Final Report

2016 Performance Audit and Asset Management System Review for NewGen Neerabup Partnership (EGL18).

Audit Report	Authorisation	Name	Position	Date
Prepared By		Nicole Davies	Principal Consultant (GES Pty Ltd)	12 March 2017
Reviewed By (licensee)		Bruno Lanciano	NewGen Neerabup Partnership	28 April 2017
Approved By (licensee)		Phil MacMahon	NewGen Neerabup Partnership	28 April 2017

Geographe Environmental Services Pty ltd
PO Box 572 DUNSBOROUGH WA 6281
Tel: 0438 938 394

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Audit Report No: RNPS032017_1

LIST OF APPENDICES

1. Neerabup Power Station Performance Audit Review March 2017

2. Neerabup Power Station Asset Management System Review March 2017

GLOSSARY

Abbreviation	Description
ABC	Automatic balancing control; automated generation dispatch system
AEMO	Australian energy market operator. The national market operator that succeeded IMO.
AGC	Automatic generator control; generator and operating mode selection control system to automatically respond to DI's
AMS	Asset Management System
BCFM	Base Case Financial Model
CCTV	Closed circuit TV
CM	Corrective maintenance
CO_2	Carbon dioxide
DBP	Dampier Bunbury Natural Gas Pipeline
DCS	Distributed Control System
DI	Dispatch instruction
DM	Demand management
DYBD	Dial before you dig
EFOR	Equivalent forced outage rate
EMR	Electricity market review; a State Govt initiative
EOH	Equivalent operating hours; considers hours, starts and mode of operation
ERA	Economic Regulation Authority
GES	Geographe Environmental Services
GT	Gas turbine
I&C	Instrumentation and control
IMO	State independent market operator; superseded by AEMO.
IT	Information Technology
'major'	Industry term for a routine major inspection and service based on EOH
MEX	Computerised Maintenance Management System
'minor'	Industry term for a routine minor inspection and service based on EOH
MOC	Management of change
NNP	NewGen Neerabup Partnership
NOx	Nitrous oxide
NPV	Net present value
OEM	Original equipment manufacturer
PAG	Power augmentation; water injection to increase power output
PAIP	Post Audit Implementation Plan
P&L	Profit and loss
PLC	Programmable logic controller
PM	Preventive maintenance
PSS	Power system stabiliser; a Technical Rules requirement
PUO	Public Utilities Office
RCA	Root cause analysis
RO	Reverse osmosis, for water treatment.
SFC	Static frequency converter; uses the generator as a motor to start the GT
STEM	Short Term Energy Market
SWIS	South West Interconnected System
UPS	Uninterruptable power supply
WP	Western Power

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Quality Control Record

	CLIENT	DATE
REQUESTED BY	BRUNO LANCIANO, NewGen Neerabup Partnership	
PREPARED BY	NICOLE DAVIES	MARCH 2017
CHECKED BY	SIMON ASHBY	MARCH 2017
REVISION	1	28 APRIL 2017

1. EXECUTIVE SUMMARY

The Licensee is NewGen Neerabup Partnership a 50:50 partnership between ERM Power and Energy Infrastructure Trust (EIT) that is managed by Infrastructure Capital Group (ICG) Founded in 1980, ERM Power is an Australian energy company that operates electricity sales and electricity generation businesses.

Infrastructure Capital Group Limited (ICG) is a leading Australian infrastructure funds management company and is the investment manager of Energy Infrastructure Trust (EIT). EIT specialises in investment in energy infrastructure with approximately $800 million of equity funds invested in projects throughout Australia including 50 per cent of the Neerabup power station.

The Neerabup power station, located 35km north of Perth, is a 330MW open-cycle, gas-fired power station, combined with a 30km dedicated gas pipeline connected to the Dampier to Bunbury Natural Gas Pipeline through a compressor station at Muchea. The power station is designed as a peaking plant to provide additional capacity to the South West Inter-connected System (SWIS) during periods of high demand. Its revenue is underpinned by a 20-year financial tolling arrangement with the government owned electricity retail corporation, Synergy. Neerabup retains dispatch control allowing for further commercial dispatch upside above the underpinning Synergy revenues.

The pipeline is oversized and in conjunction with the compressor station provides 30TJ of storage. NewGen Neerabup Partnership has engaged Geographe Environmental Services Pty Ltd to undertake its third Performance Audit and Asset Management System Review as required by the Economic Regulation Authority (ERA). NewGen Neerabup Partnership was granted a Generation Licence (Licence Number EGL18) under the *Electricity Industry Act 2004* on 26th March 2008. Sections 13 and 14 of the Electricity Industry Act 2004 require as a condition of every licence that the licensee must, not less than once in every period of 24 months (or any longer period that the Authority allows) calculated from the grant of the licence, provide the Authority with a performance audit and a asset management system review report by an independent expert acceptable to the Authority.

Geographe Environmental Services has been approved by the Authority to undertake the works subject to development of an audit plan for the period 1st April 2013 to 31st October 2016 for a submission date of prior to the 31st March 2017.

The Asset Management System Review and the Performance Audit have been conducted in order to assess the effectiveness of the Neerabup Power Station Asset Management Systems and level of compliance with the conditions of its Generation Licence EGL18. Through the execution of the Audit Plan, field work, assessment and testing of the control environment, the information system, control procedures and compliance attitude, the audit team members have gained reasonable assurance that NewGen Neerabup Partnership has an effective asset management system and has complied with its Generating Licence during the audit period 1st April 2013 to 31st October 2016.

The Licensee has implemented the recommendations of the previous audit report and the effectiveness of the actions is evident in the compliance history during the audit period (Refer to 3).

The site audit was conducted on the 13th of February and this audit report is an accurate representation of the audit team's findings and opinions. The Auditors confirm that the Licensee provided full access as required by the Audit Guidelines (2014), in respect to; access to facilities and business premise, access to data, reports, minutes, documentation, correspondence and process control data. Additionally, the Licensee ensure the appropriate personnel were available and provided information as requested for external persons relevant to the audit process.

1.1 Performance Audit Summary

All licence requirements reviewed were found to be compliant during the audit.

A two-dimensional rating scale (refer Section 11.4.1 of the Audit Guidelines) was used in the Audit report to summarise the compliance rating for each licence condition. Each obligation was rated for both the adequacy of existing controls and the compliance with the relevant licence obligation.

A comprehensive report of the audit findings is included in Appendix 1.

There were Generation Licence compliance elements that were not included in the scope of this audit because they did not eventuate in this audit period or have not been established within licence EGL18. These are defined in Table 1.

The performance audit was conducted in a period over February and March and required 80 hours of Nicole Davies time.

Table 1: Performance Audit Compliance Summary

Compliance Obligation Reference No.	Licence Reference	Audit Priority	Adequacy of Controls Rating					Compliance Rating				
			A	B	C	D	NP	1	2	3	4	NR
SECTION 8: TYPE 1 REPORTING REQUIREMENTS												
THERE ARE NO TYPE 1 REPORTING REQUIREMENTS APPLICABLE TO EGL18												
SECTION 11: ELECTRICITY INDUSTRY ACT - LICENCE CONDITIONS AND OBLIGATIONS												
101	Electricity Industry Act section 13(1) Generation Licence condition 14.1	5	A					1				
102	Electricity Industry Act, section 14(1)(a) Generation Licence condition 20.1	5	A					1				
103	Electricity Industry Act, section 14(1)(b) Generation Licence condition 20.2 & 20.3	4	A					1				
104	Electricity Industry Act, section 14(1)(c) Generation Licence, condition 20.4	5	A					1				
105	Electricity Industry Act section 17(1) Generation Licence condition 4.1	4	A					1				
106	Electricity Industry Act section 31(3) Generation Licence condition 5.1	4	A					1				
107	Electricity Industry Act section 41(6) Generation Licence condition 5.1	4					NP					NR
SECTION 12: ELECTRICITY LICENCES - LICENCE CONDITIONS AND OBLIGATIONS												
119	Electricity Industry Act section 11 Generation Licence condition 12.1	4	A					1				
120	Electricity Industry Act section 11 Generation Licence condition 13.4	4					NP					NR
121	Electricity Industry Act section 11 Generation Licence condition 14.2	4	A					1				

Compliance Obligation Reference No.	Licence Reference	Audit Priority	Adequacy of Controls Rating					Compliance Rating				
			A	B	C	D	NP	1	2	3	4	NR
122	Electricity Industry Act section 11 Generation Licence condition 20.5	4	A					1				
123	Electricity Industry Act section 11 Generation Licence condition 15.1	4					NP					NA
124	Electricity Industry Act section 11 Generation Licence condition 16.1	4	A					1				
125	Electricity Industry Act section 11 Generation Licence condition 17.1 & 17.2	4					NP					NA
126	Electricity Industry Act section 11Generation Licence condition 18.1	4	A					1				
SECTION 14: ELECTRICITY INDUSTRY METERING CODE - LICENCE CONDITIONS AND OBLIGATIONS												
324	Electricity Industry Metering Code, Cl 3.3B Generation Licence, condition 5.1	4					NP					NR
339 [349]	Generation Licence condition 5.1 Electricity Industry Metering Code Cl 3.27	4	A									NR
364 [372]	Electricity Industry Metering Code Cl 3.27 Generation Licence condition 5.1	4					NP					NR
371 [379]	Electricity Industry Metering Code Cl 4.4(1) Generation Licence condition 5.1	5	A									NR
372 [380]	Electricity Industry Metering Code Cl 4.5(1) Generation Licence condition 5.1	5					NP					NR
373 [381]	Electricity Industry Metering Code Cl 4.5(2) Generation Licence condition 5.1	4					NP					NR
388 [393]	Electricity Industry Metering Code Cl 5.4(2) Generation Licence condition 5.1	5					NP					NR
401 [406]	Electricity Industry Metering Code Cl 5.16 Generation Licence condition 5.1	4					NP					NR

Compliance Obligation Reference No.	Licence Reference	Audit Priority	Adequacy of Controls Rating					Compliance Rating				
			A	B	C	D	NP	1	2	3	4	NR
402 [407]	Electricity Industry Metering Code Cl 5.17(1) Generation Licence condition 5.1	4					NP					NR
405 [408]	Electricity Industry Metering Code clause 5.18 Generation Licence condition 5.1	4					NP					NR
406 [409]	Electricity Industry Metering Code Cl 5.19(1) Generation Licence condition 5.1	5					NP					NR
407 [410]	Electricity Industry Metering Code Cl 5.19(2) Generation Licence condition 5.1	5					NP					NR
408 [411]	Electricity Industry Metering Code Cl 5.19(3) Generation Licence condition 5.1	4					NP					NR
410 [414]	Electricity Industry Metering Code Cl 5.19(6) Generation Licence condition 5.1	5					NP					NR
416 [420]	Electricity Industry Metering Code Cl 5.21(5) Generation Licence condition 5.1	4					NP					NR
417 [421]	Electricity Industry Metering Code Cl 5.21(6) Generation Licence condition 5.1	4					NP					NR
435 [439]	Electricity Industry Metering Code Cl 5.27 Generation Licence condition 5.1	4					NP					NR
448 [446]	Electricity Industry Metering Code Cl 6.1(2) Generation Licence condition 5.1	4					NP					NR
451 [448]	Electricity Industry Metering Code Cl 7.2(1) Generation Licence condition 5.1	5	A					1				
453 [450]	Electricity Industry Metering Code Cl 7.2(4) Generation Licence condition 5.1	4					NP					NR
454 [451]	Electricity Industry Metering Code Cl 7.2(5) Generation Licence condition 5.1	4					NP					NR

Compliance Obligation Reference No.	Licence Reference	Audit Priority	Adequacy of Controls Rating					Compliance Rating				
			A	B	C	D	NP	1	2	3	4	NR
455 [452]	Electricity Industry Metering Code Cl 7.5 Generation Licence condition 5.1	4					NP					NR
456 [453]	Electricity Industry Metering Code Cl 7.6(1) Generation Licence condition 5.1	4					NP					NR
457 [454]	Electricity Industry Metering Code Cl 8.1(1) Generation Licence condition 5.1	5					NP					NR
458 [455]	Electricity Industry Metering Code Cl 8.1(2) Generation Licence condition 5.1	5					NP					NR
459 [456]	Electricity Industry Metering Code Cl 8.1(3) Generation Licence condition 5.1	5					NP					NR
460 [457]	Electricity Industry Metering Code Cl 8.1(4) Generation Licence condition 5.1	4					NP					NR
461 [458]	Electricity Industry Metering Code Cl 8.3(2) Generation Licence condition 5.1	5					NP					NR
SECTION 16: ELECTRICITY LICENCES - LICENSEE SPECIFIC CONDITIONS AND OBLIGATIONS												
THIS SECTION IS NOT APPLICABLE TO NEERABUP AS THERE HAVE BEEN NO SPECIFIC CONDITIONS AND OBLIGATIONS ATTACHED TO THE GENERATION LICENCE												

1.2 Asset Management System Review Summary

The asset management system was found to be satisfactory.

