

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

For



**FINANCIAL CORPORATION LIMITED (FCLM)**

Prepared by: Steve Woods – Veritek Limited

Date audit commenced: 9 April 2019

Date audit report completed: 18 April 2019

Audit report due date: 01-May-19

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## EXECUTIVE SUMMARY

**Financial Corporation Limited (FCLM)** is a Metering Equipment Provider (MEP) and is required to undergo an audit by 1 May 19 in accordance with clause 1(1)(b) of schedule 10.5.

19 non compliances are recorded, and two recommendations are made. Improvements have been made to the accuracy of registry data and most issues are now resolved.

The total quantity of uncertified meters is now approx. 2,500 down from approx. 3,000.

The data collection function still has some non-compliant processes. The system is largely compliant, but the Code also requires certain checks to be conducted and they are not being done. The checks are as follows:

- 1,013 ICPs were not read during the maximum interrogation cycle and there are no processes in place to resolve issues preventing interrogation;
- there is no action taken when there are clock errors to ensure the data is not affected and to ensure there are no systemic issues; and
- event logs are not reviewed prior to being sent to retailers.

There are some metering installations with cancelled certification where the registry has not been updated with a revised expiry date. The issues are as follows:

- incorrect monitoring of five installations certified at a lower category;
- two installations not monitored since insufficient load certification was completed;
- 17 installations not fit four purpose due to low burden; and
- 11 installations without inspections conducted within the allowable window.

ICP 0002221151WF237 was reported as defective by the Trader. An investigation was conducted but the installation was not tested, and it has not been confirmed whether the installation is recording accurately or not. There are also no type test, calibration or certification records available and it appears this is a check metering installation being used as revenue metering. One of the measuring transformers is overheating and the casing has started to become deformed. Compounding the issue is that there is no test facility and no room for a test facility or a compliant meter.

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 three months. To ensure FCLM has sufficient time to implement changes I recommend an audit frequency of nine months.

## AUDIT SUMMARY

### NON-COMPLIANCES

Subject	Section	Clause	Non-Compliance	Controls	Audit Risk Rating	Breach Risk Rating	Remedial Action
Services access interface	2.1	10.9(2)	Location of services access interface not recorded for ICP 0000371281TU8A8.	Strong	Low	1	Identified
Provision of accurate information	2.5	11.2 and 10.6	Registry not always updated as soon as	Moderate	Low	2	Investigating

			<p>practicable in some cases.</p> <p>Statement of situation incomplete for ICP 0002221151WF237.</p> <p>Late files to retailers in December 2018 due to disk storage reaching 100%.</p>				
Registry updates	3.2	2 of Schedule 11.4	97 registry updates later than 15 business days.	Strong	Low	1	Identified
Changes to registry records	4.10	3 of Schedule 11.4	Some records updated on the registry later than 10 business days.	Moderate	Low	2	Identified
Accurate and complete records	5.1	4(1) of Schedule 10.6	<p>Metering records not populated on registry for 11 ICPs.</p> <p>Some CT information is missing for 19 ICPs.</p> <p>No calibration or certification records for ICP 0002221151WF237.</p>	Moderate	Low	2	Identified
Response to switch request	6.1	1(1) of Schedule 11.4	Nine late MN files.	Strong	Low	1	Identified
Provision of Registry Information	6.2	7 (1), (2) and (3) of Schedule 11.4	Some registry records incomplete or incorrect.	Strong	Low	1	Identified
Cancellation of certification	6.4	6 of Schedule 11.4	<p>Certification cancelled and registry not updated for:</p> <p>Incorrect monitoring of 5 installations certified at a lower category;</p> <p>2 installations not monitored since insufficient load certification was completed;</p> <p>17 installations not fit for purpose due to low burden; and</p> <p>11 installations without inspections conducted</p>	Weak	Medium	6	Unknown

			within the allowable window.				
Certification of metering installations	7.1	10.38 (a), clause 1 and clause 15 of Schedule 10.7	Certification cancelled or expired for 2,558 ICPs.  Certification expired for NSP CFM0011CBREEN.	Moderate	Medium	4	Identified
Insufficient load	7.7	14(3) and (4) of Schedule 10.7	Monitoring not conducted of 2 installations certified with insufficient load.	Moderate	Low	2	Identified
Timekeeping	7.10	23 of Schedule 10.7	48 meters with timeclocks not checked every 12 months.	None	Low	5	Identified
Compensation factors	7.14	24(3) of Schedule 10.7	Compensation factor of 20 not recorded in the registry for ICP 0002221151WF237.	Strong	High	3	Identified
Interim certification	7.19	18 of Schedule 10.7	896 ICPs with expired interim certification.	Moderate	Medium	4	Identified
Category 1 inspections	8.1	45 of Schedule 10.7	Inspections not conducted within the allowable window for nine installations.	Moderate	Low	2	Identified
Category 2 to 5 inspections	8.2	46(1) of Schedule 10.7	Inspections not conducted within the allowable window for five installations.	Moderate	Low	2	Investigating
Testing of faulty metering installation	9.2	10.44(1)(a) and 10.44(3)(a)	Testing of a faulty metering installation not conducted.	Weak	Medium	6	Investigating
Maximum interrogation cycle	10.5	8 of Schedule 10.6	1,013 ICPs not read during the maximum interrogation cycle.  Processes not in place to resolve issues preventing interrogation.	Weak	Medium	6	Disputed
Time Errors for Metering Installations	10.7	8(4) of Schedule 10.6	Clock errors greater than the threshold for 11 ICPs.	Strong	Low	1	Disputed
Event logs	10.8	8(7)(b) of Schedule 10.6	Event logs are not reviewed prior to being sent to retailers.	None	Low	5	Disputed

<b>Future Risk Rating</b>	<b>56</b>
<b>Indicative Audit Frequency</b>	<b>3 months</b>

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
Electronic Interrogation of Metering Installations	10.5	Clause 8 of Schedule 10.6	Implement suitable processes to ensure issues preventing successful interrogation are resolved.
Comparison of HHR Data with Register Data	10.9	Clause 8(9) of Schedule 10.6	Ensure all sum-check failures are investigated and report on the results of each investigation.

## 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

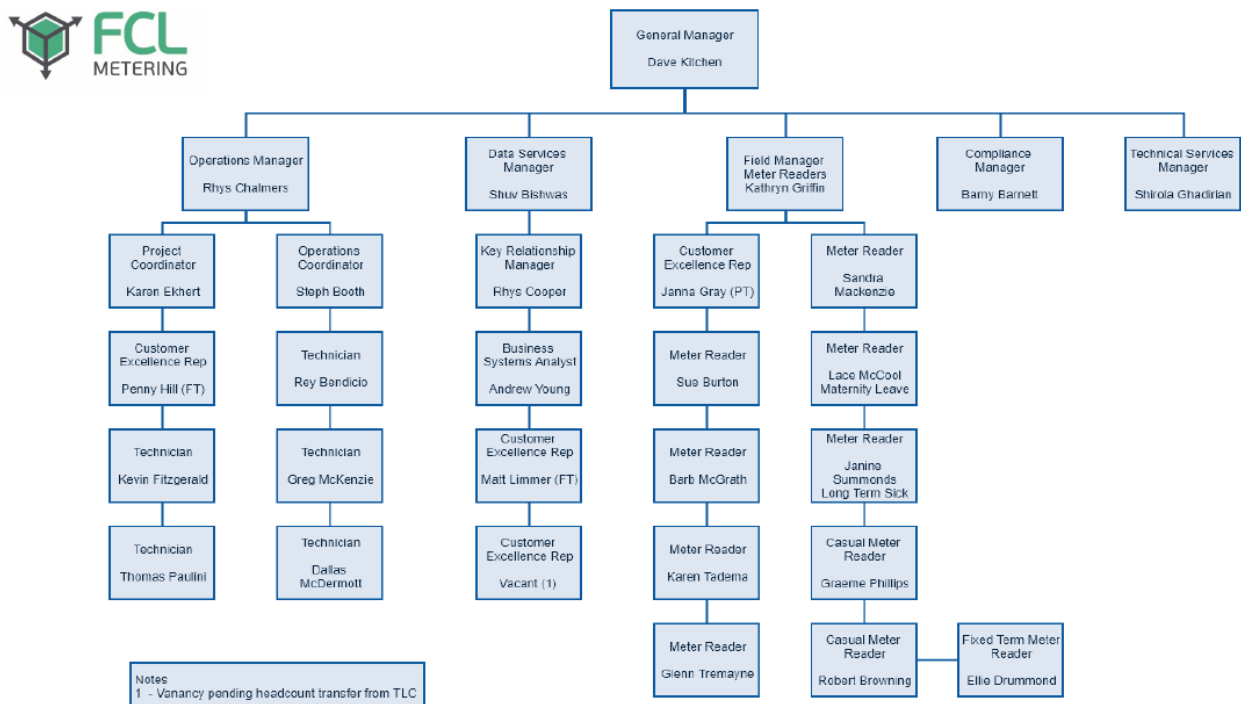
I checked the Electricity Authority website to confirm whether there were any exemptions in place.

#### Audit commentary

I checked the Electricity Authority website and I confirmed that FCLM was granted exemption 267 on 11 May 2018. FCLM is exempted from complying with the obligation in clause 7(1) of Schedule 11.4 of the Electricity Industry Participation Code 2010 ("Code") to provide to the registry manager the information indicated in lines 23 to 30 of Table 1. FCLM is exempt from providing the metering records that The Lines Company Limited uses only for network billing purposes.

### 1.2. Structure of Organisation

FCLM Metering Services Structure – Effective 09 April 2019.



### 1.3. Persons involved in this audit

Auditor: Steve Woods

**Veritek Limited**

**Electricity Authority Approved Auditor**

FCLM personnel assisting in this audit were.

Name	Title
David Barnett	Compliance Manager
Rhys Chalmers	Operations Manager
Shuv Biswas	Data Services Manager

### 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

FCLM engages Accucal, VEMS and Wells as ATHs to conduct certification activities. These parties are not considered agents for this activity.

