

# PERFORMANCE AUDIT and ASSET MANAGEMENT SYSTEM REVIEW

**BHP Billiton Nickel West Pty Ltd**

PERFORMANCE AUDIT ON ELECTRICITY LICENCE  
CONDITIONS AND REVIEW OF ELECTRICAL ASSET  
MANAGEMENT SYSTEM 2008

- WP03608-EE-RP-0001
- Final
- 5 March 2009



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SKM has prepared this report based on the information presented by BHP Billiton Nickel West in relation to their compliance with the conditions of their licence. Audits are undertaken using a sampling process and the report and its recommendations are reflective only of activities and records sighted during this audit process. As such, SKM shall not be held liable for loss or damage to third parties due to reliance on the information contained in this report or in supporting documentation.

Approvals				
Representative	Signature	Name	Position	Date
Auditor		Stephen Robertson	Lead Auditor	
Licensee		Bill Head	Senior Engineer - Energy Management	



# 1 Executive Summary

BHP Billiton Nickel West (NiW) engaged SKM in July 2008 to conduct a performance audit and asset management review of their compliance with the licence conditions in the Electrical Distribution Licence (EDL2) and Electrical Retail Licence (ERL2) as required by Sections 13 and 14 of the Electricity Industry Act 2004 (WA).

The audit and review covers the period from 23 March 2006 to 30 March 2008 and is the first audit and review required. The audit has been conducted in accordance with the Authority's "Audit Guidelines: Electricity, Water and Gas Licences (September 2006)". An audit plan was submitted to the ERA and approved on the 24<sup>th</sup> September 2008.

A number of non-compliances were identified during the audit. These mainly relate to:

- Filing and administration of compliance documents.
- Metering testing, calibration and CT / VT accuracy.
- Reliance on mining operations for asset management.

Historically, the NiW network was constructed to support its mining operations and later extended to other independent mines under individual Power Purchase Agreements (PPA). NiW remains to be primarily a mining business and only maintains an electrical network to support its mining activities. Performance Audit Compliance Summary

A summary of the findings from the performance audit was tabularised using the rating scale presented below.

- **Table 1 : Performance compliance rating scale**

Compliance status	Rating	Description of compliance
COMPLIANT	5	Compliant with no further action required to maintain compliance
COMPLIANT	4	Compliant apart from minor or immaterial recommendations to improve the strength internal controls to maintain compliance
COMPLIANT	3	Compliant with major or material recommendations to improve the strength of internal controls to maintain compliance
NON-COMPLIANT	2	Does not meet minimum requirements
SIGNIFICANTLY NON-COMPLIANT	1	Significant weaknesses and/or serious action required

■ **Table 2 : EDL2 Performance audit compliance summary**

Operating area	Operating Licence Reference (Cl.=clause, Sch.=schedule)	Consequence (1=minor, 2=moderate, 3=major)	Likelihood (A=likely, B=probable, C=unlikely)	Inherent Risk (Low, Medium, High)	Adequacy of existing controls (S=strong, M=moderate, W=weak)	Compliance Rating (Refer to the 5-point rating scale in Table 1 for details)				
						1	2	3	4	5
<b>SERVICE DELIVERY</b>										
Definitions	Cl 1									
Grant of Licence	Cl 2	1	C	Low	M					✓
Term	Cl 3	1	C	Low	M					✓
Fees	Cl 4	1	C	Low	S					✓
Compliance	Cl 5	2	A	High	M		✓			
Transfer of Licence	Cl 6	1	C	Low	W					
Cancellation of Licence	Cl 7	1	C	Low	W					✓
Surrender of Licence	Cl 8	1	C	Low	W					
Renewal of Licence	Cl 9	1	C	Low	W					
Amendment of Licence on Application of Licensee	Cl 10	1	C	Low	W					✓
Amendment of Licence by the Authority	Cl 11	1	C	Low	W					
Customer Service Charter	Cl 12									
Amending the Customer Service Charter	Cl 13									
Approved Scheme	Cl 14	2	B	Medium	M					
Expansion or Reduction of Distribution Systems	Cl 15	2	B	Medium	M			✓		
Accounting Records	Cl 16	2	A	High	S					✓
Individual performance Standards	Cl 17	3	A	High	M					
Performance Audit	Cl 18	2	B	Medium	W					✓
Asset Management System	Cl 19	3	A	High	M		✓			

Operating area	Operating Licence Reference (Cl.=clause, Sch.=schedule)	Consequence (1=minor, 2=moderate, 3=major)	Likelihood (A=likely, B=probable, C=unlikely)	Inherent Risk (Low, Medium, High)	Adequacy of existing controls (S=strong, M=moderate, W=weak)	Compliance Rating (Refer to the 5-point rating scale in Table 1 for details)				
						1	2	3	4	5
<b>SERVICE DELIVERY</b>										
Reporting	Cl 20	2	C	Medium	W					
Provision of Information	Cl 21	1	B	Low	W					
Publishing Information	Cl 22	1	B	Low	W					✓
Notices	Cl 23	1	C	Low	W					✓
Review of the Authorities Decisions	Cl 24	2	B	Medium	W					

■ **Table 3 : ERL2 Performance audit compliance summary**

Operating area	Operating Licence Reference (Cl.=clause, Sch.=schedule)	Consequence (1=minor, 2=moderate, 3=major)	Likelihood (A=likely, B=probable, C=unlikely)	Inherent Risk (Low, Medium, High)	Adequacy of existing controls (S=strong, M=moderate, W=weak)	Compliance Rating (Refer to the 5-point rating scale in Table 1 for details)				
						1	2	3	4	5
<b>SERVICE DELIVERY</b>										
Definitions	Cl 1									
Grant of Licence	Cl 2	1	C	Low	M					✓
Term	Cl 3	1	C	Low	M					✓
Fees	Cl 4	1	C	Low	S					✓
Compliance	Cl 5	2	A	High	M			✓		
Marketers	Cl 6									
Transfer of Licence	Cl 7	1	C	Low	W					



Operating area	Operating Licence Reference (Cl.=clause, Sch.=schedule)	Consequence (1=minor, 2=moderate, 3=major)	Likelihood (A=likely, B=probable, C=unlikely)	Inherent Risk (Low, Medium, High)	Adequacy of existing controls (S=strong, M=moderate, W=weak)	Compliance Rating (Refer to the 5-point rating scale in Table 1 for details)				
						1	2	3	4	5
<b>SERVICE DELIVERY</b>										
Cancellation of Licence	Cl 8	1	C	Low	W					✓
Surrender of Licence	Cl 9	1	C	Low	W					
Renewal of Licence	Cl 10	1	C	Low	W					
Amendment of Licence on Application of Licensee	Cl 11	1	C	Low	W					✓
Amendment of Licence by the Authority	Cl 12	1	C	Low	W					
Customer Contracts	Cl 13									
Amending the Standard Form Contract	Cl 14									
Customer Service Charter	Cl 15									
Amending the Customer Service Charter	Cl 16									
Supplier of Last Resort	Cl 17									
Directions by the Authority	Cl 18	2	B	Medium	M				✓	
Approved Scheme	Cl 19	2	A	High	S					
Accounting Records	Cl 20	3	A	High	M					✓
Individual performance Standards	Cl 21	2	B	Medium	W					
Performance Audit	Cl 22	3	A	High	M					✓
Reporting	Cl 23	2	C	Medium	W					
Provision of Information	Cl 24	1	B	Low	W					
Publishing Information	Cl 25	1	B	Low	W					✓
Notices	Cl 26	1	C	Low	W					✓
Review of the Authorities Decisions	Cl 27	2	B	Medium	W					

## 1.1 Asset Management Review Summary

A summary of the findings from the asset management review was tabularised using the rating scale presented below.