As required by section 11.4.2 of the Audit and Review Guidelines – Electricity and Gas Licences (April 2014) Table 2 summarises the auditor's assessment of both the process and policy definition rating and the performance rating for each key process in the licensees asset management system, using the scales described in Table 7 and Table 8 (refer Section 3.3 Asset Management Review Methodology). The rating was determined by the auditor's judgement based on the execution of the Audit Plan.

The process and policy and asset management system adequacy ratings are summarised below;

Table 2: Asset Management System - Effectiveness Summary

Asset Management System	Asset Management Process And Policy Definition Adequacy Rating	Asset Management Performance Rating
1. Asset planning	A	1
2. Asset creation/ acquisition	A	1
3. Asset disposal	A	Not assessed
4. Environmental analysis	A	1
5. Asset operations	A	1
6. Asset maintenance	A	1
7. Asset Management Information System	A	1
8. Risk management	A	1
9. Contingency planning	A	1
10. Financial planning	A	1
11. Capital expenditure planning	A	1
12. Review of AMS	A	1

The Audit and Review Guidelines – Electricity and Gas Licences (April 2014) require that auditors who have rated the adequacy of the process and policy definition process as C or D or the asset management performance as 3 or 4 also make recommendations to address the issue(s).

Table 1: Table of Current Review Asset System Deficiencies/Recommendations

Table of Current Review Asset System Deficiencies/Recommendations			
A. Resolved during current Review period			
Ref.	**Asset System Deficiency (Rating / Asset Management System Component & Effectiveness Criteria / Details of Asset System Deficiency)**	**Date Resolved (& management action taken)**	**Auditors comments**
9.Contingency Planning	B2	15/8/14	
B. Unresolved at end of current Review period			
Reference (no./year)	**Asset System Deficiency (Rating / Asset Management System Component & Effectiveness Criteria / Details of Asset System Deficiency)**	**Auditors' Recommendation**	**Management action taken by end of Audit period**
None			

2. PERFORMANCE AUDIT

2.1 Performance Audit Scope-

Follow-Up from Previous Audit Findings

This is the third audit of EGL18. The organisation has implemented the recommendations of the previous audit and as required by Section 11.3 of the Audit Guidelines (April 2014). Table 3 below details how all recommendations were resolved early in the current audit period

Table 3 Previous audit non compliances and recommendations

Table of Previous Non-Compliances & Audit Recommendations				
A Resolved before end of previous audit period				
Reference (no./year)	(Compliance rating/ Legislative Obligation/ details of the issue)	Auditors' Recommendation or action taken	Date Resolved	Further action required *
There were no non-compliances resolved prior to the previous audit period.				
B Resolved before end of during the current audit period				
Reference (no./year)	(Compliance rating/ Legislative Obligation/ details of the issue)	Auditors' Recommendation or action taken	Date Resolved	Further action required *
124	2/Electricity Industry Act section 11/Controls could be improved to avoid missing required information	Confirm/Complete the improvements to the existing work order scheduling and reporting process, by inclusion of automated reports of upcoming due dates so as to ensure better monitoring of the compliance requirements as per recommendations in section 7 of the "2013 ERM Compliance Management Process - Internal Audit - Rev B	14/02/2014 Automated functionality from the maintenance management system (MEX) have been implemented.	No
C Unresolved at the end of the current audit period				
Reference (no./year)	(Compliance rating/ Legislative Obligation/ details of the issue)	Auditors' Recommendation or action taken	Date Resolved	Further action required *
There were no non-compliances unresolved at the end of the current audit period.				

* (Yes/No/Not Applicable) & required including current recommendation reference if applicable

2.4 2011 Post Audit Implementation Plan

There are no audit non compliances identified that require the development of a post audit implementation plan. This is reflective of the assessment that the Licensee has well established processes for compliance.

Table 4: Post Audit Implementation Plan

CURRENT AUDIT NON COMPLIANCES/RECOMMENDATIONS			
A. RESOLVED DURING THE CURRENT AUDIT PERIOD			
REF.	Non Compliance/Controls Improvement (Rating/ Legislative Obligation/ Details of Non Compliance or Inadequacy of Controls)	Auditors Recommendation	Management action taken by end of Audit period
There are no non compliances or recommendations raised and resolved during the audit period.			
B. UNRESOLVED AT END OF CURRENT AUDIT PERIOD			
	Non Compliance/Controls Improvement (Rating/ Legislative Obligation/ Details of Non Compliance or Inadequacy of Controls)	Auditors Recommendation	Management action taken by end of Audit period
There are no non compliances or recommendations raised and unresolved during the audit period.			

3. ASSET MANAGEMENT SYSTEM EFFECTIVENESS REVIEW

3.1 AMS Review Scope

The scope of the AMS review includes an assessment of adequacy and effectiveness of Neerabup Power Station's asset management system by evaluating during the audit period 1st April 2013 to 31st October 2016 the following;

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

The review has been established as a requirement of the current Generating Licence issued by the Economic Regulation Authority to NewGen Neerabup Partnership.

The asset management review follows the approved audit plan and uses;

- a risk based approach to auditing using the risk evaluation model set out in ISO31000:2009
- an overall effectiveness rating for an asset management process, based on a combination of the process and policy adequacy rating and the performance rating
- the format and content of the reviewer's report; and post- implementation plan as described in the Guidelines.

Table 5: Interviewed personal during the review

Bruno Lanciano	Neerabup Power Station Manager	NewGen Neerabup Partnership
Phil Mac Mahon	Operations Manager	NewGen Neerabup Partnership
Kho SuChuan	Operations Support Engineer	NewGen Neerabup Partnership

The key documents and other information sources are detailed below and further in Appendix 2.

Table 6: Key reference documentation

#	Description
1	All Monthly Reports.
2	130517 Business Manager's Report Neerabup April 2013.
3	130616 Business Manager's Report Neerabup May 2013.
4	130718 Business Manager's Report Neerabup June 2013.
5	130816 Business Manager's Report Neerabup July 2013.
6	130918 Business Manager's Report Neerabup Aug 2013.
7	131015 Business Manager's Report Neerabup Sept 2013.
8	131114 Business Manager's Report Neerabup Oct 2013.
9	131217 Business Manager's Report Neerabup Nov 2013.
10	140130 Business Manager's Report Neerabup Dec 2013.
11	140213 Business Manager's Report Neerabup Jan 2014.
12	140319 Business Manager's Report Neerabup Feb 2014.
13	140410 Business Manager's Report Neerabup Mar 2014.
14	140513 Business Manager's Report Neerabup Apr 2014.
15	140619 Business Manager's Report Neerabup May 2014 - FINAL.
16	140718 Business Manager's Report Neerabup June 2014.
17	140814 Business Manager's Report Neerabup July 2014.
18	140912 Business Manager's Report Neerabup Aug 2014.
19	141014 Business Manager's Report Neerabup Sept 2014.
20	141111 Business Manager's Report Neerabup Oct 2014.
21	141209 Business Manager's Report Neerabup Nov 2014.
22	150116b Business Manager's Report Neerabup Dec 2014.
23	150212 Business Manager's Report Neerabup Jan 2015.
24	150313 Business Manager's Report Neerabup Feb 2015.
25	150410 Business Manager's Report Neerabup Mar 2015.
26	150508 Business Manager's Report Neerabup Apr 2015.
27	150605a Business Manager's Report Neerabup May 2015.
28	150703 Business Manager's Report Neerabup June 2015.
29	150810 Business Manager's Report Neerabup July 2015.
30	150917 Business Manager's Report Neerabup Aug 2015.
31	151007 Business Manager's Report Neerabup Sept 2015.
32	151105 Business Manager's Report Neerabup Oct 2015.
33	151210 Business Manager's Report Neerabup Nov 2015.
34	160112 Business Manager's Report Neerabup Dec 2015.
35	160212 Business Manager's Report Neerabup Jan 2016.
36	160311 Business Manager's Report Neerabup Feb 2016.
37	160406 Business Manager's Report Neerabup Mar 2016.
38	160504 Business Manager's Report Neerabup Apr 2016.
39	160601 Business Manager's Report Neerabup May 2016.
40	160711 Business Manager's Report Neerabup June 2016.

41	160810 Business Manager's Report Neerabup July 2016 _ final.
42	160901 Business Manager's Report final Neerabup Aug 2016.
43	161013 Business Manager's Report Neerabup Sept 2016 Final Version Used with DM Comments.
44	161109 Business Manager's Report Neerabup Oct 2016.
48	MEX OPEN list for Audit report.
49	MEX History list for Audit report.
50	MEX OPEN _Compliance to now_ list for Audit report.
51	NPS-OHS-INC-REG NPS Incident Report Register.
52	NPS-INC-096 Unit 12 SFC trip & failed start_Completed.
53	140820 NewGen Neerabup EGL18 PAIP update_Signed.
54	NPS-OPS-CPL-01 ERA Safety & Commercial Contingency Plan.
55	Witness start up.
56	Computer file tree displayed.
57	Computer file back.
58	Neerabup-Preliminary-Decommissioning-Plan.
59	Filenote Telecon Bruno 21-2-17.
60	NPS-INC-093 - 5 whys RCA.
61	NPS-INC-093 - KT Problem Analysis.
62	Bruno email 21-2-17.
63	111024 ERA PAIP Response

The review was conducted by Power & Energy Services on behalf of Geographe Environmental Services in conjunction with the Performance Audit during February-March 2017 and included desktop review, one day's audit to execute audit plan and interview sessions and report writing. In total the audit required 80 hours of Simon Ashby's time.

3.2 Objective of the Asset Management System Review

The objective of the review is to examine the effectiveness of the processes used by NewGen Neerabup Partnership to deliver asset management, the information systems supporting asset management activities and the data and knowledge used to make decisions about asset management. These elements were examined from a life cycle perspective i.e. planning, construction, operation, maintenance, renewal, replacement and disposal using the guidelines developed by the Economic Regulation Authority.

3.3 Methodology for Asset Management System Review

The audit methodology detailed in the Audit Guidelines – Electricity and Gas Licences (April 2014) was used in the execution of the Asset Management System Review and is detailed in the Audit Plan.

Asset Management System Effectiveness Rating

The Audit Guidelines – Electricity and Gas Licences (April 2014) (section 11.4.2) states that the asset management review report must provide a table that summarises the auditor's assessment of both the process and policy definition rating and the performance rating for each key process in the licensee's asset management system using the scales described in Table 7 and Table 8. It is left to the judgement of the auditor to determine the most appropriate rating for each asset management process.

Table 7: Asset management process and policy definition adequacy ratings

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

Table 8: Asset management performance ratings

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

Deviation from the Audit Plan

Audit Priority for Contingency Planning # 9.1 was changed from 2 to 4 due to review and assessment of control adequacy. Control mechanisms are sufficient and adequately address requirements.

3.4 2013 Post Audit Implementation Plan

As stipulated in section 11.8 of the Audit Guidelines – Electricity and Gas Licences (April 2014), the Audit Team notes that the Asset Management Review Post Implementation Plan does not form part of the Audit Opinion. It is the responsibility of the licensee to ensure actions are undertaken as determined by NewGen Neerabup Partnership.

The 2013 Post Audit Plan has been fully implemented.

4. FOLLOW UP AUDIT PROCESS

This is the third Performance Audit and Asset Management Review conducted since the issue of the licence and all previous audit report findings have been reviewed as part of the content of this report. Review of actions taken in response to corrective actions and recommendations will form part of subsequent audit plans.

