

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

For

COUNTIES POWER (COUP)

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TABLE OF CONTENTS

Executive summary	5
Audit summary	6
Non-compliances	6
Recommendations	6
Issues 7	
1. Administrative	8
1.1. Exemptions from Obligations to Comply With Code (Section 11)	8
1.2. Structure of Organisation	8
1.3. Persons involved in this audit	8
1.4. Use of Agents (Clause 10.3)	9
1.5. Hardware and Software	9
1.6. Breaches or Breach Allegations	9
1.7. ICP Data	9
1.8. Authorisation Received	10
1.9. Scope of Audit	10
1.10. Summary of previous audit	11
2. Operational Infrastructure	13
2.1. MEP responsibility for services access interface (Clause 10.9(2))	13
2.2. Dispute Resolution (Clause 10.50(1) to (3))	13
2.3. MEP Identifier (Clause 7(1) of Schedule 10.6)	13
2.4. Communication Equipment Compatibility (Clause 40 Schedule 10.7)	14
2.5. Participants to Provide Accurate Information (Clause 11.2 and Clause 10.6)	14
3. Process for a Change of MEP	16
3.1. Change of metering equipment provider (Clause 10.22)	16
3.2. Registry Notification of Metering Records (Clause 2 of Schedule 11.4)	16
3.3. Provision of Metering Records to Gaining MEP (Clause 5 of Schedule 10.6)	16
3.4. Termination of MEP Responsibility (Clause 10.23)	17
4. Installation and Modification of Metering Installations	19
4.1. Design Reports for Metering Installations (Clause 2 of Schedule 10.7)	19
4.2. Contracting with ATH (Clause 9 of Schedule 10.6)	19
4.3. Metering Installation Design & Accuracy (Clause 4(1) of Schedule 10.7)	20
4.4. Subtractive Metering (Clause 4(2)(a) of Schedule 10.7)	20
4.5. HHR Metering (Clause 4(2)(b) of Schedule 10.7)	21
4.6. NSP Metering (Clause 4(3) of Schedule 10.7)	21
4.7. Responsibility for Metering Installations (Clause 10.26(10))	21
4.8. Suitability of Metering Installations (Clause 4(4) of Schedule 10.7)	22
4.9. Installation & Modification of Metering Installations (Clauses 10.34(2), (2A) and (3))	22
4.10. Changes to Registry Records (Clause 3 of Schedule 11.4)	23
4.11. Metering Infrastructure (Clause 10.39(1))	24
4.12. Decommissioning of an ICP (Clause 10.23A)	25
4.13. Measuring Transformer Burden and Compensation Requirements (Clause 31(4) and (5) of Schedule 10.7)	25
4.14. Changes to Software ROM or Firmware (Clause 39(1) and 39(2) of Schedule 10.7)	26
4.15. Temporary Electrical Connection (Clauses 10.29A)	27

4.16. Temporary Electrical Connection (Clause 10.30A)	27
4.17. Temporary Electrical Connection (Clause 10.31A)	27
5. Metering Records.....	29
5.1. Accurate and Complete Records (Clause 4(1)(a) and (b) of Schedule 10.6, and Table 1, Schedule 11.4)	29
5.2. Inspection Reports (Clause 4(2) of Schedule 10.6)	29
5.3. Retention of Metering Records (Clause 4(3) of Schedule 10.6)	30
5.4. Provision of Records to ATH (Clause 6 Schedule 10.6).....	30
6. Maintenance of Registry Information.....	32
6.1. MEP Response to Switch Notification (Clause 1(1) of Schedule 11.4)	32
6.2. Provision of Registry Information (Clause 7 (1), (2) and (3) of Schedule 11.4)	32
6.3. Correction of Errors in Registry (Clause 6 of Schedule 11.4)	37
6.4. Cancellation of Certification (Clause 20 of Schedule 10.7)	38
6.5. Registry Metering Records (Clause 11.8A)	39
7. Certification of Metering Installations	40
7.1. Certification and Maintenance (Clause 10.38 (a), clause 1 and clause 15 of Schedule 10.7)	40
7.2. Certification Tests (Clause 10.38(b) and clause 9 of Schedule 10.6).....	42
7.3. Active and Reactive Capability (Clause 10.37(1) and 10.37(2)(a))	43
7.4. Local Service Metering (Clause 10.37(2)(b))	43
7.5. Measuring Transformer Burden (Clause 30(1) and 31(2) of Schedule 10.7)	44
7.6. Certification as a Lower Category (Clauses 6(1)(b) and (d), and 6(2)(b) of Schedule 10.7)	44
7.7. Insufficient Load for Certification Tests (Clauses 14(3) and (4) of Schedule 10.7)	45
7.8. Insufficient Load for Certification – Cancellation of Certification (Clause 14(6) of Schedule 10.7)	46
7.9. Alternative Certification Requirements (Clauses 32(2), (3) and (4) of Schedule 10.7)	46
7.10. Timekeeping Requirements (Clause 23 of Schedule 10.7)	47
7.11. Control Device Bridged Out (Clause 35 of Schedule 10.7)	47
7.12. Control Device Reliability Requirements (Clause 34(5) of Schedule 10.7).....	48
7.13. Statistical Sampling (Clauses 16(1) and (5) of Schedule 10.7)	48
7.14. Compensation Factors (Clause 24(3) of Schedule 10.7).....	49
7.15. Metering Installations Incorporating a Meter (Clause 26(1) of Schedule 10.7).....	49
7.16. Metering Installations Incorporating a Measuring Transformer (Clause 28(1) of Schedule 10.7)	50
7.17. Metering Installations Incorporating a Data Storage Device (Clause 36(1) of Schedule 10.7)	50
7.18. Notification of ATH Approval (Clause 7 (3) Schedule 10.3).....	50
7.19. Interim Certification (Clause 18 of Schedule 10.7).....	51
8. Inspection of metering installations	53
8.1. Category 1 Inspections (Clause 45 of Schedule 10.7).....	53
8.2. Category 2 to 5 Inspections (Clause 46(1) of Schedule 10.7)	54
8.3. Inspection Reports (Clause 44(5) of Schedule 10.7)	54
8.4. Broken or removed seals (Clause 48(4) and (5) of Schedule 10.7)	55
9. Process for Handling Faulty Metering Installations	56
9.1. Investigation of Faulty Metering Installations (Clause 10.43(4) and (5)).....	56
9.2. Testing of Faulty Metering Installations (Clause 10.44).....	56
9.3. Statement of Situation (Clause 10.46(2))	57

10.	Access to and Provision of Raw meter Data and Metering Installations.....	58
10.1.	Access to Raw Meter Data (Clause 1 of Schedule 10.6).....	58
10.2.	Restrictions on Use of Raw Meter Data (Clause 2 of Schedule 10.6).....	58
10.3.	Access to Metering Installations (Clause 3(1), (3) and (4) of Schedule 10.6).....	59
10.4.	Urgent Access to Metering Installations (Clause 3(5) of Schedule 10.6)	59
10.5.	Electronic Interrogation of Metering Installations (Clause 8(2), 8(3), 8(5) and 8(6) of Schedule 10.6)	60
10.6.	Security of Metering Data (Clause 10.15(2))	62
10.7.	Time Errors for Metering Installations (Clause 8(4) of Schedule 10.6)	63
10.8.	Event Logs (Clause 8(7) of Schedule 10.6).....	64
10.9.	Comparison of HHR Data with Register Data (Clause 8(9) of Schedule 10.6)	65
10.10.	Correction of Raw Meter Data (Clause 10.48(2),(3))	66
	Conclusion	68
	Participant response	68

EXECUTIVE SUMMARY

This participant audit was performed at the request of Counties Power to encompass the Authority's request for an audit, as required by clause 10.20, of Part 10, of the Electricity Industry Participation Code. The relevant clauses were audited as required by the Guidelines for Metering Equipment Provider v.2.2 issued by the Electricity Authority.

At the time of this audit the number of ICPs for which Counties Power is recorded as being the MEP, was 49,943 ICPs. Counties Power does not read meters themselves. Metrix as Counties Power agents read AMI meters and provide data to reconciliation participants. Some parts of section 10 are based on the Metrix MEP audit conducted 31/05/19. Metrix provides post-raw meter data services such as estimation. The Code does not have a provision for the MEP to estimate metering data, it is the responsibility of reconciliation participants. We audited this part of the Metrix operation as a part of this audit. Our findings could be included in the relevant parts of the reconciliation participant audit report.

The audit found 7 non-compliances and one recommendation. The level of compliance has improved since the last audit.