■ **Table 4 : Asset management review effectiveness rating scale**

Effectiveness	Rating	Description
Continuously improving	5	Continuously improving organisation capability and process effectiveness
Quantitatively controlled	4	Measurable performance goals established and monitored
Well-defined	3	Standard processes documented, performed and coordinated
Planned and tracked	2	Performance is planned, supervised, verified and tracked
Performed informally	1	Base practices are performed
Not performed	0	Not performed (indicate if not applicable)

It is the opinion of the auditor that NiW needs to make progress to improve service levels and tracking ability in the areas of asset management and metering for its electricity business. Mines tend to have shorter life spans than the electrical assets and maintenance windows for critical plant may only open up once or twice a year during mine shutdowns which are coordinated with NiW's customers. This presents a unique set of challenges and investment criteria in the electricity sector.

The auditor also believes that corrective actions identified will benefit NiW and are achievable. Some of the identified actions are being performed informally at one or both locations or head office.

A summary of NiW assessed compliance across all Asset management audit elements is shown below.



<b>ASSET MANAGEMENT SYSTEM</b>	Not performed	Performed informally	Planned and tracked	Well defined	Quantitatively controlled	Continuously improving
Process Effectiveness rating	0	1	2	3	4	5
1. Asset Planning				✓		
2. Asset Creation / Acquisition						✓
3. Asset Disposal		✓				
4. Environmental Analysis						✓
5. Asset Operations			✓			
6. Asset Maintenance			✓			
7. Asset Management Information System		✓				
8. Risk Management		✓				
9. Contingency Planning	✓					
10. Financial Planning			✓			
11. Capital Expenditure Planning						✓
12. Review of Asset Management System	✓					

## 2 Introduction

### 2.1 Preamble

The Economic Regulation Authority (Authority) granted Western Mining Corporation Resources Limited (Licensee) an Electrical Distribution Licence (EDL2) and an Electrical Retail Licence (ERL2) in accordance with the *Electricity Industry Act 2004 (WA)* on the 24<sup>th</sup> March 2006. On the 15<sup>th</sup> December 2006 the ERA amended the licensee to BHP Billiton Nickel West (NiW).

It is a requirement in terms of Clause 18 of EDL2 and Clause 21 or ERL2 that NiW appoint an independent expert to provide the Authority with a performance audit within 24 months after the commencement date, and every 24 months thereafter. It is also a requirement in terms of Clause 19.2 of EDL2 that NiW must provide the Authority with a report as to the effectiveness of the Asset Management System within 24 months after the commencement date and every 24 months thereafter.

NiW has appointed Sinclair Knight Merz (SKM) as their auditors to report on NiW's compliance with their licence conditions. The professional analysis in this report has been prepared by SKM for the exclusive use of the parties to whom it is addressed. In conducting the analysis in this report, SKM has endeavoured to use what is considered the best information available at the date of publication, including information supplied by NiW.

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### 2.2 Commercial Consideration

NiW is a customer of Southern Cross Energy (SCE) which owns the generation assets and sells electricity to NiW. For this purpose, a bilateral Power Purchase Agreement (PPA) is in place between NiW and SCE regulating the sale and purchase of electricity.

Similar PPAs are also in place between NiW and its customers.

These PPAs specify planned outages, reliability and quality of electricity supply, network modifications, metering and dispute resolution.

### 2.3 Distribution System

WMC Resources Limited (WMC) trading as NiW originally built, owned and maintained the generation and distribution systems required to operate its assets in Western Australia. This distribution network was later extended to service regional independent mining companies.

NiW has since sold its generation assets and the majority of its distribution assets to TransAlta Energy Australia trading as Southern Cross Energy. The remaining sum total length of NiW's distribution lines is limited to 72 kilometres. The NiW distribution system is divided into what is referred to in the area as the Northern System and Southern System. In addition to servicing NiW assets, NiW has retained the following seven (7) customers:

Within the Northern System;

- Agnew Gold Mine Company (AGMC)

Within the Southern System;

- Blair Nickel Mine (BNM)
- Goldfields Mine Management (GMM)
- Lanfranchi Nickel Mine (LNM)
- Lightning Nickel (LiN)
- Mincor Resources NL (Mincore)
- St Ives Gold Mine Company (SIGMC)

The NiW Distribution System essentially operates as a radial feeder with seven mining customers and the Leinster Supply Authority (LSA) each receiving supply at multiple metered points.

The Northern System is an isolated system owned and operated for the most part by SCE. NiW has retained ownership of a portion of this distribution network specifically servicing the NiW bore fields and the LSA. Leinster is a closed town by invitation from NiW and provides residential accommodation and service facilities to their mine site at Leinster, Agnew Gold employees, support contractors and businesses. The LSA supplies approximately 300 houses, industrial and commercial premises and electricity is supplied without charge. Agnew Gold Mine was formally a WMC asset and although it is serviced by the TransAlta distribution network it remains an electricity supply customer of NiW.



The NiW Southern System is connected to the South West Interconnected System. At present, all NiW customers are mining operations with bilateral PPAs and there are no Small Use Customers (see Appendix B for distribution layout). For the purposes of this audit, a Customer has been defined by definitions used in the Metering Code 2005 and the Electricity Industry Act as being a person (or entity) to whom electricity is sold for the purpose of consumption. This definition is in line with the structure of the PPAs entered into by NiW. Several Customers have multiple metered entry connections covered by a single PPA.

## 3 Objectives and Scope

### 3.1 Performance Audit

The objective of the audit was to undertake a systematic, independent and documented audit process for obtaining audit evidence and objectively evaluate the extent of which NiW operates the Distribution and Retail operations in accordance with license requirements.

The audit identified any areas where improvement is required and recommendations for corrective action as developed in the Post Audit Implementation Plan with NiW.

