	Component and Effectiveness Criteria (per Audit Guidelines)	Observations and results (including any potential improvements)	Process and Policy Rating	Performance Rating
			The completed form is then sent for approval as per Nickel Wests Approval Framework.		
3.4	4	There is a replacement strategy for assets.	The AMP includes forecasting capital (and operating) expenditure for the next 5 years. There is a capital expenditure budget for the next 5 years that sets out the replacement strategy for the electrical distribution assets.	A	1
4		**ENVIRONMENTAL ANALYSIS**		A	2
4.1	2	Opportunities and threats in the system environment are assessed.	The Asset Management System Manual adequately sets out the overall system environment. The opportunities and threats are documented in Section 7 - Risk Management. NiW has an 'Environment' business objective "To consider sustainability in asset management decisions and minimise risks to the environment. The requirements of the Environment Management System at Nickel West are set out in the Environment Management Plan (NIW-HSEC-PLN-001). The Plan is included in the Asset Management System Manual and outlines the overall Environmental Management System, Framework and Policy, and the legal and other requirements. The decision making process for expansion of NiW's distribution network includes an environmental impact assessment. These assessments are carried out as part of the overall mine project of which the electrical component is a small part. Local environmental conditions are recorded and used for the purchasing of equipment. Given the nature of NiW's licenced electricity distribution and retail business, both opportunities and threats in the system environment are related to its own and its customer's mining operations. As noted previously, NiW's electricity asset management is generally assessed as part of overall mining operations and the feasibility of new mining projects. As such and given mine life is often shorter than the nominal electricity asset lives, it differs from a more traditional asset management approach. NiW's activities associated with its electricity distribution network are, as a minimum, subject to the same environmental requirements as the NiW operational sites.	A	1

Item no.	Review Priority (1 High to 5 Low)	Component and Effectiveness Criteria (per Audit Guidelines)	Observations and results (including any potential improvements)	Process and Policy Rating	Performance Rating
			Environment objectives and targets are established as per the Nickel West planning process. Nickel West maintains a Risk Register that identifies the environment aspects associated with each Operation. The NiW Risk Register is reviewed on an annual basis. Environmental performance is reported monthly in the HSEC Performance Report. This includes reporting on environmental events, community complaints, water use and greenhouse gas emissions. The reporting is by NiW site and so the electrical distribution component of the reporting will be included but is grouped together with the rest of NiW operations. A review of NiW's Environment Management System Management is completed annually with the Nickel West HSEC Lead Team. The outcomes from the annual review are included in the Annual Environmental Report submitted to the Department of Environment Regulation.		
4.2	4	Performance standards (availability of service, capacity, continuity, emergency response, etc.) are measured and achieved.	Service level targets are set out in Section 5.6.2 (table 3) of NiW's Asset Management System Manual. The performance targets have been designed to meet NiW's business values and legislated requirements and reflect the service levels included in each of NiW's Power Purchase Agreements (PPAs). They include service level targets for Reliability, Capacity, Quality, Safety, Customer Service and Environment. NiW maintains a register of any outages in the distribution network in Electricity Industry Network Quality and Reliability of Supply Code - Reporting Requirements Register. There have been no customer complaints in the review period. Section 15 of NiW's Environment Management Plan outlines the intent to maintain sufficient training of all site personnel, especially the site leadership team, to ensure that all personnel have the awareness, understanding, competence and skills appropriate to their role and responsibilities. NiW employees and contractors are required to be trained to manage the potential significant environmental impacts associated with their role.	B	3

Item no.	Review Priority (1 High to 5 Low)	Component and Effectiveness Criteria (per Audit Guidelines)	Observations and results (including any potential improvements)	Process and Policy Rating	Performance Rating
			Speaking with the Leinster site superintendent during site visit, the reviewer ascertained that Site leadership lacked awareness of Site emergency response procedures, although the delegated Site environmental team displayed competency. ***Recommendation 1/2023*** *a) NiW to review and improve the staff training matrix to include mandatory emergency response awareness modules for all site-based staff and contractors.* *b) Regular training should be provided to all site personnel, including the site Superintendent, to ensure awareness of site emergency procedures and regular participation in the emergency response drills.* *c) Maintain hardcopy visual documentation on site notice boards to ensure easy access of the Emergency Site Procedure to all site personnel.*		
4.3	4	Compliance with statutory and regulatory requirements.	The AMP lists regulatory requirements relating to the ERA and DWER (environment). NiW maintains a legal register which contains all relevant legislation that is applicable to its operations. There is also a Compliance and Reporting Register with the ongoing regulatory obligations to ERA and DWER. The HSEC Licences and Approvals procedure ensures the management of HSEC regulatory licences and commitments, including the provision of reminders for key dates, the payment of licence fees and recording of compliance. Nonconformity, corrective and preventative action, related to HSE issues, is managed in accordance with the NiW HSEC Event Reporting and Investigation procedure. Environment monitoring is completed across NiW to satisfy legal and other obligations and is undertaken according to the relevant standards. The monitoring of Environment aspects is detailed in the Environment Monitoring procedure. Reporting health, safety, environment and community significant events is covered in BHP Billiton's Health, Safety, Environment and Community Reporting - Our Requirements, March 2018.	A	1

Item no.	Review Priority (1 High to 5 Low)	Component and Effectiveness Criteria (per Audit Guidelines)	Observations and results (including any potential improvements)	Process and Policy Rating	Performance Rating
4.4	4	Achievement of customer service levels.	Service level targets are set out in Section 5.6.2 (table 3) of NiW's Asset Management System Manual. The performance targets have been designed to meet NiW's business values and legislated requirements and reflect the service levels included in each of NiW's Power Purchase Agreements (PPAs). They include service level targets for Reliability, Capacity, Quality, Safety, Customer Service and Environment. As the span of NiW's distribution network and the number of customers is considered to be too limited to justify the operation of a fully equipped call centre, customer feedback is achieved through the use of a simplified communication channel that meets specified requirements and is accepted by customers. NiW's management of customer feedback includes: • The recording of customer comments and complaints. • NiW field service details are available to all customers. • Maintenance manager phone number publicly listed (Leinster Township) • Regular meetings which customers may attend. NiW has a complaint procedure in place to address complaints for all customer groups and any identified power quality non-compliances are recorded as part of the overall risk management procedure. There have been no complaints in the audit period. NiW has ensured that the supply of electricity has been maintained and the occurrence and duration of interruptions has been kept to a minimum. The statistics for the interruptions for this 4 year period were as follows: • Average length of interruption: 105 minutes • Average no. of interruptions pa: 4 • Average supply availability: 99.96% • Average total length of interruptions pa: 344 minutes The interruptions have been minor and response is in line with service levels expected for the number and size of customers and the network. Where required, distribution networks are repaired or upgraded as appropriate. This was confirmed during the site visit discussions and sighting of the assets.	A	1

