

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

For

**NORTHPOWER LTD**

Prepared by: Allan Borcoski

Date audit commenced: 20 July 2020

Date audit report completed: 16 August 2020

Audit report due date: 24-Aug-20

---

## TABLE OF CONTENTS

Executive summary .....	5
Audit summary .....	6
Non-compliances .....	6
1. Administrative.....	8
1.1. Exemptions from Obligations to Comply With Code (Section 11) .....	8
1.2. Structure of Organisation .....	8
1.3. Persons involved in this audit .....	8
1.4. Use of Agents (Clause 10.3) .....	9
1.5. Hardware and Software .....	9
1.6. Breaches or Breach Allegations .....	10
1.7. ICP Data .....	10
1.8. Authorisation Received .....	10
1.9. Scope of Audit .....	10
1.10. Summary of previous audit .....	11
2. Operational Infrastructure .....	12
2.1. MEP responsibility for services access interface (Clause 10.9(2)) .....	12
2.2. Dispute Resolution (Clause 10.50(1) to (3)) .....	12
2.3. MEP Identifier (Clause 7(1) of Schedule 10.6) .....	13
2.4. Communication Equipment Compatibility (Clause 40 Schedule 10.7) .....	13
2.5. Participants to Provide Accurate Information (Clause 11.2 and Clause 10.6) .....	14
3. Process for a Change of MEP .....	15
3.1. Change of metering equipment provider (Clause 10.22) .....	15
3.2. Registry Notification of Metering Records (Clause 2 of Schedule 11.4) .....	15
3.3. Provision of Metering Records to Gaining MEP (Clause 5 of Schedule 10.6) .....	16
3.4. Termination of MEP Responsibility (Clause 10.23) .....	17
4. Installation and Modification of Metering Installations .....	19
4.1. Design Reports for Metering Installations (Clause 2 of Schedule 10.7) .....	19
4.2. Contracting with ATH (Clause 9 of Schedule 10.6) .....	21
4.3. Metering Installation Design & Accuracy (Clause 4(1) of Schedule 10.7) .....	21
4.4. Subtractive Metering (Clause 4(2)(a) of Schedule 10.7) .....	23
4.5. HHR Metering (Clause 4(2)(b) of Schedule 10.7) .....	23
4.6. NSP Metering (Clause 4(3) of Schedule 10.7) .....	23
4.7. Responsibility for Metering Installations (Clause 10.26(10)) .....	24
4.8. Suitability of Metering Installations (Clause 4(4) of Schedule 10.7) .....	24
4.9. Installation & Modification of Metering Installations (Clauses 10.34(2), (2A) and (3)) .....	25
4.10. Changes to Registry Records (Clause 3 of Schedule 11.4) .....	26
4.11. Metering Infrastructure (Clause 10.39(1)) .....	28
4.12. Decommissioning of an ICP (Clause 10.23A) .....	29
4.13. Measuring Transformer Burden and Compensation Requirements (Clause 31(4) and (5) of Schedule 10.7) .....	30
4.14. Changes to Software ROM or Firmware (Clause 39(1) and 39(2) of Schedule 10.7) .....	30
4.15. Temporary Electrical Connection (Clauses 10.29A) .....	31
4.16. Temporary Electrical Connection (Clause 10.30A) .....	31
4.17. Temporary Electrical Connection (Clause 10.31A) .....	32
5. Metering Records .....	33

5.1.	Accurate and Complete Records (Clause 4(1)(a) and (b) of Schedule 10.6, and Table 1, Schedule 11.4) .....	33
5.2.	Inspection Reports (Clause 4(2) of Schedule 10.6) .....	35
5.3.	Retention of Metering Records (Clause 4(3) of Schedule 10.6) .....	35
5.4.	Provision of Records to ATH (Clause 6 Schedule 10.6) .....	36
6.	Maintenance of Registry Information .....	37
6.1.	MEP Response to Switch Notification (Clause 1(1) of Schedule 11.4) .....	37
6.2.	Provision of Registry Information (Clause 7 (1), (2) and (3) of Schedule 11.4) .....	37
6.3.	Correction of Errors in Registry (Clause 6 of Schedule 11.4) .....	41
6.4.	Cancellation of Certification (Clause 20 of Schedule 10.7) .....	42
6.5.	Registry Metering Records (Clause 11.8A) .....	44
7.	Certification of Metering Installations .....	45
7.1.	Certification and Maintenance (Clause 10.38 (a), clause 1 and clause 15 of Schedule 10.7) .....	45
7.2.	Certification Tests (Clause 10.38(b) and clause 9 of Schedule 10.6) .....	48
7.3.	Active and Reactive Capability (Clause 10.37(1) and 10.37(2)(a)) .....	48
7.4.	Local Service Metering (Clause 10.37(2)(b)) .....	49
7.5.	Measuring Transformer Burden (Clause 30(1) and 31(2) of Schedule 10.7) .....	49
7.6.	Certification as a Lower Category (Clauses 6(1)(b) and (d), and 6(2)(b) of Schedule 10.7) .....	51
7.7.	Insufficient Load for Certification Tests (Clauses 14(3) and (4) of Schedule 10.7) ..	52
7.8.	Insufficient Load for Certification – Cancellation of Certification (Clause 14(6) of Schedule 10.7) .....	53
7.9.	Alternative Certification Requirements (Clauses 32(2), (3) and (4) of Schedule 10.7) .....	53
7.10.	Timekeeping Requirements (Clause 23 of Schedule 10.7) .....	54
7.11.	Control Device Bridged Out (Clause 35 of Schedule 10.7) .....	54
7.12.	Control Device Reliability Requirements (Clause 34(5) of Schedule 10.7) .....	55
7.13.	Statistical Sampling (Clauses 16(1) and (5) of Schedule 10.7) .....	55
7.14.	Compensation Factors (Clause 24(3) of Schedule 10.7) .....	56
7.15.	Metering Installations Incorporating a Meter (Clause 26(1) of Schedule 10.7) .....	56
7.16.	Metering Installations Incorporating a Measuring Transformer (Clause 28(1) of Schedule 10.7) .....	58
7.17.	Metering Installations Incorporating a Data Storage Device (Clause 36(1) of Schedule 10.7) .....	60
7.18.	Notification of ATH Approval (Clause 7 (3) Schedule 10.3) .....	60
7.19.	Interim Certification (Clause 18 of Schedule 10.7) .....	60
8.	Inspection of metering installations .....	63
8.1.	Category 1 Inspections (Clause 45 of Schedule 10.7) .....	63
8.2.	Category 2 to 5 Inspections (Clause 46(1) of Schedule 10.7) .....	64
8.3.	Inspection Reports (Clause 44(5) of Schedule 10.7) .....	66
8.4.	Broken or removed seals (Clause 48(4) and (5) of Schedule 10.7) .....	66
9.	Process for Handling Faulty Metering Installations .....	67
9.1.	Investigation of Faulty Metering Installations (Clause 10.43(4) and (5)) .....	67
9.2.	Testing of Faulty Metering Installations (Clause 10.44) .....	67
9.3.	Statement of Situation (Clause 10.46(2)) .....	68
10.	Access to and Provision of Raw meter Data and Metering Installations .....	69
10.1.	Access to Raw Meter Data (Clause 1 of Schedule 10.6) .....	69
10.2.	Restrictions on Use of Raw Meter Data (Clause 2 of Schedule 10.6) .....	69
10.3.	Access to Metering Installations (Clause 3(1), (3) and (4) of Schedule 10.6) .....	70

10.4. Urgent Access to Metering Installations (Clause 3(5) of Schedule 10.6) .....	71
10.5. Electronic Interrogation of Metering Installations (Clause 8(2), 8(3), 8(5) and 8(6) of Schedule 10.6) .....	71
10.6. Security of Metering Data (Clause 10.15(2)) .....	72
10.7. Time Errors for Metering Installations (Clause 8(4) of Schedule 10.6) .....	72
10.8. Event Logs (Clause 8(7) of Schedule 10.6).....	73
10.9. Comparison of HHR Data with Register Data (Clause 8(9) of Schedule 10.6) .....	73
10.10. Correction of Raw Meter Data (Clause 10.48(2),(3)).....	74
Conclusion .....	75
Participant response.....	75

## EXECUTIVE SUMMARY

This participant audit was performed at the request of Northpower to encompass the Authority's request for an audit, as required by clause 10.20, of Part 10, of the Electricity Industry Participation Code 2010.

