

**ELECTRICITY INDUSTRY PARTICIPATION CODE
METERING EQUIPMENT PROVIDER AUDIT REPORT**

For

MERCURY NZ LIMITED

Prepared by: Steve Woods – Veritek Limited

Date audit commenced: 3 May 2019

Date audit report completed: 23 May 2019

Audit report due date: 16-May-19

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EXECUTIVE SUMMARY

Mercury NZ Limited (Mercury) is a Metering Equipment Provider (MEP) and is required to undergo an audit by 16/05/19, in accordance with clause 1(1)(b) of schedule 10.5.

Three non-compliances were identified. Mercury's inspection program, whilst robust and well managed, does not achieve compliance with the Code, leading to cancellation of certification for some installations. The inspection program has each installation inspected at 18 months from the previous inspection and the inspections should be conducted at 18 months from the previous certification. Each installation is inspected at least once and often twice during the 36-month certification period, but the Code is clear that inspection should be 18 months from the previous certification. A proposed Code change is likely to allow Mercury's current inspection process to be compliant.

One faulty metering event was investigated and resolved during the audit period. I've recommended that a summary report is prepared for any future events of this nature and I've also recorded that the Authority was not notified as required by the Code.

The date of the next audit is determined by the Electricity Authority and is dependent on the level of compliance during this audit. The table below provides some guidance on this matter and recommends an audit frequency of 24 months, which I agree with.

AUDIT SUMMARY

NON-COMPLIANCES

Subject	Section	Clause	Non-Compliance	Controls	Audit Risk Rating	Breach Risk Rating	Remedial Action
Certification of metering installations	7.1	10.38 (a), clause 1 and clause 15 of Schedule 10.7	Certification cancelled for eight installations.	Strong	Low	1	Identified
Category 2 to 5 inspections	8.2	46(1) of Schedule 10.7	Eight Mercury metering installations not inspected within the required window.	Strong	Low	1	Identified
Statement of situation	9.3	10.46(2)	Statement of situation not provided to Authority.	Moderate	Low	2	
Future Risk Rating						4	
Indicative Audit Frequency						24 months	

Future risk rating	1-2	3-6	7-9	10-19	20-24	25+
Indicative audit frequency	36 months	24 months	18 months	12 months	6 months	3 months

RECOMMENDATIONS

Subject	Section	Recommendation	Description
		Nil	

ISSUES

Subject	Section	Recommendation	Description
		Nil	

1. ADMINISTRATIVE

1.1. Exemptions from Obligations to Comply with Code (Section 11)

Code reference

Section 11 of Electricity Industry Act 2010.

Code related audit information

Section 11 of the Electricity Industry Act provides for the Electricity Authority to exempt any participant from compliance with all or any of the clauses.

Audit observation

I checked the Electricity Authority website and I confirm there are no exemptions in place.

Audit commentary

I checked the Electricity Authority website and I confirm there are no exemptions in place.

1.2. Structure of Organisation

Noel Woodfield is the only person involved in this particular function for Mercury.

1.3. Persons involved in this audit

Auditor: Steve Woods

Veritek Limited

Electricity Authority Approved Auditor

Mercury personnel assisting in this audit were.

Name	Title	Operation
Noel Woodfield	Senior Electrical Engineer	Mercury

1.4. Use of Agents (Clause 10.3)

Code reference

Clause 10.3

Code related audit information

A participant who uses a contractor

- remains responsible for the contractor's fulfillment of the participants Code obligations*
- cannot assert that it is not responsible or liable for the obligation due to the action of a contractor*
- must ensure that the contractor has at least the specified level of skill, expertise, experience, or qualification that the participant would be required to have if it were performing the obligation itself.*

Audit observation

I checked whether there were any agents or contractors involved in the performance of functions within the scope of the audit.

Audit commentary

Mercury engages ATHs to conduct certification activities, but there are no contractors used to perform MEP responsibilities.

1.5. Hardware and Software

Mercury has a scheduling system used to track the relevant inspection and certification dates. This resides on the server and is backed up in accordance with standard industry protocols.

1.6. Breaches or Breach Allegations

Mercury confirmed there are no breach allegations relevant to the scope of this audit.

1.7. ICP Data

Mercury does not have metering installations at ICPs.

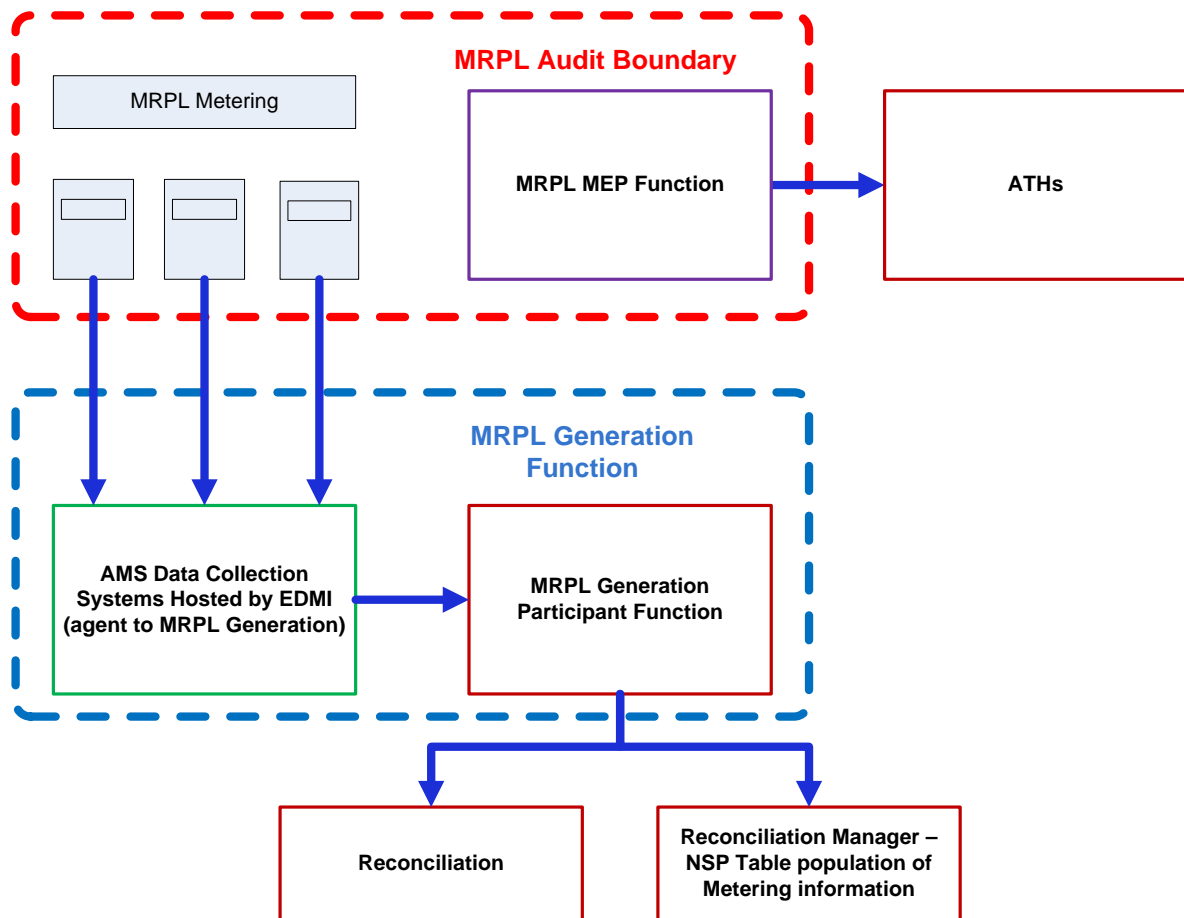
1.8. Authorisation Received

A letter of authorisation was not required or requested.

1.9. Scope of Audit

This audit was conducted in accordance with the Guideline for Metering Equipment Provider Audits V2.2, which was published by the Electricity Authority.

The boundaries of this audit are shown below for greater clarity.



1.10. Summary of previous audit

The previous audit was conducted in July 2018 by Steve Woods of Veritek Limited.

Mercury did not have any non-compliances.

TABLE OF NON-COMPLIANCE

Subject	Section	Clause	Non-Compliance	Status
Certification of metering installations	7.1	10.38 (a), clause 1 and clause 15 of Schedule 10.7	Certification cancelled for four installations	Still existing
Category 2 to 5 inspections	8.2	46(1) of Schedule 10.7	Four Mercury metering installations not inspected within the required window.	Still existing

TABLE OF RECOMMENDATIONS

Subject	Section	Clause	Description	Status
			Nil	

2. OPERATIONAL INFRASTRUCTURE

2.1. MEP responsibility for services access interface (Clause 10.9(2))

Code reference

Clause 10.9(2)

Code related audit information

The MEP is responsible for providing and maintaining the services access interface.

