

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

For



FINANCIAL CORPORATION LIMITED (FCLM)

Prepared by: Brett Piskulic – Veritek Limited

Date audit commenced: 27 November 2019

Date audit report completed: 28 January 2020

Audit report due date: 01-Feb-20

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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 February 2020 in accordance with clause 1(1)(b) of schedule 10.5.

In November 2019 FCLM purchased the Trustpower metering assets, ATH and MEP business. This is the first audit following the purchase and encompasses both the FCLM and TRUM participant identifiers.

The quantity of non-compliances has decreased from 21 during the previous audits to 16 in this audit, with the future risk rating decreasing from 56 to 41.

The quantity of uncertified metering installations has reduced by 674 since the previous audits. FCLM is currently undertaking a statistical recertification project which when completed should see a further 1200 uncertified metering installations certified.

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:

- three installations not monitored since insufficient load certification was completed;
- three installations not fit for purpose due to low burden;
- 20 installations without inspections conducted within the allowable window; and
- one category 2 installation outside accuracy tolerances.

Processes have been implemented to review event logs before they are sent to retailers.

There has been an improvement in the processes which ensure meters do not exceed their maximum interrogation cycle. The process has seen a significant drop in the number of meters exceeding their maximum interrogation cycle from the time of last communication. However, no action has been taken for meters that have not communicated since the time of installation.

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 improvements from the integration of the FCLM and TRUM MEP operations 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
Provision of accurate information	2.5	11.2 and 10.6	Registry not always updated as soon as practicable in some cases.	Moderate	Low	2	Identified
Registry updates	3.2	2 of Schedule 11.4	76 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	Investigating
Accurate and complete records	5.1	4(1) of Schedule 10.6	Metering records not populated on registry for 3 ICPs.	Moderate	Low	2	Identified

			Some CT information is missing for 9 ICPs. Some inaccurate certification records.				
Response to switch request	6.1	1(1) of Schedule 11.4	Five 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	Certification cancelled and registry not updated for: 3 installations not monitored since insufficient load certification was completed; 3 installations not fit four purpose due to low burden; 20 installations without inspections conducted within the allowable window; and 1 category 2 installation outside accuracy tolerances.	Weak	Medium	6	Identified
Certification of metering installations	7.1	10.38 (a), clause 1 and clause 15 of Schedule 10.7	Certification cancelled or expired for 2,468 ICPs.	Moderate	Medium	4	Identified
Certification tests	7.2	10.38(b) and clause 9 of Schedule 10.6	Component certification test not completed.	Moderate	Low	2	Cleared
Insufficient load	7.7	14(3) and (4) of Schedule 10.7	Monitoring not conducted of 3 installations certified with insufficient load.	Moderate	Low	2	Identified
Timekeeping	7.10	23 of Schedule 10.7	40 meters with timeclocks not checked every 12 months.	None	Low	5	Identified

Metering Installations Incorporating a Meter	7.15	26(1) of Schedule 10.7	Meter not certified.	Moderate	Low	2	Cleared
Interim certification	7.19	18 of Schedule 10.7	829 ICPs with expired interim certification.	Moderate	Medium	4	Disputed
Category 2 to 5 inspections	8.2	46(1) of Schedule 10.7	Inspections not conducted within the allowable window for 20 installations.	Moderate	Low	2	Investigating
Maximum interrogation cycle	10.5	8 of Schedule 10.6	913 ICPs not read during the maximum interrogation cycle.	Moderate	Medium	4	Cleared
Time Errors for Metering Installations	10.7	8(4) of Schedule 10.6	Clock errors greater than the threshold for 23 ICPs.	Strong	Low	1	Identified
Future Risk Rating						41	
Indicative Audit Frequency						3 months	

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

RECOMMENDATIONS

Subject	Section	Recommendation	Description
		Nil	

ISSUES

Subject	Section	Recommendation	Description
		Nil	

1. ADMINISTRATIVE

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

Code reference

Section 11 of Electricity Industry Act 2010.

Code related audit information

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

Audit observation

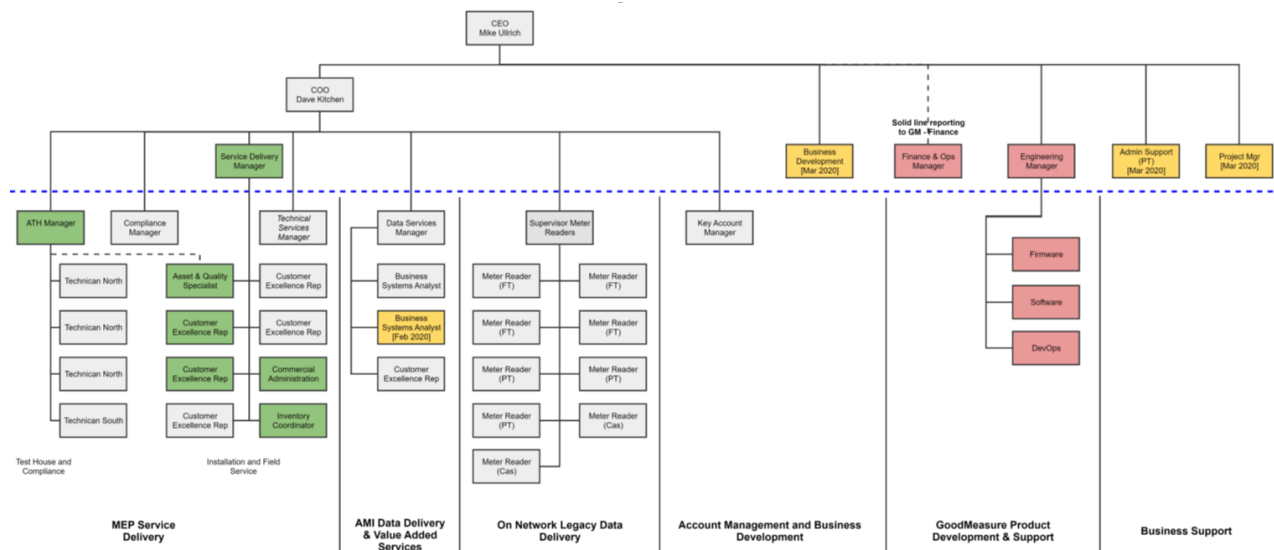
I checked the Electricity Authority website to confirm whether there were any exemptions in place.

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 Structure – Effective 13 December 2019.



1.3. Persons involved in this audit

Auditor: Brett Piskulic

Veritek Limited

Electricity Authority Approved Auditor

FCLM personnel assisting in this audit were.

Name	Title
David Barnett	Compliance Manager
Shuv Biswas	Data Services Manager
Jaime Hollinshead	Asset Data Specialist
Graeme Prestidge	Service Delivery 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 with ATHs to conduct certification activities and they are an ATH themselves, but there are no contractors used to perform MEP responsibilities.

Audit commentary

FCLM engages with ATHs to conduct certification activities and they are an ATH themselves, but there are no contractors used to perform MEP responsibilities.

1.5. Hardware and Software

FCLM

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

TRUM

TRUM MEP data is held in Maximo, 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
4(1)(a) and (b) of Schedule 10.6	FCLM breached clauses 4(1)(a) and (b) of Schedule 10.6 by failing to keep accurate and correct records. FCLM breached clause 1 of Schedule 10.7 by not maintaining the records of the metering installation. FCLM also breached clause 15 of Schedule 10.7 by not having a recertification programme in place to ensure recertification of this metering installation was completed prior to certification expiry.	The Committee decided to take no further action on the alleged breaches under regulation 11(1)(c) of the Electricity Industry (Enforcement) Regulations 2010 (Regulations).
10.44(1) and 10.44(3)	FCLM did not breach clauses 10.44(1) and 10.44(3) because it did arrange for testing of the metering installation. Table 1 of Schedule 11.4, cannot be breached because this table defines the registry metering records. The obligation for an MEP to keep accurate and correct records as specified in Table 1, is contained in clause 4(1)(a) and (b) of Schedule 10.6.	The Committee decided to take no further action on the alleged breaches under regulation 11(1)(b) of the Regulations.
10.38(a)	FCLM breached clause 10.38(a) by failing to maintain metering certification at the ICP. However, on 26 May 2016, the Committee decided to take no further action on breaches of clause 10.38(a) concerning all of FCLM's uncertified metering installations which included the metering installation in this case.	The Authority cannot take further action on the alleged breach of clause 10.38(a) because it has already declined to take action on the alleged breach under regulation 11 of the Regulations.

