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**TRONOX MANAGEMENT PTY LTD  
GENERATION LICENCE EGL 23  
PERFORMANCE AUDIT  
ASSET MANAGEMENT REVIEW REPORT**

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**Prepared by Kevan McGill  
Date 19 May 2017**



Lloyd Owens  
Contract specialist  
Tronox Management Pty Ltd  
PERTH WA 6005

Dear Mr Owens

## **Performance Audit & Asset Management Review Electricity Licence**

The fieldwork on the performance audit of Generation Licence EGL23 for the audit period (1 January 2013 to 31 Oct 2016) is complete and I am pleased to submit the report to you. The report reflects my findings and opinions.

In my opinion, the Licensee has maintained a good level of compliance with the Licence conditions and integrity with the Licensee's reporting obligations. There are 2 non-compliances noted.

In my opinion, the Licensee maintained, in all material aspects, control procedures in relation to the Generation licence (EGL 23) for the audit period on the relevant clauses referred to within the scope section of this report.

In my opinion, the Licensee maintained, in all material aspects, effective control procedures and an effective asset management system in relation to the Generation licence (EGL 23) for the review period on the relevant clauses referred to within the scope section of this report.

Yours sincerely

Kevan McGill  
Director

Date 19 May 2017

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## 1 EXECUTIVE SUMMARY

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This performance audit and asset management system review was conducted in accordance with the guidelines issued by the Economic Regulation Authority (ERA) for the audit period (1 January 2013 to 31 Oct 2016).

### 1.1 OVERALL CONCLUSION

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In my opinion, the Licensee has maintained a good level of compliance with the licence conditions. There were 2 non-compliances requiring corrective actions. There are no issues with the integrity of reporting to the ERA or other statutory organisations.

In my opinion, the Licensee maintained, in all material aspects, effective control procedures in relation to the Generation Licence (EGL 23) for the audit period based on the relevant clauses referred to within the scope section of this report.

In my opinion, the Licensee maintained, in all material aspects, effective control procedures and an effective asset management system in relation to the Generation Licence (EGL 23) for the review period on the relevant clauses referred to within the scope section of this report.

### 1.2 SUMMARY OF SIGNIFICANT RESULTS

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#### 1.2.1 AUDIT

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There are 2 non-compliances (items 105 and 124).

#### 1.2.2 ASSET MANAGEMENT SYSTEM REVIEW

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There is one issue that is required to improve the effectiveness of the asset management system.

### 1.3 AUDIT PERIOD

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This audit covers the period 1 January 2013 to 31 Oct 2016. The previous audit/review period was 24 December 2010 to 31 December 2012.

### 1.4 THE LICENSEE

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Tronox Management (*Tronox*) holds an Electricity Generation Licence (EGL 23) issued by the Economic Regulation Authority under the Electricity Industry Act 2004. This performance audit was conducted in accordance with the guidelines issued by the Economic Regulation Authority (ERA) to assess Tronox's level of compliance with the licence conditions.

### 1.5 THE ASSETS

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Tronox is a large producer of titanium dioxide and the KMK Cogeneration plant is co-located at Kwinana in Western Australia with the titanium dioxide pigment plant. Tronox

is publicly listed company with diverse interests and is listed on the New York Stock Exchange. The KMK cogeneration facility consists of a 36MW Frame 6 gas turbine and heat recovery steam generator, (HRSG), that supplies power and steam to the facility and also exports excess power as part of the balancing market through the South West Interconnected System, SWIS. The Cogen plant is operated and maintained by a third party- Monadelphous Group Limited. Tronox provides the operating framework (electricity and steam output) and approves any maintenance outside of the routine maintenance specified in the Operating and Maintenance Agreement.

The generator was originally part of the Verve fleet at Pinjar Power Station and relocated to Kwinana by Verve (then Western Power) as part of a supply agreement. The plant was subsequently purchased by Tronox. The Licensee is primarily a mineral manufacturer on this site and generation of electricity is secondary to mineral production and to that end the key output of the plant is production steam and then electricity for manufacturing and if there is excess to participate in the electricity market.

The records and areas covered by the Licence were inspected and interviews were also held with key personnel at the Kwinana licence area.

## 1.6 PREVIOUS AUDIT NON-COMPLIANCES AND RECOMMENDATIONS

There are issues from previous audit.

<b>Table of Previous Non-Compliances and Audit Recommendations</b>				
<b>A. Resolved before end of previous audit period</b>				
<b>Reference (no./year)</b>	<b>(Compliance rating/ Legislative Obligation/ details of the issue)</b>	<b>Auditors' Recommendation</b>	<b>Date Resolved</b>	<b>Further action required (Yes/No/Not Applicable) Details of further action required including current recommendation reference if applicable</b>
<b>B. Resolved during current Audit period</b>				
<b>Reference (no./year)</b>	<b>(Compliance rating/ Legislative Obligation/ details of the issue)</b>	<b>Auditors' Recommendation</b>	<b>Date Resolved</b>	<b>Further action required (Yes/No/Not Applicable) Details of further action required including current recommendation reference if applicable</b>
2/2013 105	Non-compliant 2 <i>Generating Licence 4.1</i> Pay Licence fees on time	As there was a near late payment. Required reminder from the ERA and one missed payment due to the licensee being unaware of requirement. Consideration could be given to including the requirement in the InControl system and including in the legal & Other Obligations Register.	2013	While there was a controls issue raised in 2013 the action was ineffective and further action is required (2/2016)
3/2013 124	Non-compliant 2 <i>Generating Licence 16.1</i> Make reports on time	As this requirement has been late and addressed with an internal action plan (i.e. inclusion as scheduled event in InControl) future compliance should be expected. However, consideration could also be given to including in the Legal and Other Obligations Register.	2013	While there was a controls issue raised in 2013 the action was ineffective and further action is required (2/2016)

C. Unresolved at end of current Audit period				
Reference (no./year)	(Compliance rating/ Legislative Obligation/ details of the issue)	Auditors' Recommendation	Date Resolved	Further action required (Yes/No/Not Applicable) Details of further action required including current recommendation reference if applicable

Opportunities for Improvement (2013)

Table of Previous Non-Compliances and Audit Recommendations				
A. Resolved before end of previous audit period				
Reference (no./year)	(Compliance rating/ Legislative Obligation/ details of the issue)	Auditors' Recommendation	Date Resolved	Further action required (Yes/No/Not Applicable) Details of further action required including current recommendation reference if applicable
B. Resolved during current Audit period				
1/2013 101	Compliant 4 <i>Generating Licence 14.1</i> Improve controls on asset management review scheduling	To ensure ongoing compliance, consideration could be given to formalising the scheduling of the audit through including the requirement in the legal and other obligations register or scheduling as event in the Incontrol System.	2013	No
C. Unresolved at end of current Audit period				
Reference (no./year)	(Compliance rating/ Legislative Obligation/ details of the issue)	Auditors' Recommendation	Date Resolved	Further action required (Yes/No/Not Applicable) Details of further action required including current recommendation reference if applicable

1.7 ISSUES FROM CURRENT AUDIT

There are 2 issues from current audit.

1.7.1 COMPLIANCE ELEMENTS REQUIRING CORRECTIVE MEASURES

The actions requiring corrective measures are:

Table of Current Audit Non-Compliances/Recommendations			
A. Resolved during current Audit period			
Reference (no./year)	Non-Compliance/Controls improvement (Rating / Legislative Obligation / Details of Non Compliance or inadequacy of controls)	Date Resolved (& management action taken)	Auditors comments
B. Unresolved at end of current Audit period			
Reference (no./year)	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
1/2016 105	C2 <i>Generating Licence 4.1</i> Pay Licence fees on time	Improve controls for regulatory requirements	Implement by June 2017
2/2016 124	C2 <i>Generating Licence 16.1</i> Make reports on time	Improve controls for regulatory requirements	Implement by June 2017

1.7.2 OPPORTUNITIES FOR IMPROVEMENT

Table of Current Audit Non-Compliances/Recommendations			
Unresolved at end of current Audit period			
Reference (no./year)	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

1.8 PREVIOUS REVIEW RECOMMENDATIONS

Recommendations from last review (2013):

Previous review ineffective components recommendations



**Table of Previous Review Ineffective Components Recommendations**

**A. Resolved before end of previous review period**

Reference (no./year)	(Asset management effectiveness rating/ Asset Management System Component & Criteria / details of the issue)	Auditors' Recommendation or action taken	Date Resolved	Further action required (Yes/No/Not Applicable) & Details of further action required including current recommendation reference if applicable

**B. Resolved during current Review period**

Reference (no./year)	(Asset management effectiveness rating/ Asset Management System Component & Criteria / details of the issue)	Auditors' Recommendation	Date Resolved	Further action required (Yes/No/Not Applicable) & Details of further action required including current recommendation reference if applicable
1/2013 1.7	A2 Likelihood and consequences of asset failure are predicted	Document a contingency plan for failure of Cogen assets in conjunction with Monadelphous and FM Global which considers the risk of such failures. Contingency plans be documented and details investigated	2013	N/A
2/2013 7.5	A2 Data backup procedures appear Adequate Manual back up to CD's is vulnerable to error and an automated system is recommended	Manual back up to CD's is vulnerable to error and an automated system is recommended. Tronox to review with Monadelphous their proposed automated system for data back up and determine if this will benefit data security.	2013	N/A
3/2013 7.6	A2 Key computations related to licensee performance reporting are materially accurate There is no method of verifying accuracy.	Since there is no kWh check metering calibration should be reviewed or some means of checking implemented. Tronox to review with Western Power, their ability to carry out calibration of their electrical meters.	2013	N/A

<b>B. Resolved during current Review period</b>				
<b>Reference (no./year)</b>	<b>(Asset management effectiveness rating/ Asset Management System Component &amp; Criteria / details of the issue)</b>	<b>Auditors' Recommendation</b>	<b>Date Resolved</b>	<b>Further action required (Yes/No/Not Applicable) &amp; Details of further action required including current recommendation reference if applicable</b>
4/2013 9.1	A2 Contingency plans are documented, understood and tested to confirm their operability and to cover higher risks	Contingency plans be documented and details investigated Contingency plans seem to be adequate apart from those for a transformer failure which appear not to be clearly documented or detail designed. The likelihood of a transformer failure is low and the financial risk for Tronox is considered acceptable. The consequences on the SWIN are also low considering the small contribution provided by the Co-gen, <1%, to the overall SWIN generation capacity. Contingency plans be documented and details investigated e.g. there is no defined contingency in event of the step up transformer failing, if such an event were to occur the industry network would be used to help find a solution. A step up transformer failure would prevent exporting of power but the pigment process could continue using power from the SWIN, this is currently an acceptable risk to Tronox	2013	N/A

<b>C. Unresolved at end of current Review period</b>			
<b>Reference (no./year)</b>	<b>(Asset management effectiveness rating/ Asset Management System Component &amp; Criteria / details of the issue)</b>	<b>Auditors' Recommendation</b>	<b>Further action required (Yes/No/Not Applicable) &amp; Details of further action required</b>

**1.9 TABLE OF CURRENT REVIEW ASSET SYSTEM DEFICIENCIES/ RECOMMENDATIONS**

<b>Table of Current Review Asset System Deficiencies/Recommendations</b>
<b>A. Resolved during current Review period</b>

Reference (no./year)	Asset System Deficiency (Rating/ Asset Management System Component & Effectiveness Criteria / Details of Asset System Deficiency)	Date Resolved (& management action taken)	Auditors comments
<b>B. Unresolved at end of current Review period</b>			
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
1/2016	B2 2.5 Ongoing legal/environmental/safety obligations of the asset owner are assigned and understood Regulatory compliance items not all complied with.	Improve controls for regulatory requirements	Implement by June 2017

## 2 PERFORMANCE AUDIT & ASSET MANAGEMENT SYSTEM REVIEW PERFORMANCE AUDIT OBJECTIVES

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### 2.1 PERFORMANCE AUDIT OBJECTIVES

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Under section 13 of the *Electricity Industry Act 2004* (the Act), it is a requirement that every licensee provide the Economic Regulation Authority (ERA) not less than once in every period of 2 years or longer as the ERA allows with a performance audit conducted by an independent expert acceptable to the ERA.

The primary objective of the audit is to audit the effectiveness of measures taken by the Licensee to maintain quality and performance standards. The Act states a performance audit is an audit of the effectiveness of measures taken by the Licensee to meet the performance criteria specified in the licence. The licence states that performance standards are contained in applicable legislation. Performance criteria are defined in the licence as:

- (a) the terms and conditions of the *licence*; and
- (b) any other relevant matter in connection with the applicable legislation that the ERA determines should form part of the audit.

The licence also provides for individual licence conditions namely - the ERA may prescribe individual performance standards in relation to the Licensee of its obligations under this licence or the applicable legislation (the Act and subordinate legislation).

The audit and review are to be conducted in accordance with the prevailing ERA documents “Audit Guidelines: Electricity and Gas Licences (hereinafter “Guidelines”)<sup>1</sup> and the Electricity Compliance Reporting Manual (hereinafter “Manual”)<sup>2</sup>. In particular, the Manual identifies each licence condition and resolves it into a number of obligations (hereinafter “Obligations”), each of which is to be addressed individually by the audit.

The Licensee appointed McGill Engineering Services Pty Ltd to conduct the audit of its Generation Licence with approval from the ERA. A preliminary assessment was conducted with the Licensee’s management to determine the inherent risk and the state of control for each compliance element of the Licence obligation. McGill Engineering Services Pty Ltd then prioritised the audit coverage based on the risk profile of the Licensee with an emphasis on providing greater focus and depth of testing for areas of higher risk to provide reasonable assurance that the Licensee had complied with the standards, outputs and outcomes under the Licence obligations.

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<sup>1</sup> Economic Regulation Authority: Audit and Review Guidelines: Electricity and Gas Licences April 2014

<sup>2</sup> Economic Regulation Authority: Electricity Compliance Reporting Manual September 2014. The audit period was covered by the 2013 manual for a period and the 2014 manual for the majority of the audit period. There are no items in the 2013 manual that are not in the 2014 manual and the 2014 manual is used for the audit. The July 2016 manual has no differences for this licensee. The October 2016 manual also has no differences for this licensee other than item 105 which already can accommodate the ERA licensing fee change.

The audit was conducted in a manner consistent with Australian Auditing Standards (AUS) 808 “Planning Performance Audits” and AUS 806 “Performance Auditing”. McGill Engineering Services Pty Ltd evaluated the adequacy and effectiveness of the controls and performance by the Licensee relative to the standards referred in the Generation Licence through a combination of enquiries, examination of documents and detailed testing for Generation Licence EGL 23 for the Licensee.