The relevant clauses were audited as required by the Guidelines for Metering Equipment Provider v.2.0 Issued by the Electricity Authority.

The number of ICPs Northpower MEP was responsible for reduced to 7454 during the audit period, a reduction of 1092. This is a reflection of the number of metering installations recertified during the audit period due to the Northpower MEP metering installation recertification programme.

The main issues identified during this audit period were relating to:

- metering installation certification expiry
- metering installation inspections not completed
- missing information from metering installation designs and certificates

The increased resources and enhanced processes put in place during the audit period appeared to be initially delivering improved recertification results, until a surge of over 900 metering certifications that expired in early 2020 put the programme behind schedule.

Northpower comment that appropriate technical field resources are in short supply in the region particularly for category 2 and above work. This situation appears to have also impacted on the category 2 plus metering inspection programme with few programmed inspections being completed during the audit period resulting in a number of metering installation certifications being cancelled.

It was noted that the metering installation commissioning and certification reports from the field were missing key information. It is suggested that Northpower MEP put agreements in place with both Approved Test Houses (ATHs) and metering installation contractors that specify the MEP expectations including code requirements. It is also suggested that a set of MEP guidelines be developed to support training and reinforcement of MEP requirements.

Based on Table 1 of the Guidelines for Reconciliation Participant audit, the next audit should happen within the next 12months.

Our recommendation is to conduct the next audit in 12 months.

We thank Northpower's staff for their full and complete cooperation in this audit.

The Audit period was 2 July 2019 to 1 July 2020

## AUDIT SUMMARY

### NON-COMPLIANCES

Subject	Section	Clause	Non Compliance	Controls	Audit Risk Rating	Breach Risk Rating	Remedial Action
Design Reports for Metering Installations	4.1	Clause 2 of Schedule 10.7	Incomplete Detail in the Metering Installation Design Reports	Moderate	Low	2	Identified
Metering Installation Design & Accuracy	4.3	Clause 4(1) of Schedule 10.7	Incomplete detail in Metering Installation Certificate – missing meter certificate numbers	Moderate	Low	2	Identified
Changes to Registry Records	4.10	Clause 3 of Schedule 11.4	8.2 % of update entries to the registry are later than 10 business days	Strong	Low	1	Identified
Certification of installations	7.1	Clause 10.38 (a), clause 1 and clause 15 of Schedule 10.7	Certification Expired for 1365 metering installations during the audit period	Moderate	Medium	4	Identified
Metering Installations Incorporating a Meter	7.15	Clause 26(1) of Schedule 10.7	Certification Expired for 1368 category 1 meters and 32 category 2 meters during the audit period.	Weak	Low	3	Identified
Metering Installations	7.16	Clause 28(1) of		Weak	Low	3	Identified

Incorporating a Measuring Transformer		Schedule 10.7					
Interim certification	7.19	Clause 18 of Schedule 10.7	170 active interim certified metering installations during the audit period	Moderate	Low	2	Identified
Category 2 to 5 Inspections	8.2	Clause 46(1) of Schedule 10.7	32 x category 2 and 1 x category 3 metering installations were not inspected when due during the audit period. Their certifications were cancelled	Moderate	Low	2	Identified
Future Risk Rating						19	

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

## 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.

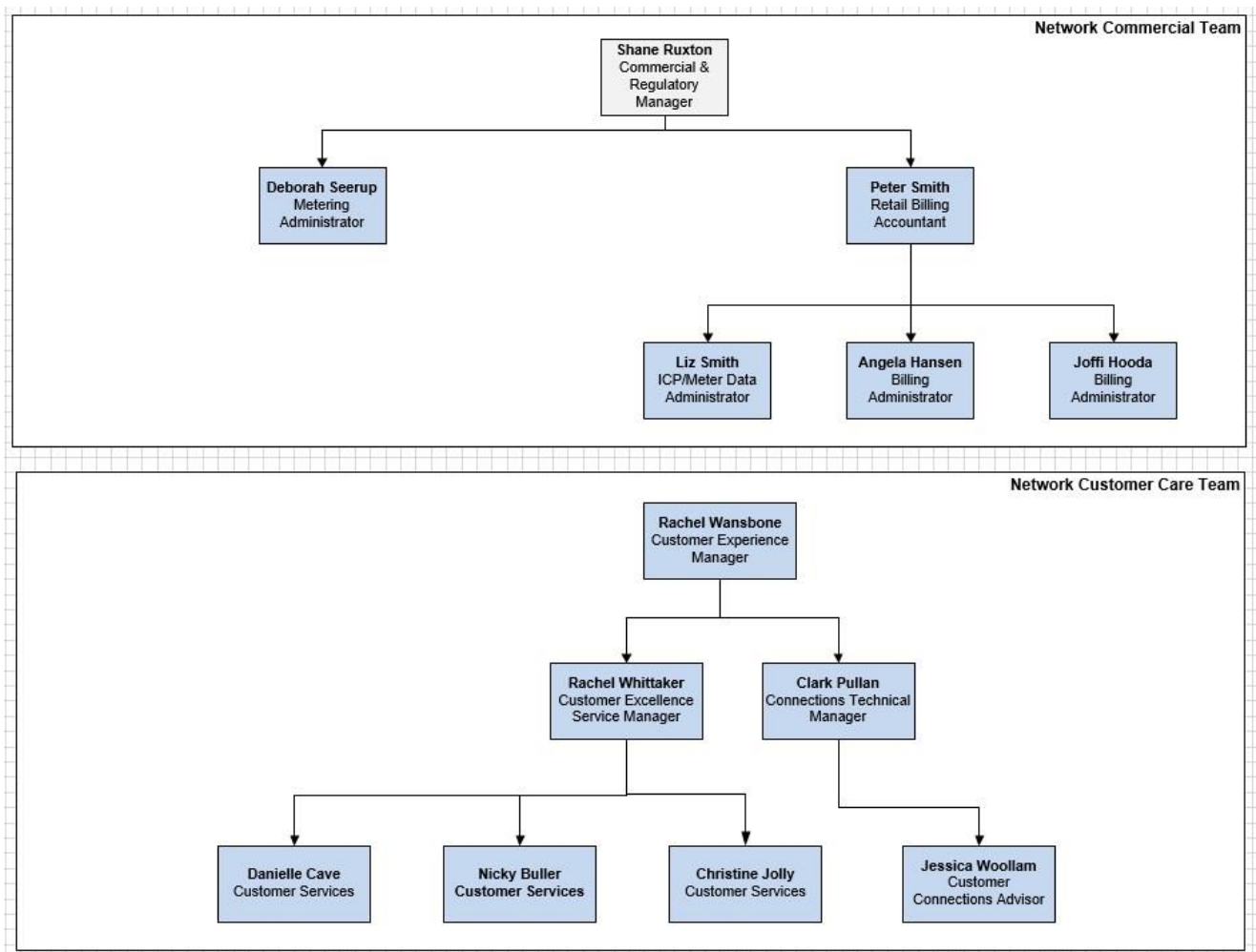
#### Audit observation

The Electricity Authority (E.A.) website was checked for exemptions from Obligations to comply with the code and the clause was discussed with Northpower MEP staff.

#### Audit commentary

Northpower did not apply for any exemptions during the audit period and there are no Exemptions relevant to the scope of this audit noted on the E.A. website.

### 1.2. Structure of Organisation



### 1.3. Persons involved in this audit



Name	Title	Company
Peter Smith	Retail Billing Accountant	NorthPower
Liz Smith	ICP/Meter Data Administrator	NorthPower
Shane Ruxton	Commercial & Regulatory Manager	NorthPower
Allan Borcoski	Electricity Authority Approved Auditor	Borcoski Energy Services Ltd

#### 1.4. Use of Agents (Clause 10.3)

##### Code reference

Clause 10.3

##### Code related audit information

*A participant who uses a contractor*

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

##### Audit observation

This clause was discussed with Northpower MEP staff.