The audit followed a risk-based audit approach to focus on the systems and effectiveness of processes used to ensure compliance with the standards, outputs and outcomes required by the license conditions.

The scope of the audit covered the following areas:

- Risk assessment – the risks posed by non-compliance with license standards and development of a risk-based audit plan to focus on the higher risk areas, with less intensive coverage of medium and low risk areas;
- Process compliance – the effectiveness of systems and procedures in place throughout the audit period;
- Outcome compliance – the actual performance against standards prescribed in the license throughout the audit period;
- Output compliance - the existence of the output from systems and procedures throughout the audit period( that is, proper records exist to provide assurance that procedures are being consistently followed and controls are being maintained);
- Integrity of performance reporting – the completeness and accuracy of the performance reporting to the ERA; and
- Compliance with any individual license conditions – any specific requirements imposed by the ERA or specific issues for follow-up that are advised by the ERA.

This audit covered the period from the first issue of licenses which is 23 March 2006 to 30 March 2008.

As NiW has no small use customers as defined by the definitions in the licence, no conditions were included relating to:

- a. Customer Service Charter;
- b. Electricity Industry Customer Transfer Code 2004; or
- c. Code of conduct for the Supply of Electricity to Small Use Customers 2004

### **3.2 Review of the Asset Management System**

The objective of the Asset Management System (AMS) review was to assess the adequacy and effectiveness of the AMS system in place for the planning, construction, operation and maintenance of the licensee's assets.

The review identified any areas where improvement is required and recommended corrective action as necessary.

The scope of the review covered the following key processes:

- 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; and
- Review of AMS.

The review covered the period from the first issue of the license up to 30 March 2008.

### **3.3 Limitations and Qualifications**

An audit provides a reasonable level of assurance on the effectiveness of control procedures and systems in place. However, the limitations in the information available and the nature of the sampling process often require the auditor to use judgement in the assessment of evidence. This also applies to the assessment of controls in the review process when there were insufficient documented procedures.



## 4 Audit Methodology

### 4.1 Risk Assessment

The risk assessment was based on the ERA's 'Audit Guidelines: Electricity, Gas and Water Licenses' and our understanding of the operations of BHPB Nickel West.

#### Consequence Ratings

	Rating	Consequence of non-compliance			
		Supply quality	Supply reliability	Consumer protection	Breaches of legislation or other licence conditions
1	Minor	<p>Minor public health or safety issues.</p> <p>Breach of quality standards minor - minimal impact on customers.</p>	<p>System failure or connection delays affecting only a few customers.</p> <p>Some inconvenience to customers.</p>	<p>Customer complaints procedures not followed in a few instances.</p> <p>Nil or minor costs incurred by customers.</p>	<p>Licence conditions not fully complied with but issues have been promptly resolved.</p>
2	Moderate	<p>Event is restricted in both area and time e.g., supply of service to one street is affected for up to one day.</p> <p>Some remedial action is required.</p>	<p>Event is restricted in both area and time e.g. supply of service to one street is affected for up to one day.</p> <p>Some remedial is required.</p>	<p>Lapse in customer service standards is clearly noticeable but manageable.</p> <p>Some additional cost may be incurred by some customers.</p>	<p>Clear evidence of one or more breaches of legislation or other licence conditions and/or sustained period of breaches.</p>
3	Major	<p>Significant system failure.</p> <p>Life-threatening injuries or widespread health risks.</p> <p>Extensive remedial action required.</p>	<p>Significant system failure.</p> <p>Extensive remedial action required.</p>		



### Likelihood Ratings

A	Likely	Non-compliance is expected to occur at least once or twice a year
B	Probable	Non-compliance is expected to occur once every three years
C	Unlikely	Non-compliance is expected to occur once every 10 years or longer

### Inherent Risk Rankings

Likelihood		Consequence		
		1. Minor	2. Moderate	3. Major
A. Likely	A	Medium	High	High
B. Probable	B	Low	Medium	High
C. Unlikely	C	Low	Medium	High

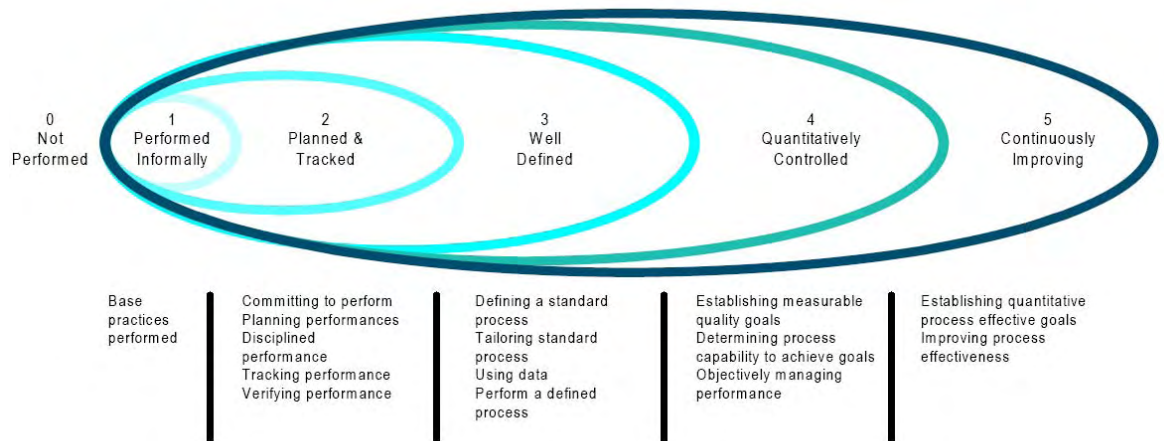
### Level of Existing Controls

Level		Description
S	Strong	Strong controls that are sufficient for the identified risks
M	Moderate	Moderate controls that cover significant risks; improvements could be made
W	Weak	Controls are weak or non-existent and have minimal impact on the risks

### Audit Priority

		Adequacy of existing controls		
Inherent Risk		Strong	Moderate	Weak
		High	Audit priority 2	Audit priority 2
	Medium	Audit priority 4	Audit priority 4	Audit priority 3
	Low	Audit priority 5	Audit priority 5	Audit priority 5

The effectiveness of the Asset Management System was scored against the criteria in the review approach using the effectiveness scale depicted below from the audit guidelines.



## 5 Key Findings

The key findings from the audit and review are listed below along with the Recommendations / Corrective Actions that were developed in the Post Audit Implementation Plan. More detailed results are presented in Appendix F and Appendix G.

Some compliance clauses are triggered by conditions or events that occur during the audit period. When events did not occur, no records were generated to validate the null data. Appendix E contains a letter from NiW management to verify the not applicable clauses.