The main issues are as follow:

- Expired certification for 1,713 metering installations
- Meters not being interrogated within maximum interrogation cycle
- Mismatch of installation information between Certificate of Compliance issued by AccuCal and the registry

The date of the next audit is determined by the Electricity Authority and is dependent on the level of compliance during this audit. Table 1 of the Guidelines for Reconciliation Participant audit provides some guidance on this matter. The Future Risk Rating score is 19 which results in an indicative audit frequency of 12 months. We agree with the recommendation

We thank Counties Power's staff for their full and complete cooperation in this audit. Their response to any request for information or clarification was answered in a timely manner.

AUDIT SUMMARY

NON-COMPLIANCES

Subject	Section	Clause	Non Compliance	Controls	Audit Risk Rating	Breach Risk Rating	Remedial Action
Participants to provide accurate information	2.5	11.2	Some information in the registry is incorrect	Moderate	Low	2	Identified
Changes to registry records	4.10	3 of Schedule 11.4	Metering data for some installations was uploaded later than 10 BD	Moderate	Low	2	Identified
Provision of registry information	6.2	7(2)(3) of Schedule 11.4	Some registry records are incorrect	Moderate	Low	2	Identified
Certification and maintenance	7.1	10.38(a)	1,713 ICPs have non-certified metering installations	Moderate	Medium	4	Identified
Interim certification	7.19	18 of Schedule 10.7	1,109 ICPs metering installations have interim certification	Moderate	Medium	4	Identified
Electronic interrogation of metering installations	10.5	8(2)of Schedule 10.6	Some metering installations not interrogated within maximum interrogation cycle (540)	Moderate	Medium	4	Identified
Time errors for metering installations	10.7	8(4) of Schedule 10.6	Around 50 meters are reported every two weeks as having clock error outside the allowable threshold	Strong	Low	1	Identified
Future Risk Rating						19	
Next audit							

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

RECOMMENDATIONS

Subject	Section	Description	Recommendation
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Provision of registry information	6.2	Mismatch of type of category 2 metering installations between the registry and Certificates of Compliance issued by AccuCal	Find a resolution between both companies to the satisfaction of both parties
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ISSUES

Subject	Section	Description	Issue
			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.

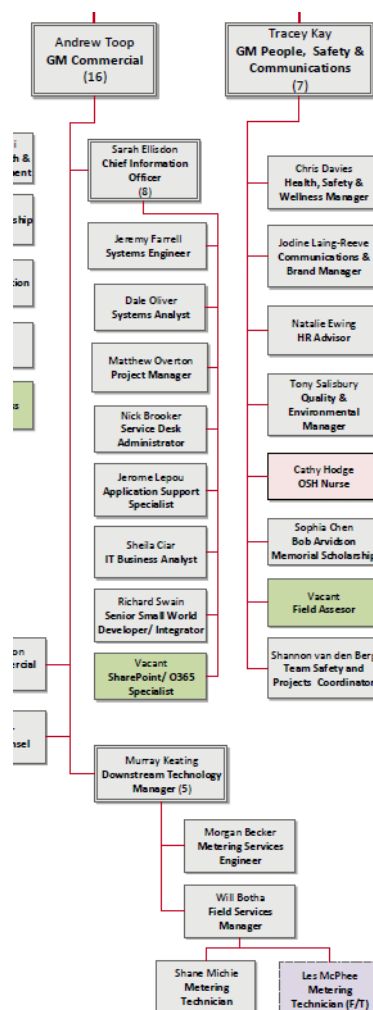
Audit observation

Counties Power does not have any exemptions granted to exempt them from compliance with all or any of the clauses.

Audit commentary

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

1.2. Structure of Organisation



1.3. Persons involved in this audit

Name	Title	Company
Murray Keating	Downstream Technology Manager	Counties Power
Willem Botha	MEP Field Services manager	Counties Power
Dale Oliver	Development Team Manager	Counties Power
Daniel Pinny	Data Services Manager	Metrix
Ewa Glowacka	Electricity Authority Approved Auditor	TEG & Associates Ltd

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 fulfilment of the participant's 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

Metrix is an agent for Counties Power for AMI data collection

Audit commentary

During this audit we reviewed the Metrix data collection operation, which was audited on 07/05/19 by Steve Woods of Veritek. We met with Metrix on 15 October 2019 and audited the estimation process conducted for metering installation which can't interrogated.

1.5. Hardware and Software

The Counties Power MEP data is held in Microsoft Navision.

AMI data collection is conducted by Metrix as its agent.

1.6. Breaches or Breach Allegations

No breaches or alleged breaches were lodged since the last audit.

1.7. ICP Data

Metering Category	Number of ICPs
1	42,478
2	410
3	35
4	12
5	8

1.8. Authorisation Received

A letter of authorisation was received from Counties Power for the purposes of gathering information for this audit.

1.9. Scope of Audit

This participant audit was performed at the request of Counties Power to encompass the Authority's request for an audit as required by clause 10.20, of Part 10, of the Electricity Industry Participation Code.

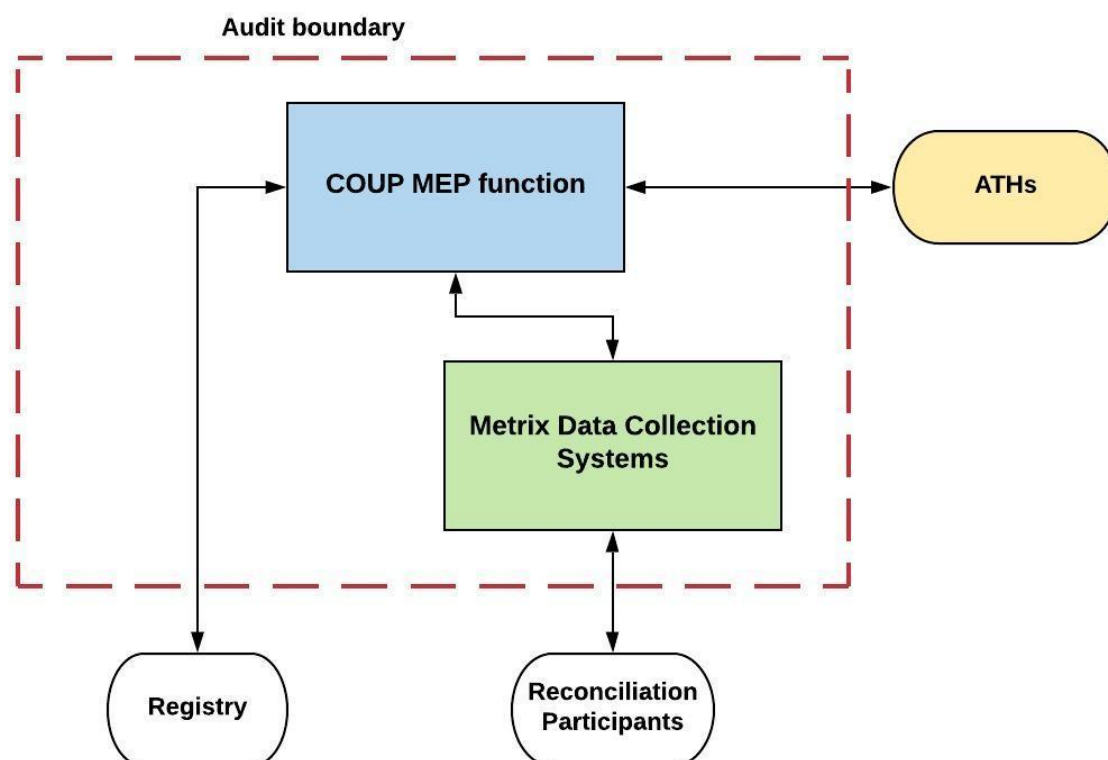
The audit was carried out on the Counties Power premises at Glasgow Road, in Pukekohe, on the 18/19 September 2019.

The audit covered the following functions:

- Process for changing a MEP
- Installation and modification of metering installations
- Metering records
- Maintenance of registry information
- Certification of metering installations
- Inspection of metering installations
- Process for handling faulty metering installations
- Access to and provision of raw meter data and metering installations

Counties Power adopted the four-letter code of COUP for a participant as a MEP. Counties Power is both a distributor and MEP under the Code with the participant code COUP being used for both functions.