1.7. ICP Data

FCLM			
Metering Category	Number of ICPs 2018	Number of ICPs Apr 2019	Number of ICPs Nov 2019
1	31,576	33,275	34,638
2	1,477	1,545	1,588
3	46	51	51
4	8	10	11

5	0	0	0
9	16	8	5
TRUM			
Metering Category		Number of ICPs Jan 2019	Number of ICPs Nov 2019
1		147,063	123,967
2		1,233	1,211
3		4	4
4		6	6
5		13	13
9		15	18

1.8. Authorisation Received

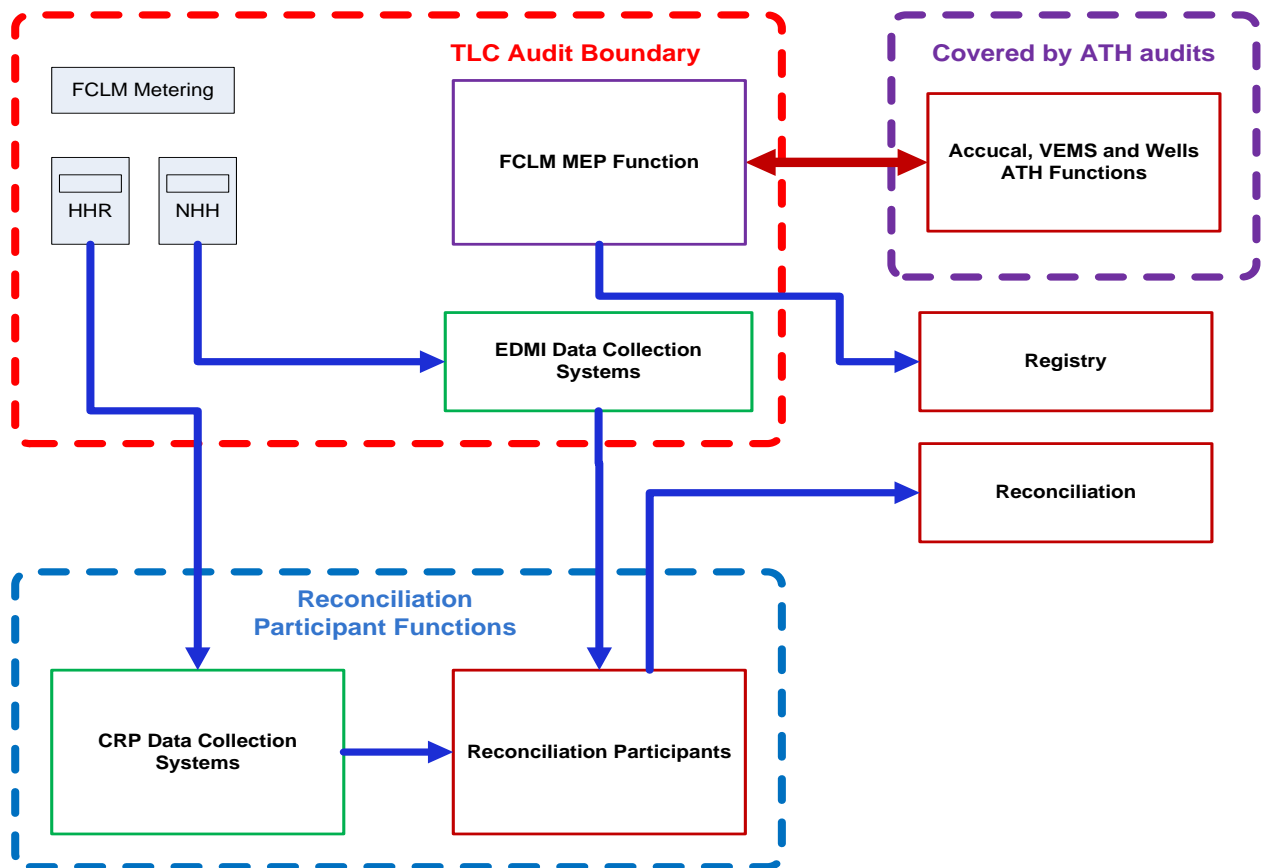
A letter of authorisation was not required or requested.

1.9. Scope of Audit

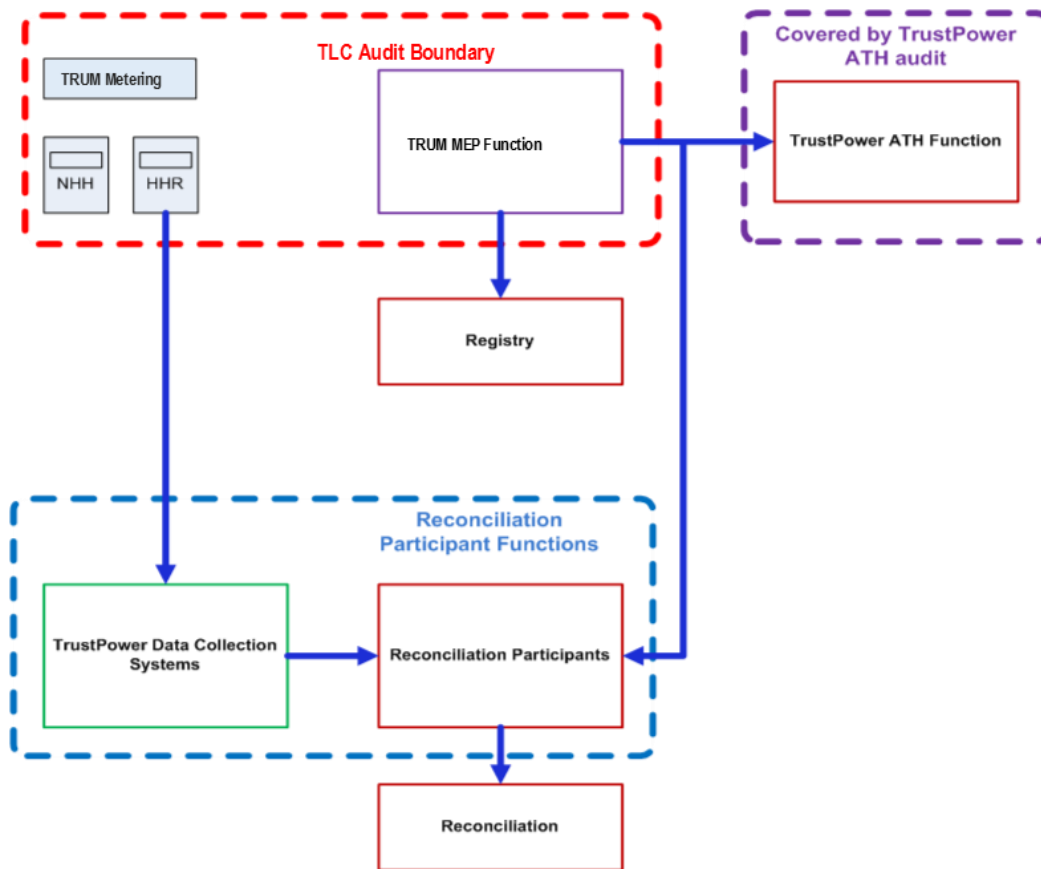
This audit was conducted in accordance with the Guideline for Metering Equipment Provider Audits V2.2, which was published by the Electricity Authority.

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

FCLM



TRUM



1.10. Summary of previous audit

The previous audits were conducted in April 2019 (FCLM) and Jan 2019 (TRUM) by Steve Woods 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
Services access interface	2.1	10.9(2)	FCLM - Location of services access interface not recorded for ICP 0000371281TU8A8.	Cleared
Provision of accurate information	2.5	11.2 and 10.6	FCLM - Registry not always updated as soon as practicable in some cases. FCLM - Statement of situation incomplete for ICP 0002221151WF237. FCLM - Late files to retailers in December 2018 due to disk storage reaching 100%.	Still existing
Registry updates	3.2	2 of Schedule 11.4	FCLM - 97 registry updates later than 15 business days.	Still existing
Metering Installation Design & Accuracy	4.3	4(1) of Schedule 10.7	TRUM - Design report not identified for three installations.	Cleared
Changes to registry records	4.10	3 of Schedule 11.4	FCLM & TRUM - 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	FCLM - Metering records not populated on registry for 11 ICPs. FCLM - Some CT information is missing for 19 ICPs. FCLM - No calibration or certification records for ICP 0002221151WF237. TRUM - Some inaccurate certification records.	Still existing for a smaller quantity
Response to switch request	6.1	1(1) of Schedule 11.4	FCLM - Nine late MN files.	Still existing