Item no.	Review Priority (1 High to 5 Low)	Component and Effectiveness Criteria (per Audit Guidelines)	Observations and results (including any potential improvements)	Process and Policy Rating	Performance Rating
5		**ASSET OPERATIONS**		A	1
5.1	4	Operational policies and procedures are documented and linked to service levels required.	NiW has multiple policies and procedures for managing its distribution systems. Some procedures are statutory and these are, therefore, non-negotiable in terms of scope and frequency. In-house procedures are reviewed periodically and frequencies modified as required. In-house SAP maintenance procedures are also reviewed periodically. Section 5.4.3 of NIW's AMP outlines the maintenance tactics applicable to the distribution assets which is based on a risk management strategy using a combination of preventative and condition-based maintenance methods. The following maintenance activities are performed on the distribution network: • Clearing of vegetation under powerlines and around substations to prevent vegetation fires reaching lines in accordance with the Code of Practice published by Energy Safety. • Integrity inspections of switchgear, transformers and secondary equipment in substations. • Periodic oil sampling for analysis of all ground-based transformers (66/11kV power transformers, 11/0.44kV auxiliary transformers and 11kV earthing transformers at Widgiemooltha and Lanfranchi substations). • Lines are checked for damage and bird nests. Insulators are inspected for damage and pollution. • Visual inspection and routine accuracy verification of all electricity revenue meters. • Overall accuracy verification of metering installations (meter, instrument transformers and wiring). • Power quality monitoring. • Power system study carried out to verify protection grading. Every procedure includes sign-off by the field staff carrying out the work, the Supervisor/Coordinator to confirm that the tasks have been completed by the technician to the required standard and the Planner, to confirm that the documentation and tasks have been completed to the standard required by the business process.	B	1

Item no.	Review Priority (1 High to 5 Low)	Component and Effectiveness Criteria (per Audit Guidelines)	Observations and results (including any potential improvements)	Process and Policy Rating	Performance Rating
			Service level targets that form the guide to operational and maintenance activities undertaken on site are outlined in the Section 5.6.2 of the AMP. NiW has an annual audit of O&M activities via their contractor MiSands. One such audit report was reviewed as part of this audit. O&M activities are then planned based on this review by MiSands each year. No work activities were occurring during the site visits to NiW's facilities. Drawings were readily available and contained detail to the expected level for isolations. <u>Power Quality Monitoring</u> Power quality requirements apply to the 'connection points' at a customer's premises as these points determine the transfer of ownership and responsibility from network operator to customer. NiW's 'Quality' business objective is 'To meet the power quality requirements as specified in the Electricity Regulations and in applicable industry codes of practice.' Details of NiW's power quality monitoring program are recorded throughout the AMP. A registration system is used to store the results from power quality measurements and to record and manage power quality complaints. Information from this database is available for annual reporting and auditing purposes. NiW is required to annually report on its quality and reliability performance. For Power Quality (PQ) the two areas of performance are: • The results of PQ monitoring. • The number of customer PQ complaints received. NiW has a key performance indicator related to the number of (recognised) power quality complaints. Complaints are attributed to the parameters they relate to (e.g. frequency, steady state voltage level, voltage fluctuations and harmonic voltages). NiW uses PQ monitoring to pro-actively identify situations where poor power quality could potentially cause customer complaints. NiW's power quality risk levels are based on the maximum allowed values and these are set out in the AMP. It was noted that NiW do not track the maintenance metrics data captured by the network operator (SCE) regularly as part of their network management. This could further assist NiW in management of power quality and asset condition monitoring.		

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			An improvement opportunity is that NiW explore the maintenance metric data capture from their network operator (SCE) on a regular basis, as part of their continuous improvement process. <u>Shutdowns</u> The majority of NiW's network maintenance work requires equipment to be de-energised. If continuous supply is required a backup facility may need to be supplied and installed. The predominantly radial network configuration of NiW's distribution systems limits operational flexibility. Alternative power can only be supplied via stand-by or mobile generation. However, as this is a costly option, it is not NiW's preferred approach for maintenance activities. NiW's most cost-effective option is to carry out maintenance activities during planned shutdowns as required by mine production outages. Once NiW has determined its maintenance activities, detailed scheduling is prepared in accordance with the planned shutdown schedules. NiW has regular meetings with its customers and discussion of shutdown planning is documented and outages are scheduled to minimise disruption to customers. In some cases SCE is also involved in the planning of outages. <u>Operational Procedures</u> NiW's asset maintenance is scheduled in SAP and the output is a work order for a task. Each work order has been risk assessed and the frequency of the task is associated with the risk. NiW's assets are defined in drawings and these are readily available from the corporate information system. As part of the audit, many documents were reviewed to confirm the operational procedures. Some of them are as listed below: 1) Critical Work Order 526371312 "8WEleclnspSubPowerhouse" 2) Critical Work Order 525344211 "13WCCElnspDistTransformers" 3) Executed Work Procedure 52W 11kV Powerline Corridor Vegetation Control (Work Order 525287598) dated 1st July 2022. 4) Weekly work order schedules for WE 9th April 2023 and WE 16th April 2023.		

Item no.	Review Priority (1 High to 5 Low)	Component and Effectiveness Criteria (per Audit Guidelines)	Observations and results (including any potential improvements)	Process and Policy Rating	Performance Rating
5.2	4	Risk management is applied to prioritise operations tasks.	The process to manage the risks associated with all bridging, overriding and bypassing activities is described in the Bridging, Overriding and Bypassing Procedure. The procedure outlines the minimum operational requirements to manage the risks Detailed technical data for electrical distribution equipment is stored in NiW's asset data register. NiW utilises 1SAP as their ERP (Enterprise Resources Planning) application to record numerical equipment data. Each power interruption is subject to a risk assessment. This risk assessment is part of NiW's process to analyse the root cause of interruptions and to determine whether the circumstances are likely to recur and result in a similar interruption. In case of recurrence, immediate mitigation measures are established and implemented. Loss of supply data is collected by NiW and registered in an IT based system as part of a mandatory procedure. The data collected is used to enable NiW to establish an annual risk assessment for its assets.	A	1
5.3	4	Assets are documented in an Asset Register including asset type, location, material, plans of components, and an assessment of assets' physical/structural condition and accounting data.	The asset data recorded in the 1SAP asset register includes asset type, location, material (where applicable), plans of components (where applicable), asset condition and accounting data. Assets in the field are physically tagged with the asset ID number and key asset information. The distribution system assets are documented in a spreadsheet that is held on the corporate computer network. Graphical equipment data is recorded on drawings in a drawing library. The AMP also includes network diagrams. Procedures are in place to maintain and update these records in case of acquisition of new assets or decommissioning/disposal of existing assets. The asset register is updated by a site based person if change occurs. Personnel with the appropriate computer access level can access the assets document.	A	1
5.4	4	Accounting data is documented for assets.	The reviewer sighted the annual Financial Reports for BHP for 2020/21 and 2021/22 prepared by external accountants. This confirms that accounting data is documented in the financial system. There is also an Asset Register maintained on the 1SAP system.	A	1

