

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

For



C O U N T I E S P O W E R
COUNTIES POWER

Prepared by: Brett Piskulic – Veritek Limited

Date audit commenced: 15 January 2019

Date audit report completed: 25 January 2019

Audit report due date: 27-Jan-19

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EXECUTIVE SUMMARY

Counties Power Limited (Counties) is a Metering Equipment Provider (MEP) and is required to undergo an audit by 27/01/2019, in accordance with clause 1(1)(b) of schedule 10.5.

Twelve non-compliances are recorded. The main issues are as follows:

- two installations had been certified using the comparative recertification method with burden lower than the lowest test point of the current transformers, without a Class A ATH confirming that the transformers will not be adversely affected, certification has not been cancelled for these two installations
- expired metering installation certification
- meters not being interrogated within the maximum interrogation cycle.

The date of the next audit is determined by the Electricity Authority and is dependent on the level of compliance during this audit. The table below provides some guidance on this matter and recommends an audit frequency of three months. There are two issues which have each caused non-compliance in two sections of this report (sections 4.1 and 4.3) and (sections 7.1 and 7.19). Due to this and in order to allow sufficient time for remedial action, I recommend an audit frequency of nine months.

AUDIT SUMMARY

NON-COMPLIANCES

Subject	Section	Clause	Non Compliance	Controls	Audit Risk Rating	Breach Risk Rating	Remedial Action
Registry updates	3.2	2 of Schedule 11.4	10 registry updates later than 15 business days.	Strong	Low	1	Identified
Design Reports	4.1	Clause 2 of Schedule 10.7	Design Report not recorded for 6 metering installations.	Strong	Low	1	Identified
Metering Installation Design & Accuracy	4.3	Clause 4(1) of Schedule 10.7	Design Report not recorded for 6 metering installations.	Strong	Low	1	Identified
Changes to Registry Records	4.10	Clause 3 of Schedule 11.4	Some records updated on the registry later than 10 business days.	Moderate	Low	2	Identified
MEP response to switch notification	6.1	Clause 1 (1) of Schedule 11.4	MN file not sent within 10 days for 12 ICPs.	Strong	Low	1	Identified
Provision of Registry Information	6.2	Clause 7 (1), (2) and (3) of Schedule 11.4	Some registry records incomplete or incorrect.	Moderate	Low	2	Identified

Certification cancellation	6.4	Clause 20 of Schedule 10.7	Two metering installations where low burden is present.	Moderate	Low	2	Identified
Certification and Maintenance	7.1	Clause 10.38 (a), clause 1 and clause 15 of Schedule 10.7	Certification expired.	Moderate	Medium	4	Identified
Timekeeping Requirements	7.10	Clause 23 of schedule 10.7	15 timeclocks not checked.	Moderate	Low	2	Identified
Interim certification	7.19	Clause 18 of Schedule 10.7	1201 cat 1 installations with expired interim certification.	Moderate	Medium	4	Identified
Electronic Interrogation of Metering Installations	10.5	Clause 8 of Schedule 10.6	Some installations not interrogated within the maximum interrogation cycle.	Moderate	Medium	4	Identified
Time Errors for Metering Installations	10.7	Clause 8(4) of Schedule 10.6	10 examples of clock errors outside the allowable thresholds.	Strong	Low	1	Identified
Future Risk Rating						25	
Indicative Audit Frequency						3 months	

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

RECOMMENDATIONS

Subject	Section	Recommendation	Description
		Nil	

ISSUES

Subject	Section	Recommendation	Description
		Nil	

1. ADMINISTRATIVE

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

Code reference

Section 11 of Electricity Industry Act 2010.

Code related audit information

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

Audit observation

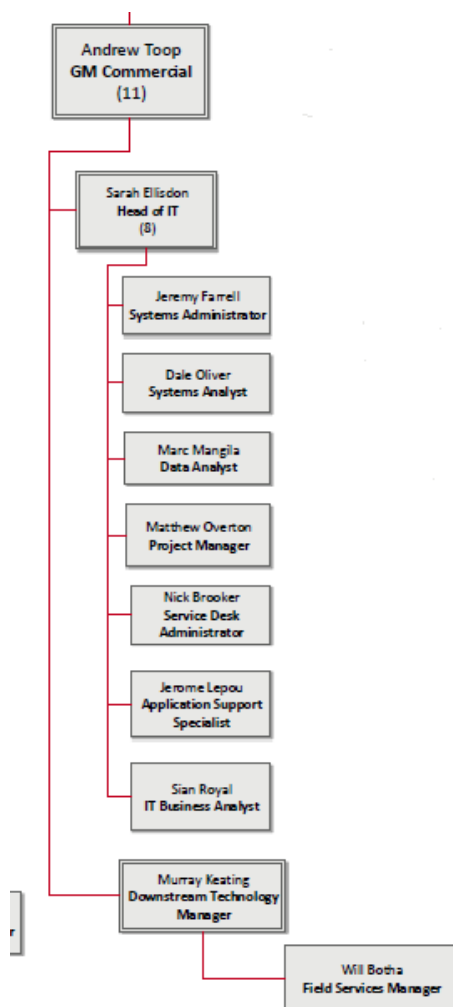
I checked the Electricity Authority website and I confirm there are no exemptions in place.

Audit commentary

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

1.2. Structure of Organisation

Counties MEP Structure:



1.3. Persons involved in this audit

Auditor: Brett Piskulic

Supporting Auditor: Steve Woods

Veritek Limited

Electricity Authority Approved Auditors

Counties personnel assisting in this audit were:

Name	Title
Murray Keating	Downstream Technology Manager
Dale Oliver	Development Team Leader
Willem Botha	MEP Field Services Manager

1.4. Use of Agents (Clause 10.3)

Code reference

Clause 10.3

Code related audit information

A participant who uses a contractor

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

Audit observation

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

Audit commentary

Counties has responsibility for AMI data collection, which is conducted by Metrix as an agent to Counties. The scope of this audit includes the Metrix data collection operation, which was audited in July 2018 by Veritek Limited.

1.5. Hardware and Software

Counties MEP data is held in Microsoft Navision, which is subject to backup arrangements in accordance with standard industry protocols.

AMI data collection is conducted by Metrix as an agent to Counties.

1.6. Breaches or Breach Allegations

Counties confirmed there have been no breach allegations during the audit period.