Subject	Section	Clause	Non-compliance	Status
Provision of Registry Information	6.2	7 (1), (2) and (3) of Schedule 11.4	FCLM & TRUM - Some registry records incomplete or incorrect.	Still existing
Cancellation of certification	6.4	6 of Schedule 11.4	FCLM - Certification cancelled and registry not updated for: FCLM - Incorrect monitoring of 5 installations certified at a lower category; FCLM - 2 installations not monitored since insufficient load certification was completed; FCLM - 17 installations not fit four purpose due to low burden; and FCLM - 11 installations without inspections conducted within the allowable window.	Still existing
Certification of metering installations	7.1	10.38 (a), clause 1 and clause 15 of Schedule 10.7	FCLM - Certification cancelled or expired for 2,558 ICPs. FCLM - Certification expired for NSP CFM0011CBREEN. TRUM - Certification expired or cancelled for 548 ICPs.	Still existing
Certification tests	7.2	10.38(b)	TRUM - Raw meter data output tests not conducted for two metering installations. Register advance not conducted for 21 metering installations.	Cleared
Insufficient load	7.7	14(3) and (4) of Schedule 10.7	FCLM - Monitoring not conducted of 2 installations certified with insufficient load.	Still existing
Timekeeping	7.10	23 of Schedule 10.7	FCLM - 48 meters with timeclocks not checked every 12 months.	Still existing
Compensation factors	7.14	24(3) of Schedule 10.7	FCLM - Compensation factor of 20 not recorded in the registry for ICP 0002221151WF237.	Cleared

Subject	Section	Clause	Non-compliance	Status
Interim certification	7.19	18 of Schedule 10.7	FCLM - 896 ICPs with expired interim certification. TRUM - 496 ICPs with expired interim certification.	Still existing
Category 1 inspections	8.1	45 of Schedule 10.7	FCLM - Inspections not conducted within the allowable window for nine installations.	Cleared
Category 2 to 5 inspections	8.2	46(1) of Schedule 10.7	FCLM - Inspections not conducted within the allowable window for five installations. TRUM - Four overdue Category 2 inspections.	Still existing
Testing of faulty metering installation	9.2	10.44(1)(a) and 10.44(3)(a)	FCLM - Testing of a faulty metering installation not conducted.	Cleared
Maximum interrogation cycle	10.5	8 of Schedule 10.6	FCLM - 1,013 ICPs not read during the maximum interrogation cycle. FCLM - Processes not in place to resolve issues preventing interrogation.	Still existing
Time Errors for Metering Installations	10.7	8(4) of Schedule 10.6	FCLM - Clock errors greater than the threshold for 11 ICPs.	Still existing
Event logs	10.8	8(7)(b) of Schedule 10.6	FCLM - Event logs are not reviewed prior to being sent to retailers.	Cleared

Table of Recommendations

Subject	Section	Clause	Recommendation for improvement	Status
Modification of metering installations	4.9	Clause 10.34(2), (2A) and (3)	TRUM - Seek written confirmation from Distributors that they agree with the following points in relation to the AMI deployment: <ul style="list-style-type: none"> - required functionality - terms of use - required interface format - integration of the ripple receiver and the meter functionality for controllable load. 	Cleared
Electronic Interrogation of Metering Installations	10.5	Clause 8 of Schedule 10.6	FCLM - Implement suitable processes to ensure issues preventing successful interrogation are resolved.	Cleared
Comparison of HHR Data with Register Data	10.9	Clause 8(9) of Schedule 10.6	FCLM - Ensure all sum-check failures are investigated and report on the results of each investigation.	Cleared

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

FCLM

I checked certification records for 60 metering installations, covering all relevant ATHs.

TRUM

I checked certification records for 54 metering installations, covering all relevant ATHs.

Audit commentary

FCLM

I checked 60 certification records and found the services access interface was recorded by all ATHs.

TRUM

I checked 54 certification records and found the services access interface was recorded by all ATHs.

Audit outcome

Compliant

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

Code reference

Clause 10.50(1) to (3)

Code related audit information

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

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

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

Audit observation

FCLM

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

TRUM

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

Audit commentary

FCLM

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

TRUM

TRUM 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

FCLM

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

TRUM

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

Audit commentary

FCLM

FCLM uses the FCLM identifier in all cases.

TRUM

TRUM uses the TRUM 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

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

TRUM

TRUM 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

FCLM

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

TRUM

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

Audit commentary

FCLM

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.

TRUM

The content of this audit report indicates that TRUM 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.

Audit outcome

Non-compliant

Non-compliance	Description		
Audit Ref: 2.5 With: Clause 11.2 and Clause 10.6 From: 01-Jan-19 To: 22-Nov-19	Registry not always updated as soon as practicable in some cases. Potential impact: Medium Actual impact: Low Audit history: Once Controls: Moderate Breach risk rating: 2		
Audit risk rating	Rationale for audit risk rating		
Low	Controls are recorded as moderate because there is room to improve processes. The impact on other participants is minor; therefore, the audit risk rating is low.		
Actions taken to resolve the issue		Completion date	Remedial action status
Updated ICPs with cancelled certification		31/01/2020	Identified
Preventative actions taken to ensure no further issues will occur		Completion date	
Review process to cancel certification if an inspection is not completed. Implement better controls to avoid future non compliance.		30/06/2020	

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

FCLM

I checked if FCLM had sent or received any invoices.

TRUM

I checked if TRUM had sent or received any invoices.

Audit commentary

FCLM

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.

TRUM

TRUM has not sent or received any invoices in relation to this clause during the audit period.

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

FCLM

I checked the audit compliance report for the period 01/05/19 to 12/11/19 for all records where FCLM became the MEP to evaluate the timeliness of updates.

TRUM

I checked the audit compliance report for the period 01/01/19 to 22/11/19 for all records where TRUM became the MEP to evaluate the timeliness of updates.

Audit commentary

FCLM

I examined the audit compliance report for 906 switches in relation to this clause and the findings are shown in the table below.

I checked 20 ICPs in detail, and I found that 15 of the late updates were due to replaced events where the original updates were on time.

Audit	Total ICPs	Total within 15 days	Average days	% compliant
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%
April 2019	1,562	1,465	8	94%
Nov 2019	906	841	-	93%

TRUM

I examined the audit compliance report for 34 switches in relation to this clause and the findings are shown in the table below.

I found that late nomination by the trader was the cause of the late update for four ICPs where the update was late.

Audit	Total ICPs	Total within 15 days	Average days	% compliant
Nov 2019	34	23	-	68%

Audit outcome

Non-compliant

Non-compliance	Description
Audit Ref: 3.2 With: Clause 2 of Schedule 11.4 From: 01-Jan-19 To: 22-Nov-19	76 registry updates later than 15 business days. Potential impact: Medium Actual impact: Low Audit history: Multiple times Controls: Strong Breach risk rating: 1

Audit risk rating	Rationale for audit risk rating		
Low	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.		
Actions taken to resolve the issue		Completion date	Remedial action status
Working with FSPs to deliver paperwork within the required time frames and retailers for MEP nominations. Significant improvement has been made.		Ongoing	Identified
Preventative actions taken to ensure no further issues will occur		Completion date	
Continue monitoring and notifying participants when late nominations or install data occur.		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

FCLM

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

TRUM

I checked with TRUM to confirm whether there had been any requests from other MEPs.

Audit commentary

FCLM

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

TRUM

This has not occurred, and no examples are available to examine. TRUM 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

FCLM

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

TRUM

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

Audit commentary

FCLM

FCLM has ceased to be responsible for some metering installations and they still continue with their responsibilities, mainly in relation to the storage or records, which are kept indefinitely. I checked five decommissioned ICPs from 2014. The records are still available for all five.

TRUM

TRUM has ceased to be responsible for some metering installations and they still continue with their responsibilities, mainly in relation to the storage or records, which are kept indefinitely. I checked five decommissioned ICPs from 2014. The records are still available for all five.

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

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

TRUM

TRUM has engaged Accucal, VCOM and Trustpower/FCLM as ATHs for certification activities. Both TRUM and the ATHs have provided design reports for this work which I have checked.

Audit commentary

FCLM

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. I checked the sign off details to confirm compliance.

I checked 60 certification records and confirmed that a design report reference was recorded in all 60 examples.

TRUM

The design reports include all of the requirements noted above and they were prepared by a person with the appropriate level of skills, expertise, experience and qualifications.

I checked 54 certification records and confirmed that a design report reference was recorded in all 54 examples.

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

FCLM

I confirmed that FCLM uses the Accucal, VCOM, Delta and Wells ATHs.