APPENDIX 1

NEWGEN NEERABUP PARTNERSHIP PERFORMANCE AUDIT MARCH 2017

Table 9 : Performance Audit

REF*	LICENCE CONDITION	RELATED LEGISLATION	LEGISLATIVE/LICENCE REQUIREMENT	AUDIT PRIORITY	AUDITING FINDING ▪ RELATED DOCUMENTATION &/OR CONTROL SYSTEMS/AUDIT EVIDENCE → CORRECTIVE ACTION (CA) OPPORTUNITY FOR IMPROVEMENT	ADEQUACY OF CONTROLS	COMPLIANCE RATING
SECTION 8: TYPE 1 REPORTING REQUIREMENTS							
THERE ARE NO TYPE 1 REPORTING REQUIREMENTS APPLICABLE TO EGL18							
SECTION 9: ELECTRICITY INDUSTRY CUSTOMER TRANSFER CODE - PART 3 - CUSTOMER/ CONNECTION INFORMATION/DATA							
101	Generation Licence *condition 14.1*	*Electricity Industry Act section 13(1)*	A licensee must provide the ERA with a performance audit conducted by an independent expert acceptable to the ERA, not less than once every 24 months.	5	This is the third Audit conducted by an independent expert since the licence was granted in March 2008. The requirement for the audit is monitored by the Neerabup Power Station Manager it is raised in email communications and correspondence with the Secretariat, as well as being tracked in the MEX System. ▪ ERA correspondence ▪ ERM Personnel interviewed - Neerabup Power Station Manager	A	1
102	Generation Licence condition 20.1	*Electricity Industry Act, section 14(1)(a)*	A licensee must provide for an asset management system.	5	The licensee maintains an Asset Management System which is continually monitored and updated in response to plant conditions. A detailed maintenance history is contained in MEX. A well-established Root Cause Analysis	A	1

REF*	LICENCE CONDITION	RELATED LEGISLATION	LEGISLATIVE/LICENCE REQUIREMENT	AUDIT PRIORITY	AUDITING FINDING ▪ RELATED DOCUMENTATION &/OR CONTROL SYSTEMS/AUDIT EVIDENCE → CORRECTIVE ACTION (CA) OPPORTUNITY FOR IMPROVEMENT	ADEQUACY OF CONTROLS	COMPLIANCE RATING
					implemented for all operational incidents.		
103	Generation Licence condition 20.2 and 20.3	*Electricity Industry Act, section 14(1)(b)*	A licensee must notify details of the asset management system and any substantial changes to it to the ERA.	4	There have been no substantial changes to the Asset Management System which have required notification to the ERA during the audit period.	A	1
104	Generation Licence, condition 20.4	*Electricity Industry Act, section 14(1)(c)*	A licensee must provide the ERA with a report by an independent expert about the effectiveness of its asset management system every 24 months, or such longer period as determined by the ERA.	5	GES was appointed, with the Authority's approval to undertake the asset management system review for the period 1 April 2013 to 31 October 2016. The technical aspects of the review have been addressed by Power & Energy Services, as detailed in the Audit Plan and approved by the Authority. This is the third review of the asset management system in accordance with the NewGen Neerabup licence. The 2013 asset management system review report was provided to the Authority in June 2013, and met the requirements of the Authority. Planning for this report has been noted in email communications, management meetings and by the engagement of GES.	A	1
105	*Generation Licence condition 4.1*	Electricity Industry Act section 17(1)	A licensee must pay the prescribed licence fees to the ERA according to clauses 6, 7 and 8 of the Economic Regulation Authority (Licensing Funding)	4	The licence was granted on 26th March 2008 and the requirement is for the invoices to be paid by 26th April of each year. Annual Licence fees that were due to be paid within the audit period were	A	1

REF*	LICENCE CONDITION	RELATED LEGISLATION	LEGISLATIVE/LICENCE REQUIREMENT	AUDIT PRIORITY	AUDITING FINDING ▪ RELATED DOCUMENTATION &/OR CONTROL SYSTEMS/AUDIT EVIDENCE → CORRECTIVE ACTION (CA) OPPORTUNITY FOR IMPROVEMENT	ADEQUACY OF CONTROLS	COMPLIANCE RATING
			Regulations 2014.		compliant and paid in accordance with requirements as follows; - ERA Invoice ERA100702 (Issued on 16/3/16) and Paid 15/4/16 - ERA Invoice ERA100270 (issued on 16/3/15) and Paid 20/3/15 - ERA Invoice ERA100128 (issued on 14/3/14) and Paid 4/4/14 - ERA Invoice ERA100017 (issued on 11/3/13) and Paid 5/4/13 In addition, the Standing Charge Fees, which were introduced in Quarter 1 of 2015 were paid within the 30 Day requirement of date of issue and were paid as follows during the audit period.; - ERA Q1 2015 Invoice ERA100409 (Issued on 29/6/15) and Paid 24/7/15 - ERA Q2 2015 Invoice ERA100490 (issued on 26/8/15) and Paid 11/9/15 - ERA Q3 2015 Invoice ERA100590 (issued on 30/11/15) and Paid 24/12/15 - ERA Q4 2015 Invoice ERA100653 (issued on 15/2/16) and Paid 11/3/16 - ERA Q1 2016 Invoice ERA100745 (issued on		

REF*	LICENCE CONDITION	RELATED LEGISLATION	LEGISLATIVE/LICENCE REQUIREMENT	AUDIT PRIORITY	AUDITING FINDING ▪ RELATED DOCUMENTATION &/OR CONTROL SYSTEMS/AUDIT EVIDENCE → CORRECTIVE ACTION (CA) OPPORTUNITY FOR IMPROVEMENT	ADEQUACY OF CONTROLS	COMPLIANCE RATING
					5/5/16) and Paid 3/6/16 - ERA Q2 2016 Invoice ERA100858 (issued on 26/8/16) and Paid 23/9/16 - ERA Q3 2016 Invoice ERA100965 (issued on 30/12/16) and Paid 6/1/16 (Note: Outside scope of audit period but payment for dates within the audit period) It is noted that all of the invoices were paid in accordance with the compliance requirements. Invoices issued by the Authority Record of Payment in accounts system. Verification of receipt of payment was confirmed through discussions with the Finance Officer of the ERA.		

106	Generation Licence condition 5.1	*Electricity Industry Act section 31(3)*	A licensee must take reasonable steps to minimise the extent, or duration, of any interruption, suspension or restriction of the supply of electricity due to an accident, emergency, potential danger or other unavoidable cause.	4	Through discussions with the Power Station Manager and review of Neerabup's systems and documentation it is noted that there are; ▪ Detailed contingency planning and business continuity processes in place to manage the impact of unplanned outages and unplanned events. ▪ Well established condition monitoring systems implemented. ▪ Reciprocal arrangements with other businesses to access parts. ▪ Regular review of the adequacy of the Crisis Management Plans ▪ Detailed schedule for planned outages, which is regularly reviewed and monitored.	A	1
107	Generation Licence condition 5.1	*Electricity Industry Act section 41(6)*	A licensee must pay the costs of taking an interest in land or an easement over land.	4	There have been no changes in the interest of the land since the previous audit. The land is owned by the licensee. As such, no activity has taken place to exercise the obligation and this requirement was not assessed.	NP	NR
SECTION 12: ELECTRICITY LICENCES - LICENCE CONDITIONS AND OBLIGATIONS							
119	Generation Licence condition 12.1	*Electricity Industry Act section 11*	A licensee and any related body corporate must maintain accounting records that comply with the Australian Accounting Standards Board Standards or	4	The ERM Power website publishes the Annual Reports for the audit period. A review of the	A	1

			equivalent International Accounting Standards.		▪ Annual Report 2016 ▪ Annual Report 2015 ▪ Annual Report 2014 ▪ Annual Report 2013 Confirmed that for the period 1 April 2014 to 31 October 2016 the licensee was compliant with the Australian Accounting Standards Board (AASB) standards. The Independent Auditor's reports attached to each report confirmed compliance with Australian Accounting Standards and were unqualified.		
120	Generation Licence condition 13.4	*Electricity Industry Act section 11*	A licensee must comply with any individual performance standards prescribed by the ERA.	4	Discussions with the Power Station Manager confirmed that, for the period 1 April 2013 to 31 October 2016, the licensee was not prescribed individual performance standards by the Authority. As, no activity has taken place to exercise the obligation during the audit period and this requirement has not been assessed.	NP	NR
121	Generation Licence condition 14.2	*Electricity Industry Act section 11*	A licensee must comply, and require its auditor to comply, with the ERA's standard audit guidelines for a performance audit.	4	The Authority approved (ERA Approval Ref D162515) the audit and review plan which ensure that the licensee and the Auditor comply with the prescribed audit guidelines and reporting manual. The audit and review were undertaken using the framework from the Audit and Review Guidelines: Electricity and Gas Licences, April 2014.	A	1
122	Generation Licence condition 20.5	*Electricity Industry Act section 11*	A licensee must comply, and must require the licensee's expert to comply, with the relevant aspects of the ERA's standard audit guidelines for an asset management system review.	4	As above	A	1

123	Generation Licence condition 15.1	*Electricity Industry Act section 1*	In the manner prescribed, a licensee must notify the ERA, if it is under external administration or if there is a significant change in the circumstances that the licence was granted which may affect the licensee's ability to meet its obligations.	4	Under Licence clause 15.1 the licensee is required to report relevant information to the Authority in the event that it: (a) Is under external administration (b) Experiences a change in its corporate, financial or technical circumstances upon which this licence was granted; and that change may materially affect the licensee's ability to perform its obligations under this licence (c) Changes its name, ABN or address. The Power Station Manager confirmed that, for the period 1 April 2013 to 31 October 2016, no such changes arose.	NP	NA
124	Generation Licence condition 16.1	*Electricity Industry Act section 11*	A licensee must provide the ERA, in the manner prescribed, with any information that the ERA requires in connection with its functions under the Electricity Industry Act.	4	Discussions with the Power Station Manager & the Power Station Support Engineer confirm that the licensee has processes in place to respond to requests for information from the Authority. Communication between the licensee and the Authority was sighted, such as; ▪ submission of required information and reports ▪ Monitoring compliance with the licence obligations and PAIPs ▪ Developing and submitting the Annual Compliance reports to the Authority by 31 August each year The Licensee has established a compliance	A	1

					scheduling system within its MEX system to ensure compliance with its regulatory obligations relevant to its Licence. The annual compliance reports were sighted for ; ▪ 1 July 2013 to 30 June 2014 (dated 20/8/14) – Received by the ERA 20/8/2014 ▪ 1 July 2014 to 30 June 2015 (dated 21/7/15) – Received by the ERA 22/7/2015 ▪ 1 July 2015 to 30 June 2016 (dated 8/8/16) – Received by the ERA 8/8/016 It is noted that this was raised as an improvement in the previous audit and compliance with this requirements confirms the effective implementation of the corrective actions raised.		
125	Generation Licence condition 17.1 and 17.2	*Electricity Industry Act section 11*	A licensee must publish any information it is directed by the Authority to publish, within the timeframes specified.	4	Discussions with the Power Station Manager confirmed that, for the period 1 April 2013 to 31 October 2016, the Authority did not direct the licensee to publish any information with regards to its Licence. As such, no activity has taken place to exercise the obligation during the audit period and this requirement was not assessed.	NP	NR
126	Generation Licence condition 18.1	*Electricity Industry Act section 11*	Unless otherwise specified, all notices must be in writing.	4	A review of documentation and emails sighted confirmed that NewGen Neerabup maintains records to evidence formal communications with the Authority within its Document Management System. It is noted that all responses to requests from the Authority have been made in writing, unless otherwise requested. During the audit	A	1

					period 1 April 2013 to 31 October 2016 there were no formal requests made from the Authority to Licensee.		
SECTION 14: ELECTRICITY INDUSTRY METERING CODE - LICENCE CONDITIONS AND OBLIGATIONS							
324	Generation Licence, condition 5.1	*Electricity Industry Metering Code, clause 3.3B*	If a user is aware of bi-directional electricity flows at a metering point that was not previously subject to a bi-directional flows or any changes in a customer's or user's circumstances in a metering point that will result in bi-directional flows, the user must notify the network operator within 2 business days.	4	NOTE 1: The Licensee has no meters and Western Power owns the meters at it's Neerabup Terminal substation and is responsible for their quality control. The Power Station Manager confirmed that during the period 1 April 2013 to 31 October 2016, no metering installations were commissioned which are subject to bi-directional electricity flows. As such, no activity has taken place to exercise the obligation during the audit period and this requirement cannot be assessed. Bi-directional flow only occurs for the power station minor house load when units are not operating. This process has been established since commissioning and as such is not applicable as it was previously subject to bi-directional flows.	NP	NR
339 [349]	Generation Licence, condition 5.1	*Electricity Industry Metering Code clause 3.11(3)*	A Code participant who becomes aware of an outage or malfunction of a metering installation must advise the network operator as soon as practicable.	4	Refer to note 1 in item 324 The network operator is responsible for metering installations and manages all aspects of the metering services. A verification check is undertaken by the Licensee using production control systems to confirm data provided by the Network Operator. The Power Station Manager	A	NR

					confirmed that during the period 1 April 2013 to 31 October 2016, no metering installation malfunctions were identified.		
364 [372]	Generation Licence, condition 5.1	*Electricity Industry Metering Code clause 3.27*	A person must not install a metering installation on a network unless the person is the network operator or a registered metering installation provider for the network operator doing the type of work authorised by its registration.	4	Refer to note 1 in item 324 The Licensee is not responsible for installing and managing all metering installations on the site. Additionally, the Licensee has not installed any metering installations on the network. The Network Operator has independent access to metering installations. Discussions with the Power Station Manager also confirmed no installation of meters. As such, no activity has taken place to exercise the obligation during the audit period and its requirement cannot be assessed.	NP	NR
371 [379]	Generation Licence, condition 5.1	*Electricity Industry Metering Code clause 4.4(1)*	If there is a discrepancy between energy data held in a metering installation and in the metering database, the affected Code participants and the network operator must liaise to determine the most appropriate way to resolve the discrepancy.	5	Refer to note 1 in item 324 NewGen Neerabup's Power Station Manager confirmed that during the audit period they were not aware of any discrepancy between energy data held in a metering installation and data held in the metering database. It is noted that although the metering database is not the Licensees responsibility they perform meter check calculations subject to error acceptance in order to confirm charges and balance production data. No discrepancy's were identified during the audit period.	A	NR