1.7. ICP Data

Metering Category	Number of ICPs
1	40,737
2	399
3	37
4	12
5	8
9	10

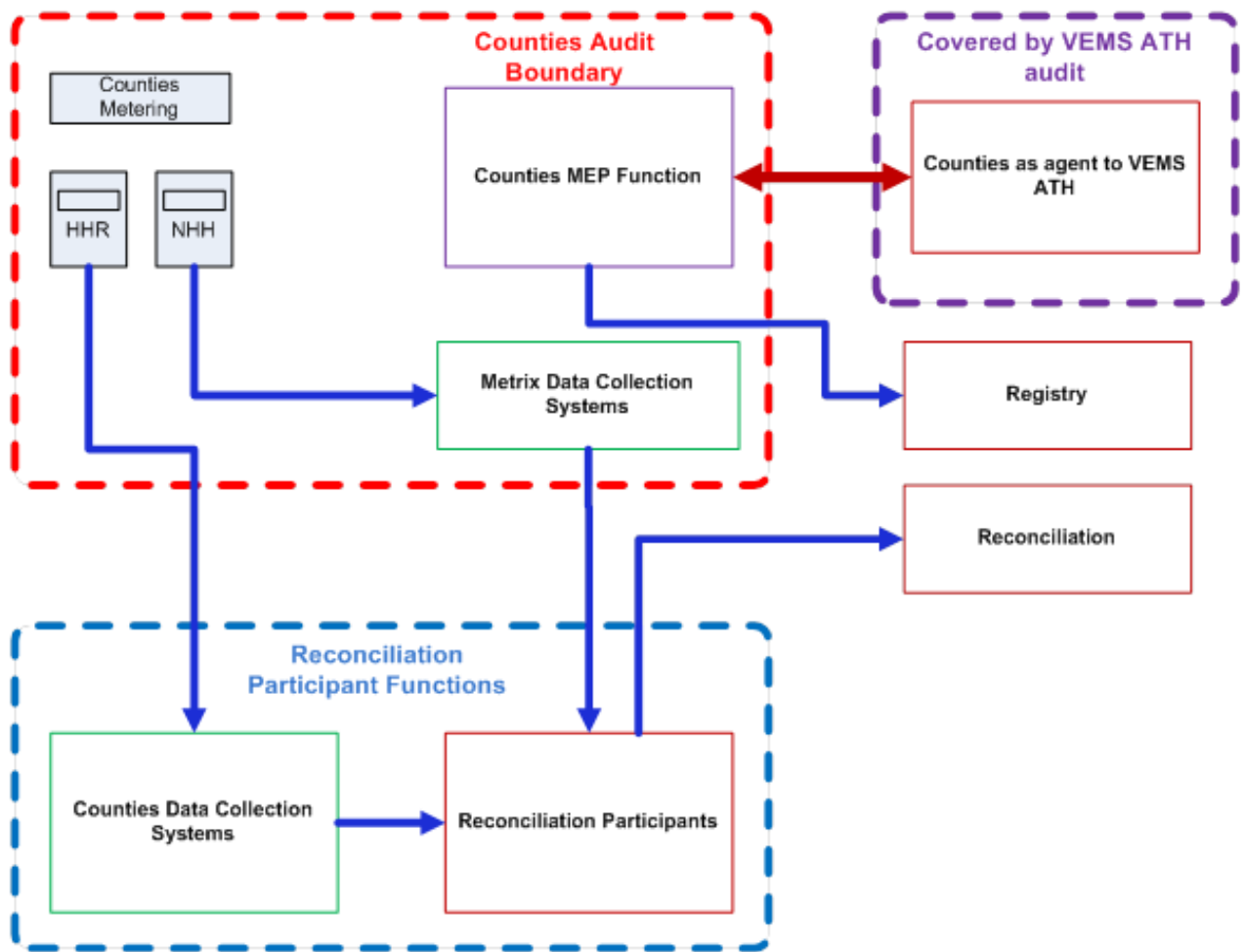
1.8. Authorisation Received

A letter of authorisation was not required or requested.

1.9. Scope of Audit

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

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



1.10. Summary of previous audit

The previous audit was conducted in December 2017 by Brett Piskulic of Veritek Limited. The table below shows that all of these issues still remain.

Table of Non Compliance

Subject	Section	Clause	Non compliance	Status
Registry notification	3.2	2 of schedule 11.4	14 registry updates later than 15 business days.	Still existing
Changes to Registry Records	4.10	3 of schedule 11.4	Some records updated on the registry later than 10 business days.	Still existing
Provision of Registry Information	6.2	Clause 7 (1), (2) and (3) of Schedule 11.4	Some registry records incomplete or incorrect.	Still existing
Certification and Maintenance	7.1	Clause 10.38 (a), clause 1 and clause 15 of Schedule 10.7	Certification expired.	Still existing for a smaller number
Timekeeping Requirements	7.10	Clause 23 of schedule 10.7	30 timeclocks not checked.	Still existing for a smaller number
Interim certification	7.19	Clause 18 of Schedule 10.7	1443 cat 1 installations with expired interim certification.	Still existing for a smaller number
Electronic Interrogation of Metering Installations	10.5	Clause 8 of Schedule 10.6	Some installations not interrogated within the maximum interrogation cycle.	Still Existing

Table of Recommendations

Subject	Section	Clause	Recommendation for improvement	Status
Accuracy of records	5.1	Clause 4(1)(a) and (b) of Schedule 10.	Require ATHs to provide certification records with better clarity.	Cleared
Electronic interrogation	10.5	Clause 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.	Still Existing
AMI events	10.8	Clause 8(7)(b)(ii) of schedule 10.6	Provide retailers with monthly reports of events.	Cleared

2. OPERATIONAL INFRASTRUCTURE

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

Code reference

Clause 10.9(2)

Code related audit information

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

Audit observation

I checked certification records for 49 metering installations, covering all relevant ATHs.

Audit commentary

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

Audit outcome

Compliant

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

Code reference

Clause 10.50(1) to (3)

Code related audit information

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

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

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

Audit observation

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

Audit commentary

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

Audit outcome

Compliant

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

Code reference

Clause 7(1) of Schedule 10.6

Code related audit information

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

Audit observation

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

Audit commentary

Counties uses the COUP identifier in all cases.

Audit outcome

Compliant

2.4. Communication Equipment Compatibility (Clause 40 Schedule 10.7)

Code reference

Clause 40 Schedule 10.7

Code related audit information

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

Audit observation

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

Audit commentary

Metrix is the agent for data collection on behalf of Counties. Metrix ensures all communication equipment is appropriately certified with the relevant telecommunications standards. This is recorded in type test certificates and other approval documents. A copy of the type test schedule was provided to Veritek during the Metrix MEP audit in July 2017, which contains a list of all components used and the type test report reference.

Audit outcome

Compliant

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

Code reference

Clause 11.2 and Clause 10.6

Code related audit information

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

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

Audit observation

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

Audit commentary

The content of this audit report indicates that Counties has taken all practicable steps to ensure that information is complete and accurate.

Audit outcome

Compliant

3. PROCESS FOR A CHANGE OF MEP

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

Code reference

Clause 10.22

Code related audit information

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

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

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

Audit observation

I checked if Counties had sent or received any invoices.

Audit commentary

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

Audit outcome

Not applicable

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

Code reference

Clause 2 of Schedule 11.4

Code related audit information

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

Audit observation

I checked the event detail report for the period 01/01/18 to 30/11/18 for all records where Counties became the MEP to evaluate the timeliness of updates.

Audit commentary

I examined an event detail report for 70 switches in relation to this clause. There were 10 late updates to the registry. In all of the 10 cases, the trader had nominated Counties late causing the late update.