#### Audit commentary

FCLM had previously used ATHs as agents for the storage of certification records. This practise was changed prior to the last audit with FCLM requiring the ATHs to provide certification reports for all activities. The certification records are stored in Orion under each ICP. I checked 60 FCLM certification records which confirmed this.

### 1.5. Hardware and Software

FCLM MEP data is held in Orion, which is subject to backup arrangements in accordance with standard industry protocols.

## 1.6. Breaches or Breach Allegations

FCLM provided details of three breach allegations, as shown in the table below.

Clause	Details	Result
10.6 and clause 1(6)(a) of Schedule 10.6	FCLM provided incorrect final meter readings when replacing analogue meters with smart meters.	decline to pursue without warning
Part 11 Schedule 11.4 clause 3	Incorrect register content codes for two ICPs.	early closure
Clause 10.38 (a), clause 1 and clause 15 of Schedule 10.7, Clause 4(1)(a) and (b) of Schedule 10.6, and Table 1, Schedule 11.4, Clause 10.44(1)(a) and 10.44(3)(a)	FCLM updated multiplier in Registry from 1 to 20 effective from 28 Sep 2018. FCLM doesn't have the certification note & test result on either the meter installation date or the effective date.	no result yet

## 1.7. ICP Data

Metering Category	Number of ICPs 2018	Number of ICPs 2019
1	31,576	33,275
2	1,477	1,545
3	46	51
4	8	10
5	0	0
9	16	8

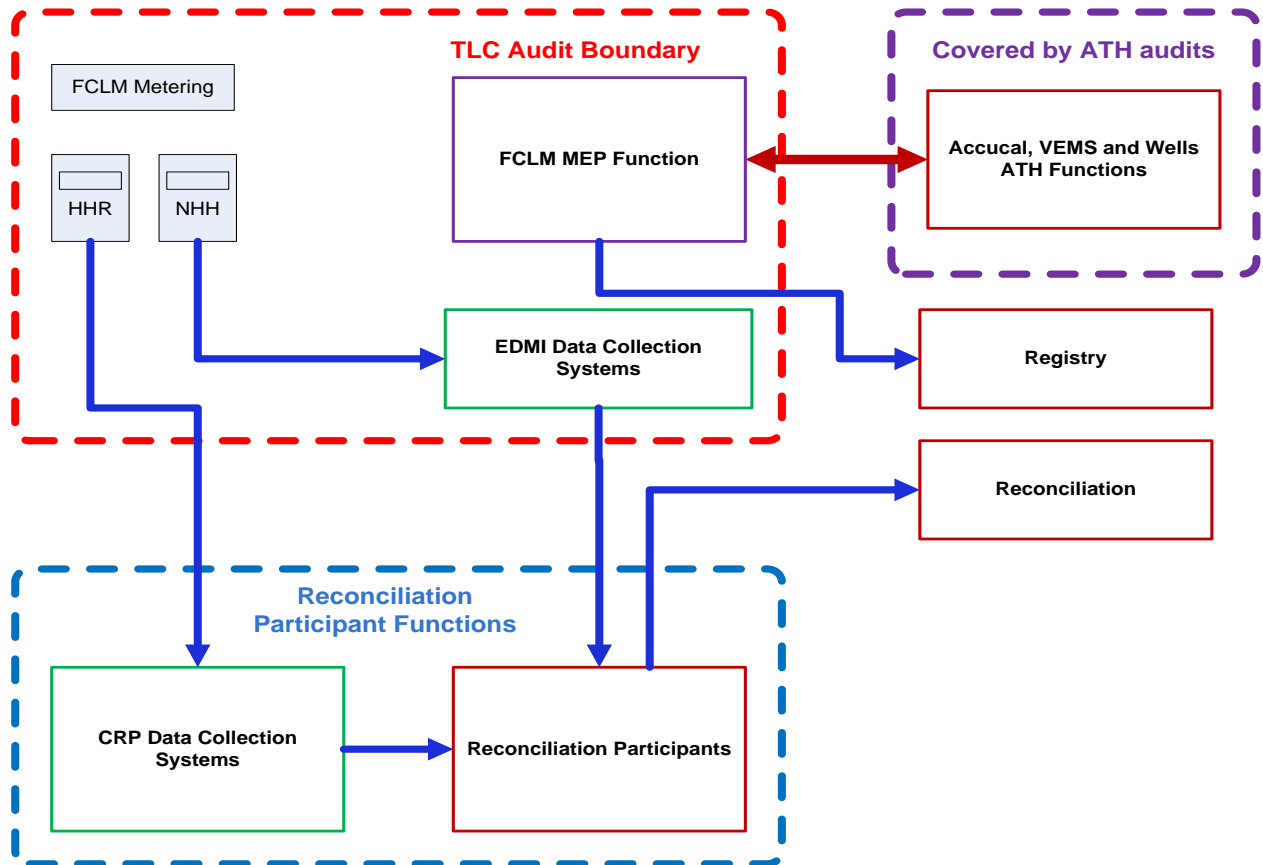
## 1.8. Authorisation Received

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 Brett Piskulic of Veritek Limited. The table below shows that some of the issues have been cleared.

### Table of Non-Compliance

Subject	Section	Clause	Non compliance	Status
Provision of accurate information	2.5	11.2 and 10.6	Registry not always updated as soon as practicable in some cases.  Incorrect meter readings provided when 3,504 meters reconfigured.	Still existing  Cleared
Registry updates	3.2	2 of Schedule 11.4	39 registry updates later than 15 business days.	Still existing
Metering Installation Design & Accuracy	4.3	4(1) of Schedule 10.7	ATHs are not always recording the design report reference.  Error and uncertainty calculations not always conducted correctly by ATHs.	Cleared
Changes to registry records	4.10	3 of Schedule 11.4	Some records updated on the registry later than 10 business days.	Still existing
Accurate and complete records	5.1	4(1) of Schedule 10.6	Metering records not populated on registry for 49 ICPs.  Some CT information is missing.	Still existing for a smaller quantity
Provision of Registry Information	6.2	7 (1), (2) and (3) of Schedule 11.4	Some registry records incomplete or incorrect.	Still existing
Cancellation of certification	6.4	6 of Schedule 11.4	Certification cancelled and registry not updated for incorrect monitoring of 7 installations certified at a lower category.  Certification cancelled and registry not updated for 2 installations not monitored since insufficient load certification was completed.	Still existing

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 expired for 2,995 ICPs.	Still existing
Insufficient load	7.7	14(3) and (4) of Schedule 10.7	Monitoring not conducted of 2 installations certified with insufficient load.	Still existing
Alternative certification	7.9	32(2), (3) and (4) of Schedule 10.7	The market administrator was advised later than 10 business days after the date of certification of the metering installation.	Cleared
Interim certification	7.19	18 of Schedule 10.7	1,648 ICPs with expired interim certification.	Still existing
Maximum interrogation cycle	10.5	8 of Schedule 10.6	874 ICPs not read during the maximum interrogation cycle. Processes not in place to resolve issues preventing interrogation.	Still existing
Time Errors for Metering Installations	10.7	8(4) of Schedule 10.6	Clock errors greater than the threshold for 8 ICPs.	Still existing

## Table of Recommendations

Subject	Section	Clause	Recommendation for improvement	Status
Uncertainty calculations	4.3	Clause 4(1) of Schedule 10.7	Require the ATHs to provide error and uncertainty results more clearly on metering installation certification reports.	Cleared
Accuracy of records	5.1	Clause 4(1)(a) and (b) of Schedule 10.	Require ATHs to provide certification records with better clarity.	Cleared
Electronic Interrogation of Metering Installations	10.5	Clause 8 of Schedule 10.6	Implement suitable processes to ensure issues preventing successful interrogation are resolved.	Still existing
Comparison of HHR Data with Register Data	10.9	Clause 8(9) of Schedule 10.6	Ensure all sum-check failures are investigated and report on the results of each investigation.	Still existing

## 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 60 metering installations, covering all relevant ATHs.

#### Audit commentary

FCLM has an AMI system and for many installations the services access interface will be “remote”. For non-AMI installations (including C&I installations) the services access interface is “local”. I checked 60 certification records and found the services access interface was recorded correctly by ATHs for 59 installations. ICP 0000371281TU8A8 does not have the location of the services access interface recorded.

#### Audit outcome

Non-compliant

Non-compliance	Description		
Audit Ref: 2.1 With: Clause 10.9(2)  From: 17-Dec-18 To: 09-Apr-19	Location of services access interface not recorded for ICP 0000371281TU8A8. Potential impact: None Actual impact: None Audit history: None Controls: Strong Breach risk rating: 1		
Audit risk rating	Rationale for audit risk rating		
Low	The controls are recorded as strong because they mitigate risk to an acceptable level.  This field is not routinely used by other parties; therefore, the audit risk rating is low.		
Actions taken to resolve the issue		Completion date	Remedial action status
Notify Test house to amend the certification report		30/04/2019	Identified
Preventative actions taken to ensure no further issues will occur		Completion date	
Remind all Test Houses of the services interface requirements. Documented confirmation to be requested to ensure no further issues will occur.		30/04/2019	



## 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

FCLM 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

FCLM uses the FCLM 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

Relevant documentation was checked to ensure the compatibility of communication equipment.

### Audit commentary

FCLM 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 content of this audit report was reviewed to determine whether all practicable steps had been taken to provide accurate information.

### Audit commentary

The content of this audit report indicates that FCLM has taken all practicable steps to ensure that information is complete and accurate in most cases; however, in **sections 6.2** and **6.4** the report records that some information was not updated as soon as practicable. The main issue is that the registry is not always updated when certification is cancelled.

In **section 9.2**, it is recorded that a statement of situation was provided for ICP 0002221151WF237, but testing was not conducted. The VircomEMS ATH stated testing could not be conducted because there was no testblock present to enable connection of test equipment. This response is not considered complete and accurate information.

As recorded in **section 10.1** one incident occurred in December 2018 when the MultiDrive disk storage reached 100% and files were not sent from 1.00pm on December 6<sup>th</sup> (Day 4 of the submission period) until December 10<sup>th</sup>. This caused retailers to have to perform a large number of estimates.