Audit observation

I checked certification records for 10 metering installations.

Audit commentary

The Code places responsibility for maintaining the services access interface on the MEP and places responsibility for determining and recording it with ATHs. I checked the certification records for 10 installations and the services access interface is recorded correctly.

Audit outcome

Compliant

2.2. Dispute Resolution (Clause 10.50(1) to (3))

Code reference

Clause 10.50(1) to (3)

Code related audit information

Participants must in good faith use its best endeavours to resolve any disputes related to Part 10 of the Code.

Disputes that are unable to be resolved may be referred to the Authority for determination.

Complaints that are not resolved by the parties or the Authority may be referred to the Rulings Panel by the Authority or participant.

Audit observation

I checked whether any disputes had been dealt with during the audit period.

Audit commentary

Mercury has not been required to resolve any disputes in accordance with this clause.

Audit outcome

Compliant

2.3. MEP Identifier (Clause 7(1) of Schedule 10.6)

Code reference

Clause 7(1) of Schedule 10.6

Code related audit information

The MEP must ensure it has a unique participant identifier and must use this participant identifier (if required) to correctly identify its information.

Audit observation

I checked the registry data to ensure the correct MEP identifier was used.

Audit commentary

Mercury uses the MRPL identifier in all cases.

Audit outcome

Compliant

2.4. Communication Equipment Compatibility (Clause 40 Schedule 10.7)

Code reference

Clause 40 Schedule 10.7

Code related audit information

The MEP must ensure that the use of its communication equipment complies with the compatibility and connection requirements of any communication network operator the MEP has equipment connected to.

Audit observation

I checked that the ATH has a process to check the relevant type test certificates to ensure compliance with this clause.

Audit commentary

Mercury ensures all communication equipment is appropriately certified with the relevant telecommunications standards. This is recorded in type test certificates and other approval documents.

Audit outcome

Compliant

2.5. Participants to Provide Accurate Information (Clause 11.2 and Clause 10.6)

Code reference

Clause 11.2 and Clause 10.6

Code related audit information

The MEP must take all practicable steps to ensure that information that the MEP is required to provide to any person under Parts 10 and 11 is complete and accurate, not misleading or deceptive and not likely to mislead or deceive.

If the MEP becomes aware that in providing information under Parts 10 and 11, the MEP has not complied with that obligation, the MEP must, as soon as practicable, provide such further information as is necessary to ensure that the MEP does comply.

Audit observation

The main information that is provided is certification dates, which are then passed on to the reconciliation manager. I checked the accuracy of these dates for ten metering installations.

Audit commentary

All MEP related information is complete, accurate and compliant with the Code.

Audit outcome

Compliant

3. PROCESS FOR A CHANGE OF MEP

3.1. Payment of Costs to Losing MEP (Clause 10.22)

Code reference

Clause 10.22

Code related audit information

The MEP for a metering installation may change only if the responsible participant enters into an arrangement with another person to become the MEP for the metering installation, and if certain notification requirements are met (in relation to the registry and the reconciliation manager).

The gaining MEP must pay the losing MEP a proportion of the costs within 20 business days of assuming responsibility.

The costs are those directly and solely attributable to the certification and calibration tests of the metering installation or its components from the date of switch until the end of the current certification period.

Audit observation

I checked whether any MEP switches had occurred.

Audit commentary

No switches had occurred, and it is unlikely MEP switching will occur for metering installations Mercury is responsible for.

Audit outcome

Compliant

3.2. Registry Notification of Metering Records (Clause 2 of Schedule 11.4)

Code reference

Clause 2 of Schedule 11.4

Code related audit information

The gaining MEP must advise the registry of the registry metering records for the metering installation within 15 days of becoming the MEP for the metering installation.

Audit observation

Mercury metering is not on the registry therefore this clause does not apply.

Audit commentary

Mercury metering is not on the registry therefore this clause does not apply.

Audit outcome

Not applicable

3.3. Provision of Metering Records to Gaining MEP (Clause 5 of Schedule 10.6)

Code reference

Clause 5 of Schedule 10.6

Code related audit information

During an MEP switch, a gaining MEP may request access to the losing MEP's metering records.

On receipt of a request from the gaining MEP, the losing MEP has 10 business days to provide the gaining MEP with the metering records or the facilities to enable the gaining MEP to access the metering records.

The losing MEP must ensure that the metering records are only received by the gaining MEP or its contractor, the security of the metering records is maintained, and only the specific metering records required for the purposes of the gaining MEP exercising its rights and performing its obligations are provided.

Audit observation

I checked whether any MEP switches had occurred.

Audit commentary

No switches had occurred, and it is unlikely MEP switching will occur for metering installations Mercury is responsible for.

Audit outcome

Compliant

3.4. Termination of MEP Responsibility (Clause 10.23)

Code reference

Clause 10.23

Code related audit information

Even if the MEP ceases to be responsible for an installation, the MEP must either comply with its continuing obligations; or before its continuing obligations terminate, enter into an arrangement with a participant to assume those obligations.

The MEP is responsible if it:

- *is identified in the registry as the primary metering contact or*
- *is the participant who owns the meter for the POC or to the grid or*
- *has accepted responsibility under clause 1(1)(a)(ii) of schedule 11.4 or*
- *has contracted with a participant responsible for providing the metering installation.*

MEPs obligations come into effect on the date recorded in the registry as being the date on which the metering installation equipment is installed or, for an NSP the effective date set out in the NSP table on the Authority's website.

An MEP's obligations terminate only when;

- *the ICP changes under clause 10.22(1)(a);*
- *the NSP changes under clause 10.22(1)(b), in which case the MEPs obligations terminate from the date on which the gaining MEP assumes responsibility;*
- *the metering installation is no longer required for the purposes of Part 15; or*
- *the load associated with an ICP is converted to be used solely for unmetered load.*

Audit observation

I checked whether Mercury had ceased to be responsible for any metering installations.

Audit commentary

This has not occurred, but Mercury keeps all records indefinitely and will comply with this requirement.

Audit outcome

Compliant

4. INSTALLATION AND MODIFICATION OF METERING INSTALLATIONS

4.1. Design Reports for Metering Installations (Clause 2 of Schedule 10.7)

Code reference

Clause 2 of Schedule 10.7

Code related audit information

The MEP must obtain a design report for each proposed new metering installation or a modification to an existing metering installation, before it installs the new metering installation or before the modification commences.

Clause 2(2) and (3)—The design report must be prepared by a person with the appropriate level of skills, expertise, experience and qualifications and must include a schematic drawing, details of the configuration scheme that programmable metering components are to include, confirmation that the configuration scheme has been approved by an approved test laboratory, maximum interrogation cycle, any compensation factor arrangements, method of certification required, and name and signature of the person who prepared the report and the date it was signed.

Clause 2(4)—The MEP must provide the design report to the certifying ATH before the ATH installs or modifies the metering installation (or a metering component in the metering installation).

Audit observation

The design changed at Southdown during the previous audit. There were no changes during the current audit period.

Audit commentary

I reviewed the Southdown design report during the previous audit, which was prepared by Accucal, and it contains all of the points listed above. Compliance is confirmed.

Audit outcome

Compliant

4.2. Contracting with ATH (Clause 9 of Schedule 10.6)

Code reference

Clause 9 of Schedule 10.6

Code related audit information

The MEP must, when contracting with an ATH in relation to the certification of a metering installation, ensure that the ATH has the appropriate scope of approval for the required certification activities.

Audit observation

I confirmed which ATHs had been used during the audit period, in order to check the Authority's website for scope of approval.

Audit commentary

Mercury uses Accucal and they have a current and appropriate scope of approval.

Audit outcome

Compliant

4.3. Metering Installation Design & Accuracy (Clause 4(1) of Schedule 10.7)

Code reference

Clause 4(1) of Schedule 10.7

Code related audit information

The MEP must ensure:

- *that the sum of the measured error and uncertainty does not exceed the maximum permitted error set out in Table 1 of Schedule 10.1 for the category of the metering installation*
- *the design of the metering installation (including data storage device and interrogation system) will ensure the sum of the measured error and the smallest possible increment of the energy value of the raw meter data does not exceed the maximum permitted error set out in Table 1 of Schedule 10.1 for the category of installation*
- *the metering installation complies with the design report and the requirements of Part 10.*

Audit observation

I checked ten certification reports to confirm compliance.