Audit outcome

Non-compliant

Non-compliance	Description		
Audit Ref: 3.2 With: Clause 2 of Schedule 11.4 From: 01-Jan-18 To: 30-Nov-18	10 registry updates later than 15 business days. Potential impact: Medium Actual impact: Low Audit history: Multiple times Controls: Strong Breach risk rating: 1		
Audit risk rating	Rationale for audit risk rating		
Low	Controls are in place to ensure the timeliness of updates, but Counties is often prevented from updating the registry due to late nomination or late updates from traders. The impact on other participants is minor; therefore the audit risk rating is low.		
Actions taken to resolve the issue		Completion date	Remedial action status
[COUP are reliant on other participants populating registry data or statuses]		N/A	Identified
Preventative actions taken to ensure no further issues will occur		Completion date	
[Some of this is out of our direct control but reports are run daily and Retailers chased to completed their nominations]		N/A	

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

Code reference

Clause 5 of Schedule 10.6

Code related audit information

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

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

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

Audit observation

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

Audit commentary

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

Audit outcome

Compliant

3.4. Termination of MEP Responsibility (Clause 10.23)

Code reference

Clause 10.23

Code related audit information

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

The MEP is responsible if it:

- *is identified in the registry as the primary metering 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

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

Audit commentary

Counties has ceased to be responsible for some metering installations and they still continue with their responsibilities, mainly in relation to the storage or records, which are kept indefinitely. I checked the records for ICPs 0001233615CN6F0 and 0001202382CN154 which have been decommissioned and confirmed that the records are 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

I checked the design reports provided by Counties to relevant ATHs, and I checked that ATHs were correctly recording the design report in the certification records.

Audit commentary

The design reports include all relevant details required by the Code and ATHs had correctly recorded the design for all except six of the 49 metering installations checked.

Audit outcome

Non-compliant

Non-compliance	Description
Audit Ref: 4.1 With: Clause 2 of Schedule 10.7 From: 01-Jan-18 To: 30-Nov-18	Design Report not recorded for 6 metering installations. Potential impact: Medium Actual impact: Low Audit history: Once Controls: Strong Breach risk rating: 1
Audit risk rating	Rationale for audit risk rating
Low	Controls are recorded as strong because processes are in place to ensure that correct design reports are used. The impact on other participants is minor; therefore the audit risk rating is low.

Actions taken to resolve the issue	Completion date	Remedial action status
[These occurred where meters replaced but no change to the original design. Field staff reminded to complete the design report reference field on the installation report form]	Done	Identified
Preventative actions taken to ensure no further issues will occur	Completion date	
[This is typically corrected at time of data entry is design report populated within the systems]	Ongoing	

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

Code reference

Clause 9 of Schedule 10.6

Code related audit information

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

Audit observation

I confirmed that Counties has used the Accucal, VEMS and Trustpower ATHs.

Audit commentary

I have checked the Authority's website and confirm that the Accucal, VEMS and Trustpower ATHs have current and appropriate scopes of approval.

Audit outcome

Compliant

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

Code reference

Clause 4(1) of Schedule 10.7

Code related audit information

The MEP must ensure:

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

Audit observation

I checked the processes used by Counties to ensure compliance with the design and with the error thresholds stipulated in Table 1. I also checked the certification records for 49 metering installations.

Audit commentary

The Counties process requires the design report to be recorded on the metering installation certification report, of the 49 reports I checked all except six included a reference to the design report.

All fully calibrated certifications and comparative recertifications are conducted by Accucal. I checked the certification records for 19 installations and can confirm that the measured error and uncertainty were appropriately recorded.

Audit outcome

Non-compliant

Non-compliance	Description		
Audit Ref: 4.3 With: Clause 4(1) of Schedule 10.7 From: 01-Jan-18 To: 30-Nov-18	Design Report not recorded for 6 metering installations. Potential impact: Medium Actual impact: Low Audit history: Once Controls: Strong Breach risk rating: 1		
Audit risk rating	Rationale for audit risk rating		
Low	Controls are recorded as strong because processes are in place to ensure that correct design reports are used. The impact on other participants is minor; therefore the audit risk rating is low.		
Actions taken to resolve the issue		Completion date	Remedial action status
[These occurred where meters replaced but no change to the original design. Field staff reminded to complete the design report reference field on the installation report form]		Done	Identified
Preventative actions taken to ensure no further issues will occur		Completion date	
[This is typically corrected at time of data entry is design report populated within the systems]		Ongoing	

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

Code reference

Clause 4(2)(a) of Schedule 10.7

Code related audit information

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

Audit observation

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

Audit commentary

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

Audit outcome

Compliant

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

Code reference

Clause 4(2)(b) of Schedule 10.7

Code related audit information

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

Audit observation

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

Audit commentary

I checked Counties' list file and confirmed that all category 3 and above metering installations are HHR.

Audit outcome

Compliant

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

Code reference

Clause 4(3) of Schedule 10.7

Code related audit information

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

Audit observation

I checked if Counties is responsible for any NSP metering.

Audit commentary

Counties is the MEP for metering at MTG0111 and subtraction does not occur.

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 is not responsible for any grid metering.

Audit commentary

Counties is not responsible for any grid metering.

Audit outcome

Compliant

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

Code reference

Clause 4(4) of Schedule 10.7

Code related audit information

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

Audit observation

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

Audit commentary

The certification record contains a field in relation to this clause, and the technician is required to confirm that installations are compliant and safe.

Counties has issued a written instruction to installers regarding the suitability of enclosures and protection for metering installations. The physical and electrical requirements for metering installations are contained in the "Counties Power – Metering Requirements for Electrical Installations" which is published on the Counties Power website.

Audit outcome

Compliant

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

Code reference

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

Code related audit information

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

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

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

Audit observation

Counties is also the distributor in all cases where they are the MEP and therefore agreement is implicit in that relationship. Consultation with traders has occurred through the Use of System Agreement and the Distribution Code. The Use of System Agreement refers to the fact that metering will comply with the Code and with the Distribution Code. The Distribution Code states that metering requirements are those contained in the “Counties Power – Metering Requirements for Electrical Installations”.

Audit commentary

Counties is also the distributor in all cases where they are the MEP and therefore agreement is implicit in that relationship. Consultation with traders has occurred through the Use of System Agreement and the Distribution Code. The Use of System Agreement refers to the fact that metering will comply with the Code and with the Distribution Code. The Distribution Code states that metering requirements are those contained in the “Counties Power – Metering Requirements for Electrical Installations”, this document is published on the Counties Power website.

Audit outcome

Compliant

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

Code reference

Clause 3 of Schedule 11.4

Code related audit information

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

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

Audit observation

I checked the event detail report for the period 01/01/18 to 30/11/18 to evaluate the timeliness of registry updates.

Audit commentary

The table below shows there were 578 new connections of which 62 were not updated within 10 business days. Of these there were 51 which were caused by late nomination.

There were 38,945 updates which were not new connections of these 253 were not updated within 10 days. The large number of updates was due to updating of meters from NHH to HHR capable.