## 2.2 REVIEW OBJECTIVES

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Under the *Electricity Industry Act 2004* (the Act) section 14, the holder of a Generation License must develop an Asset Management System and maintain an asset management system to manage the assets accordingly for delivery of a reliable service to its customers. The Act requires a review of the asset management system every two years (or longer time approved by the ERA).

This report is an impartial review of the Licensee’s asset management effectiveness under the Review Guidelines: Electricity and Gas Licences published by the ERA.

The review conducted between December 2016 to February 2017 examined the asset management processes used by the Licensee in delivering the services to its customers. These services include lifecycle processes for:

- Asset planning;
- Asset creation/acquisition;
- Asset disposal;
- Environmental analysis;
- Asset operations;
- Asset maintenance;
- Asset management information system (AMIS);
- Risk management;
- Contingency planning;
- Financial planning;
- Capital expenditure planning; and
- Review of the asset management system.

As well as the processes, the asset management supporting systems were tested as to their use and effectiveness. Data used by the Licensee was also examined with respect to its effectiveness for asset management and the delivery of outcomes.

Tests were undertaken through interviews and investigation of the processes to assess whether they were being performed as documented.

The Licensee appointed McGill Engineering Services Pty Ltd to conduct the review of its Generation Licence with approval from the ERA. A preliminary assessment was conducted with the Licensee’s management to determine the inherent risk and the state of control for each asset management system lifecycle processes McGill Engineering Services Pty Ltd then prioritised the review coverage based on the risk profile of the Licensee with an emphasis on providing greater focus and depth of testing for areas of

higher risk to provide reasonable assurance that the Licensee has maintained an effective asset management system.

The review was conducted in a manner consistent with ASAE 3000 Assurance standard for engagements to audit other than historical financial information. McGill Engineering Services Pty Ltd evaluated the adequacy and effectiveness of the controls and performance by the Licensee relative to the standards referred in the Generation Licence through a combination of enquiries, examination of documents and detailed testing for Electricity Generation Licence EGL 23 for Tronox Management Pty Ltd.

### 2.3 SCOPE LIMITATION

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The review was undertaken by examination of documents, interviews with key persons and observations and is not a detailed inspection of physical items. The generating plant was inspected.

### 2.4 INHERENT LIMITATIONS

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Because of the inherent limitations of any internal control structure, it is possible that fraud, error or non-compliance with laws and regulations may occur and not be detected.

An audit is not designed to detect all weaknesses in compliance measures as an audit is not performed continuously throughout the period and the audit procedures performed on the compliance measures are undertaken on a test basis.

Any projection of the evaluation of the operating licences to future periods is subject to the risk that the compliance measures in the plans may become inadequate because of changes in conditions or circumstances, or that the degree of compliance with them may deteriorate.

The audit opinion expressed in this report has been formed on the above basis.

### 2.5 STATEMENT OF INDEPENDENCE

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To the best of my knowledge and belief, there is no basis for contraventions of any professional code of conduct in respect of the audit.

I have not done or contemplate undertaking any other work with the Licensee.

There are no independence threats due to:

- self-interest – as the audit company or a member of the audit team have no financial or non-financial interests in the Licensee or a related entity;
- self-review – no circumstance has occurred:
  - where the audit company or a member of the audit team has undertaken other non-audit work for the Licensee that is being evaluated in relation to the audit/review; or
  - when a member of the audit team was previously an officer or director of the Licensee; or

- where a member of the audit team was previously an employee of the Licensee who was in a position to exert direct influence over material that will be subject to audit during an audit/review.

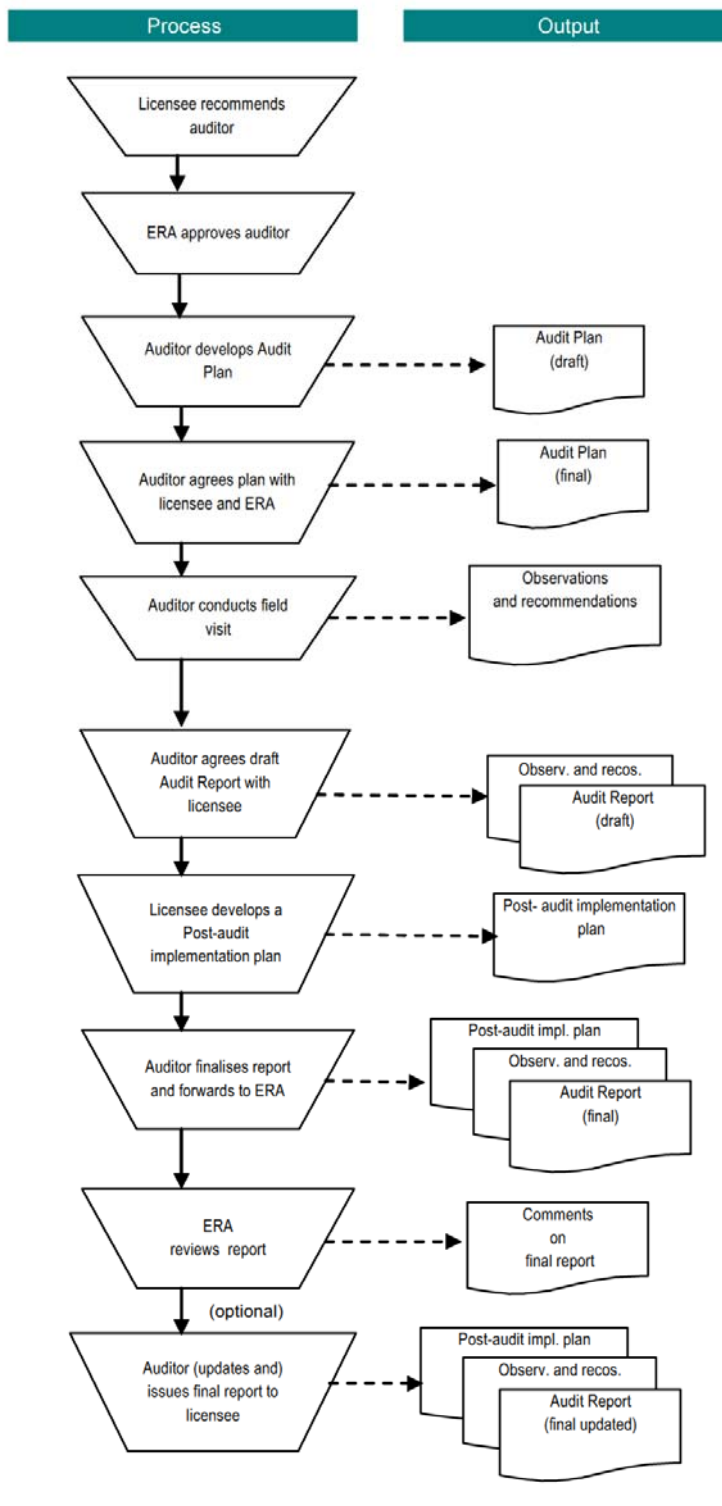
There is no risk of a self-review threat as:

- no work has been undertaken by the auditor, or a member of the audit/review team, for the Licensee within the previous 24 months; or
- the auditor is currently undertaking for the Licensee; or
- the auditor has submitted an offer, or intends to submit an offer, to undertake for the Licensee within the next 6 months; and
- there is no close family relationship with a Licensee, its directors, officers or employees, and
- the auditor is not, nor is perceived to be too sympathetic to the Licensee's interests.

## 2.6 SCOPE OF THE AUDIT

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The audit was conducted in accordance with flow chart:



## 2.7 KEY CONTACTS

The key contacts were:

- Licensee: The licensee's key people are
- Monadelphous



- Steve Farley: Site Manager
- Steve Paul: Technical Officer
- Tronox
  - Shayne Ashworth: Manager Supply Chain
  - Lloyd Owens: Contracts Specialist
- McGill Engineering Services Pty Ltd:
  - Kevan McGill, John McLoughlin.

The generating plant at Kwinana was visited. Kevan McGill spent 80 hours and John McLoughlin spent 30 hours on the audit/review.

## 2.8 AUDIT REQUIREMENTS

Compliance with licence conditions was examined according to the likely inherent risk and the adequacy of controls to manage that risk.

### Nature of audit work conducted

The audit considered:

- **process compliance** - the effectiveness of systems and procedures in place throughout the audit period, including the adequacy of internal controls;
- **outcome compliance** – the actual performance against standards prescribed in the licence throughout the audit period;
- **output compliance** – the existence of the output from systems and procedures throughout the audit period (that is, proper records exist to provide assurance that procedures are being consistently followed and controls are being maintained);
- **integrity of reporting** – the completeness and accuracy of the compliance and performance reports provided to the ERA; and
- **compliance with any individual licence conditions** - the requirements imposed on the specific licensee by the ERA or specific issues that are advised by the ERA.

Stage	Auditor	Standard
1. Risk & Materiality Assessment Outcome - Operational/ Performance Audit Plan	K McGill John McLoughlin	ASA 300 Planning ASA 315: Risk Assessments and Internal Controls ASAE 3000 Assurance standard for engagements to audit other than historical financial information AS/NZS ISO 31000:2009 Risk Management ERA Guidelines
2. System Analysis	K McGill John McLoughlin	AUS 810: Special Purpose Reports on Effectiveness of Control Procedures
3. Fieldwork Assessment and testing of; • The control environment	K McGill John McLoughlin	AUS 502: Audit Evidence ASAE 3000 Assurance standard for engagements to audit other than historical financial information

<ul style="list-style-type: none"> <li>Information system</li> <li>Compliance procedures</li> <li>Compliance attitude</li> </ul>		
4. Reporting	K McGill John McLoughlin	ASA 300 Planning ASAE 3000 Assurance standard for engagements to audit other than historical financial information

## 2.9 OVERALL CONCLUSION

In my opinion, the Licensee maintained, in all material aspects, effective control procedures in relation to the Generation Licence EGL 23 for the audit period based on the relevant clauses referred to within the scope section of this report.

There are 2 non-compliances that required corrective actions.

## 2.10 FINDINGS

The conclusions of each of the elements of the licence are summarised in the following table. The audit risk as determined for each licence condition is also shown. The details of the audit can be seen in detailed findings on Page 26.

## 2.11 AUDIT COMPLIANCE AND CONTROLS RATING SCALES

Performance audit compliance and controls rating scales			
Adequacy of Controls Rating		Compliance Rating	
Rating	Description	Rating	Description
A	Adequate controls - no improvement needed	1	Compliant
B	Generally adequate controls – improvement needed	2	Non-compliant – minor impact on customers or third parties
C	Inadequate controls -significant improvement required	3	Non-compliant – moderate impact on customers or third parties
D	No controls evident	4	Non-compliant – major impact on customers or third parties
NP	Not performed	NR	Not Rated

2.12 AUDIT SUMMARY

Item	Licence Clause/Condition reference (Cl.=clause, Sch.=schedule)	Obligations under condition	Licence Type (G - Generation)	Type	Audit Priority	Adequacy of Controls (NP=Not Performed)					Compliance Rating (NR = Not Rated)				
<b>Licence Conditions – Licence Clause – Generation</b>						<b>Adequacy of controls rating</b>					<b>Compliance Rating</b>				
<b>Obligations- Electricity Industry Act Section</b>						<b>A</b>	<b>B</b>	<b>C</b>	<b>D</b>	<b>NP</b>	<b>1</b>	<b>2</b>	<b>3</b>	<b>4</b>	<b>NR</b>
101.	14.1	s <sup>3</sup> 13(1)	G	NR	5	✓					✓				
102.	20.1	s14(1)(a)	G	NR	5	✓					✓				
103.	20.2 &20.3	s14(1)(b)	G	2	4					✓				✓	
104.	20.4	s14(1)(c)	G	NR	5	✓					✓				
105.	4.1	s17(1)	G	2	4			✓				✓			
106	5.1	s31(3)	G	NR	5	✓					✓				
107.	5.1	s41(6)	G	2	4					✓				✓	
<b>Licence Conditions – Electricity Industry Act Section</b>						<b>Adequacy of controls rating</b>					<b>Compliance Rating</b>				
<b>Obligations- Licence Clause – Generation</b>						<b>A</b>	<b>B</b>	<b>C</b>	<b>D</b>	<b>NP</b>	<b>1</b>	<b>2</b>	<b>3</b>	<b>4</b>	<b>NR</b>
119.	s11	12.1	G	2	4	✓					✓				
120.	s11	13.4	G	2	4					✓				✓	
121.	s11	14.2	G	2	4	✓					✓				
122.	S22	20.5	G	2	4	✓					✓				
123.	s11	15.1	G	2	4					✓				✓	
124.	s11	16.1	G	2	4			✓				✓			
125.	s11	17.1&17.2	G	2	4					✓				✓	
126.	s11	18.1	G	2	4	✓					✓				
<b>Licence Conditions – Licence clause</b>						<b>Adequacy of controls rating</b>					<b>Compliance Rating</b>				
<b>Obligations- Electricity Industry Metering Code Clause</b>						<b>A</b>	<b>B</b>	<b>C</b>	<b>D</b>	<b>NP</b>	<b>1</b>	<b>2</b>	<b>3</b>	<b>4</b>	<b>NR</b>
324.	5.1	3.3B	G	NR	5					✓				✓	
339.	5.1	3.11(3)	G	NR	5					✓				✓	
364	5.1	3.27	G	2	4					✓				✓	
371.	5.1.	4.4(1)	G	NR	5					✓				✓	
372.	5.1	4.5(1)	G	NR	5					✓				✓	
373	5.1	4.5(2)	G	2	4					✓				✓	
388.	5.1	5.4(2)	G	2	4					✓				✓	
401.	5.1	5.16	G	2	4					✓				✓	

<sup>3</sup> s = Section of Act

Licence Conditions – Licence clause Obligations- Electricity Industry Metering Code Clause					Priority	Adequacy of controls rating					Compliance Rating				
						A	B	C	D	NP	1	2	3	4	NR
402.	5.1	5.17(1)	G	2	4					✓					✓
405.	5.1	5.18	G	2	4					✓					✓
406.	5.1	5.19(1)	G	NR	5					✓					✓
407.	5.1	5.19(2)	G	NR	5					✓					✓
408.	5.1	5.19(3)	G	2	4					✓					✓
410.	5.1	5.19(6)	G	NR	5					✓					✓
416.	5.1	5.21(5)	G	2	4					✓					✓
417.	5.1	5.21(6)	G	NR	4					✓					✓
435.	5.1	5.27	G	2	4					✓					✓
448.	5.1	6.1(2)	G	2	4	✓					✓				
451.	5.1	7.2(1)	G	2	4	✓					✓				
453.	5.1	7.2(4)	G	2	4					✓					✓
454.	5.1	7.2(5)	G	2	4					✓					✓
455.	5.1	7.5	G	NR	5					✓					✓
456.	5.1	7.6(1)	G	NR	5					✓					✓
457.	5.1	8.1(1)	G	NR	5					✓					✓
458.	5.1	8.1(2)	G	2	4					✓					✓
459.	5.1	8.1(3)	G	NR	5					✓					✓
460.	5.1	8.1(4)	G	NR	5					✓					✓
461.	5.1	8.3(2)	G	NR	5					✓					✓

## 2.13 REVIEW EFFECTIVENESS

### 2.13.1 ASSET MANAGEMENT REVIEW EFFECTIVENESS SUMMARY

The overall effectiveness rating for each asset management process is based on the combination of the process and policy adequacy rating and the performance rating.