Audit commentary

With regard to the design of the installation (including data storage device and interrogation system), Mercury ensures the sum of the measured error and the smallest possible increment of the energy value of the raw meter data does not exceed the maximum permitted error set out in Table 1 of Schedule 10.1 for the category of installation. There are no components installed where “coarse” rounding is in place for the data or where meters with a low pulse rate are connected to separate data storage devices.

Mercury ensures the metering installation complies with the design report and the requirements of Part 10 by requiring the ATH to confirm the installation matches the design or by requiring updates to be provided if the installation does not match the design. Compliance is confirmed.

Audit outcome

Compliant

4.4. Subtractive Metering (Clause 4(2)(a) of Schedule 10.7)

Code reference

Clause 4(2)(a) of Schedule 10.7

Code related audit information

For metering installations for ICPs that are not also NSPs, the MEP must ensure that the metering installation does not use subtraction to determine submission information used for the purposes of Part 15.

Audit observation

Mercury does not have any metering installations at ICPs.

Audit commentary

Mercury does not have any metering installations at ICPs.

Audit outcome

Not applicable

4.5. HHR Metering (Clause 4(2)(b) of Schedule 10.7)

Code reference

Clause 4(2)(b) of Schedule 10.7

Code related audit information

For metering installations for ICPs that are not also NSPs, the MEP must ensure that all category 3 or higher metering installations must be half-hour metering installations.

Audit observation

Mercury does not have metering at ICPs.

Audit commentary

Mercury does not have metering at ICPs.

Audit outcome

Not applicable

4.6. NSP Metering (Clause 4(3) of Schedule 10.7)

Code reference

Clause 4(3) of Schedule 10.7

Code related audit information

The MEP must ensure that the metering installation for each NSP that is not connected to the grid does not use subtraction to determine submission information used for the purposes of Part 15 and is a half-hour metering installation.

Audit observation

I checked the NSP table for any NSP metering where Mercury is the MEP and checked the certification records to ensure HHR metering was present.

Audit commentary

Mercury is the MEP for some NSP metering at interconnection points and these installations are HHR.

Audit outcome

Compliant

4.7. Responsibility for Metering Installations (Clause 10.26(10))

Code reference

Clause 10.26(10)

Code related audit information

The MEP must ensure that each point of connection to the grid for which there is a metering installation that it is responsible for has a half hour metering installation.

Audit observation

I checked the NSP table for any grid metering where Mercury is the MEP and checked the certification records to ensure HHR metering was present.

Audit commentary

Mercury is the MEP for some grid metering these installations are HHR. Compliance is confirmed.

Audit outcome

Compliant

4.8. Suitability of Metering Installations (Clause 4(4) of Schedule 10.7)

Code reference

Clause 4(4) of Schedule 10.7

Code related audit information

The MEP must, for each metering installation for which it is responsible, ensure that it is appropriate having regard to the physical and electrical characteristics of the POC.

Audit observation

I checked the certification records for ten installations to confirm the accommodation was recorded as appropriate.

Audit commentary

Mercury's metering installations are all installed in appropriate accommodation.

Audit outcome

Compliant

4.9. Installation & Modification of Metering Installations (Clauses 10.34(2), (2A) and (3))

Code reference

Clauses 10.34(2), (2A) and (3)

Code related audit information

If a metering installation is proposed to be installed or modified at a POC, other than a POC to the grid, the MEP must consult with and use its best endeavours, to agree with the distributor and the trader for that POC, before the design is finalised, on the metering installations:

- *required functionality*
- *terms of use*
- *required interface format*
- *integration of the ripple receiver and the meter*
- *functionality for controllable load.*

Each participant involved in the consultations must use its best endeavours to reach agreement and act reasonably and in good faith.

Audit observation

I checked the NSP table for any NSP metering where Mercury is the MEP and checked whether consultation occurred.

Audit commentary

Mercury has metering installations at two interconnection points and agreement has been reached between the two responsible parties. There were no new installations during the audit period.

Audit outcome

Compliant

4.10. Changes to Registry Records (Clause 3 of Schedule 11.4)

Code reference

Clause 3 of Schedule 11.4

Code related audit information

The MEP must advise the registry of the registry metering records or any change to the registry metering records for a metering installation for which it is responsible, no later than 10 business days following:

- a) the electrical connection of an ICP that is not also an NSP*
- b) any subsequent change in any matter covered by the metering records.*

Audit observation

Mercury does not have any metering at ICPs; therefore, the registry is not populated.

Audit commentary

Mercury does not have any metering at ICPs; therefore, the registry is not populated.

Audit outcome

Not applicable

4.11. Metering Infrastructure (Clause 10.39(1))

Code reference

Clause 10.39(1)

Code related audit information

The MEP must ensure that for each metering installation:

- an appropriately designed metering infrastructure is in place*
- each metering component is compatible with, and will not interfere with any other component in the installation*
- collectively, all metering components integrate to provide a functioning system*
- each metering installation is correctly and accurately integrated within the associated metering infrastructure.*

Audit observation

Mercury does not operate a data collection system, but it is expected that the installation will integrate with the data collection system. I examined compliance by exception, looking at notifications from the data collector to Mercury indicating problems with the installation.

Audit commentary

There were no obvious issues with the integration of metering installations with data collection systems. All components operate as intended in a compliant manner.

Audit outcome

Compliant

4.12. Responsibility for Metering at ICP (Clause 11.18B(3))

Code reference

Clause 11.18B(3)

Code related audit information

If an ICP is to be decommissioned, the MEP who is responsible for each metering installation for the ICP must:

- advise the trader no later than three business days prior to decommissioning that the trader must, as part of the decommissioning, carry out a final interrogation; or*
- if the MEP is responsible for the interrogation of the metering installation, arrange for a final interrogation to take place.*

Audit observation

Mercury is not responsible for metering at any ICPs.

Audit commentary

Mercury is not responsible for metering at any ICPs.

Audit outcome

Not applicable

4.13. Measuring Transformer Burden and Compensation Requirements (Clause 31(4) and (5) of Schedule 10.7)

Code reference

Clause 31(4) and (5) of Schedule 10.7

Code related audit information

The MEP must, before approving the addition of, or change to, the burden or compensation factor of a measuring transformer in a metering installation, consult with the ATH who certified the metering installation.

If the MEP approves the addition of, or change to, the burden or compensation factor, it must ensure the metering installation is recertified by an ATH before the addition or change becomes effective.

Audit observation

I conducted a walkthrough of the process with Mercury and the ATH, Accucal during their most recent ATH audit.

Audit commentary

Current transformers only have metering equipment connected. Some voltage transformers have other equipment connected and this equipment is included in the certification process, including the sealing information.

Audit outcome

Compliant

4.14. Changes to Software ROM or Firmware (Clause 39(1) and 39(2) of Schedule 10.7)

Code reference

Clause 39(1) and 39(2) of Schedule 10.7

Code related audit information

The MEP must, if it proposes to change the software, ROM or firmware of a data storage device installed in a metering installation, ensure that, before the change is carried out, an approved test laboratory:

- *tests and confirms that the integrity of the measurement and logging of the data storage device would be unaffected*
- *documents the methodology and conditions necessary to implement the change*
- *advises the ATH that certified the metering installation of any change that might affect the accuracy of the data storage device.*

The MEP must, when implementing a change to the software, ROM or firmware of a data storage device installed in a metering installation:

- *carry out the change in accordance with the methodology and conditions identified by the approved test laboratory under clause 39(1)(b)*
- *keep a list of the data storage devices that were changed*
- *update the metering records for each installation affected with the details of the change and the methodology used.*

Audit observation

I asked Mercury whether any relevant changes had occurred during the audit period.

Audit commentary

No changes occurred during the audit period. Any changes will be conducted by Accucal in their laboratory in accordance with these clauses.

Audit outcome

Compliant

4.15. Temporary Energization (Clause 10.28(6))

Code reference

Clause 10.28(6)

Code related audit information

An MEP must not request the temporary energisation of a new POC unless authorised to do so by the reconciliation participant responsible for that POC and has an arrangement with that reconciliation participant to provide metering services.

Audit observation

I asked Mercury whether temporary energisation had occurred for any metering installations.

Audit commentary

Temporary energisation has not occurred for any metering installations during the audit period.