##### Audit commentary

All functions covered by this audit are performed by Northpower MEP staff.

Northpower does not use agents for any of the functions covered by this audit.

#### 1.5. Hardware and Software

Software Application	Purpose/Use
Gentrack Velocity	<ul style="list-style-type: none"> <li>• Key database to support EIPC compliance</li> <li>• ICP creation and management</li> <li>• Automated Registry interface (all updates to the registry and notifications from the registry)</li> <li>• MEP functionality including meter management and billing</li> <li>• Line Charge Billing</li> </ul>
Salesforce	<ul style="list-style-type: none"> <li>• CRM platform to support customer experience and service</li> <li>• Manages customer contact</li> <li>• Workflow of new network connection applications and alterations to existing connections</li> </ul>

	<ul style="list-style-type: none"> <li>Interface between retailers, customers and warranted service contractors for the above tasks.</li> <li>Workflow management tool for the MEP recertification programme</li> </ul>
MS Access	<ul style="list-style-type: none"> <li>Registry exception reporting</li> <li>Exception and discrepancy reporting from other Northpower information systems</li> </ul>

## 1.6. Breaches or Breach Allegations

The Electricity Authority (E.A.) website was checked for breaches or breach allegations with the code during the audit period and this was also discussed with Northpower MEP staff.

There were no breaches or alleged breaches during this audit period.

It was noted there was breach activity in June 2019 relating to Category 2 inspections and installation certification expiry.

## 1.7. ICP Data

<b>Metering Category</b>	<b>Number of ICPs (14 Jul 20)</b>	<b>Number of ICPs (2 July 19)</b>	<b>Number of ICPs (16 Jan 19)</b>
1	7300	8,352	8,783
2	130	165	166
3	11	22	22
4	1	1	1
5	6	6	6

## 1.8. Authorisation Received

A letter of authorisation was received from Northpower for the purposes of gathering information for this audit

## 1.9. Scope of Audit

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

The audit was carried out on the Northpower premises at 28 Mount Pleasant Road, in Whangarei, on 22-23 July 2020.

The audit covered the following functions:

- Process for changing a MEP

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

Northpower adopted the four-letter code of NPOW for a participant as a MEP. Northpower is both a Distributor and MEP under the Code with the participant code NPOW being used for both functions.

#### 1.10. Summary of previous audit

The previous audit was conducted in July 2019 by Ewa Glowacka of TEG & Associates Ltd. The table below shows non-compliances identified during this audit:

Subject	Section	Clause	Non-Compliance	Comments
Changes to registry records	4.10	3 of Schedule 11.4	4.3% of updated entries in the registry are uploaded later than 10BD	Still exists
Certification of installations	7.1	10.38(a)	Certification expired for 961 installations	Still exists
Interim certification	7.19	10 of Schedule 10.7	404 ICPs (status "active") and 147 ICPs (status "inactive") with expired interim certification	Still exists

## 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

This was discussed with Northpower MEP Staff.

Northpower MEP provide MEP Services for metering installation categories 1 to 5.

#### Audit commentary

The services access interface for all Northpower MEP meters is at the meter.

Traders are given access to the meters to enable meter readings to be collected.

Category 1 and most category 2 meters are manually read by third party meter reading companies engaged by Traders.

Category 3, 4, and 5 metering installations and category 2 ICPs with TOU meters are read remotely by third party data collection companies engaged by Traders.

At some ICPs for which Northpower is the MEP and TOU meters are installed, Northpower MEP may remotely read the meters using MV90. The HHR data is only used for Northpower's internal purposes such as monitoring the end to end data communications to identify any potential problems and facilitate repairs if Traders report any issues. This functionality allows prompt, appropriate remedial action to be taken.

#### 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

This was discussed with Northpower MEP Staff.

#### Audit commentary

Northpower is both a distributor and MEP. If the need arises the process used by Northpower as a distributor is used for MEP related disputes.

There have not been any significant disputes during this audit period that required the disputes resolution process to be used.

#### **Audit outcome**

Compliant

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

#### **Code reference**

*Clause 7(1) of Schedule 10.6*

#### **Code related audit information**

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

#### **Audit observation**

The registry LIS file dated 14/07/20 was examined and this was also discussed with Northpower MEP staff.

#### **Audit commentary**

It was confirmed the 4 letter code NPOW was used exclusively as the participant identifier for ICPs using Northpower MEP services.

#### **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**

Several TOU certification documents were checked and this was also discussed with Northpower MEP staff.

#### **Audit commentary**

Communications equipment is tested at installation and certification by the Approved Test House (ATH), compatibility of the PSTN or GSM modems is confirmed as part of the testing.

During the audit period there have been no communications equipment compatibility issues brought to the attention of Northpower MEP.

#### **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 LIS and EDA files dated 14 July 2020 along with process documents were checked, this was also discussed with Northpower staff.

### Audit commentary

Northpower MEP run exception reporting daily including checking the Registry Ack files to identify errors. For example metering data sent to the Registry due to a Gentrack “feature” that sends data that it believes has not been previously sent from prior to part 10 go live is identified and corrected.

Northpower MEP also reverses a significant number of metering information entries made to the Registry when it displaces its own metering equipment and installs another MEPs metering equipment to facilitate a switch to that new MEP. This is a daily process in order to maintain accurate information. This outlined more fully in **section 4.10**.

Considerable effort appears to be made by Northpower MEP Staff to maintain Registry information as accurate as possible.

### Audit outcome

Compliant

### 3. PROCESS FOR A CHANGE OF MEP

#### 3.1. Change of metering equipment provider (Clause 10.22)

##### Code reference

Clause 10.22

##### Code related audit information

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

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

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

##### Audit observation

The code requirement was discussed with Northpower MEP Staff.

##### Audit commentary

Northpower's policy is to be the MEP only for metering installations with Northpower owned metering assets installed.

Northpower stated that they have not exercised this clause during this audit period.

Northpower have however signalled that in future they may instigate a proportional cost based charge where metering has been recently recertified or replaced and is subsequently displaced by another MEP.

##### Audit outcome

Compliant

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

##### Code reference

Clause 2 of Schedule 11.4

##### Code related audit information

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

##### Audit observation

The EDA and PR255 reports dated 14 July 2020 were checked. In addition this was discussed with Northpower MEP staff and correspondence between Northpower MEP and the retailers involved viewed.

##### Audit commentary

Two MEP nominations were received by Northpower MEP during the audit period, both were unintended.

ICP	Event Date	Registry Input Date	Reason
0000516098NRD53	27/05/19	26/08/19	<p>Northpower legacy meter installed 10/2/2015 by a Northpower inspector at an ICP that had previously been "long-term disconnected". The ICP was certified but left disconnected for further work to be completed.</p> <p>Site visits in mid-2017 confirmed the ICP was still disconnected and the fuse tails were removed to stop unauthorised reconnection.</p> <p>A reconnection site visit in march 2019 was not completed as further work was required at the ICP and all meter seals were found to be broken.</p> <p>Finally on 27/5/2019 the ICP was inspected, the metering installation was recertified, and the ICP was livened using the existing metering that was installed on 10/2/2015.</p> <p>August 2019 correspondence with the retailer confirmed they wanted the MEP nomination to be effective from the 27/5/2019 ICP livening date not the 10/2/2015 meter installation date.</p> <p>August 2020, as a result of the MEP audit, the certification details in the Registry were corrected to show the 27/5/2019 certification details instead of the original 10/2/2015 certification details.</p>
0000554347NR419	04/01/20	02/03/20	<p>Temporary Supply installed for the customer as part of emergency works by a Network warranted contractor to get power on post fire event. This contractor was not requested to install metering or re-liven the ICP by Northpower MEP, however as a Northpower owned legacy meter was installed Northpower was forced to accept the MEP nomination due to the circumstances.</p>

0000554347NR419 required the original metering information (prior to fire event) to be reinstated in the registry to allow the retailer Electric Kiwi to switch the ICP to Pulse as Electric Kiwi could not utilise the NHH metering installed.