### Audit outcome

Non-compliant

Non-compliance	Description		
<p>Audit Ref: 2.5</p> <p>With: Clause 11.2 and Clause 10.6</p> <p>From: 01-Jul-18</p> <p>To: 31-Mar-19</p>	<p>Registry not always updated as soon as practicable in some cases.</p> <p>Statement of situation incomplete for ICP 0002221151WF237.</p> <p>Late files to retailers in December 2018 due to disk storage reaching 100%.</p> <p>Potential impact: Medium</p> <p>Actual impact: Low</p> <p>Audit history: None</p> <p>Controls: Moderate</p> <p>Breach risk rating: 2</p>		
Audit risk rating	Rationale for audit risk rating		
Low	<p>Controls are recorded as moderate because there is room to improve processes.</p> <p>The impact on other participants is minor; therefore, the audit risk rating is low.</p>		
Actions taken to resolve the issue		Completion date	Remedial action status
<p>VEMS were unable to fully complete a testing portion of the Statement of situation as the metering is not fit for purpose as identified by FCLM on compliance change out.</p> <p>FCLM expect our contractors to act in a safe manner. Altering the installation may cause risk to the installation, or themselves. As such, FCLM cannot alter the installation to complete testing.</p> <p>FCLM have recommended the installation be disconnected until the issue has been resolved, as there is a current Health and Safety risk with this metering installation.</p> <p>As an MEP does not own the Electrical installation, we are currently awaiting other parties to resolve the issue with the installation to allow appropriate metering to be installed.</p> <p>FCLM put Health and Safety as a higher priority than completing a test.</p> <p>The disk storage problem had a root cause analysis done and a fix applied to prevent any further issues.</p>		30/04/2019	Investigating
			<p><b>Post audit comment.</b></p> <p>Testing can be conducted with a temporary shutdown to connect test equipment.</p>
Preventative actions taken to ensure no further issues will occur		Completion date	
These types of situations occasionally happen and need to be dealt with on a case by case basis.		Ongoing	

### 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 if FCLM had sent or received any invoices.

##### Audit commentary

FCLM has not sent or received any invoices in relation to this clause during the audit period. FCLM invoiced another MEP during one of the previous audit periods and this invoice is yet to be paid.

##### 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

I checked the event detail for the period 01/10/17 to 31/05/18 for all records where FCLM became the MEP to evaluate the timeliness of updates.

##### Audit commentary

I examined an event detail report for 1,562 switches in relation to this clause and the findings are shown in the table below.

I checked 12 ICPs in detail, and I found that late nomination by the trader was the cause of the late update for eight of 12 ICPs where the update was late. Late processing by FCLM was the cause for the other four.

<b>Audit</b>	<b>Total ICPs</b>	<b>Total within 15 days</b>	<b>Average days</b>	<b>% compliant</b>
Oct 2015	283	124	45	44%
May 2016	440	88	66	20%
Dec 2016	60	53	33	88%
Oct 2017	517	478	7	92%
Jun 2018	367	328	6	89%
<b>April 2019</b>	<b>1,562</b>	<b>1,465</b>	<b>8</b>	<b>94%</b>

### Audit outcome

#### Non-compliant

<b>Non-compliance</b>	<b>Description</b>		
Audit Ref: 3.2 With: Clause 2 of Schedule 11.4  From: 01-Jul-18 To: 31-Mar-19	97 registry updates later than 15 business days.  Potential impact: Medium Actual impact: Low Audit history: Multiple times Controls: Strong Breach risk rating: 1		
<b>Audit risk rating</b>	<b>Rationale for audit risk rating</b>		
<b>Low</b>	Controls are in place to ensure the timeliness of updates, but FCLM is often prevented from updating the registry due to late field notification.  The impact on other participants is minor; therefore, the audit risk rating is low.		
<b>Actions taken to resolve the issue</b>		<b>Completion date</b>	<b>Remedial action status</b>
FCLM has introduced JIRA an email tracking system and reporting functions in Orion MEP database to minimise work order delays.		10/07/2018	Identified
<b>Preventative actions taken to ensure no further issues will occur</b>		Completion date	
Continue working closely with service providers to ensure we receive data on time, for example, we are streaming the workflow on the field PDA's to a single portal (per FSP) to allow for greater visibility and monitoring locally.		Ongoing	

### 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 with FCLM to confirm whether there had been any requests from other MEPs.

#### Audit commentary

This has not occurred, and no examples are available to examine. FCLM have stated that any information will be provided as necessary.

#### 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 FCLM 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 confirmed that FCLM has ceased to be responsible for some metering installations by checking the event detail report.

#### **Audit commentary**

FCLM has ceased to be responsible for some metering installations and they still continue with their responsibilities, mainly in relation to the storage of records, which are kept indefinitely. I checked the records for ICPs 0000014322KP2E0 and 0007820660WM898, which were both decommissioned. The metering details are still available in the “show historic” page in Orion.

#### **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

FCLM has engaged the Accucal, VEMS and Wells ATHs for certification activities. Both FCLM and the ATHs have provided design reports for this work which I have checked.

#### Audit commentary

FCLM has provided design reports which are used by Wells on the Lines Company Network. In all other cases the ATHs provide design reports. I have checked the design reports and confirm they include all of the requirements noted above and they were prepared by a person with the appropriate level of skills, expertise, experience and qualifications. Configuration 314 is a new design report, which was approved by the Wells ATH during the audit period. I checked the sign off details to confirm compliance.

#### 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 that FCLM uses the Accucal, VEMS and Wells ATHs.

#### Audit commentary

I have checked the Authority's website and confirm that the Accucal, VEMS and Wells have current and appropriate scope of approvals. FCLM monitors the ATH schedule on the Authority's website to ensure that these ATHs have an 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 the processes used by FCLM to ensure compliance with the design and with the error thresholds stipulated in Table 1. I also checked the certification records for 60 metering installations.

#### Audit commentary

The design report reference was recorded in all 60 certification reports.

All ATHs are now calculating uncertainty for metering installations certified using the comparative method. Previously the Wells certification reports did not show these results with sufficient clarity for MEPs to determine whether compliance was achieved. This matter has been recently resolved.

## 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

I asked FCLM to confirm whether subtraction was used for any metering installations where they were the MEP.

#### Audit commentary

FCLM does not have any metering installations where subtractive metering is used.

## Audit outcome

Compliant

#### 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

I checked FCLM's list file to confirm compliance with this requirement.

##### Audit commentary

I checked FCLM's list file and I confirm that all category 3 and above metering installations are HHR.

##### Audit outcome

Compliant

#### 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 if FCLM is responsible for any NSP metering.

##### Audit commentary

FCLM is responsible for metering at 36 NSPs. FCLM confirmed that subtraction is not used at these NSPs.

##### 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

FCLM is not responsible for any grid metering.

##### Audit commentary

FCLM is not responsible for any grid metering.

#### 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 asked FCLM to provide details of how they ensure the suitability of metering installations.

##### Audit commentary

FCLM has a metering manual, which addresses hazard identification and the suitability of metering enclosures. During the previous audit, I noted that this manual is not used for “off network” metering and that FCLM intended to send a letter to relevant parties reminding them of their responsibilities under this clause. All relevant ATHs have now been subject to an audit under new Part 10 and compliance is confirmed with the requirement to ensure enclosures are suitable.

#### 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

FCLM has provided copies of the design reports to all distributors and traders in order to achieve compliance with this requirement.

##### Audit commentary

FCLM provided a copy of correspondence sent to distributors and traders in June 2016. I checked the contents of the correspondence and confirm that it meets the requirements above.

## 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

I checked the event detail report for the period 01/07/18 to 31/03/19 to evaluate the timeliness of registry updates.

#### Audit commentary

The table below shows that there were registry updates for 596 new connections completed of which 107 were late, and 82% of updates were compliant. I checked 12 records in detail, and I found that late updates were caused by late nomination for four of the 12.

There were 14,123 other updates of which 85% of were compliant.

Event	Audit	Total ICPs	ICPs Notified Within 10 Days	ICPs Notified Greater Than 10 Days	Average Notification Days	Percentage Compliant
New Connection	May 2016	149	61	88	28	41%
	Dec 2016	345	177	168	17	51%
	Oct 2017	411	375	36	8	91%
	Jun 2018	322	284	38	7	88%
	<b>April 2019</b>	<b>596</b>	<b>489</b>	<b>107</b>	<b>8</b>	<b>82%</b>
Updates	May 16	12,362	6,340	6,022	192	51%
	Dec 16	31,245	2,605	28,640	394	8%
	Oct 2017	7,420	3,167	4,253	349	43%
	Jun 2018	19,524	18,839	685	9	96%
	<b>April 2019</b>	<b>14,123</b>	<b>11,967</b>	<b>2,156</b>	<b>49</b>	<b>85%</b>

## Audit outcome

Non-compliant

Non-compliance	Description		
Audit Ref: 4.10 With: Clause 3 of Schedule 11.4  From: 01-Jul-18 To: 31-Mar-19	Some records updated on the registry later than 10 business days.  Potential impact: Low  Actual impact: Low  Audit history: Multiple times  Controls: Moderate  Breach risk rating: 2		
Audit risk rating	Rationale for audit risk rating		
<b>Low</b>	I have recorded the controls as moderate in this area because they reduce risk most of the time but there is still room for improvement, especially with new connection updates.  The late updates for new connections occurred after the trader had populated their records, therefore the impact on participants, customers or settlement is minor, therefore the audit risk rating is low.		
Actions taken to resolve the issue		Completion date	Remedial action status
FCLM has introduced JIRA an email tracking system and reporting functions in Orion MEP database to minimise work order delays		10/07/2018	Identified
Preventative actions taken to ensure no further issues will occur		Completion date	
Continue working closely with service providers to ensure we receive data on time.		Ongoing	

### 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

FCLM metering infrastructure was examined as part of this audit to confirm compliance.

#### Audit commentary

FCLM metering infrastructure was examined as part of this audit and I confirm compliance.