Item no.	Review Priority (1 High to 5 Low)	Component and Effectiveness Criteria (per Audit Guidelines)	Observations and results (including any potential improvements)	Process and Policy Rating	Performance Rating
5.5	4	Operational costs are measured and monitored.	NiW's Opex budget planning follows a rigorous process and is carried out in accordance with various NiW standards and procedures. The operating cost finances are generally drawn from consolidated budgets for the mining plants. The distribution network covered under the AMP is a small part of Nickel West's greater electrical network. There is one division responsible for the operation of the total electrical system and no clear distinction is made between budgets. For this reason the operational budget for the distribution part of the network is an estimation derived from the total operational budget. NiW's Operating expenditure budgets include costs associated with the: • Operation of existing assets. • Maintenance of existing assets. The Principal Energy and Production Integration confirmed that operational costs are recorded and reviewed against budgets in monthly financial reporting.	A	1
5.6	4	Staff resources are adequate and staff receive training commensurate with their responsibilities.	Both Leinster and Kambalda locations have a Site Supervisor/Maintenance Manager and associated staff. An Asset Manager, who is located at the Perth head office, coordinates activities between both locations. NiW's normal distribution network operation does not require a high level of involvement of staff. Switching activities are usually initiated by maintenance requirements or emergency situations or, occasionally, requested by customers and/or SCE. The resourcing for the Northern System comprises the town work being a portion of the duties of a BHP Facility Superintendent employee with electricians reporting to them and engineers looking after the operations and maintenance of the distribution system. If a task requires additional resources, then BHP Billiton employees from the area can be used as required. There is a contractor based in Leonora approximately 150km away who has plant and equipment for working with power poles and aerial power lines. The resourcing for the Southern System comprises of a team of an electrical supervisor, HV switching operators plus an electrician. The distribution work is only a portion of the duties of BHP Billiton's employees. The employees are residential and have an arrangement for managing after-hours call outs. If a task requires	B	2

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			additional resources, then contractors are used. There is a local contractor who has plant and equipment for working with power poles and aerial power lines. The site visit confirmed that staff and contractor resources are adequate to maintain the electricity distribution network. Competency requirements for operations and maintenance personnel involved in source water, treatment and distribution are identified and documented in position profiles. Training plans are then established and implemented to ensure employees and contractors are competent. NiW's normal distribution network operation does not require a high level of involvement of staff. Switching activities are usually initiated by maintenance requirements or emergency situations or, occasionally, requested by customers and/or SCE. NiW's staff receive training commensurate with their responsibilities. Refresher training is completed where required. Each member of staff has an individual training record that identifies training requirements and includes copies of certification. Staff training is managed through BHP's corporate learning management system portal, which tracks and records training completed and required. Training is completed both in-house and using external training, as may be required. NiW staff are supported by contractors for labour and equipment with contractors contacted when a power interruption requires component(s) to be repaired or replaced. Incidents of lack of availability of a contractor have been experienced which leads to an increase in outage time. *NiW is in the process of finalising their Electrical Training Pathway Standard document (NIW-ENG-STD-0009) and all its appendices that identify the training qualification requirements and frequencies of refresher courses of various modules to be completed by all electrical O&M staff.* During the site visit and whilst discussing with Leinster site superintendent, as outlined in Item 4.2 above in this report, it became evident that there seemed to be lack of basic awareness of site emergency response procedures and that all staff did not partake in emergency response drills. This raised concerns relating to relevant aspects of staff training requirements.		

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			Refer Recommendation 1/2023		
6		**ASSET MAINTENANCE**		A	1
6.1	4	Maintenance policies and procedures are documented and linked to service levels required.	NiW's AMP provides a high level description of the significant maintenance activities carried out by NiW on its electricity network. Maintenance policies and references to equipment standards are included in Section 5.4 of the AMP. The asset performance data is recorded in NIW's Asset Management System, 1SAP. The system records both planned and responsive maintenance activities. The maintenance activities that are completed for the distribution network can be categorised by the following programs: • Planned Corrective Maintenance (PM01): Planned non-scheduled maintenance required to rectify a known issue which is not urgent. Corrective maintenance work is generally identified through preventive maintenance. • Preventive Maintenance (PM02): Planned scheduled maintenance necessary to ensure the reliability or to sustain the design life of an asset. NiW's preventive maintenance is based on maintenance intervals prescribed by manufacturers or common industry standards. • Breakdown Maintenance (PM03): Unplanned maintenance required to bring an asset back to working order when it has failed or is worn out. This work must be completed within 1 to 8 days. • Project Work (PM06): Engineering requests that lead to project work such as replacement or improvements that must be programmed. NiW's asset maintenance requires close interaction with the connected customers as the radial network structure has only limited switching options. Maintenance on major equipment is generally scheduled during shutdowns of the associated mining area to minimise impacts on NiW and its electricity retail customers. *An improvement opportunity is to ensure that the maintenance responsibilities of SCE for the five transmission lines they own are clearly established and communicated to*	B	2

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			maintenance staff; the SCE line data reports (daily/weekly) and monthly maintenance metrics are reported to NiW, and failure responses are clearly established. *An improvement opportunity is that at the time of site visit, NiW have been trialling Online Condition Monitor for a high-voltage transformer and may consider rolling out to cover all high voltage transformers within the network.*		
6.2	4	Regular inspections are undertaken of asset performance and condition.	Asset inspections and asset condition monitoring are regularly performed to identify renewals, rehabilitation and replacements required to ensure reliable ongoing levels of service. Maintenance and inspection requirements and frequencies for plant and equipment are defined in Operating and Maintenance Manuals or Asset Management Plan, with the planned maintenance instructions (PMI's) pre-loaded into the 1SAP works management system, allowing automatic generation of work orders when inspection and attendance is required. NiW monitors asset integrity data through regular inspection programs. The intensity of monitoring depends on the estimated risk levels. Although it does not currently maintain a single asset inspection record, inspection results are recorded as specific equipment parameters in NiW's SAP system. The regular inspections include: • Thermographic inspections on a yearly basis of HV aerials, HV transformers and pole mounted fuses. • Visual inspections of all distribution equipment on a 3 monthly basis. • Transformer oil sampling of ground mounted transformers every 12 months or more frequently if required. • A power quality audit is scheduled for once in every 12 months. The audit includes reviewing the loading on transformers as the air conditioning load has been increasing. • Inspections of poles are managed using a dedicated spreadsheet. Inspections are prioritised, with information/notes being recorded against	A	2