Event	Year	Total ICPs	ICPs Notified Within 10 Days	ICPs Notified Greater Than 10 Days	Average Notification Days	Percentage Compliant
New connection	Dec 2017	523	434	89	7	83%
	Jan 2019	578	516	62	7.5	89.3%
Update	Dec 2017	2478	2019	459	163	82%
	Jan 2019	38945	38692	253	3	99.4%

Audit outcome

Non-compliant

Non-compliance	Description		
Audit Ref: 4.10 With: Clause 3 of Schedule 11.4 From: 01-Jan-18 To: 30-Nov-18	Some records updated on the registry later than 10 business days. Potential impact: Medium Actual impact: Low Audit history: Multiple times Controls: Moderate Breach risk rating: 2		
Audit risk rating	Rationale for audit risk rating		
Low	I have recorded the controls as moderate in this area because there is room to improve and shorten the notification process for new connections. The late updates for new connections occurred after the trader had populated their records, therefore the impact on participants, customers or settlement is minor, therefore the audit risk rating is low.		
Actions taken to resolve the issue		Completion date	Remedial action status
[Some new staff in MEP administrative roles]		Done	Identified
Preventative actions taken to ensure no further issues will occur		Completion date	
[MEP administration team have been reminded of this requirement]		Done	

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 uses Metrix as an agent for the collection of AMI data. The Metrix data collection systems are considered “metering infrastructure”. The Metrix systems were checked by Veritek as part of the Metrix MEP audit in July 2018 to confirm that the systems operate 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 AMI systems. All components operate as intended in an integrated manner.

Audit outcome

Compliant

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

Code reference

Clause 10.23A

Code related audit information

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

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

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

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

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

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

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

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

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

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

Audit observation

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

Audit commentary

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

Audit outcome

Compliant

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

Code reference

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

Code related audit information

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

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

Audit observation

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

Audit commentary

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

Audit outcome

Compliant

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

Code reference

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

Code related audit information

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

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

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

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

Audit observation

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

Audit commentary

Counties has not conducted any updates during the audit period.

Audit outcome

Compliant

4.15. Temporary Energisation (Clause 10.28(6))

Code reference

Clause 10.28(6)

Code related audit information

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

Audit observation

I asked Counties if there had been any examples of temporary energisation.

Audit commentary

There were no examples of temporary energisation.

Audit outcome

Compliant

5. METERING RECORDS

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

Code reference

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

Code related audit information

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

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

Audit observation

I checked certification records for 49 metering installations and I also checked five inspection records to evaluate compliance with this clause.

Audit commentary

All of the records listed above are available and the records were correct for the 49 examples checked and for the five inspection records checked.

Audit outcome

Compliant

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

Code reference

Clause 4(2) of Schedule 10.6

Code related audit information

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

Audit observation

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

Audit commentary

Counties has not been requested to supply any inspection reports.

Audit outcome

Compliant

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

Code reference

Clause 4(3) of Schedule 10.6

Code related audit information

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

Audit observation

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

Audit commentary

Counties keeps records indefinitely. I checked an example of a decommissioned installation, ICP1099568434CN33D, and confirmed that records are still available.

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

Counties has provided information to ATH's in the past and this may occur in future.

Audit commentary

There were examples where this has occurred when category 2 installations previously certified by VEMS are recertified by Accucal. In these cases, Accucal has been given access to the relevant 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 that it is the gaining MEP for the metering installation for the ICP, the MEP must enter into an arrangement with the trader and advise the registry it accepts responsibility for the ICP and of the proposed date on which it will assume responsibility.

Audit observation

I checked the Switch Breach History Detail Report (PR040) for the period 01/01/18 to 30/11/18 to confirm whether all responses were within 10 business days.

Audit commentary

There were 12 cases where Counties did not send the MN file within 10 business days as detailed in the following table:

ICP	Trader sent nomination	Expected MN date	Actual MN date	Days late
1099576942CN2C6	15-02-18	02-03-18	07-03-18	3
1099576950CN8EE	16-02-18	05-03-18	13-03-18	6
1099576927CN079	16-02-18	05-03-18	13-03-18	6
1099577008CNA5B	15-02-18	02-03-18	13-03-18	7
1099576968CND02	15-02-18	02-03-18	13-03-18	7
1099577044CNBE0	15-02-18	02-03-18	13-03-18	7
1099576998CND15	15-02-18	02-03-18	13-03-18	7
1099577046CNB65	14-02-18	01-03-18	13-03-18	8
1099576690CN00E	15-02-18	02-03-18	02-05-18	40
1099576755CN3AA	15-02-18	02-03-18	02-05-18	40
1099576756CNF6A	15-02-18	02-03-18	02-05-18	40
0004023983CN3FC	15-02-18	02-03-18	19-06-18	>100

Audit outcome

Non-compliant

Non-compliance	Description		
Audit Ref: 6.1 With: Clause 1 (1) of Schedule 11.4 From: 01-Jan-18 To: 30-Nov-18	MN file not sent within 10 days for 12 ICPs. Potential impact: Low Actual impact: Low Audit history: None Controls: Strong Breach risk rating: 1		
Audit risk rating	Rationale for audit risk rating		
Low	I have recorded the controls as strong because Counties has good monitoring in place for this. There is a minor impact on other participants; therefore the audit risk rating is low.		
Actions taken to resolve the issue		Completion date	Remedial action status
[An automated process is in place to handle, but the systems have encountered miscellaneous file transfer glitches]			Identified
Preventative actions taken to ensure no further issues will occur		Completion date	
[To be raised with IT administration for improvement]		29/03/19	

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

Code reference

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

Code related audit information

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

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

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

Audit observation

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

Audit commentary

Analysis of the list file and an event detail report for all Counties ICPs found the following issues.

Quantity of ICPs Jan 2019	Quantity of ICPs Dec 2017	Quantity of ICPs Jan 2017	Quantity of ICPs 2016	Issue	Resolved?
0	0	1	1	Blank records on the registry.	n/a
0	0	0	4	Category 1 on the registry but with a multiplier above 3. These should be Category 2.	n/a
0	0	0	0	Fully certified installations since 29/08/13 with a multiplier of 3.	n/a
0	0	6	6	Incorrect metering category.	n/a
1	1	6	154	Incorrect certification or expiry dates.	no
0	0	1	1	CTs on Category 1 installation (CTs need to be removed on registry).	n/a
0	1	2	8	ICPs with load type of "B" with no injection register (suggest checking with retailers whether DG is actually installed).	n/a
0	0	2	13	Category 2 or above without CTs.	n/a
6	7	11	3	Control device certified but not populated on registry.	no
291	571	844	304	Control device certification = "N", where profile requires certification to be "Y" (note, this is a trader responsibility to notify Counties).	no
7	-	-	-	Incorrect ATH recorded.	no

Audit outcome

Non-compliant

Non-compliance	Description		
Audit Ref: 6.2 With: Clause 7 (1), (2) and (3) of Schedule 11.4 From: 01-Jan-18 To: 30-Nov-18	Some registry records incomplete or 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	I have recorded the controls as moderate in this area because there are still a small number of areas where improvement can be made. Certification of control devices is an example. Very few of the discrepancies have an impact on participants, customers or settlement. The audit risk rating is low.		
Actions taken to resolve the issue		Completion date	Remedial action status
[Primarily miscellaneous manual data entry errors]		Ongoing	Identified
Preventative actions taken to ensure no further issues will occur		Completion date	
[Ongoing improvements in data entry checking with system validation checks already evident in lower numbers of discrepancy's. Errors identified to be corrected]		29/03/19	

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

Code reference

Clause 6 of Schedule 11.4

Code related audit information

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

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

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

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

Audit observation

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

Audit commentary

Counties has in place a MEP Registry Reconciliation process. This is an automated process which runs daily within Navision. An EDA file is downloaded from the registry and a comparison is done with the Navision master data. A report is provided detailing any differences found. I did not find any examples of updates which were not completed within five business days.