Audit outcome

Compliant

5. METERING RECORDS

5.1. Accurate and Complete Records (Clause 4(1)(a) and (b) of Schedule 10.6, and Table 1, Schedule 11.4)

Code reference

Clause 4(1)(a) and (b) of Schedule 10.6, and Table 1, Schedule 11.4

Code related audit information

The MEP must, for each metering installation for which it is responsible, keep accurate and complete records of the attributes set out in Table 1 of Schedule 11.4. These include:

- a) the certification expiry date of each metering component in the metering installation*
- b) all equipment used in relation to the metering installation, including serial numbers and details of the equipment's manufacturer*
- c) the manufacturer's or (if different) most recent test certificate for each metering component in the metering installation*
- d) the metering installation category and any metering installations certified at a lower category*
- e) all certification reports and calibration reports showing dates tested, tests carried out, and test results for all metering components in the metering installation*
- f) the contractor who installed each metering component in the metering installation*
- g) the certification sticker, or equivalent details, for each metering component that is certified under Schedule 10.8 in the metering installation:*
- h) any variations or use of the 'alternate certification' process*
- i) seal identification information*
- j) any applicable compensation factors*
- k) the owner of each metering component within the metering installation*
- l) any applications installed within each metering component*
- m) the signed inspection report confirming that the metering installation complies with the requirements of Part 10.*

Audit observation

I checked the certification and inspection records for ten metering installations to confirm compliance.

Audit commentary

All the information listed above is available in Mercury's records. Compliance is confirmed.

Audit outcome

Compliant

5.2. Inspection Reports (Clause 4(2) of Schedule 10.6)

Code reference

Clause 4(2) of Schedule 10.6

Code related audit information

The MEP must, within 10 business days of receiving a request from a participant for a signed inspection report prepared under clause 44 of Schedule 10.7, make a copy of the report available to the participant.

Audit observation

I asked Mercury whether any requests had been made for copies of inspection reports.

Audit commentary

Mercury has not been requested to supply any inspection reports, but these are available and can be supplied on request.

Audit outcome

Compliant

5.3. Retention of Metering Records (Clause 4(3) of Schedule 10.6)

Code reference

Clause 4(3) of Schedule 10.6

Code related audit information

The MEP must keep metering installation records for 48 months after any metering component is removed, or any metering installation is decommissioned.

Audit observation

I checked some metering records from 2014 to confirm compliance.

Audit commentary

Mercury keeps records indefinitely and the availability of the 2014 records confirms compliance.

Audit outcome

Compliant

5.4. Provision of Records to ATH (Clause 6 Schedule 10.6)

Code reference

Clause 6 Schedule 10.6

Code related audit information

If the MEP contracts with an ATH to recertify a metering installation and the ATH did not previously certify the metering installation, the MEP must provide the ATH with a copy of all relevant metering records not later than 10 business days after the contract comes into effect.

Audit observation

Mercury has provided information to ATH's in the past and this may occur in future. There are no current examples to examine.

Audit commentary

Mercury has provided information to ATH's in the past and this may occur in future. There are no current examples to examine.

Audit outcome

Compliant

6. MAINTENANCE OF REGISTRY INFORMATION

6.1. MEP Response to Switch Notification (Clause 1(1) of Schedule 11.4)

Code reference

Clause 1(1) of Schedule 11.4

Code related audit information

Within 10 business days of being advised by the registry that it is the gaining MEP for the metering installation for the ICP, the MEP must enter into an arrangement with the trader and advise the registry it accepts responsibility for the ICP and of the proposed date on which it will assume responsibility.

Audit observation

Mercury does not have metering installations at ICPs; therefore, they are not required to supply information to the registry.

Audit commentary

Mercury does not have metering installations at ICPs; therefore, they are not required to supply information to the registry.

Audit outcome

Compliant

6.2. Provision of Registry Information (Clause 7 (1), (2) and (3) of Schedule 11.4)

Code reference

Clause 7 (1), (2) and (3) of Schedule 11.4

Code related audit information

The MEP must provide the information indicated as being 'required' in Table 1 of clause 7 of Schedule 11.4 to the registry, in the prescribed form for each metering installation for which the MEP is responsible.

From 1 April 2015, a MEP is required to ensure that all the registry metering records of its category 1 metering installations are complete, accurate, not misleading or deceptive, and not likely to mislead or deceive.

The information the MEP provides to the registry must derive from the metering equipment provider's records or the metering records contained within the current trader's system.

Audit observation

Mercury does not have metering at ICPs; therefore, the registry is not populated.

Audit commentary

Mercury does not have metering at ICPs; therefore, the registry is not populated.

Audit outcome

Not applicable

6.3. Correction of Errors in Registry (Clause 6 of Schedule 11.4)

Code reference

Clause 6 of Schedule 11.4

Code related audit information

By 0900 hours on the 13th business day of each reconciliation period, the MEP must obtain from the registry:

- *a list of ICPs for the metering installations the MEP is responsible for*
- *the registry metering records for each ICP on that list.*

No later than five business days following collection of data from the registry, the MEP must compare the information obtained from the registry with the MEP's own records.

Within five business days of becoming aware of any discrepancy between the MEP's records and the information obtained from the registry, the MEP must correct the records that are in error and advise the registry of any necessary changes to the registry metering records.

Audit observation

Mercury does not have metering at ICPs; therefore, the registry is not populated.

Audit commentary

Mercury does not have metering at ICPs; therefore, the registry is not populated.

Audit outcome

Not applicable

6.4. Cancellation of Certification (Clause 20 of Schedule 10.7)

Code reference

Clause 20 of Schedule 10.7

Code related audit information

The certification of a metering installation is automatically cancelled on the date on which one of the following events takes place:

- a) *the metering installation is modified otherwise than under sub clause 19(3) or 19(6)*
- b) *the metering installation is classed as outside the applicable accuracy tolerances set out in Table 1 of Schedule 10.1, defective or not fit for purpose under this Part or any audit*
- c) *an ATH advises the metering equipment provider responsible for the metering installation of a reference standard or working standard used to certify the metering installation not being compliant with this Part at the time it was used to certify the metering installation, or the failure of a group of meters in the statistical sampling recertification process for the metering installation, or the failure of a certification test for the metering installation*
- d) *the manufacturer of a metering component in the metering installation determines that the metering component does not comply with the standards to which the metering component was tested*
- e) *an inspection of the metering installation, that is required under this Part, is not carried out in accordance with the relevant clauses of this Part*
- f) *if the metering installation has been determined to be a lower category under clause 6 and the maximum current conveyed through the metering installation at any time exceeds the current rating of its metering installation category as set out in Table 1 of Schedule 10.1*

- g) the metering installation is certified under clause 14 and sufficient load is available for full certification testing and has not been retested under clause 14(4)
- h) a control device in the metering installation certification is, and remains for a period of at least 10 business days, bridged out under clause 35(1)
- i) the metering equipment provider responsible for the metering installation is advised by an ATH under clause 48(6)(b) that a seal has been removed or broken and the accuracy and continued integrity of the metering installation has been affected.

A metering equipment provider must, within 10 business days of becoming aware that one of the events above has occurred in relation to a metering installation for which it is responsible, update the metering installation's certification expiry date in the registry.

Audit observation

I checked for examples of all the points listed above, and checked whether certification had been cancelled, and whether the NSP table had been updated.

Audit commentary

Mercury's inspection program, whilst robust and well managed, does not achieve compliance with the Code, leading to cancellation of certification for some installations. The inspection program has each installation inspected at 18 months from the previous inspection and the inspections should be conducted at 18 months from the previous certification. Each installation is inspected at least once and often twice during the 36-month certification period, but the Code is clear that inspection should be 18 months from the previous certification. The table below shows which metering installations were not inspected within the allowable window. Mercury as an MEP is not responsible for updating the NSP table. This responsibility is for Mercury as a "responsible party" which falls under the reconciliation participant function.

Installation	Certification date	Inspection window start	Inspection window finish	Inspection date
Aratiatia G1	30-09-16	28-02-18	30-04-18	28-06-18
Aratiatia G3	25-08-16	25-01-18	25-03-18	28-06-18
Whakamaru G3	16-08-17	16-01-19	16-03-19	27-06-18
Whakamaru G4	04-09-17	04-02-19	04-04-19	27-06-18
Rotokawa 11kV	22-05-17	22-10-18	22-12/18	22-06-18
OEC21 to NAP	22-05-17	22-10-18	22-12/18	22-06-18
Southdown T1AT	01-02-17	01-06-18	01-08-18	20-11-17
Southdown T1BT	27-09-17	27-02-18	27-04-18	20-11-17

There are also some that have been recently inspected (earlier than the required inspection window) and these will need to be inspected again within the window to achieve future compliance. Mercury as an MEP is not required to update the RM of certification expiry dates so this matter is recorded as non-compliance in **sections 7.1** and **8.2** but not in this section.