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			each asset in the spreadsheet, including where maintenance/renewal work has been identified. • All transformers are inspected on a three monthly basis for oil leaks and general condition. There have been no major oil leaks in the review period. • A contractor with personnel and equipment for removal of vegetation near power lines visits Leinster every 3 months with the task of managing vegetation where required. During the site visits, the reviewer did not observe any issues related to vegetation being in close proximity to the power lines. NiW's electrical equipment is either designed for an outdoor environment or enclosed with a suitable IP rating. The major electrical equipment is visually inspected every 3 months and switchboards have a detailed inspection every 12 months. During site visits, the reviewer did not observe any issues related to water affecting any of NiW's electrical equipment. *However, one of the transformer compounds was infested with wasp nests with some destruction observed to the cable sheaths. This requires urgent attention as it can lead to unsafe work environment and/or catastrophic failure of the equipment. This was brought to the attention of the site supervisor for immediate action.* The most recent power pole audit was completed in January 2023 by a specialist company who reviewed the condition of all the wooden power poles. The review included core sampling. The reviewer sighted examples of work order lists, detailed individual work orders in 1SAP and viewed a calendar of work orders recorded against different asset types. During the site visits, examples of recent work orders were reviewed in detail and observed that they had well-documented procedures and checklists. The work order work flow was well understood by the interviewed staff. The work flow involves the supervisor reviewing the actions and results. If further actions are required, a work order is created for the specific action.		

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6.3	4	Maintenance plans (emergency, corrective and preventative) are documented and completed on schedule.	Regular work orders are produced in 1SAP for maintaining the distribution network. The work orders include the risk rating, and this is utilised in prioritising work when scheduled manning is unavailable or a task takes longer than expected. NiW's list of work orders in SAP is extensive and involves timeframes of weekly to multi-year maintenance activities. Maintenance is performed by NiW internal resources and contractors. NiW staff are responsible for, planning the activities, managing client communication, directing contractor staff, switching duties and ensuring a safe work environment. The contractors provide labour and equipment and work under supervision of NiW personnel. Through review of NiW's Security, Crisis and Emergency Management and Business Continuity Plans – Our Requirements and site interviews, the reviewer confirmed that NiW maintains emergency response, incident response and business continuity management systems, which support its commitment to its customers to maintain continuity of supply and safe and secure operations. The Maintenance Superintendent confirmed that NiW managers are notified of significant disruptions as and when they occur. This obligation is documented in the above Plans. NiW's Energy Management Group (EMG) holds regular meetings with the representatives of external stakeholders (Customers/Power Provider (SCE)). These meetings are minuted and contact details for participants and key personnel are included in the minutes. The meetings cover aspects of safety, technical supply issues and developments, reliability and outage planning. As a result of these meetings, outages on the power system are normally discussed well in advance and, where possible, coordinated with the end users to minimise the impact to the customers.	A	1

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6.4	4	Failures are analysed and operational/maintenance plans adjusted where necessary.	NiW has to pay liquidated damages under the terms of the PPAs for the duration in the audit period that NiW was retailing to the organisation). Under the terms of the PPAs in place for NiW's other customers, the requirements for interruptions relate to the standard Western Power quality of supply requirements. Any supply interruptions greater than four hours are highlighted in NiW's Electricity Industry Network Quality and Reliability of Supply Code - Reporting Requirements spreadsheet. To assess it performance against its reliability business objective, NiW uses key performance indicators based on: • Customer minutes lost. • Length of interruption. • Number of interruptions. • Annual average percentage of supply. The reviewer confirmed that asset performance is controlled and optimised by the application of the risk management process, including the analysis of any failures and adjustment of operational/maintenance plans.	A	1
6.5	4	Risk management is applied to prioritise maintenance tasks.	NiW has a planned corrective maintenance program based on historical expenditure and a preventative maintenance program, including inspections, servicing and monitoring, to ensure the quality and reliability of the services is maintained. Each power interruption is subject to a risk assessment. This risk assessment is part of NiW's process to analyse the root cause of interruptions and to determine whether the circumstances are likely to recur and result in a similar interruption. In case of recurrence, immediate mitigation measures are established and implemented. Loss of supply data is collected by NiW and registered in an IT based system as part of a mandatory procedure. The data collected is used to enable NiW to establish an annual risk assessment for its assets.	A	1

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6.6	4	Maintenance costs are measured and monitored.	The AMP includes information on the type of maintenance completed and in separate financial budgets, the cost of planned, preventative and breakdown maintenance over the next 5 years. These are an estimate subject to annual review following the BHP Corporate Alignment Planning process. Maintenance costs related to completed work orders are recorded in 1SAP and are reviewed by the Electrical Supervisor on a regular basis. Maintenance costs are recorded in the monthly financial report and variances to budget are reviewed and actioned as necessary. The actual operations and maintenance costs for each year in the review period are included within the cost centres for scheduled repairs, preventative maintenance and breakdown costs.	A	1
7		**ASSET MANAGEMENT INFORMATION SYSTEM**		A	1
7.1	4	Adequate system documentation for users and IT operators.	BHP uses the 1SAP asset management system for asset and work management processes. The work management processes defined in 1SAP provide BHP with the ability to identify, plan, schedule, execute and manage multidisciplinary work activities. Work management processes are used for the development of repeatable work plans and strategies, reporting and investigating HSE and other events and management of work execution (e.g. generation of work orders for planning and scheduling work, shutdown management and contractor management). 1SAP is also utilised for data collection and management, analysing performance and documenting asset condition. NIW has established a comprehensive Management System and hierarchy of supporting documentation which defines water supply and sewerage system responsibilities. It includes a range of controlled documents covering health and safety, project development and implementation, operations and maintenance, and training. All NIW employees have access to current procedures on the BHP Intranet.	A	1
7.2	4	Input controls include appropriate verification and validation of data entered into the system.	Data accuracy is maintained by edit checks of data fields in the key system and checks by the user when entering manually completed work order requests and updates. Considered adequate.	A	1

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7.3	4	Logical security access controls appear adequate, such as passwords.	The NiW Information Technology (IT) Department is responsible for the administration, operation and maintenance of the IT systems. Data is encrypted using AES-128 standard and stored in secure data centres or hosting facilities. Procedures are in place for user authentication, cyber security, IT risk management, incident management and disaster recovery. The IT systems are accessible via authorised computer terminals (on the LAN) and users require a valid account and current password. The computer terminals are not available to the general public and are located in approved lockable buildings. In addition, the IT systems are remotely accessible to authorised users using a two-factor authentication system. Restricted access is given to authorised users of the following systems: • Supervisory Control and Data Acquisition (SCADA) systems. • Enterprise Resources Planning system 1SAP.	A	1
7.4	4	Physical security access controls appear adequate.	The physical access restrictions to the site office in Leinster were confirmed during the field visit. Access to systems via Laptop PCs and mobile devices is controlled by passwords, which are required to be changed on a regular basis.	A	1
7.5	4	Data backup procedures appear adequate and backups are tested.	Data is continually backed up to cloud storage with a managed Information Technology (IT) service provider. There is also a physical back up of the key data systems used by NiW to external hard drives. Backups are tested and data backup procedures are sound.	A	1
7.6	4	Key computations related to licensee performance reporting are materially accurate.	NiW's management reporting related to its electrical assets is minimal but performance recording and reporting is considered adequate for the licensee to monitor licence obligations. The performance data monitoring and reporting includes: • Number of end user customers experiencing electricity supply interruptions for more than 12 hours continuously.	A	1