Audit outcome

Compliant

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

Code reference

Clause 20 of Schedule 10.7

Code related audit information

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

- a) the metering installation is modified otherwise than under sub clause 19(3) or 19(6)*
- b) the metering installation is classed as outside the applicable accuracy tolerances set out in Table 1 of Schedule 10.1, defective or not fit for purpose under this Part or any audit*
- c) an ATH advises the metering equipment provider responsible for the metering installation of a reference standard or working standard used to certify the metering installation not being compliant with this Part at the time it was used to certify the metering installation, or the failure of a group of meters in the statistical sampling recertification process for the metering installation, or the failure of a certification test for the metering installation*
- d) the manufacturer of a metering component in the metering installation determines that the metering component does not comply with the standards to which the metering component was tested*
- e) an inspection of the metering installation, that is required under this Part, is not carried out in accordance with the relevant clauses of this Part*
- f) if the metering installation has been determined to be a lower category under clause 6 and the maximum current conveyed through the metering installation at any time exceeds the current rating of its metering installation category as set out in Table 1 of Schedule 10.1*
- g) the metering installation is certified under clause 14 and sufficient load is available for full certification testing and has not been retested under clause 14(4)*
- h) a control device in the metering installation certification is, and remains for a period of at least 10 business days, bridged out under clause 35(1)*
- i) the metering equipment provider responsible for the metering installation is advised by an ATH under clause 48(6)(b) that a seal has been removed or broken and the accuracy and continued integrity of the metering installation has been affected.*

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

Audit observation

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

Audit commentary

I identified five installations which were due for inspection. I checked the inspection reports for five completed inspections and confirmed they had been completed within the required timeframes.

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

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

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

The memo also states:

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

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

Analysis of the certification records for 19 Category 2 and above metering installations found that two had been certified using the comparative recertification method with burden lower than the lowest test point, without a Class A ATH confirming that the measuring transformers will not be adversely affected. Therefore, in accordance with the Authority's memo, these metering installations are not considered "fit for purpose". This means certification is cancelled.

Audit outcome

Non-compliant

Non-compliance	Description		
Audit Ref: 6.4 With: Clause 20 of Schedule 10.7 From: 01-Jan-18 To: 30-Nov-18	Certification not cancelled on the registry for two metering installations where low burden is present. Potential impact: Low Actual impact: Low Audit history: Never Controls: Moderate Breach risk rating: 2		
Audit risk rating	Rationale for audit risk rating		
Low	The installations with low burden are all recording within the allowable 2.5% therefore the impact on settlement is minor. The responsibility for Counties is to cancel certification on the registry once they know certification is cancelled and the impact of not doing this is minor, therefore the audit risk rating is low. I have recorded the controls as moderate as there is room for improvement.		
Actions taken to resolve the issue		Completion date	Remedial action status
[Test House has already been issued jobs to correct add burden and recertify the ICPs in question]		29/03/19	Identified
Preventative actions taken to ensure no further issues will occur		Completion date	
[Raised with Test House, and standing instruction on implementing additional burdening secondary circuits on <500A CTs as necessary issued]		Completed	

6.5. Registry Metering Records (Clause 11.8A)

Code reference

Clause 11.8A

Code related audit information

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

Audit observation

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

Audit commentary

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

Audit outcome

Compliant

7. CERTIFICATION OF METERING INSTALLATIONS

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

Code reference

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

Code related audit information

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

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

Audit observation

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

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

Audit commentary

The registry shows three ICPs over category 1 with expired full certification. The table below shows the details of these ICPs and the reasons for the expired certification date.

ICP	Cat	Cert date	Expiry date	Comments
0069016303CN40E	2	07-04-16	10-11-18	Not Certified
1099559046CNA68	2	09-04-14	15-10-18	No Access
1099562664CNF72	2	16-07-14	01-10-18	ICP not active, incorrect status on registry.

There are 530 Category 1 metering installations with expired full certification and 1,201 interim certified installations with expired certification. Counties provided a breakdown of reasons for inability to complete certification for both groups of ICPs. The tables below show the results.

Fully certified

Reason	Quantity
Already disconnected	1
Board substandard	21
Customer cancelled	254
Customer missed appointment	17
Done	1
Equipment inaccessible	6
Health and safety	2

Incorrect retailer	1
locate ICP	17
No Load	9
No room on switchboard	3
Room on switchboard	21
Substandard Wiring	26
Technical Issue (AES)	13
Unable to arrange appointment	129
Unable to locate ICP	4
Unable to locate Property	1
Vacant at the time - to be reissued	4

Interim Certified

Reason	Quantity
Board substandard	73
Customer cancelled	616
Customer missed appointment	5
Import/Export - To be reissued	1
locate ICP	39
Meters done but exp. to update Reg.	3
Meters done but need to update Reg.	3
No Load	18
Reissued	4
Room on switchboard	18
Substandard Wiring	213
To be reissued	10
Unable to arrange appointment	197
Vacant	3
Vacant at the time - to be reissued	5

Audit outcome

Non-compliant

Non-compliance	Description		
<p>Audit Ref: 7.1</p> <p>With: Clause 10.38 (a), clause 1 and clause 15 of Schedule 10.7</p> <p>From: 01-Jan-18</p> <p>To: 30-Nov-18</p>	<p>Certification expired for:</p> <ul style="list-style-type: none"> - 1,201 previously interim certified category 1 ICPs - 530 category 1 ICPs - 3 category 2 ICPs <p>Potential impact: High</p> <p>Actual impact: Medium</p> <p>Audit history: Multiple times</p> <p>Controls: Moderate</p> <p>Breach risk rating: 4</p>		
Audit risk rating	Rationale for audit risk rating		
Medium	<p>I have recorded the controls as moderate in this area because certification has been expired for a number of years for some ICPs and because some of the expired installations were fully certified at one point.</p> <p>The impact on settlement is recorded as moderate because of the increased likelihood of failure or inaccuracy for metering installations with expired certification, therefore the audit risk rating is medium.</p>		
Actions taken to resolve the issue		Completion date	Remedial action status
<p>[On going endeavours to continue to drive down the Cat 1 uncertified balance remaining.</p> <p>Noting as Retailers and the Network are reluctant to disconnect customers, substandard electrical installations cannot be completed without customer action or cooperation with the MEP]</p>		[None]	Identified
Preventative actions taken to ensure no further issues will occur		Completion date	
<p>[The two outstanding Cat 2 ICPs are issued to Test House, and COUP are liaising with the Retailers to achieve access to the metering installation, Registry status to be updated on the other]</p>		[29/03/19]	

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

Code reference

Clause 10.38(b) and clause 9 of Schedule 10.6

Code related audit information

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

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

Audit observation

I checked the certification records for 49 metering installations to confirm compliance. ATHs have shown that their processes include all tests, and reports confirm tests are completed.