Northpower MEP Staff appear to have taken all practicable steps to deal with these unintended MEP nominations once they were aware of them.

It is suggested that Northpower put in place measures to ensure metering equipment cannot be installed without Northpower MEP permission to avoid this situation in future.

### Audit outcome

Compliant

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

#### Code reference

*Clause 5 of Schedule 10.6*



### Code related audit information

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

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

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

### Audit observation

The EDA and PR255 reports dated 14 July 2020 were checked. In addition this was discussed with Northpower MEP staff.

### Audit commentary

Northpower metering equipment is currently being displaced with Smart metering equipment from other MEPs. This is being managed by prearrangement with the new MEP, with metering information provided to the new MEP at meter change.

No MEPs have requested metering records from Northpower MEP during this audit period.

### 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

The code requirement was discussed with Northpower MEP Staff. The metering data and information systems used by Northpower MEP were examined.

#### **Audit commentary**

Northpower MEP uses Gentrack as its primary system for recording metering data and information, it is also the interface to the registry. Gentrack is supported by an electronic document management system and reporting tools.

Metering data and information has been kept since the beginning of the MEP function and a full metering history for the ICP is retained. When a new MEP takes over the ICP, Northpower load the current meter on site into Gentrack for Network billing purposes.

There are currently no plans to purge any non-required historical data.

#### **Audit outcome**

Compliant

## 4. INSTALLATION AND MODIFICATION OF METERING INSTALLATIONS

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

#### Code reference

Clause 2 of Schedule 10.7

#### Code related audit information

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

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

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

#### Audit observation

The metering installation designs available on the Northpower website were examined. The code requirement was discussed with Northpower MEP Staff.

#### Audit commentary

The installation designs available on the Northpower website are for category 1 metering only. The designs comprise of basic schematic drawings showing metering device terminations and wiring connections. Northpower has a class B Approved Test House (ATH) however there is no reference to this evident on the designs. The designs appear to be missing or reference to other required details such as; the maximum interrogation cycle and the method of certification.

Fifteen metering installation commissioning reports/certificates were examined and the following anomalies were found:

Interrogation cycle	Design Report No	Incomplete certification tests	Electrical safety tests	EAC No
None x 6	None x 12 Incorrect x 3	None x 5 Incomplete x 7	Incomplete x 10	None x 4

It is suggested the design reports are reviewed and brought up to date with current code requirements and good industry practice.

#### Audit outcome

Non-compliant

## NON-COMPLIANCE

Non-compliance	Description		
<p>Audit Ref: 4.1</p> <p>With: <i>Clause 2 of Schedule 10.7</i></p> <p>From: 02-Jul-19</p> <p>To: 01-Jul-20</p>	<p>Incomplete Detail in the Metering Installation Design Reports</p> <p>Potential impact: Low</p> <p>Actual impact: Low</p> <p>Audit history: None</p> <p>Controls: Moderate</p> <p>Breach risk rating: 2</p>		
Audit risk rating	Rationale for audit risk rating		
<b>Low</b>	<p>Controls are rated as moderate because basic design information is in place however there are improvements that can be made to bring the designs into line with current code requirements. A relatively small number of ICPs are affected by this non-compliance. There was no impact on settlement. The audit risk rating is recorded as low.</p>		
Actions taken to resolve the issue		Completion date	Remedial action status
<p>Northpower MEP does not install new metering or modify existing metering, and as such changes are limited to like-for-like replacements for compliance purposes. The meter installation designs available on the Northpower web site are to support sub-contractors completing category 1 metering installation re-certification using Northpower legacy meters for Northpower MEP only. Category 3 and above HV sites are re-certified by AccuCal under their test house.</p> <p>The field contractors will be reminded of the requirement to fully and properly complete the meter installation reports when they carry out recertification of any metering installations at an ICP.</p>			Identified
Preventative actions taken to ensure no further issues will occur		Completion date	
<p>Northpower MEP will monitor all meter installation reports returned by field contractors for completeness. Any reports found to be incomplete will be returned to the contractor so that all applicable tests and information required is correctly recorded on the report.</p>			

## 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

The Registry was checked and this was also discussed with the Northpower MEP staff.

### Audit commentary

Northpower MEP uses the following ATHs:

Approved Test house	Metering Installation Category	Approved Certification Scope
Northpower (class B)	<ul style="list-style-type: none"><li>Cat 1</li><li>Cat 2</li><li>Cat 3 LV</li></ul>	Y
AccuCal (class A)	<ul style="list-style-type: none"><li>Cat 3 HV</li><li>Cat 4 HV</li><li>Cat 5 HV</li></ul>	Y

### 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

Fifteen category 1, two category 2 and one category 3 metering installation commissioning reports/certificates were examined and this was also discussed with the Northpower MEP staff.

### Audit commentary

Northpower MEP uses its own class B ATH to certify category 1 meters, install the meters and produce metering installation commissioning reports/certificates. The selective component

method is used to certify category 1, 2 and 3 LV metering installations. AccuCal is used to certify category 3 HV and above metering installations.

Four category 1 meter installations sampled had no meter certification numbers listed on the metering installation commissioning reports/certificates (27%). As the selective component method is used to certify category 1 metering installations, Northpower MEP would find it difficult to confirm the metering installation does not exceed the maximum permitted error for the installation.

It is suggested Northpower MEP reinforces the code requirements for certifying metering installations with its metering contractors. In addition where there are gaps in the information supplied by metering installers take every practicable step to obtain the correct information. For example access the meter test records from the Northpower ATH.

#### Audit outcome

Non-compliant

### NON-COMPLIANCE

Non-compliance	Description		
Audit Ref: 4.3 With: <i>Clause 4(1) of Schedule 10.7</i>  From: 02-Jul-19 To: 01-Jul-20	Incomplete detail in Metering Installation Certificate – missing meter certificate numbers Potential impact: Low Actual impact: Low Audit history: None Controls: Moderate Breach risk rating: 2		
Audit risk rating	Rationale for audit risk rating		
<b>Low</b>	Controls are assessed as moderate because a process is in place is in place however it appears it is not being followed. Simple improvements can be made to the process to enable code requirement to be achieved. A relatively small number of ICPs are affected by this non-compliance. There was no impact on settlement. The audit risk rating is recorded as low.		
Actions taken to resolve the issue		Completion date	Remedial action status
The ATH field contractors will be reminded of the requirement to fully and properly complete the meter installation reports when they carry out recertification of any metering installations at an ICP.			Identified
Preventative actions taken to ensure no further issues will occur		Completion date	

Northpower MEP will monitor all meter installation reports returned by the field contractors for completeness. Any reports found to be incomplete will be returned to the contractor so that all applicable tests and information required is correctly recorded on the report.		
---	--	--

#### 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

This was discussed with Northpower MEP staff.

##### Audit commentary

Northpower MEP staff stated that they have no metering installations that they are responsible for that use subtraction to determine submission information.

##### Audit outcome

Compliant

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

##### Code reference

*Clause 4(2)(b) of Schedule 10.7*

##### Code related audit information

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

##### Audit observation

The registry LIS file dated 14/07/20 was examined and this was also discussed with Northpower MEP staff.

##### Audit commentary

The LIS file confirmed that all eighteen category 3, 4 and 5 metering installations have half hour metering installed.

##### Audit outcome

Compliant

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

##### Code reference

Clause 4(3) of Schedule 10.7

#### Code related audit information

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

#### Audit observation

This was discussed with Northpower MEP staff.

#### Audit commentary

Northpower MEP is not responsible for any NSP metering installations. There are no future plans to provide MEP services for such installations.

This clause is not applicable. Compliance was not assessed

#### Audit outcome

Not applicable

### 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

This was discussed with Northpower MEP staff.

#### Audit commentary

Northpower MEP is not responsible for any metering installation for a point of connection to the grid. There are no future plans to provide MEP services for such installations.

This clause is not applicable. Compliance was not assessed

#### Audit outcome

Not applicable

### 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

This was discussed with Northpower MEP staff, and relevant Network Connection documentation available on The Northpower website examined.