Item no.	Review Priority (1 High to 5 Low)	Component and Effectiveness Criteria (per Audit Guidelines)	Observations and results (including any potential improvements)	Process and Policy Rating	Performance Rating
			• Number of end user customers experiencing more than 16 electricity supply interruptions. • Number of complaints received relating supply interruption. • Capital expenditure by NiW in addressing these complaints. • Number and total amount of payments made for failure to give required minimum 72 hours' notice of planned interruptions. • Number and total amount of payments made for supply interruptions exceeding 12 hours. • Average length of interruptions to supply at customer premises expressed in minutes. • Average number of interruptions to supply at customer premises. • Average percentage of time that electricity has been supplied to customer premises. • Average total length of all interruptions to supply at customer premises expressed in minutes. Billing and interruptions data is collected and analysed in Perth. Expenditure data is also monitored and reported although, as noted previously, this typically relates to all of NiW's electricity activities as opposed to separating out the data only associated with its licenced distribution and retail activities.		
7.7	4	Management reports appear adequate for the licensee to monitor licence obligations.	Service levels are documented in the AMP, including availability of service, service interruptions and system failure or complaints. These are reviewed on a regular basis, including quarterly meetings to review all service standards.	A	1
7.8	4	Adequate measures to protect asset management data from unauthorised access or theft by persons outside the organisation.	Access to all systems have restricted user access and require passwords that are regularly changed. Data is continuously backed up to cloud storage. There is also a physical back up of the key data systems used by NiW. Backups are tested and data backup procedures are sound.	A	1

Item no.	Review Priority (1 High to 5 Low)	Component and Effectiveness Criteria (per Audit Guidelines)	Observations and results (including any potential improvements)	Process and Policy Rating	Performance Rating
8		**RISK MANAGEMENT**		A	1
8.1	4	Risk management policies and procedures exist and are being applied to minimise internal and external risks associated with the asset management system.	BHP requirements for risk management are used by NiW and are applicable to the NiW electricity distribution network. NiW's Risk Management policy references are included in Section 7 of the Asset Management System Manual. The agreed risk management policy is included in each of the PPAs that NiW has in place for each of its retail customers. BHP's risk management objective states "The identification and management of all risks are central to achieving our purpose, strategy and business plans. By understanding and managing risk in a consistent way, we provide greater certainty and confidence to our employees, the communities in which we operate and our shareholders, customers and suppliers." NiW electricity distribution activities form only a small part of BHP's global business. However, the particular risk management objectives associated with these activities still have a direct relation to the corporate objectives and risk management policies. NiW has a Safety business objective "To align all network activities with applicable safety legislation and NiW's applicable safety standards". NiW's risk management procedures have been prepared in accordance with BHP's Enterprise Wide Risk Management (EWRM) process. The risk management process applicable to NiW's distribution and retail activities is integrated with the existing NiW risk management procedure. This procedure aligns with the Risk Management Standard ISO 31000. ▪ Risk management strategies are based on maximising performance of service levels for each of NiW's seven business values. NiW uses its performance indicators as a reference to measure the performance and adequacy of controls. NiW's risk criteria are linked to these performance indicators and are used to assess the severity of potential risks in terms of likelihood and consequence. NiW identifies risks through: • Annual Risk Assessment Workshops involving management and operational staff.	A	1

Item no.	Review Priority (1 High to 5 Low)	Component and Effectiveness Criteria (per Audit Guidelines)	Observations and results (including any potential improvements)	Process and Policy Rating	Performance Rating
			• Measurements of performance indicators, including power supply quality assessed against the defined quality criteria, customer complaints, equipment loads and fault current levels. • Inspection results from condition monitoring activities, which are used in conjunction with the measurements, to compare with reference values and provide an indication of the equipment condition and associated risk levels. • Loss of supply reports based on information from planned and unplanned loss of supply events. These reports allow NiW to identify risks related to reliability of supply and also an assessment of component failure data. • HSE incident reports. HSE related issues having a high priority and are addressed immediately by NiW. Lower level risks are addressed in line with NiW's business priorities. • Customer Service reports, including customer complaints are used by NiW to contribute to the risk management process. During the review period NiW has also arranged external reviews of all NiW sites for different categories of equipment in order to develop criteria and scores for updated risk assessments. Examples of external reports were sighted in the review. The risk assessment process has been used to develop mitigation plans for the different equipment, The developed risk mitigation plans cover HV and LV assets.		
8.2	4	Risks are documented in a risk register and treatment plans are actioned and monitored.	The Risk Management Plan – Electrical Assets includes the specific risk assessment for individual equipment assets. Individual risks are listed and scored, with a separate mitigation plan developed to address each extreme and high risk. The Assessment and Mitigation Plans provide details of existing controls to derive the existing risk rating and then provide a Proposed Risk Control Plan to provide additional mitigation to reduce the risk. A condition assessment is also included in the Plan. The individual equipment risk plans roll up and allow NiW to prioritise at different levels. Progress against the program is reported monthly to the Asset Integrity Manager NiW has a fully developed HSEC management framework in place and has implemented industry approved safe work practices. The activities associated with	A	1

Item no.	Review Priority (1 High to 5 Low)	Component and Effectiveness Criteria (per Audit Guidelines)	Observations and results (including any potential improvements)	Process and Policy Rating	Performance Rating
			the operation of the electricity distribution network are, as a minimum, subject of the same safety requirements as NiW's operational mining and processing sites. BHP's Safety - Our Requirements provides an overview of Safety risk management, including Permit to work, Isolation work, Company-wide safety risks (Confined space, Dropped and falling objects, Fall of ground, Lifting, Light vehicle, Loss of containment of hazardous materials, Mobile equipment and light vehicle collisions in open cut mining operations, and Personnel falling from height).		
8.3	4	The probability and consequences of asset failure are regularly assessed.	NiW uses quantitative analysis method to rank risks. Risk ranking is based on both likelihood and consequence scores. The process and the likelihood and consequence scores are set out in the BHP – Risk Management – Our Requirements document. Risks are assessed on the Severity of the impact and the Likelihood of occurring as per BHP's requirements for risk management. Impact categories may include Health & Safety, Environment, Community, Reputation, Legal and Financial. Likelihood categories may include very rare, rare, unlikely, possible, likely and almost certain. The Likelihood assessment measure the chance of the impact at the severity which is being used in the calculation of the Residual Risk Rating, taking into account the effectiveness of existing preventative controls. NiW develops and implements cost-effective treatments or controls to increase potential benefits and reduce potential negative impacts. Risk ratings with proposed controls are re- assessed to ensure that residual risks are within expectable limits. NiW monitors and reviews the risks and the effectiveness of the treatment measures. Ongoing risks are recorded in a Risk Register which is reviewed at regular intervals and updated when additional risks are identified.	A	1
9		**CONTINGENCY PLANNING**		B	2
9.1	2	Contingency plans are documented, understood and tested to confirm their operability and to cover higher risks.	BHP has an overall Security, Crisis and Emergency Management and Business Continuity Plans - Our Requirements policy. Emergency Response Procedures including emergency contacts are documented in the Asset Management System Manual (Section 8.5 Emergency Response Procedures). NiW distribution network contingency planning covers mitigation actions to reduce quality and reliability of supply non-conformances. The distribution network	B	2