Audit commentary

Certification activities have been conducted by Counties using the Accucal, VEMS and Trustpower ATHs. The most recent audit reports for all ATHs confirm the appropriate testing is conducted. The 49 certification records all included confirmation that the required tests had been completed.

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:

- import active energy*
- import reactive energy*
- 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:

- import active energy*
- export active energy*
- import reactive energy*
- export reactive energy.*

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

- import active energy*
- export active energy*
- import reactive energy*
- export reactive energy*

Audit observation

All relevant metering is compliant with this clause.

Audit commentary

Counties has metering installations at and above Category 2 and they record energy in accordance with this clause.

Audit outcome

Compliant

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

Code reference

Clause 10.37(2)(b)

Code related audit information

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

Audit observation

This clause relates to Transpower as an MEP.

Audit commentary

This clause relates to Transpower as an MEP.

Audit outcome

Not applicable

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

Code reference

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

Code related audit information

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

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

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

Audit observation

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

Audit commentary

There are no examples of burden changes having occurred.

Audit outcome

Compliant

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

Code reference

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

Code related audit information

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

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

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

If a meter is certified in this manner:

- *the MEP must, each month, obtain a report from the participant interrogating the metering installation, which details the maximum current from raw meter data from the metering installation by either calculation from the kVA by trading period, if available, or from a maximum current indicator if fitted in the metering installation conveyed through the point of connection for the prior month; and*
- *if the MEP does not receive a report, or the report demonstrates that the maximum current conveyed through the POC was higher than permitted for the metering installation category it is certified for, then the certification for the metering installation is automatically cancelled.*

Audit observation

I checked the registry for examples of certification at a lower category.

Audit commentary

There were three examples of certification at a lower category in the audit period. I checked the certification records for these installations. The ATH has recorded that a protection device has been installed which limits the maximum current of the installation to be within the certified category in each case. This meets the requirements of Clause 6(1)(a) of Schedule 10.7.

Audit outcome

Compliant

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

Code reference

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

Code related audit information

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

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

Audit observation

I checked if there were any examples of Insufficient load certifications and if monitoring was conducted as required.

Audit commentary

There were two examples of insufficient load certification. ICP 1099575082CNEC0 was certified with insufficient load on 21/08/2018 and subsequently fully certified on 7/11/2018 after monitoring identified sufficient load was present. ICP 1099577683CN7C3 was certified with insufficient load on 26/11/2018, monitoring has not yet identified sufficient load. I checked and confirmed that monitoring has been conducted by Counties each month for both ICPs.

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

There were two examples of insufficient load certification as detailed in **section 7.7**.

Audit commentary

The ATH returned and completed certification tests for ICP 1099575082CNEC0 which demonstrated that the metering installation was within the maximum permitted error on 7/11/2018.

Audit outcome

Compliant

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

Code reference

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

Code related audit information

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

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

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

Audit observation

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

Audit commentary

Alternative certification has not been applied to any metering installations.

Audit outcome

Compliant

7.10. Timekeeping Requirements (Clause 23 of Schedule 10.7)

Code reference

Clause 23 of Schedule 10.7

Code related audit information

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

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

Audit observation

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

Audit commentary

Counties confirmed there are 15 metering installations which have time clocks. These were all checked during 2014 and Counties showed the results, indicating that time errors were very minor. The Code requires that this exercise is completed each year and it was not done for 2015, 2016, 2017 or 2018. Counties has discontinued this two-register tariff during 2017 making these time clocks redundant. Progress has been made on removing all of these devices, there were approximately 30 in December 2017 and the work is planned to be completed by April 2019.

Audit outcome

Non-compliant

Non-compliance	Description		
Audit Ref: 7.10 With: Clause 23 of schedule 10.7 From: 01-Jan-18 To: 15-Jan-19	15 timeclocks not checked. Potential impact: Low Actual impact: Low Audit history: Multiple times Controls: Moderate Breach risk rating: 2		
Audit risk rating	Rationale for audit risk rating		
Low	I have recorded the controls as moderate in this area because progress has been made in removing the timeclocks and there is a plan in place to remove those remaining. It is unlikely that there will be significant time errors which will impact on participants, customers or settlement. The audit risk rating is low.		
Actions taken to resolve the issue		Completion date	Remedial action status
[Multi-rate tariffs requiring timed register switching have been closed for many years on COUP network. The Network is liaising with all Retailers to withdraw them from customers. No customer is commercially disadvantaged regardless of potential drift of meter time]		01/04/19	Identified
Preventative actions taken to ensure no further issues will occur		Completion date	
[Regardless each remaining meter is scheduled for AMI upgrade, however is subject to Test House resource constraints in the region]		TBA	

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

Code reference

Clause 35 of Schedule 10.7

Code related audit information

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

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

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

Audit observation

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

Audit commentary

Counties has a process for the management of bridged control devices. There were no examples identified where control devices were bridged during the audit period.

Audit outcome

Compliant

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

Code reference

Clause 34(5) of Schedule 10.7

Code related audit information

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

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

Audit observation

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

Audit commentary

Counties has not received notification from ATHs in accordance with this clause. Counties is the distributor and MEP in their region and they confirm there are no signal propagation issues on their network.

Audit outcome

Compliant

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

Code reference

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

Code related audit information

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

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

Audit observation

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

Audit commentary

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

Audit outcome

Compliant

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

Code reference

Clause 24(3) of Schedule 10.7

Code related audit information

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

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

Audit observation

I checked the records for 19 Category 2 and above metering installations to confirm that compensation factors were correctly recorded on the registry.

Audit commentary

Compensation factors have been updated accurately on the registry. Checking the records for 19 ICPs confirmed this.

Audit outcome

Compliant

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

Code reference

Clause 26(1) of Schedule 10.7

Code related audit information

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

Audit observation

I checked the certification records for 49 metering installations to confirm compliance.

Audit commentary

Meters were certified for all 49 installations. For new smart meters the meters have been certified by the supplier, re-installed meters are certified by the class A ATH which performs the calibration.

Audit outcome

Compliant

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

Code reference

Clause 28(1) of Schedule 10.7

Code related audit information

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

Audit observation

I checked the certification records for 19 metering installations completed to confirm compliance.

Audit commentary

Measuring transformers were certified for the 19 metering installations. New CTs are supplied pre-certified by TWS. Existing VT's and CTs are calibrated and re-certified by Accucal in higher category installations.