372 [380]	Generation Licence, condition 5.1	*Electricity Industry Metering Code clause 4.5(1)*	A Code participant must not knowingly permit the registry to be materially inaccurate.	5	Refer to note 1 in item 324 NewGen Neerabup does not maintain any standing data or energy data in relation to the metering installations captured under the Metering Code. These activities are managed by the Network Operator and are outside the control of the Licensee. As the Network operator maintains sole responsibility for the management of standing data within the registry and/or metering database, these obligations are not relevant to the Licensee's operations for the period 1 April 2013 to 31 October 2015.	NP	NR
373 [381]	Generation Licence, condition 5.1	*Electricity Industry Metering Code clause 4.5(2)*	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 within the timeframes prescribed.	4	Refer to note 1 in item 324 As Above.	NP	NR
388 [393]	Generation Licence, condition 5.1	*Electricity Industry Metering Code clause 5.4(2)*	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.	5	Refer to note 1 in item 324 The network operator has not requested the assistance of NewGen Neerabup with respect to their metering installation during the audit period.	NP	NR
401 [406]	Generation Licence, condition 5.1	*Electricity Industry Metering Code clause 5.16*	A user that collects or receives energy data from a metering installation must provide the network operator with the energy data (in accordance with the communication rules) within the timeframes prescribed.	4	Refer to note 1 in item 324 The network operator collects the energy data. This requirement is not applicable to the Licensee.	NP	NR

402 [407]	Generation Licence, condition 5.1	*Electricity Industry Metering Code clause 5.17(1)*	A user must provide standing data and validated (and where necessary substituted or estimated) energy data to the user's customer, to which that information relates, where the user is required by an enactment or an agreement to do so for billing purposes or for the purpose of providing metering services to the customer.	4	Refer to note 1 in item 324 As previously detailed, there are no meters maintained by the Licensee to collect information or data from billing. The Network Operator is responsible for metering installations.	NP	NR
405 [408]	Generation Licence, condition 5.1	*Electricity Industry Metering Code clause 5.18*	A user that collects or receives information regarding a change in the energisation status of a metering point must provide the network operator with the prescribed information, including the stated attributes, within the timeframes prescribed	4	Refer to note 1 in item 324 The network operator has access to their own metering installation. This obligation is not applicable to the Licensee.	NP	NR
406 [409]	Generation Licence, condition 5.1	*Electricity Industry Metering Code clause 5.19(1)*	A user must, when requested by the network operator acting in accordance with good electricity industry practice, use reasonable endeavours to collect information from customers, if any, that assists the network operator in meeting its obligations described in the Code and elsewhere.	5	Refer to note 1 in item 324 Discussions with the Power Station Manager confirm that there have been no requests during the audit period to collect information from customers.	NP	NR
407 [410]	Generation Licence, condition 5.1	*Electricity Industry Metering Code clause 5.19(2)*	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	5	Refer to note 1 in item 324 The connection point is with the network operator and there are no meters from which to obtain such data.	NP	NR
408	Generation Licence, condition 5.1	*Electricity Industry Metering Code clause 5.19(3)*	A user must, after becoming aware of any change in a site's prescribed attributes, notify the network operator of the change within the timeframes prescribed.	4	Refer to note 1 in item 324 There is only one connection point with the Network Operator and there have been no	NP	NR

[411]					changes in attributes during the audit period.		
410 [414]	Generation Licence, condition 5.1	*Electricity Industry Metering Code clause 5.19(6)*	A user must use reasonable endeavours to ensure that it does not notify the network operator of a change in an attribute that results from the provision of standing data by the network operator to the user.	5	Refer to note 1 in item 324 During the audit period there has been no provision of standing data by the network operator to the user that resulted in the user notifying the network operator of a change in attributes.	NP	NR
416 [420]	Generation Licence, condition 5.1	*Electricity Industry Metering Code clause 5.21(5)*	A Code participant must not request a test or audit unless the Code participant is a user and the test or audit relates to a time or times at which the user was the current user or the Code participant is the IMO.	4	Refer to note 1 in item 324 The Power Station Manager confirmed that no tests have been requested during the audit period, 1 April 2013 to 31 October 2016.	NP	NR
417 [421]	Generation Licence, condition 5.1	*Electricity Industry Metering Code clause 5.21(6)*	A Code participant must not make a test or audit request that is inconsistent with any access arrangement or agreement.	4	Refer to note 1 in item 324 As above	NP	NR
435 [439]	Generation Licence, condition 5.1	*Electricity Industry Metering Code clause 5.27*	Upon request, a current user must provide the network operator with customer attribute information that it reasonably believes are missing or incorrect within the timeframes prescribed.	4	Refer to note 1 in item 324 The network operator did not make any requests for customer attributes information during the audit period	NP	NR
448	Generation Licence, condition 5.1	*Electricity Industry Metering Code clause*	A user must, in relation to a network on which it has an access contract, comply with the rules,	4	Refer to note 1 in item 324 Discussions with the Power Station Manager	NP	NR

[446]		*6.1(2)*	procedures, agreements and criteria prescribed.		confirm that there have been no breaches of the rules, procedures, agreements and criteria during the audit period.		
451 [448]	Generation Licence, condition 5.1	*Electricity Industry Metering Code clause 7.2(1)*	Code participants must use reasonable endeavours to ensure that they can send and receive a notice by post, facsimile and electronic communication and must notify the network operator of a telephone number for voice communication in connection with the Code.	5	Refer to note 1 in item 324 The NewGen Neerabup site has well established communication processes such as a main telephone line & facsimile, mobile telephone coverage, remote system monitoring and wireless internet access. During the audit period, there have been no communication issues arising.	A	1
453 [450]	Generation Licence, condition 5.1	*Electricity Industry Metering Code clause 7.2(4)*	A Code participant must notify its contact details to a network operator with whom it has entered into an access contract within 3 business days after the network operator's request.	4	Refer to note 1 in item 324 The Power Station Manager confirmed that, during the period 1 April 2013 to 31 October 2016, the network operator did not request the licensee to provide its contact details. There have been no changes made to Licensee's contact details.	NP	NR
454 [451]	Generation Licence, condition 5.1	*Electricity Industry Metering Code clause 7.2(5)*	A Code participant must notify any affected network operator of any change to the contact details it notified to the network operator at least 3 business days before the change takes effect.	4	Refer to note 1 in item 324 There has been no change in contact details during the audit period.	NP	NR
455	Generation Licence, condition 5.1	*Electricity Industry Metering Code clause 7.5*	A Code participant must not disclose, or permit the disclosure of, confidential information provided to it under or in connection with the Code and may only use or reproduce confidential information for the purpose for which it was disclosed or another	4	Refer to note 1 in item 324 The Power Station Manager confirmed that during the period 1 April 2013 to 31 October 2016, the Licensee was not required to disclose	NP	NR

[452]			purpose contemplated by the Code.		or permit the disclosure of confidential information in connection to the Code.		
456 [453]	Generation Licence, condition 5.1	*Electricity Industry Metering Code clause 7.6(1)*	A Code participant must disclose or permit the disclosure of confidential information that is required to be disclosed by the Code.	4	Refer to note 1 in item 324 As above	NP	NR
457 [454]	Generation Licence, condition 5.1	*Electricity Industry Metering Code clause 8.1(1)*	Representatives of disputing parties must meet within 5 business days after a notice given by a disputing party to the other disputing parties and attempt to resolve the dispute under or in connection with the Electricity Industry Metering Code by negotiations in good faith	5	Refer to note 1 in item 324 Under the Metering Code, 'disputes' refers to metering disputes between NewGen Neerabup as a generator, a Code Participant, another generator, the network operator , a user or the IMO. The Power Station Manager confirmed that no disputes have arisen between NewGen Neerabup and the network operator or the IMO, during the period 1 April 2013 to 31 October 2016.	NP	NR
458 [455]	Generation Licence, condition 5.1	*Electricity Industry Metering Code clause 8.1(2)*	If a dispute is not resolved within 10 business days after the dispute is referred to representative negotiations, the disputing parties must refer the dispute to a senior management officer of each disputing party who must meet and attempt to resolve the dispute by negotiations in good faith.	5	Refer to note 1 in item 324 As above	NP	NR
459 [456]	Generation Licence, condition 5.1	*Electricity Industry Metering Code clause 8.1(3)*	If the dispute is not resolved within 10 business days after the dispute is referred to senior management negotiations, the disputing parties must refer the dispute to the senior executive officer of each disputing party who must meet and attempt to resolve the dispute by negotiations in good faith.	5	Refer to note 1 in item 324 As above	NP	NR

460 [457]	Generation Licence, condition 5.1	*Electricity Industry Metering Code clause 8.1(4)*	If the dispute is resolved by representative negotiations, senior management negotiations or CEO negotiations, the disputing parties must prepare a written and signed record of the resolution and adhere to the resolution.	4	Refer to note 1 in item 324 As above	NP	NR
461 [458]	Generation Licence, condition 5.1	*Electricity Industry Metering Code clause 8.3(2)*	The disputing parties must at all times conduct themselves in a manner which is directed towards achieving the objective of dispute resolution with as little formality and technicality and with as much expedition as the requirements of Part 8 of the Code and a proper hearing and determination of the dispute permit.	5	Refer to note 1 in item 324 As above	NP	NR
SECTION 16: ELECTRICITY LICENCES - LICENSEE SPECIFIC CONDITIONS AND OBLIGATIONS							
THIS SECTION IS NOT APPLICABLE TO NEERABUP AS THERE HAVE BEEN NO SPECIFIC CONDITIONS AND OBLIGATIONS ATTACHED TO THE GENERATION LICENCE							

Note:
NP - not possible to provide a compliance rating because no activity has taken place to exercise the obligation during the audit period
NA - Not applicable to audit period and as such not assessed.
[XXX} – The numbers in the square brackets refer to the Compliance Reporting Manual Reference in the previous audit report and are included for ease of comparison only.

APPENDIX 2

NEWGEN NEERABUP PARTNERSHIP

ASSET MANAGEMENT REVIEW

MARCH 2017

Introduction

Monthly reports as referenced in Table 6 and Ref #1, cover the key requirements of operations for the reporting period and historically. They cover safety, environmental, regulatory notifications, community and cultural heritage, audits, operations, inspection plans, pipeline, dial before you dig applications, notable activities during the month, human resources, training, preventive/corrective maintenance, energy transactions and market pricing, contract management, finance, key performance indicators and incident reports. Tabulated safety, emissions, operational and financial statistics, including P&L and Balance sheets and variances from budget, are included in the reports giving a comprehensive summary of performance and events. The Executive Summary gives an overview of performance, key issues and events.

The DCS performs a lot of the AMS functions with automatic duty/standby functions in event of a failure, data logging, trending, actioning and reporting. MEX is used for asset management and regulatory reporting prompts. Company financials, human resources and administration utilise SAP enterprise application software and are handled in the Brisbane head office.

Dominant operating costs are gas and debt servicing and revenue is derived from Synergy and AEMO contracts augmented by bilateral and gas deals with other parties.
Synergy supplies gas as part of their contract, otherwise NNP are responsible for gas supply.

NNP takes advantage of linepack gas storage and other storage for gas for its own use and for selling to others.