#### Audit commentary



Electricity connections to the Northpower network and related metering installations are controlled by a number of network standards and supporting documents such as:

- Electricity Network Standard: 05.01.010 L.V Service connections
- Electricity Network Standard: 5.2.16 Conditions for Contractors Constructing Services
- Electricity Network Standard: 05.02.036 Supply Options for Low Voltage Customers
- Meter Wiring Diagrams
- EEA Metering Safety Good Practice Guide

Metering information is found embedded within the above Northpower network standards and supporting documents.

Northpower also has its own Class B ATH to certify metering equipment and metering installations using appropriately qualified and competent installers including electrical inspectors. New connections to the network are inspected by an electrical inspector.

Northpower MEP staff state that they are not aware of any metering installations that may be inappropriate with regard to the physical and electrical characteristics of the POC.

#### **Audit outcome**

Compliant

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

##### **Code reference**

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

##### **Code related audit information**

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

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

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

##### **Audit observation**

This was discussed with Northpower MEP staff, and relevant Network Connection documentation available on The Northpower website examined.

##### **Audit commentary**

Metering information is found on the Northpower website embedded within Northpower network requirements, standards and supporting documents such as:

- Electricity Network Standard: 05.01.010 L.V Service connections
- Electricity Network Standard: 5.2.16 Conditions for Contractors Constructing Services
- Electricity Network Standard: 05.02.036 Supply Options for Low Voltage Customers
- Meter Wiring Diagrams
- EEA Metering Safety Good Practice Guide

By default metering designs meet network requirements.

Northpower MEP staff stated that Trader requirements are agreed by verbal agreement.

## Audit outcome

Compliant

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

#### Code reference

*Clause 3 of Schedule 11.4*

#### Code related audit information

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

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

#### Audit observation

The EDA file dated 14 July 2020 was checked, this was also discussed with Northpower staff.

#### Audit commentary

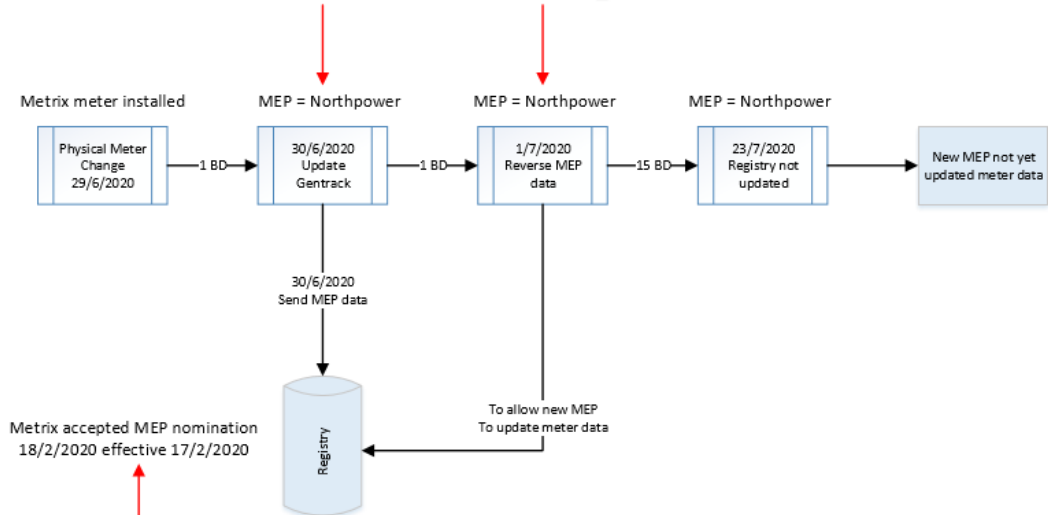
Total Registry Transactions	Active	Replaced	Reversed	Active transactions greater than 10 business days
1261	508	20	733	42 (8.2%)

Where Northpower MEP metering requires maintenance or replacement (due to recertification for example), Northpower MEP will generally seek to have the metering displaced by another MEP in the first instance.

Northpower maintains other MEP owned metering information in Gentrack to facilitate Network billing. The way Northpower's Gentrack is configured creates the need for Northpower MEP to perform a large number of reversals in the registry. As Northpower is still recorded as the MEP in the registry during the meter change process, Gentrack updates the Registry with the meter removal and install events. The removal event the day prior to the meter change and install event on the date of the new metering installation. Northpower MEP demonstrates that it is updating the registry within the ten business days.

To enable the new MEP to update meter data into the registry to become the new MEP, the Northpower metering entries must be reversed to allow the new MEP to upload their metering information. It is a well-controlled process, run every day. Unfortunately it appears that the new MEP does not always update the registry with the new metering information within the 10 business day window. An example timeline is shown below.

ICP Number	0000549941NRD5D	Event Type	Metering	<input checked="" type="checkbox"/> Reversed	<input type="checkbox"/> Replaced	<input checked="" type="checkbox"/> Show csv	<input type="checkbox"/> Sort by Input Date/Time	<a href="#">Download csv</a>				
Event Type	Effective Date	Input Date	Time	Audit	Input By	User	Mode	State	Rev/Repl. Date	Audit	Participant User	Mode
Metering	29/06/2020	30/06/2020	19:30:07	MET-21021608	NPOW	NPOW	File	Reversed	01/07/2020 11:08:34	MET-21022810	NPOW	NPOW File
Metering	19/08/2013	20/08/2013	18:17:44	MET-10800176	NPOW	NPOW	File	Reversed	22/08/2013 11:01:24	MET-12096419	NPOW	NPOW File
Metering	17/08/2013	23/08/2013	14:59:03	MET-12617538	NPOW	NPOW	File	Active				
Metering	04/10/2002	29/05/2003	15:07:16	MET-5654037	CTCT	CALDJ	Web	Active				



ICP Number	0000549941NRD5D	Event Type	MN	<input checked="" type="checkbox"/> Reversed	<input type="checkbox"/> Replaced	<input checked="" type="checkbox"/> Show csv		
Event Type	Effective Date	Input Date	Time	Audit	Input By	User	Mode	State
MN	17/02/2020	18/02/2020	11:54:42	MN-6562255	MTRX	MTRX	File	Active
MN	04/10/2002	17/08/2013	19:54:09	MN-2281497	NPOW	EMCO0001	Web	Active

## Audit outcome

Non-compliant

## NON-COMPLIANCE

Non-compliance	Description
<p>Audit Ref: 4.10</p> <p>With: <i>Clause 3 of Schedule 11.4</i></p> <p>From: 02-Jul-19</p> <p>To: 01-Jul-20</p>	<p>8.2 % of update entries to the registry are later than 10 business days</p> <p>Potential impact: Low</p> <p>Actual impact: Low</p> <p>Audit history: None</p> <p>Controls: Strong</p> <p>Breach risk rating: 1</p>
Audit risk rating	Rationale for audit risk rating
<b>Low</b>	Controls are assessed as strong because considerable effort is made to overcome shortcomings in the Northpower meter displacement process and transfer to other MEPs. The audit risk rating is recorded as low as there is negligible impact on settlement outcomes.

Actions taken to resolve the issue	Completion date	Remedial action status
Often the reason for the late Registry update is due to a third party contractor not providing the inspection and certification reports in a timely manner to allow the Registry metering data to be updated within the 10 business day Code requirement. We will reinforce our requirements to our contractors, but with a severe shortage of adequately qualified personnel available in the market to complete metering related work, it is a challenge to enforce this deadline whilst retaining resources.		Identified
Preventative actions taken to ensure no further issues will occur	Completion date	
<p>Wherever possible Northpower MEP is endeavouring to update the Registry within the timeframe required by the Code. The contractors used by the Test House for meter certification activities do not always provide the information to Northpower MEP in a timely manner to enable Code updates within the required timeframe.</p> <p>Northpower MEP will remind all metering contractors used by the Test House of the timeframe requirements under their agreements with us, and provide context that this is necessary to ensure that Northpower MEP can comply with its Code obligations.</p>		

#### 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

Fifteen category 1, two category 2, one category 3 metering installation commissioning reports/certificates and relevant Network Connection documentation including metering designs available on the Northpower website were examined and this was also discussed with the Northpower MEP staff

##### Audit commentary

Northpower MEP currently installs only Category 1 NHH non AMI metering installations.