### 5.1 Performance Audit

No.	Condition	Finding	Rating	Corrective Action
82	A licensee must provide for an asset management system.	Asset planning is done both on a local level and by the projects group as part of mining operations. No formal asset management system exists for the electrical assets.	2	Within 6 months NiW will develop an asset management system and submit to the ERA.  Responsible: BH
83	A licensee must notify details of the asset management system and any substantial changes to it to the Authority.	Nothing has been submitted to the ERA for approval.	1	Within 6 months NiW will develop an asset management system and submit to the ERA.  Responsible: BH
85	A licensee must pay to the Authority the prescribed licence fee within one month after the day of grant or renewal of the licence and within one month after each anniversary of that day during the term of the licence.	Paper 2007 fee invoice not found, but SAP records of payment was presented	4	Within 3 months, NiW to set up a calendar of payment due dates and dates of payment along with filing of paper receipts.  Responsible: BH

No.	Condition	Finding	Rating	Corrective Action
302	A network operator must ensure that its meters meet the requirements specified in the applicable metrology procedure and also comply with any applicable specifications or guidelines (including any transitional arrangements) specified by the National Measurement Institute under the National Measurement Act.	Meters are compliant and were last calibrated during the period between 2000 and 2003. CT / VT details were not available and the overall accuracy is unknown.	1	Over the next 12 months a full audit and inspection of the metrology system will be made to determine any gaps.  Responsible: BH
307	A network operator must, for each metering installation on its network, on and from the time of its connection to the network, provide, install, operate and maintain the metering installation in the manner prescribed (unless otherwise agreed).	Meters were not checked or calibrated during the audit period.	1	Meters to be maintained and checked in accordance with Australian standards. Initial testing to start within 6 months.  Responsible: LD & SL
310	If a network operator becomes aware that a metering installation does not comply with the Code, the network operator must advise affected parties of the non-compliance and arrange for the non-compliance to be corrected as soon as practicable.	It is not possible to determine whether the metering is compliant.	NA	Establish Metering Code Compliance procedures and determine level of compliance within 12 months.  Responsible: BH
312	A network operator must, for each metering installation on its network, ensure that the metering installation is secured by means of devices or methods which, to the standard of good electricity industry practice, hinder unauthorized access and enable unauthorized access to be detected.	Metering installations that are installed on the customer's premises have no locks. Other meters are inside locked switchrooms. No meters were sealed.	1	Lock and seal all meters including test blocks within 4 months.  Responsible: LD & SL

No.	Condition	Finding	Rating	Corrective Action
313	Each metering installation must meet at least the requirements for that type of metering installation specified in Table 3 in Appendix 1 of the Code.	There is no standard for metering installations and it is uncertain whether the installations meet the requirements of the Code. PPAs state the metering accuracy requirement (which has been met), but CT / VT details were unavailable.	3	NiW is to document the current installations, determine the overall accuracy and develop a plan achieve compliance within the next 12 months.  Responsible: BH
320	A network operator must ensure that each metering installation complies with, at least, the prescribed design requirements.	No details of wiring configuration or CT / VT details were available.	2	Drawing register to be updated and CT / VT details be made available before next audit.  Responsible: BH
321	A network operator must ensure that instrument transformers in its metering installations comply with the relevant requirements of any applicable specifications or guidelines (including any transitional arrangements) specified by the National Measurement Institute under the National Measurement Act and any requirements specified in the applicable metrology procedure.	No details of wiring configuration or CT / VT details were available.	2	Drawing register to be updated and CT / VT details be made available before next audit.  Responsible: BH
323	A network operator must maintain drawings and supporting information, to the standard of good electricity industry practice, detailing the metering installation for maintenance and auditing purposes.	Records of meter installation and testing were available. No other information or drawings could be found.	1	Drawings and data to be collated over the next 12 months.  Responsible: BH

No.	Condition	Finding	Rating	Corrective Action
327	If, under clause 3.14(2) of the Code, a metering installation uses metering class CTs and VTs that do not comply with the prescribed requirements, then the network operator must either (or both) install meters of a higher class accuracy or apply accuracy calibration factors within the meter in order to achieve the overall accuracy requirements prescribed.	No details of wiring configuration or CT / VT details were available.	2	Drawing register to be updated and CT / VT details be made available before next audit.  Responsible: BH
346	A network operator must prepare, and if applicable, must implement a disaster recovery plan to ensure that it is able, within 2 business days after the day of any disaster, to rebuild the metering database and provide energy data to Code participants.	There was on site data logging and main servers with backup. The 2 days a compliance criterion was untested.	4	Recovery systems to have a testing schedule developed within 4 months and be tested at least annually.  Responsible: BH
347	A network operator must ensure that its registry complies with the Code and the prescribed clause of the market rules.	The standing data does not contain all of the information specified.	2	Metering registry should be brought up to Code within 3 months.  Responsible: BH
348	The standing data for a metering point must comprise at least the items specified.	The standing data does not contain all of the information specified.	1	Metering registry should be brought up to Code within 3 months.  Responsible: BH
351	If a Code participant (other than a network operator) becomes aware of a change to or an inaccuracy in an item of standing data in the registry, then it must notify the network operator and provide details of the change or inaccuracy	Staffs were interviewed and meter testing records checked.	3	Error log to be implemented within the next 3 months.  Responsible: LD & SL

No.	Condition	Finding	Rating	Corrective Action
	within the timeframes prescribed.			
380	A user must, to the extent that it is able, collect and maintain a record of the address, site and customer attributes, prescribed in relation to the site of each connection point, with which the user is associated.	Points of contact were found to be out of date. This has already been identified by NiW as an issue.	2	Points of contact to be updated within 2 months.  Responsible: BH
385	A network operator must, within 6 months from the date this Code applies to the network operator, develop, in accordance with the communication rules, an energy data verification request form.	No form was available.	1	An Energy Data Verification Request Form is to be developed and copies distributed to customers within 3 months.  Responsible: BH
386	An Energy Data Verification Request Form must require a Code participant to provide the information prescribed.	No form was available.	NA	The Energy Data Verification Request Form to request the prescribed information.  Responsible: BH
393	Any written service level agreement in respect of the testing of the metering installations, or the auditing of information from the meters associated with the metering installations, must include a provision that no charge is to be imposed if the test or audit reveals a non-compliance with this Code which results in energy data errors in the network operator's favour.	The metrology clauses do include information about the requirements to check the meters, but do not indicate whether this will be a chargeable item. In practice, NiW does not charge for any meter testing.	2	PPAs to be amended by addendum to include this item within 6 months.  Responsible: Commercial Manager
415	A network operator must, in relation to its network, comply with the agreements, rules, procedures, criteria	With the exception of metering, there is no evidence of any excursion from the terms	2	PPAs to be amended by addendum within 6 months.