Table 10: Effectiveness Criteria Descriptors

1	Key Process - Asset Planning *Asset planning strategies are focused on meeting customer needs in the most effective and efficient manner (delivering the right service at the right price).*	Outcome *Integration of asset strategies into operational or business plans will establish a framework for existing and new assets to be effectively utilised and their service potential optimised.*
1.1	Asset management plan covers key requirements	
1.2	Planning process and objectives reflect the needs of all stakeholders and is integrated with business planning	
1.3	Service levels are defined	
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	Plans are regularly reviewed and updated	
2	Key Process - Asset creation/acquisition *Asset creation/acquisition means the provision or improvement of an asset where the outlay can be expected to provide benefits beyond the year of outlay.*	Outcome *A more economic, efficient and cost-effective asset acquisition framework which will reduce demand for new assets, lower service costs and improve service delivery.*
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	Key process - Asset disposal *Effective asset disposal frameworks incorporate consideration of alternatives for the disposal of surplus, obsolete, under-performing or unserviceable assets. Alternatives are evaluated in cost-benefit terms*	Outcome *Effective management of the disposal process will minimise holdings of surplus and under-performing assets and will lower service costs.*
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	Key Process - Environmental analysis *Environmental analysis examines the asset system environment and assesses all external factors affecting the asset system.*	Outcome *The asset management system regularly assesses external opportunities and threats and takes corrective action to maintain performance requirements.*
4.1	Opportunities and threats in the 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	Key Process - Asset operations *Operations functions relate to the day-to-day running of assets and directly affect service levels and costs.*	Outcome *Operations plans adequately document the processes and knowledge of staff in the operation of assets so that service levels can be consistently achieved.*
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, an assessment of assets' physical/structural condition and accounting data	
5.4	Operational costs are measured and monitored	
5.5	Staff receive training commensurate with their responsibilities	
6	Key process - Asset maintenance *Maintenance functions relate to the upkeep of assets and directly affect service levels and costs.*	Outcome *Maintenance plans cover the scheduling and resourcing of the maintenance tasks so that work can be done on time and on cost.*
6.1	Maintenance policies and procedures are documented and linked to service levels required	
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	Key process - Asset Management Information System (MIS) *An asset management information system is a combination of processes, data and software that support the asset management functions.*	Outcome - *The asset management information system provides authorised, complete and accurate information for the day-to-date running of the asset management system. The focus of the review is the accuracy of performance information used by the licensee to monitor and report on service standards.*
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	Logical security access controls appear adequate, such as passwords	
7.4	Physical security access controls appear adequate	
7.5	Data backup procedures appear adequate	
7.6	Key computations related to licensee performance reporting are materially accurate	
7.7	Management reports appear adequate for the licensee to monitor licence obligations	
8	Key Process - Risk Management *Risk management involves the identification of risks and their management within an acceptable level of risk.*	Outcome *An effective risk management framework is applied to manage risks related to the maintenance of service standards*
8.1	Risk management policies and procedures exist and are being applied to minimise internal and external risks associated with the asset management system	
8.2	Risks are documented in a risk register and treatment plans are actioned and monitored	
8.3	The probability and consequences of asset failure are regularly assessed	
9	Key Process - Contingency Planning *Contingency plans document the steps to deal with the unexpected failure of an asset.*	Outcome- *Contingency plans have been developed and tested to minimise any significant disruptions to service standards.*
9.1	Contingency plans are documented, understood and tested to confirm their operability and to cover higher risks	

10	Key Process - Financial Planning *The financial planning component of the asset management plan brings together the financial elements of the service delivery to ensure its financial viability over the long term.*	Outcome *A financial plan that is reliable and provides for long-term financial viability of services*
10.1	The financial plan states the financial objectives and strategies and actions to achieve the objectives	
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 provide 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	Significant variances in actual/budget income and expenses are identified and corrective action taken where necessary	

11	Key Process - Capital Expenditure Planning *The capital expenditure plan provides a schedule of new works, rehabilitation and replacement works, together with estimated annual expenditure on each over the next five or more years.* *Since capital investments tend to be large and lumpy, projections would normally be expected to cover at least 10 years, preferably longer. Projections over the next five years would usually be based on firm estimates.*	Outcome - *A capital expenditure plan that provides reliable forward estimates of capital expenditure and asset disposal income, supported by documentation of the reasons for the decisions and evaluation of alternatives and options.*
11.1	There is a capital expenditure plan that covers issues to be addressed, actions proposed, responsibilities and dates	
11.2	The plan provide 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 actioned	
12	Key Process - Review of AMS *The asset management system is regularly reviewed and updated*	Outcome *Review of the Asset Management System to ensure the effectiveness of the integration of its components and their currency.*
12.1	A review process is in place to ensure that the asset management plan and the asset management system described therein are kept current	
12.2	Independent reviews (e.g. internal audit) are performed of the asset management system	

Table 11: Audit Review Ratings & Recommendations

1.	Key Process - Asset Planning *Asset planning strategies are focused on meeting customer needs in the most effective and efficient manner (delivering the right service at the right price).* Outcome *Integration of asset strategies into operational or business plans will establish a framework for existing and new assets to be effectively utilised and their service potential optimised.*	Asset management process and policy definition adequacy rating A	Asset management performance rating 1

Interviewees:

Bruno Lanciano	Neerabup Power Station Manager	NewGen Neerabup Partnership
Phil MacMahon	Operations Manager	NewGen Neerabup Partnership

Relevant documentation:

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18	Business Manager's Report Aug 2014
19	Business Manager's Report Sept 2014
20	Business Manager's Report Oct 2014
25	Business Manager's Report Mar 2015
42	Business Manager's Report Aug 2016
48	MEX w/o open list
49	MEX history
53	Post Audit Implementation Plan
58	Neerabup preliminary de-commissioning plan
62	Bruno email 21-2-17

Criteria Effectiveness			Post Review Audit Priority						
	Policy	Performance	Likelihood	Consequence	Inherent Risk rating	Adequacy of existing controls	Review priority	Adequacy rating	Performance Rating
			A=likely B=probable C=unlikely	1=minor 2=moderate 3=major	L=low M=medium H=high	S=strong M=moderate W=weak			
1.1 Asset management plan covers key requirements	Ref docs; 1, 48 & 53	The plant is to supply peaking power and has operated reliably and profitably.	C	1	LOW	S	5	A	1
1.2 Planning process and objectives reflect the needs of all stakeholders and is integrated with business planning	Ref docs - 1, 48, 58	The nature of peaking supply means that the asset gets little use and the original design was fit for purpose and requires little development. Provision for a Stage 2 is made in design.	C	2	MEDIUM	S	4	A	1
1.3 Service levels are defined	Ref docs - 1, 2, 7, 11, 12, 19, 20 & 53	System Management and the supply contracts define service levels and the NNP have responded to any changes in these.	C	2	MEDIUM	S	4	A	1
1.4 Non-asset options (e.g. demand management) are considered	Ref docs - 1	DM is applied for gas supplies using 30km pipeline linepack and other storage. Bilateral agreements for gas and power.	C	1	LOW	S	5	A	1
1.5 Lifecycle costs of owning and operating assets are assessed	2, 3, 4, 7, 11, 12, 13, 14, 19, 20, 48, 49	The plant has proved profitable. Life cycle costing is employed for new works.	C	2	MEDIUM	S	4	A	1
1.6 Funding options are evaluated	Ref docs - 25, 48, 62	STEM governs gas and elec prices and trading decisions. Long term hedge used for original investment. With new plant and little use current capital expenditure is low and sourced within NNP	C	2	MEDIUM	S	4	A	1

1.7 Costs are justified and cost drivers identified	Ref docs – 7, 13, 14, 25, 48	MoC process requires life cycle costing. Procurement process require typically three quotes or tender for larger contracts.	C	2	MEDIUM	S	4	A	1
1.8 Likelihood and consequences of asset failure are predicted	Ref docs - 2, 3, 4, 7, 11, 12, 13, 14, 20, 25, 49	With new plant asset failure is rare. Duplicate GTs within a single facility provide reserve. Stock of spares held and NNP participate in a network of users of similar GTs.	C	2	MEDIUM	S	4	A	1
1.9 Plans are regularly reviewed and updated	1, 2, 3, 4, 7, 11, 12, 13, 14, 18, 19, 42	AMS is continually monitored and updated in the light of experience. Maintenance history retained in MEX. RCA carried out for all operational incidents.	C	1	LOW	S	5	A	1

Comments & Recommendations
Capacity factor of peaking plant is very low and thus wear and tear is low. The design is proven, based on other peaking plant, and the main asset planning process is complete. One 'minor' service by the OEM took place during the reporting period with only minor works required, next 'major' service is not due for several years.

2.	Key Process - Asset creation/acquisition *Asset creation/acquisition means the provision or improvement of an asset where the outlay can be expected to provide benefits beyond the year of outlay.* Outcome *A more economic, efficient and cost-effective asset acquisition framework which will reduce demand for new assets, lower service costs and improve service delivery.*	Asset management process and policy definition adequacy rating A	Asset management performance rating 1

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25	Business Manager's Report Mar 2015
26	Business Manager's Report Apr 2015
27	Business Manager's Report May 2015
32	Business Manager's Report Oct 2015
33	Business Manager's Report Nov 2015
35	Business Manager's Report Jan 2016
40	Business Manager's Report Jun 2016
48	MEX w/o open list
50	MEX compliance
52	SFC trip and failed to start incident report

Criteria Effectiveness			Post Review Audit Priority						
	Policy	Performance	Likelihood	Consequence	Inherent Risk rating	Adequacy of existing controls	Review priority	Adequacy rating	Performance Rating
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2.1 Full project evaluations are undertaken for new assets, including comparative assessment of non-asset solutions	Ref docs – 1, 2, 3, 4, 12, 14, 20, 21, 25, 26, 27, 35, 40, 48	Dispatch automation, ABC/AGC, was evaluated but not found economic and final execution put on hold until it became a requirement from System Management.	C	2	MEDIUM	S	4	A	1
2.2 Evaluations include all life-cycle costs	Ref docs – 1, 2, 3, 4, 12, 14, 20, 21, 25, 26, 27, 35, 40, 48	Life–cycle costs are evaluated as part of the asset acquisition process and the maintenance management process. MoC process requires NPV analysis.	C	1	LOW	S	5	A	1
2.3 Projects reflect sound engineering and business decisions	Ref docs – 1, 2, 3, 4, 12, 14, 20, 21, 25, 26, 27, 35, 40, 48	The OEM or other reputable suppliers are normally involved with engineering decisions, some of which were residual warranty issues.	C	2	MEDIUM	S	4	A	1
2.4 Commissioning tests are documented and completed	Ref docs – 8, 32, 33, 48, 52	Commissioning test and data are conducted retained on MEX and in some cases reviewed by Western Power to ensure they meet the Technical Requirements. Capacity tests are carried twice a year to meet System Management requirements.	C	2	MEDIUM	S	4	A	1
2.5 Ongoing legal/environmental/safety obligations of the asset owner are assigned and understood	Ref docs – 1, 2, 3, 4, 12, 14, 20, 21, 25, 26, 27, 35, 40, 50	Regulatory reporting and testing requirement are incorporated in MEX and reported in the monthly reports.	C	2	MEDIUM	S	4	A	1

Comments & Recommendations
Asset creation has been small scale with the focus on maintaining and updating the existing plant to meet changing requirements of the market such as AGC, governor tuning and improving reliability.

3.	Key process - Asset disposal *Effective asset disposal frameworks incorporate consideration of alternatives for the disposal of surplus, obsolete, under-performing or unserviceable assets. Alternatives are evaluated in cost-benefit terms* Outcome *Effective management of the disposal process will minimise holdings of surplus and under-performing assets and will lower service costs.*	Asset management process and policy definition adequacy rating A	Asset management performance rating Not assessed

Interviewees:

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Phil MacMahon	Operations Manager	NewGen Neerabup Partnership

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36	Business Manager's Report Feb 2016
48	MEX w/o open list
58	Neerabup preliminary de-commissioning plan

Criteria Effectiveness			Post Review Audit Priority						
	Policy	Performance	Likelihood	Consequence	Inherent Risk rating	Adequacy of existing controls	Review priority	Adequacy Rating	Performance Rating
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3. 1 Under-utilised and under-performing assets are identified as part of a regular systematic review process	Ref docs – 1, 14, 48	Peaking plant inherently has a low capacity factor. Under performing plant is identified through MEX, gas pressure regulation being the main one.	C	1	LOW	S	5	A	1
3.2 The reasons for under-utilisation or poor performance are critically examined and corrective action or disposal undertaken	Ref docs – 1, 12, 13, 14, 15, 20, 21, 24, 25, 26, 27, 28, 29, 36, 48	Over sensitive adjustment to pilot valves and possibly sulphur build up in cage on oversized valves has caused problems. Poor response from the OEM supplier was addressed.	C	2	MEDIUM	S	4	A	1
3.3 Disposal alternatives are evaluated	Ref docs – 58	Not applicable. NNP are not considering reviewing the 2010 De-commissioning Plan so early in the project's lifetime.	C	1	LOW	Not assessed	5	Not assessed	
3.4 There is a replacement strategy for assets	Ref docs – 1, 48, 58	Wear and tear items are stocked or pre-ordered for services.	C	2	MEDIUM	M	4	A	1

Comments & Recommendations
With new, reliable plant operating on a low capacity factor there has been no requirement for asset disposal. Gas pressure regulation problems were the cause of most of the unavailable/trips attributable to NNP during the reporting period and have taken a long time to address, Working in with the OEM new gas regulator flow cages have been installed, new gas line trace heating to prevent pilot valve icing up has been commissioned, these fixes have been successful and are still being monitored.