Audit outcome

Compliant

6.5. Registry Metering Records (Clause 11.8A)

Code reference

Clause 11.8A

Code related audit information

The MEP must provide the registry with the required metering information for each metering installation the MEP is responsible for and update the registry metering records in accordance with Schedule 11.4.

Audit observation

Mercury does not have metering installations at ICPs; therefore, registry updates are not required.

Audit commentary

Mercury does not have metering installations at ICPs; therefore, registry updates are not required.

Audit outcome

Not applicable

7. CERTIFICATION OF METERING INSTALLATIONS

7.1. Certification and Maintenance (Clause 10.38 (a), clause 1 and clause 15 of Schedule 10.7)

Code reference

Clause 10.38 (a), clause 1 and clause 15 of Schedule 10.7

Code related audit information

The MEP must obtain and maintain certification for all installations and metering components for which it is responsible. The MEP must ensure it:

- *performs regular maintenance, battery replacement, repair/replacement of components of the metering installations*
- *updates the metering records at the time of the maintenance*
- *has a recertification programme that will ensure that all installations are recertified prior to expiry.*

Audit observation

I checked the NSP table, Mercury's certification schedule and the records for ten metering installations.

Audit commentary

All Mercury metering installations have current certification recorded in the NSP table.

As recorded in **section 6.4**, eight installations have cancelled certification.

The proposed Code change is likely to allow the 18-month inspection schedule to remain in place and achieve compliance.

Audit outcome

Non-compliant

Non-compliance	Description
Audit Ref: 7.1 With: Clause 10.38 (a), clause 1 and clause 15 of Schedule 10.7 From: 25-Mar-18 To: 06-May-19	Certification cancelled for eight Mercury installations. Potential impact: None Actual impact: None Audit history: Once Controls: Strong Breach risk rating: 1
Audit risk rating	Rationale for audit risk rating
Low	I have recorded the controls as strong because inspections are conducted at least once and often twice during each 3-year certification period. There is no impact on settlement or other participants, therefore the audit risk rating is low.
Actions taken to resolve the issue	
Completion date	Remedial action status

This issue has arisen from interpretation of the EIPC not from changes in systems and processes in place. We believe that review of the EIPC currently being carried out will resolve the issue.	2019	Identified
Preventative actions taken to ensure no further issues will occur	Completion date	
If the EIPC review resolves the issue no changes to systems or processes will be required. If the EIPC review does not resolve the problem Mercury systems and processes.	2019	

7.2. Certification Tests (Clause 10.38(b) and clause 9 of Schedule 10.6)

Code reference

Clause 10.38(b) and clause 9 of Schedule 10.6

Code related audit information

For each metering component and metering installation an MEP is responsible for, the MEP must ensure that:

- *an ATH performs the appropriate certification and recertification tests*
- *the ATH has the appropriate scope of approval to certify and recertify the metering installation.*

Audit observation

I checked the certification records for 10 metering installations to confirm compliance.

Audit commentary

I confirm the appropriate tests are conducted and the results are recorded.

Audit outcome

Compliant

7.3. Active and Reactive Capability (Clause 10.37(1) and 10.37(2)(a))

Code reference

Clause 10.37(1) and 10.37(2)(a)

Code related audit information

For any category 2 or higher half-hour metering installation that is certified after 29 August 2013, the MEP must ensure that the installation has active and reactive measuring and recording capability.

Consumption only installations that is a category 3 metering installation or above must measure and separately record:

- a) *import active energy*
- b) *import reactive energy*
- c) *export reactive energy.*

Consumption only installations that are a category 2 metering installation must measure and separately record import active energy.

All other installations must measure and separately record:

- a) *import active energy*
- b) *export active energy*
- c) *import reactive energy*
- d) *export reactive energy.*

All grid connected POCs with metering installations which are certified after 29 August 2013 should measure and separately record:

- a) *import active energy*
- b) *export active energy*
- c) *import reactive energy*
- d) *export reactive energy.*

Audit observation

I checked the certification records for ten metering installations to confirm compliance.

Audit commentary

Mercury is the MEP for grid connected metering and it is all four quadrant, as required by this clause. Compliance is confirmed.

Audit outcome

Compliant

7.4. Local Service Metering (Clause 10.37(2)(b))

Code reference

Clause 10.37(2)(b)

Code related audit information

The accuracy of each local service metering installation in grid substations must be within the tolerances set out in Table 1 of Schedule 10.1.

Audit observation

This clause relates to Transpower as an MEP.

Audit commentary

This clause relates to Transpower as an MEP.

Audit outcome

Not applicable

7.5. Measuring Transformer Burden (Clause 30(1) and 31(2) of Schedule 10.7)

Code reference

Clause 30(1) and 31(2) of Schedule 10.7

Code related audit information

The MEP must not permit a measuring transformer to be connected to equipment used for a purpose other than metering, unless it is not practical for the equipment to have a separate measuring transformer.

The MEP must ensure that a change to, or addition of, a measuring transformer burden or a compensation factor related to a measuring transformer is carried out only by:

- a) the ATH who most recently certified the metering installation*
- b) for a POC to the grid, by a suitably qualified person approved by both the MEP and the ATH who most recently certified the metering installation.*

Audit observation

I checked the certification records for ten metering installations and conducted a walk-through of the process.

Audit commentary

Current transformers only have metering equipment connected. Some voltage transformers have other equipment connected and this equipment is included in the certification process, including the sealing information. Compliance is confirmed.

Audit outcome

Compliant

7.6. Certification as a Lower Category (Clauses 6(1)(b) and (d), and 6(2)(b) of Schedule 10.7)

Code reference

Clauses 6(1)(b) and (d), and 6(2)(b) of Schedule 10.7

Code related audit information

A category 2 or higher metering installation may be certified by an ATH at a lower category than would be indicated solely on the primary rating of the current if the MEP, based on historical metering data, reasonably believes that:

- the maximum current will at all times during the intended certification period be lower than the current setting of the protection device for the category for which the metering installation is certified, or is required to be certified by the Code; or*
- the metering installation will use less than 0.5 GWh in any 12-month period.*

If a metering installation is categorised under clause 6(1)(b), the ATH may, if it considers appropriate, and, at the MEP's request, determine the metering installation's category according to the metering installation's expected maximum current.

If a meter is certified in this manner:

- the MEP must, each month, obtain a report from the participant interrogating the metering installation, which details the maximum current from raw meter data from the metering installation by either calculation from the kVA by trading period, if available, or from a maximum current indicator if fitted in the metering installation conveyed through the point of connection for the prior month; and*

- *if the MEP does not receive a report, or the report demonstrates that the maximum current conveyed through the POC was higher than permitted for the metering installation category it is certified for, then the certification for the metering installation is automatically cancelled.*

Audit observation

Mercury has not approved the certification of any metering installations as a lower category.

Audit commentary

Mercury has not approved the certification of any metering installations as a lower category.

Audit outcome

Compliant

7.7. Insufficient Load for Certification Tests (Clauses 14(3) and (4) of Schedule 10.7)

Code reference

Clauses 14(3) and (4) of Schedule 10.7

Code related audit information

If there is insufficient electricity conveyed through a POC to allow the ATH to complete a prevailing load test for a metering installation that is being certified as a half hour meter and the ATH certifies the metering installation the MEP must:

- *obtain and monitor raw meter data from the metering installation at least once each calendar month to determine if load during the month is sufficient for a prevailing load test to be completed:*
- *if there is sufficient load, arrange for an ATH to complete the tests (within 20 business days).*

Audit observation

I checked for examples of insufficient load certification.

Audit commentary

There was one example. The monitoring process is compliant, and the required tests were conducted as stipulated by the Code.

Audit outcome

Compliant

7.8. Insufficient Load for Certification – Cancellation of Certification (Clause 14(6) of Schedule 10.7)

Code reference

Clause 14(6) of Schedule 10.7

Code related audit information

If the tests conducted under clause 14(4) of Schedule 10.7 demonstrate that the metering installation is not within the relevant maximum permitted error:

- *the metering installation certification is automatically revoked:*
- *the certifying ATH must advise the MEP of the cancellation within one business day:*
- *the MEP must follow the procedure for handling faulty metering installations (clause 10.43 - 10.48).*

Audit observation

I checked for examples of insufficient load certification.

Audit commentary

There was one example. The monitoring process is compliant, and the required tests were conducted as stipulated by the Code.