#### Asset management process and policy definition adequacy rating

Rating	Description	Criteria
A	Adequately defined	<ul style="list-style-type: none"> <li>Processes and policies are documented.</li> <li>Processes and policies adequately document the required performance of the assets.</li> <li>Processes and policies are subject to regular reviews, and updated where necessary.</li> <li>The asset management information system(s) are adequate in relation to the assets that are being managed.</li> </ul>
B	Requires some improvement	<ul style="list-style-type: none"> <li>Process and policy documentation requires improvement.</li> <li>Processes and policies do not adequately document the required performance of the assets.</li> <li>Reviews of processes and policies are not conducted regularly enough.</li> <li>The asset management information system(s) require minor improvements (taking into consideration the assets that are being managed).</li> </ul>
C	Requires significant improvement	<ul style="list-style-type: none"> <li>Process and policy documentation is incomplete or requires significant improvement.</li> <li>Processes and policies do not document the required performance of the assets.</li> <li>Processes and policies are significantly out of date.</li> <li>The asset management information system(s) require significant improvements (taking into consideration the assets that are being managed).</li> </ul>

<b>D</b>	Inadequate	<ul style="list-style-type: none"> <li>Processes and policies are not documented.</li> <li>The asset management information system(s) is not fit for purpose (taking into consideration the assets that are being managed).</li> </ul>
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### Asset management performance ratings

Rating	Description	Criteria
<b>1</b>	Performing effectively	<ul style="list-style-type: none"> <li>The performance of the process meets or exceeds the required levels of performance.</li> <li>Process effectiveness is regularly assessed, and corrective action taken where necessary.</li> </ul>
<b>2</b>	Opportunity for improvement	<ul style="list-style-type: none"> <li>The performance of the process requires some improvement to meet the required level.</li> <li>Process effectiveness reviews are not performed regularly enough.</li> <li>Process improvement opportunities are not actioned.</li> </ul>
<b>3</b>	Corrective action required	<ul style="list-style-type: none"> <li>The performance of the process requires significant improvement to meet the required level.</li> <li>Process effectiveness reviews are performed irregularly, or not at all.</li> <li>Process improvement opportunities are not actioned.</li> </ul>
<b>4</b>	Serious action required	<ul style="list-style-type: none"> <li>Process is not performed, or the performance is so poor that the process is considered to be ineffective.</li> </ul>

### 2.13.2 ASSET MANAGEMENT SYSTEM EFFECTIVENESS SUMMARY

ASSET MANAGEMENT SYSTEM COMPONENT & EFFECTIVENESS CRITERIA		Asset management process and policy definition adequacy rating	Asset management performance rating
<b>1</b>	<b>Asset planning</b>	<b>A</b>	<b>1</b>
1.1	Asset management plan covers the key requirements	A	1
1.2	Planning process and objectives reflect the needs of all stakeholders and is integrated with business planning	A	1
1.3	Service levels are defined	A	1
1.4	Non-asset options (e.g. demand management) are considered	A	1
1.5	Lifecycle costs of owning and operating assets are assessed	A	1
1.6	Funding options are evaluated	A	1
1.7	Costs are justified and cost drivers identified	A	1
1.8	Likelihood and consequences of asset failure are predicted	A	1
1.9	Plans are regularly reviewed and updated	A	1
<b>2.</b>	<b>Asset creation and acquisition</b>	<b>B</b>	<b>2</b>
2.1	Full project evaluations are undertaken for new assets, including comparative assessment of non-asset solutions	NP	NR
2.2	Evaluations include all life-cycle costs	A	NR
2.3	Projects reflect sound engineering and business decisions	A	NR
2.4	Commissioning tests are documented and completed	A	NR
2.5	Ongoing legal/environmental/safety obligations of the asset owner are assigned and understood	B	2
<b>3.</b>	<b>Asset disposal</b>	<b>A</b>	<b>NR</b>
3.1	Under-utilised and under-performing assets are identified as part of a regular systematic review process	A	1
3.2	The reasons for under-utilisation or poor performance are critically examined and corrective action or disposal undertaken	A	1

3.3	Disposal alternatives are evaluated	A	1
3.4	There is a replacement strategy for assets	A	NR
<b>4.</b>	<b>Environmental analysis</b>	<b>A</b>	<b>1</b>
4.1	Opportunities and threats in the system environment are assessed	A	1
4.2	Performance standards (availability of service, capacity continuity, emergency response, etc.) are measured and achieved	A	1
4.3	Compliance with statutory and regulatory requirements	A	1
4.4	Achievement of customer service levels	A	1
<b>5</b>	<b>Asset operations</b>	<b>A</b>	<b>1</b>
5.1	Operational policies and procedures are documented and linked to service levels required	A	1
5.2	Risk management is applied to prioritise operations tasks	A	1
5.3	Assets are documented in an Asset Register including asset type, location, material, plans of components, an assessment of assets' physical/structural condition and accounting data	A	1
5.4	Operational costs are measured and monitored	A	1
5.5	Staff resources are adequate and staff receive training commensurate with their responsibilities	A	1
<b>6</b>	<b>Asset maintenance</b>	<b>A</b>	<b>1</b>
6.1	Maintenance policies and procedures are documented and linked to service levels required	A	1
6.2	Regular inspections are undertaken of asset performance and condition	A	1
6.3	Maintenance plans (emergency, corrective and preventative) are documented and completed on schedule	A	1
6.4	Failures are analysed and operational/maintenance plans adjusted where necessary	A	1
6.5	Risk management is applied to prioritise maintenance tasks	A	1
6.6	Maintenance costs are measured and monitored	A	1
<b>7</b>	<b>Asset Management Information System (MIS)</b>	<b>A</b>	<b>1</b>
7.1	Adequate system documentation for users and IT operators	A	1
7.2	Input controls include appropriate verification and validation of data entered into the system	A	1
7.3	Logical security access controls appear adequate, such as passwords	A	1
7.4	Physical security access controls appear adequate	A	1
7.5	Data backup procedures appear adequate and backups are tested	A	1
7.6	Key computations related to Licensee performance reporting are materially accurate	A	1
7.7	Management reports appear adequate for the Licensee to monitor licence obligations	A	1
<b>8</b>	<b>Risk management</b>	<b>A</b>	<b>1</b>
8.1	Risk management policies and procedures exist and are being applied to minimise internal and external risks associated with the asset management system	A	1
8.2	Risks are documented in a risk register and treatment plans are actioned and monitored	A	1
8.3	The probability and consequences of asset failure are regularly assessed	A	1
<b>9</b>	<b>Contingency planning</b>	<b>A</b>	<b>1</b>
9.1	Contingency plans are documented, understood and tested to confirm their operability and to cover higher risks	A	1
<b>10</b>	<b>Financial planning</b>	<b>A</b>	<b>1</b>
10.1	The financial plan states the financial objectives and strategies and actions to achieve the objectives	A	1

10.2	The financial plan identifies the source of funds for capital expenditure and recurrent costs	A	1
10.3	The financial plan provides projections of operating statements (profit and loss) and statement of financial position (balance sheets)	A	1
10-4	The financial plan provides firm predictions on income for the next five years and reasonable indicative predictions beyond this period	A	1
10.5	The financial plan provides for the operations and maintenance, administration and capital expenditure requirements of the services	A	1
10.6	Significant variances in actual/budget income and expenses are identified and corrective action taken where necessary	A	1
<b>11</b>	<b>Capital expenditure planning</b>	<b>A</b>	<b>NR</b>
11.1	There is a capital expenditure plan that covers issues to be addressed, actions proposed, responsibilities and dates	A	NR
11.2	The plan provides reasons for capital expenditure and timing of expenditure	A	NR
11.3	The capital expenditure plan is consistent with the asset life and condition identified in the asset management plan	A	1
11.4	There is an adequate process to ensure that the capital expenditure plan is regularly updated and actioned	A	1
<b>12</b>	<b>Review of AMS</b>	<b>A</b>	<b>1</b>
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	A	1
2.2	Independent reviews (e.g. internal audit) are performed of the asset management system	A	1

## 2.14 OVERALL CONCLUSION

In my opinion, the Licensee maintained, in all material aspects, effective control procedures and an effective asset management system in relation to the Generation licence (EGL 23) for the review period on the relevant clauses referred to within the scope section of this report.

There are no ineffective issues that required corrective actions.

## 2.15 ESTABLISHING THE CONTEXT

The key legislation that governs the licensing of providers of Electricity is the Electricity Industry Act 2004. In turn, the compliance elements in the organization's Operating Licence were examined and referred to throughout the audit process.

### 2.15.1 AUDIT RESULTS AND RECOMMENDATIONS

#### Summary of significant results

There are 2 non-compliances.

### 2.15.2 COMPLIANCE ELEMENTS REQUIRING CORRECTIVE MEASURES

There are 2 issues requiring corrective action.

### 2.15.3 SUGGESTIONS FOR IMPROVEMENT

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There are no suggestions for improvement.

## 2.16 DETAILED FINDINGS

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The following sets out the audit findings

### 2.16.1 AUDIT WORK UNDERTAKEN

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We conducted interviews and enquiries to:

- Understand the control environment by determining the responsibility matrix and key control points
- Obtain the policies and procedures for managing licensed areas; and
- Identify the information systems and processes employed to manage licensed areas
- Determine the level of understanding of the systems and processes for managing licensed areas
- In reviewing the procedures and protocols for managing provision of services within a licensed area, where applicable, we obtained flowcharts of the processes and assessed the reasonableness of the decision matrix and the adequacy of the control points implemented by the Licensee.

### 2.16.2 FURTHER CONTROL STRATEGIES

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The Licensee has compliance manual to assist compliance with regulatory items and a risk register.

## 2.17 POST AUDIT/ POST REVIEW IMPLEMENTATION PLANS

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The Licensee will provide to the ERA a post-audit and post-review implementation plan, with the audit or review report.

## 2.18 AUDIT/ REVIEW EVIDENCE

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The following was considered in the audit/review.

- Generation Licence V3
- Contact details
- Asset Register
- Spares List
- Tronox Financial reports
- Tronox Consolidated financial statements
- Annual compliance returns
- Licence fees payment details



- Asset Management Plan
- Western Power Access Agreement
- HSE and Environment management plan
- Tronox emergency Response plan
- Tronox-Western Power operating agreement
- MEX reports and screen shots
- Financial auditor report
- Sample tender documents
- Training certificates



## 2.19 DETAILED AUDIT FINDINGS

The following sets out the audit findings

### 2.19.1 ELECTRICITY INDUSTRY ACT – LICENCE CONDITIONS AND OBLIGATIONS

<b>Item 101</b> Generation Licence condition 14.1	Adequacy of controls rating A	Compliance rating 1	
<b>Licence:</b> Generation			
<i>Electricity Industry Act section 13(1)</i> A Licensee must, not less than once every 24 months, provide the ERA with a performance audit conducted by an independent expert acceptable to the ERA.			
<b>Observations</b>			
Documents	<input checked="" type="checkbox"/>	Compliance	<input checked="" type="checkbox"/>
<b>Evidence:</b> interviewed Site Manager, Technical Officer, Contracts Specialist, listed staff. <b>Documents:</b> The Licensee contracted with the auditor to carry out the audit. The documents were forwarded to the ERA as part of the approval of the auditor. Licensee received approval from the ERA for audit scope and appointment of auditor.			
Process	<input checked="" type="checkbox"/>	Outcome	<input checked="" type="checkbox"/>
Output	<input checked="" type="checkbox"/>	Reporting	<input checked="" type="checkbox"/>
Compliance	<input checked="" type="checkbox"/>		
The Licensee contracted with the auditor to carry out the audit to meet the requirements. The last audit met the requirements.			
<b>Issues</b>			
None			
<b>Recommendations</b>			
None			

<b>Item 102</b> Generation Licence condition 20.1	Adequacy of controls rating A	Compliance rating 1	
<b>Licence:</b> Generation			
<i>Electricity Industry Act section 13(1)</i> A Licensee must provide for an asset management system.			
<b>Observations</b>			
Documents	<input checked="" type="checkbox"/>	Compliance	<input checked="" type="checkbox"/>
<b>Evidence:</b> interviewed Site Manager, Technical Officer, Contracts Specialist, listed staff. <b>Documents:</b> Include, Risk management policy, MEX Screen shots, Asset Register, Spares List, Tronox Financial reports, Annual compliance returns, Licence fees payment details,			
Process	<input checked="" type="checkbox"/>	Outcome	<input checked="" type="checkbox"/>
Output	<input checked="" type="checkbox"/>	Reporting	<input checked="" type="checkbox"/>
Compliance	<input checked="" type="checkbox"/>		
The Licensee has an asset management system. A copy of the asset management plan and the operations and maintenance asset management plan was obtained, and maintenance systems reviewed at site. These included maintenance planning modules in MEX and spreadsheets. The asset management system includes time based and conditioned based maintenance. The review examined the efficacy of the asset management system.			
<b>Issues</b>			
None			
<b>Recommendations</b>			
None			

<b>Item 103</b> Generation Licence condition 20.2 & 20.3	Adequacy of controls rating Not Performed	Compliance rating Not Rated	
<b>Licence:</b> <i>Generation</i>			
<i>Electricity Industry Act section 13(1)</i> A Licensee must notify details of the asset management system and any substantial changes to it to the ERA.			
<b>Observations</b>			
Documents	<input type="checkbox"/>	Compliance	<input type="checkbox"/>
<b>Evidence:</b> interviewed Site Manager, Technical Officer, Contracts Specialist, listed staff. Documents: The asset management system was examined in the review.			
Process	<input type="checkbox"/>	Outcome	<input type="checkbox"/>
Output	<input type="checkbox"/>	Reporting	<input type="checkbox"/>
Compliance	<input type="checkbox"/>		<input type="checkbox"/>
In the licence application, the asset management system was advised to the ERA. There have been no substantial changes that required notifying the ERA. There has been no activity in audit period.			
<b>Issues</b>			
None			
<b>Recommendations</b>			
None			