4.	Key Process - Environmental analysis *Environmental analysis examines the asset system environment and assesses all external factors affecting the asset system.* Outcome *The asset management system regularly assesses external opportunities and threats and takes corrective action to maintain performance requirements.*	Asset management process and policy definition adequacy rating A	Asset management performance rating 1

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Phil MacMahon	Operations Manager	NewGen Neerabup Partnership

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35	Business Manager's Report Jan 2016
39	Business Manager's Report May 2016
41	Business Manager's Report Jul 2016
43	Business Manager's Report Sept 2016
44	Business Manager's Report Oct 2016
50	MEX compliance

Criteria Effectiveness			Post Review Audit Priority						
	Policy	Performance	Likelihood	Consequence	Inherent Risk rating	Adequacy of existing controls	Review priority	Adequacy Rating	Performance Rating
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4.1 Opportunities and threats in the system environment are assessed	Ref docs – 1, 8, 10, 12, 13, 15, 16, 18, 19, 20, 26, 30, 35, 39, 41, 43, 44, 50	Energy trading relies on good knowledge of the market and plant capabilities to be competitive.	B	2	MEDIUM	S	4	A	1
4.2 Performance standards (availability of service, capacity, continuity, emergency response, etc.) are measured and achieved	Ref docs – 1, 8, 10, 12, 13, 15, 16, 18, 19, 20, 26, 30, 35, 39, 41, 43, 44, 50	Availability, capacity factor, EFOR etc. are monitored and reported monthly. Actual trading is compared against potential with the actual market price for each month.	B	2	MEDIUM	S	4	A	1
4.3 Compliance with statutory and regulatory requirements	Ref docs – 1, 8, 10, 12, 13, 15, 16, 18, 19, 20, 26, 30, 35, 39, 41, 43, 44, 50	Statutory and regulatory requirements are documented in MEX and regularly reviewed.	C	2	MEDIUM	S	4	A	1
4.4 Achievement of customer service levels	Ref docs – 1, 8, 10, 12, 13, 15, 16, 18, 19, 20, 26, 30, 35, 39, 41, 43, 44, 50	Customer service levels are well documented in the monthly reports and reviewed financially and for performance internally and by System Management.	C	2	MEDIUM	S	4	A	1

Comments & Recommendations
There were several environmental changes during the reporting period with structural changes to System Management, IMO and AEMO. The structural changes resulted in the AEMO replacing IMO as the market operator and the transfer of System Management and its' functions from Western Power to the AEMO. Other changes included the introduction of ABC/AGC, repeal of carbon tax, EMR, increased competition and changing gas prices. NNP was prepared and responded to these changes effectively

5.	Key Process - Asset operations *Operations functions relate to the day-to-day running of assets and directly affect service levels and costs.* Outcome *Operations plans adequately document the processes and knowledge of staff in the operation of assets so that service levels can be consistently achieved.*	Asset management process and policy definition adequacy rating A	Asset management performance rating 1

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	42	Business Manager's Report Aug 2016
	43	Business Manager's Report Sept 2016
	49	MEX history
	50	MEX compliance
	51	Incident Report Register
	52	SFC trip and failed to start incident report
	55	Witness start
	56	Computer file tree

Criteria Effectiveness			Post Review Audit Priority						
	Policy	Performance	Likelihood	Consequence	Inherent Risk rating	Adequacy of existing controls	Review priority	Adequacy Rating	Performance rating
			A=likely B=probable C=unlikely	1=minor 2=moderate 3=major	L=low M=medium H=high	S=strong M=moderate W=weak			
5.1 Operational policies and procedures are documented and linked to service levels required	Ref docs – 1, 2, 3, 4, 5, 6, 8, 9, 11, 12, 15, 16, 17, 18, 20, 21, 23, 24, 27, 28, 31, 32, 33, 36, 38, 40, 41, 42, 49, 50, 51, 52, 55 & 56,	Operations are largely automated with programming mainly by OEM suppliers and ERM staff. System Management electronically call for generation. Trading performance is reviewed and refined regularly and reported in Monthly Reports.	C	2	MEDIUM	S	4	A	1
5.2 Risk management is applied to prioritise operations tasks	Ref docs – 1, 2, 3, 4, 7, 18, 19, 21, 23, 33, 41, 42, 49, 51, 52, 53, 57, & 59	Maintenance work is programmed through MEX based on historical performance, OEM recommendations and condition monitoring. OEM manufacturers and GT users Group provide regular updates on similar GT's performance. Insurers, require actions to minimise risk. Trading is risk based and regularly reviewed.	C	2	MEDIUM	S	5	A	1
5.3 Assets are documented in an Asset Register including asset type, location, material, plans of components, an assessment of assets' physical/structural condition and accounting data	Ref docs – 49, 50 & 51	MEX has records of asset maintenance from when the plant was built. New assets are added to MEX. The KKS Power Plant numbering system is used for equipment identification.	C	2	MEDIUM	S	4	A	1
5.4 Operational costs are measured and monitored	Ref docs – 1	System Management/IMO/AEMO reporting requirements, including capacity tests, energy transfer, availability and capacity, are met. Operational costs and revenue are included in the Monthly Reports.	C	2	MEDIUM	S	4	A	1

Criteria Effectiveness			Post Review Audit Priority						
	Policy	Performance	Likelihood	Consequence	Inherent Risk rating	Adequacy of existing controls	Review priority	Adequacy Rating	Performance rating
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5.5 Staff receive training commensurate with their responsibilities	Ref docs – 1,2 3, 4, 5, 7, 8, 10, 12, 13, 14, 19, 20, 23, 24, 26, 32, 35, 36, 38, 40, 41 &43	Training is reported in the Monthly Reports and includes safety, first aid, snake handling, safe driving, control, protection, SCADA, and equipment specific. Operators have responded knowledgably and safely when required.	C	2	MEDIUM	S	4	A	1

Comments & Recommendations
The power station has operated reliably and any incidents have been responded to promptly. Supply interruption duration have mainly been due to external factors, WP line outage and bushfires.

6.	Key process - Asset maintenance *Maintenance functions relate to the upkeep of assets and directly affect service levels and costs.* Outcome *Maintenance plans cover the scheduling and resourcing of the maintenance tasks so that work can be done on time and on cost.*	Asset management process and policy definition adequacy rating A	Asset management performance rating 1

Interviewees:

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	48 MEX w/o open list 49 MEX history 51 Incident Report Register 52 SFC trip and failed to start incident report 55 Witness start 60 NPS-INC-093 – 5 whys RCA 61 NPS-INC-093 – KT Problem Analysis

Criteria Effectiveness			Post Review Audit Priority						
	Policy	Performance	Likelihood	Consequence	Inherent Risk rating	Adequacy of existing controls	Review priority	Adequacy Rating	Performance Rating
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6.1 Maintenance policies and procedures are documented and linked to service levels required	Ref docs – 1, 48, 49, 51, 52 & 61	Maintenance plans, policy and procedures are documented in MEX and are based on OEM recommendations, historical records and condition monitoring. The low capacity factor of peaking plant means that number of starts is often the dominating consideration.	C	2	MEDIUM	S	4	A	1
6.2 Regular inspections are undertaken of asset performance and condition	Ref docs – 1, 43, 48, 49, 51, 52 & 55	The T3000 DCS monitors online the GT and compressor plant. Balance of plant is regularly inspected with thermograph, vibration etc. and visual inspections.	C	2	MEDIUM	S	4	A	1
6.3 Maintenance plans (emergency, corrective and preventative) are documented and completed on schedule	Ref docs – 1, 6, 16, 19, 21, 30, 43, 48, 49, 51, 52, 55, 60 & 61	Maintenance outages of the plant are planned and reported in the Monthly Reports. To date there have only been 'minor' inspections, the first 'major' is not due for some years. The 'minor' was carried out within the OEM's approved EOH. Planning starts well before so parts can be procured. Work orders are monitored in MEX and reported in the Monthly Reports. Note 'Minor Inspections' are minor 'Maintenance' as defined by the OEM (Siemens), the minor inspections are part of the	C	2	MEDIUM	S	4	A	1

		OEM scheduled maintenance program, in our case the trigger is every 250 GT starts +/- 10% overrun allowance (or at 40,000 EOH, whichever is first), the 'minor inspections' were completed; Unit 11 – 1st Minor completed @273 Starts on 19/11/2014 Unit 12 – 1st Minor completed @ 272 Starts on 21/11/2014							
6.4 Failures are analysed and operational/maintenance plans adjusted where necessary	Ref docs – 1, 5, 6, 11, 12, 14, 15, 16, 17, 18, 19, 21, 23, 24, 27, 31, 36, 40, 41, 42, 43, 48, 49, 51, 52, 55, 60 & 61	RCA is applied to incidents, reported and reviewed. Operational "events" are reported in the Monthly Reports. Expert advice is called on as required. Maintenance and/or operational plans are modified as required.	C	2	MEDIUM	S	4	A	1
6.5 Risk management is applied to prioritise maintenance tasks	Ref docs – 1, 48, 49, 51, 52, 55, 60 & 61 ,	Incident reports include RCA and actions. CM is rarely required and is given priority. The demand for profitable peaking power is seasonal and routine maintenance is planned accordingly. Day to day maintenance tasks are programmed and monitored via MEX	C	2	MEDIUM	S	4	A	1
6.6 Maintenance costs are measured and monitored	Ref docs – 1, 43, 48, & 49	Maintenance costs for materials and contractors are monitored in MEX. Staff labour is included in overheads unless a third party claim is involved.	C	2	MEDIUM	S	4	A	1

Comments & Recommendations
The low capacity factor of peaking plant means number of starts is often pre-dominant over equivalent operating hours for maintenance. The first 'major' isn't due for over a decade.

7.	Key process - Asset Management Information System (MIS) *An asset management information system is a combination of processes, data and software that support the asset management functions.* Outcome *The asset management information system provides authorised, complete and accurate information for the day-to-date running of the asset management system. The focus of the review is the accuracy of performance information used by the licensee to monitor and report on service standards.*	Asset management process and policy definition adequacy rating A	Asset management performance rating 1

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38	Business Manager's Report Apr 2016
40	Business Manager's Report Jun 2016
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42	Business Manager's Report Aug 2016
48	MEX w/o open list

	49	MEX history
	51	Incident Report Register
	52	SFC trip and failed to start incident report
	55	Witness start

Criteria Effectiveness			Post Review Audit Priority						
	Policy	Performance	Likelihood	Consequence	Inherent Risk rating	Adequacy of existing controls	Review priority	Adequacy Rating	Performance Rating
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7.1 Adequate system documentation for users and IT operators	Ref docs – 1, 26, 27, 28, 35 & 41	T3000, MEX and SAP are all reputable proprietary software packages with OEM support. The T3000 DCS version is still supported by the GT OEM. Support contract with Siemens is in place. ERM has a competent IT department in Brisbane. On–site staff have been trained in MEX and the control system. The AGC/ABC software was developed by ERM and Siemens and tested with Western Power..	C	2	MEDIUM	S	4	A	1
7.2 Input controls include appropriate verification and validation of data entered into the system	Ref docs – 1, 48, 49 & 51	Data is collected by the DCS and reported. Power import and export, and gas usage is monitored. Energy balances are carried out and variances investigated. System Management also do checks.	C	2	MEDIUM	S	4	A	1
7.3 Logical security access controls appear adequate, such as passwords	Ref docs – 1, 48, 49 & 51	Computer access is limited to staff and passwords are in place. Similarly access to the DCS and its data acquisition system is also controlled to ensure validity of data entry. Firewalls are in place and virus protection active and have proved successful against significant attacks. USB dedicated ports are blocked.	C	2	MEDIUM	S	4	A	1
7.4 Physical security access controls appear adequate	Ref docs – 1, 37, 38, 40, 41, 48, 49, 51,	The power station and gas compression station are monitored by CCTV cameras with movement detection. The power station site is manned with operators during normal	C	2	MEDIUM	S	4	A	1