No.	Condition	Finding	Rating	Corrective Action
	and processes prescribed.	of the PPAs.		Responsible: BH
419	A network operator must notify each Code participant of its initial contact details and of any change to its contact details at least 3 business days before the change takes effect.	No formal communication took place.	2	Quality filing system for Code compliance issues to be implemented within 6 months.  Responsible: BH
429	A distributor or transmitter must, as far as reasonably practicable, ensure that electricity supply to a customer's electrical installations complies with prescribed standards.	No permanent monitoring. One audit was done on the Leinster supply slightly prior to March 2006. One mine had under voltages from their open load. There has no formalised logging of power quality complaints.	1	Testing of supply quality to be done at least bi-annually.  Responsible: LD & SL
431	A distributor or transmitter must, as far as reasonably practicable, ensure that that the supply of electricity is maintained and the occurrence and duration of interruptions is kept to a minimum.	Culture based incentive to keep workers morale high to maintain good levels of production. Tests on site show that there is no log of faults. There is no call centre. While outage durations are kept to a minimum there is no recording or documentation.	3	Outages should be logged and recorded. System to be developed over the next 6 months.  Responsible: LD & SL
444	A distributor or transmitter must take all such steps as are reasonably necessary to monitor the operation of its network to ensure compliance with specified requirements.	There is no dedicated control room and not many statistics are stored including outages. Switching records are only recorded on site or in SAP.	2	Outage reports are to be compiled on a regular basis and sent through weekly to a central process overseer. System to be developed over the next 6 months.

No.	Condition	Finding	Rating	Corrective Action
				Responsible: LD & SL
445	A distributor or transmitter must keep records of information regarding its compliance with specific requirements for the period specified.	There is no central recording system for recording compliance with Code conditions. Not all of the required information was available. Evidence of a system under development was seen.	2	Initial system to be developed over the next 6 months to show details of future compliance of action items.  Responsible: BH
450	A distributor or transmitter must arrange for an independent audit and report on its systems for monitoring, and its compliance with specific requirements. This is to be carried out in respect of the operation of such systems during each year ending on 30 June.	2006 report was sighted. Dated 15 Nov 2006. No report or letter of exemption for 2007 was found.	2	Quality filing system for Code compliance issues to be implemented within 6 months.  Responsible: BH
451	A distributor or transmitter must prepare and publish a report about its performance in accordance with specified requirements.	2006 report was sighted. Dated 15 Nov 2006. No report or letter of exemption for 2007 was found.	2	Quality filing system for Code compliance issues to be implemented within 6 months.  Responsible: BH
452	A distributor or transmitter must give a copy of its report about its performance to the Minister and the Authority within the specified period.	Letter to the ERA was sighted. No correspondence with the Minister's office was found.	2	Quality filing system for Code compliance issues to be implemented within 6 months.  Responsible: BH

## 5.2 Asset Management Review

No.	Asset Management Element	Finding	Rating	Corrective Actions
1	Asset Planning	No service levels are defined.	3	<p>Formalise an AMP and define service levels. Strategy to be formalised in the next 6 months and implemented over the next 12 months in line with budgetary guidelines.</p> <p>Responsible: BH</p>
3.3	Disposal alternatives are identified.	<p>Decommissioning is done as part of the mining projects.</p> <p>Decommissioned assets are all returned to a central stores dept for refurbishment, reuse or disposal.</p> <p>No spares list was available.</p>	1	<p>Develop, maintain and distribute a list of available and required critical spares to avoid disposing of critical or retaining unnecessary plant. High level disposal plans for electrical plant should be included in the AMP. To be implemented in the next 6 months.</p> <p>Responsible: BH</p>
5.1	Operational policies and procedures are documented and linked to service levels required.	Operational plans are produced by SAP. These plans reflect an economic decision on spending rather than being linked to service levels.	2	<p>Link operational plans to service levels and review regularly. To be implemented in the next 6 months.</p> <p>Responsible: BH</p>
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 and accounting data.	<p>No formal process for maintaining asset registers outside of SAP.</p> <p>Both sites use different systems for storing the data. CT / VT data was requested, but not received</p>	0	<p>Formalise asset registers and create a complete set of plans. To be implemented in the next 6 months.</p> <p>Responsible: BH</p>

No.	Asset Management Element	Finding	Rating	Corrective Actions
6.4	Failures are analysed and operational / maintenance plans adjusted where necessary.	Maintenance plans are high level plans that can lead to items being missed by inexperienced staff.	3	Maintenance plans for plant to be improved and reviewed regularly. To be implemented in the next 6 months.  Responsible: BH
7	An asset management information system is a combination of processes, data and software that support the asset management functions.	SAP is used as the primary MIS backed up by excel files at Leinster. Staff is being trained in the SAP and some links between operations and maintenance works were missing. However, the missing linkages were able to be found during searches. There is no overarching MIS that integrates all components. CITEC is used to store metering data and display system status.	1	An IT system should be developed that will provide a roadmap to all relevant data and capture compliance issues. The effectiveness of the MIS should be reviewed regularly. To be implemented in the next 6 months.  Responsible: BH
8.2	Risks are documented in a risk register and treatment plans are actioned and monitored.	Risks are identified on a local, informal basis and if one is considered to be significant, a SAP works order is initiated. The risks are not documented.	1	Create a risk register and review regularly. To be implemented in the next 6 months.  Responsible: BH

No.	Asset Management Element	Finding	Rating	Corrective Actions
8.3	The probability and consequences of asset failure are regularly assessed.	No risk analysis is used.	0	Risk analysis to be used and linked to service levels. To be implemented in the next 6 months.  Responsible: BH
9	Contingency plans document the steps to deal with the unexpected failure of an asset.	The networks operate predominantly as a radial network. Some spares are kept by stores, but the list of spares is not distributed. No formal contingency plans exist.	0	Contingency planning should be developed from the Risk Register and documented during reviews. To be implemented in the next 6 months.  Responsible: BH
10	The financial planning component of the asset management plan brings together the financial elements of the service delivery to ensure its financial viability over the long term.	The network aims to operate as a non-profit centre. No formal financial plan exists. Operations and maintenance costs are planned and tracked through SAP.	2	Financial planning should form a part of the AMS. The current system is functional and sufficient for NiW's needs, but should be documented. To be implemented in the next 6 months.  Responsible: BH



## 6 Post Implementation Plan

The Post Implementation Plan was developed in conjunction with the Licensee and recorded as corrective actions in the audit results and section 5, Key Findings.

## 7 Other Information

A summary of the people involved in the audit and review is posted below along with the schedule of dates for onsite meetings. Follow up meetings have not been included.