<b>Item 104</b> Generation Licence condition 20.4	Adequacy of controls rating A	Compliance rating 1	
<b>Licence:</b> <i>Generation</i>			
<i>Electricity Industry Act section 14(1)(c)</i> A Licensee must provide the ERA with a report by an independent expert as to the effectiveness of its asset management system every 24 months, or such longer period as determined by the ERA.			
<b>Observations</b>			
Documents	<input checked="" type="checkbox"/>	Compliance	<input checked="" type="checkbox"/>
<b>Evidence:</b> interviewed Site Manager, Technical Officer, Contracts Specialist, listed staff. Documents: Include, Asset Management Plan. Approval and Appointment letters for current review.			
Process	<input checked="" type="checkbox"/>	Outcome	<input checked="" type="checkbox"/>
Output	<input checked="" type="checkbox"/>	Reporting	<input checked="" type="checkbox"/>
Compliance	<input checked="" type="checkbox"/>		<input checked="" type="checkbox"/>
The Licensee contracted McGill Engineering Services, with approval of the ERA, for the review in accordance with the requirements and the review plan documents have been forwarded to the ERA as part of approval of the auditor.			
<b>Issues</b>			
None			
<b>Recommendations</b>			
None			

<b>Item 105</b> Generation Licence condition 4.1	Adequacy of controls rating C	Compliance rating 2	
<b>Licence:</b> <i>Generation</i>			
<i>Electricity Industry Act section 17(1)</i> A Licensee must pay to the ERA the prescribed licence fee within one month after the day of grant or renewal of the licence and within one month after each anniversary of that day during the term of the licence.			
<b>Observations</b>			
Documents	<input checked="" type="checkbox"/>	Compliance	<input checked="" type="checkbox"/>

<b>Evidence:</b> interviewed Site Manager, Technical Officer, Contracts Specialist, listed staff. Documents: Include invoices and receipts									
Process	<input checked="" type="checkbox"/>	Outcome	<input checked="" type="checkbox"/>	Output	<input checked="" type="checkbox"/>	Reporting	<input checked="" type="checkbox"/>	Compliance	<input checked="" type="checkbox"/>
Fees were not all paid on time e.g. the 2015/2016 annual fee was 5 days late. Five quarterly fees were also late.									
<b>Issues</b>									
Fees were not all paid on time.									
<b>Recommendations</b>									
Improve controls on regulatory obligations.									

<b>Item 106</b> Generation Licence condition 5.1	Adequacy of controls rating A	Compliance rating 1							
<b>Licence:</b> <i>Generation</i>									
<i>Electricity Industry Act section 31(3)</i> 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.									
<b>Observations</b>									
Documents	<input checked="" type="checkbox"/>	Compliance	<input checked="" type="checkbox"/>						
<b>Evidence:</b> interviewed Site Manager, Technical Officer, Contracts Specialist, listed staff. Documents: Include incident log.									
Process	<input checked="" type="checkbox"/>	Outcome	<input checked="" type="checkbox"/>	Output	<input checked="" type="checkbox"/>	Reporting	<input checked="" type="checkbox"/>	Compliance	<input checked="" type="checkbox"/>
There have been 27 forced interruptions of supply from generator faults, exhaust air cowl, HRSG damper faults and system outages. Also the system is islanded when there is a threat of lightning. All interruptions were minimized.									
<b>Issues</b>									
None.									
<b>Recommendations</b>									
None.									

<b>Item 107</b> Generation Licence condition 5.1	Adequacy of controls rating Not Performed	Compliance rating Not Rated							
<b>Licence:</b> <i>Generation</i>									
<i>Electricity Industry Act section 41(6)</i> A Licensee must pay the costs of taking an interest in land or an easement over land.									
<b>Observations</b>									
Documents	<input type="checkbox"/>	Compliance	<input type="checkbox"/>						
<b>Evidence:</b> interviewed Site Manager, Technical Officer, Contracts Specialist, listed staff. Documents: Not applicable									
Process	<input type="checkbox"/>	Outcome	<input type="checkbox"/>	Output	<input type="checkbox"/>	Reporting	<input type="checkbox"/>	Compliance	<input type="checkbox"/>
No land has been acquired under Part 9 of the Land Administration Act and therefore no costs and expenses for taking an interest in land or an easement over land. There has been no land acquired in the audit period.									
<b>Issues</b>									
None									
<b>Recommendations</b>									
None									

2.19.2 ELECTRICITY LICENCE – LICENCE CONDITIONS AND OBLIGATIONS

<b>Item 119</b> Electricity Industry Act section 11	Adequacy of controls rating A	Compliance rating 1	
<b>Licence:</b> <i>Generation</i>			
<i>Generation Licence condition 12.1</i> A Licensee and any related body corporate must maintain accounting records that comply with the Australian Accounting Standards Board Standards or equivalent International Accounting Standards.			
<b>Observations</b>			
Documents	<input checked="" type="checkbox"/>	Compliance	<input checked="" type="checkbox"/>
<b>Evidence:</b> interviewed Site Manager, Technical Officer, Contracts Specialist, listed staff. Documents: The Tronox annual report declaration by the financial auditor has been sighted. The Tronox financial accounts refer to compliance with the appropriate accounting standards (International Financial Reporting Standards and US Generally Accepted Accounting Principles adopted by the US Securities and Exchange Commission.)			
Process	<input checked="" type="checkbox"/>	Outcome	<input checked="" type="checkbox"/>
Output	<input checked="" type="checkbox"/>	Reporting	<input checked="" type="checkbox"/>
Compliance	<input checked="" type="checkbox"/>		
The Tronox annual reports/business plan show compliance with accounting standards - comply with Australian Accounting Standards Board (AASB) requirements.			
<b>Issues</b>			
None			
<b>Recommendations</b>			
None			

<b>Item 120</b> Electricity Industry Act section 11	Adequacy of controls rating Not Performed	Compliance rating Not Rated	
<b>Licence:</b> <i>Generation</i>			
<i>Generation Licence condition 13.4</i> A Licensee must comply with any individual performance standards prescribed by the ERA.			
<b>Observations</b>			
Documents	<input type="checkbox"/>	Compliance	<input type="checkbox"/>
<b>Evidence:</b> interviewed Site Manager, Technical Officer, Contracts Specialist, listed staff. Documents: Not applicable.			
Process	<input type="checkbox"/>	Outcome	<input type="checkbox"/>
Output	<input type="checkbox"/>	Reporting	<input type="checkbox"/>
Compliance	<input type="checkbox"/>		
There are no individual performance standards applied by the ERA to assess compliance.			
<b>Issues</b>			
None			
<b>Recommendations</b>			
None			

<b>Item 121</b> Electricity Industry Act section 11	Adequacy of controls rating A	Compliance rating 1	
<b>Licence:</b> <i>Generation</i>			
<i>Generation Licence condition 14.2</i> A Licensee must comply, and require its auditor to comply, with the ERA's standard audit guidelines dealing with the performance audit.			
<b>Observations</b>			
Documents	<input checked="" type="checkbox"/>	Compliance	<input checked="" type="checkbox"/>

<b>Evidence:</b> interviewed Site Manager, Technical Officer, Contracts Specialist, listed staff. Documents: The audit plan was forwarded to the ERA, approval of the auditor obtained prior to appointment.									
Process	<input checked="" type="checkbox"/>	Outcome	<input checked="" type="checkbox"/>	Output	<input checked="" type="checkbox"/>	Reporting	<input checked="" type="checkbox"/>	Compliance	<input checked="" type="checkbox"/>
The Licensee has contracted with the auditor to comply with the requirements.									
<b>Issues</b>									
None									
<b>Recommendations</b>									
None									

<b>Item 122</b> Electricity Industry Act section 11	Adequacy of controls rating A	Compliance rating 1							
<b>License:</b> <i>Generation</i>									
<i>Generation Licence condition 20.5</i> A Licensee must comply, and must require the Licensee's expert to comply, with the relevant aspects of the ERA's standard guidelines dealing with the asset management system review.									
<b>Observations</b>									
Documents	<input checked="" type="checkbox"/>	Compliance	<input checked="" type="checkbox"/>						
<b>Evidence:</b> interviewed Site Manager, Technical Officer, Contracts Specialist, listed staff. Documents: The AMS review plan has been forwarded to the ERA approval of the reviewer obtained prior to appointment.									
Process	<input checked="" type="checkbox"/>	Outcome	<input checked="" type="checkbox"/>	Output	<input checked="" type="checkbox"/>	Reporting	<input checked="" type="checkbox"/>	Compliance	<input checked="" type="checkbox"/>
The Licensee has contracted with the reviewer to comply with the requirements.									
<b>Issues</b>									
None									
<b>Recommendations</b>									
None									

<b>Item 123</b> Electricity Industry Act section 11	Adequacy of controls rating Not Performed	Compliance rating Not Rated							
<b>License:</b> <i>Generation</i>									
<i>Generation Licence condition 15.1</i> A Licensee must report to the ERA, in the manner prescribed, if a Licensee is under external administration or there is a significant change in the circumstances upon which the licence was granted which may affect a Licensee's ability to meet its obligations.									
<b>Observations</b>									
Documents	<input type="checkbox"/>	Compliance	<input type="checkbox"/>						
<b>Evidence:</b> interviewed Site Manager, Technical Officer, Contracts Specialist, listed staff. Documents: Not applicable.									
Process	<input type="checkbox"/>	Outcome	<input type="checkbox"/>	Output	<input type="checkbox"/>	Reporting	<input type="checkbox"/>	Compliance	<input type="checkbox"/>
The Licensee is not under external administration so not able to assess compliance with advice requirements.									
<b>Issues</b>									
None									
<b>Recommendations</b>									
None									

Item 124 Electricity Industry Act section 11	Adequacy of controls rating C	Compliance rating 2							
<b>Licence:</b> <i>Generation</i>									
<i>Generation Licence condition 16.1</i> A Licensee must provide the ERA, in the manner prescribed, any information the ERA requires in connection with its functions under the Electricity Industry Act.									
<b>Observations</b>									
Documents	<input checked="" type="checkbox"/>	Compliance	<input checked="" type="checkbox"/>						
<b>Evidence:</b> interviewed Site Manager, Technical Officer, Contracts Specialist, listed staff. The Site Superintendent advised that there have been no requests for information from the ERA other than the Compliance Report. Documents:									
Process	<input checked="" type="checkbox"/>	Outcome	<input checked="" type="checkbox"/>	Output	<input checked="" type="checkbox"/>	Reporting	<input checked="" type="checkbox"/>	Compliance	<input checked="" type="checkbox"/>
The Licensee has not met the reporting requirements e.g. the 2014/2015/2016 reports were late. The non-compliance was noted in subsequent reports.									
<b>Issues</b>									
Reports were late									
<b>Recommendations</b>									
Improve controls on regulatory requirements.									

Item 125 Electricity Industry Act section 11	Adequacy of controls rating Not Performed	Compliance rating Not Rated							
<b>Licence:</b> <i>Generation</i>									
<i>Generation Licence condition 17.1 &amp; 17.2</i> A Licensee must publish any information it is directed by the ERA to publish, within the timeframes specified.									
<b>Observations</b>									
Documents	<input type="checkbox"/>	Compliance	<input type="checkbox"/>						
<b>Evidence:</b> interviewed Site Manager, Technical Officer, Contracts Specialist, listed staff. Documents: Not applicable.									
Process	<input type="checkbox"/>	Outcome	<input type="checkbox"/>	Output	<input type="checkbox"/>	Reporting	<input type="checkbox"/>	Compliance	<input type="checkbox"/>
The ERA has not directed any information to be published so unable to assess compliance with publishing requirements.									
<b>Issues</b>									
None									
<b>Recommendations</b>									
None									

Item 126 Electricity Industry Act section 11	Adequacy of controls rating A	Compliance rating 1							
<b>Licence:</b> <i>Generation</i>									
<i>Generation Licence condition 18.1</i> Unless otherwise specified, all notices must be in writing.									
<b>Observations</b>									
Documents	<input checked="" type="checkbox"/>	Compliance	<input checked="" type="checkbox"/>						
<b>Evidence:</b> interviewed Site Manager, Technical Officer, Contracts Specialist, listed staff. Documents: Sample communication with ERA sighted.									
Process	<input checked="" type="checkbox"/>	Outcome	<input checked="" type="checkbox"/>	Output	<input checked="" type="checkbox"/>	Reporting	<input checked="" type="checkbox"/>	Compliance	<input checked="" type="checkbox"/>
No notices have been required by the ERA. All material communication with the ERA is in writing.									

<b>Issues</b>
None
<b>Recommendations</b>
None

**2.19.3 ELECTRICITY INDUSTRY METERING CODE – LICENCE CONDITIONS AND OBLIGATIONS (ALL LICENCE CONDITION LICENCE CLAUSE 5.1)**

<b>Item 324</b> Licence condition 5.1	Adequacy of controls rating Not Performed	Compliance rating Not Rated	
<b>Licence:</b> <i>Generation</i>			
<i>Electricity Industry Metering Code clause 3.3B</i> A user who is aware of bi-directional flows at a metering point which was not previously subject to a bi-directional electricity flows or any changes in a customer's or user's circumstances in a metering point which will result in bi-directional electricity flows must notify the network operator within 2 business days.			
<b>Observations</b>			
Documents	<input type="checkbox"/>	Compliance	<input type="checkbox"/>
<b>Evidence:</b> interviewed Site Manager, Technical Officer, Contracts Specialist, listed staff, inspected Generation plant. Documents: n/a			
Process	<input type="checkbox"/>	Outcome	<input type="checkbox"/>
Output	<input type="checkbox"/>	Reporting	<input type="checkbox"/>
Compliance	<input type="checkbox"/>		
The Licensee has no meters with all metering by Western Power. The meters are bidirectional with the Licensee consuming power when not generating or generating insufficiently to provide the steam or electricity for manufacturing and can export power. These meters were always bi-directional and there have been no changes in a customer's or user's circumstances at a metering point.			
<b>Issues</b>			
None			
<b>Recommendations</b>			
None			

<b>Item 360</b> Licence condition 5.1	Adequacy of controls rating Not Performed	Compliance rating Not Rated	
<b>Licence:</b> <i>Generation</i>			
<i>Electricity Industry Metering Code clause 3.11(3)</i> A Code participant who becomes aware of an outage or malfunction of a metering installation must advise the network operator as soon as practicable.			
<b>Observations</b>			
Documents	<input type="checkbox"/>	Compliance	<input type="checkbox"/>
<b>Evidence:</b> interviewed Site Manager, Technical Officer, Contracts Specialist, listed staff, inspected Generation plant. Documents: n/a.			
Process	<input type="checkbox"/>	Outcome	<input type="checkbox"/>
Output	<input type="checkbox"/>	Reporting	<input type="checkbox"/>
Compliance	<input type="checkbox"/>		
The Licensee has no meters with all metering by Western Power. The Licensee is not aware of any outage or malfunction to require advice.			
<b>Issues</b>			
None			