The boundaries of this audit are shown below:



1.10. Summary of previous audit

The previous audit was conducted on 15th January 2019 by Brett Pisculic of Veritek Ltd. The table below shows non-compliances identified during this audit:

Subject	Section	Clause	Non-Compliance	Comments
Registry notification of metering records	3.2	2 of Schedule 11.4)	14 registry updates later than 15 business days	Cleared
Changes to registry records	4.10	3 of Schedule 11.4	Some records updated on the registry later than 10 business days	Still exists
Provision of registry information	6.2	Clause 7 (1), (2) and (3) of Schedule 11.4	Some registry records incomplete or incorrect	Still exists
Certification of installations	7.1	10.38(a)	Certification expired	Still exists
Time keeping requirements	7.10	10.38(b) and clause 9 of Schedule 10.6	15 timeclocks not checked.	Cleared
Interim certification	7.19	18 of Schedule 10.7	1443 cat 1 installations with expired interim certification	Still exists, number of installations decreased by 100
Electronic Interrogation of Metering Installations	10.5	8 of Schedule 10.6	Some installations not interrogated within the maximum interrogation cycle.	Still exists

Time errors	10.7	8(4) of Schedule 10.6	42 examples of clock errors outside the allowable thresholds in the most recent reports.	Still exists
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Subject	Section	Clause	Recommendation for improvement	Comments
Electronic interrogation	10.5	8 of Schedule 10.6	Counties to consider the memo issued by the Authority on 26 July 2017 and a report is run regularly and ICPs are changed to AMI non-communicating within an appropriate timeframe.	

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

Counties Power provide the MEP services for metering installations of category 1 to 5. AMI installations are read remotely by Metrix and data provided to reconciliation participants or by metering companies or agents employed by traders.

Audit commentary

Metering certification provided by Counties Power (90) showed that access interface was recorded on all of them. If meter readers have difficulties reading meters because of a problem with a service access interface, Counties Power is notified and asked to address it, which is done promptly.

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

Counties Power has a process in place for dispute resolution because it is also a distributor. If the need arises the same process is adopted for MEP related disputes.

Audit commentary

Counties Power confirmed that all disputes were resolved in good faith without involving the Authority.

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

The LIS file dated 13/09/19 was provided by Counties Power to assist in the assessment of compliance.

Audit commentary

According to the LIS file Counties Power use COUP as their MEP identifier.

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

Counties Power is responsible for a number of metering installations which are read remotely using Silverspring, which was rolled out in 2013, and cellphones.

Audit commentary

Metrix, as the agent to Counties Power, interrogates meters for which Counties Power provides MEP services. Metrix ensures that all communication equipment is compatible with any connection requirements of relevant telecommunication standards. The Metrix MEP audit conducted this year states that all communication equipment is appropriately certified. It is recorded in the type test certificate and other approval documents. It was confirmed compliant during the Metrix audit.

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

During the audit we reviewed activities conducted by Counties Power to determine whether all practicable steps had been taken to provide accurate information.

Audit commentary

As described in **section 6.3**, Counties Power compares the registry data with Navision master data.

Section 6.3 we identified non-compliance because of a mismatch of information between Certificates of Compliance issued by AccuCal and the registry.

Section 7.1 – incorrect certification expiry date for 43 ICPs.

Audit outcome

Non-compliant

Non-compliance	Description		
Audit Ref: 2.5 With: 11.2 From: 01-Dec-18 To: 31-Aug-19	Some information in the registry is incorrect Potential impact: Medium Actual impact: None Audit history: None Controls: Moderate Breach risk rating: 2		
Audit risk rating	Rationale for audit risk rating		
Low	Controls are recorded as moderate, additional improvement should be made. Some corrections could not have been made up to now because of system restrictions. Audit risk is identified as low.		
Actions taken to resolve the issue		Completion date	Remedial action status
Counties Power acknowledges some deficiency's in IT systems and how they interface with Registry are contributing to discrepancy's in the data set populated in Registry. Correcting errors found is an ongoing routine process.			Identified
Preventative actions taken to ensure no further issues will occur		Completion date	
Counties Power will utilise the new tools available in Registry to better maintain the data set. As well as short term fixes being implemented, potential for an entirely new system to interface with registry is being investigated.			

3. PROCESS FOR A CHANGE OF MEP

3.1. Change of metering equipment provider (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 requirements are met in relation to updating the registry and advising 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

We asked Counties Power if they sent or received invoices in relation to this clause.

Audit commentary

Counties Power stated that this clause was not exercised.

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 manager of the registry metering records for the metering installation within 15 days of becoming the MEP for the metering installation.

Audit observation

Counties Power provided the Event Listing file (EDA) and the Audit Compliance report for the period covering 01/12/18 – 31/08/19. We checked all records where Counties Power became the MEP to evaluate the timeliness of updates.

Audit commentary

Counties Power was nominated for 15 existing installations as the MEP. Metering data was uploaded within 15 business days after becoming the MEP.

Audit outcome

Compliant

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

It was discussed during the audit if Counties Power had been requested access to their metering records by a gaining MEP.

Audit commentary

No MEP has asked Counties Power for metering records since the last audit. Compliance confirmed based on a verbal statement from Counties Power.

Audit outcome

Compliant

3.4. Termination of MEP Responsibility (Clause 10.23)

Code reference

Clause 10.23

Code related audit information

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

The MEP is responsible if it:

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

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

An MEPs 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

Metering records are kept in Navision. The records are kept indefinitely and are not purged after any set period.

Audit commentary

During the audit we reviewed many records of metering installations. Some of them were decommissioned or moved to other MEPs. All records were still available.

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

Counties Power uses their own technicians working under AMS ATH certification for category 1 metering installations, and AccuCal for category 2 and higher metering installations. We reviewed 105 certifications across all categories.

Audit commentary

The Metering Installation Certification Report used for category 1 installations has a field for the reference to the appropriate ATH wiring drawing. AccuCal Certification of Compliance has a design report reference. Design reports were approved by AMS (VEMS) and contain all information except maximum interrogation cycle, which is recorded on certifications.

Counties Power confirmed that no installations were modified which would require the creation of a new design report. There were no new design reports produced during the period covered by this audit.

The last audit report identified non-compliance because a design number was not recorded on 6 metering installations. During this audit we reviewed 105 certifications and did not come across such an occurrence.

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

Counties Power uses AccuCal for category 2 and higher metering installations and its own technicians working under AMS ATH certification.

Audit commentary

The EA website confirmed that AMS and AccuCal have current and appropriate certification.

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

We reviewed 105 metering certifications and discussed with Counties Power which methods of certification were used.

Audit commentary

All certifications are validated by Counties Power before data is entered into Navision and later on uploaded to the registry.

Counties Power' technicians use the selective component metering method to certify category 1 metering installations. AccuCal used the same method or "end to end" test method as per clause 12 of Schedule 10.7 (comparative certification) for category 2 metering installations when appropriate.

Counties Power conducts random field audits to ensure the correctness of certifications .

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

We verified with Counties Power whether they provide MEP services for installations where subtraction is used to determine submission information.

Audit commentary

No installations for which Counties Power is responsible use subtraction to determine submission information.

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

The LIS file dated 13/09/19 was analysed to assess compliance.

Audit commentary

The LIS file was checked, and we confirm that all category 3 and higher installations have half-hour metering installed.

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

Counties Power is responsible for one NSP metering installation.

Audit commentary

The NSP metering installation for which Counties Power provide MEP services is MTG0111, which is the interconnection between WEL networks and Counties Power.

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

Counties Power is not responsible for any metering installation for a point of connection to the grid.

Audit commentary

This clause is not applicable. Compliance was not assessed.

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

It was discussed during the audit how compliance with this clause is met.

Audit commentary

Counties Power is a distributor and employs people with a lot of engineering expertise. The company uses two approved ATH to assist them with compliance. Counties Power issued a special document called "Counties Power – Metering requirements for electrical installations", which is published on their website. The company also issued a written instruction to installers regarding the suitability of enclosures and protection of metering installations.

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 installation's:

- *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

Counties Power is both a distributor and an MEP therefore agreement between these two parts of the same company should be easy to reach. Use of a System Agreement signed with traders covered requirements that metering must comply with the Code.

Audit commentary

As per **section 4.8**, Counties Power issued a special document called “Counties Power – Metering requirements for electrical installations”, which is published on their website. Counties Power works closely with traders to install metering which meets their and customers’ requirements.

There were no new or modified designs during the period covered by this audit.

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 manager of the registry metering records, or any change to the registry metering records, for each metering installation for which it is responsible at the ICP, no later than 10 business days following:

- a) the electrical connection of the metering installation at the ICP*
- b) any subsequent change to the metering installation’s metering records*

Audit observation

The EDA file and the Audit Compliance report was reviewed to assess compliance.

Audit commentary

There were 31,125 metering data updates. 254 updates were later than 10 business days. 99.2% of updates were uploaded to the registry within the timeframe specified by the Code. It is a very good result.

On 30/08/19 Counties Power updated the interrogation cycle to 236 days and changed a flag for the certification of control devices to “Y” for 29,001 installations.

42 updates were backdated more than one year, all of them were data corrections from when Counties Power discovered incorrect data. They do appreciate that the backdating of data, if outside of 10 BD, constitutes non-compliance but the company wants to comply with clause 11.2.