Item no.	Review Priority (1 High to 5 Low)	Component and Effectiveness Criteria (per Audit Guidelines)	Observations and results (including any potential improvements)	Process and Policy Rating	Performance Rating
			contingency planning ensures, so far as is reasonably practicable, that the supply of electricity to a customer is maintained to keep the occurrence and duration of interruptions to a minimum. NiW's levels of service obligations related to restoration times are set out in the PPAs with each customer. NiW ensures replacement times are minimised for any power supply interruptions through mitigation controls that include: • Capable staff and appropriate tools. • Critical spares availability. • Mobile or stand-by generators (there are 3 backup generators at the Leinster townsite and arrangements with local suppliers). NiW has a formal arrangement with SCE for network support in the northern system and local contractors are used in Kambalda with SCE being available on an as required basis. Spares such as pole top transformers, poles, switchgear such as Ring Main Units and insulators are kept on site. NiW's Emergency Management Plan provides an explanation of how Crisis and Emergency Management is conducted in NiW. The Plan includes details emergency planning requirements such as command and control structures, management teams, response teams, managing evacuations, medical facilities and training. In the event of an emergency, NiW staff work closely with a number of designated contractors to secure the emergency area and perform necessary switching operations. The 'callout' contractor usually performs the repair work. An assessment is made by NiW distribution network staff to determine the best course of action for the restoration of power supplies. As much load as possible is restored at the earliest practical opportunity. NiW has site-based disaster/recovery plans but the focus of these relates to core-business production rather than specifically for the distribution assets. There is a Town Evacuation Plan for Leinster that includes actions and emergency contact details. NiW completes annual testing scenarios related to its emergency contingency requirements. These relate to overall incidents rather than focusing on the licenced distribution assets.		

Item no.	Review Priority (1 High to 5 Low)	Component and Effectiveness Criteria (per Audit Guidelines)	Observations and results (including any potential improvements)	Process and Policy Rating	Performance Rating
			The following improvements to the emergency response procedures and testing are recommended: • *Include the Site Maintenance Superintendent in the communication team for any emergency situation;* • *Track the actions/improvements identified after an emergency response event in the work order system.* *Also refer recommendation 1/2023.*		
10		**FINANCIAL PLANNING**		A	1
10.1	4	The financial plan states the financial objectives and strategies and actions to achieve the objectives.	NiW has a Financial business objective 'To assess life cycle costs in the asset management decision making processes and determine potential financial impact of risks.' An overview of NiW's financial management is provided in Section 6 of its Asset Management System Manual. The financial management of the licenced assets form part of NiW's mining electrical assets and are included as part of the overall budgeting process. The overall budget identifies the source of funds for proposed capital expenditure projects and also recurrent asset lifecycle costs. The majority of capital expenditure is funded as part of larger specific mining development projects. NiW uses the BHP corporate Power and Gas Month End processes. There is a standard operating procedure for the preparation and processing of month end close journals, physicals upload into 1SAP for allocation of variable power costs and allocation of actual gas commodity costs to sites. As the financial management of the licenced assets forms only a small part of NiW's core business mining operations, detailed financial plans for the licensed assets are not considered relevant, and instead detailed financial plans for the mining operations are prepared. NiW's funding and cash flow management is performed at the corporate level through NiW Finance. Revenue is only collected from the commercial customers and the small-use customers are supplied electricity without charge. NiW's revenue does not cover the cost of operating the network. However, these unrecovered costs are considered to be acceptable to NiW for strategic reasons.	A	1

Item no.	Review Priority (1 High to 5 Low)	Component and Effectiveness Criteria (per Audit Guidelines)	Observations and results (including any potential improvements)	Process and Policy Rating	Performance Rating
			The five year financial plan applies a detailed bottom-up build approach to operating costs, capital expenditure and headcount planning. NiW prepares a monthly Flash report which compares monthly actual financial information to budgets and also provides the Year to Date assessment. The Flash report uses a traffic light grading for each line so that any significant variances can be quickly identified.		
10.2	4	The financial plan identifies the source of funds for capital expenditure and recurrent costs.	Revenue is only collected from the commercial customers and the small-use customers are supplied electricity without charge. NiW's revenue does not cover the cost of operating the network. However, these unrecovered costs are considered to be acceptable to NiW for strategic reasons.	A	1
10.3	4	The financial plan provides projections of operating statements (profit and loss) and statement of financial position (balance sheets).	NiW has a 5 Year Plan Financial Plan that is underpinned by the Nickel West capital allocation from Group and is intended to be updated to reflect latest approved mine plans, projects, physicals, headcount, price and FX protocols, and financials. The first two years of the Plan, covering years FY22 to FY23 form the 2 year Budget. The budget is update for refresh of global protocols, action items from the CEO, Minerals Australia President and annual Board review and closing working capital balances.	A	1
10.4	4	The financial plan provides firm predictions on income for the next five years and reasonable indicative predictions beyond this period.	Revenue is only collected from the commercial customers and the small-use customers are supplied electricity without charge. NiW's revenue does not cover the cost of operating the network. However, these unrecovered costs are considered to be acceptable to NiW for strategic reasons. As such there is no need to demonstrate the financial viability achieved from electricity distribution income under this licence.	A	1
10.5	4	The financial plan provides for the operations and maintenance, administration and capital expenditure requirements of the services.	Projected expenditure for the next five years is included in the 5 Year Financial Plan. This includes operations and maintenance and capital expenditure.	A	1
10.6	4	Significant variances in actual/budget income and expenses are identified and	An annual operating budget is prepared identifying monthly expenditure. There is evidence of comparison of the annual budget to the previous year's actuals.	A	1