<b>Recommendations</b>
None

<b>Item 364</b> Licence condition 5.1	Adequacy of controls rating Not Performed	Compliance rating Not Rated	
<b>Licence:</b> <i>Generation</i>			
<i>Electricity Industry Metering Code clause 3.27</i> 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.			
<b>Observations</b>			
Documents	<input type="checkbox"/>	Compliance	<input type="checkbox"/>
<b>Evidence:</b> interviewed Site Manager, Technical Officer, Contracts Specialist, listed staff, inspected Generation plant. Documents: n/a.			
Process	<input type="checkbox"/>	Outcome	<input type="checkbox"/>
Output	<input type="checkbox"/>	Reporting	<input type="checkbox"/>
Compliance	<input type="checkbox"/>		
The Licensee has no tariff meters with all metering by Western Power and installed by them.			
<b>Issues</b>			
None			
<b>Recommendations</b>			
None			

<b>Item 371</b> Licence condition 5.1	Adequacy of controls rating Not Performed	Compliance rating Not Rated	
<b>Licence:</b> <i>Generation</i>			
<i>Electricity Industry Metering Code clause 4.4(1)</i> If there is a discrepancy between energy data held in a metering installation and data held in the metering database, the affected Code participants and the network operator must liaise together to determine the most appropriate way to resolve a discrepancy.			
<b>Observations</b>			
Documents	<input type="checkbox"/>	Compliance	<input type="checkbox"/>
<b>Evidence:</b> interviewed Site Manager, Technical Officer, Contracts Specialist, listed staff, inspected Generation plant. Documents: n/a.			
Process	<input type="checkbox"/>	Outcome	<input type="checkbox"/>
Output	<input type="checkbox"/>	Reporting	<input type="checkbox"/>
Compliance	<input type="checkbox"/>		
There has been no discrepancy between energy data held in a metering installation and data held in the metering database The Licensee has no tariff meters with all metering by Western Power. The Licensee has no metering database and no metering installation to allow a discrepancy. The Licensee has no customers associated with this metering point and this obligation is not performed/not rated. It has a customer associated with the connection point but this is not a metering installation on the network and this is not related to the generation licence and its metering installation. The network operator has no involvement in the metering beyond its meter at the connection point. In any case the installation predates the meter code so nothing is required to be updated to the Code (subject to bi-directional metering which has always existed).			
<b>Issues</b>			
None			
<b>Recommendations</b>			
None			

<b>Item 372</b> Licence condition 5.1	Adequacy of controls rating Not Performed	Compliance rating Not Rated
<b>Licence:</b> Generation		
<i>Electricity Industry Metering Code clause 4.5(1)</i> A Code participant must not knowingly permit the registry to be materially inaccurate.		
<b>Observations</b>		
Documents	<input type="checkbox"/>	Compliance
<b>Evidence:</b> interviewed Site Manager, Technical Officer, Contracts Specialist, listed staff, inspected Generation plant. Documents: n/a.		
Process	<input type="checkbox"/>	Outcome
Output	<input type="checkbox"/>	Reporting
Compliance	<input type="checkbox"/>	
The Licensee did not knowingly permit the registry to be materially inaccurate. The Licensee has no tariff meters with all metering by Western Power. The Licensee is no knowledge of Western Power's registry other than their own details.		
<b>Issues</b>		
None		
<b>Recommendations</b>		
None		

<b>Item 373</b> Licence condition 5.1	Adequacy of controls rating Not Performed	Compliance rating Not Rated
<b>Licence:</b> Generation		
<i>Electricity Industry Metering Code clause 4.5(2)</i> Subject to subclause 5.19(6), 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.		
<b>Observations</b>		
Documents	<input type="checkbox"/>	Compliance
<b>Evidence:</b> interviewed Site Manager, Technical Officer, Contracts Specialist, listed staff, inspected Generation plant. Documents: n/a.		
Process	<input type="checkbox"/>	Outcome
Output	<input type="checkbox"/>	Reporting
Compliance	<input type="checkbox"/>	
The Licensee has no tariff meters with all metering by Western Power. The Licensee has no customers to have any Western Power registry data, nor has there been any change to their own data.		
<b>Issues</b>		
None		
<b>Recommendations</b>		
None		

<b>Item 388</b> Licence condition 5.1	Adequacy of controls rating Not Performed	Compliance rating Not Rated
<b>Licence:</b> Generation		
<i>Electricity Industry Metering Code clause 5.4(2)</i> A user must, when reasonably requested by a network operator, assist the network operator to comply with the network operator's obligation under subclause 5.4(1).		
<b>Observations</b>		
Documents	<input type="checkbox"/>	Compliance
<b>Evidence:</b> interviewed Site Manager, Technical Officer, Contracts Specialist, listed staff, inspected Generation plant. Documents: n/a.		
Process	<input type="checkbox"/>	Outcome
Output	<input type="checkbox"/>	Reporting
Compliance	<input type="checkbox"/>	

The Licensee has no tariff meters with all metering by Western Power. There have been no requests from Western Power.
<b>Issues</b>
None
<b>Recommendations</b>
None

<b>Item 401</b> Licence condition 5.1	Adequacy of controls rating Not Performed	Compliance rating Not Rated	
<b>Licence:</b> <i>Generation</i>			
<i>Electricity Industry Metering Code clause 5.16</i> If a user collects or receives energy data from a metering installation, then the user must provide the network operator with the energy data (in accordance with the communication rules) within the timeframes prescribed.			
<b>Observations</b>			
Documents	<input type="checkbox"/>	Compliance	<input type="checkbox"/>
<b>Evidence:</b> interviewed Site Manager, Technical Officer, Contracts Specialist, listed staff, inspected Generation plant. Documents: n/a.			
Process	<input type="checkbox"/>	Outcome	<input type="checkbox"/>
Output	<input type="checkbox"/>	Reporting	<input type="checkbox"/>
Compliance	<input type="checkbox"/>		<input type="checkbox"/>
The Licensee has no tariff meters with all metering by Western Power. The Licensee does not collect or receive energy data from a metering installation related to the generation licence.			
<b>Issues</b>			
None			
<b>Recommendations</b>			
None			

<b>Item 402</b> Licence condition 5.1	Adequacy of controls rating Not Performed	Compliance rating Not Rated	
<b>Licence:</b> <i>Generation</i>			
<i>Electricity Industry Metering Code clause 5.17(1)</i> 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.			
<b>Observations</b>			
Documents	<input type="checkbox"/>	Compliance	<input type="checkbox"/>
<b>Evidence:</b> interviewed Site Manager, Technical Officer, Contracts Specialist, listed staff, inspected Generation plant. Documents: n/a.			
Process	<input type="checkbox"/>	Outcome	<input type="checkbox"/>
Output	<input type="checkbox"/>	Reporting	<input type="checkbox"/>
Compliance	<input type="checkbox"/>		<input type="checkbox"/>
The Licensee has no tariff meters with all metering by Western Power. The Licensee has no requirement by an enactment or an agreement to provide standing data and validated, and where necessary substituted or estimated, energy data to the user's customer to which that information relates.			
<b>Issues</b>			
None			
<b>Recommendations</b>			
None			

<b>Item 405</b> Licence condition 5.1	Adequacy of controls rating Not Performed	Compliance rating Not Rated
<b>Licence:</b> <i>Generation</i>		
<i>Electricity Industry Metering Code clause 5.18</i> If a user collects or receives information regarding a change in the energisation status of a metering point then the user must provide the network operator with the prescribed information, including the stated attributes, within the timeframes prescribed.		
<b>Observations</b>		
Documents	<input type="checkbox"/>	Compliance
<b>Evidence:</b> interviewed Site Manager, Technical Officer, Contracts Specialist, listed staff, inspected Generation plant. Documents: n/a.		
Process	<input type="checkbox"/>	Outcome
Output	<input type="checkbox"/>	Reporting
Compliance	<input type="checkbox"/>	
The Licensee has no tariff meters with all metering by Western Power. The Licensee was not aware of any change of energisation status of a metering point during the audit period.		
<b>Issues</b>		
None		
<b>Recommendations</b>		
None		

<b>Item 406</b> Licence condition 5.1	Adequacy of controls rating Not Performed	Compliance rating Not Rated
<b>Licence:</b> <i>Generation</i>		
<i>Electricity Industry Metering Code clause 5.19(2)</i> 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, and provide that information to the network operator.		
<b>Observations</b>		
Documents	<input type="checkbox"/>	Compliance
<b>Evidence:</b> interviewed Site Manager, Technical Officer, Contracts Specialist, listed staff, inspected Generation plant. Documents: n/a.		
Process	<input type="checkbox"/>	Outcome
Output	<input type="checkbox"/>	Reporting
Compliance	<input type="checkbox"/>	
The Licensee has no tariff meters with all metering by Western Power. There have been no requests from Western Power.		
<b>Issues</b>		
None		
<b>Recommendations</b>		
None		

<b>Item 407</b> Licence condition 5.1	Adequacy of controls rating Not Performed	Compliance rating Not Rated
<b>Licence:</b> <i>Generation</i>		
<i>Electricity Industry Metering Code clause 5.19(2)</i> A user must, to the extent that it is able, collect and maintain a record of the prescribed information in relation to the site of each connection point with which the user is associated.		
<b>Observations</b>		
Documents	<input type="checkbox"/>	Compliance
<b>Evidence:</b> interviewed Site Manager, Technical Officer, Contracts Specialist, listed staff, inspected Generation plant. Documents: n/a.		

Process	<input type="checkbox"/>	Outcome	<input type="checkbox"/>	Output	<input type="checkbox"/>	Reporting	<input type="checkbox"/>	Compliance	<input type="checkbox"/>
The Licensee has no tariff meters with all metering by Western Power. This connection point is with Western Power and there is no requirement to collect and maintain a record of the prescribed information from this connection point. The network operator has no involvement in customers associated with the connection point of the Licensee.									
<b>Issues</b>									
None									
<b>Recommendations</b>									
None									

<b>Item 408</b> Licence condition 5.1	Adequacy of controls rating Not Performed	Compliance rating Not Rated							
<b>Licence:</b> <i>Generation</i>									
<i>Electricity Industry Metering Code clause 5.19(3)</i> Subject to subclauses 5.19(3A) and 5.19(6), the user must, within 1 business day after becoming aware of any change in an attribute described in subclause 5.19(2), notify the network operator of the change.									
<b>Observations</b>									
Documents	<input type="checkbox"/>	Compliance	<input type="checkbox"/>						
<b>Evidence:</b> interviewed Site Manager, Technical Officer, Contracts Specialist, listed staff, inspected Generation plant. Documents: n/a.									
Process	<input type="checkbox"/>	Outcome	<input type="checkbox"/>	Output	<input type="checkbox"/>	Reporting	<input type="checkbox"/>	Compliance	<input type="checkbox"/>
The Licensee has no meters with all metering by Western Power. The Licensee is not aware of any changes in attributes.									
<b>Issues</b>									
None									
<b>Recommendations</b>									
None									

<b>Item 410</b> Licence condition 5.1	Adequacy of controls rating Not Performed	Compliance rating Not Rated							
<b>Licence:</b> <i>Generation</i>									
<i>Electricity Industry Metering Code clause 5.19(6)</i> The user must use reasonable endeavours to ensure that it does not notify the network operator of a change in an attribute described in subclause 5.19(2) that results from the provision of standing data by the network operator to the user.									
<b>Observations</b>									
Documents	<input type="checkbox"/>	Compliance	<input type="checkbox"/>						
<b>Evidence:</b> interviewed Site Manager, Technical Officer, Contracts Specialist, listed staff, inspected Generation plant. Documents: n/a.									
Process	<input type="checkbox"/>	Outcome	<input type="checkbox"/>	Output	<input type="checkbox"/>	Reporting	<input type="checkbox"/>	Compliance	<input type="checkbox"/>
The Licensee did not notify the network operator of a change in an attribute described in subclause 5.19(2) that results from the provision of standing data by the network operator to the user. The Licensee has no tariff meters with all metering by Western Power. There have been no requests from Western Power.									
<b>Issues</b>									
None									
<b>Recommendations</b>									
None									

<b>Item 416</b> Licence condition 5.1	Adequacy of controls rating Not Performed	Compliance rating Not Rated
<b>Licence:</b> <i>Generation</i>		
<i>Electricity Industry Metering Code clause 5.21(5)</i> A Code participant must not request a test or audit under subclause 5.21(1) 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.		
<b>Observations</b>		
Documents	<input type="checkbox"/>	Compliance
<b>Evidence:</b> interviewed Site Manager, Technical Officer, Contracts Specialist, listed staff, inspected Generation plant. Documents: n/a.		
Process	<input type="checkbox"/>	Outcome
Output	<input type="checkbox"/>	Reporting
Compliance	<input type="checkbox"/>	
The Licensee has no tariff meters with all metering by Western Power. There have been no requests for tests or audits by either party.		
<b>Issues</b>		
None		
<b>Recommendations</b>		
None		

<b>Item 417</b> Licence condition 5.1	Adequacy of controls rating Not Performed	Compliance rating Not Rated
<b>Licence:</b> <i>Generation</i>		
<i>Electricity Industry Metering Code clause 5.21(6)</i> A Code participant must not make a request under subclause 5.21(1) that is inconsistent with any access arrangement or agreement.		
<b>Observations</b>		
Documents	<input type="checkbox"/>	Compliance
<b>Evidence:</b> interviewed Site Manager, Technical Officer, Contracts Specialist, listed staff, inspected Generation plant. Documents: n/a.		
Process	<input type="checkbox"/>	Outcome
Output	<input type="checkbox"/>	Reporting
Compliance	<input type="checkbox"/>	
The Licensee has no tariff meters with all metering by Western Power. There have been no requests for tests or audits by either party.		
<b>Issues</b>		
None		
<b>Recommendations</b>		
None		

<b>Item 435</b> Licence condition 5.1	Adequacy of controls rating Not Performed	Compliance rating Not Rated
<b>Licence:</b> <i>Generation</i>		
<i>Electricity Industry Metering Code clause 5.27</i> Upon request from a network operator, the current user for a connection point must provide the network operator with customer attribute information that it reasonably believes are missing or incorrect within the timeframes prescribed.		
<b>Observations</b>		
Documents	<input type="checkbox"/>	Compliance
<b>Evidence:</b> interviewed Site Manager, Technical Officer, Contracts Specialist, listed staff, inspected Generation plant. Documents: n/a.		
Process	<input type="checkbox"/>	Outcome
Output	<input type="checkbox"/>	Reporting
Compliance	<input type="checkbox"/>	