#### Audit outcome

Compliant

### 4.12. Responsibility for Metering at ICP (Clause 10.23A)

#### Code reference

Clause 10.23A

#### Code related audit information

*If a metering installation at an ICP is to be decommissioned, but the ICP is not being decommissioned, the metering equipment provider that is responsible for decommissioning the metering installation must,—*

*(a) if the metering equipment provider is responsible for interrogating the metering installation—*

*(i) arrange for a final interrogation to take place before the metering installation is decommissioned; and*

*(ii) provide the raw meter data from the interrogation to the trader that is recorded in the registry as being responsible for the ICP; or*

*(b) if another participant is responsible for interrogating the metering installation, advise the other participant not less than three business days before the decommissioning—*

*(i) of the date and time of the decommissioning; and*

*(ii) that the participant must carry out a final interrogation.*

*(2) To avoid doubt, if a metering installation at an ICP is to be decommissioned because the ICP is being decommissioned—*

*(a) the metering equipment provider is not responsible for arranging a final interrogation of the metering installation; and*

*(b) the trader that is recorded in the registry as being responsible for the ICP must arrange for a final interrogation of the metering installation under clause 11.18(3).*

#### Audit observation

I checked whether FCLM was the MEP at any decommissioned metering installations and whether notification had been provided to relevant traders.

#### Audit commentary

There were no examples of decommissioned metering installations where the ICP was not decommissioned.

#### Audit outcome

Compliant

#### 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 asked FCLM whether they had approved any burden changes during the audit period.

##### Audit commentary

There have not been any examples of this occurring during the audit period.

##### 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 checked if there any examples of changes in accordance with these clauses.

##### Audit commentary

FCLM advised that there were no firmware or software changes during the audit period.

#### **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 checked examples of insufficient load certification to determine whether there were any examples of temporary energisation for the purposes of testing.

##### **Audit commentary**

I checked examples of insufficient load certification to determine whether there were any examples of temporary energisation for the purposes of testing. None were identified.

#### **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 certification records for 60 metering installations to evaluate compliance with this clause.

#### Audit commentary

Metering installation certification reports were provided for all 60 installations. The certification reports contained the details required by this clause.

I found 11 ICPs where FCLM is recorded on the registry as the MEP but the metering records have not been populated on the registry. Certification records are also not available.

FCLM has 19 CT metered installations without measuring transformer information on the registry, therefore they do not have information related to points a, b, c and e above.

Alternative certification has been applied in one case during the audit period, for NSP HS0011TENCEN. I checked the installation certification report and the notification sent to the Authority. The details of the alternative certification were recorded correctly in the certification report. The prescribed form was used and sent to the authority.

During the previous audit I recorded that several of the records were difficult to read and some of the critical fields were difficult to identify. I recommended that FCLM requires ATHs to include the following information clearly on the first page of certification records:

1. ICP
2. Metering installation certification date
3. Metering installation certification expiry date
4. Energisation date (if known and if the ATH is also the energisation agent)
5. Metering Category
6. Certification type (selected component, comparative, fully calibrated, alternative, insufficient load, lower category).

This matter has been recently resolved.

Category 2 ICP 0002221151WF237 is discussed in **section 9** because it is faulty. It was also determined that there are no certification records and no calibration reports or type test reports for any of the components.

#### Audit outcome

Non-compliant

Non-compliance	Description		
Audit Ref: 5.1 With: Clause 4(1) of Schedule 10.6  From: 01-Jul-18 To: 31-Mar-19	Metering records not populated on registry for 11 ICPs Some CT information is missing for 19 ICPs No calibration or certification records for ICP 0002221151WF237 Potential impact: Medium Actual impact: Low Audit history: Multiple times Controls: Moderate Breach risk rating: 2		
Audit risk rating	Rationale for audit risk rating		
<b>Low</b>	I have recorded the controls as moderate because there is room for improvement. There is a minor impact on other participants; therefore, the audit risk rating is low.		
Actions taken to resolve the issue		Completion date	Remedial action status
FCLM are continuing working with retailers to obtain either the metering data or access for these sites that has reduced from 30 to 11 since last audit. CTs information is being picked up on compliance. 0002221151WF237 work in progress with the distributor		Ongoing	Identified
Preventative actions taken to ensure no further issues will occur		Completion date	
Future connections require all components and their owner to be on the certification details.		Ongoing	

## 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 FCLM whether any requests had been made for copies of inspection reports.

### Audit commentary

FCLM 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 a directory of metering records from 2015 to confirm compliance.

### Audit commentary

FCLM keeps records indefinitely and intends to keep other records for at least 48 months.

### 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

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

### Audit commentary

FCLM has provided information to ATH's in the past and this may occur in future. There are no current examples to examine. FCLM demonstrated that records are kept in ORION; these are forwarded to the ATH as required.

**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

I checked the switch breach history detail report to confirm whether all responses were within 10 business days.

#### Audit commentary

Nine late MN files were identified.

#### Audit outcome

Compliant

Non-compliance	Description		
Audit Ref: 6.1 With: 1(1) of Schedule 11.4  From: 22-Aug-18 To: 28-Feb-19	Nine late MN files Potential impact: Low Actual impact: None Audit history: None Controls: Strong Breach risk rating: 1		
Audit risk rating	Rationale for audit risk rating		
Low	The controls are recorded as strong because they mitigate risk to an acceptable level.  There was no impact; therefore, the audit risk rating is low.		
Actions taken to resolve the issue		Completion date	Remedial action status
MNs were updated			Identified
Preventative actions taken to ensure no further issues will occur		Completion date	
Continue to improve FCLM processes		Ongoing	

## 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

I checked the list file for 100% of records to identify discrepancies.

### Audit commentary

Analysis of the list file and an event detail report for all FCLM ICPs found a number of issues. The table below shows the issues found and has a comparison to the previous audit results.

Quantity of ICPs				Issue	FCLM Response
Apr 19	Jul 18	Sep 17	Dec 16		
11	30	49	78	Blank metering records	
0	0	1	2	Category 2 ICP recorded as Category 1	N/A
0	0	0	2	Compensation factor of 3 on recently certified installations	N/A
0	1	0	5	ICPs over Category 1 with interim certification	N/A
0	15	9	3	ICPs with Y for the HHR flag but with NHH installations	N/A
0	1	2	0	Category 2 installations certified for more than 10 years or for zero years (cert date = expiry date)	N/A
0	1			Category 4 installations certified for more than 5 years	N/A

6	3	3	5	Category 1 installations certified for more than 15 years or for zero years (cert date = expiry date)	Updated – To be automated stage 3 Orion. In the interim manual monitoring to take place.
2	1	1	0	ICPs with IN24. The EA has advised that IN24 should not be used.	
0	0	0	0	ICPs with IN0	N/A
0	0	0	0	ICPs with UN0	N/A
0	0	0	0	D18 without N6	N/A
0	0	0	0	Day without night	N/A
3	296	293	37	Night without day	
0	3	4	3	CN only, these should have an associated code or they could be IN	0
12	592	157	464	Controlled load with no control device	
2	81	77	487	IN content code without a control device	
19	56	60	129	Installations without CT information populated on the registry	
0	0	0	3	Interim certification expiry dates incorrect	N/A
14	9	8	6	Export ICPs without an injection register	
2	2	4	1	Category 3 or 4 with a NHH meter installation type	
41	158	279	188	Profile requiring certified control device where control device is not certified (excl AMI)	
0	0	0	0	7304 register missing from the registry	N/A

#### Audit outcome

Non-compliant

Non-compliance	Description		
Audit Ref: 6.2 With: Clause 7 (1), (2) and (3) of Schedule 11.4 From: 01-Jul-18 To: 31-Mar-19	Some registry records incomplete or incorrect. Potential impact: Medium Actual impact: Low Audit history: Multiple times Controls: Strong Breach risk rating: 1		
Audit risk rating	Rationale for audit risk rating		
<b>Low</b>	I have recorded the controls as strong in this area. The number of discrepancies is very small. Very few of the discrepancies have an impact on participants, customers or settlement. The only relevant ones in this regard are tariff related and there were only a small number. The audit risk rating is low.		
Actions taken to resolve the issue		Completion date	Remedial action status
Updated discrepancies		30/04/2018	Identified
Preventative actions taken to ensure no further issues will occur		Completion date	
Further enhancements to Orion database.		31/06/2019	

### 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



I conducted a walkthrough of the validation processes to confirm compliance. I checked all records in the event detail report to confirm whether the timeliness requirements were being met.

#### Audit commentary

FCLM runs a discrepancy report on a monthly basis; corrections are made within five days, I checked the latest report to confirm that it had been run.

#### Audit outcome

Compliant

### 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 of the points listed above, and checked whether certification had been cancelled, and whether the registry had been updated within 10 business days.

#### Audit commentary

I checked all of the points mentioned above. The previous audit had found that the monitoring of seven category 2 metering installations which were certified at a lower category had been conducted incorrectly. FCLM has since corrected the method of monitoring. However, the certification of five of these ICPs was not cancelled and they have not been recertified. One ICP was recertified as Category 3. The five ICPs are recorded in the table below.

ICP	Certification date	Certification expiry	Comments
0006805370RN56B	03/02/17	03/02/27	Certification cancelled due to incorrect monitoring
0113930534LCA64	30/05/17	30/05/27	Certification cancelled due to incorrect monitoring
0236915045LCFEF	27/10/17	27/10/27	Certification cancelled due to incorrect monitoring
0252339746LC018	28/03/17	28/03/27	Certification cancelled due to incorrect monitoring
0260194298LC53B	20/05/11	20/05/21	Certification cancelled due to no monitoring

During the previous audit there were two examples of insufficient load certifications. Cat 2 ICP 1002046119LC662 and Cat 4 ICP 0148028039LCC7C. FCLM has not conducted monitoring of these installations since certification. The certification of these installations has not been cancelled and the registry has not been updated. One additional ICP was identified as having insufficient load certification and it is also not cancelled. The details are shown in the table below.