Audit outcome

Non-compliant

Non-compliance	Description		
Audit Ref: 4.10 With: 3 of Schedule 11.4 From: 01-Dec-18 To: 31-Aug-19	Metering data for some installations was uploaded later than 10 BD 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	Controls are recorded as moderate, a small number of entries were backdated to achieve compliance with clause 11.2. Audit risk rating is recorded as low because there is a minor, practically no, impact on settlement outcomes.		
Actions taken to resolve the issue		Completion date	Remedial action status
Generally every effort is made to meet the requirement Some upload delays incurred due to MEP nominations delays, and occasionally systems file transfer errors			Identified
Preventative actions taken to ensure no further issues will occur		Completion date	
Counties Power has just (post audit) implemented the electronic capture of field metering installations data to generally speed the processes between meter installation and registry upload.		22/10/19	

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

Counties Power uses Metrix as their agent to read AMI meters. The Metrix audit report considers its data collection system as "metering infrastructure". It was checked during the audit and confirm "that the system operates as intended and are compatible with all metering components interrogated, by examining the success rate of data collection along with the number of events generated."

Audit commentary

There were no obvious issues with the operation of the Metrix system.

Non-AMI installations are not read by Metrix. Each installation is tested by an inspector and the results recorded on the Installation Report by the technician. If necessary, any faulty components are replaced. There were no complaints from customers or traders about components installed since the last audit.

Audit outcome

Compliant

4.12. Decommissioning of an 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 MEP that is responsible for decommissioning the metering installation must:

- *if the MEP is responsible for interrogating the metering installation, arrange for a final interrogation to take place before the metering installation is decommissioned, and provide the raw meter data from the interrogation to the responsible trader*
- *if another participant is responsible for interrogating the metering installation, advise the other participant not less than 3 business days before the decommissioning of the time and date of the decommissioning, and that the participant must carry out a final interrogation.*

To avoid doubt, if a metering installation at an ICP is to be decommissioned because the ICP is being decommissioned:

- *the trader, not the MEP, is responsible for arranging a final interrogation of the metering installation*
- *the responsible trader must arrange for a final interrogation of the metering installation*

Audit observation

A request for the decommissioning of an installation always comes from a trader. Counties Power provided 20 examples.

Audit commentary

In all reviewed case the ICP and metering installations were decommissioned. There were no situations where only a metering installation was decommissioned.

After meters are removed a trader is notified of the final read and the registry is updated with the date of meter removal and a final read.

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

During the audit we asked Counties Power whether any burden changes occurred during the period covered by this audit.

Audit commentary

The company policy is that a burden can be changed if a metering installation were recertified and current transformer ratio was less than 500/5. When AccuCal perform the certification they will decide if a change is required.

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

The meters used in metering installations of category 3 and higher have data storage devices integrated with the meter therefore, if there is a need to change a data storage device software, ROM or firmware, an existing meter will be removed. A new meter will be installed, and the installation recertified.

Audit commentary

Counties Power stated that, as a principle, if communications change from landline to cell phone or a mesh, half-hour meters are never reprogramed in-situ but are replaced by newly certified meters by an authorised ATH.

Audit outcome

Compliant

4.15. Temporary Electrical Connection (Clauses 10.29A)

Code reference

Clause 10.29A

Code related audit information

An MEP must not request that a grid owner temporarily electrically connect a POC to the grid unless the MEP is authorised to do so by the grid owner responsible for that POC and the MEP has an arrangement with that grid owner to provide metering services.

Audit observation

Counties Power does not provide MEP service for such installations.

Audit commentary

This clause is not applicable. Compliance was not assessed.

Audit outcome

Not applicable

4.16. Temporary Electrical Connection (Clause 10.30A)

Code reference

Clause 10.30A

Code related audit information

An MEP must not request that a distributor temporarily electrically connect an NSP that is not a POC to the grid unless the MEP is authorised to do so by the reconciliation participant responsible for that NSP and the MEP has an arrangement with that reconciliation participant to provide metering services.

Audit observation

Counties Power does not provide MEP service for an NSP that is not a POC to the grid.

Audit commentary

This clause is not applicable. Compliance was not assessed.

Audit outcome

Not applicable

4.17. Temporary Electrical Connection (Clause 10.31A)

Code reference

Clause 10.31A

Code related audit information

Only a distributor may, on its network, temporarily electrically connect an ICP that is not an NSP. A MEP may only request the temporary electrical connection of the ICP if it is for the purpose of certifying a metering installation, or for maintaining, repairing, testing, or commissioning a metering installation at the ICP.

Audit observation

It was discussed during the audit.

Audit commentary

Counties Power confirmed no requests have been made for the temporary electrical connection of any ICP.

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:

Please note in bold font we specify the location of each record kept by Counties Power as the MEP.

- a) The certification expiry date of each metering component in the metering installation – **PDF directory**
- b) All equipment used in relation to the metering installation, including serial numbers and details of the equipment's manufacturer - **Navision**
- c) The manufacturer's or (if different) most recent test certificate for each metering component in the metering installation - **PDF directory**
- d) The metering installation category and any metering installations certified at a lower category - **Navision**
- 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 – **Installation Report/Metering Declaration of Conformity**
- g) The certification sticker, or equivalent details, for each metering component that is certified under Schedule 10.8 in the metering installation - **Installation Report/Metering Declaration of Conformity**
- h) Any variations or use of the 'alternate certification' process – **not used**
- i) Seal identification information - **Installation Report/Metering Declaration of Conformity**
- j) Any applicable compensation factors - **Installation Report/Metering Declaration of Conformity**
- k) The owner of each metering component within the metering installation - **Navision**
- l) Any applications installed within each metering component – **no additional applications**
- m) The signed inspection report confirming that the metering installation complies with the requirements of Part 10.- **Installation Report/Metering Declaration of Conformity**

Audit observation

We checked certification records for 105 metering installations and 11 inspection records to assess compliance.

Audit commentary

All records were available and correct. Installation Reports for category 1 metering installations are scanned and saved in a dedicated category.

Audit outcome

Compliant

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

Code reference

Clause 4(2) of Schedule 10.6

Code related audit information

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

Audit observation

It was discussed during the audit whether any requests had been made for copies of inspection reports.

Audit commentary

If Counties Power is requested to provide a signed inspection report it will provide this to a participant as a scanned copy of the installation report prepared by the Counties Power inspector. Since last year's audit, no trader has asked for an inspection report.

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

Counties Power holds historic installation records in an electronic format by scanning the original paper records. For any new installations all documents are scanned. All scanned records will be kept indefinitely.

Audit commentary

Compliance confirmed on observation during the audit when checking historic information.

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

For metering installations of category 2 and above, AccuCal is used as the ATH and there is no plan to change it.

Audit commentary

In the situation where an installation was previously certified by VEMS, AccuCal has been given access to the records.

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 manager 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 manager it accepts responsibility for the ICP and of the proposed date on which it will assume responsibility.

Audit observation

Counties Power provided the Switch Breach report and the Audit Compliance report for the period covering 01/12/18 – 31/08/19. We checked all records where Counties Power became the MEP to evaluate the timeliness of updates.

Audit commentary

The total number of nomination was 494 metering installations. All of them were accepted the same day or following business day.

Audit outcome

Compliant

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

Code reference

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

Code related audit information

The MEP must provide the information indicated as being 'required' in Table 1 of clause 7 of Schedule 11.4 to the registry manager, 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 manager must derive from the metering equipment provider's records or the metering records contained within the current trader's system.

Audit observation

The EDA file and the Audit Compliance report were reviewed.

Audit commentary

The results from the Audit Compliance report for the period 01/12/18 to 31/08/19 are shown below:

Query	Number of ICPs	Comment
Active with no metering	162	It appears that this query looks at MEP nomination of audited party without taking into consideration that this installation is still metered

		by another MEP. Out of 162 ICPs, CTCT nominated COUP as the MEP on 16/08/19 for 154 ICPs
Accuracy of certification dates	2	1099576685CN7EC – incorrect livening date entered by network 1099578377CNABB -ICP was reassigned by COUP as a distributor Information provided by MEP is correct
Certification duration	4	4 ICPs need correction 0099549949CN811 – combination of a whole current meter and CT meter, Date of certification is for the whole current meter 1099563751CND61 – meter was changed 0005002355CNBEF – feeder 1 – incorrect certification date, it should be 29/01/19 0005002350CN6A0 – feeder 2 - 1 – incorrect certification date, it should be 29/01/19
Cat 3 and above without HHR Submission or HHR Metering or HHR installations	3	0005004001CN42E – cat 4 , installation type NHH 1099568913CN6AA – cat 5, installation type NHH 1099569136CN71D – cat 3, installation type NHH
Compensation Factor on Category 1 Metering Installation	0	
CT component installed on category 1 metering installation	0	
HHR profile and submission type and meter or installation type is not HHR	0	
Blank Registry records	0	
Compensation factor of 3	0	
Over category 1 with no CT's	0	
All compensation factors	0	All correct
CN only	14	All installations metered pumps
No control device recorded	1,617	These ICPs use a “loaded pilot” for hot water control. By definition, an installation with a “loaded pilot” does not have a control device at the ICP because the pilot-wire supplies the entire load on the controlled supply. The registry does not have a field to record this.
Day + night not = 24	0	

Day without night	0	
Night without day	101	Separate meters
IN24 or IN0	0	
UN not = 24	0	
UN only with a control device	6	Control device was removed but the registry was not updated.