### 7.1 SKM Personnel

Name	Role	Hours
Ashley Van Staden/Pras Kumar	Project Director	5
Glenn VanderPutt/Stephen Robertson	Project Manager and Lead Auditor	290
Michael Farr	Technical Review and Auditor	76
Danny Norton	Technical Review (Practice Lead)	72
Ngoni Msakwa	Researcher	50

## 7.2 Audit Schedule

Location	Person	Date	Purpose
<b>Perth Office</b>	Glenn VanderPutt (Auditor)	14/10/2008	Management audit
	Stephen Robertson (Auditor)	1/01/2009	
	Bill Head (Auditee)		
	Mike Farr (Auditor)		
<b>Leinster</b>	Glenn VanderPutt (Auditor)	22/10/2008	On site audit and interviews
	Simon Longhurst (Auditee)		
<b>Kambalda</b>	Glenn VanderPutt (Auditor)	15/10/2008	On site audit and interviews
	Lionel Diprose (Auditee)		
	Mike Farr (Auditor)		



## Appendix A Terms used in this Report

“**AMP**” Asset Management Plan;

“**AMR**” Asset Management Review;

“**AMS**” means Asset Management System;

“**Authority**” means the Economic Regulation Authority established by the Economic Regulation Authority Act 2003;

“**Customer**” means a person (or entity) to which electricity is sold for the purpose of consumption;

“**Interruption**” means a loss of electricity supply for more than one minute that is due to a cause beyond the control of the customer concerned;

“**LSA**” means Leinster Supply Authority;

“**Network**” means —

(a) Transmission works; or

(b) Distribution works,

“**NiW**” means BHP Billiton Nickel West;

“**PPA**” means Purchase Power Agreement;

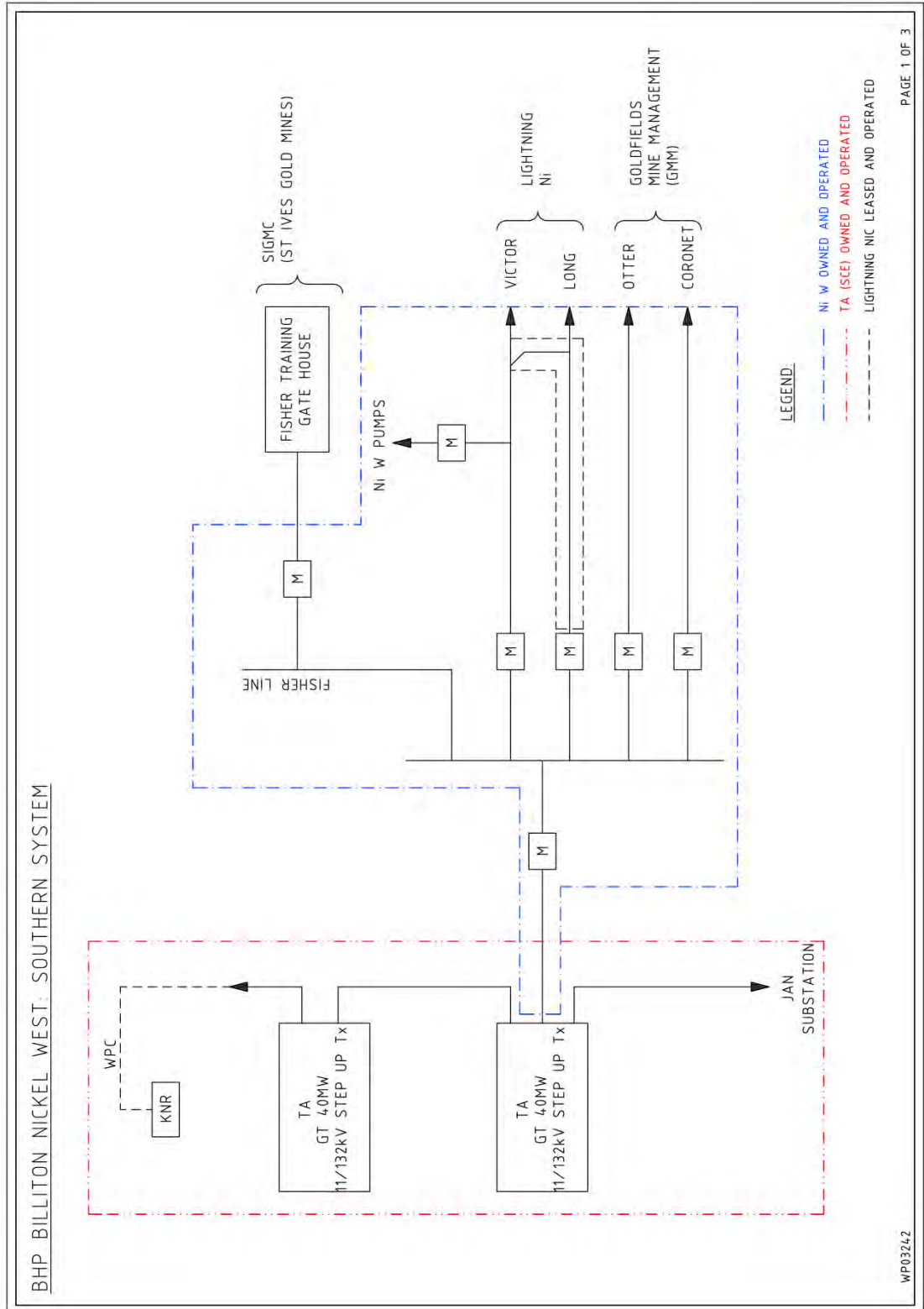
“**SCE**” means Southern Cross Energy;

“**SKM**” means Sinclair Knight Merz;