TRUM

I confirmed that TRUM has used Accucal, VCOM and their own ATH (Trustpower/FCLM Class B) during the audit period.

Audit commentary

FCLM

I have checked the Authority's website and confirm that the Accucal, VCOM, Delta 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.

TRUM

I checked the Authority's website and confirm that the Accucal, VCOM and FCLM ATHs have appropriate scopes 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

FCLM

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.

TRUM

I checked the processes used by TRUM to ensure compliance with the design and with the error thresholds stipulated in Table 1. I also checked the certification records for 54 metering installations.

Audit commentary

FCLM

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.

TRUM

The FCLM/Trustpower and Accucal ATHs were used to conduct certification for Category 2 to 5 metering installations. Both ATHs are correctly calculating uncertainty taking temperature variations into account.

The design report was recorded for all 54 metering installations checked as part of the audit.

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

FCLM

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

TRUM

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

Audit commentary

FCLM

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

TRUM

TRUM 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

FCLM

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

TRUM

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

Audit commentary

FCLM

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

TRUM

I checked TRUM'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

FCLM

I checked if FCLM is responsible for any NSP metering.

TRUM

I checked if TRUM is responsible for any NSP metering.

Audit commentary

FCLM

FCLM is responsible for metering at 30 NSPs. FCLM confirmed that subtraction is not used at these NSPs.

TRUM

TRUM is responsible for metering at four NSPs. TRUM 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

FCLM is not responsible for any grid metering.

TRUM

TRUM is not responsible for any grid metering.

Audit commentary

FCLM

FCLM is not responsible for any grid metering.

TRUM

TRUM is responsible for metering at two points of connection to the grid, and they are both HHR metered.

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

FCLM

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

TRUM

I asked TRUM to provide details of how they ensure the suitability of metering installations.

Audit commentary

FCLM

FCLM has a metering manual, which addresses hazard identification and the suitability of metering enclosures. 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.

TRUM

There is a written instruction to all contractors that they will ensure the enclosure provides protection from the environment, restricted access to terminals, basic insulation and wiring and ease of access for meter readers.

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

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

TRUM

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

Audit commentary

FCLM

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.

TRUM

TRUM 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.

In the previous audit it was recommended that TRUM seek confirmation from networks regarding a planned AMI deployment. TRUM did not proceed with any further AMI deployment so did not follow the recommendation.

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

FCLM

I checked the audit compliance report for the period 01/05/19 to 12/11/19 for all records where FCLM became the MEP to evaluate the timeliness of registry updates.

TRUM

I checked the audit compliance report for the period 01/01/19 to 22/11/19 for all records where TRUM became the MEP to evaluate the timeliness of registry updates.

Audit commentary

FCLM

The table below shows that there were registry updates for 796 new connections completed of which 256 were late, and 68% of updates were compliant. I checked 15 records in detail, and I found that late updates were caused by late nomination for one of the 15.

There were 1,842 registry updates completed of which 300 were late, and 84% of updates 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%
	April 2019	596	489	107	8	82%

	Nov 2019	796	540	256	-	68%
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%
	April 2019	14,123	11,967	2,156	49	85%
	Nov 2019	1,842	1,542	300	79	84%

TRUM

The table below shows that there were registry updates for 2,297 new connections completed of which 116 were late, and 95% of updates were compliant. I checked 15 records in detail, and I found that late updates were caused by late nomination for two of the 15.

There were 44,770 registry updates completed of which 779 were late, and 98% of updates were compliant.

Event	Year	Total ICPs	ICPs Notified Within 10 Days	ICPs Notified Greater Than 10 Days	Average Notification Days	Percentage Compliant
New connection	2015	142	116	26		81.7%
	2016	203	187	16	6.8	92.1%
	2017	145	138	7	5.7	95.2%
	2018	2,297	2,141	156	4.5	93.2%
	2019	2,297	2,181	116	-	95%
Update	2015	3,067	2,113	954		68.9%
	2016	3,927	3,243	684	31	82.6%
	2017	17,776	5,756	12,020	24.7	32.4%
	2018	6,361	4,617	1,774	129	72.6%
	2019	44,770	43,991	779	14.6	98%

Audit outcome

Non-compliant

Non-compliance	Description		
Audit Ref: 4.10 With: Clause 3 of Schedule 11.4 From: 01-Jan-19 To: 22-Nov-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		
Low	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
Investigate audit data to identify all causes of late updates. A large number were due data clean up where the last event date was used and therefore will always exceed 10 business days.		Ongoing	Investigating
Preventative actions taken to ensure no further issues will occur		Completion date	
Continue to work with Retailers and FSPs for timely data. Review internal processes and modify where required to meet the timeframes. For data cleansing we would like to seek clarification on what event date should be used. A – The date of the last event that was incorrect B – The date the data is corrected and sent to the registry. Note - If the data effects other participants the event date must reflect the actual effected date. i.e this will always be non-compliant.		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

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

TRUM

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

Audit commentary

FCLM

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

TRUM

TRUM 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

FCLM

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

TRUM

I checked whether TRUM was the MEP at any decommissioned ICPs and whether notification had been provided to relevant traders.

Audit commentary

FCLM

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

TRUM

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

FCLM

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

TRUM

I asked TRUM whether they had approved any burden changes during the audit period.

Audit commentary

FCLM

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

TRUMM

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

FCLM

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

TRUM

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

Audit commentary

FCLM

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

TRUM

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

Audit outcome

Compliant

4.15. Temporary Energisation (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

FCLM

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

TRUM

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

Audit commentary

FCLM

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.

TRUM

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

FCLM

I checked all registry records and the certification records for 60 metering installations to evaluate compliance with this clause.

TRUM

I checked all registry records and the certification records for 54 metering installations to evaluate compliance with this clause.

Audit commentary

FCLM

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

I found three 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 nine 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 ICP 0787867756LCC27. 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.

TRUM

Some issues were identified with the content of certification reports. They are listed in the table below.

Quantity Nov 2019	Quantity April 2019	Quantity 2018	Issue
0	0	1	Incorrect metering category
1	38	3	Incorrect ATH
0	13	18	Meter certification date and certifying ATH not recorded
0	6	5	Meter certification expiry date not recorded
0	6 (HHR/NHH)	5	HHR/NHH, Maximum interrogation cycle or services access interface not recorded
0	0	8	CT expiry date earlier than installation expiry date
0	0	1	Incorrect installation certification expiry date
0	7	0	Incorrect installation certification date

The inspection process identified the following incorrect data fields out of 522 inspections

Quantity Nov 2019	Quantity April 2019	Issue
22	24	TARIFF ERROR – meter configuration discrepancy
0	19	CERT EXPIRY – Installation Expiry date incorrectly recorded
0	34	RELAY DETAILS – incorrect details in records

Audit outcome

Non-compliant

Non-compliance	Description		
Audit Ref: 5.1 With: Clause 4(1) of Schedule 10.6 From: 01-Jan-19 To: 22-Nov-19	Metering records not populated on registry for 3 ICPs. Some CT information is missing for 9 ICPs. Some inaccurate certification records. Potential impact: Medium Actual impact: Low Audit history: Multiple times Controls: Moderate Breach risk rating: 2		
Audit risk rating	Rationale for audit risk rating		
Low	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
The data not held are for Non AMI ICPs. FCLM is in the process of upgrading all meters to AMI . Accurate data is obtained from the new install details sent from our FSPs. As results show considerable improvement has been made.		Ongoing	Identified
Preventative actions taken to ensure no further issues will occur		Completion date	
Ensuring FSPs supply complete metering records.		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

FCLM

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

TRUM

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

Audit commentary

FCLM

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

TRUM

TRUM 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

FCLM

I checked a directory of metering records from 2016 to confirm compliance.

TRUM

I checked a directory of metering records from 2016 to confirm compliance.

Audit commentary

FCLM

FCLM keeps metering records indefinitely.

TRUM

TRUM keeps metering records indefinitely.

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

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

TRUM

TRUM 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

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.

TRUM

TRUM will comply with this requirement as it arises. There are no current examples where this has occurred.

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

FCLM

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

TRUM

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

Audit commentary

FCLM

The switch breach history detail report for the audit period contained five ICPs where the FCLM response was later than 10 business days. The details are shown in the table below.

ICP	Nomination Date	Acceptance Date	Days to acceptance
0001113135WM195	27-09-19	17-10-19	13
0001113027WM2B9	18-04-19	13-05-19	13
0001113028WMD67	18-04-19	13-05-19	13
0001130023PS649	28-08-19	24-09-19	18
0001130024PSB83	28-08-19	24-09-19	18

TRUM

All responses were within 10 business days.