Analysis of the PR-255 and LIS file showed that some information indicating which meters are AMI is incorrect. According to Counties Power 183 metering installations had their comms removed but the registry has not been updated.

As described in **section 10.5**, Metrix provides weekly reports which show which meters don't communicate with their system. The registry is not updated to reflect this. Counties Power provided the report from INTELLIHUB dated 19 September 2019. According to the report 540 meters were "unreachable", we don't know how many are switched off. This year a lot of work was done on the Silverspring system, as a result the number of meters which don't communicate decreased.

On 30/08/19 Counties Power updated the maximum interrogation cycle for smart meters to 236 days on advice of Landis+Gyr. Using the PR-255 data we created a pivot table to look for the allocation of maximum interrogation cycle to HHR and NHH meters. The results are shown below, they indicate some inconsistencies.

Maximum interrogation cycle [days]	Number of ICPs (HHR)
90	8996
150	1
236	27525
365	1
Grand Total	36523

Maximum interrogation cycle [days]	Number of ICP (NHH)
0	12
10	5
40	1
90	4923
150	2
236	1526
365	11
Grand Total	6480

Below is the NHH installation split between interim certification and full certification.

Maximum interrogation cycle [days]	Number of ICPs (NHH); full certification
0	7
10	5
40	1
90	3639
150	2
236	1526
365	7
Grand Total	5187

Maximum interrogation cycle [days]	Number ICP (NHH); interim certification
0	5
90	1284
365	4
Grand Total	1293

Note: Interim certification records can't be updated as they are locked in the registry.

It was discussed with Counties Power during the audit. Their comment was:

In general, I would say a number of discrepancy's picked up are likely symptoms of deficiency's in Counties Power systems (Navision) with its Registry Interface. Navision is not fundamentally designed to integrate with Registry, and while it generally works reasonably well, the interface is essentially homemade, and is not really industry standard, I think if such shortcomings are an audit finding - then that is appropriate.

We also observed that for some installations information about the maximum interrogation cycle or type of installation on the Certificate of Compliance issued by AccuCal do not match information recorded in the registry. For example for HHR category 2 metering installations the maximum interrogation cycle is recorded as 31 days, the registry says 90.

AccuCal certified all category 2 metering installations as non-AMI NHH installations, not following Counties Power requirements. The installations are marked in the registry as AMI, HHR installations.

There has been a lot of correspondence on the matter between AccuCal and Counties Power but so far there is no agreement between the two parties. Counties Powers' argument is that as of 01/06/2018, the Metrix system was compliant with clause 8(9) of Schedule 10.6, which requires an MEP to ensure that each electronic interrogation that retrieves half-hour metering information compares the information against the increment of the metering installations accumulating meter registers. It was confirmed in the latest Metrix MEP audit dated 07/05/19. It allows AccuCal, according to clause 8(8) of Schedule 10.6 to certify category 2 installations as HHR moving forwards. As far as historic certifications go, AccuCal can use clause 8A of Schedule 10.7 to amend certification reports.

Our recommendation is to find a solution between AccuCal and Counties Power to incorrect the type of category 2 installations in the registry.

We reviewed certifications for 10 metering installation category 1. They were certified as NHH but the registry records shows NHH.

Audit outcome

Non-compliant

Non-compliance	Description		
Audit Ref: 6.2 With: 7 (2)(3) of Schedule 11.4 From: 01-Dec-18 To: 31-Aug-19	Some registry records are incorrect 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	Controls are recorded as moderate, small improvements can be made. The audit risk rating is recorded as low because of the small number of ICPs. Some corrections could not have been made up to now because of system restrictions. Audit risk is recorded as low, minor impact on settlement outcomes.		
Actions taken to resolve the issue		Completion date	Remedial action status
With recent systems improvements, the end user of the Navision MEP database system recently has more ability to directly correct minor records errors without engaging the IT department to accomplish such tasks.			Identified
Preventative actions taken to ensure no further issues will occur		Completion date	
An better system to interface and make corrections to the Registry is a focus of the MEP and IT Management teams for 2020			

Issue	Recommendation	Audited party comment	Remedial action
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Mismatch of type of category 2 metering installations between the registry and Certificates of Compliance issued by AccuCal	Find a resolution between both companies to the satisfaction of both parties	AccuCal are predominantly working in the Category 3-5 HHR metering certification space. They have chosen a conservative approach to certifying AMI Cat 2 installations as HHR capable - as they cannot verify a 30 min interval measurement with a DA in the traditional manner.	If a satisfactory resolution cannot be arrived at between both parties, Counties Power will seek a Test House Prepared to accept Intelli-hubs verification methodology to transfer the Category 2 AMI works over to.
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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 5 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 5 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 manager of any necessary changes to the registry metering records.

Audit observation

Counties Power setup the following process to comply with this clause. An EDA file is downloaded Daily from the registry and compared with Navision metering records; it is an automated process. Every day a report is created showing the differences between the two data sets.

Audit commentary

Counties Power provided a daily report. We went through the report to investigate and identified discrepancies. The report covers the installation, meter component, and meter channel section. The report, which we analysed covered 14 entries related to 12 ICPs. The issues were divided into two sections, "no issue to handle" (timing) and "legitimate minor data issues to correct". Against each section, a comment was made what action needs to happen. We checked; the differences were resolved within 5 business days.

Counties Power also runs regularly additional MEP reconciliation reports, which look at correctness of data within Navision.

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

We asked Counties Power to show us examples of all the points listed above.

- (a) Installation modification – this was covered in **section 4.1** – no installations were modified
- (b) Accuracy tolerance – this is covered in **section 4.3**
- (e) Lack of inspection - This was identified and described in detail in **section 8.2**. The registry records were not updated
- (f) Certification to a lower category – 14 ICPs, it is discussed in **section 7.6**
- (g) Insufficient load for full certification – this is discussed in **section 7.8**
- (h) Bridged out load control device – the process is described in **section 7.11**
- (i) Seal broken – the process is discussed in **section 8.4**.

Audit commentary

The last audit identified non-compliance due to two metering installations where low burden was present. We followed up with Counties Power.

ICP 0002234800CN8B2- has been burdened and recertified successfully by AccuCal. It was interesting to see that error measured was 0.088% at 0.41VA and it remained and following burden installation to 1.61VA, the site error remained unchanged at 0.088%

ICP 0099548481CN942 – a pump shed was inaccessible on the return visit due to condition of the field and is with AccuCal to follow up. We would like to note that the measured site error was also negligible at 0.009%, which is much smaller than maximum allowable site error of 2.5%.

We believe that the approved (the audit dated 27/05/17 did not identify any non-compliances) calibration methods AccuCal would have used to certify this metering installation would satisfy Clause 31(7)(b)(1) Schedule 10.7. The test results from the burdened metering installation at ICP 0002234800CN8B2 would also tend to support this view.

11 metering installations were re-certified under clause 12 of Schedule 10.7 (comparative certification) during the period covered by this audit.

ICP - 1099565016CN8CC, calculated burden was 0.4VA/0.41VA/0.44VA. According to the last audit, this installation would be considered “not fit for purpose”. Counties Power went to AccuCal asking for comment. The measured site accuracy of the particular metering installation at 0.798 is three times more accurate than required by the code (the maximum allowable 2.5%).

AccuCal stated in certifications that these installations were operating in accordance with this clause at the time of completing the certification tests.

Audit outcome

Compliant

6.5. Registry Metering Records (Clause 11.8A)

Code reference

Clause 11.8A

Code related audit information

The MEP must provide the registry manager 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

We reviewed the PR-255 and the LIS file.

Audit commentary

In **section 6.2** we analysed the correctness of registry information. Counties Power uploaded all information required by the Code in the prescribed form. When information is uploaded to the registry that does not conform to the registry specifications they are rejected.

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

We analysed the Audit Compliance report for the period covered by this audit.