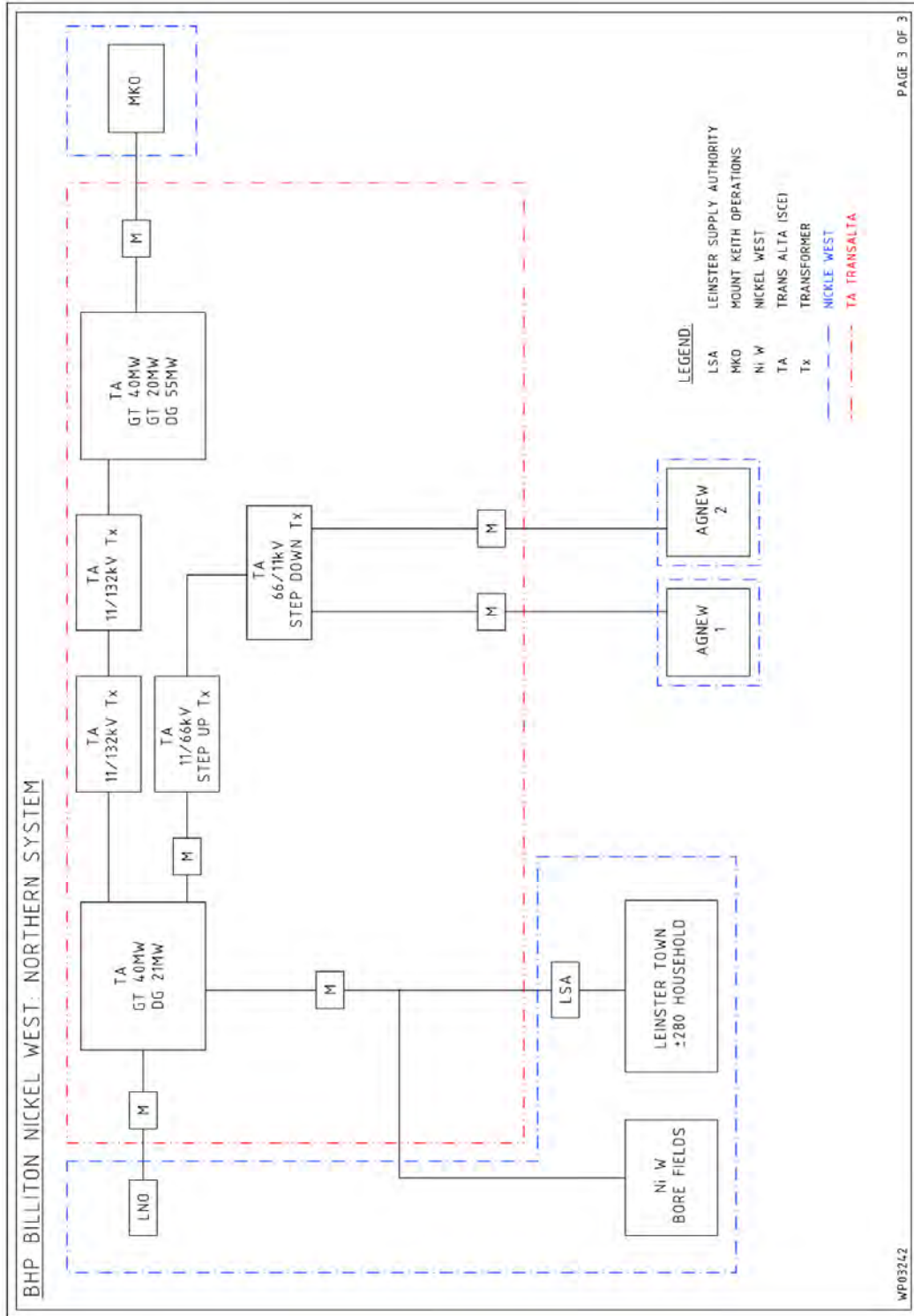
“**TA**” means TransAlta trading as either SCE or Goldfields Power;



# Appendix B Distribution Network



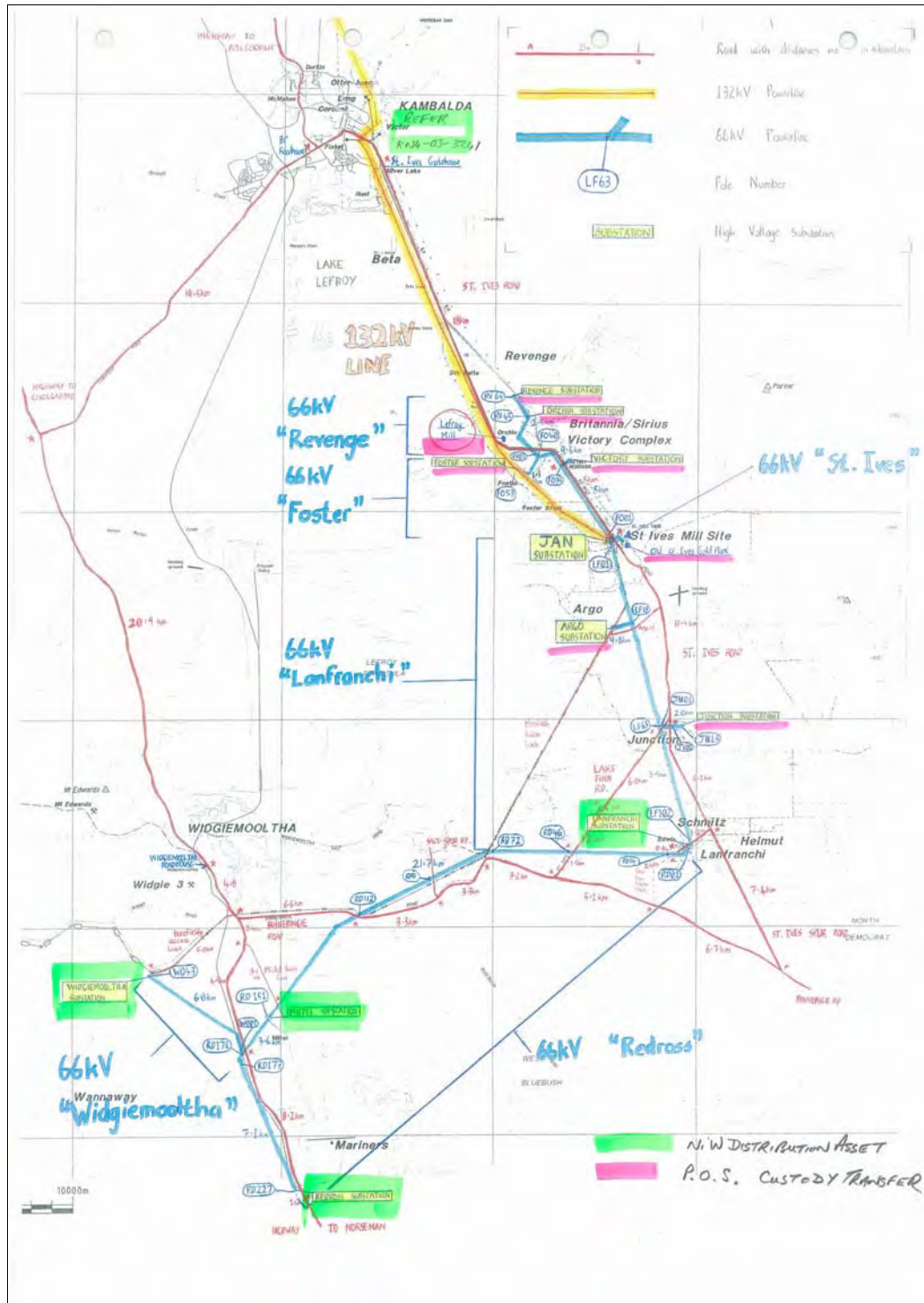




## Appendix C Geographic Location of Distribution Network



## Appendix D Distribution License Area





## Appendix E Statement of Correctness

  
renewing the future

**Nickel West**  
Central Park  
155-159 St. George's Terrace  
Perth WA 6000 Australia  
GPO Box 51421  
Perth WA 6840 Australia  
Tel: +61 (08) 6274 1590 Fax: +61 (08) 6380 1080  
cbp@bhp.com.au

File Ref: EMGPS 11.2  
Docs Ref: 129888

25 November 2008

Mr Glenn Vanderputt  
Sinclair Knight Merz  
7<sup>th</sup> Floor Durack Centre  
263 Adelaide Terrace  
Perth, WA 6000

Dear Glenn

**Re: Statement for Audits.**

I, Darren Beugelaar, confirm, in relation to the 2008 Electricity Audits (Retail and Distribution), that to the best of my knowledge the statements following in the attachment are true and correct.