ICP	Certification date	Certification expiry	Comments
1002046119LC662	20/04/18	20/04/28	Certification cancelled due to no monitoring for insufficient load
0148028039LCC7C	13/11/17	10/11/22	Certification cancelled due to no monitoring for insufficient load

The next issue relates to low burden on CT metered installations. The Authority provided a memo on 04/04/16 clarifying that:

The Electricity Industry Participation Code 2010 (Code) requires an ATH to ensure that an approved calibration laboratory or a class A ATH has confirmed that all measuring transformers comply with the standards in Table 5 of Schedule 10.1 (clause 3(b) of Schedule 10.8). If the errors are within the limits set by the standards, the transformer has passed the test and may be certified as accurate within that range of burden (clause 3 of Schedule 10.8 and Table 5 of Schedule 10.1).

If a measuring transformer is installed in a metering installation with the burden lower than the lowest test point used in the measuring transformer's calibration, then burdening resistors must be used to ensure that the measuring transformer operates within its calibration range.<sup>1</sup>

The memo also states:

If an ATH certifies a metering installation with under-burdened measuring transformers, and it has not complied with clause 31(7) of Schedule 10.7 of the Code, then:

1. The ATH will breach clause 31(7) of Schedule 10.7 and also clause 43 of Schedule 10.7 by failing to grant certification in accordance with Part 10
2. The metering installation may be classed outside the applicable accuracy tolerances specified in Table 1 of Schedule 10.1, or not be fit for purpose, and if so, the metering installation certification is cancelled (clause 20(1)(b) of Schedule 10.7)
3. In certifying the metering installation, the ATH may breach clause 21 of Schedule 10.7 by certifying a metering installation that exceeds that maximum permitted error set out in Table 1 of Schedule 10.1.

The Authority confirmed on 01/03/18 that certification is cancelled for installations where low burden is not addressed.

TWS provided a letter to the industry on 21/08/13 confirming that CTs with compensation windings will not be accurate with low burden. An extract from the letter is shown below.

#### **Under Burdening of CTs**

*For a non-compensated CT, as detailed above, as the burden on it is reduced, the errors approach zero but always remain negative. This will not ever result in the CT going out of class. However, for a compensated CT, because the errors can become positive, there is the very real chance that the CT will go out of class in the positive direction when under-burdened.*

Analysis of the certification records for 20 recently certified Category 2 metering installations found that 17 had been certified with burden lower than the lowest test point, without a Class A ATH confirming that the measuring transformers will not be adversely affected. Therefore, in accordance with the Authority's memo, these metering installations are considered "not fit for purpose". This means certification is cancelled. The ICPs are shown in the table below, with the burden figure and with the overall error, confirming what TWS stated, which is that some CTs may be out of class in the positive direction. There are no negative errors for any of the 17 installations below.

ICP	CT make/model	Ratio	Rated burden	In service burden	overall error
0000022074EA81B	TWS, SEV87	250/5	5	0.4375	0.02%
0000371281TU8A8	TWS, EV86A	300/5	5	0.04	0.55%
0001110045WMF2C	TWS, SEW90B	200/5	5	0.05	0.44%
0001110609WM891	TWS, SEW90B	200/5	5	0.03	0.76%
0001111895WM3C3	TWS, SEW90B	200/5	5	0.09	0.27%
0001111974WMC38	TWS, SEW90B	200/5	5	0.11	0.01%
0001604391WMB0D	TWS, SEW90B	200/5	5	0.1	0.40%
0127563075LC7AD	TWS, SEW90B	200/5	5	0.28	0.67%
0151793034LC621	TWS, SEW90B	200/5	5	0.34	0.53%
0168147130LC16B	ATCO, 3.3	150/5	7.5	0.41	1.36%

0000522372NR1D7	TWS, SBO98	200/5	5	0.02	0.53%
0000522374NR058	TWS, SBO99	300/5	5	0.28	0.19%
0000946350TEEB	TWS, SEW90B	200/5	5	0.14	0.32%
0001429809HR87B	TWS, SEW90B	200/5	5	0.28	0.18%
0110006855EL6A7	TWS, SEV86A	300/5	5	1.11	0.95%
0027485425HB57E	TWS, SAF36	300/5	5	0.23	0.47%
0008305375NVD2C	TWS, SEV95	200/5	5	0.67	0.62%

FCLM does not conduct Category 1 sample inspections, so I checked for any installations where 10 yearly inspections were required. There are nine ICPs where inspections were not conducted, therefore certification is cancelled. The details are shown below.

ICP	Certification date	Certification expiry	Comments
0000064180TRCA8	24/05/2005	24/05/2020	Certification cancelled due to inspection not being done
0000328925MPF26	28/09/2007	28/09/2022	Certification cancelled due to inspection not being done
0001403340WM6B2	15/10/2004	15/10/2019	Certification cancelled due to inspection not being done
0005730848RN034	13/09/2004	13/09/2019	Certification cancelled due to inspection not being done
0007118767RN568	9/12/2004	9/12/2019	Certification cancelled due to inspection not being done
0009110970WM944	3/12/2004	3/12/2019	Certification cancelled due to inspection not being done
1000755634UN302	30/05/2006	30/05/2021	Certification cancelled due to inspection not being done
1001102256UN0BC	31/10/2005	31/10/2020	Certification cancelled due to inspection not being done
1001115643UN7DE	19/09/2006	19/09/2021	Certification cancelled due to inspection not being done

Two category 4 ICPs did not have inspections conducted within the allowable window. One was early and one was late. The details are shown below.

ICP	Certification date	Certification expiry	Comments
0005610363WM715	29/08/2016	31/05/2020	Certification cancelled due to inspection not being done
1001116075UN54F	29/04/2016	29/04/2021	Certification cancelled due to inspection being done early

Three NSP metering installations were not inspected. Certification is therefore cancelled. The NSPs are as follows. The NSP table should have been updated by the responsible party for these points of connection.

NSP	Certification expiry	Responsible party	Comments
CFM0011CBREEN	27/01/2019	CBRE	Certification cancelled due to inspection not being done. Certification already expired
CGP0011CBREEN	25/11/2019	CBRE	Certification cancelled due to inspection not being done
ETC0011SMRTEN	18/08/2020	SMRT	Certification cancelled due to inspection not being done

#### Audit outcome

Non-compliant

Non-compliance	Description
<p>Audit Ref: 6.4</p> <p>With: Clause 20 of Schedule 10.7</p> <p>From: 01-Jul-18</p> <p>To: 31-Mar-19</p>	<p>Certification cancelled and registry not updated for:</p> <p>Incorrect monitoring of 5 installations certified at a lower category.</p> <p>2 installations not monitored since insufficient load certification was completed.</p> <p>17 installations not fit four purpose due to low burden</p> <p>11 installations without inspections conducted within the allowable window</p> <p>Potential impact: Medium</p> <p>Actual impact: Medium</p> <p>Audit history: Multiple times</p> <p>Controls: Weak</p> <p>Breach risk rating: 6</p>
Audit risk rating	Rationale for audit risk rating
<b>Medium</b>	<p>I have recorded the controls as weak in this area because in most cases, the registry is not populated with the correct expiry date when certification is cancelled.</p> <p>The issues found can all potentially have a moderate impact on other participants and on settlement. The audit risk rating is medium.</p>
Actions taken to resolve the issue	
Completion date	Remedial action status

<p>9 Cat ones updated expiry dates and they are on FCLM compliance replacement program.</p> <p>2 installations not monitored are being followed up with the test house as we do not use this method of certification, we require them to use load banks</p> <p>Cat 4 inspection early is to be recertified.</p> <p>Cat 4 inspection not done on 0005610363WM715 as it is a Generator with no water so is closed down, Will be recertified instead of inspection when load is available.</p> <p>5 cat 2 sites have been monitored correctly for over 12 months with no problems. We are having difficulty with our service providers getting these recertified. Following up as to why they are not completed as requested .One the retailer claims does not have a customer.</p> <p>Sending service requests for 3 NSPs to be recertified. These are new NSPs replacing old NSPs that were end dated on the NSP table without our knowledge.</p> <p>Following up with test houses to ensure compliance with Burden requirements.</p>		Unknown
		<p><b>Post audit comment</b></p> <p>Remedial action recorded as unknown because the proposed actions do not stipulate when the registry will be updated with the correct expiry date.</p>
<b>Preventative actions taken to ensure no further issues will occur</b>	Completion date	
Discuss with EA issues with both high category inspection unable to be carried out for valid reasons and how to manage NSP compliance when it is managed out of a table we have no control over.	Ongoing	

## 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

This clause refers to schedule 11.4 which is discussed in **section 6.2**, apart from the requirement to provide information in the “prescribed form”. I checked for examples of FCLM not using the prescribed form.

### Audit commentary

This clause refers to schedule 11.4 which is discussed in **section 6.2**, apart from the requirement to provide information in the “prescribed form”. I checked for examples of FCLM not using the prescribed form and did not find any exceptions.

### Audit outcome

Compliant

## 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 conducted the following checks to identify metering installations with expired, cancelled or late certification:

- the registry PR255 report was checked to identify ICPs with expired certification;
- the new connections process was checked by using the event detail report, PR255 and the list file to identify ICPs where the certification was not conducted within five business days of energization; and
- I checked ICPs where certification was cancelled to ensure the registry was updated accordingly.

#### Audit commentary

The registry shows 2,558 ICPs have expired certification. The table below gives a breakdown of these.

It is expected that 1,785 metering installations will be recertified by statistical sampling. The analysis phase of this exercise has commenced.

Dec 2016	Sep 2017	Jul 2018	April 2019	Description
2,376	1,648	1,118	896	Expired interim certification
1,782	1,539	1800	1,572	Expired full certification (Category 1)
95	39	67	50	Expired full certification (Category 2)
1	0	2	2	Expired full certification (Category 3)
0	0	0	1	Expired full certification (Category 4)
5	0	0	9	Cancelled certification due to overdue inspections (Category 1)
0	0	0	0	Cancelled certification due to overdue inspections (Category 2)
0	0	0	5	Cancelled certification due to overdue inspections (Category 3 & 4)
0	9	7	5	Cancelled certification due to certification as a lower category and monitoring not conducted
0	0	0	17	Cancelled due to low burden
<b>4,262</b>	<b>3,236</b>	<b>2995</b>	<b>2,558</b>	<b>Total</b>

FCL provided the table below which details the reasons for not being able to complete a meter replacement at 1,669 installations.