Where Northpower MEP metering requires maintenance or replacement (due to recertification for example), Northpower will displace its own meter and install another MEP's meter equipment in its place where possible.

Northpower MEP metering infrastructure such as current transformers and communications equipment were tested at installation and certification by the ATH, compatibility of PSTN or GSM modems were confirmed as part of the commissioning and certification testing. New installations are no longer being installed, and re-certification is carried out by AccuCal for Cat3 HV and above.

Northpower MEP staff stated that during the audit period there were no metering infrastructure compatibility or integration issues brought to their attention.

#### **Audit outcome**

Compliant

### **4.12. Decommissioning of an ICP (Clause 10.23A)**

#### **Code reference**

*Clause 10.23A*

#### **Code related audit information**

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

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

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

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

#### **Audit observation**

The decommissioning process was reviewed along with the registry for ten ICPs decommissioned, and this was discussed with the Northpower MEP staff.

#### **Audit commentary**

Twenty six ICPs were decommissioned by Northpower MEP during the audit period.

A customer or Trader may request an ICP to be decommissioned however it is noted that the Northpower website directs customers to their retailer. The retailer arranges for a warranted person to permanently disconnect the ICP. Metering removal is by a Northpower subcontractor where requested by the retailer. Final meter readings will be obtained by the subcontractor and passed on to the retailer.

#### **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

The approach to managing measuring transformer burden and compensation requirements was discussed with Northpower MEP staff.

##### Audit commentary

Metering Category	Number of CT Installations (14 Jul 20)	Number of CT Installations (2 July 19)	Number of CT Installations (16 Jan 19)
2	130	165	166
3	11	22	22
4	1	1	1
5	6	6	6
<b>Total</b>	<b>147</b>	<b>194</b>	<b>195</b>

Certification work on Northpower MEP Cat 3 HV and above CT metering installations is carried out by AccuCal.

Northpower MEP has one metering installation (ICP 0000549009NR4E5) it is responsible for that has burdening resistors fitted, to remedy a voltage transformer (VT) that has errors outside its accuracy class.

Northpower MEP staff state that there were no changes to burden or compensation factors during this 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**

The approach to managing changes to software, ROM or firmware was discussed with Northpower MEP staff.

#### **Audit commentary**

The metering equipment used by Northpower MEP for HHR metering installations uses data storage devices integrated with the meters. AccuCal certifies HHR metering installations for Cat3 HV and above.

Northpower MEP staff state that HHR meters are never reprogrammed in-situ. For example if a PSTN modem is replaced with a GSM modem the meter will be replaced by a meter programmed and tested to operate with a GSM modem. The metering installation will then be recertified by an ATH.

#### **Audit outcome**

Compliant

### **4.15. Temporary Electrical Connection (Clauses 10.29A)**

#### **Code reference**

*Clause 10.29A*

#### **Code related audit information**

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

#### **Audit observation**

Northpower MEP does not provide MEP services to grid owners.

#### **Audit commentary**

This clause is not applicable. Compliance was not assessed

#### **Audit outcome**

Compliant

### **4.16. Temporary Electrical Connection (Clause 10.30A)**

#### **Code reference**

*Clause 10.30A*

#### **Code related audit information**

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

#### **Audit observation**

Northpower MEP does not provide MEP services to NSPs

#### **Audit commentary**

This clause is not applicable. Compliance was not assessed

#### **Audit outcome**

Compliant

### **4.17. Temporary Electrical Connection (Clause 10.31A)**

#### **Code reference**

*Clause 10.31A*

#### **Code related audit information**

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

#### **Audit observation**

This was discussed with Northpower MEP staff, and relevant Network Connection documentation available on The Northpower website examined.

#### **Audit commentary**

The electrical connection of any installation on the Northpower network is always completed by contractors approved to work on their network.

During this audit period Northpower MEP did not request Northpower as a distributor to temporarily electrically connect an ICP.

#### **Audit outcome**

Compliant



## 5. METERING RECORDS

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

#### Code reference

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

#### Code related audit information

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

- 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

The metering data and information systems used by Northpower MEP were examined. This was also discussed with Northpower MEP staff

#### Audit commentary

	Metering Installation Attribute	Primary Record Storage	Comment
a	The certification expiry date of each metering component in the metering installation	Gentrack	Copies of equipment test reports and certificates held in Northpower ATH files.  Accessible by Northpower MEP.
b	All equipment used in relation to the metering installation, including serial numbers and details of the equipment's manufacturer	Gentrack	Field commissioning and certification reports held in Northpower document management system.
c	The manufacturer's or (if different) most recent test certificate for each	Northpower ATH files	Accessible by Northpower MEP.

	metering component in the metering installation		
d	The metering installation category and any metering installations certified at a lower category	Gentrack	Northpower MEP is responsible for one Metering installation ICP 0000523418NR214
e	All certification reports and calibration reports showing dates tested, tests carried out, and test results for all metering components in the metering installation	Northpower ATH files	Accessible by Northpower MEP.
f	The contractor who installed each metering component in the metering installation	Northpower document management system	Included in scanned copies of field commissioning and certification reports
g	The certification sticker, or equivalent details, for each metering component that is certified under Schedule 10.8 in the metering installation	Gentrack	<ul style="list-style-type: none"> <li>• Holds certification sticker numbers and asset/serial number</li> <li>• Other detail is included in scanned copies of field commissioning and certification reports held in Northpower document management system.</li> </ul>
h	Any variations or use of the 'alternate certification' process	Nil	This is not used by Northpower MEP
i	Seal identification information	Northpower ATH files	
J	Any applicable compensation factors	Gentrack	Other detail is included in scanned copies of field commissioning and certification reports held in Northpower document management system.
k	The owner of each metering component within the metering installation	Gentrack	
l	Any applications installed within each metering component	Northpower ATH files	HHR metering applications and programmes held in Northpower ATH systems
m	The signed inspection report confirming that the metering installation complies with the requirements of Part 10	Northpower document management system	Included in scanned copies of field commissioning and certification reports

Northpower MEP also maintain copies of all metering job related information and communications such as job sheets, emails, site photos, new connection application forms, ICP permanent disconnection/decommissioning application forms, trader job requests( disconnect/reconnect), site visit reports and metering inspection reports.

#### **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**

This was discussed with Northpower MEP staff

#### **Audit commentary**

Northpower MEP staff stated that during this audit period there were no requests for inspection reports made.

If a participant were to request an inspection report, a copy of a relevant field report prepared and signed by a Northpower technician would be provided.

#### **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**

The metering data and information systems used by Northpower MEP were examined. This was also discussed with Northpower MEP staff

#### **Audit commentary**

Northpower MEP uses Gentrack as its primary system for recording metering data and information, it is also the interface to the registry. Gentrack is supported by an electronic document management system and reporting tools.

Metering data and information has been kept since the introduction of the MEP function and a full metering history including scanned paper field reports for the ICP is retained. When a new

MEP takes over the ICP, Northpower MEP loads the new MEP's metering information into Gentrack for Network billing purposes.

Northpower MEP staff confirm there are currently no plans to purge any non-required historical metering data.

#### 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

The metering data and information systems used by Northpower MEP were examined. This was also discussed with Northpower MEP staff

#### Audit commentary

Northpower MEP uses the following ATHs:

Approved Test house	Metering Installation Category
Northpower (class B)	<ul style="list-style-type: none"><li>• Cat 1</li><li>• Cat 2</li><li>• Cat 3 LV</li></ul>
AccuCal (class A)	<ul style="list-style-type: none"><li>• Cat 3 HV</li><li>• Cat 4 HV</li><li>• Cat 5 HV</li></ul>

Northpower MEP maintains records of all metering equipment and metering installations it is responsible for, and MEP staff confirm that information is made available to the ATH's as required. The ATH's also retain their own records of previous work completed on each metering installation. There are no current plans to change these ATH arrangements.