The Licensee has no tariff meters with all metering by Western Power. There have been no requests.
<b>Issues</b>
None
<b>Recommendations</b>
None

<b>Item 448</b> Licence condition 5.1	Adequacy of controls rating A	Compliance rating 1							
<b>Licence:</b> <i>Generation</i>									
<i>Electricity Industry Metering Code clause 6.1(2)</i> A user must, in relation to a network on which it has an access contract, comply with the rules, procedures, agreements and criteria prescribed.									
<b>Observations</b>									
Documents	<input checked="" type="checkbox"/>	Compliance	<input checked="" type="checkbox"/>						
<b>Evidence:</b> interviewed Site Manager, Technical Officer, Contracts Specialist, listed staff, inspected Generation plant. Documents: Western Power ETAC.									
Process	<input checked="" type="checkbox"/>	Outcome	<input checked="" type="checkbox"/>	Output	<input checked="" type="checkbox"/>	Reporting	<input checked="" type="checkbox"/>	Compliance	<input checked="" type="checkbox"/>
The Licensee has an access contract with Western Power. There have been no breaches of the rules, procedures, agreements and criteria prescribed.									
<b>Issues</b>									
None									
<b>Recommendations</b>									
None									

<b>Item 451</b> Licence condition 5.1	Adequacy of controls rating A	Compliance rating 1							
<b>Licence:</b> <i>Generation</i>									
<i>Electricity Industry Metering Code clause 7.2(1)</i> 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.									
<b>Observations</b>									
Documents	<input checked="" type="checkbox"/>	Compliance	<input checked="" type="checkbox"/>						
<b>Evidence:</b> interviewed Site Manager, Technical Officer, Contracts Specialist, listed staff, inspected Generation plant. Documents: n/a.									
Process	<input checked="" type="checkbox"/>	Outcome	<input checked="" type="checkbox"/>	Output	<input checked="" type="checkbox"/>	Reporting	<input checked="" type="checkbox"/>	Compliance	<input checked="" type="checkbox"/>
The Licensee has no tariff meters with all metering by Western Power. Western Power has the contact details and the licensee’s control room operates 24/7.									
<b>Issues</b>									
None									
<b>Recommendations</b>									
None									

<b>Item 453</b> Licence condition 5.1	Adequacy of controls rating Not Performed	Compliance rating Not Rated
<b>Licence:</b> <i>Generation</i>		

<i>Electricity Industry Metering Code clause 7.2(4)</i> If requested by a network operator with whom it has entered into an access contract, the Code participant must notify its contact details to a network operator within 3 business days after the request.									
<b>Observations</b>									
Documents	<input type="checkbox"/>	Compliance	<input type="checkbox"/>						
<b>Evidence:</b> interviewed Site Manager, Technical Officer, Contracts Specialist, listed staff, inspected Generation plant. Documents: n/a.									
Process	<input type="checkbox"/>	Outcome	<input type="checkbox"/>	Output	<input type="checkbox"/>	Reporting	<input type="checkbox"/>	Compliance	<input type="checkbox"/>
The Licensee has no tariff meters with all metering by Western Power. There has been no request. Western Power has the contact details.									
<b>Issues</b>									
None									
<b>Recommendations</b>									
None									

<b>Item 454</b> Licence condition 5.1	Adequacy of controls rating Not Performed	Compliance rating Not Rated							
<b>Licence:</b> <i>Generation</i>									
<i>Electricity Industry Metering Code clause 7.2(5)</i> A Code participant must notify any affected network operator of any change to the contact details it notified to the network operator under subclause 7.2(4) at least 3 business days before the change takes effect.									
<b>Observations</b>									
Documents	<input type="checkbox"/>	Compliance	<input type="checkbox"/>						
<b>Evidence:</b> interviewed Site Manager, Technical Officer, Contracts Specialist, listed staff, inspected Generation plant. Documents: n/a.									
Process	<input type="checkbox"/>	Outcome	<input type="checkbox"/>	Output	<input type="checkbox"/>	Reporting	<input type="checkbox"/>	Compliance	<input type="checkbox"/>
The Licensee has no tariff meters with all metering by Western Power. There has been no change in the contact details.									
<b>Issues</b>									
None									
<b>Recommendations</b>									
None									

<b>Item 455</b> Licence condition 5.1	Adequacy of controls rating Not Performed	Compliance rating Not Rated							
<b>Licence:</b> <i>Generation</i>									
<i>Electricity Industry Metering Code clause 7.5</i> A Code participant must subject to subclauses 5.17A and 7.6 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 purpose contemplated by the Code.									
<b>Observations</b>									
Documents	<input type="checkbox"/>	Compliance	<input type="checkbox"/>						
<b>Evidence:</b> interviewed Site Manager, Technical Officer, Contracts Specialist, listed staff, inspected Generation plant. Documents: n/a.									
Process	<input type="checkbox"/>	Outcome	<input type="checkbox"/>	Output	<input type="checkbox"/>	Reporting	<input type="checkbox"/>	Compliance	<input type="checkbox"/>
The Licensee has no tariff meters with all metering by Western Power. There has been no confidential information to disclose.									



<b>Issues</b>
None
<b>Recommendations</b>
None

<b>Item 456</b> Licence condition 5.1	Adequacy of controls rating Not Performed	Compliance rating Not Rated	
<b>Licence:</b> <i>Generation</i>			
<i>Electricity Industry Metering Code clause 7.6(1)</i> A Code participant must disclose or permit the disclosure of confidential information that is required to be disclosed by the Code.			
<b>Observations</b>			
Documents	<input type="checkbox"/>	Compliance	<input type="checkbox"/>
<b>Evidence:</b> interviewed Site Manager, Technical Officer, Contracts Specialist, listed staff, inspected Generation plant. Documents: n/a.			
Process	<input type="checkbox"/>	Outcome	<input type="checkbox"/>
Output	<input type="checkbox"/>	Reporting	<input type="checkbox"/>
Compliance	<input type="checkbox"/>		
The Licensee has no tariff meters with all metering by Western Power. There has been no confidential information to disclose.			
<b>Issues</b>			
None			
<b>Recommendations</b>			
None			

<b>Item 457</b> Licence condition 5.1	Adequacy of controls rating Not Performed	Compliance rating Not Rated	
<b>Licence:</b> <i>Generation</i>			
<i>Electricity Industry Metering Code clause 8.1(1)</i> If any dispute arises between any Code participants, then (subject to subclause 8.2(3)) 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 by negotiations in good faith.			
<b>Observations</b>			
Documents	<input type="checkbox"/>	Compliance	<input type="checkbox"/>
<b>Evidence:</b> interviewed Site Manager, Technical Officer, Contracts Specialist, listed staff, inspected Generation plant. Documents: n/a.			
Process	<input type="checkbox"/>	Outcome	<input type="checkbox"/>
Output	<input type="checkbox"/>	Reporting	<input type="checkbox"/>
Compliance	<input type="checkbox"/>		
The Licensee has no tariff meters with all metering by Western Power. There have been no disputes to resolve.			
<b>Issues</b>			
None			
<b>Recommendations</b>			
None			

<b>Item 458</b> Licence condition 5.1	Adequacy of controls rating Not Performed	Compliance rating Not Rated
<b>Licence:</b> <i>Generation</i>		
<i>Electricity Industry Metering Code clause 8.1(2)</i>		

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.									
<b>Observations</b>									
Documents	<input type="checkbox"/>	Compliance	<input type="checkbox"/>						
<b>Evidence:</b> interviewed Site Manager, Technical Officer, Contracts Specialist, listed staff, inspected Generation plant. Documents: n/a.									
Process	<input type="checkbox"/>	Outcome	<input type="checkbox"/>	Output	<input type="checkbox"/>	Reporting	<input type="checkbox"/>	Compliance	<input type="checkbox"/>
The Licensee has no tariff meters with all metering by Western Power. There have been no disputes to resolve.									
<b>Issues</b>									
None									
<b>Recommendations</b>									
None									

<b>Item 459</b> Licence condition 5.1	Adequacy of controls rating Not Performed	Compliance rating Not Rated							
<b>Licence:</b> <i>Generation</i>									
<i>Electricity Industry Metering Code clause 8.1(3)</i> 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.									
<b>Observations</b>									
Documents	<input type="checkbox"/>	Compliance	<input type="checkbox"/>						
<b>Evidence:</b> interviewed Site Manager, Technical Officer, Contracts Specialist, listed staff, inspected Generation plant. Documents: n/a.									
Process	<input type="checkbox"/>	Outcome	<input type="checkbox"/>	Output	<input type="checkbox"/>	Reporting	<input type="checkbox"/>	Compliance	<input type="checkbox"/>
The Licensee has no tariff meters with all metering by Western Power. There have been no disputes to resolve.									
<b>Issues</b>									
None									
<b>Recommendations</b>									
None									

<b>Item 460</b> Licence condition 5.1	Adequacy of controls rating Not Performed	Compliance rating Not Rated							
<b>Licence:</b> <i>Generation</i>									
<i>Electricity Industry Metering Code clause 8.1(4)</i> 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.									
<b>Observations</b>									
Documents	<input type="checkbox"/>	Compliance	<input type="checkbox"/>						
<b>Evidence:</b> interviewed Site Manager, Technical Officer, Contracts Specialist, listed staff, inspected Generation plant. Documents: n/a.									
Process	<input type="checkbox"/>	Outcome	<input type="checkbox"/>	Output	<input type="checkbox"/>	Reporting	<input type="checkbox"/>	Compliance	<input type="checkbox"/>
The Licensee has no tariff meters with all metering by Western Power. There have been no disputes to resolve.									

<b>Issues</b>
None
<b>Recommendations</b>
None

<b>Item 461</b> Licence condition 5.1	Adequacy of controls rating Not Performed	Compliance rating Not Rated	
<b>Licence:</b> <i>Generation</i>			
<i>Electricity Industry Metering Code clause 8.3(2)</i> The disputing parties must at all times conduct themselves in a manner which is directed towards achieving the objective in subclause 8.3(1).			
<b>Observations</b>			
Documents	<input type="checkbox"/>	Compliance	<input type="checkbox"/>
<b>Evidence:</b> interviewed Site Manager, Technical Officer, Contracts Specialist, listed staff, inspected Generation plant. Documents: n/a.			
Process	<input type="checkbox"/>	Outcome	<input type="checkbox"/>
Output	<input type="checkbox"/>	Reporting	<input type="checkbox"/>
Compliance	<input type="checkbox"/>		<input type="checkbox"/>
The Licensee has no tariff meters with all metering by Western Power. There have been no disputes to resolve.			
<b>Issues</b>			
None			
<b>Recommendations</b>			
None			

**2.20 ASSET MANAGEMENT SYSTEM REVIEW RESULTS AND RECOMMENDATIONS**

Asset Planning	Process/Policy rating <b>A</b>	Effectiveness rating <b>1</b>
<p><b>1. Asset planning</b> Asset planning strategies are focused on meeting customer needs in the most effective and efficient manner (delivering the right service at the right price).</p>		
<p><b>Observations</b></p>		
<p><i>Asset Planning Process/Plan and its currency</i> Tronox is a large producer of titanium dioxide and the KMK Cogeneration plant is co-located at Kwinana in Western Australia with the titanium dioxide pigment plant. Tronox is publicly listed company with diverse interests and is listed on the New York Stock Exchange. The KMK cogeneration facility consists of a 36MW Frame 6 gas turbine and heat recovery steam generator, (HRSG), that supplies power and steam to the facility and also exports excess power as part of the balancing market through the South West Interconnected System, SWIS. The Cogen plant is operated and maintained by a third party- Monadelphous Group Limited. Tronox provides the operating framework (electricity and steam output) and approves any maintenance outside of the routine maintenance specified in the Operating and Maintenance Agreement.</p> <p>The generator was originally part of the Verve fleet at Pinjar Power Station and relocated to Kwinana by Verve (then Western Power) as part of a supply agreement. The plant was subsequently purchased by Tronox. The Licensee is primarily a mineral manufacturer on this site and generation of electricity is secondary to mineral production and to that end the key output of the plant is production steam and then electricity for manufacturing and if there is excess to participate in the electricity market.</p> <p>Asset management has to be part of the context of the licensed operations as part of the business of the company which is mineral manufacturing. The licensed facilities primarily exist to facilitate manufacturing and are governed by the life of the manufacturing plant. The life cycle of generation assets can be different to the life of a manufacturing plant. Asset planning will be subservient to manufacturing plant planning. That is, there will be no planning for licensed assets that are not dependent on manufacturing plant development.</p> <p>The Licensee has developed an asset management plan for the operation and maintenance of the licensed assets. The Licensee has asset management plans for their manufacturing business of which the licenced assets are a small part. There have been no plans to develop the assets or extend the assets in the review period. The license did investigate disposing of the assets but decided not to do so in the review period.</p> <p>Service strategies and service standards are set out in asset planning documents.</p> <p><i>Evaluation Criteria summary Licensee</i></p> <p>1.1 <i>Asset management plan covers key requirements.</i> <span style="float: right;"><b>A1</b></span></p>		

Response: This site’s AMP meets this criterion. The AMP plan provides the Licensee information on key requirements for this site. The AMP is adequate for the extent that generation is a small part of their business.	
1.2 <i>Planning process and objectives reflect the needs of all stakeholders and is integrated with business planning.</i>	
Response: The AMP meets this criterion and reflects the needs of all stakeholders and is integrated with business planning for manufacturing and then the consequent steam and electricity. When electricity generation is limited, but more production steam is required, extra gas is burned in the HRSG.	
1.3 <i>Service levels are defined.</i>	<b>A1</b>
Response: The AMP defines service levels for this site. As the key requirement is steam for production, availability is the key indicator.	
1.4 <i>Non-asset options (eg demand management) are considered.</i>	<b>A1</b>
Response: The AMS is substantially about utilization of the current assets as new proposals are likely to be based on production needs. The production need for steam can be provided by not generating and providing a steam boiler and while this is an asset it would not be a licensed asset. This option was considered but rejected. Further generation asset options are unlikely for this Licensee.	
1.5 <i>Lifecycle costs of owning and operating assets are assessed.</i>	<b>A1</b>
Response: The AMP meets this criterion with lifecycle costs of owning and operating assets assessed for this site. The capital cost was considered and costed in terms of the generating assets cost viability. Servicing the production needs is the dominant requirement for the assets with profitability being the major driving force.	
1.6 <i>Funding options are evaluated.</i>	<b>A1</b>
Response: Funding is determined by what is necessary to serve generating operational and maintenance functions of the generating plant.	
1.7 <i>Costs are justified and cost drivers identified.</i>	<b>A1</b>
Response: All proposals include justification of costs and identification of cost drivers including availability and reliability of supply. The rejection a steam boiler was a cost based decision	
1.8 <i>Likelihood and consequences of asset failure are predicted.</i>	<b>A1</b>
Response: The evaluation of risks addressed in the AMP cover the aspects of asset failure and consequences on operation and maintenance.	
1.9 <i>Plans are regularly reviewed and updated.</i>	<b>A1</b>
Response: The AMP meets this criterion and is reviewed annually (due April 2017).	