Yours faithfully  
  
**Darren Beugelaar**  
Commercial Manager - Energy Supply

BHP Billiton Nickel West Pty Ltd  
ABN 78 504 184 538  
Registered Office: Level 27, BHP Billiton Centre, 100 Loraine Street, Melbourne, Victoria 3000, Australia  
A member of the BHP Billiton Group, which is headquartered in Australia

Item	Clause	Statement
109	A licensee must report to the Authority, in the manner prescribed, if a licensee is under external administration or there is a significant change in the circumstances upon which the licence was granted which may affect a licensee's ability to meet its obligations.	Nickel West is not under external administration nor is there a change in circumstances that would require reporting to the Authority
110	A licensee must provide the Authority, in the manner prescribed, any information the Authority requires in connection with its functions under the Electricity Industry Act.	To the best of our knowledge, there has been no information that Nickel West has failed to provide to the Authority
334	A network operator must, if reasonably requested by a Code participant, provide enhanced technology features in a metering installation.	There has been no request by a code participant to provide enhanced features in a metering installation.
335	A network operator may only impose a charge for the provision of metering installations with enhanced technology features in accordance with the applicable service level agreement between it and the user.	Nickel West has made no charges for the provision of metering facilities with enhanced technology features as there are none
336	Meters containing an internal real time clock must maintain time accuracy as prescribed. Time drift must be measured over a period of 1 month.	Meters containing an internal real time clock have not been tested to the level required. Testing regimes are to be developed and implemented.
337	If a metering installation includes measurement elements and an internal data logger at the same site, it must include facilities on site for storing the interval energy data for the periods prescribed.	Data storage periods are unknown and are required to be assessed.
338	A network operator providing one or more metering installations with enhanced technology features must be licensed to use and access the metering software applicable to all devices being installed and be able to program the devices and set parameters.	Metering software is purchased with the meters.
339	Where signals are provided from the meter for the user or the user's customer use, a network operator must ensure that signals are isolated by relays or electronic buffers to prevent accidental or malicious damage to the meter.	No metering signals are provided directly from the meters to the users or customers.
340	Where signals are provided from the meter for the user or the user's customer use, a network operator must provide the user or the user's customer with sufficient details of the signal specification to enable compliance with clause 3.23(C) of the Code.	Signals are not provided from the meter to any customers directly.
352	If a network operator is notified of a change to or inaccuracy in an item of standing data by a Code participant which is the designated source for the item of standing data, then the network operator must update the registry.	There have been no notifications of changes to or inaccuracies in standing data that have required updating in the registry.

Item	Clause	Statement
353	<p>If a network operator is notified of a change to or inaccuracy in an item of standing data by a Code participant which is not the designated source for the item of standing data, or otherwise becomes aware of a change to or inaccuracy in an item of standing data, then the network operator must undertake investigations to the standard of good electricity industry practice to determine whether the registry should be updated, and update the registry as required.</p>	<p>Nickel West has not been advised of a change to or an inaccuracy in any item of standing data.</p>
355	<p>A network operator must allow a user who supplies, purchases or generates electricity to have local and (where a suitable communications link is installed) remote access to the energy data for metering points at its associated connection points, using a read only password provided by the network operator.</p>	<p>Due to the nature of the Nickel West contracts, energy data is exchanged with the user who generates electricity.</p>
363	<p>A user must, when reasonably requested by a network operator, use reasonable endeavours to assist the network operator to comply with the network operator's obligation.</p>	<p>There have been no requests by a network operator for specific direct assistance.</p>
369	<p>A network operator must comply with any reasonable request by a Code participant to undertake either a test or an audit of the accuracy of the metering installation or the energy or standing data of the metering installation.</p>	<p>Nickel West has not had a request by a Code participant to undertake either a test or an audit of the accuracy of the metering installation or the energy or data of the metering installation.</p>
407	<p>A network operator (acting in accordance with good electricity industry practice) must consider any reasonable request from a Code participant for an estimated or substituted value to be replaced.</p>	<p>Nickel West has not had a request from a Code participant for an estimated or substituted value to be replaced.</p>
430	<p>A distributor or transmitter must, so far as reasonably practicable, disconnect the supply of electricity to installations or property in specified circumstances, unless it is in the interest of the customer to maintain the supply.</p>	<p>No known events occurred that would have required disconnection of the supply and customers were not disconnected unnecessarily. Supplies are generally maintained to provide essential purifying and lighting.</p>
437	<p>A distributor or transmitter must, on request, provide to an affected customer a free copy of an instrument issued by the Minister and of any notice given under section 14(7) of the Electricity Industry (Network Quality and Reliability of Supply) Code 2005.</p>	<p>There have been no requests for the provision of an instrument issued by the Minister and of any notice given under section 14(7) of the Electricity Industry (Network Quality and Reliability of Supply) Code 2005.</p>
438	<p>A distributor or transmitter that agrees with a customer to exclude or modify certain provisions must set out the advantages and disadvantages to the customer of doing so in their agreement.</p>	<p>There have been no exclusions or modifications to requirements except under Power Purchase Agreements negotiated and in force prior to the implementation of EI (NQRFS) Code. Advantages and disadvantages would not have been set out at the time.</p>
439	<p>A distributor operating a relevant distribution system must, in specified circumstances, make a payment to a customer within a specific timeframe for a failure to give required notice of planned interruption.</p>	<p>There have been no requests for compensation for failing to give the required notice period for planned interruptions. All planned interruptions been given with sufficient notice period.</p>



Item	Clause	Statement
440	A distributor operating a relevant distribution system must, in specified circumstances, make a payment to a customer within a specific timeframe if a supply interruption exceeds 12 hours.	There have been no applications from customers for compensation under this provision.
446	A distributor or transmitter must complete a quality investigation requested by a customer in accordance with specified requirements.	There have been no requests for investigations.
447	A distributor or transmitter must report the results of an investigation to the customer concerned.	There have been no requests for investigations.



## Appendix F Performance Audit



## Appendix G Asset Management Review