Audit outcome

Compliant

7.9. Alternative Certification Requirements (Clauses 32(2), (3) and (4) of Schedule 10.7)

Code reference

Clauses 32(2), (3) and (4) of Schedule 10.7

Code related audit information

If an ATH cannot comply with the requirements to certify a metering installation due to measuring transformer access issues, and therefore certifies the metering installation in accordance with clause 32(1) of Schedule 10.7, the MEP must:

- *advise the market administrator, by no later than 10 business days after the date of certification of the metering installation, of the details in clause 32(2)(a) of Schedule 10.7*
- *respond, within five business days, to any requests from the market administrator for additional information*
- *ensure that all of the details are recorded in the metering installation certification report*
- *take all steps to ensure that the metering installation is certified before the certification expiry date.*

If the market administrator determines the ATH could have obtained access the metering installation is deemed to be defective and the MEP must follow the process of handling faults metering installations in clauses 10.43 to 10.48.

Audit observation

I checked with Mercury to confirm whether alternative certification had been applied.

Audit commentary

Alternative certification has not been applied during the audit period. The process was checked during the last audit and it was confirmed as compliant.

Audit outcome

Compliant

7.10. Timekeeping Requirements (Clause 23 of Schedule 10.7)

Code reference

Clause 23 of Schedule 10.7

Code related audit information

If a time keeping device that is not remotely monitored and corrected controls the switching of a meter register in a metering installation, the MEP must ensure that the time keeping device:

- a) *has a time keeping error of not greater than an average of 2 seconds per day over a period of 12 months*
- b) *is monitored and corrected at least once every 12 months.*

Audit observation

I asked Mercury whether there were any metering installations with time clocks.

Audit commentary

Mercury does not have any metering installations with time clocks.

Audit outcome

Compliant

7.11. Control Device Bridged Out (Clause 35 of Schedule 10.7)

Code reference

Clause 35 of Schedule 10.7

Code related audit information

The participant must, within 10 business days of bridging out a control device or becoming aware of a control device being bridged out, notify the following parties:

- *the relevant reconciliation participant*
- *the relevant metering equipment provider.*

If the control device is used for reconciliation, the metering installation is considered defective in accordance with 10.43.

Audit observation

Mercury does not have any control devices.

Audit commentary

Mercury does not have any control devices.

Audit outcome

Not applicable

7.12. Control Device Reliability Requirements (Clause 34(5) of Schedule 10.7)

Code reference

Clause 34(5) of Schedule 10.7

Code related audit information

If the MEP is advised by an ATH that the likelihood of a control device not receiving signals would affect the accuracy or completeness of the information for the purposes of Part 15, the MEP must, within three business days inform the following parties of the ATH's determination (including all relevant details):

- a) *the reconciliation participant for the POC for the metering installation*
- b) *the control signal provider.*

Audit observation

Mercury does not have any control devices.

Audit commentary

Mercury does not have any control devices.

Audit outcome

Not applicable

7.13. Statistical Sampling (Clauses 16(1) and (5) of Schedule 10.7)

Code reference

Clauses 16(1) and (5) of Schedule 10.7

Code related audit information

The MEP may arrange for an ATH to recertify a group of category 1 metering installations for which the MEP is responsible using a statistical sampling process.

The MEP must update the registry in accordance with Part 11 on the advice of an ATH as to whether the group meets the recertification requirements.

Audit observation

Mercury does not have any category 1 metering installations.

Audit commentary

Mercury does not have any category 1 metering installations.

Audit outcome

Not applicable

7.14. Compensation Factors (Clause 24(3) of Schedule 10.7)

Code reference

Clause 24(3) of Schedule 10.7

Code related audit information

If a compensation factor must be applied to a metering installation that is an NSP, the MEP must advise the reconciliation participant responsible for the metering installation of the compensation factor within 10 days of certification of the installation.

In all other cases the MEP must advise the registry of the compensation factor.

Audit observation

Compensation factors for Mercury metering are all programmed in to the meters.

Audit commentary

Compensation factors for Mercury metering are all programmed in to the meters.

Audit outcome

Compliant

7.15. Metering Installations Incorporating a Meter (Clause 26(1) of Schedule 10.7)

Code reference

Clause 26(1) of Schedule 10.7

Code related audit information

The MEP must ensure that each meter in a metering installation it is responsible for is certified.

Audit observation

I checked the records for ten metering installations to confirm compliance.

Audit commentary

Meters were certified in all cases. Compliance is confirmed.

Audit outcome

Compliant

7.16. Metering Installations Incorporating a Measuring Transformer (Clause 28(1) of Schedule 10.7)

Code reference

Clause 28(1) of Schedule 10.7

Code related audit information

The MEP must ensure that each measuring transformer in a metering installation it is responsible for is certified.

Audit observation

I checked the records for ten metering installations to confirm compliance.

Audit commentary

Measuring transformers were certified in all cases. Compliance is confirmed.

Audit outcome

Compliant

7.17. Metering Installations Incorporating a Data Storage Device (Clause 36(1) of Schedule 10.7)

Code reference

Clause 36(1) of Schedule 10.7

Code related audit information

The MEP must ensure that each data storage device in a metering installation it is responsible for is certified.

Audit observation

I checked the records for ten metering installations to confirm compliance.

Audit commentary

Data storage devices were certified in all cases. Compliance is confirmed.

Audit outcome

Compliant

7.18. Notification of ATH Approval (Clause 7 (3) Schedule 10.3)

Code reference

Clause 7 (3) Schedule 10.3

Code related audit information

If the MEP is notified by the Authority that an ATH's approval has expired, been cancelled or been revised, the MEP must treat all metering installations certified by the ATH during the period where the ATH was not approved to perform the activities as being defective and follow the procedures set out in 10.43 to 10.48.

Audit observation

I checked the ATH register to confirm compliance.

Audit commentary

All relevant ATHs have appropriate approval.

Audit outcome

Compliant

7.19. Interim Certification (Clause 18 of Schedule 10.7)

Code reference

Clause 18 of Schedule 10.7

Code related audit information

The MEP must ensure that each interim certified metering installation on 28 August 2013 is certified by no later than 1 April 2015.

Audit observation

Mercury does not have any interim certified metering installations.

Audit commentary

Mercury does not have any interim certified metering installations.

Audit outcome

Not applicable

8. INSPECTION OF METERING INSTALLATIONS

8.1. Category 1 Inspections (Clause 45 of Schedule 10.7)

Code reference

Clause 45 of Schedule 10.7

Code related audit information

The MEP must ensure that category 1 metering installations (other than interim certified metering installations):

- *have been inspected by an ATH within 120 months from the date of the metering installation's most recent certification or*
- *for each 12-month period, commencing 1 January and ending 31 December, a sample of the category 1 metering installations selected under clause 45(2) of Schedule 10.7 has been inspected by an ATH.*

Before a sample inspection process can be carried out, the MEP must submit a documented process for selecting the sample to the Electricity Authority, at least two months prior to first date on which the inspections are to be carried out, for approval (and promptly provide any other information the Authority may request).

The MEP must not inspect a sample unless the Authority has approved the documented process.

The MEP must, for each inspection conducted under clause 45(1)(b), keep records detailing:

- *any defects identified that have affected the accuracy or integrity of the raw meter data recorded by the metering installation*
- *any discrepancies identified under clause 44(5)(b)*
- *relevant characteristics, sufficient to enable reporting of correlations or relationships between inaccuracy and characteristics*
- *the procedure used, and the lists generated, to select the sample under clause 45(2).*

The MEP must, if it believes a metering installation that has been inspected is or could be inaccurate, defective or not fit for purpose:

- *comply with clause 10.43*
- *arrange for an ATH to recertify the metering installation if the metering is found to be inaccurate under Table 1 of Schedule 10.1, or defective or not fit for purpose.*

The MEP must by 1 April in each year, provide the Authority with a report that states whether the MEP has, for the previous 1 January to 31 December period, arranged for an ATH to inspect each category 1 metering installation for which it is responsible under clause 45(1)(a) or 45(1)(b).

This report must include the matters specified in clauses 45(8)(a) and (b).

If the MEP is advised by the Authority that the tests do not meet the requirements under clause 45(9) of Schedule 10.7, the MEP must select the additional sample under that clause, carry out the required inspections, and report to the Authority, within 40 business days of being advised by the Authority.

Audit observation

Mercury does not have any Category 1 metering installations.

Audit commentary

Mercury does not have any Category 1 metering installations.

Audit outcome

Not applicable

8.2. Category 2 to 5 Inspections (Clause 46(1) of Schedule 10.7)

Code reference

Clause 46(1) of Schedule 10.7

Code related audit information

The MEP must ensure that each category 2 or higher metering installation is inspected by an ATH at least once within the applicable period. The applicable period begins from the date of the metering installation's most recent certification and extends to:

- 120 months for Category 2
- 60 months for Category 3
- 30 months for Category 4
- 18 months for Category 5.