Audit commentary

According to the report Counties Power had 612 previously certified ICPs with expired certification and 1,109 previously interim certified installations that have now expired.

The breakdown of 612 previously certified ICPs with expired certifications is:

- Cat 1- 602
- Cat2 – 9
- Cat 3 - 1

The table shows the details of category 2 and 3 installations, which certification was expired at the time of the audit. ICP 0069016303CN40E and 1099562664CNF72 were recorded in the previous audit. In green we highlighted metering installations which were re-certified since our meeting in Pukekohe. Counties Power proactively pursue their recertification programme.

ICP	Property name	Category	Cert Exp date	Comment
0099551817CNF67	Shed, Pukekohe	2	10/06/2019	Now certified, Cert Exp date is 12/09/29
0099549844CNE4E	Adams Drive, Pukekohe	3	27/03/2019	Now certified as cat 4, Cert Exp date is 13/05/24
0069016303CN40E	Irrigation	2	10/11/2018	CTs expired (ICP certified 2015) pump, Access issue -Test House advise awaiting paddocks to dry out
0009520019CN934	Irrigation pump	2	15/06/2019	Now certified, Cert Exp date is 12/09/29
0008309030CN883	Shed pool	2	19/08/2019	Now certified, Cert Exp date is 19/09/29
0005019200CN0AD	Cool room	2	29/06/2019	Now certified, Cert Exp date is 13/09/29
0005011200CNDAD		2	19/05/2019	Now certified, Cert Exp date is 12/09/29
0005010047CN965	Irrigation pump	2	03/04/2019	Access issue -Test House advise awaiting paddocks to dry out
0099548327CNFD0	Rest Home	2	12/06/2019	Now certified, Cert Exp date is 06/09/29
1099562664CNF72		2	01/10/2018	No Installation connected to metering – awaiting ICP status change by CTCT

At the beginning of each year Counties Power gives a list to AccuCal of ICPs which require recertification. Some installations are not certified in time because there is a shortage of technicians.

Counties Power has a re certification program in place. The company provided a breakdown of reasons why category 1 metering installations are not certified. The total number is 1,711. All of them except 43 ICPs, which have incorrect expiry certification dates in the registry, were visited at least once. Counties Power works together with retailers to have access to installations where customers cancel appointments or refuse to have a meter replaced.

Reason	Number of cat 1 installations with expired certification
Board substandard	92
Customer Cancelled / Refusal	896
Customer missed appointment / Refusal	15
Disconnected at the time	4
Inactive	3
Incorrect meter exp. Date in Reg.	43
Meter Installation Disconnected	28
Substandard Wiring	230
Switchboard needs full reconfiguration	27
To be Reissued	16
Unable to arrange appointment - Refer to retailer	291
Unable to locate / Decommissioned?	56
Vacant at the time - to be reissued	10
Total	1711

Maintenance is carried out as required for battery replacement or communications faults on half-hourly metered ICP meter installations.

Audit outcome

Non-compliant

Non-compliance	Description
Audit Ref: 7.1 With: Clause 10.38(a) From: 01-Dec-18 To: 31-Aug-19	1,713 ICPs have non-certified metering installations Potential impact: Medium Actual impact: Medium Audit history: Multiple times Controls: Moderate Breach risk rating: 4
Audit risk rating	Rationale for audit risk rating
Medium	Controls are recorded as moderate because certification for some metering installations has been expired for number of years. We assigned audit risk rating as medium because of increased possibility of failure or inaccuracy is steadily increasing, which could have an impact on settlement outcomes.
Actions taken to resolve the issue	
Completion date	Remedial action status

		Identified
Preventative actions taken to ensure no further issues will occur	Completion date	
<p>Counties Power has recently engaged another Test House to assist with undertaking the higher Category 2 annual compliance program that slipped behind schedule in the second quarter due to resource constraints</p> <p>Reasonable success to date resolving the category 1 compliance issues - each now on a case by case basis, with no regard to expense, and implemented solutions to a number of technical constraints.</p> <p>Noting we cannot forcibly make access on to private property to carry out compliance work where customers are uncooperative, or else present a danger to staff.</p> <p>Whilst will be a major key focus over next 12 month period an exact date could not be estimated for completion of this program or work - unless the Network was to elect to simply disconnect non-compliant metered ICPs.</p>		

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

We checked certification records for 95 category 2 and above installations recertified by AccuCal and 10 certification records for category 1 metering installations.

Audit commentary

AccuCal certifies category 2 and above metering installations. Counties Power's technicians work under AMS ATH certification. Both ATHs hold class A certification. Certifications showed that all tests were complete.

We reviewed the ATHs audit reports. Non-compliances recorded in the AMS audit report are not relevant to the Counties power operation. The AccuCal audit report did not identify any non-compliance in relation to the Counties Power's operation.

Audit outcome

Compliant

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

Code reference

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

Code related audit information

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

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

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

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

All other installations must measure and separately record:

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

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

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

Audit observation

We analysed the PR-255 to assess compliance.

Audit commentary

All relevant metering is compliant with this clause.

Audit outcome

Compliant

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

Code reference

Clause 10.37(2)(b)

Code related audit information

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

Audit observation

Counties Power does not provide the MEP functionality to local services metering installations in grid substations.

Audit commentary

This clause is not applicable. Compliance was not assessed.

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

Current transformers (CTs) used for revenue metering at ICP's, for which Counties Power provides the MEP services, are used only for metering.

During the audit we asked Counties Power if there were any examples of burden changes or the addition of non-metering equipment being connected to metering CTs.

Audit commentary

Counties Power confirm that there were no changes to a measuring transformer burden for installations for which they provide MEP services. For new installations Counties Power uses non compensated CTs such as TWS 500/5 CTs or greater.

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

The Audit Compliance report for the period covered by this audit was reviewed.

Audit commentary

According to the report the following installations are certified as a lower category.

ICP	Compensation factor	Highest Metering Category	Cert date
0099551688CN955	240	2	20/03/18
0005013460CN71B	160	2	14/02/18
0005012193CNF69	160	2	19/07/17
0005011940CNC06	120	2	28/03/17
0005002400CN1AA	2000	3	5/04/18
0005001900CN642	120	2	6/07/12
0003592010CN288	120	2	20/07/17
0005001911CN0AA	120	2	7/11/17
0005001840CNDE3	1000	3	19/02/16
1099565015CN40C	400	3	28/06/14
1099568859CNF9A	200	2	22/11/18
1099569971CN87F	160	2	12/10/10
1099570633CN111	200	2	19/12/16
1099575230CN6F0	120	2	1/07/16

All installations were verified during the last audit. The lower category is assured by fusing current or size of transformer.

Since the last audit no new installations were certified at a lower category.

Audit outcome

Compliant

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

Code reference

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

Code related audit information

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

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

Audit observation

During the audit we asked Counties Power if there were any examples where it had insufficient load for certification tests.

Audit commentary

There were no such examples since the last audit. The last audit listed one ICP 1099577683CN7C3. Counties Power confirmed that AccuCal completed the test. The process implemented for such a situation is to monitor load via Clarity.

Audit outcome

Compliant

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

Code reference

Clause 14(6) of Schedule 10.7

Code related audit information

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

- *the metering installation certification is automatically revoked:*
- *the certifying ATH must advise the MEP of the cancellation within 1 business day:*
- *the MEP must follow the procedure for handling faulty metering installations (clause 10.43 - 10.48).*

Audit observation

As described in **section 7.7**, there were no metering installations for which there was insufficient load for certification tests.

Audit commentary

There are no examples of tests conducted showing that the metering installation is not within the relevant maximum permitted error. In such situations a metering installation won't be certified.

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 Authority, 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 5 business days, to any requests from the Authority 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 Authority 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

It was discussed during the audit. The LIS file was reviewed.

Audit commentary

Counties Power confirmed that there were no access issues to any measuring transformer therefore alternative certification was not applied.

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

The last audit identified 15 metering installations with time clock.

Audit commentary

Counties Power confirmed that all of them were replaced with smart meters.

Audit outcome

Compliant

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

Code reference

Clause 35 of Schedule 10.7

Code related audit information

The participant must, within 10 business days of bridging out a control device or becoming aware of a control device being bridged out, advise 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

The process for the managing of bridged control devices was examined.

Audit commentary

Metering installations where smart meters are installed have control devices built-in. Only about 3,400 controls devices are installed on the Counties Power network. According to the process spare control devices are carried by faultmen, who replace a faulty one. There were no examples identified where control devices were bridged out.

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 3 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

The PR-255 file was analysed to assess compliance.

Audit commentary

All control devices installed within metering installations for which Counties Power is responsible are certified. The registry was updated on 30/08/19.