Reason	Comment	2019
Access	Customer refusals and issues with access	597
Health & Safety	Health and Safety	101
No Power	De-energised sites (TLC and Retailer)	203
Technical (Includes tariff issues)	Tariff issues related to Load Control	647
Questionable ICP	ICPs created in error by the Network	107
Unable to locate	ICPs that have been unable to locate	12
Vacant	Vacant de-energised (Retailer)	2

The NSP table shows that certification is expired for one NSP.

NSP	Certification expiry	Responsible party	Comments
CFM0011CBREEN	27/01/2019	CBRE	NSP change FCLM were unaware of.

#### 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: 01-Jul-18  To: 31-Mar-19	Certification cancelled or expired for 2,558 ICPs.  Certification expired for NSP CFM0011CBREEN.  Potential impact: High  Actual impact: Medium  Audit history: Multiple times  Controls: Moderate  Breach risk rating: 4		
Audit risk rating	Rationale for audit risk rating		
Medium	I have recorded the controls as moderate in this area because certification has been expired for a number of years for some ICPs and because some of the expired installations were fully certified at one point.  The impact on settlement is recorded as moderate because of the increased likelihood of failure or inaccuracy for metering installations with expired certification, therefore the audit risk rating is medium.		
Actions taken to resolve the issue		Completion date	Remedial action status



<p>FCLM is a 100% subsidiary of TLC and have responsibility for 34,916 ICPs nationally.</p> <p>TLC network accounts for 23,379 ICPs (67%)</p> <p>Remainder of NZ accounts for 11,537 ICPs (33%)</p> <p>TLC network summary is as per the summary attached for 1669 installations a reduction from 2,325 in 2018.</p> <p>Off network (Remainder of NZ)</p> <p>Now that major rollouts by retailers appear to be completed FCLM is in the process of Statistical sampling of the uncertified ICPs . The ICPs have been sent to the Test house grouped by meter types. We are waiting on the sample return so we can assist the Test house with customer details. The outcome is expected to certify a large number of these sites and will enable us to formulate a suitable replacement plan to remain compliant.</p>	In progress	Identified
<b>Preventative actions taken to ensure no further issues will occur</b>	Completion date	
Orion compliance reporting identifies installations due for recertification. Work orders are created from the reports to ensure compliance is maintained.	On Going	

## 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 60 metering installations to confirm compliance. ATHs have shown that their processes include all tests and reports confirm tests are completed.

### Audit commentary

Most certification activities have been conducted by FCLM using the Accucal, VEMS and Wells ATHs. The most recent audit reports for all ATHs confirm the appropriate testing is conducted.

### 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

All relevant metering is compliant with this clause.

#### Audit commentary

All relevant metering is compliant with this clause.

#### 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 asked FCLM if there were any examples of burden changes or the addition of non-metering equipment being connected to metering CTs.

#### Audit commentary

There are no examples of burden changes having occurred.

#### 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

I checked all ICPs for examples where the CT ratio was above the threshold to confirm that protection was appropriate or that monitoring was in place.

#### Audit commentary

The certification reports I checked confirm fusing and notification of the requirement to monitor.

I checked the recent monitoring reports and confirmed that the monitoring is conducted correctly.

The previous audit had found that the monitoring of seven category 2 metering installations which were certified at a lower category had been conducted incorrectly. FCLM has since corrected the method of monitoring. However, the certification of five of these ICPs was not cancelled and they have not been recertified. This is recorded as non-compliance in **section 6.4**.

#### 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 if there were any examples of Insufficient load certifications.

#### Audit commentary

During the previous audit, there were two examples of insufficient load certifications, Cat 2 ICP 1002046119LC662 and Cat 4 ICP 0148028039LCC7C. FCLM had not conducted monitoring of these installations since certification. This audit found an additional example, Category 2 ICP 1002058039LC212, which has been monitored.

#### Audit outcome

Non-compliant

Non-compliance	Description		
Audit Ref: 7.7 With: 14(3) and (4) of Schedule 10.7  From: 01-Nov-17 To: 31-Mar-19	Monitoring not conducted of 2 installations certified with insufficient load. Potential impact: Medium Actual impact: Low Audit history: Multiple times Controls: Moderate Breach risk rating: 2		
Audit risk rating	Rationale for audit risk rating		
<b>Low</b>	The controls are recorded as moderate because they mitigate risk most of the time but there is room for improvement.  The issues found can all potentially have an impact on other participants and on settlement. The audit risk rating is low.		
Actions taken to resolve the issue		Completion date	Remedial action status
Create work orders to load test and certify		30/04/2019	Identified
Preventative actions taken to ensure no further issues will occur		Completion date	
Revisit our requirements with service providers so they are notified to use load banks in all cases. If there is an issue to raise it with the MEP so it is not missed when it is noted on a check sheet.		31/05/2019	

## 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

FCLM has not conducted monitoring of insufficient load certifications.

### Audit commentary

FCLM has not conducted monitoring of insufficient load certifications.

## 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 the registry records to confirm whether alternative certification had been applied.

#### Audit commentary

Alternative certification is still in place for ICP 0016100092EL8AA.

NSP HS0011TENCEN had alternative certification applied due to outage constraints. Appropriate notification was provided.

## 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 FCLM whether there were any metering installations with time clocks.

### Audit commentary

FCLM has some Landis + Gyr meters with internal time clocks. The data is manually collected each year from these meters and is used by The Lines Company as a Distributor for maximum demand charging. The data collection process does not include a check and correction of the time clock. FCLM is in the process of replacing these meters, of which there are currently 48.

### Audit outcome

Non-compliant

Non-compliance	Description		
Audit Ref: 7.10 With: Clause 23 of Schedule 10.7  From: 01-Jul-18 To: 31-Mar-19	48 meters with timeclocks not checked every 12 months.  Potential impact: Low  Actual impact: Low  Audit history: None  Controls: None  Breach risk rating: 5		
Audit risk rating	Rationale for audit risk rating		
Low	There isn't a process in place to check the time setting on these meters.  The impact on settlement and participants could be minor; therefore, the audit risk rating is low.		
Actions taken to resolve the issue		Completion date	Remedial action status
These are early electronic meters that are not AMI. Work orders are being processed to replace these meters.		31/07/2019	Identified
Preventative actions taken to ensure no further issues will occur		Completion date	
This meter type has not been used for several years		09/04/2019	

### 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

I checked the process for the management of bridged control devices, and I checked whether any notifications were required to other parties.

#### **Audit commentary**

FCLM has a process for dealing with control devices which have been bridged out. If any are bridged out for more than 10 business days, they notify as required by this clause. There have not been any recent examples.

#### **Audit outcome**

Compliant

### **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**

I checked the steps FCLM had taken to identify regions with signal propagation issues.

#### **Audit commentary**

FCLM has not been advised of any areas by the ATHs.

#### **Audit outcome**

Compliant

### **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**

I checked whether statistical sampling had occurred during the audit period.

#### **Audit commentary**

It is expected that 1,785 metering installations will be recertified by statistical sampling. The analysis phase of this exercise has commenced.

FCLM has not conducted any statistical sampling during the audit period.



## Audit outcome

Compliant

### 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

I checked the records for 31 Category 2, 3 and 4 metering installations to confirm that compensation factors were correctly recorded on the registry.

#### Audit commentary

Compensation factors have been updated accurately on the registry. I confirmed this by checking the records for 31 ICPs.

ICP 0002221151WF237 had a compensation factor of 1 recorded in the registry but the actual compensation factor is 20. This is recorded as non-compliance.

## Audit outcome

Non-compliant

Non-compliance	Description		
Audit Ref: 7.14 With: Clause 24(3) of Schedule 10.7  From: 16-Aug-13 To: 28-Sep-18	Compensation factor of 20 not recorded in the registry for ICP 0002221151WF237.  Potential impact: High  Actual impact: High  Audit history: None  Controls: Strong  Breach risk rating: 3		
Audit risk rating	Rationale for audit risk rating		
High	The controls are recorded as strong because they are robust for new installations.  The impact on settlement and participants is major; therefore, the audit risk rating is high.		
Actions taken to resolve the issue		Completion date	Remedial action status
		05/02/2019	Identified

<p>The site required a statement of situation due to data supplied to FCLM from a meter owner prior to part 10 being incorrect.</p> <p>The registry was updated when the statement of situation stated a multiplier of 20 was on site.</p>		<p>Note that a complete statement of situation is required to confirm the compensation factor is 20. It's still possible a compensation factor of 1 is correct.</p>
<b>Preventative actions taken to ensure no further issues will occur</b>	<b>Completion date</b>	
<p>These type of situations will always occur and need to be dealt with on a case by case basis.</p>	Ongoing	

#### 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 certification records for 60 metering installations to confirm compliance.

##### Audit commentary

Meters were certified for all 60 installations.

##### 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 certification records for 31 metering installations to confirm compliance.

##### Audit commentary

Measuring transformers were certified for all 31 installations.

##### 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 certification records for 60 metering installations to confirm compliance.

##### Audit commentary

The 60 certification records that I checked confirmed that the data storage devices are being correctly certified.

##### 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

I checked the registry records (PR255) to identify any ICPs with interim certification recorded.

##### Audit commentary

There are 896 previously interim certified installations with expired certification.