Audit outcome

Non-compliant

Non-compliance	Description		
Audit Ref: 6.1 With: 1(1) of Schedule 11.4 From: 01-Jan-19 To: 22-Nov-19	Five 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 the MN process		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

FCLM

I checked the audit compliance report to identify discrepancies.

TRUM

I checked the audit compliance report to identify discrepancies.

Audit commentary

FCLM

Analysis of the audit compliance report for the period 01/05/19 to 12/11/19 for all FCLM ICPs found the issues detailed in the table below.

Quantity of ICPs					Issue	FCLM Response
Nov 19	Apr 19	Jul 18	Sep 17	Dec 16		
3	11	30	49	78	Blank metering records	2 ICPs UTIs unable to obtain records. 1 ICP follow up as we believe is unmetered Telecom ICP
0	0	0	1	2	Category 2 ICP recorded as Category 1	
1	0	0	0	2	Compensation factor of 3 on recently certified installations	Waiting for customer to upgrade switchboard to 3 phase.
0	0	1	0	5	ICPs over Category 1 with interim certification	
0	0	15	9	3	ICPs with Y for the HHR flag but with NHH installations	
1	0	1	2	0	Category 2 installations certified for more than 10 years or for zero years (cert date = expiry date)	Input error. Updated.
1	0	1			Category 4 installations certified for more than 5 years	Input error. Updated.
2	6	3	3	5	Category 1 installations certified for more than 15 years or for zero years (cert date = expiry date)	Input error. Updated.
2					Day + Night not equal to 24	Input error. Updated.
10	2	1	1	0	ICPs with IN24. The EA has advised that IN24 should not be used.	Found test house had recently started using IN24 . Updated and notified test house not to use.
0	0	0	0	0	ICPs with IN0	
3	0	0	0	0	ICPs with UN0	Investigating
1					ICPs with UN19	Investigating
1	0	0	0	0	Day without night	Investigating

3	3	296	293	37	Night without day	2 Follow Up 1 Prior to NO is N only
0	0	3	4	3	CN only, these should have an associated code or they could be IN	
189	12	592	157	464	Controlled load with no control device	Mainly non AMI electronic meters . Being replaced
195					UN only with a relay installed	Historical data not held by FCLM . Update on compliance rollout.
0	2	81	77	487	IN content code without a control device	
8	19	56	60	129	Installations without CT information populated on the registry	Historical data not held by FCLM . Update on compliance.
2	0	0	0	3	Interim certification expiry dates incorrect	Input error. Updated
10	14	9	8	6	Export ICPs without an injection register	No service request to install Export meter.
1	2	2	4	1	Category 3 or 4 with a NHH meter installation type	Input error. Updated
35	41	158	279	188	Profile requiring certified control device where control device is not certified (excl. AMI)	Investigating AMI upgrade project.
0	0	0	0	0	7304 register missing from the registry	
3					Category 1 with CTs.	Updated Input Error
2					Certification or expiry dates incorrect	

TRUM

Analysis of the audit compliance report for the period 01/01/19 to 22/11/19 for all TRUM ICPs found the issues detailed in the table below.

Quantity of ICPs				Issue	TRUM Response
Nov 19	Dec 18	Dec 17	Aug 16		
11,949	2	46	79	No control device information on the registry.	

28	0	0	1	Blank metering records on the registry.	Either unmetered sites, decommissioned or another MEP should have loaded an event. All check and correctly do not have our metering installed
47	-	-	-	Day + Night not equal to 24	No issue here as all DC/NC so will not add up as its control component only outside register switch
0	0	0	0	Day without night.	
0	0	1	1	Night without day.	
0	0	1	3	UN12 - these are metered streetlights. They are likely to be NC12 but this needs to be confirmed.	
488	1,474	1680	-	UN only with a relay installed	Actively working through these
2	0	0	0	HHR profile with NHH meter.	Our data correct Retailer had wrong flag and has since been corrected
0	0	1	1	Category 2 with no CTs on the registry.	
1	30	957	4,873	Certification or expiry dates incorrect	
11	13	22	1	Compensation factor of 3 certified after 29/08/13.	Actively working through these
0	0	2	2	Category 1 with CTs.	
Not checked	216	255	222	Installations without 7304 register.	-
37	58	18	Not checked	CN only on residential ANZSIC code (these are all pumps and are correct)	All correct
Not checked	54	38	26	Export ICPs without an injection register	
Not checked	168	165	0	Profile requiring certified control device where control device is not certified (excl. AMI).	

Audit outcome

Non-compliant

Non-compliance	Description		
Audit Ref: 6.2 With: Clause 7 (1), (2) and (3) of Schedule 11.4 From: 01-Jan-19 To: 22-Nov-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		
Low	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 input errors .		31/01/2020	Identified
Preventative actions taken to ensure no further issues will occur		Completion date	
AMI and compliance rollout projects planned to upgrade all other errors.		Ongoing	

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

FCLM

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.

TRUM

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

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.

TRUM

TRUM runs a discrepancy report on a fortnightly basis; corrections are made within five days of confirming an error is present. This sometimes involves a site visit.

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

FCLM

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.

TRUM

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

FCLM

I checked all of the points mentioned above.

I confirmed that monitoring had taken place for all installations certified at a lower category. The previous audit identified five category 2 metering installations certified at a lower category which required certification to be cancelled due to incorrect monitoring. The certification of these five metering installations has been cancelled and the installations recertified during this audit period.

I identified two examples of metering installations certified with insufficient load. 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. During the previous audit there were two examples of insufficient load certifications identified where certification had not been cancelled due to lack of monitoring. The certification of one of these metering installations not been cancelled and the registry has not been updated. The details are shown in the table below.

ICP	Certification date	Certification expiry	Comments
Current audit period			
0000014461KP387	02/11/19	02/11/29	Certification cancelled due to no monitoring for insufficient load
0498266907LC42A	08/06/19	08/06/24	Certification cancelled due to no monitoring for insufficient load
Previous audit			
1002046119LC662	20/04/18	20/04/28	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.¹

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.

Analysis of the certification records for 30 recently certified Category 2 and above metering installations found that two 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, or the addition of burden resistors. There was one category 2 installation where burden resistors had been added but the burden was still less than the lowest test point, the CTs are rated at 15VA. Therefore, in accordance with the Authority's memo, this metering installations are considered "not fit for purpose". This means certification is cancelled. The ICPs are shown in the table below;

ICP	CT make/model	Ratio	Rated burden	In service burden	Comment
0000025444TR57D	Secura	200/5	Unknown	0.18, 0.17, 0.18	No burden resistors added.
0000006289KP68E	TWS SEW90B	200/5	5VA	0.293, 0.302, 0.283	No burden resistors added.
0000000216NT14B	Unknown	150/5	15VA	1.255, 1.279, 1.347	Burden resistors added but in service burden still less than 25% of the stated rated burden of 15VA.

FCLM does not conduct Category 1 sample inspections, so I checked for any installations where 10 yearly inspections were required. There were no category 1 inspections due for inspection.

One category 4 ICP was identified during the previous audit as not having an inspection conducted within the allowable window. Certification has not been cancelled for this ICP. 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

TRUM

I checked all the points mentioned above and found two issues resulting in cancellation of certification, as follows:

19 category 2 metering installations were not inspected within the allowable window. Certification is therefore cancelled. The details are shown below.

ICP	Certification date	Certification expiry	Comments
0000125797WAD24	17-07-08	17-07-23	Certification cancelled due to inspection not being done
00008101110TUC34	25-11-08	25-11-23	Certification cancelled due to inspection not being done
0000978019TU055	27-11-08	27-11-23	Certification cancelled due to inspection not being done
0001120463TG890	03-07-08	03-07-23	Certification cancelled due to inspection not being done
0001144145MLFBF	02-04-09	02-04-24	Certification cancelled due to inspection not being done
0001411352UN32F	17-11-08	17-11-23	Certification cancelled due to inspection not being done
0001418463UNB30	27-11-08	27-11-23	Certification cancelled due to inspection not being done
0002110895TGFE3	23-07-08	23-07-23	Certification cancelled due to inspection not being done
0003219453AL939	23-04-09	23-04-24	Certification cancelled due to inspection not being done
0003342439MLC93	15-05-09	15-05-24	Certification cancelled due to inspection not being done
0005504564ML26F	14-04-09	14-04-24	Certification cancelled due to inspection not being done
0006440614RN0EF	15-04-09	15-04-24	Certification cancelled due to inspection not being done
0007113704RN9B8	13-11-08	13-11-23	Certification cancelled due to inspection not being done
0008812457MLA54	12-05-09	10-05-24	Certification cancelled due to inspection not being done
0009803750ALB56	28-04-09	28-04-24	Certification cancelled due to inspection not being done
0025019778TU143	18-12-08	18-12-23	Certification cancelled due to inspection not being done

0030422420PC97B	26-01-09	26-01-24	Certification cancelled due to inspection not being done
0001116453ML1AC	18-04-09	16-04-24	Certification cancelled due to inspection being done early
0001393176AL45D	20-11-08	20-11-23	Certification cancelled due to inspection being done late

A category 2 metering installation, ICP 0000904584TU4D5, was found to be faulty during a routine inspection by an ATH. There was a phase failure due to a blown potential fuse resulting in the meter under recording. The ATH replaced the fuse whilst on-site but did not re-certify the installation. The certification of this installation is automatically cancelled as it is was outside the applicable accuracy tolerances set out in Table 1 of Schedule 10.1.