Audit observation

I checked the inspection records for ten metering installations, and I checked Mercury's inspection schedule.

Audit commentary

Mercury's inspection program, whilst robust and well managed, does not achieve compliance with the Code, leading to cancellation of certification for some installations. The inspection program has each installation inspected at 18 months from the previous inspection and the inspections should be conducted at 18 months from the previous certification. Each installation is inspected at least once and often twice during the 36-month certification period, but the Code is clear that inspection should be 18 months from the previous certification. The table below shows which metering installations were not inspected within the allowable window.

Installation	Certification date	Inspection window start	Inspection window finish	Inspection date
Aratiatia G1	30-09-16	28-02-18	30-04-18	28-06-18
Aratiatia G3	25-08-16	25-01-18	25-03-18	28-06-18
Whakamaru G3	16-08-17	16-01-19	16-03-19	27-06-18
Whakamaru G4	04-09-17	04-02-19	04-04-19	27-06-18
Rotokawa 11kV	22-05-17	22-10-18	22-12/18	22-06-18
OEC21 to NAP	22-05-17	22-10-18	22-12/18	22-06-18
Southdown T1AT	01-02-17	01-06-18	01-08-18	20-11-17
Southdown T1BT	27-09-17	27-02-18	27-04-18	20-11-17

There are also some that have been recently inspected (earlier than the required inspection window) and these will need to be inspected again within the window to achieve future compliance.

Audit outcome

Non-compliant

Non-compliance	Description		
Audit Ref: 8.2 With: Clause 46(1) of Schedule 10.7 From: 25-Mar-18 To: 06-May-19	Eight Mercury metering installations not inspected within the required window. Potential impact: None Actual impact: None Audit history: Once Controls: Strong Breach risk rating: 1		
Audit risk rating	Rationale for audit risk rating		
Low	I have recorded the controls as strong because inspections are conducted at least once and often twice during each 3-year certification period. There is no impact on settlement or other participants, therefore the audit risk rating is low.		
Actions taken to resolve the issue		Completion date	Remedial action status
This issue has arisen from interpretation of the EIPC not from changes in systems and processes in place. We believe that review of the EIPC currently being carried out will resolve the issue.		2019	Identified
Preventative actions taken to ensure no further issues will occur		Completion date	
If the EIPC review resolves the issue no changes to systems or processes will be required. If the EIPC review does not resolve the problem Mercury systems and processes.		2019	

8.3. Inspection Reports (Clause 44(5) of Schedule 10.7)

Code reference

Clause 44(5) of Schedule 10.7

Code related audit information

The MEP must, within 20 business days of receiving an inspection report from an ATH:

- undertake a comparison of the information received with its own records
- investigate and correct any discrepancies

- *update the metering records in the registry.*

Audit observation

I checked the process for confirming the accuracy of records with the ATH, Accucal.

Audit commentary

Inspections are conducted with the previous certification records as the “base data”. If any changes are required (a very rare event) they are made at the time of the inspection. Compliance is confirmed.

Audit outcome

Compliant

8.4. Broken or removed seals (Clause 48(4) and (5) of Schedule 10.7)

Code reference

Clause 48(4) and (5) of Schedule 10.7

Code related audit information

If the MEP is advised of a broken or removed seal it must use reasonable endeavours to determine

- a) who removed or broke the seal;*
- b) the reason for the removal or breakage*

and arrange for an ATH to carry out an inspection of the removal or breakage and determine any work required to remedy the removal or breakage.

The MEP must make the above arrangements within

- a) three business days, if the metering installation is category 3 or higher*
- b) 10 business days if the metering installation is category 2*
- c) 20 business days if the metering installation is category 1.*

Audit observation

I checked the process for the management of seals with Mercury and with Accucal.

Audit commentary

Mercury has a process in place for the management of seals and any subsequent investigation and reporting. Accucal maintains a database of seal information and Mercury conducts on-site checks of seals and the accuracy of sealing records. There were no examples of missing or broken seals during the audit period.

Audit outcome

Compliant

9. PROCESS FOR HANDLING FAULTY METERING INSTALLATIONS

9.1. Investigation of Faulty Metering Installations (Clause 10.43(4) and (5))

Code reference

Clause 10.43(4) and (5)

Code related audit information

If the MEP is advised or becomes aware that a metering installation may be inaccurate, defective, or not fit for purpose, it must investigate and report on the situation to all affected participants as soon as reasonably practicable after becoming aware of the information, but no later than;

- a) 20 business days for Category 1,*
- b) 10 business days for Category 2 and*
- c) 5 business days for Category 3 or higher.*

Audit observation

I checked the process for the management of faulty metering installations.

Audit commentary

Mercury has a process in place for the management of faulty metering installations and any subsequent investigation and reporting. Validation is in place at the time of interrogation and any issues are likely to be discovered within a short timeframe.

One example was identified during the audit period. Mokai T8 had erroneous data for some trading periods. This was identified during validation processes. The investigation and remedial actions occurred within the required timeframes and the incorrect data was revised.

Audit outcome

Compliant

9.2. Testing of Faulty Metering Installations (Clause 10.44)

Code reference

Clause 10.44

Code related audit information

If a report prepared under clause 10.43(4)(c) demonstrates that a metering installation is inaccurate, defective, or not fit for purpose, the MEP must arrange for an ATH to test the metering installation and provide a 'statement of situation'.

If the MEP is advised by a participant under clause 10.44(2)(a) that the participant disagrees with the report that demonstrates that the metering installation is accurate, not defective and fit for purpose, the MEP must arrange for an ATH to:

- a) test the metering installation*
- b) provide the MEP with a statement of situation within five business days of:*
- c) becoming aware that the metering installation may be inaccurate, defective or not fit for purpose; or*
- d) reaching an agreement with the participant.*

The MEP is responsible for ensuring the ATH carries out testing as soon as practicable and provides a statement of situation.

Audit observation

I checked the process for the management of faulty metering installations.

Audit commentary

One example was identified during the audit period. Mokai T8 had erroneous data for some trading periods. This was identified during validation processes. The investigation and remedial actions occurred within the required timeframes and the incorrect data was revised.

I recommend Mercury develops a summary report template so that when any investigation is complete, there is a complete record of all actions with dates. This will ensure the completed steps are easy to understand during any follow up checks or investigations.

Recommendation	Description	Audited party comment	Remedial action
Regarding Clause 10.44	Prepare summary report in relation to any defective metering installations.	Report template will be developed	Identified

Audit outcome

Compliant

9.3. Statement of Situation (Clause10.46(2))

Code reference

Clause10.46(2)

Code related audit information

Within three business days of receiving the statement from the ATH, the MEP must provide copies of the statement to:

- *the relevant affected participants*
- *the Authority (for all category 3 and above metering installations and any category 1 and category 2 metering installations) on request.*

Audit observation

I checked the process for the management of faulty metering installations.

Audit commentary

One example was identified during the audit period. Mokai T8 had erroneous data for some trading periods. This was identified during validation processes. The investigation and remedial actions occurred within the required timeframes and the incorrect data was revised.

Notification to participants was within the allowable timeframe, but the Authority was not notified as required by this clause.

Audit outcome

Non-compliant

Non-compliance	Description		
Audit Ref: 9.3 With: Clause10.46(2) From: 14-Jan-19 To: 06-May-19	Statement of situation not provided to Authority. Potential impact: Low Actual impact: Low Audit history: None Controls: Moderate Breach risk rating: 2		
Audit risk rating	Rationale for audit risk rating		
Low	The controls are recorded as strong because they mitigate risk most of the time but there is room for improvement. The impact participants is minor; therefore the audit risk rating is low.		
Actions taken to resolve the issue		Completion date	Remedial action status
Better process structure would prevent overlooking the required statement to the authority		30/9/2019	Identified
Preventative actions taken to ensure no further issues will occur		Completion date	
A report template will be developed including process to advise the authority (and all other interested parties).		30/9/2019	

10. ACCESS TO AND PROVISION OF RAW METER DATA AND METERING INSTALLATIONS

10.1. Access to Raw Meter Data (Clause 1 of Schedule 10.6)

Code reference

Clause 1 of Schedule 10.6

Code related audit information

The MEP must give authorised parties access to raw meter data within 10 business days of receiving the authorised party making a request.

The MEP must only give access to raw meter data to a trader or person, if that trader or person has entered into a contract to collect, obtain, and use the raw meter data with the end customer.