#### Audit outcome

Compliant

## 6. MAINTENANCE OF REGISTRY INFORMATION

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

#### Code reference

Clause 1(1) of Schedule 11.4

#### Code related audit information

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

#### Audit observation

The Northpower MEP EDA files for the audit period were checked along with the registry and the Audit Summary report. An effective documented procedure for running the registry report to identify and process MEP nominations was observed

#### Audit commentary

A process is run daily using the Registry Notification file that looks for MEP notifications that meet the criteria of Northpower Network ICP and nominated MEP is NPOW. The process creates a service order in Gentrack which is then able to be accepted or rejected as appropriate.

Two MEP nominations were received by Northpower during the audit period, both were unintended.

ICP	Event Date	Registry Input Date	Reason
0000516098NRD53	27/05/19	26/08/19	Refer to the background information on this ICP in section 3.2
0000554347NR419	04/01/20	02/03/20	Refer to the background information on this ICP in section 3.2

0000554347NR419 required the original metering information (prior to fire event) to be reinstated in the registry to allow the retailer Electric Kiwi to switch the ICP to Pulse as Electric Kiwi could not utilise the NHH metering installed.

Northpower MEP Staff appear to have taken all practicable steps to deal with these unintended MEP nominations once they were aware of them.

It is suggested that Northpower put in place measures to ensure metering equipment cannot be installed without Northpower MEP permission to avoid this situation in future.

#### Audit outcome

Compliant

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

#### Code reference

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

**Code related audit information**

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

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

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

**Audit observation**

The metering data and information systems used by Northpower MEP were examined along with the LIS, EDA, PR255 files and Audit Compliance summary for the audit period. This was also discussed with Northpower MEP staff

**Audit commentary**

	<b>Jul 2020</b>	<b>Jul 2019</b>	<b>Jan 2019</b>	<b>2018</b>
Cat 2 with multiplier over 100	No change	No change	No change	1 ICP 0000523418NR214 Category 3 certified as category 2
Cat 3 and above without HHR profile or HHR meter or HHR installation	None	None	None	None
Cat 1 over 15 years	3	None	None	None
Cat 2 over 10 years or over 15 if cert before 29/8/2013	None	None	None	None
Cat 3 over 10 years	None	None	None	None
Cat 4 over 5 years	None	None	None	None
Cat 5 over 3 years	None	None	None	None
Invalid certification date	None	None	None	None

Expired Certification date during audit period	1470 expired certification: Cat 1 – 1383 Cat 2 - 82 Cat 3 – 5	961 expired certification: Cat 1 – 871 Cat 2 - 76 Cat 3 – 14	1066 expired certification: Cat 1 – 1,027 Cat 2 - 31 Cat 3 – 8 1	1501 expired certification: Cat 1 – 1,479 Cat 2 - 12 I Cat 3 – 7 Cat 4 – 1 Cat 5 – 2
Compensation factor on Cat 1 Installation	6 3ph pump installations with a 1ph installed meter on a 3PH supply so a multiplier of 3 applies. This is a result of historical practice	35 3ph pump installations with a 1ph installed meter on a 3PH supply so a multiplier of 3 applies. This is a result of historical practice	37 3ph pump installations with a 1ph installed meter on a 3PH supply so a multiplier of 3 applies. This is a result of historical practice	36 3ph pump installations with a 1ph installed meter on a 3PH supply so a multiplier of 3 applies. This is a result of historical practice
CT on Cat 1	None	None	None	None
Export ICPs (load type of generation or both) Check that the registry has an "I" channel	None	2	2	4
HHR profile and submission type and meter or installation type is not HH	1 ICP 0000527659NR073 appears to be trader error	None	None	None
ICP in LIS File but not in PR255	None	None	None	None
Any compensation factor that is not: 20,30,40,50,60,80,100,120,160,200,240,400	6 3ph pump installations with a 1ph installed meter on a 3PH supply. Only category 4 and 5 metering installations may have compensation factors exceeding 400	35 3ph pump installations with a 1ph installed meter on a 3PH supply Only category 4 and 5 metering installations may have compensation	37 3ph pump installations with a 1ph installed meter on a 3PH supply Only category 4 and 5 metering installations may have compensation	36 3ph pump installations with a 1ph installed meter on a 3PH supply Only category 4 and 5 metering installations may have compensation factors exceeding 400

		factors exceeding 400	factors exceeding 400	
Over Cat 1 with No CTs	None	None	None	None
Control device not populated. All CN, NC, D, N should have control device unless they are AMI	70 loaded pilots	81 loaded pilots	98 loaded pilots	114 “loaded pilot” does not have a control device at the ICP because the pilot- wire supplies the entire load on the controlled supply. Loaded pilots are being progressively eliminated in conjunction with meter upgrades
Profile analysis Check period of availability and register content: CN without any other tariff	1 Pump Northpower allows CN to be used	11	32	39 Possible within Northpower's price plan options to have a controlled load meter with no uncontrolled meter. This is commonly used for nonurgent supplies such as irrigation/flood pumps or metered lighting.
Profile analysis Check period of availability and register content: Day and night = 24	34 Valid price plan ND5 ICPs on price plan ND5  8 Interim certified ICP. Not changed from D/N to DC/NC as would need backdate	6 Interim certified ICP. Not changed from D/N to DC/NC as would need backdate	7 Interim certified ICP. Not changed from D/N to DC/NC as would need backdate	59 Valid. ICPs on price plan ND5 (Controlled Day/Night) where the total availability in any 24-hour period is 22 hours – Northpower can control up to 2 hours in any 24- hour period
Profile analysis Check period of availability and register content: Day without Night	None	None	None	None
Profile analysis Check period of availability and	None	None	None	None



register content: IN Register cannot be 24 or O				
Control device not populated - All "IN" register content should have control device	8 Loaded Pilots	36	39	ICPs with an "IN" register content is on the "closed" DM4 price plan. Many of these ICPs use a "loaded pilot" for hot water control. Loaded pilots are being progressively eliminated in conjunction with meter upgrades

The information the Northpower MEP provides to the registry is derived from Gentrack records. This is verified by the number of metering records the MEP has to reverse in the Registry due to Gentrack updating the registry with every change in metering information identified whether intentional or not.

#### Audit outcome

Compliant

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

#### Code reference

*Clause 6 of Schedule 11.4*

#### Code related audit information

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

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

*No later than 5 business days following collection of data from the registry, the MEP must compare the information obtained from the registry with the MEP's own records.*

*Within 5 business days of becoming aware of any discrepancy between the MEP's records and the information obtained from the registry, the MEP must correct the records that are in error and advise the registry manager of any necessary changes to the registry metering records.*

#### Audit observation

The metering data and information systems used by Northpower MEP were examined along with the LIS, EDA, PR255 files and Audit Compliance summary for the audit period. This was also discussed with Northpower MEP staff

#### Audit commentary

Northpower MEP staff make considerable effort to ensure Registry data is as accurate as possible. The John Candy Consulting database tool is used to produce the day 13 discrepancy reporting. The PR-255 and the LIS files downloaded from the registry on the 13th business day and the information compared with the information maintained in Gentrack. In addition a suite of MS ACCESS reports are run daily, weekly and monthly to identify errors. For example the Registry Acknowledgment files are checked daily for rejected entries which are corrected

immediately. The EDA file shows a large number of corrections are made by data reversal (to correct entries auto uploaded by Gentrack see section 4.10 for more detail). There were 145 data fixes identified in the EDA file for the audit period.