<b>Asset management process and policy definition</b>					
Process	<input checked="" type="checkbox"/>	Policy	<input checked="" type="checkbox"/>	Documentation	<input checked="" type="checkbox"/>
<b>Evidence:</b> interviewed Site Manager, Technical Officer, Contracts Specialist, listed staff. Documents: Generation Licence, Asset Register, Environmental Plans and Approvals, Asset management plan, Risk management policy, Risk register, O & M AMP					
<b>Asset management performance</b>					
Process	<input type="checkbox"/>	Availability	<input type="checkbox"/>	Use	<input type="checkbox"/>

<b>Issues</b>
<p>The Licensee has developed an asset management plan for the operation and maintenance of the licensed assets. The Licensee has asset management plans for their manufacturing business of which the licenced assets are a small part. There have been no plans to develop the assets or extend the assets in the review period. The license did investigate disposing of the assets but no decision to do so was made in the review period.</p> <p>The internal reviews of the AMP are carried out annually.</p>
<b>Recommendation</b>
None



Asset Creation	Process/Policy rating <b>B</b>	Effectiveness rating <b>2</b>
<p><b>2. Asset creation and acquisition</b> 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.</p>		
<p><b>Observations</b></p>		
<p><i>Policies and procedures for asset creation / sample creation activities</i> Asset management has to be part of the context of the licensed operations as part of the business of the company which is mineral manufacturing. The licensed facilities primarily exist to facilitate manufacturing and are governed by the life of the manufacturing plant. The life cycle of generation assets can be different to the life of a manufacturing plant. Asset creation will be subservient to manufacturing plant planning. That is, there will be no creation for licensed assets that are not dependent on manufacturing plant development.</p> <p>Procurement of major generation plant is a very significant exercise taking considerable time. There are documented procedures for creation of fixed assets. There has been no creation in the review period.</p> <p><i>Evaluation Criteria summary Licensee</i></p> <p>2.1 <i>Full project evaluations are undertaken for new assets, including comparative assessment of non-asset solutions.</i> <b>NPNR</b> Response: Full project evaluations occurred for Asset creation. The financiers require good quality procurement. There will be no asset creation outside the manufacturing needs.</p> <p>2.2 <i>Evaluations include all life-cycle costs</i> <b>ANR</b> Response: Evaluations for this site included life cycle costings but did not result in asset creation.</p> <p>2.3 <i>Projects reflect sound engineering and business decisions</i> <b>ANR</b> Response: The Licensee has the resources to ensure sound engineering and business decisions for example on the steam boiler decision.</p> <p>2.4 <i>Commissioning tests are documented and completed</i> <b>ANR</b> Response: The Licensee has the resources to ensure commissioning tests are documented and completed but no commissioning occurred in the review period.</p> <p>2.5 <i>Ongoing legal/environmental/safety obligations of the asset owner are assigned and understood</i> <b>B2</b> Response: The responsibilities of the AMS are assigned to the Contracts Specialist and understood. Legal, environmental and safety are key components of new project work within the organisation and are specifically required to be addressed in projects. While responsibilities are assigned non-compliances occurred.</p>		
<p><b>Asset management process and policy definition</b></p>		
Process	<input checked="" type="checkbox"/>	Policy
<input checked="" type="checkbox"/>	Documentation	<input checked="" type="checkbox"/>

<b>Evidence:</b> interviewed Site Manager, Technical Officer, Contracts Specialist, listed staff. Documents: Asset management plan, Asset Register,					
<b>Asset management performance</b>					
Process	<input checked="" type="checkbox"/>	Availability	<input checked="" type="checkbox"/>	Use	<input checked="" type="checkbox"/>
<b>Issues</b>					
<p>Asset management has to be part of the context of the licensed operations as part of the business of the company which is mineral manufacturing. The licensed facilities primarily exist to facilitate manufacturing and are governed by the life of the manufacturing plant. The life cycle of generation assets can be different to the life of a manufacturing plant. Asset creation will be subservient to manufacturing plant planning. That is, there will be no creation for licensed assets that are not dependent on manufacturing plant development. Regulatory compliance items not all complied with.</p>					
<b>Recommendation</b>					
Improve controls for regulatory compliance items.					



<b>Asset Disposal</b>	<b>Process/Policy rating</b> <b>A</b>	<b>Effectiveness rating</b> <b>Not Rated</b>			
<p><b>3 Asset disposal</b> 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.</p>					
<p><b>Observations</b></p>					
<p><i>Policies and procedures for asset disposal / sample disposal activities</i> Asset management has to be part of the context of the licensed operations as part of the business of the company which is mineral manufacturing. The licensed facilities primarily exist to facilitate manufacturing and are governed by the life of the manufacturing plant. The life cycle of generation assets can be different to the life of a manufacturing plant. Asset disposal will be subservient to manufacturing plant needs. That is, there will be no disposal of licensed assets that are not related to manufacturing plant requirements. The Licensee considered replacing the licensed assets with steam boilers but decided to not proceed with that option. There was no disposal action in the review period.</p> <p><i>Evaluation Criteria summary Licensee</i></p> <p>3.1 <i>Under-utilised and under-performing assets are identified as part of a regular systematic review process</i> <b>A1</b> Response: The Licensee considered replacing the licensed assets with steam boilers but decided to not proceed with that option. The option included disposal actions for the licensed plant. No disposal occurred in review period.</p> <p>3.2 <i>The reasons for under-utilisation or poor performance are critically examined and corrective action or disposal undertaken</i> <b>A1</b> Response: The most likely issue is plant failures and these are critically examined. Components have been disposed as they become unserviceable and spares have been sought even if they are not new.</p> <p>3.3 <i>Disposal alternatives are evaluated</i> <b>A1</b> Response: Disposal alternatives have been evaluated even if not implemented.</p> <p>3.4 <i>There is a replacement strategy for assets</i> <b>ANR</b> Response: Replacement was determined by manufacturing needs or a finding from condition based maintenance. Parts are scarce and used parts have had to be sourced (such as AVR and spare rotor). No disposal occurred in review period.</p>					
<p><b>Asset management process and policy definition</b></p>					
Process	<input checked="" type="checkbox"/>	Policy	<input checked="" type="checkbox"/>	Documentation	<input checked="" type="checkbox"/>
<p><b>Evidence:</b> interviewed Site Manager, Technical Officer, Contracts Specialist, listed staff. Documents: Asset management plan, O&amp;M AMP</p>					
<p><b>Asset management performance</b></p>					
Process	<input type="checkbox"/>	Availability	<input type="checkbox"/>	Use	<input type="checkbox"/>
<p><b>Issues</b></p>					
<p>The licensed facilities primarily exist to facilitate manufacturing and are governed by the life of the manufacturing plant. The life cycle of generation assets can be different</p>					

to the life of a manufacturing plant. Asset disposal will be subservient to manufacturing plant needs. That is, there will be no disposal of licensed assets that are not related to manufacturing plant requirements. No disposal occurred in review period.

**Recommendation**

None



Environmental analysis	Process/Policy rating A	Effectiveness rating 1
<p><b>4 Environmental analysis</b> Environmental analysis examines the asset system environment and assesses all external factors affecting the asset system.</p>		
<p><b>Observations</b></p>		
<p><i>Standards / monitoring / reporting / breaches</i> The Licensee has an Environmental Management Plan (EMP). Reporting and monitoring tools are appropriate.</p> <p>The Licensee has a number of environmental licences and no unresolved issues have arisen with respect to environmental matters. No non-compliances have been reported.</p> <p>Steam is the prime consideration for the Licensee with electricity use for the plant being consequential. Trading in the electricity market is bonus that is taken when available. The plant is currently constrained by a fault to 20MW which limits trading opportunities. The principal external threats to the assets relate the market for the manufactured product and to a lesser extent any changes to the electricity market in Western Australia. The manufacturing site is a major hazard site with the OSH issues that follow. The Tronox Pigment Plant (manufacturing plant) which is adjacent to the Cogen site is a major hazard facility (not the Cogen site itself). The Pigment Plant falls under the ambit of the Western Australia “Dangerous Goods Safety (Major Hazard Facilities) Regulations 2007” due to the quantity and nature of hazardous materials that is stored and processed at the facility. This leads to an attitude of compliance on both sites.</p> <p><i>Evaluation Criteria summary Licensee</i></p> <p>4.1 <i>Opportunities and threats in the system environment are assessed</i> <b>A1</b> Response: Assessing opportunities and threats in system environment was made by the Licensee. Change in Western Australian energy market may have an effect on such developments. The plant islands from the network when there is threat of lightning.</p> <p>4.2 <i>Performance standards (availability of service, capacity, continuity, emergency response, etc.) are measured and achieved</i> <b>A1</b> Response: The AMS meets this criterion with service standards defined for this site. Availability is key performance requirement.</p> <p>4.3 <i>Compliance with statutory and regulatory requirements</i> <b>A1</b> Response: There have been no noted environmental breaches for the assets covered by the licence during the review period. Quality of demineralized water has caused issues with managing NOx control but no breaches were noted.</p> <p>4.4 <i>Achievement of customer service levels</i> <b>A1</b> Response: The AMP defines the customer service levels for this site. Environmental requirements are met. Steam requirements are met even if there is a top up gas to be burned in HRSG.</p>		
<p><b>Asset management process and policy definition</b></p>		

Process	<input checked="" type="checkbox"/>	Policy	<input checked="" type="checkbox"/>	Documentation	<input checked="" type="checkbox"/>	
<b>Evidence:</b> interviewed Site Manager, Technical Officer, Contracts Specialist, listed staff and staff on site listed. Documents: Environmental Management Plan (EMP) O & M AMP, Risk management policy, Risk register.						
<b>Asset management performance</b>						
Process	<input checked="" type="checkbox"/>	Availability	<input checked="" type="checkbox"/>	Use	<input checked="" type="checkbox"/>	
<b>Issues</b>						
None.						
<b>Recommendation</b>						
None						



Asset operations	Process/Policy rating A	Effectiveness rating 1				
<p><b>5 Asset operations</b> Operations functions relate to the day-to-day running of assets and directly affect service levels and costs.</p>						
<p><b>Observations</b></p>						
<p><i>Policies and procedures for asset operation / sample activities</i> The system is operated by Western Power from SWIS system control. The asset operation is appropriate for the duty.</p> <p>The Licensee records outages automatically on SCADA. Performance is closely monitored. The service levels are defined. Operations and Maintenance is contracted to Monadelphous.</p> <p>The asset register is part of the maintenance system and supported by spread sheets and standard procedures.</p> <p><i>Evaluation Criteria summary</i></p> <p>5.1 <i>Operational policies and procedures are documented and linked to service levels required</i> <span style="float: right;"><b>A1</b></span> Response: The AMS meets this criterion with service standards defined. Planned maintenance takes place consistent with manufacturing needs. The Generation system is dispatched from system control. Operational policies are substantially manufacturing needs and maintenance/reliability matters.</p> <p>5.2 <i>Risk management is applied to prioritise operations tasks</i> <span style="float: right;"><b>A1</b></span> Response: There is risk matrix which is primarily used for maintenance. Risk analysis is applied by developing a task hazard analysis for all tasks on the site. Manufacturing steam needs sets priorities.</p> <p>5.3 <i>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</i> <span style="float: right;"><b>A1</b></span> Response: Asset registers are contained with the appropriate information in the MEX system.</p> <p>5.4 <i>Operational costs are measured and monitored</i> <span style="float: right;"><b>A1</b></span> Response: Operational costs – staffing, contracts and materials are measured and monitored.</p> <p>5.5 <i>Staff resources are adequate and staff receive training commensurate with their responsibilities</i> <span style="float: right;"><b>A1</b></span> Response: The staff receives training commensurate with their responsibilities. Training requirements are monitored with all obligatory training on schedule but some desirable training such as CPR for Mechanical operatives was late. Staff resources are adequate for effective operation of the plant.</p>						
<p><b>Asset management process and policy definition</b></p>						
Process	<input checked="" type="checkbox"/>	Policy	<input checked="" type="checkbox"/>	Documentation	<input checked="" type="checkbox"/>	

**Evidence:** interviewed Site Manager, Technical Officer, Contracts Specialist, listed staff and staff on site listed. Documents: Asset Register, Spares List, O & AMP, Risk management policy, Risk register, training certificates.

**Asset management performance**

Process	<input checked="" type="checkbox"/>	Availability	<input checked="" type="checkbox"/>	Use	<input checked="" type="checkbox"/>
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**Issues**

The asset operation is appropriate for the duty.