The MEP must provide the following when giving a party access to information:

- a) the raw meter data; or*
- b) the means (codes, keys etc.) to enable the party to access the raw meter data.*

The MEP must, when providing raw meter data or access to an authorised person use appropriate procedures to ensure that:

- the raw meter data is received only by that authorised person or a contractor to the person*
- the security of the raw meter data and the metering installation is maintained*
- access to the raw meter data is limited to only the specific raw meter data under clause 1(7)(c) of Schedule 10.6.*

Audit observation

Mercury as an MEP does not control access to raw meter data. Mercury as a participant will consider requests for access to data or components.

Audit commentary

Mercury as an MEP does not control access to raw meter data. Mercury as a participant will consider requests for access to data or components.

Audit outcome

Compliant

10.2. Restrictions on Use of Raw Meter Data (Clause 2 of Schedule 10.6)

Code reference

Clause 2 of Schedule 10.6

Code related audit information

The MEP must not give an authorised person access to raw meter data if to do so would breach clause 2(1) of Schedule 10.6.

Audit observation

Mercury as an MEP does not control access to raw meter data. Mercury as a participant will consider requests for access to data or components.

Audit commentary

Mercury as an MEP does not control access to raw meter data. Mercury as a participant will consider requests for access to data or components.

Audit outcome

Compliant

10.3. Access to Metering Installations (Clause 3(1), (3) and (4) of Schedule 10.6)

Code reference

Clause 3(1), (3) and (4) of Schedule 10.6

Code related audit information

The MEP must within 10 business days of receiving a request from one of the following parties, arrange physical access to each component in a metering installation:

- *a relevant reconciliation participant with whom it has an arrangement (other than a trader)*
- *the Authority*
- *an ATH*
- *an auditor*
- *a gaining MEP.*

This access must include all necessary means to enable the party to access the metering components

When providing access, the MEP must ensure that the security of the metering installation is maintained and physical access is limited to only the access required for the purposes of the Code, regulations in connection with the party's administration, audit and testing functions.

Audit observation

I checked whether any parties had requested access to metering installations.

Audit commentary

Mercury can facilitate physical access as required. No requests have been made.

Audit outcome

Compliant

10.4. Urgent Access to Metering Installations (Clause 3(5) of Schedule 10.6)

Code reference

Clause 3(5) of Schedule 10.6

Code related audit information

If the party requires urgent physical access to a metering installation, the MEP must use its best endeavours to arrange physical access.

Audit observation

I checked whether any parties had requested access to metering installations.

Audit commentary

Mercury can facilitate physical access as required. No requests have been made.

Audit outcome

Compliant

10.5. Electronic Interrogation of Metering Installations (Clause 8 of Schedule 10.6)

Code reference

Clause 8 of Schedule 10.6

Code related audit information

When raw meter data can only be obtained from an MEP's back office, the MEP must

- *ensure that the interrogation cycle does not exceed the maximum interrogation cycle shown in the registry*
- *interrogate the metering installation at least once within each maximum interrogation cycle.*

When raw meter data can only be obtained from an MEP's back office, the MEP must ensure that the internal clock is accurate, to within ± 5 seconds of:

- *New Zealand standard time; or*
- *New Zealand daylight time.*

When raw meter data can only be obtained from an MEP's back office, the MEP must record in the interrogation and processing system logs, the time, the date, and the extent of any change in the internal clock setting in the metering installation.

When raw meter data can only be obtained from an MEP's back office, the MEP must ensure that a data storage device in a metering installation does not exceed the maximum time error set out in Table 1 of clause 8(5) of Schedule 10.6.

The MEP must compare the time on the internal clock of the data storage device with the time on the interrogation and processing system clock, calculate and correct (if required by this provision) any time error, and advise the affected reconciliation participant.

When raw meter data can only be obtained from an MEP's back office, the MEP must, when interrogating a metering installation, download the event log, check the event log for evidence of malfunctioning or tampering, and if this is detected, carry out the appropriate requirements of Part 10.

The MEP must ensure that all raw meter data that can only be obtained from the MEPs back office, that is downloaded as part of an interrogation, and that is used for submitting information for the purpose of Part 15 is archived:

- *for no less than 48 months after the interrogation date*
- *in a form that cannot be modified without creating an audit trail*
- *in a form that is secure and prevents access by any unauthorised person*

in a form that is accessible to authorised personnel.

Audit observation

Mercury is not responsible for electronic interrogation.

Audit commentary

Mercury is not responsible for electronic interrogation.

Audit outcome

Not applicable

10.6. Security of Metering Data (Clause 10.15(2))

Code reference

Clause 10.15(2)

Code related audit information

The MEP must take reasonable security measures to prevent loss or unauthorised access, use, modification or disclosure of the metering data.

Audit observation

Mercury is not responsible for electronic interrogation.

Audit commentary

Mercury is not responsible for electronic interrogation.

Audit outcome

Not applicable

10.7. Time Errors for Metering Installations (Clause 8(4) of Schedule 10.6)

Code reference

Clause 8(4) of Schedule 10.6

Code related audit information

When raw meter data can only be obtained from the MEPs back office, the MEP must ensure that the data storage device it interrogates does not exceed the maximum time error set out in Table 1 of clause 8(5) of Schedule 10.6.

Audit observation

Mercury is not responsible for electronic interrogation.

Audit commentary

Mercury is not responsible for electronic interrogation.

Audit outcome

Not applicable

10.8. Event Logs (Clause 8(7) of Schedule 10.6)

Code reference

Clause 8(7) of Schedule 10.6

Code related audit information

When raw meter data can only be obtained from the MEP's back office, the MEP must, when interrogating a metering installation:

- a) ensure an interrogation log is generated*
- b) review the event log and:*
 - i. take appropriate action*
 - ii. pass the relevant entries to the reconciliation participant.*
- c) ensure the log forms part of an audit trail which includes:*
 - i. the date and*

- ii. *time of the interrogation*
- iii. *operator (where available)*
- iv. *unique ID of the data storage device*
- v. *any clock errors outside specified limits*
- vi. *method of interrogation*
- vii. *identifier of the reading device used (if applicable).*

Audit observation

Mercury is not responsible for electronic interrogation.

Audit commentary

Mercury is not responsible for electronic interrogation.

Audit outcome

Not applicable

10.9. Comparison of HHR Data with Register Data (Clause 8(9) of Schedule 10.6)

Code reference

Clause 8(9) of Schedule 10.6

Code related audit information

When raw meter data can only be obtained from the MEP's back office, the MEP must ensure that each electronic interrogation that retrieves half-hour metering information compares the information against the increment of the metering installations accumulating meter registers.

Audit observation

Mercury is not responsible for electronic interrogation.

Audit commentary

Mercury is not responsible for electronic interrogation.

Audit outcome

Not applicable

10.10. Correction of Raw Meter Data (Clause 10.48(2),(3))

Code reference

Clause 10.48(2),(3)

Code related audit information

If the MEP is notified of a question or request for clarification in accordance with clause 10.48(1), the MEP must, within 10 business days:

- *respond in detail to the questions or requests for clarification*
- *advise the reconciliation participant responsible for providing submission information for the POC of the correction factors to apply and period the factors should apply to.*

Audit observation

I checked whether correction of raw meter data would occur.

Audit commentary

As mentioned in **section 9**, there is a process in place to manage faulty metering installations. Mercury has input into data correction and the raw data is always still available.

Audit outcome

Compliant

CONCLUSION

Three non-compliances were identified. Mercury's inspection program, whilst robust and well managed, does not achieve compliance with the Code, leading to cancellation of certification for some installations. The inspection program has each installation inspected at 18 months from the previous inspection and the inspections should be conducted at 18 months from the previous certification. Each installation is inspected at least once and often twice during the 36-month certification period, but the Code is clear that inspection should be 18 months from the previous certification. A proposed Code change is likely to allow Mercury's current inspection process to be compliant.

One faulty metering event was investigated and resolved during the audit period. I've recommended that a summary report is prepared for any future events of this nature and I've also recorded that the Authority was not notified as required by the Code.

The date of the next audit is determined by the Electricity Authority and is dependent on the level of compliance during this audit. The Future Risk rating table provides some guidance on this matter and recommends an audit frequency of 24 months, which I agree with.

PARTICIPANT RESPONSE

The technical non-compliances relating to the 18 month inspections are acknowledged however these non-compliances are seen to be the result of a recent interpretation of the wording of the EIPC code not the result of inadequate systems. It is hoped that revision of the code will legitimise the processes in place.

The identified omission of a specified reporting to the Authority was an oversight; the recommendation to more formally structure the meter fault reporting process will prevent future recurrence of this.