No traders notified Counties Power of any installations where a control device could affect the accuracy or completeness of volumes for the purpose of Part 15.

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

In October 2015, Countries Power completed its statistical sampling programme of meter models at Category 1 metering installations which were previously interim certified.

Audit commentary

Countries Power has not conducted any statistical sampling during the period covered by this audit.

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 update the compensation factor recorded in the registry in accordance with Part 11.

Audit observation

Countries Power does not have such installations.

Audit commentary

This clause is not applicable. Compliance was not assessed.

Audit outcome

Not applicable

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

We went through the certification records for 105 metering installations.

Audit commentary

Meters for category 3 and above are individually tested by AccuCal as a part of certification. New smart meters are certified by the supplier.

Audit outcome

Compliant

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

Code reference

Clause 28(1) of Schedule 10.7

Code related audit information

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

Audit observation

During the audit we checked 90 category 2 and higher metering installations certification issued by AccuCal.

Audit commentary

Meters for category 3 and above are individually tested by AccuCal as a part of certification. If CTs need to be replaced Counties Power uses CTs no less than 500/5. Counties Power provided 5 test certificates for current transformers.

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

The PR-22 dated 18/09/19 was reviewed.

Audit commentary

Counties Power does not use separate data storage devices.

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 given notice 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 clauses 10.43 to 10.48.

Audit observation

Counties Power understands clause 7 and, if it occurs, will take appropriate action.

Audit commentary

We checked the ATH (AccuCal and AMS) register to confirm compliance.

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

We checked the LIS file dated 12/09/19 to see if there are any ICPs with interim certification recorded.

Audit commentary

We identified 1,109 interim certified metering installations. As described in **section 7.1** Counties Power proactively seeks access to these installations to certify them.

Audit outcome

Non-compliant

Non-compliance	Description
Audit Ref: 7.19 With: 18 of Schedule 10.7 From: 01-Dec-18 To: 31-Aug-19	1,109 ICPs metering installations have interim certification Potential impact: Medium Actual impact: Medium Audit history: Multiple times Controls: Moderate Breach risk rating: 4
Audit risk rating	Rationale for audit risk rating
Medium	Controls are recorded as moderate because certification for some metering installations has been expired for number of years. We assigned audit risk rating as medium because of increased possibility of failure or inaccuracy is steadily increasing, which could have an impact on settlement outcomes.

Actions taken to resolve the issue	Completion date	Remedial action status
<p>Counties Power is continuing efforts to reduce these outstanding legacy metering installations.</p> <p>We are actively engaging with the customers and their associated Retailers in order to negotiate access and or approval to carry out the work at the customers property where this is the applicable reason for non-completion.</p> <p>Mounting meters on poles or in street pillars has been investigated, but at this point is considered a last resort</p>		Identified
Preventative actions taken to ensure no further issues will occur	Completion date	
<p>We have requested Retailers not to reconnect disconnected ICPs with expired metering installations.</p> <p>Additional resources have been recruited into the metering team to resolve where possible the miscellaneous technical issues remaining preventing metering installs.</p>		

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 2 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

Counties Power has in place a statistical sampling inspection regime for category 1 metering installations as per the Code requirements.

Audit commentary

In the year 2018, 144 ICPs were selected and 127 of them were inspected. After inspections are finished, Counties Power MEP analyses the results of the inspections in accordance with the requirements of clauses 45(8)(ii) and clause 45(8)(b)(ii) of Schedule 10.7.

Counties Power have already completed installation inspections for 2019. 50 ICPs were visited and inspected.

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

Counties Power does not inspect category 2 metering installations, they are recertified. The PR-255 file was reviewed.

Audit commentary

We identified 15 metering installations category 3 to 5 for which inspections were due this year or last year. For all of them inspections were conducted. Counties Power provided supporting evidence.

Audit outcome

Compliant

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

The process was reviewed.

Audit commentary

When the inspections are conducted by AccuCal for installations of category 3 and higher, Counties Power compares the information on the report supplied with its own records and the registry is updated as required.

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) 3 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

According to the process adopted by Counties Power, if inspectors find broken seals at category 1 or 2 metering installations they will check the installation for signs of tampering and if none are identified the missing seals are replaced. This task is completed under the authority of the AMS ATH.

Audit commentary

Counties Power stated that since the last audit 4 broken seals were identified, and they were resealed.

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

The process adopted by Counties Power is as follows. Traders send through a service request (SR) asking for a site visit. Once the SR is received, an inspector or a metering technician makes a site visit to investigate and remedy any issues he may find. Once the SR is closed, the information is sent to a trader which will include any information that the inspector discovered relevant to the fault.

Audit commentary

Counties Power provided 9 examples of faulty category 1 metering installations where a meter had to be replaced. They also provided 16 examples for jobs issued to AccuCal to replace a modem to reinstate communication.

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 5 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

In **section 9.1** Counties Power provided 9 examples of faulty installations. In each example a faulty meter was replaced by a new one.

Audit commentary

We found the process used by Counties Power compliant. Counties Power did not have any faulty installations of category 3 and higher.

Audit outcome

Compliant

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

Code reference

Clause10.46(2)

Code related audit information

Within 3 business days of receiving the statement from the ATH, the MEP must provide copies of the statement to:

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

Audit observation

Counties Power confirmed that there were no instances, since the last audit, where an installation was faulty and inaccuracies in raw data were discovered as a result.

Audit commentary

There were no examples of faulty cat 3 and above installation, which require a statement of situation.

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

It was discussed during the audit if Counties Power has been requested to give access to raw data.

Audit commentary

No request has been received. Counties Power could organize access to raw data if requested.

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

It was discussed during the audit if Counties Power has been requested to give access to raw data.

Audit commentary

No request has been received. Access could be granted 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

Since the last audit, Counties Power was not asked by parties listed in this clause to have access to components in metering installations.

Audit commentary

Counties Power will use its best endeavours to arrange access to a metering installation if requested. It will be solely dependent on the customer's availability or health and safety concerns due to the nature of the customer's business that determines if access is granted and within what time frame.

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

Since the last audit, Counties Power was not asked by parties listed in this clause to have access to components in metering installations.

Audit commentary

As described in **section 10.3**, Counties Power confirmed that it will use its best endeavours to provide physical access to an installation if requested. Counties Power will provide any codes, keys, or other means to enable another party to obtain physical access to all metering components in a metering installation if it is necessary and Counties Power is in a position to do so.

Audit outcome

Compliant

10.5. Electronic Interrogation of Metering Installations (Clause 8(2), 8(3), 8(5) and 8(6) of Schedule 10.6)

Code reference

Clause 8(2), 8(3), 8(5) and 8(6) 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.

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

Counties Power does not read meters themselves. Metrix as Counties Power agents reads AMI meters and provide data to reconciliation participants. During the audit we check if meters were read within the interrogation cycle, meters clock synchronisation, events log downloaded during interrogation.

Audit commentary

Counties Power received weekly reports from Metrix advising how many meters were read and which ones are not communicating. Counties Power had been implementing an interface which will allow them to import their reports to Navision, which in turn will update the AMI flag in the registry to "N". At the time of this audit it has been tested.

- Maximum interrogation cycle - Metrix provides weekly reports which shows which meters don't communicate with their system. The registry is not updated to reflect it. Counties Power provided

the report from Intellihub (Metrix) dated 19 September 2019. According to the report 540 meters were “unreachable”. It is not known how many of them had been removed

- As of 30/08/19 Counties Power changed the maximum interrogation cycle to 236 for U12 and U33xx meters on the advice from Landis+Gyr. Meters not read for 236 days would be more likely to be “unreachable” with significant problems with communication.
- Clock synchronisation – **section 10.7**
- Event logs – **section 10.8**
- Security of data – **section 10.6**

Audit outcome

Non-compliant

Non-compliance	Description
Audit Ref: 10.5 With: 8(2) of Schedule 10.6 From: 01-Dec-18 To: 31-Aug-19	Some metering installations not interrogated within maximum interrogation cycle (540)* Potential impact: Medium Actual impact: Medium Audit history: Twice before Controls: Moderate Breach risk rating: 4
Audit risk rating	Rationale for audit risk rating
Medium	Controls are recorded as moderate an improvements can be made. The reports from Metrix are in place but still more work has to be done to ensure successful interrogation. The impact on settlement is recorded as moderate because some retailers will be required to estimate data or arrange manual reads. The audit risk rating is medium.
Actions taken to resolve the issue	
Completion date	Remedial action status