**Recommendation**

None



Asset Maintenance	Process/Policy rating A	Effectiveness rating 1
<p><b>6 Asset maintenance</b> Maintenance functions relate to the upkeep of assets and directly affect service levels and costs.</p>		
<p><b>Observations</b></p>		
<p><i>Policies and procedures for asset maintenance / sample activities</i> The MEX business application is used by Tronox for the generating plant.</p> <p>The Licensee engaged Monadelphous to undertake their maintenance. Condition inspection of the plant is routinely carried out. Inventory of critical spares has been developed. Some spares are not available from the equipment manufacturer and used spare have been sourced (e.g. Automatic Voltage Regulator (AVR) and spare turbine rotor). Time based maintenance is routinely carried with some condition based maintenance (Vibration on machines such as water feed pumps, water sampling).</p> <p><i>Training / resources / exceptions</i> Maintenance is scheduled well into the future and these actions are appropriate for the type of equipment. The resourcing is appropriate and ongoing training is evident as are the operating procedures and practices. Training requirements are monitored with all obligatory training on schedule but some desirable training such as First Aid CPR for Mechanical operatives was late. There are some maintenance issues that are arising that might be expected for plant of this age. There are vibrations problems with the rotor that is limiting output and with hydraulic issues with the diversion damper to the HRSG. The controls are robust and meet A rating. The performance is not what would be expected for new plant but all reasonable corrective actions have been taken and the cost benefit of replacing with new plant have not been achieved and therefore the plant is considered effective considering where it is in its life cycle (exceeded) and given a 1 rating.</p> <p><i>Evaluation Criteria summary</i></p> <p>6.1 <i>Maintenance policies and procedures are documented and linked to service levels required</i> <b>A1</b> Response: Policies and procedures are documented. The business plan supports this criterion with service standards defined. MEX reports overdue maintenance which is used to improve asset management controls.</p> <p>6.2 <i>Regular inspections are undertaken of asset performance and condition</i> <b>A1</b> Response: The MEX maintenance planning system fulfils this criterion by regular scheduling of inspections to assess condition. Time based schedules are set up for physical inspection, testing and collection of samples for condition based analysis (eg vibration analysis, water quality sampling etc.).</p> <p>6.3 <i>Maintenance plans (emergency, corrective and preventative) are documented and completed on schedule</i> <b>A1</b> Response: Corrective (condition based) and preventative maintenance plans are recorded in the MEX system and completed on schedule.</p> <p>6.4 <i>Failures are analysed and operational/maintenance plans adjusted where necessary</i> <b>A1</b> Response: Failures are analysed and spares sourced even if these are often used parts as new are not available. Tracking of cracks in turbine exhaust were closely monitored before the exhaust cowl was replaced. Maintenance is driven by manufacturing needs and scheduled to suit these needs.</p>		

<p>6.5 <i>Risk management is applied to prioritise maintenance tasks</i> <span style="float: right;"><b>A1</b></span>                  Response: Risk matrix is used to prioritize maintenance. Tasks are scheduled on break down basis and then according to risk matrix.</p>			
<p>6.6 <i>Maintenance costs are measured and monitored</i>                  Response: Maintenance costs are recorded, measured and monitored by the contractor and passed to the licensee.</p>			
<b>Asset management process and policy definition</b>			
Process	<input checked="" type="checkbox"/>	Policy	<input checked="" type="checkbox"/>
Documentation	<input checked="" type="checkbox"/>		
<p><b>Evidence:</b> interviewed Site Manager, Technical Officer, Contracts Specialist, listed staff and staff on site listed. Documents: Asset Register, Spares List, O &amp; M AMP, Risk management policy, Risk register</p>			
<b>Asset management performance</b>			
Process	<input checked="" type="checkbox"/>	Availability	<input checked="" type="checkbox"/>
Use	<input checked="" type="checkbox"/>		
<b>Issues</b>			
None.			
<b>Recommendation</b>			
None			



Asset Management Information System	Process/Policy rating A	Effectiveness rating 1
<p><b>7 Asset Management Information System (MIS)</b> An asset management information system is a combination of processes, data and software that support the asset management functions</p>		
<p><b>Observations</b></p>		
<p><i>Policies and procedures</i> The Licensee has a competent asset management information system with a number of elements. The maintenance management system based on the MEX maintenance software system MEX V15 (described in section 6 above). The system allows for both time based and condition based activities. The system was viewed. The Licensee uses standard financial packages.</p> <p>Access to write to the database is controlled (passwords) and changes are tracked. There is good documentation for data recovery procedures which include operating on the office server and backing up the servers to ensure data integrity.</p> <p><i>Evaluation Criteria summary</i></p> <p>7.1 Adequate system documentation for users and IT operators <b>A1</b> Response: The IT system is well documented. The system is intuitive with online assistance and documentation is rarely required. The viewing of Historic data is also intuitive.</p> <p>7.2 Input controls include appropriate verification and validation of data entered into the system <b>A1</b> Response: The system is easy to use with a maintenance focus rather than a database focus and includes appropriate verification and validation of data entered into the system.</p> <p>7.3 Logical security access controls appear adequate, such as passwords <b>A1</b> Response: Logical control is adequate with hierarchical access by password. Personnel are automatically logged out of computer systems after periods of inactivity.</p> <p>7.4 Physical security access controls appear adequate <b>A1</b> Response: Physical security is adequate with the system on access controlled site. Server room for MEX in office is locked. Server for SCADA is in switch Room which is secured. Backup tapes are held in safe and backed up nightly to Perth HO</p> <p>7.5 Data backup procedures appear adequate and backups are tested <b>A1</b> Response: Data backup is carried out daily and weekly on all servers. Backups are tested 3 monthly.</p> <p>7.6 Key computations related to Licensee performance reporting are materially accurate <b>A1</b> Response: There is minimal regular licence compliance computation work. Key computations related to Licensee performance reporting are materially accurate, to the extent possible to assess with visual inspection.</p> <p>7.7 Management reports appear adequate for the Licensee to monitor licence obligations <b>A1</b></p>		

Response: Management reports to monitor licence obligations are on spreadsheets. The key reports are for performance monitoring. Reports on MEX are adequate for operation and maintenance of the plant.					
<b>Asset management process and policy definition</b>					
Process	<input checked="" type="checkbox"/>	Policy	<input checked="" type="checkbox"/>	Documentation	<input checked="" type="checkbox"/>
<b>Evidence:</b> interviewed Site Manager, Technical Officer, Contracts Specialist, listed staff and staff on site listed. Documents: Tronox energy budget, Asset management plan, Viewed MEX, viewing of Historical database.					
<b>Asset management performance</b>					
Process	<input checked="" type="checkbox"/>	Availability	<input checked="" type="checkbox"/>	Use	<input checked="" type="checkbox"/>
<b>Issues</b>					
None					
<b>Recommendation</b>					
None					

<b>Risk management</b>	<b>Process/Policy rating</b> A	<b>Effectiveness rating</b> 1
<p><b>8 Risk management</b> Risk management involves the identification of risks and their management within an acceptable level of risk.</p>		
<b>Observations</b>		
<p><i>Policies and procedures</i> The Licensee has a documented risk management procedure and there is evidence that risk based approaches is being carried out.</p> <p>The Licensee has assessed and prioritised the threats to specific plant and developed contingencies for these threats which are based on assessment of risks.</p> <p><i>Evaluation Criteria summary</i></p> <p>8.1 <i>Risk management policies and procedures exist and are being applied to minimise internal and external risks associated with the asset management system.</i> <b>A1</b> Response: The AMS meets this criterion. The risk management section of the plan set out risks, risk assessment and risk mitigation. There is consideration of areas of concern and associated risks.</p> <p>8.2 <i>Risks are documented in a risk register and treatment plans are actioned and monitored.</i> <b>A1</b> Response: The risk process is set out in the AMP. There is a risk register as part of AMP. The risk register is reviewed annually internally and externally. There are issues of managing aging plant such as this, including sourcing used parts where new are not available.</p> <p>8.3 <i>The probability and consequences of asset failure are regularly assessed</i> <b>A1</b> Response: During the review period, the risks of asset failures have been assessed based on probability and consequence parameters. Forced outage events are studied to reduce the likely frequency /consequences of future events.</p>		
<b>Asset management process and policy definition</b>		
Process	<input checked="" type="checkbox"/>	Policy
	<input checked="" type="checkbox"/>	Documentation
	<input checked="" type="checkbox"/>	
<p><b>Evidence:</b> interviewed Site Manager, Technical Officer, Contracts Specialist, listed staff and staff on site listed. Documents: Asset Register, Spares List, Asset Management Plan</p>		
<b>Asset management performance</b>		
Process	<input checked="" type="checkbox"/>	Availability
	<input checked="" type="checkbox"/>	Use
	<input checked="" type="checkbox"/>	
<b>Issues</b>		
None		
<b>Recommendation</b>		
None		

<b>Contingency planning</b>	<b>Process/Policy rating</b> A	<b>Effectiveness rating</b> 1
<b>9 Contingency planning</b> Contingency plans document the steps to deal with the unexpected failure of an asset.		
<b>Observations</b>		
<i>Development of contingency plans / currency</i> The Licensee has good documentation of its data recovery plans.  The Licensee has documented the threats to specific plant but not yet developed contingencies for these threats. An inventory of spare parts has been acquired.  The Licensee has detailed maintenance scheduled out for several years, with minor and major shutdowns allowed to deal with potential issues. Maintenance is partly conducted on condition based maintenance which monitors critical items for indicators of future failure.  The maintenance regime is geared to keeping the plant operational without forced outages.  <i>Evaluation Criteria summary</i> 9.1 <i>Contingency plans are documented, understood and tested to confirm their operability and to cover higher risks</i> <b>A1</b> Response: The AMS meets this criterion despite there being no explicit contingency plan there is an emergency management plan and infrastructure risks through the asset management plan. Critical spares are identified and acquired where available and used parts are sourced where new are not available. Routine testing is scheduled, with one emergency exercise per year and 2 emergency fire drills per year.		
<b>Asset management process and policy definition</b>		
Process	<input checked="" type="checkbox"/>	Policy
	<input checked="" type="checkbox"/>	Documentation
	<input checked="" type="checkbox"/>	
<b>Evidence:</b> interviewed Site Manager, Technical Officer, Contracts Specialist, listed staff and staff on site listed. Documents: Emergency management plan, asset management plan.		
<b>Asset management performance</b>		
Process	<input checked="" type="checkbox"/>	Availability
	<input checked="" type="checkbox"/>	Use
	<input checked="" type="checkbox"/>	
<b>Issues</b>		
None		
<b>Recommendation</b>		
None		

Financial planning	Process/Policy rating A	Effectiveness rating 1
<p><b>10 Financial planning</b> 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.</p>		
<p><b>Observations</b></p>		
<p><i>Financial planning process / plans</i> The Licensee carries out budgeting and monitoring processes. The licensed facilities are a budget item in the manufacturing business’s financial plan. There is a budgeting process set out in the asset management plan for the operational and maintenance elements.</p> <p>Costs are accrued monthly and estimates updated quarterly. The expenditure reports go to the parent body’s executives. There is a business plan which includes a financial philosophy document together with the budget.</p> <p><i>Evaluation Criteria summary</i></p> <p>10.1 <i>The financial plan states the financial objectives and strategies and actions to achieve the objectives</i> <b>A1</b> Response: There is a financial budget for the licensed assets which is a financial plan given the simplicity of the financial model.</p> <p>10.2 <i>The financial plan identifies the source of funds for capital expenditure and recurrent costs</i> <b>A1</b> Response: The overall budget identifies the source of funds for recurrent costs and where required capital expenditure.</p> <p>10.3 <i>The financial plan provides projections of operating statements (profit and loss) and statement of financial position (balance sheets)</i> <b>A1</b> Response: The Licensee has operating statements (profit and loss) and statement of financial position (balance sheets) and monitors costs with respect to budgets. The licensed assets are a cost centre in the overall budget.</p> <p>10.4 <i>The financial plan provides firm predictions on income for the next five years and reasonable indicative predictions beyond this period</i> <b>A1</b> Response: The licensee predicts income for each year and reviewed annually and on at least 5 years out on rolling basis.</p> <p>10.5 <i>The financial plan provides for the operations and maintenance, administration and capital expenditure requirements of the services</i> <b>A1</b> Response: The financial plan provides for the operations and maintenance, administration and capital expenditure requirements of the plant.</p> <p>10.6 <i>Significant variances in actual/budget income and expenses are identified and corrective action taken where necessary</i> <b>A1</b> Response: When significant variation in expenditure or budget are noted this is investigated. Funds have been provided for preventative maintenance program to improve income.</p>		
<p><b>Asset management process and policy definition</b></p>		
Process	<input checked="" type="checkbox"/>	Policy
<input checked="" type="checkbox"/>	Documentation	<input checked="" type="checkbox"/>

**Evidence:** interviewed Site Manager, Technical Officer, Contracts Specialist, listed staff and staff on site listed. Documents: asset management plan

**Asset management performance**

Process	<input checked="" type="checkbox"/>	Availability	<input checked="" type="checkbox"/>	Use	<input checked="" type="checkbox"/>
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**Issues**

None

**Recommendation**

None



Capital expenditure planning	Process/Policy rating A	Effectiveness rating NR				
<p><b>11 Capital expenditure planning</b>                      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.</p> <p>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.</p>						
<p><b>Observations</b></p>						
<p><i>Capital expenditure process / plans</i>                      The Licensee has budgeting and monitoring processes. These are on 1 year and 5-year cycles and upgraded year by year. The licensed assets are a subset of the Licensee's capital plans.</p> <p><i>Evaluation Criteria summary</i></p> <p>11.1 <i>There is a capital expenditure plan that covers issues to be addressed, actions proposed, responsibilities and dates</i> <b>ANR</b>                      Response: The Licensee's capital plan sets out requirements including the licensed assets. But no capital was required in the review period.</p> <p>11.2 <i>The plan provides reasons for capital expenditure and timing of expenditure</i> <b>ANR</b>                      Response: The Licensee's capital plan sets out requirements including the licensed assets. All items need a business case for inclusion in the capital plan. But no capital was required in the review period.</p> <p>11.3 <i>The capital expenditure plan is consistent with the asset life and condition identified in the asset management plan</i> <b>A1</b>                      Response: The asset management plan sets out items to maintain the asset life including capital expenditure required. The plan responds to asset condition.</p> <p>11.4 <i>There is an adequate process to ensure that the capital expenditure plan is regularly updated and actioned</i> <b>A1</b>                      Response: The business plan sets out a review process. Tronox has financial review and audit processes.</p>						
<p><b>Asset management process and policy definition</b></p>						
Process	<input checked="" type="checkbox"/>	Policy	<input checked="" type="checkbox"/>	Documentation	<input checked="" type="checkbox"/>	
<p><b>Evidence:</b> interviewed Site Manager, Technical Officer, Contracts Specialist, listed staff and staff on site listed. Documents: asset management plan</p>						
<p><b>Asset management performance</b></p>						
Process	<input checked="" type="checkbox"/>	Availability	<input checked="" type="checkbox"/>	Use	<input checked="" type="checkbox"/>	
<p><b>Issues</b></p>						

None.
<b>Recommendation</b>
None





<b>Review of AMS</b>	<b>Process/Policy rating</b> <b>A</b>	<b>Effectiveness rating</b> <b>1</b>			
<b>12 Review of AMS</b> The asset management system is regularly reviewed and updated.					
<b>Observations</b>					
As a supplier of electricity, the service delivery is heavily asset based and needs an AMS. There is ongoing review of the asset management plan.					
<i>Evaluation Criteria summary</i>					
12.1 A review process is in place to ensure that the asset management plan and the asset management system described therein are kept current		<b>A1</b>			
Response: A review process is in place to ensure that the asset management system described are kept current.					
12.2 Independent reviews (eg internal review) are performed of the asset management system		<b>A1</b>			
Response: The asset management plan is reviewed internally annually.					
<b>Asset management process and policy definition</b>					
Process	<input checked="" type="checkbox"/>	Policy	<input checked="" type="checkbox"/>	Documentation	<input checked="" type="checkbox"/>
<b>Evidence:</b> interviewed Site Manager, Technical Officer, Contracts Specialist, listed staff and staff on site listed. Documents: Generation Licence, Asset Register, asset management plan, Risk management policy, Risk register					
<b>Asset management performance</b>					
Process	<input checked="" type="checkbox"/>	Availability	<input checked="" type="checkbox"/>	Use	<input checked="" type="checkbox"/>
<b>Issues</b>					
None					
<b>Recommendation</b>					
None					