Audit outcome

Compliant

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

Code reference

Clause 36(1) of Schedule 10.7

Code related audit information

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

Audit observation

I checked the certification records for 49 metering installations to confirm compliance.

Audit commentary

The 49 certification records that I checked confirmed that the data storage devices are being correctly certified. The data storage devices are incorporated in the meters and the meters are being certified correctly as part of the meter certification in all cases.

Audit outcome

Compliant

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

Code reference

Clause 7 (3) Schedule 10.3

Code related audit information

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

Audit observation

I checked the ATH register to confirm compliance.

Audit commentary

The Accucal, VEMS and Trustpower ATHs have appropriate approval.

Audit outcome

Compliant

7.19. Interim Certification (Clause 18 of Schedule 10.7)

Code reference

Clause 18 of Schedule 10.7

Code related audit information

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

Audit observation

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

Audit commentary

There are 1,201 previously interim certified installations with expired certification.

Audit outcome

Non-compliant

Non-compliance		Description	
Audit Ref: 7.19 With: Clause 18 of Schedule 10.7 From: 01-Apr-15 To: 30-Nov-19		1,201 ICPs with expired interim certification. Potential impact: High Actual impact: Medium Audit history: Multiple times Controls: Moderate Breach risk rating: 4	
Audit risk rating		Rationale for audit risk rating	
Medium		I have recorded the controls as moderate in this area because certification has been expired for a number of years for these ICPs. The impact on settlement is recorded as moderate because of the increased likelihood of failure or inaccuracy for metering installations with expired certification, therefore the audit risk rating is medium.	
Actions taken to resolve the issue		Completion date	Remedial action status
[See previous comments regards Cat 1 replacement program]		N/A	Identified
Preventative actions taken to ensure no further issues will occur		Completion date	

<p>[An on-going program of works in this area continues with best endeavours, however this issue will almost certainly remain outstanding at next audit - as some aspects outside our control as MEP]</p>	<p>unknown</p>	
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8. INSPECTION OF METERING INSTALLATIONS

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

Code reference

Clause 45 of Schedule 10.7

Code related audit information

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

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

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

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

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

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

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

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

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

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

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

Audit observation

I checked to determine whether Counties was required to conduct any inspections during the audit period.

Audit commentary

Counties has conducted sample inspections for Category 1 metering installations. The process was approved by the Authority and all inspections were completed within the required timeframe. Reporting

has been prepared and supplied to the Authority. Out of the 127 ICPs inspected the following issues were found;

Count of ICPs	Description of Non-compliance:
12	Seal or seals broken

In all of these cases the meters were replaced at the time of inspection and all components were resealed as part of the recertification process.

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

I checked the registry information to confirm which ICPs were due for inspection. There were five category 2+ installations due for inspection.

Audit commentary

I checked the inspection reports for five completed inspections and confirmed they had been completed within the required timeframes.

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

I checked the process and results from inspection regimes to ensure any incorrect records were updated.

Audit commentary

The Counties inspection process includes a comparison with registry records, discrepancies are corrected within the required timeframe.

Audit outcome

Compliant

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

Code reference

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

Code related audit information

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

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

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

The MEP must make the above arrangements within

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

Audit observation

I checked if there were any examples of notification of missing seals.

Audit commentary

During the Category 1 inspections 12 examples of unsealed main switches were identified. In all of these cases the meters were replaced at the time of inspection and all components were resealed as part of the recertification process.

Counties has a documented process in place for the management of seals and any subsequent investigation and reporting.

Audit outcome

Compliant

9. PROCESS FOR HANDLING FAULTY METERING INSTALLATIONS

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

Code reference

Clause 10.43(4) and (5)

Code related audit information

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

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

Audit observation

I asked Counties to provide examples where they had become aware of a faulty metering installation.

Audit commentary

Counties has a documented process in place for the management of faulty metering installations and any subsequent investigation and reporting.

Counties provided an example of a category 1 metering installation where the meter was removed and sent to a calibration laboratory for calibration at the request of the consumer. The calibration report confirmed that the meter was marginally outside the error limits for the meter class at one test point. As the meter was replaced and the metering installation recertified at the time of meter removal there was no requirement for any further investigation or testing. The findings of the meter calibration were reported to the trader within the timeframe required.

Audit outcome

Compliant

9.2. Testing of Faulty Metering Installations (Clause 10.44)

Code reference

Clause 10.44

Code related audit information

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

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

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

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

Audit observation

I checked for examples where Counties had become aware of faulty metering installations which required testing.

Audit commentary

In the case provided in **section 9.1** the metering installation was recertified when the meter was removed for calibration. Counties did not become aware of the issue with the accuracy of the meter until the meter calibration results were received. There was no requirement for further testing or a statement of situation in this case.

Audit outcome

Compliant

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

Code reference

Clause10.46(2)

Code related audit information

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

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

Audit observation

There were no examples of statements of situation being required.

Audit commentary

There were no examples of statements of situation being required.

Audit outcome

Compliant

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

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

Code reference

Clause 1 of Schedule 10.6

Code related audit information

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

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

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

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

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

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

Audit observation

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

Audit commentary

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

Audit outcome

Compliant

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

Code reference

Clause 2 of Schedule 10.6

Code related audit information

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

Audit observation

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

Audit commentary

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

Audit outcome

Compliant

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

Code reference

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

Code related audit information

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

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

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

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

Audit observation

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

Audit commentary

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

Audit outcome

Compliant

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

Code reference

Clause 3(5) of Schedule 10.6

Code related audit information

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

Audit observation

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

Audit commentary

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

Audit outcome

Compliant

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

Code reference

Clause 8 of Schedule 10.6

Code related audit information

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

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

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

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

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

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

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

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

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

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

in a form that is accessible to authorised personnel.

Audit observation

Counties uses Metrix as an agent for data collection. Process related information for this section has been obtained from the Metrix (Mercury NZ) MEP audit completed by Veritek in July 2018.

Performance related information was obtained and evaluated in January 2019 specifically for the Counties audit.

Interrogation cycle

I checked reporting of meters not read during the maximum interrogation cycle.

Clock synchronisation

Clock synchronisation is discussed in **section 10.7**.

Event logs

Event logs are discussed in **section 10.8**.

Security of raw meter data

I checked the security and storage of data during the Metrix audit by looking at examples of data more than 48 months old and by checking security protocols.

Audit commentary

Interrogation cycle

Reporting is in place for all installations without a successful interrogation during the maximum interrogation cycle. The most recent report contained 342 records. 324 of the 342 records are recorded in the registry as AMI = "Y".

Clock synchronisation

Clock synchronisation is discussed in **section 10.7**.

Event logs

Event logs are discussed in **section 10.8**.

Security of raw meter data

With regard to the security of raw meter data, I checked some data from 2013 to confirm it was available. All users have login and password to access working data and only certain IT experts can access raw data. There are no business processes that allow data to be edited. Event data is archived along with consumption data. This part of the process is compliant.