<p>*Note The meters with data not obtained within interrogation cycles don't pertain the large Commercial and Industrial category HHR metering installations</p> <p>Current data attainment from the overall smart meter fleet (encompassing Cat 1 and 2) is consistently close to 99% successful across Counties Powers Network. Some unreachable meters are physically removed or replaced, and the reporting will flag these until the removal paperwork catches up.</p> <p>While failure of the sensitive electronics associated in delivering AMI data is to be expected in some cases, the field investigations to date in the majority of cases point to deenergised metering installations being the root cause of communications failures (resulting in data not being retrieved within interrogation cycles).</p> <p>These may be vacant property's, holiday houses, or metering for seasonally used agricultural equipment such as irrigation pumps.</p> <p>We have encouraged customers directly, and also Retailers to remind their customers remote reads cannot be obtained from deenergised meters, and to isolate their electricity supply at the distribution board - and not the metering panel isolator.</p>		Identified
Preventative actions taken to ensure no further issues will occur	Completion date	
<p>Counties Power has been approaching this problem in two ways.</p> <p>A radio infrastructure improvement project has successfully enhanced the communications coverage in the remote rural areas of the network to improve the data attainment.</p> <p>The IT systems enhancements for automation to properly manage the AMI communications flag in Registry are in development, but not unfortunately were not yet operational at the time of audit.</p>		

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

Counties Power does not read meters themselves. Metrix as the agents for Counties Power reads AMI meters and provide data to reconciliation participants

Audit commentary

We checked information for which Counties Power is not the MEP anymore, it is still available. The access to the system is highly controlled. All personnel having access to metering data uses individual logins. A copy of raw meter data is stored within the system, it is archived.

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

Counties Power does not read meters themselves. Metrix as the agents for Counties Power reads AMI meters and provide data to reconciliation participants.

Audit commentary

The compliance was audited during the recent MEP audit. The auditor found Metrix non-compliant with this clause. 42 examples were found of clock error outside the allowable threshold in most recent reports. The audit noted that for Silverspring for Counties Power the clock setting was out by 10 sec to 20 minutes. For errors over 20 minutes the user must manually set the time.

Metrix provide time synchronisation reports every two weeks or less frequent. Counties Power provided a copy of 11 reports for review. The analysis of 6 of them is shown below:

Date of report	Number of meters	Range of adjustments [sec]
11/07/19	67	-396 to 46529
25/07/19	63	-122 to 653
08/08/19	61	-509 to 356
15/08/19	68	-137 to 1271
29/08/19	82	-106 to 502
05/09/19	76	-180 to 1741

For any newly installed meters significant adjustments to clocks are expected and normal. Time is set on meters during their first interrogation. On average in each report contains about 10 newly installed meters. Taking into consideration the total number of meters interrogated by Metrix as the agent to Counties Power, the result is very good. It is around 0.1%.

IntelliHub (Metrix) will notify the appropriate traders about the time sync events.

Audit outcome

Non-compliant

Non-compliance	Description		
Audit Ref: 10.7 With: 8(4) of Schedule 10.6 From: 01-Dec-18 To: 31-Aug-19	Around 50 meters are reported every two weeks as having clock errors outside the allowable threshold 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 recorded as strong . A very small percentage of meters have a clock error outside the allowable threshold . The audit risk rating is recorded as low because it is a small number of ICPs.		
Actions taken to resolve the issue		Completion date	Remedial action status
If the meter is communicating regularly then any drift will automatically be corrected by the communications network within compliance limits. Therefore despite battery backed up timekeeping within the meter - long periods of non-communication would prevent the system from syncing increasing the possibility of the clock drifting outside of compliance limits. Other than initial time syncs following new installations, the cause of other miscellaneous meter time clock errors are attributable to actual Network power outages and or disconnected ICPs / meters being re-livened and re-joining the Network.			Identified
Preventative actions taken to ensure no further issues will occur		Completion date	
There does not appear to be an action Counties power could make to improve the technology deployed. It is hoped the recent move to remote (soft) disconnections and reconnections on the Network using the smart meters internal disconnect will alleviate this symptom - as the meters themselves will remain energised and receiving the regular clock synchronisations.			

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

Counties Power does not read meters themselves. Metrix as the agents for Counties Power reads AMI meters and provide data to reconciliation participants.

Audit commentary

This part of Metrix obligations was covered in the Metrix audit report dated 07/05/19. Metrix was found to comply with this clause. The interrogation logs contain all the information listed in above clause.

Logs files are provided to Counties Power and reconciliation participants for review. Counties Power reviews them regularly and takes any action if necessary. The company provided the report for Sept'19 for review.

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

Counties Power does not read meters themselves. Metrix as the agent for Counties Power reads AMI meters and provide data to reconciliation participants.

Audit commentary

This part of Metrix obligations was covered in the Metrix audit report dated 07/05/19. Metrix was found to comply with this clause. The report says

Sum-check occurs when each meter is interrogated. The sum of the intervals is compared to the register read (scalar read) for the same period. Sum-check exceptions are reported on and are categorised as follows:

- 1. No interval data provided by the meter. If there is a scalar read but no interval data, then the sum-check cannot be performed. In these cases, no read processes commence to resolve the issue. When interval data is received the sum-check occurs automatically.*
- 2. Interval data is present, but no scalar reading is collected. MDM will attempt to estimate the scalar reading from interval data or historic scalar readings. If a scalar reading cannot be generated due to insufficient data, then an exception is generated.*
- 3. Scalar reading period is less than a configured percentage of the interval data period. If the scalar register reading period is less than 97% (this is configurable) of the interval data time period, an exception is generated. MDM then performs intervalisation to derive the scalar reading for the same time period as the interval data. A sum-check is performed comparing the scalar reading to the interval data. Reporting is in place for repeat offenders so these can be dealt with.*
- 4. Interval data and scalar consumption do not match. If the interval data and scalar consumption for the same time period do not match (threshold is 1 kWh), an exception is generated. Any of these exceptions are investigated.*

Counties Power confirmed that no reports were received of non-compliance of any meters unless it was a genuine faulty meter which was replaced.

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

It was discussed during the audit. Counties Power does not read meters themselves. Metrix as the agent for Counties Power reads AMI meters and provide data to reconciliation participants. Last year Metrix implemented a new system. In the new system Metrix does not correct raw meter data, but if such data is not available, an estimation capability process has been implemented. The Code does not have a provision for a MEP to estimate metering data, it is the responsibility of reconciliation participants.

MEPs are required to provide raw meter data to reconciliation participants (clause 1(1) of Schedule 10.6). If the MEP provides any post-raw meter data services (such as estimation) this is done as an agent for the reconciliation participant and must be covered in the reconciliation participant audit report.

During this audit we looked at the information provided by Metrix on behalf of Counties Power and what processing of the raw meter has been done prior to receipt of the data (including estimation). Our findings could be included in the relevant parts of the reconciliation participant audit report.

Audit commentary

Estimated data being provided by Metrix is an exception. Metrix provides post-raw meter data services such as estimation. The Code does not have a provision for the MEP to estimate metering data as it is the responsibility of reconciliation participants. We audited this part of the Metrix operation as a part of this audit.

Two types of estimation is conducted by Metrix, scalar reads (register reads) and interval data. Scalar reads estimation has three types of estimation depending on what data is missing (scenarios).

- Register (scalar) read is derived from interval
- Register read is prorated
- Register read is estimated – historic consumption is used

Interval data estimation is conducted when interval reads are missing. There are four types of estimation depending on what data is missing (scenarios).

- Interval adjustment from scalar (register)
- Interval interpolation (linear)
- Interval average estimation – based on historical usage
- Default estimate – 5 type of customers

Strict business rules are in place to ensure that an algorithm applied is the most appropriate to achieve most accurate estimation. One day is estimated at a time. Estimated readings are clearly flagged. If Metrix re-establishes communication with a meter and actual data is available, the company sends the “replacement” file which overrides previously estimated data. The current system setup is to send replacement data for 15 days. If a retailer requires more than 15 days, a special request (ad-hoc) needs to be sent to Metrix. It is considered an extra service.

Metrix provided 5 examples of estimation provided to one retailer. We found the results of the estimation to be correct.

Audit outcome

Compliant

CONCLUSION

PARTICIPANT RESPONSE

Counties Power acknowledges the miscellaneous improvements required, particularly with respect to the current business systems and registry interface in service, that currently makes correcting data errors found more complex than ideal. We hope to have a new MEP data management system in place in 2020.

Counties Power has taken steps to improve compliance by bringing on extra staff and expertise in the metering department to troubleshoot and find resolutions where possible to the 3% of the metering fleet still uncertified remaining in service.

We have now made arrangements with another (third) Test House to get the annual Category 2 compliance program work completed in a more timely manner.

Since the audit was completed, we have implemented new android tablet based work management tools to the field installers in order to reduce data errors and omissions associated with paper based documentation and transcriptions.