Item no.	Review Priority (1 High to 5 Low)	Component and Effectiveness Criteria (per Audit Guidelines)	Observations and results (including any potential improvements)	Process and Policy Rating	Performance Rating
		corrective action taken where necessary.	The budget and actual revenue and costs are compared on a monthly basis through variance analysis by Finance and then adjusted with management approvals, to provide more accurate projections.		
11		**CAPITAL EXPENDITURE PLANNING**		**A**	**1**
11.1	4	There is a capital expenditure plan that covers issues to be addressed, actions proposed, responsibilities and dates.	NiW's capital expenditure planning follows a rigorous process and is carried out in accordance with various BHP and NiW standards and procedures. BHP's Corporate Alignment Planning – Our Requirements document sets out the overall framework for NiW's asset planning activities. The planning process starts with planning for the long-term to maximise value by understanding strategic options for growth, then focuses on medium and short-term plans to deliver against these strategic objectives. The strategy is reviewed against the operating environment to capture the risks and opportunities this presents and to allow these to be considered through the planning processes. The process and deliverables facilitate informed decision-making and disciplined delivery of quality planning outcomes, including a calendar and Group Accounting & Reporting timetable for submission dates to be considered at the whole-of-organisation level. The Asset Management System Manual (Section 6.2) includes the process that capital expenditure budgets are compiled each year for the following 5 years with greater accuracy given to the first financial year. The reviewer sighted the 5 year capital expenditure plan for 2022-2027.	A	1
11.2	4	The plan provides reasons for capital expenditure and timing of expenditure.	NiW's capital expenditure is predominantly drawn from mining projects. While asset life is considered in NiW's process, the life of the electricity assets usually exceeds that of the project. The 5 year capital expenditure budgets include costs for: • Acquisition of new assets • Upgrade/renewal of existing assets • Disposal of existing assets. The plan is reviewed at least annually.	A	1
11.3	4	The capital expenditure plan is consistent with the asset life	NiW develops its capital projects for major items follow a rigorous process defined in BHP Engineering Standards.	A	1

Item no.	Review Priority (1 High to 5 Low)	Component and Effectiveness Criteria (per Audit Guidelines)	Observations and results (including any potential improvements)	Process and Policy Rating	Performance Rating
		and condition identified in the asset management plan.	NiW prepares its capital expenditure budgets annually for the following five financial years with greater accuracy given to the first financial year. NiW has a 5 Year Plan FY22-27 Context Statement that: • Outlines the intent of the 5 year Corporate Alignment Planning (CAP) cycle process. • Provides strategic context, key priorities, guidance and assumptions. • Provides guidance on preparation milestones. • Outlines the processes to be followed and key accountabilities. The Financial Context Statement provides the financial context to assist in preparation of the FY2023 five year plan and two year budget financials. The document sets out the financial process, the Systems, Templates & Tools to be used, the analysis and comparisons that are required to be completed, the key contacts, actions and responsibilities associated with specific items that need to be considered in the budgeting process, and details of cost centre and resources codes. Standard information to be used in the preparation of the five year plan (e.g. CPI, exchanges rates etc.) are set out in the Appendices. The Appendices also include details of predicted expenditure on major consumables and services.		
11.4	4	There is an adequate process to ensure that the capital expenditure plan is regularly updated and actioned.	The Asset Management System Manual (Section 6.2) includes the process that capital expenditure budgets are compiled each year for the following 5 years with greater accuracy given to the first financial year. The budgets include costs for: • Acquisition of new assets • Upgrade/renewal of existing assets • Disposal of existing assets.	A	1

Item no.	Review Priority (1 High to 5 Low)	Component and Effectiveness Criteria (per Audit Guidelines)	Observations and results (including any potential improvements)	Process and Policy Rating	Performance Rating
12		**REVIEW OF ASSET MANAGEMENT SYSTEM**		A	1
12.1	4	A review process is in place to ensure that the asset management plan and the asset management system described therein are kept current.	Section 10 of the Asset Management System Manual sets out the review requirements for the document. NiW reviews its Asset Management System (AMS) at least every 5 years and in the event of any significant changes to assets. The requirements when reviewing the AMS are to provide focus on: • Improving the AMS • The accuracy of the information/documentation • The currency of the information/documentation The AMS was reviewed and updated in August 2022.	A	1
12.2	4	Independent reviews (e.g. internal audit) are performed of the asset management system.	Independent reviews of specific elements of the electricity distribution services have been completed during the review period by external contractors as required. An independent review is also performed (by the ERA appointed auditors) every 24 months as required by the licence or longer period as specified by the ERA.	A	1

2.7 Review Recommendations

As per the Audit and Review Guidelines, only recommendations from the review that were rated as process C or D and/or effectiveness of 3 or 4 are listed in the following table. There was one recommendation in the Performance Audit Report (01/2023) and one recommendation in this review.

Other opportunities for improvements are advised separately to the Licensee.

Table of Current Review Asset System Deficiencies and Recommendations			
A. Resolved during current review period			
Reference (no./year) Compliance rating	**Asset System Deficiency** (AMS Component/Effectiveness Criteria/Details)	**Auditor's Recommendation**	**Management Action taken by end of review period**
	Nil		
B. Unresolved during current review period			
Reference (no./year) Compliance rating	**Asset System Deficiency** (AMS Component/Effectiveness Criteria/Details)	**Auditor's Recommendation**	**Management Action taken by end of audit period**
2/2023 **B3**	**Environmental Analysis – Emergency Response** *Performance standards (availability of service, capacity, continuity, emergency response, etc.) are measured and achieved.* Section 15 of NiW's Environment Management Plan outlines the intent to maintain sufficient training of all site personnel, especially the site leadership team, to ensure that all personnel have the awareness, understanding, competence and skills appropriate to their role and responsibilities. NiW employees and contractors are required to be trained to manage the potential significant environmental impacts associated with their role. Speaking with the Leinster site superintendent during the site visit, the reviewer ascertained that site leadership were not fully aware of site emergency response procedures, although the delegated site environmental team displayed competency.	a) NiW to review and improve the staff training matrix to include mandatory emergency response awareness modules for all site-based staff and contractors. b) Regular training should be provided to all site personnel, including the site Superintendent, to ensure awareness of site emergency procedures and regular participation in the emergency response drills. c) Maintain hardcopy visual documentation on site notice boards to ensure easy access of the Emergency Site Procedure to all site personnel.	Nil

Appendix A - Methodology

A1. Review Approach

Our approach to meeting the requirements for the performance audit and asset management system effectiveness review is set out below.

Review Planning

- Conduct an initial meeting with the ERA to confirm the review approach and timing for the review (*not required).*
- Contact the licensee to gain an understanding of the business, relevant management plans and systems that may affect the risk assessment for planning purposes.
- Prepare a review including any specific factors or changes relevant to the licensee (in tabular form against each asset management system component).
- Submit a draft **Review Plan**, including the risk assessment and proposed approach, to the ERA for review and approval.
- Send a **Pre-Visit Checklist** of information and documentation to the licensee to enable staff to prepare for the visit (and where possible, send us information prior to the site visit).