#### Audit outcome

Non-compliant

Non-compliance	Description		
Audit Ref: 7.19 With: Clause 18 of Schedule 10.7 From: 01-Apr-15 To: 11-Apr-19	896 ICPs with expired interim certification. Potential impact: High Actual impact: Medium Audit history: Multiple times Controls: Moderate Breach risk rating: 4		
Audit risk rating	Rationale for audit risk rating		
<b>Medium</b>	I have recorded the controls as moderate in this area because certification has been expired for four years for these ICPs. The impact on settlement is recorded as moderate because of the increased likelihood of failure or inaccuracy for metering installations with expired certification, therefore the audit risk rating is medium.		
Actions taken to resolve the issue		Completion date	Remedial action status
FCLM is a 100% subsidiary of TLC and have responsibility for 34,916 ICPs nationally. TLC network accounts for 23,379 ICPs (67%) Remainder of NZ accounts for 11,537 ICPs (33%) TLC network summary is as per the summary attached for 1669 installations a reduction from 2,325 in 2018. Off network (Remainder of NZ) Now that major rollouts by retailers appear to be completed FCLM is in the process of Statistical sampling of the uncertified ICPs. The outcome is expected to certify a large number of these sites and will enable us to formulate a suitable replacement plan to remain compliant.		In Progress	Identified
Preventative actions taken to ensure no further issues will occur		Completion date	
Orion compliance reporting identifies installations due for recertification. Work orders are created from the reports to ensure compliance is maintained.		On Going	

## 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

FCLM does not intend to commence Category 1 inspections through sampling. They intend to re-certify installations rather than do inspections.

### Audit commentary

FCLM does not intend to commence Category 1 inspections through sampling. They intend to re-certify installations rather than do inspections. I checked the registry records and found nine installations due for inspection where the inspection had not been conducted. The ICPs are recorded in **section 6.4**.

### Audit outcome

Non-compliant

Non-compliance	Description		
Audit Ref: 8.1 With: Clause 45 of Schedule 10.7  From: 01-Jul-18 To: 31-Mar-19	Inspections not conducted within the allowable window for nine installations. Potential impact: Medium 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 moderate because they mitigate risk most of the time but there is room for improvement.  The impact on settlement and participants could be minor; therefore, the audit risk rating is low.		
Actions taken to resolve the issue		Completion date	Remedial action status
9 Cat ones updated expiry dates and they are on FCLM compliance replacement program.		09/04/2019	Identified
Preventative actions taken to ensure no further issues will occur		Completion date	
FCLM plans to replace all cat 1 NHH meters to AMI		Working with FSPs	

## 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 registry information to confirm which ICPs were due for inspection.

#### Audit commentary

As recorded in **section 6.4**, inspections were not conducted within the allowable window for five metering installations.

#### Audit outcome

Non-compliant

Non-compliance	Description		
Audit Ref: 8.2 With: Clause 46(1) of Schedule 10.7  From: 01-Jul-18 To: 31-Mar-19	Inspections not conducted within the allowable window for five installations. Potential impact: Medium Actual impact: Low Audit history: None Controls: Moderate Breach risk rating: 2		
Audit risk rating	Rationale for audit risk rating		
<b>Low</b>	The controls are recorded as moderate because they mitigate risk most of the time but there is room for improvement. The impact on settlement and participants could be minor; therefore, the audit risk rating is low.		
Actions taken to resolve the issue		Completion date	Remedial action status
SRs sent to recertify the ICPs		31/05/2019	Investigating
Preventative actions taken to ensure no further issues will occur		Completion date	
Discuss with EA issues with both high category inspection unable to be carried out for valid reasons and how to manage NSP compliance when it is managed out of a table we have no control over. In particular NSP changes.		Ongoing	

### 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 reviewing inspection reports.

#### **Audit commentary**

FCLM reviews and updates records as required following inspections.

#### **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 two examples of category 1 installations which had seals removed and the meters were bridged.

#### **Audit commentary**

FCLM were advised that the meter was unsealed, and the meter bridged after being remotely disconnected. FCLM arranged for an ATH to visit site within the required 20 days. The ATH unbridged the meter, recertified the installation and resealed the meter.

The FCLM process requires that all unsealed meters are tested by the ATH and recertified if required.

#### **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 two examples of bridged meters, which are deemed to be faulty due to the bridging.

I checked one example of a Category 2 installation that was possibly faulty.

#### Audit commentary

The two bridged meters were resolved within the appropriate timeframes and notification was provided.

ICP 0002221151WF237 was recorded by FCLM as Category 1, but when the site was visited for a meter replacement job, it was found to be Category 2 with a compensation factor of 20. The Retailer required an investigation and a statement of situation, which was conducted within 10 business days.

#### 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 two examples of bridged meters, which are deemed to be faulty due to the bridging.

I checked one example of a Category 2 installation that was possibly faulty.

### Audit commentary

The two bridged meters were resolved within the appropriate timeframes and notification was provided. A statement of situation was not required.

A statement of situation was provided for ICP 0002221151WF237, but testing was not conducted. The VircomEMS ATH stated testing could not be conducted because there was no testblock present to enable connection of test equipment. This response is inadequate because test equipment can be connected at the meter by arranging a temporary shutdown.

FCLM is non-compliant with clauses 10.44(1)(a) and 10.44(3)(a) of Part 10 because testing was not arranged.

VircomEMS conducted the original certification and they are non-compliant with the following clauses.:

- clause 28(4)(a)(i) of Schedule 10.7 -there is no test facility at the time of original certification;
- clause 11 of Schedule 10.4 - no calibration or certification report; and
- clause 10.46(1) of Part 10 - details of tests and test results not provided, and testing could be conducted by arranging a temporary shutdown.

The metering at this ICP appears to be of check metering quality, not revenue metering quality. It appears it should never have been certified because there are no type test reports, calibration reports and there is no test facility.

It is also possible the metering installation measures electricity for more than one customer. FCLM does not believe it is their responsibility to investigate this matter and the Code does not appear to require this to be investigated. The Retailer may need to arrange for this to be checked by the Distributor or by an electrician.

### Audit outcome

Non-compliant

Non-compliance	Description
Audit Ref: 9.2 With: Clauses 10.44(1)(a) and 10.44(3)(a)  From: 13-Mar-19 To: 11-Apr-19	Testing of a faulty metering installation not conducted.  Potential impact: High Actual impact: Medium Audit history: None Controls: Weak Breach risk rating: 6
Audit risk rating	Rationale for audit risk rating
<b>Medium</b>	The controls are recorded as weak because testing was originally not conducted and there were no remedial actions taken to ensure testing was subsequently conducted.  The impact on settlement is unknown but the impact on the retailer is moderate because they don't know if the kWh they are billing and reconciling is correct. The audit risk rating is Medium.

Actions taken to resolve the issue	Completion date	Remedial action status
<p>VEMS were unable to fully complete a testing portion of the Statement of situation as the metering is not fit for purpose as identified by FCLM on compliance change out.</p> <p>FCLM expect our contractors to act in a safe manner. Altering the installation may cause risk to the installation, or themselves. As such, FCLM cannot alter the installation to complete testing.</p> <p>FCLM have recommended the installation be disconnected until the issue has been resolved, as there is a current Health and Safety risk with this metering installation.</p> <p>As an MEP does not own the Electrical installation, we are currently awaiting other parties to resolve the issue with the installation to allow appropriate metering to be installed.</p> <p>FCLM put Health and Safety as a higher priority than completing a test.</p> <p>We are currently processing an alleged breach that will be sent to the EA once completed.</p>	26/04/2019	Investigating
		Testing can be conducted by arranging a shut-down to connect test equipment.
Preventative actions taken to ensure no further issues will occur	Completion date	
We are currently processing an alleged breach that will be sent to the EA once completed.	26/04/2019	

### 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 market administrator (for all category 3 and above metering installations and any category 1 and category 2 metering installations) on request.*

#### Audit observation

The statement of situation for ICP 0002221151WF237 was provided within the appropriate timeframe.

#### Audit commentary

The statement of situation for ICP 0002221151WF237 was provided within the appropriate timeframe.

#### Audit outcome

Compliant

## 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

I checked whether any parties had requested access to raw meter data.

#### Audit commentary

No requests have been received but FCLM advised access could be granted in accordance with this clause if necessary.

I checked two additional points in relation to the provision of data during this audit.

1. Whether there were any data delivery issues.
2. Whether revised data was supplied when it was available.

One incident occurred in December 2018 when the MultiDrive disk storage reached 100% and files were not sent from 1.00pm on December 6<sup>th</sup> (Day 4 of the submission period) until December 10<sup>th</sup>. This caused retailers to have to perform a large number of estimates. I have confirmed compliance with this clause, but compliance is not achieved with the requirement to provide “complete and accurate data”, as recorded in section 2.5.

I checked that revised data is provided to retailers as soon as it is available. I checked data going back several months to confirm there is no “cutoff” for the provision of data.

#### 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

I checked whether any parties had requested access to raw meter data.

### Audit commentary

No requests have been received but FCLM advised access could be granted in accordance with this clause if necessary.

### 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

No requests have been received but FCLM advised access could be granted in accordance with this clause if necessary.

### 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

No requests have been received, but FCLM advised access could be granted in accordance with this clause if necessary.

##### 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  $\pm 5$  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

I requested reporting on interrogation cycle to confirm compliance.

I checked the security and storage of data by looking at examples of data more than 48 months old.

#### Audit commentary

Reporting is now in place and this was demonstrated. There are 1,013 ICPs without a successful interrogation with the maximum interrogation cycle of 90 days. This information is provided to reconciliation participants, but whilst reporting is in place, no further action is taken to resolve any issues preventing successful interrogation; FCLM is reactive to this and only takes remedial action if the relevant participant sends a service request. I recommend FCLM implements suitable processes to ensure all ICPs are successfully interrogated within the maximum interrogation cycle.

Recommendation	Description	Audited party comment	Remedial action
Regarding Clause 8 of Schedule 10.6	Implement suitable processes to ensure issues preventing successful interrogation are resolved.	Submission to the EA omnibus seeking clarification on the AMI communicating – non communicating process . FCLM will take action on the result of the outcome.	Investigating

Data is stored indefinitely, and this was confirmed by checking some historic data from 2015.

#### Audit outcome

Non-compliant

Non-compliance	Description
Audit Ref: 10.5 With: Clause 8 of Schedule 10.6 From: 01-Jul-18 To: 31-Mar-19	1,013 ICPs not read during the maximum interrogation cycle. Processes not in place to resolve issues preventing interrogation. Potential impact: High Actual impact: Medium Audit history: Twice Controls: Weak Breach risk rating: 6
Audit risk rating	Rationale for audit risk rating
<b>Medium</b>	I have recorded the controls as weak in this area because processes have not been developed to resolve issues preventing interrogation.  The impact on settlement is considered moderate, because some traders will be required to estimate data. The impact on traders and customers is also moderate because some customers will be required to switch retailers if AMI data is not available. The audit risk rating is medium.