Audit outcome

Non-compliant

Non-compliance	Description		
Audit Ref: 6.4 With: Clause 20 of Schedule 10.7 From: 01-Jan-19 To: 22-Nov-19	Certification cancelled and registry not updated for: 3 installations not monitored since insufficient load certification was completed; 3 installations not fit four purpose due to low burden; 20 installations without inspections conducted within the allowable window; and 1 category 2 installation outside accuracy tolerances. Potential impact: Medium Actual impact: Medium Audit history: Multiple times Controls: Weak Breach risk rating: 6		
Audit risk rating	Rationale for audit risk rating		
Medium	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. The issues found can all potentially have a moderate impact on other participants and on settlement. The audit risk rating is medium.		
Actions taken to resolve the issue		Completion date	Remedial action status
The majority of the non compliances are for ICPs identified in the audit due to inspections not carried out on time and certification cancelled .The records have been amended. In regards to the potential blown fuse this was recertified at the time and confirmed now working, issue was resolved at time and site made compliant		31/01/2020	Identified

Preventative actions taken to ensure no further issues will occur	Completion date	
<p>The three cat 2 sites were done by VCOM and we will be revisiting there end to end testing process</p> <p>Review inspection process to remove the non compliances.</p>	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

FCLM

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.

TRUM

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 TRUM not using the prescribed form.

Audit commentary

FCLM

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.

TRUM

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 TRUM 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

FCLM

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

- the audit compliance 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 energisation; and
- I checked ICPs where certification was cancelled to ensure the registry was updated accordingly.

TRUM

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

- the audit compliance 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 energisation; and
- I checked ICPs where certification was cancelled to ensure the registry was updated accordingly.

Audit commentary

FCLM

The registry shows 2,395 ICPs have expired certification. The table below gives a breakdown of these. FCLM is in the process of recertifying 1,200 category 1 metering installations by statistical sampling.

Dec 2016	Sep 2017	Jul 2018	April 2019	Nov 2019	Description
2,376	1,648	1,118	896	826	Expired interim certification
1,782	1,539	1800	1,572	1507	Expired full certification (Category 1)
95	39	67	50	52	Expired full certification (Category 2)

1	0	2	2	0	Expired full certification (Category 3)
0	0	0	1	1	Expired full certification (Category 4)
5	0	0	9	1	Cancelled certification due to overdue inspections (Category 1)
0	0	0	0	1	Cancelled certification due to overdue inspections (Category 2)
0	0	0	5	1	Cancelled certification due to overdue inspections (Category 3 & 4)
0	9	7	5	3	Cancelled certification due to certification as a lower category and monitoring not conducted
0	0	0	17	3	Cancelled due to low burden
4,262	3,236	2995	2,558	2395	Total

FCLM 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	230
Health & Safety	Health and Safety	17
No Power	De-energised sites (TLC and Retailer)	99
Technical (Includes tariff issues)	Tariff issues related to Load Control	714
Questionable ICP	ICPs created in error by the Network	2
Unable to locate	ICPs that have been unable to locate	29

TRUM

The registry shows 73 ICPs have expired certification. The table below gives a breakdown of these.

Quantity	Description
2	Interim certified without another MEP nominated
1	Interim certified with another MEP nominated
37	Cancelled or expired Category 2 installations
19	Cancelled Category 2 due to inspections not conducted within the allowable window
1	Cancelled Category 4 due to inspection not conducted within the allowable window
13	Category 1 fully certification expired
73	Total

Audit outcome

Non-compliant

Non-compliance	Description		
<p>Audit Ref: 7.1</p> <p>With: Clause 10.38 (a), clause 1 and clause 15 of Schedule 10.7</p> <p>From: 01-Jan-19</p> <p>To: 22-Nov-19</p>	<p>Certification cancelled or expired for 2,468 ICPs.</p> <p>Potential impact: High</p> <p>Actual impact: Medium</p> <p>Audit history: Multiple times</p> <p>Controls: Moderate</p> <p>Breach risk rating: 4</p>		
Audit risk rating	Rationale for audit risk rating		
Medium	<p>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.</p> <p>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.</p>		
Actions taken to resolve the issue		Completion date	Remedial action status
<p>Statistical Sampling – Began 12 months ago but ran in to resource issues . Sampling is now in progress.</p> <p>AMI rollout project to replace all non AMI meters . We have increased our resources , namely purchase of Trustpower test house and contracts with more FSPs so we are better resourced to carry out compliance work.</p> <p>Cat 2 non compliant and 40 with time clocks not checked will be high priority.</p> <p>Note – IHUB has a rollout project in place that will also reduce a number of non compliant meters.</p>		Ongoing	Identified
Preventative actions taken to ensure no further issues will occur		Completion date	
Compliance reporting and planning in place to maintain metering compliance.		Ongoing	

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

FCLM

I checked the certification records for 60 metering installations to confirm compliance.

TRUM

I checked the certification records for 54 metering installations to confirm compliance.

Audit commentary

FCLM

Most certification activities have been conducted by FCLM using the Accucal, VEMS, Delta and Wells ATHs. The most recent audit reports for all ATHs confirm the appropriate testing is conducted. The certification records I checked contained confirmation of testing being completed.

TRUM

Most certification activities have been conducted by the FCLM/Trustpower ATH with some being conducted by Accucal. 53 of the 54 certification records I checked contained confirmation of testing being completed.

There was one category 1 metering installation for a BTS (Builders Temporary Supply). The meter in this installation had been calibrated in 2016 and re-installed on six other installations prior to being installed in this installation. The meter had not been calibrated after being removed from any of the previous installations. FCLM confirmed that their processes at the time of installation did not require the meter to be calibrated prior to re-installation. The processes have been updated since the recent FCLM/Trustpower ATH audit to ensure that all meters are recalibrated before being reused. The code allows a meter to be moved only once within 12 months of the date that it was previously installed. After this the meter must be recalibrated prior to being reused. In this case the ATH has not completed a component certification check in accordance with table 3 of schedule 10.7.

Audit outcome

Non-compliant

Non-compliance	Description
Audit Ref: 7.2 With: Clause 10.38(b) From: 01-Jan-19 To: 22-Nov-19	Component certification test not completed. Potential impact: Low Actual impact: Low Audit history: None Controls: Moderate Breach risk rating: 2
Audit risk rating	Rationale for audit risk rating
Low	The controls are recorded as moderate because they mitigate risk most of the time but there is room for improvement and the process has been corrected since the ATH audit. The accuracy of the meter is unlikely to have been affected and the consumption recorded on a BTS is minimal, therefore the audit risk rating is low.

Actions taken to resolve the issue	Completion date	Remedial action status
TRUM: Process has now been changed however as BTS have minimal consumption the risk here is low as a BTS meter only uses approx 30units a month for a period of 3-4 months	20/12/2019	Cleared
Preventative actions taken to ensure no further issues will occur	Completion date	
Changed TRUM process to FCLM process for BTS installations	20/12/2019	

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

FCLM

All relevant metering is compliant with this clause.

TRUM

All relevant metering is compliant with this clause.

Audit commentary

FCLM

All relevant metering is compliant with this clause.

TRUM

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

FCLM

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

TRUM

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

Audit commentary

FCLM

There are no examples of burden changes having occurred.

TRUM

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

FCLM

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.

TRUM

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

FCLM

29 category 2 metering installations have CT ratios above 500/5. I confirmed that 16 of these had appropriate protection in place to limit the maximum current to less than 500A.

I checked the recent monitoring reports and confirmed that monitoring is conducted correctly each month for the remaining 13 metering installations.