	52 & 55	working hours with remote access/control by staff on call out of hours. Security contractors are in attendance out of normal working hours.							
7.5 Data backup procedures appear adequate and backups are tested	Ref docs – 48, & 49	Back-up is to the local server, head office IT system in Brisbane and hard discs that are kept off-site. The DCS is backed up onto hard disk drives with onsite & off site copies. Back-up reinstallation has been tested against a mirror of the DCS.	C	2	MEDIUM	S	4	A	1
7.6 Key computations related to licensee performance reporting are materially accurate	Ref docs – 1	Monitoring of electrical energy transfer between NNP and the SWIS is with Western Power calibrated duplicate metering at the Neerabup Terminal substation. Gas is supplied by Synergy for their energy supply and other gas is purchased on the market for STEM. Energy balances (gas in v elec out) are in each Monthly Report	C	2	MEDIUM	S	4	A	1
7.7 Management reports appear adequate for the licensee to monitor licence obligations	Ref docs – 1, 48, 49 & 51	Regulatory reporting is initiated in MEX and was carried out in a timely manner during the reporting period.	C	2	MEDIUM	S	4	A	1

Comments & Recommendations
On site staff are well trained and there is a low turnover of staff who look after the DCS with Siemens doing quarterly checks and reporting. Siemens' support is available when required. Site team is also well trained in the power station and gas SCADA systems and participate in regular forums (eg: Siemens I&C and Gas Turbine V94.2 usergroups)

8.	Key Process - Risk Management *Risk management involves the identification of risks and their management within an acceptable level of risk.* Outcome *An effective risk management framework is applied to manage risks related to the maintenance of service standards*	Asset management process and policy definition adequacy rating A	Asset management performance rating 1

Interviewees:

Bruno Lanciano	Neerabup Power Station Manager	NewGen Neerabup Partnership
Phil MacMahon	Operations Manager	NewGen Neerabup Partnership

Relevant documentation:

1	Business Manager's Report All
2	Business Manager's Report Apr 2013
3	Business Manager's Report May 2013
4	Business Manager's Report Jun 2013
7	Business Manager's Report Sept 2013
18	Business Manager's Report Aug 2014
19	Business Manager's Report Sept 2014
21	Business Manager's Report Nov 2014
23	Business Manager's Report Jan 2015
33	Business Manager's Report Nov 2015
41	Business Manager's Report Jul 2016
42	Business Manager's Report Aug 2016
49	MEX history
51	Incident Report Register
52	SFC trip and failed to start incident report
53	Post Audit Implementation Plan
56	Computer file tree
57	Computer file back up process

Criteria Effectiveness			Post Review Audit Priority						
	Policy	Performance	Likelihood	Consequence	Inherent Risk rating	Adequacy of existing controls	Review priority	Adequacy Rating	Performance Rating
			A=likely B=probable C=unlikely	1=minor 2=moderate 3=major	L=low M=medium H=high	S=strong M=moderate W=weak			
8.1 Risk management policies and procedures exist and are being applied to minimise internal and external risks associated with the asset management system	Ref docs – 1, 2, 3, 4, 7, 19, 21, 23, 33, 41, 42, 49, 51, 52, 53, 56 & 57	Risk management is integral with their management and safety policies. Incident reports incorporate RCA and actions. Association with other power stations in ERM Power and GT users group reduces risk. Trading is risk based and closely monitored and refined. Duplication of GTs within one facility and linepack gas storage reduces risk.	B	2	MEDIUM	S	4	A	1
8.2 Risks are documented in a risk register and treatment plans are actioned and monitored	Ref docs – 1, 42, 49, 51, 52, 53, 56 & 57	Pipeline fatigue management identifies higher risk areas for inspection. MoC progress is reported in Monthly Reports Safety audits are regularly carried out.	C	2	MEDIUM	S	4	A	1
8.3 The probability and consequences of asset failure are regularly assessed	Ref docs – 1, 2, 3, 4, 7, 18, 19, 21, 23, 33, 41, 42, 49, 51, 52, 53, 56 & 57	The probability and consequences of asset failure are reviewed regularly. Quarterly meetings within the whole ERM Power group share risk experience.	B	2	MEDIUM	S	4	A	1

Comments & Recommendations
Risk management is an integral part of energy trading. Evap pond had limited freeboard that could curtail generation, temporary water treatment plant was installed for two seasons followed by a permanent installation.

9.	Key Process - Contingency Planning *Contingency plans document the steps to deal with the unexpected failure of an asset.* Outcome- *Contingency plans have been developed and tested to minimise any significant disruptions to service standards.*	Asset management process and policy definition adequacy rating A	Asset management performance rating 1

Interviewees:

Bruno Lanciano	Neerabup Power Station Manager	NewGen Neerabup Partnership
Phil MacMahon	Operations Manager	NewGen Neerabup Partnership

Relevant documentation:

1	Business Manager's Report All
2	Business Manager's Report Apr 2013
3	Business Manager's Report May 2013
4	Business Manager's Report Jun 2013
5	Business Manager's Report Jul 2013
6	Business Manager's Report Aug 2013
8	Business Manager's Report Oct 2013
9	Business Manager's Report Nov 2013
14	Business Manager's Report Apr 2014
15	Business Manager's Report May 2014
23	Business Manager's Report Jan 2015
41	Business Manager's Report Jul 2016
51	Incident Report Register
52	SFC trip and failed to start incident report
54	Safety & commercial contingency plan
57	Computer file back up process
63	111024 ERA PAIP Response

Criteria Effectiveness			Post Review Audit Priority						
	Policy	Performance	Likelihood	Consequence	Inherent Risk rating	Adequacy of existing controls	Review priority	Adequacy Rating	Performance Rating
			A=likely B=probable C=unlikely	1=minor 2=moderate 3=major	L=low M=medium H=high	S=strong M=moderate W=weak			
9.1 Contingency plans are documented, understood and tested to confirm their operability and to cover higher risks Note: Audit Priority changed from 2 to 4 due to review and assessment of control adequacy. Control mechanisms are sufficient and adequately address requirements.	Ref doc – 1, 2, 3, 4, 5, 6, 8, 9, 14, 15, 23, 41, 51, 52, 54, 57 & 63	Site evacuation policy in event of bushfires has been agreed with FESA. Many backup arrangements are incorporated in the DCS. Duplication and transfer capability allows each SFC to operate either GT. Single GT can provide most of the historical peaking demand. Duplicate gas train compressors, power station can still run on DBP gas pressure (without compression). Duplicate gas regulation at the power station. Duplicate gas heating trains	C	3	HIGH	S	4	A	1

Comments & Recommendations
2013 post audit recommendations implemented. Many contingencies are automated in the DCS, eg calling second GT if fail to start, redundant gas regulation / heating trains & others require manual intervention such as using #11's SFC to start #12. All these have been executed during the reporting period.

10.	Key Process - Financial Planning *The financial planning component of the asset management plan brings together the financial elements of the service delivery to ensure its financial viability over the long term.* Outcome *A financial plan that is reliable and provides for long-term financial viability of services*	Asset management process and policy definition adequacy rating A	Asset management performance rating 1

Interviewees:

Bruno Lanciano	Neerabup Power Station Manager	NewGen Neerabup Partnership
Phil MacMahon	Operations Manager	NewGen Neerabup Partnership

Relevant documentation:

1	Business Manager's Report All
7	Business Manager's Report Sept 2013
49	MEX history
50	MEX compliance
62	Bruno email 21-2-17

Criteria Effectiveness			Post Review Audit Priority						
	Policy	Performance	Likelihood	Consequence	Inherent Risk rating	Adequacy of existing controls	Review priority	Adequacy Rating	Performance Rating
			A=likely B=probable C=unlikely	1=minor 2=moderate 3=major	L=low M=medium H=high	S=strong M=moderate W=weak			
10.1 The financial plan states the financial objectives and strategies and actions to achieve the objectives	Ref docs – 1, 7 & 62	Budget prepared annually with a forward budget based on 5 years as basis. Energy trading governs profitability and takes into account both gas and electricity markets and uses the 30TJ linepack storage capacity to exploit opportunities.	C	2	MEDIUM	S	4	A	1
10.2 The financial plan identifies the source of funds for capital expenditure and recurrent cost	Ref docs – 1, 7, & 62	No major or untoward expenditure is anticipated due to the low EOH. 'Major" and 'minor' services are incorporated in the operating budget.	C	2	MEDIUM	S	4	A	1
10.3 The financial plan provides projections of operating statements (profit and loss) and statement of financial position (balance sheets)	Ref docs – 1	Financials are reported in Monthly Reports with operating costs, P&L and Balance actuals compared against budgeted. Any variances are investigated.	C	2	MEDIUM	S	4	A	1
10.4 The financial plan provide firm predictions on income for the next five years and reasonable indicative	Ref docs – 1	Budget prepared annually with a forward budget based on 5 years as basis. 20yr contract with Synergy, long term hedge on original debt.	C	2	MEDIUM	S	4	A	1

predictions beyond this period									
10.5 The financial plan provides for the operations and maintenance, administration and capital expenditure requirements of the services	Ref docs – 1	O&M, admin and overheads are incorporated in the plan together with forecast capital expenditure.	C	2	MEDIUM	S	4	A	1
10.6 Significant variances in actual/budget income and expenses are identified and corrective action taken where necessary	Ref docs – 1, & 62	Financials are reported in Monthly Reports with operating costs, P&L and Balance actuals compared against budgeted. Any variances are investigated. .	C	2	MEDIUM	S	4	A	1
Comments & Recommendations									
Returns generally exceeded budgeted in the reporting period.									

11.	Key Process - Capital Expenditure Planning *The capital expenditure plan provides a schedule of new works, rehabilitation and replacement works, together with estimated annual expenditure on each over the next five or more years.* *Since capital investments tend to be large and lumpy, projections would normally be expected to cover at least 10 years, preferably longer.* *Projections over the next five years would usually be based on firm estimates.* Outcome - *A capital expenditure plan that provides reliable forward estimates of capital expenditure and asset disposal income, supported by documentation of the reasons for the decisions and evaluation of alternatives and options.*	Asset management process and policy definition adequacy rating A	Asset management performance rating 1

Interviewees:		
Bruno Lanciano	Neerabup Power Station Manager	NewGen Neerabup Partnership
Phil MacMahon	Operations Manager	NewGen Neerabup Partnership

Relevant documentation:	
1	Business Manager's Report All
7	Business Manager's Report Sept 2013
14	Business Manager's Report Apr 2014
20	Business Manager's Report Oct 2014
25	Business Manager's Report Mar 2015
27	Business Manager's Report May 2015

Criteria Effectiveness			Post Review Audit Priority						
	Policy	Performance	Likelihood	Consequence	Inherent Risk rating	Adequacy of existing controls	Review priority	Adequacy Rating	Performance Rating
			A=likely B=probable C=unlikely	1=minor 2=moderate 3=major	L=low M=medium H=high	S=strong M=moderate W=weak			
11.1 There is a capital expenditure plan that covers issues to be addressed, actions proposed, responsibilities and dates	Ref docs – 1	Budget prepared annually with a forward budget based on 5 years as basis. However, planning was evident for up to a 10 year period for significant capital expenditure i.e. major turbine outage.	C	2	MEDIUM	S	4	A	1
11.2 The plan provide reasons for capital expenditure and timing of expenditure	Ref docs – 1	MEX, the annual asset review, risk register, condition monitoring, supplier recommendations and specialist reports are utilised as basis for capital justification. Wherever possible capital works are scheduled during the shoulder season and time allowed for procurement of long lead items.	C	2	MEDIUM	S	4	A	1
11.3 The capital expenditure plan is consistent with the asset life and condition identified in the asset management plan	Ref docs – 1, 7, 14, 20, 25 & 27	Low capacity factor means little capital expenditure is anticipated until the first 'major' currently ≈ 2030	C	2	MEDIUM	S	4	A	1
11.4 There is an adequate process to ensure that the capital expenditure plan is regularly updated and actioned	Ref docs – 1, 7, 14, 20, 25 & 27	MoC and work order status are reported in the Monthly Reports together with forecast GT inspections.	C	1	LOW	S	5	A	1

Comments & Recommendations
There has been limited capital expenditure in the reporting period and assessment has been mainly based on the AGC/ABC requirement of the System Management. Capital projects in the reporting period have included addition of an additional Reverse Osmosis plant and Security upgrade at the compression station site.