Actions taken to resolve the issue	Completion date	Remedial action status
	June 2019	Disputed
Preventative actions taken to ensure no further issues will occur	Completion date	
Submission to the EA omnibus seeking clarification on the AMI communicating – non communicating process . FCLM will take action on the result of the outcome.	June 2019	

#### 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

I checked the security and storage of data by looking at examples of data more than 48 months old.

##### Audit commentary

All data is secure, and any transmission is via SFTP or password protected email.

##### Audit outcome

Compliant

#### 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

I conducted a walkthrough of the management of time errors and I checked the relevant reports.

##### Audit commentary

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. The relevant part of this table is shown below:

Metering Installation Category	HHR Metering Installations (seconds)	NHH Metering Installations (seconds)
1	±30	±60
2	±10	±60

During interrogation, the system time is compared to the data logger time. MultiDrive automatically adjusts any clock errors up to the appropriate pre-set value. Errors over the threshold are investigated and the time is adjusted manually unless fieldwork is required to resolve an issue.

The event information supplied to FCLM by EDM I contains clock adjustment information and this is sent to retailers as required by this clause.

I checked the most recent report for time errors greater than 30 seconds. The report contained 11 examples during March and April 2019.

This clause is clear that when errors are outside the threshold, compliance is not achieved. The exact text is as follows:

*“A metering equipment provider must ensure that a data storage device in a metering installation for which it is responsible for interrogating does not exceed the maximum time error set out in Table 1 of subclause (5).”*

EDMI provides data in NZST and FCLM converts to NZDT in the MDX Processing Application. I checked this in the system and confirm it is operating as expected.

I examined the situation where clocks are fast by more than one trading period to confirm what happens to the data in those trading periods. EDM I confirmed that the data would need to be manually apportioned to prior periods. This will be a rare event, but EDM I and FCLM have a process in place to deal with this if required.

#### Audit outcome

Non-compliant

Non-compliance	Description
Audit Ref: 10.7 With: Clause 8(4) of Schedule 10.6 From: 01-Mar-19 To: 09-Apr-19	Clock errors greater than the threshold for 11 ICPs. Potential impact: Low Actual impact: None Audit history: None Controls: Strong Breach risk rating: 1
<b>Audit risk rating</b>	<b>Rationale for audit risk rating</b>

<b>Low</b>	<p>The controls are recorded as strong because interrogation is attempted daily, and clock errors are addressed during all interrogations.</p> <p>The errors were all small and none were across a trading period, therefore there is no impact on participants or settlement. The audit risk rating is low.</p>		
<b>Actions taken to resolve the issue</b>		<b>Completion date</b>	<b>Remedial action status</b>
Errors are looked by FCLM each Day and SRs sent to FSPs if required			Disputed
<b>Preventative actions taken to ensure no further issues will occur</b>		<b>Completion date</b>	

## 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

I conducted a walkthrough of the event management process and I checked the most recent report sent to all relevant retailers.

### Audit commentary

During the previous audit I recorded that *"EDMI downloads the event log as required by this clause. All critical events are evaluated, and appropriate action is taken. All events are supplied to FCLM, and from there they are passed to reconciliation participants using a manual extraction process. FCLM has processes in place to manage relevant fieldwork. The events include reverse rotation and phase failure."*

Event logs are now sent automatically to reconciliation participants but FCLM does not review the logs as required by Clause 8(7)(b) of Schedule 10.6.

### Audit outcome

## Non-compliant

Non-compliance	Description		
Audit Ref: 10.8 With: Clause 8(7)(b) of Schedule 10.6 From: 01-Jul-18 To: 31-Mar-19	Event logs are not reviewed prior to being sent to retailers. Potential impact: Medium Actual impact: Low Audit history: None Controls: None Breach risk rating: 5		
Audit risk rating	Rationale for audit risk rating		
Low	There is no longer an event log review process. The impact on settlement and participants is minor; therefore, the audit risk rating is low.		
Actions taken to resolve the issue		Completion date	Remedial action status
Submission to the EA Omnibus stating we believe monitoring of event logs should sit with the retailer			Disputed
Preventative actions taken to ensure no further issues will occur		Completion date	
Waiting EA review June 2019			

## 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

I conducted a walkthrough of the sum-check process, and I checked the most recent reporting.

### Audit commentary

The sum-check process is conducted in Orion, below is an extract from the Orion specification which details the sum-check process. The register read materiality threshold is set at 1KWh.

#### Validating Register Reads 10.4.2

*Register reads are validated against interval reads received for the same period on the same meter channel. The validation process creates validation errors which can be reviewed by a user in Orion. The Register Read validation process runs as a nightly task. For performance reasons, the validation process only considers register reads from the past 90 days. Please note that this value (number of days) is configurable. If the validation issues are not resolved within this timeframe, the exception remains in the system and is not re-validated even if the related interval is subsequently updated.*

Automatically resolved validation errors are removed from the TOU Data Errors list automatically. Validation errors can be manually flagged as Completed by users.

Figure 134: Register Read Validation Errors

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If a user flags an error as completed, this error is deleted from the system the next time the overnight process runs.

The following details the steps taken by the validation process to validate register reads in the system:

1. The process finds any manually resolved (Completed) validation errors, updates the register read as validated and deletes the validation error.
2. For all registers reads which have not been previously validated within the cut-off period, where there is a prior register read (not necessarily the day prior) on the same channel and where all required interval reads have been received or estimated for the period between the un-validated read and the most recent prior read:
  - a. A: Sum all interval read values where start read date time is between the register read and the prior register read.
  - b. B: Calculate the difference between the un-validated register read and the prior register read.
  - c. If the absolute value of  $A - B$  equals or exceeds the materiality threshold AND the absolute value of  $(A - B)/A$  equals or exceeds the percentage threshold and there is not already an exception for a register read, a validation error is created.
  - d. If no exception is created, the read is flagged as validated and any previous validation error for this register read is deleted.
  - e. Register reads, which previously failed validation and where the exception hasn't been resolved, will be re-checked regularly in case interval reads have been added or updated.
  - f. Register reads are received from EDML in NZDT so this process uses the NZDT times of the interval reads for these comparisons. It is assumed for each meter the time the register reads are taken (in Zulu time) does not change, only that the read time in NZDT differs when daylight savings is in effect.

Threshold parameters in Orion below:

system_id	param_code	param_desc	param_type_code	parameter
ORION_AM	RRVAL_CUTOFFDAYS	Register Read Validation Cutoff Days	NUMBER	90
ORION_AM	RRVAL_ABSTHRSHLD	Register Read Validation Materiality Threshold (kWh)	NUMBER	1
ORION_AM	RRVAL_PCTTHRSOLD	Register Read Validation Percentage Threshold	NUMBER	1
ORION_AM	RRVAL_PCTTHRSOLD	Register Read Validation Percentage Threshold	NUMBER	1

An example of the report was examined, and it showed some examples where the sum-check had failed. Data is still provided to participants and it is labelled as having failed, but no further action is taken to determine the cause of the failure. Whilst this clause does not require any further action, if there is an undiagnosed problem, it could cause non-compliance with Clause 10.6, which is the requirement to provide complete and accurate information. I recommend sum-check failures are examined and the results recorded to ensure accurate information is provided.

Recommendation	Description	Audited party comment	Remedial action
Regarding Clause 8(9) of Schedule 10.6	Ensure all sum check failures are investigated and report on the results of each investigation.	Working on a centralized report that will report across all retailers to enhance monitoring.	Investigating

## Audit outcome

Compliant

## 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

FCLM has not received any requests in relation to this clause.

### Audit commentary

FCLM has not received any requests in relation to this clause.

### Audit outcome

Not applicable

## CONCLUSION

19 non compliances are recorded, and two recommendations are made. Improvements have been made to the accuracy of registry data and most issues are now resolved.

The total quantity of uncertified meters is now approx. 2,500 down from approx. 3,000.

The data collection function still has some non-compliant processes. The system is largely compliant, but the Code also requires certain checks to be conducted and they are not being done. The checks are as follows:

- 1,013 ICPs were not read during the maximum interrogation cycle and there are no processes in place to resolve issues preventing interrogation;
- there is no action taken when there are clock errors to ensure the data is not affected and to ensure there are no systemic issues; and
- event logs are not reviewed prior to being sent to retailers.

There are some metering installations with cancelled certification where the registry has not been updated with a revised expiry date. The issues are as follows:

- incorrect monitoring of five installations certified at a lower category;
- two installations not monitored since insufficient load certification was completed;
- 17 installations not fit for purpose due to low burden; and
- 11 installations without inspections conducted within the allowable window.

ICP 0002221151WF237 was reported as defective by the Trader. An investigation was conducted but the installation was not tested, and it has not been confirmed whether the installation is recording accurately or not. There are also no type test, calibration or certification records available and it appears this is a check metering installation being used as revenue metering. One of the measuring transformers is overheating and the casing has started to become deformed. Compounding the issue is that there is no test facility and no room for a test facility or a compliant meter.

## PARTICIPANT RESPONSE

FCLM would again like to thank the Auditors for the diligence and guidance during the audit process.

With the introduction and continued development of our Orion MDMS system the number of non-compliances has continued to reduce year on year and the areas that remain for attention require us to work closely with third parties to achieve compliance.

The additional deployment of the JIRA Service Desk to further monitor and track performance of our third party providers and prioritise requests from Retailers will ensure that we continue to work towards our compliance obligations. However, we feel that the majority of non-compliances are related to one ICP that is under investigation and Event Logs, Maximum Interrogation Cycle (AMI).

We have made submissions to the EA Omnibus consultation and awaiting the outcome in June for clarification on these issues and feel that the audit, in its current format, is adversely looking to drive and outcome before the EA has issued a Code amendment.