Audit outcome

Non-compliant

Non-compliance	Description
Audit Ref: 10.5 With: Clause 8 of Schedule 10.6 From: 01-Jan-18 To: 15-Jan-19	Some installations not interrogated within the maximum interrogation cycle. Potential impact: High Actual impact: Medium Audit history: Once Controls: Moderate Breach risk rating: 4
Audit risk rating	Rationale for audit risk rating
Medium	I have recorded the controls as moderate because reporting is in place but there is room for improvement to ensure all AMI installations are successfully interrogated. The impact on settlement is considered moderate, because some traders will be required to estimate data. The impact on traders and customers is also moderate because some customers will be required to switch retailers if AMI data is not available. The audit risk rating is medium.

Actions taken to resolve the issue	Completion date	Remedial action status
<p>[We have noted, typically the meters not read within the interrogation cycle are cat 1 residential, irrigation, flood pumps, and holiday homes fully powered off prior to the meter preventing the successful remote read.</p> <p>NOT the TOU / HHR reconciled commercial metering to which perhaps the requirement was aimed]</p> <p>(actual impact with such scenario on reconciliation is logically low)</p>		Identified
Preventative actions taken to ensure no further issues will occur	Completion date	
<p>[We continue to educate customers not to isolate the electrical installation at the metering isolator]</p> <p>Additionally a 6 month project has been initiated already to reinforce the communications network in remote areas to ensure a back up communication path always exists]</p>	30/07/19	

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 uses Metrix as an agent for data collection. Information for this section has been obtained from the Metrix MEP audit completed by Veritek in July 2018.

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

Audit commentary

With regard to the security of raw meter data, I checked some data from 2013 to confirm it was available. All users have login and password to access working data and only certain IT experts can access raw data. There are no business processes that allow data to be edited. Event data is archived along with consumption data.

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 uses Metrix as an agent for data collection. I checked the clock synchronisation processes during the Metrix audit conducted in July 2018. I checked the time synchronisation report from 22nd November 2018 to check compliance.

Audit commentary

Time synchronisation occurs as follows: The clock setting is 10 seconds to 20 minutes. For errors over 20 minutes a user must manually set the time. This list is run weekly and sent to Silverspring for them to adjust the clock.

Metrix advises affected reconciliation participants of time error adjustments or any potential effect on raw meter data. Metrix monitors devices with multiple clock errors to ensure the meters are replaced.

This clause is slightly different to the clause in Part 15 for reconciliation participants. This clause requires MEPs to ensure the time is not outside the allowable thresholds, therefore non-compliance exists for those examples where time has drifted outside the allowable threshold. The 22/11/18 report contained 10 records from the previous week where clock errors were greater than 60 seconds (they were all NHH).

Audit outcome

Non-compliant

Non-compliance	Description	
Audit Ref: 10.7 With: Clause 8(4) of Schedule 10.6 From: 01-Jan-18 To: 15-Jan-19	10 examples of clock errors outside the allowable thresholds in the November 2018 report. Potential impact: Medium Actual impact: Low Audit history: None Controls: Strong Breach risk rating: 1	
Audit risk rating	Rationale for audit risk rating	
Low	I have recorded the controls as strong because clocks are synchronised during every successful interrogation. The impact is considered minor because most clock errors are small and are corrected within one half hour. The audit risk rating is low.	
Actions taken to resolve the issue	Completion date	Remedial action status
[Clock errors outside the threshold often pertain to newly installed meters - not yet synced initially]	N/A	Identified
Preventative actions taken to ensure no further issues will occur	Completion date	

[Any meters with ongoing time clock issues will be replaced]	Ongoing	
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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 uses Metrix as an agent for data collection. Information for this section has been obtained from the Metrix MEP audit completed by Veritek in July 2018.

I checked the interrogation logs and event logs to ensure the items above were managed in a compliant manner.

Audit commentary

The interrogation logs contain all of the information above.

Metrix downloads the event log as required by this clause. All critical events are evaluated and appropriate action is taken. Relevant events, including tampering, are sent to reconciliation participants. Metrix provided a table listing all events, which shows "required action". The list appears to be comprehensive and complete.

I examined the process for filtering and managing events and I confirm that this is complete and robust.

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

I used the findings from Metrix's audit report in relation to processes and I checked sumcheck failure reporting.

Audit commentary

Sumcheck occurs when each meter is interrogated. The sum of the intervals is compared to the register read (scalar read) for the same period. Sumcheck 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 sumcheck cannot be performed. In these cases, no read processes commence to resolve the issue. When interval data is received the sumcheck 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 sumcheck 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.

Recent reporting was provided, which confirmed there are no exceptions resulting from genuine failures of devices, systems or processes.

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

I checked whether correction of raw meter data occurs.

Audit commentary

Data correction of raw meter data does not occur, but an estimation capability has been implemented. The business rules are as follows:

Scalar reads:

1. **Scalar Derived from Interval:** This rule is applied when there is a missing scalar (register) read. It uses the available interval data to derive the register read.

2. **Scalar Proration:** This rule is applied when there is a missing scalar (register) read. It uses the scalar read before and after the missing value and prorates an estimated value.
3. **Scalar Estimation:** This rule is applied when there is a missing scalar (register) read, and no subsequent read. It uses the historical consumption at the site to provide an estimated value.

Interval data:

1. **Interval Adjustment from Scalar:** Estimates missing interval values based on the scalar usage for the same period, i.e. the missing interval reading values are estimated based on the scalar value for the end of that day.
2. **Interval Interpolation:** When values are missing Oracle estimates gaps of missing interval values based on linear interpolation i.e. it draws a straight line between the values before and after the gap and estimates consumption based on the values that the line represents.
3. **Interval Average Estimation:** Estimates missing interval values based on an average of the historical usage for that interval over time. i.e. it uses consumption history to estimate the missing values.
4. **Default Estimate:** Estimates are based on one of five different default values depending on customer type.

In situations where interval data has been estimated and actual data is subsequently delivered, the actual reads automatically replace the estimates and the “replacement” file is provided to retailers in the next processing run. Replacement files are provided for a 15 day period. After this period replacement files are not sent. All estimates are appropriately identified.

There is one issue to be resolved for this process to be fully compliant with the requirements of Clauses 15 and 19 of Schedule 15.2. The system doesn’t differentiate between “missing data” and “power outages”. Estimation occurs for periods where there are outages. The event files contain outage information, and this should be taken into account.

The estimation requirements of Part 15 are outside the scope of this audit because they are the responsibility of Retailers, which means the content of this section will need to be included in Retailers’ next Reconciliation Participant audit reports if these services are used.

Audit outcome

Not applicable

CONCLUSION

Twelve non-compliances are recorded. The main issues are as follows:

- two installations had been certified using the comparative recertification method with burden lower than the lowest test point of the current transformers, without a Class A ATH confirming that the transformers will not be adversely affected, certification has not been cancelled for these two installations
- expired metering installation certification
- meters not being interrogated within the maximum interrogation cycle.

PARTICIPANT RESPONSE

Counties Power continues to strive to improve processes and overall MEP compliance.

Noting we have recently experienced some constraints in the availability of appropriate Test House resources to carry out the required field activities in the region.