12.	Key Process - Review of AMS *The asset management system is regularly reviewed and updated* Outcome *Review of the Asset Management System to ensure the effectiveness of the integration of its components and their currency.*	Asset management process and policy definition adequacy rating A	Asset management performance rating 1

Interviewees:

Bruno Lanciano	Neerabup Power Station Manager	NewGen Neerabup Partnership
Phil MacMahon	Operations Manager	NewGen Neerabup Partnership

Relevant documentation:

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6	Business Manager's Report Aug 2013
8	Business Manager's Report Oct 2013
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31	Business Manager's Report Sept 2015
38	Business Manager's Report Apr 2016
42	Business Manager's Report Aug 2016
50	MEX compliance
52	SFC trip and failed to start incident report
63	111024 ERA PAIP Response

Criteria Effectiveness			Post Review Audit Priority						
	Policy	Performance	Likelihood	Consequence	Inherent Risk rating	Adequacy of existing controls	Review priority	Adequacy rating	Performance Rating
			A=likely B=probable C=unlikely	1=minor 2=moderate 3=major	L=low M=medium H=high	S=strong M=moderate W=weak			
12.1 A review process is in place to ensure that the asset management plan and the asset management system described therein are kept current	Ref doc – 1, 6, 8, 19, 23, 31, 38, 42, 50, 52 & 63	There is no one AMS document, a lot of functions are incorporated in the DCS and MEX. AMS process is reviewed and revised on an ongoing basis, often as a consequence of an Incident Report or a change of System Management or Regulatory requirements.	C	2	MEDIUM	S	4	A	1
12.2 Independent reviews (eg internal audit) are performed of the asset management system	Ref doc – 1, 8, 31, & 38	Internal and external review of the assets and management systems are regularly conducted. ERA requires AMS review as part of the licensing renewal. Insurance external audits/reviews have been conducted Annually.	C	2	MEDIUM	S	4	A	1

Comments & Recommendations

Table 3.0 Effectiveness Criteria Pre- Audit Review

Ref	Asset management system component	Details/Requirements	Consequence 1=minor, 2=moderate, 3=major	Risk Likelihood A=likely, B=probable, C=unlikely	Inherent Risk low, medium, high	Adequacy of existing controls S=strong, M=moderate, W=weak	Review Priority				
							1	2	3	4	5
1	Asset Planning	Asset planning strategies are focused on meeting customer needs in the most effective and efficient manner (delivering the right service at the right price).					0	0	0	6	3
1.1		Asset management plan covers key requirements	1	C	LOW	M					5
1.2		Planning process and objectives reflect the needs of all stakeholders and is integrated with business planning	2	C	MEDIUM	M				4	
1.3		Service levels are defined	2	C	MEDIUM	M				4	
1.4		Non-asset options (e.g. demand management) are considered	1	C	LOW	M					5
1.5		Lifecycle costs of owning and operating assets are assessed	2	C	MEDIUM	M				4	

Ref	Asset management system component	Details/Requirements	Consequence 1=minor, 2=moderate, 3=major	Risk Likelihood A=likely, B=probable, C=unlikely	Inherent Risk low, medium, high	Adequacy of existing controls S=strong, M=moderate, W=weak	Review Priority				
1.6		Funding options are evaluated	2	C	MEDIUM	M				4	
1.7		Costs are justified and cost drivers identified	2	C	MEDIUM	M				4	
1.8		Likelihood and consequences of asset failure are predicted	2	C	MEDIUM	M				4	
1.9		Plans are regularly reviewed and updated	1	C	LOW	M					5
2	Asset creation/acquisition	Asset creation/acquisition means the provision or improvement of an asset where the outlay can be expected to provide benefits beyond the year of outlay.					0	0	0	4	1
2.1		Full project evaluations are undertaken for new assets, including comparative assessment of non-asset solutions	2	C	MEDIUM	M				4	
2.2		Evaluations include all life-cycle costs	1	C	LOW	M					5
2.3		Projects reflect sound engineering and business decisions	2	C	MEDIUM	M				4	

Ref	Asset management system component	Details/Requirements	Consequence 1=minor, 2=moderate, 3=major	Risk Likelihood A=likely, B=probable, C=unlikely	Inherent Risk low, medium, high	Adequacy of existing controls S=strong, M=moderate, W=weak	Review Priority				
2.4		Commissioning tests are documented and completed	2	C	MEDIUM	M				4	
2.5		Ongoing legal/environmental/safety obligations of the asset owner are assigned and understood	2	C	MEDIUM	M				4	
3	Asset disposal	Effective asset disposal frameworks incorporate consideration of alternatives for the disposal of surplus, obsolete, under-performing or unserviceable assets. Alternatives are evaluated in cost-benefit terms					0	0	0	2	2
3.1		Under-utilised and under-performing assets are identified as part of a regular systematic review process	1	C	LOW	M					5
3.2		The reasons for under-utilisation or poor performance are critically examined and corrective action or disposal undertaken	2	C	MEDIUM	M				4	
3.3		Disposal alternatives are evaluated	1	C	LOW	M					5
3.4		There is a replacement strategy for assets	2	C	MEDIUM	M				4	

Ref	Asset management system component	Details/Requirements	Consequence 1=minor, 2=moderate, 3=major	Risk Likelihood A=likely, B=probable, C=unlikely	Inherent Risk low, medium, high	Adequacy of existing controls S=strong, M=moderate, W=weak	Review Priority				
4	Environmental analysis	Environmental analysis examines the asset system environment and assesses all external factors affecting the asset system.					0	0	0	4	0
4.1		Opportunities and threats in the system environment are assessed	2	B	MEDIUM	M				4	
4.2		Performance standards (availability of service, capacity, continuity, emergency response, etc.) are measured and achieved	2	B	MEDIUM	M				4	
4.3		Compliance with statutory and regulatory requirements	2	C	MEDIUM	M				4	
4.4		Achievement of customer service levels	2	C	MEDIUM	M				4	
5	Asset operations	Operations functions relate to the day-to-day running of assets and directly affect service levels and costs.					0	0	0	4	0
5.1		Operational policies and procedures are documented and linked to service levels required	2	C	MEDIUM	M				4	

Ref	Asset management system component	Details/Requirements	Consequence 1=minor, 2=moderate, 3=major	Risk Likelihood A=likely, B=probable, C=unlikely	Inherent Risk low, medium, high	Adequacy of existing controls S=strong, M=moderate, W=weak	Review Priority				
5.2		Risk management is applied to prioritise operations tasks	2	C	MEDIUM	M				5	
5.3		Assets are documented in an Asset Register including asset type, location, material, plans of components, an assessment of assets' physical/structural condition and accounting data	2	C	MEDIUM	M				4	
5.4		Operational costs are measured and monitored	2	C	MEDIUM	M				4	
5.5		Staff receive training commensurate with their responsibilities	2	C	MEDIUM	M				4	
6	Asset maintenance	Maintenance functions relate to the upkeep of assets and directly affect service levels and costs.					0	0	0	6	0
6.1		Maintenance policies and procedures are documented and linked to service levels required	2	C	MEDIUM	M				4	

Ref	Asset management system component	Details/Requirements	Consequence 1=minor, 2=moderate, 3=major	Risk Likelihood A=likely, B=probable, C=unlikely	Inherent Risk low, medium, high	Adequacy of existing controls S=strong, M=moderate, W=weak	Review Priority				
6.2		Regular inspections are undertaken of asset performance and condition	2	C	MEDIUM	M				4	
6.3		Maintenance plans (emergency, corrective and preventative) are documented and completed on schedule	2	C	MEDIUM	M				4	
6.4		Failures are analysed and operational/maintenance plans adjusted where necessary	2	C	MEDIUM	M				4	
6.5		Risk management is applied to prioritise maintenance tasks	2	C	MEDIUM	M				4	
6.6		Maintenance costs are measured and monitored	2	C	MEDIUM	M				4	
7	Asset Management Information System	An asset management information system is a combination of processes, data and software that support the asset management functions.					0	0	0	7	0
7.1		Adequate system documentation for users and IT operators	2	C	MEDIUM	M				4	

Ref	Asset management system component	Details/Requirements	Consequence 1=minor, 2=moderate, 3=major	Risk Likelihood A=likely, B=probable, C=unlikely	Inherent Risk low, medium, high	Adequacy of existing controls S=strong, M=moderate, W=weak	Review Priority				
7.2		Input controls include appropriate verification and validation of data entered into the system	2	C	MEDIUM	M				4	
7.3		Logical security access controls appear adequate, such as passwords	2	C	MEDIUM	M				4	
7.4		Physical security access controls appear adequate	2	C	MEDIUM	M				4	
7.5		Data backup procedures appear adequate and backups are tested	2	C	MEDIUM	M				4	
7.6		Key computations related to licensee performance reporting are materially accurate	2	C	MEDIUM	M				4	
7.7		Management reports appear adequate for the licensee to monitor licence obligations	2	C	MEDIUM	M				4	
8	Risk Management	Risk management involves the identification of risks and their management within an acceptable level of risk.					0	0	0	3	0
8.1		Risk management policies and procedures exist and are being applied to minimise internal and external risks associated with the asset management system	2	B	MEDIUM	M				4	

Ref	Asset management system component	Details/Requirements	Consequence 1=minor, 2=moderate, 3=major	Risk Likelihood A=likely, B=probable, C=unlikely	Inherent Risk low, medium, high	Adequacy of existing controls S=strong, M=moderate, W=weak	Review Priority				
8.2		Risks are documented in a risk register and treatment plans are actioned and monitored	2	C	MEDIUM	M				4	
8.3		The probability and consequences of asset failure are regularly assessed	2	B	MEDIUM	M				4	
9	Contingency Planning	Contingency plans document the steps to deal with the unexpected failure of an asset.					0	1	0	0	0
9.1		Contingency plans are documented, understood and tested to confirm their operability and to cover higher risks	3	C	HIGH	M		2			
10	Financial Planning	The financial planning component of the asset management plan brings together the financial elements of the service delivery to ensure its financial viability over the long term.					0	0	0	6	0
10.1		The financial plan states the financial objectives and strategies and actions to achieve the objectives	2	C	MEDIUM	M				4	

Ref	Asset management system component	Details/Requirements	Consequence 1=minor, 2=moderate, 3=major	Risk Likelihood A=likely, B=probable, C=unlikely	Inherent Risk low, medium, high	Adequacy of existing controls S=strong, M=moderate, W=weak	Review Priority				
10.2		The financial plan identifies the source of funds for capital expenditure and recurrent costs	2	C	MEDIUM	M				4	
10.3		The financial plan provides projections of operating statements (profit and loss) and statement of financial position (balance sheets)	2	C	MEDIUM	M				4	
10.4		The financial plan provide firm predictions on income for the next five years and reasonable indicative predictions beyond this period	2	C	MEDIUM	M				4	
10.5		The financial plan provides for the operations and maintenance, administration and capital expenditure requirements of the services	2	C	MEDIUM	M				4	
10.6		Significant variances in actual/budget income and expenses are identified and corrective action taken where necessary	2	C	MEDIUM	M				4	

Ref	Asset management system component	Details/Requirements	Consequence 1=minor, 2=moderate, 3=major	Risk Likelihood A=likely, B=probable, C=unlikely	Inherent Risk low, medium, high	Adequacy of existing controls S=strong, M=moderate, W=weak	Review Priority				
11	Capital Expenditure Planning	The capital expenditure plan provides a schedule of new works, rehabilitation and replacement works, together with estimated annual expenditure on each over the next five or more years. Since capital investments tend to be large and lumpy, projections would normally be expected to cover at least 10 years, preferably longer. Projections over the next five years would usually be based on firm estimates					0	0	0	3	1
11.1		There is a capital expenditure plan that covers issues to be addressed, actions proposed, responsibilities and dates	2	C	MEDIUM	M				4	
11.2		The plan provide reasons for capital expenditure and timing of expenditure	2	C	MEDIUM	M				4	
11.3		The capital expenditure plan is consistent with the asset life and condition identified in the asset management plan	2	C	MEDIUM	M				4	
11.4		There is an adequate process to ensure that the capital expenditure plan is regularly updated and actioned	1	C	LOW	M					5

Ref	Asset management system component	Details/Requirements	Consequence 1=minor, 2=moderate, 3=major	Risk Likelihood A=likely, B=probable, C=unlikely	Inherent Risk low, medium, high	Adequacy of existing controls S=strong, M=moderate, W=weak	Review Priority				
12	Review of AMS	The asset management system is regularly reviewed and updated.					0	0	0	2	0
12.1		A review process is in place to ensure that the asset management plan and the asset management system described therein are kept current	2	C	MEDIUM	M				4	
12.2		Independent reviews (e.g. internal audit) are performed of the asset management system	2	C	MEDIUM	M				4	
						TOTAL OF EACH PRIORITY	0	1	0	47	7