Fieldwork

- Complete a visit to the licensee and conduct various meetings with stakeholders, including corporate services and works/facilities management personnel, to determine the effectiveness of systems and procedures in place and to compare actual performance against the licence standards. The on-site visit included our Engineer.
- Obtain copies of the latest asset management plans, performance reporting statistics and relevant correspondence between the licensee and the ERA for the audit period.
- The activities in the **Asset Management System Review** included:
    - analyse the documented procedures and processes for the planning, construction, operation and maintenance of assets to assess whether they are consistent with regulatory requirements under the licence;
    - interview key personnel to assess whether they understand and comply with the documented processes and procedures;
    - physically inspect the key assets and infrastructure; and
    - assess the effectiveness of the processes and system in place.

Review Reporting

- Prior to the conclusion of the visit, the lead auditor will discuss any observations and recommendations with the licensee's management to confirm our understanding of the issues and to discuss the action to be taken.
- Provide a draft report to the ERA for review no later than two weeks before the final report is due and make any revisions necessary.
- Provide the updated draft report to the ERA for review and feedback prior to finalising the report.
- Issue the final report to the ERA.
- The ERA will arrange responses to the proposed actions in the Post Review Implementation Plan.

A2. Key Documents Reviewed

- Energy Coordination Act 1994
- Electricity Industry Act 2004
- Electricity Industry (Metering Code) 2012
- Economic Regulation Authority (Licensing Funding) Regulations 2014
- Electricity Compliance Reporting Manual (February 2023 and previous versions February 2022, June 2020 and July 2018).
- Electricity Distribution Licence EDL2 (Version 11)
- NiW Metering Standing Data Register
- Interruptions Register
- NiW Compliance and Breach Register
- Nickel West Description of Metering Overview

Asset Planning

- NiW – Electrical Distribution Licence - Asset Management System Manual (including Asset Management Plan)
- BHP - Corporate Alignment Planning - Our Requirements
- NiW 5 Year Plan FY22-27 Context Statement
- BHP Finance 5 Year Plan Timetable (Calendar of event and milestones)
- Northern Regions FY 23 pipeline prioritised Rev D3 Capital Planning Spreadsheet
- Power Purchasing Agreements
- Description of Metering document
- Opex budget for NiW 2022/23

Asset Creation

- NiW – Electrical Design Criteria – DESC 300, November 2018 or later
- BHP Billiton 1SAP Basic Procurement Guide
- NiW - Standard Engineering Specification ('SES') for Distribution Transformers (SES-341)
- NiW - SES for High Voltage Outdoor Circuit Breakers (SES-362)
- NiW - SES for Electrical testing and Commissioning Stages 1 & 2 (SES-383)
- NiW – SES for Earthing Transformers (SES-385)
- NiW - SES for Overhead Powerlines up to 33kV (SES-312)
- NiW - SES for Battery and Charger units (SES-318)
- NiW - SES for High Voltage Indoor Metal Clad Switchgear (SES-330)
- Functional Location Structure: Structure List examples in 1SAP
- Energy Data Verification Request Form
- NiW Metering Standing Data Register
- Distribution Operating Area Maps (ERA-EL-071C and ERA-EL-070-1) Electricity Retail Licence ERL2 (Version 12)
- Retail Operating Area Maps (ERA-EL-158 and ERA-EL-070-2) Performance Audit and Asset Management Review Report (July 2019)
- Post Audit Implementation Plan (2019)
- Performance and Compliance Reports to the ERA for 2019/20, 2020/21 and 2021/22
- Electricity Industry Network Quality and Reliability of Supply Code – Reporting Requirements spreadsheet

Environmental Analysis

- NiW HSEC Performance Report. Feb. 2023
- NiW Environmental Management Plan
- NiW – Bridging, Overriding and Bypassing Procedure
- BHP - Health, Safety, Environment and Community Event and Investigation Management – Our Requirements
- BHP - Health, Safety, Environment and Community Reporting – Our Requirements
- Incident reports examples (2022-23)
- BHP - Isolations and Permit to Work Procedure
- NiW - Management of Controlled Documents

Asset Disposal

- NiW – Disposal Procedure
- NiW Disposals Form

Asset Management Information System

- Examples of schematic drawings and plans
- BHP Global Processes, Information Systems and Cybersecurity - Our Requirements
- Asset Register example

Financial Planning and Capital Expenditure Planning

- NiW Financial Context Statement FY2022 to 2027
- EMG End of Month Procedure
- Example of Monthly Financial Report – YTD to February 2023 (actuals/budget for NiW)
- NiW Capital Expenditure reports FY22 and FY 23
- BHP Billiton Annual Reports (2020 to 2022) – from website

Asset Operations and Asset Maintenance

- Accuracy Testing - Kambalda Nickel Concentrator, January 2021 and January 2023
- Reconciliation spreadsheets for planned and scheduled electrical work
- Maintenance Plans for Leinster Town Electrical Assets
- BHP Leinster Town Line Maintenance contract work
- Examples of 1SAP Weekly Work Management Report (2022)
- Examples of inspection reports (2022)
- Example of Asset Inspection Reports (2022)
- Maintenance Performance KPI Reports
- Equipment Work Procedure - electrical inspections.

Risk Management

- BHP – Risk Management – Our Requirements
- BHP – Security and Emergency Management- Our Requirements
- NiW Risk Management Procedure – NIW-FIN-PRO-0008
- NiW HSEC Event Reporting & Investigation - NIW-HSEC-PRO-003
- NiW NKC Electrical Equipment – Risk Management Plan Summary – Extreme and High Risks
- NiW Risk Register
- HV Risk Mitigation Plans
- LV Risk Mitigation Plans
- NiW – Work Description - Inspect Power Poles (12monthly) – Checklist
- 52W Power Quality Survey – Leinster Town Work Instruction
- NiW – Engineering Guideline for Arc Flash Hazard Assessment and Application of Controls (GL076)
- NiW – Electrical PPE and Test Equipment (NIW-IOPS-PRO-0001)
- NiW – High Voltage Isolation and Access (NIW-NOW-PRO-0005)
- NiW Procedure for Lifting Operations (NIW-HSEC-PRO-0025)
- NiW – Guideline for Maintenance and Testing of High Voltage Oil Filled Transformers > 500kVA (GL-301)
- NiW – Guideline for Maintenance and Testing of High Voltage Switchgear (GL-302)

Contingency Planning

- NiW - Leinster Processing Emergency Management Plan
- NiW - Emergency Management Plan Part 1

NiW - NKK Emergency Management Plan Part 2

A3. Key Contacts

The licensee's representatives participating in the audit were:

- Essie Croukamp - Principal Energy & Production Integration
- Ian Pritchard - Maintenance Superintendent
- Justin Van Jaarsveldt – Supervisor Electrical
- Shantanu Kumar – Principal Engineer Electrical
- Samuel Loughnan – Graduate Engineer Electrical

A4. Consultants

NAME AND POSITION	HOURS
Geoff White - Director	25
Tanuja Sanders – Engineering Consultant	25
TOTAL	**50**

END OF REPORT