TRUM

18 category 2 metering installations have CT ratios above 500/5. I checked the certification records for all 18 installations and I confirm appropriate protection is in place to limit the maximum current to less than 500A.

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

FCLM

I checked if there were any examples of Insufficient load certifications.

TRUM

I checked if there were any examples of Insufficient load certifications.

Audit commentary

FCLM

The FCLM instruction to ATHs requires load banks to be used to increase load to conduct testing. My checks of recent certifications identified two installations certified with insufficient load during the audit period. FCLM has not conducted monitoring of these installations since certification.

There was also one example which was identified during the previous audit that had not been monitored since certification, certification for this installation had not been cancelled.

See table below for details.

ICP	Certification date	Certification expiry
Current audit period		
0000014461KP387	02/11/19	02/11/29
0498266907LC42A	08/06/19	08/06/24
Previous audit		
1002046119LC662	20/04/18	20/04/28

TRUM

TRUM does not allow certification in accordance with this clause. Load banks are required to be used to increase the load to conduct testing.

Audit outcome

Non-compliant

Non-compliance	Description		
Audit Ref: 7.7 With: 14(3) and (4) of Schedule 10.7 From: 01-Jan-19 To: 22-Nov-19	Monitoring not conducted of 3 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		
Low	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
Monitoring the load so complete testing can be carried out.		Ongoing	Identified
Preventative actions taken to ensure no further issues will occur		Completion date	
Notify FSPs that FCLM do not use this method of certification Please notify FCLM if unable to use a load bank.		Ongoing	

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

FCLM has not conducted monitoring of insufficient load certifications.

TRUM

TRUM has not conducted monitoring of insufficient load certifications.

Audit commentary

FCLM

FCLM has not conducted monitoring of insufficient load certifications.

TRUM

TRUM 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

FCLM

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

TRUM

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

Audit commentary

FCLM

Alternative certification is still in place for ICP 0016100092EL8AA.

ICP 0787867756LCC27 had alternative certification applied due to access constraints. Appropriate notification was provided.

TRUM

Alternative certification has not been applied to any metering installations.

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

FCLM

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

TRUM

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

Audit commentary

FCLM

FCLM has some Landis + Gyr meters with internal time clocks. FCLM is in the process of replacing these meters, of which there are currently 40.

TRUM

TRUM confirmed there are no metering installations with timeclocks.

Audit outcome

Non-compliant

Non-compliance	Description		
Audit Ref: 7.10 With: Clause 23 of Schedule 10.7 From: 01-Jan-19 To: 22-Nov-19	40 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 meters are non AMI and will be high priority to change out. We have replaced 34 since the last audit but have identified others.	30/04/2020	Identified
Preventative actions taken to ensure no further issues will occur	Completion date	
These type of meters are not used anymore.	Complete	

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

FCLM

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

TRUM

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

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.

TRUM

TRUM has a process for dealing with control devices which have been bridged out, which is that they are immediately resolved. The records for 100 ICPs showed that the reconciliation participant was aware of the bridging in all cases, because they issued the work orders. One of 100 control devices was bridged for longer than 10 business days but the ICP had the GXP profile meaning the control device was not used for reconciliation.

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

FCLM

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

TRUM

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

Audit commentary

FCLM

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

TRUM

TRUM 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

FCLM

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

TRUM

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

Audit commentary

FCLM

FCLM is in the process of recertifying 1,200 category 1 metering installations by statistical sampling, this has not yet been completed.

TRUM

TRUM has conducted statistical sampling during the audit period. I checked the certification results and confirmed that the registry had been updated appropriately.

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

FCLM

I checked the records for 30 Category 2 and above metering installations to confirm that compensation factors were correctly recorded on the registry.

TRUM

I checked the records for 26 Category 2 metering installations to confirm that compensation factors were correctly recorded on the registry.

Audit commentary

FCLM

Compensation factors have been updated accurately on the registry. I confirmed this by checking the records for 30 ICPs.

TRUM

Compensation factors have been updated accurately on the registry. I confirmed this by checking the records for 26 ICPs.

Audit outcome

Compliant

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

Code reference

Clause 26(1) of Schedule 10.7

Code related audit information

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

Audit observation

FCLM

I checked the certification records for 60 metering installations to confirm compliance.

TRUM

I checked the certification records for 54 metering installations to confirm compliance.

Audit commentary

FCLM

Meters were certified for all 60 installations.

TRUM

Meters were certified for all 53 of the 54 installations checked.

There was one category 1 metering installation for a BTS (Builders Temporary Supply). The meter in this installation had been calibrated in 2016 and re-installed on six other installations prior to being installed in this installation. The meter had not been calibrated after being removed from any of the previous installations. FCLM confirmed that their processes at the time of installation did not require the meter to be calibrated prior to re-installation. The processes have been updated since the recent Trustpower/FCLM ATH audit to ensure that all meters are recalibrated before being reused. The code allows a meter to be moved only once within 12 months of the date that it was previously installed. After this the meter must be recalibrated prior to being reused. In this case the meter certification is not valid as the meter was not recalibrated in accordance with clause 26(2) of schedule 10.7.

Audit outcome

Non-compliant

Non-compliance	Description		
Audit Ref: 7.15 With: Clause 26(1) of Schedule 10.7 From: 01-Jan-19 To: 22-Nov-19	Meter not certified. Potential impact: Low Actual impact: Low Audit history: None Controls: Moderate Breach risk rating: 2		
Audit risk rating	Rationale for audit risk rating		
Low	The controls are recorded as moderate because they mitigate risk most of the time but there is room for improvement and the process has been corrected since the ATH audit. The accuracy of the meter is unlikely to have been affected and the consumption recorded on a BTS is minimal, therefore the audit risk rating is low.		
Actions taken to resolve the issue		Completion date	Remedial action status
Changed TRUM process to FCLM process for BTS installations.		20/12/2019	Cleared

Preventative actions taken to ensure no further issues will occur	Completion date	
FCLM BTS process uses a new calibrated meter for each installation.	20/01/2019	

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

FCLM

I checked the certification records for 30 metering installations to confirm compliance.

TRUM

I checked the certification records for 26 metering installations to confirm compliance.

Audit commentary

FCLM

Measuring transformers were certified for all 30 installations.

TRUM

Measuring transformers were certified for all 26 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

FCLM

I checked the certification records for 60 metering installations to confirm compliance.

TRUM

I checked the certification records for four metering installation to confirm compliance.

Audit commentary

FCLM

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

TRUM

The four certification records that I checked confirmed that the data storage devices were 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

FCLM

I checked the ATH register to confirm compliance.

TRUM

I checked the ATH register to confirm compliance.

Audit commentary

FCLM

All relevant ATHs have appropriate approval.

TRUM

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

FCLM

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

TRUM

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

Audit commentary

FCLM

There are 826 previously interim certified installations with expired certification.

TRUM

There are three 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: 22-Nov-19	829 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

Medium	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
As per clause 7.1		Ongoing	Disputed
Preventative actions taken to ensure no further issues will occur		Completion date	
We don't acknowledge this rule as relevant and is covered by clause 7.1 Therefore the risk rating should not applied as it is already applied .		Date	

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

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

TRUM

I checked whether TRUM had conducted sample inspections for Category 1 metering installations.

Audit commentary

FCLM

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 there were no Category 1 ICPs due for inspection.

TRUM

TRUM had completed Category 1 inspections through statistical sampling. I checked the inspection process and the associated reporting, which confirms compliance with the Code.

Audit outcome

Compliant

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

FCLM

I checked the registry information to confirm which ICPs were due for inspection and I then checked the inspection records for all relevant ICPs.

TRUM

I checked the registry information to confirm which ICPs were due for inspection and I then checked the inspection records for all relevant ICPs.

Audit commentary

FCLM

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

TRUM

As recorded in **section 6.4**, inspections were not conducted within the allowable window for 19 metering installations.

Audit outcome

Non-compliant

Non-compliance	Description		
Audit Ref: 8.2 With: Clause 46(1) of Schedule 10.7 From: 01-Jan-19 To: 22-Nov-19	Inspections not conducted within the allowable window for 20 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
Some of the cat 2 inspections were not carried out due to them being scheduled by IHUB for displacement.		Ongoing	Investigating
Preventative actions taken to ensure no further issues will occur		Completion date	
Will look to improve controls		Date	

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

FCLM

I checked the inspection process and the results to confirm compliance.

TRUM

I checked the inspection process and the results to confirm compliance.

Audit commentary

FCLM

FCLM reviews and updates records as required following inspections.

TRUM

The inspection report information was checked against TRUM's records within the required timeframe.

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

FCLM

I checked three examples of category 1 installations which had seals removed and the meters were bridged.

TRUM

I checked all examples of notification of missing seals, which were all as a result of inspection processes or notification by field technicians.

Audit commentary

FCLM

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.

TRUM

There were 39 examples and in all cases an investigation was conducted on-site, and the components were re-sealed.

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

FCLM

I checked three examples of bridged meters, which are deemed to be faulty due to the bridging.

TRUM

I checked the results of the inspection process where there was one example of theft and four stopped meters.

I also checked an example of a faulty Category 2 metering installation found during an inspection.

Audit commentary

FCLM

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

TRUM

All installations from the inspection process were Category 1 and the investigations were conducted immediately, therefore the 20 business day requirement is met.

A category 2 metering installation, ICP 0000904584TU4D5, was found to be faulty during a routine inspection by an ATH. There was a phase failure due to a blown potential fuse resulting in the meter under recording. The ATH replaced the fuse whilst on-site and appropriate notification was provided to the trader. This is recorded as non-compliance in **section 6.4** as the metering installation certification was not cancelled.

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

FCLM

I checked three examples of bridged meters, which are deemed to be faulty due to the bridging.

TRUM

I checked the results of the inspection process where there were two examples of theft, two of bridged relays and one stopped meter.

I also checked one faulty Category 2 example.

Audit commentary

FCLM

The three bridged meters were resolved within the appropriate timeframes and notification was provided. The forms completed in the field by the ATHs contain sufficient information to report to relevant parties and meet the requirement for the provision of a statement of situation.

TRUM

In all cases, appropriate testing and reporting was conducted immediately. The forms completed in the field by the ATHs contain sufficient information to report to relevant parties and meet the requirement for the provision of a statement of situation.

Audit outcome

Compliant

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

Code reference

Clause10.46(2)

Code related audit information

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

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

Audit observation

FCLM

I checked three examples where FCLM had become aware of faulty metering installations.

TRUM

I checked six examples where FCLM had become aware of faulty metering installations.

Audit commentary

FCLM

The statements of situation were all provided within three business days.

TRUM

The statements of situation were all provided within three business days.

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

FCLM

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

TRUM

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

Audit commentary

FCLM

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

TRUM

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

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

FCLM

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

TRUM

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

Audit commentary

FCLM

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

TRUM

No requests have been received but TRUM 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

FCLM

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

TRUM

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

Audit commentary

FCLM

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

TRUM

No requests have been received, but TRUM 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

FCLM

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

TRUM

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

Audit commentary

FCLM

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

TRUM

No requests have been received, but TRUM 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 ± 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

FCLM

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.

TRUM

TRUM does not conduct electronic data collection.

Audit commentary

FCLM

I checked a report sent by FCLM which detailed the number of meters not interrogated within the maximum interrogation cycle recorded in the registry. The FCLM process is that a report is run monthly and any meters that have not communicated have the AMI flag changed to "N". This process has seen a significant drop in the number of meters exceeding their maximum interrogation cycle from the time of last communication. However, no action has been taken for meters that have not communicated since the time of installation. The table below details the number of meters with an AMI flag of "Y" where interrogation had not been successful.

MIC	90 days	200 days	365 days
No comms since installation	892	1	4
Last comms date greater than MIC	14	2	0

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

TRUM

TRUM does not conduct electronic data collection.

Audit outcome

Non-compliant

Non-compliance	Description		
Audit Ref: 10.5 With: Clause 8 of Schedule 10.6 From: 01-Jan-19 To: 22-Nov-19	913 ICPs not read during the maximum interrogation cycle. Potential impact: High Actual impact: Medium Audit history: Three times Controls: Moderate Breach risk rating: 4		
Audit risk rating	Rationale for audit risk rating		
Medium	I have recorded the controls as moderate because reporting is in place but there is room for improvement to ensure all AMI installations are successfully interrogated. 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
An error had occurred analysing the reconciliation report that is used to identify sites outside there cycle .This has now been rectified and the registry updated . Note – 164 meters out of the 913 are now communicating .		31/01/2020	Cleared
Preventative actions taken to ensure no further issues will occur		Completion date	
Report error noted and corrected.		20/01/2020	

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

FCLM

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

TRUM

TRUM does not conduct electronic data collection.

Audit commentary

FCLM

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

TRUM

TRUM does not conduct electronic data collection.

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

FCLM

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

TRUM

TRUM does not conduct electronic data collection.

Audit commentary

FCLM

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 EDMl contains clock adjustment information and this is sent to retailers as required by this clause.

I checked the most recent reports for time errors greater than 30 seconds. The reports contained 23 examples during November 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 sub-clause (5).”

EDMl 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. EDMl confirmed that the data would need to be manually apportioned to prior periods. This will be a rare event, but EDMl and FCLM have a process in place to deal with this if required.

TRUM

TRUM does not conduct electronic data collection.

Audit outcome

Non-compliant

Non-compliance	Description
Audit Ref: 10.7 With: Clause 8(4) of Schedule 10.6 From: 01-Jan-19 To: 22-Nov-19	Clock errors greater than the threshold for 23 ICPs. Potential impact: Low Actual impact: None Audit history: Once Controls: Strong Breach risk rating: 1
Audit risk rating	Rationale for audit risk rating

Low	<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>		
Actions taken to resolve the issue		Completion date	Remedial action status
<p>Meters communicating regularly are adjusted and do not exceed the limits. Non communicating meters that begin communicating may fall into the error category and adjusted accordingly.</p> <p>Initial time adjustment is carried out on installation if required.</p> <p>We believe these should not be included as a non compliance</p>		Ongoing	Identified
Preventative actions taken to ensure no further issues will occur		Completion date	
Seek advice from the EA on what other action is required.		Ongoing	

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

FCLM

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

TRUM

TRUM does not conduct electronic data collection.

Audit commentary

FCLM

In the previous audit it was recorded that the event logs are sent automatically to retailers without a review being conducted. A process has now been added where the event logs are opened daily from the location where they are automatically stored. The events are reviewed and actions taken as required, the files are then moved to an archive location.

TRUM

TRUM does not conduct electronic data collection.

Audit outcome

Compliant

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

FCLM

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

TRUM

TRUM does not conduct electronic data collection.

Audit commentary

FCLM

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 EDM1 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. The report is analysed to determine if further action is required. In most cases the failures are data issues such as missing intervals due to comms problems which are resolved in subsequent sum-checks.

TRUM

TRUM does not conduct electronic data collection.

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

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

TRUM

TRUM does not conduct electronic data collection.

Audit commentary

FCLM

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

TRUM

TRUM does not conduct electronic data collection.

Audit outcome

Not applicable

CONCLUSION

In November 2019 FCLM purchased the Trustpower metering assets, ATH and MEP business. This is the first audit following the purchase and encompasses both the FCLM and TRUM participant identifiers.

The quantity of non-compliances has decreased from 21 during the previous audits to 16 in this audit, with the future risk rating decreasing from 56 to 41.

The quantity of uncertified metering installations has reduced by 674 since the previous audits. FCLM is currently undertaking a statistical recertification project which when completed should see a further 1200 uncertified metering installations certified.

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:

- three installations not monitored since insufficient load certification was completed;
- three installations not fit for purpose due to low burden;
- 20 installations without inspections conducted within the allowable window; and
- 1 category 2 installation outside accuracy tolerances.

Processes have been implemented to review event logs before they are sent to retailers.

There has been an improvement in the processes which ensure meters do not exceed their maximum interrogation cycle. The process has seen a significant drop in the number of meters exceeding their maximum interrogation cycle from the time of last communication. However, no action has been taken for meters that have not communicated since the time of installation.

PARTICIPANT RESPONSE

FCLM would again like to thank the Auditors for the diligence and guidance during the audit process. As always the process has proven valuable, either through reassurance of areas that FCLM continues to operate well in, recognition of the effectiveness of new controls or the improvement recommendations received. We are continuously working to achieve compliance with another notable reduction from our last audit.

Grandfather Interim clause 7.19 as it is no longer relevant and covered by clause 7.1 as non-compliant.

We believe with the evidence of continuous improvement being made, that the risk rating does not accurately reflect the improvements and reduction of non-compliance.

FCLM expects that there will be a further significant reduction of outstanding compliance issues over the next 12-month period. This considered and the evidence of the continuous improvement, we feel an audit frequency of 12 months appropriate and to align with the program of work scheduled. A shorter period would add little value, would distract from progress and add unnecessary costs.