### 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

The metering data and information systems used by Northpower MEP were examined along with the LIS, EDA, PR255 files and Audit Compliance summary for the audit period. This was also discussed with Northpower MEP staff

## Audit commentary

	<b>Certification Cancellation Reasons</b>	<b>Northpower MEP staff State:</b>
a	the metering installation is modified otherwise than under sub clause 19(3) or 19(6)	there were no modifications outside of standard designs made to any metering installation during the audit period that they were aware of
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	Northpower MEP use selective component as the certification method for Category 1 to 3 metering installations Meter lass 1 meters and 0.5S CTs are used.
c	an ATH advises the metering equipment provider responsible for the metering installation: <ol style="list-style-type: none"> <li>1. 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</li> <li>2. the failure of a group of meters in the statistical sampling recertification process for the metering installation</li> <li>3. the failure of a certification test for the metering installation</li> </ol>	<p>None during this audit period</p> <p>None during this audit period</p> <p>None during this audit period</p>
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	None during this audit period
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	<p>Category 1 - none this audit period statistical sampling Inspections completed</p> <p>Category 2 - 27 cancelled</p> <p>Category 3 – 1 cancelled</p> <p>See section 8.2</p>
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	None during this audit period
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)	None during this audit period
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)	<p>None during this audit period</p> <p>See section 7.111</p>

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	<p>None during this audit period</p> <p>None during this audit period</p> <p>See section 8.4</p>
---	---	--

### Audit outcome

Compliant

## 6.5. Registry Metering Records (Clause 11.8A)

### Code reference

Clause 11.8A

### Code related audit information

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

### Audit observation

The Registry, LIS, EDA, PR255 files and Audit Compliance summary were analysed for the audit period. This was also discussed with Northpower MEP staff

### Audit commentary

Northpower MEP uses Gentrack as its primary system for recording metering data and information, it is also the interface to the registry. Gentrack is supported by an electronic document management system and reporting tools. Northpower MEP staff make significant efforts to ensure Registry data is as accurate as possible a suite of MS ACCESS reports are run daily, weekly and monthly to identify errors which are quickly corrected.

It was verified that metering information for installations Northpower MEP are responsible for is recorded in the Registry.

### 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

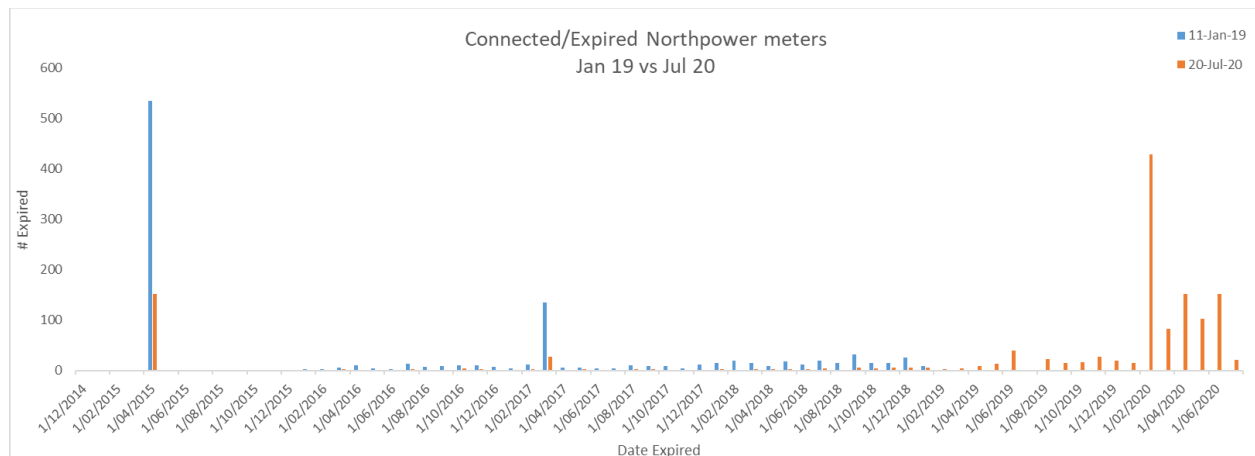
The Registry, LIS, EDA, PR255 files and Audit Compliance summary were analysed for the audit period. This was also discussed with Northpower MEP staff

#### Audit commentary

Total expired Certifications	Expired during Audit period	Interim certified (made expired)	By category
1470	1365	170	Cat 1 -1383 Cat 2 – 82 Cat 3- 5 (includes cat 2 & 3 cancelled because inspections not completed)

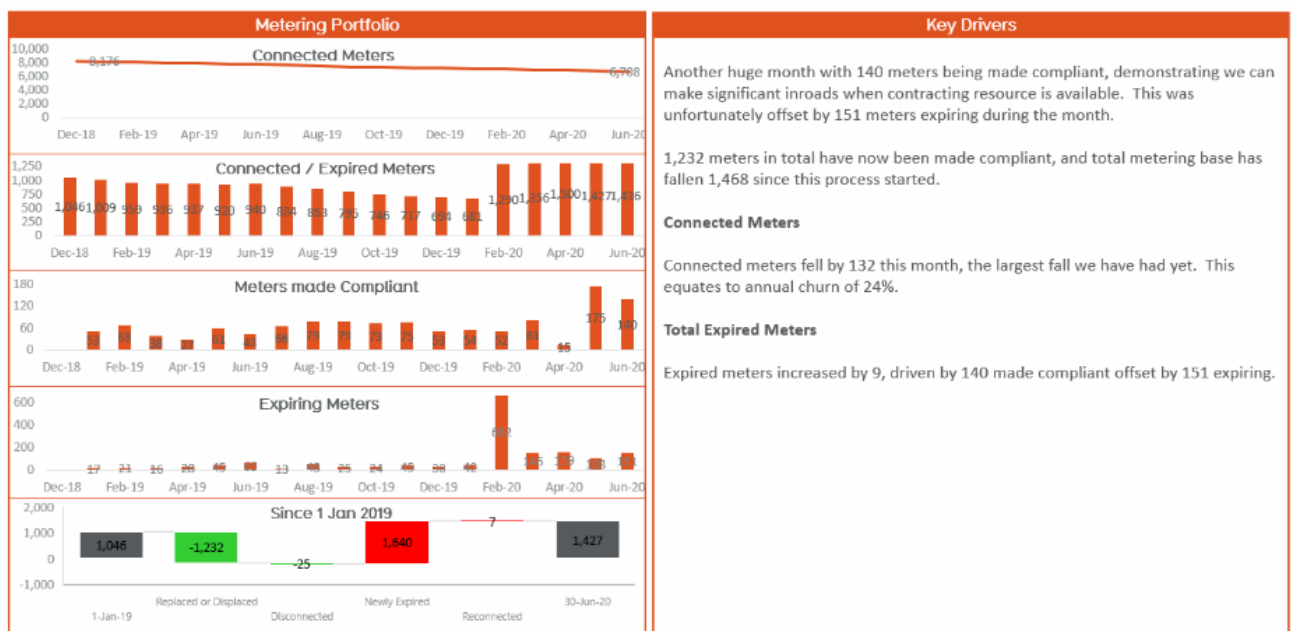
Northpower MEP have enhanced their metering installation recertification programme significantly since the last audit. An in-house dedicated resource has been put in place to manage the work flow for metering replacement/recertification. On a regular basis ICPs requiring recertification are loaded into the work management system (Salesforce CRM) The dedicated Northpower MEP staff coordinate customer communication and arrange the recertification activity. ICPs are either transitioned to the Intellihub MEP wherever possible or by customer request Northpower .MEP recertifies the metering installation using its own certified metering equipment.

With the reinforced capabilities Northpower MEP appeared to be making very good progress in reducing expired certifications until early 2020 when a large “wave” of over nine hundred installations expired in a short timeframe. However their progress is still demonstrated through the significant reduction in the average age of expired metering installations.



Category 2 and above work is hindered by the lack of suitable field resource in the region currently. In addition, 126 of the expired sites are currently sitting with retailers to provide us with access to the metering installation as required under the Code, or to address other issues with their customer such as metering board or wiring safety issues which prevent us from safely replacing the meter. We track these cases through our CRM and follow up from time to time.

Closer management scrutiny has been put in place and an example of a recent progress report is below.



Despite the increased efforts and diligence of the Northpower MEP staff the level of expired certifications is high.

## Audit outcome

Non-compliant

## NON-COMPLIANCE

Non-compliance	Description		
<p>Audit Ref: 7.1</p> <p>With: <i>Clause 10.38 (a), clause 1 and clause 15 of Schedule 10.7</i></p> <p>From: 02-Jul-19</p> <p>To: 01-Jul-20</p>	<p>Certification Expired for 1365 metering installations during the audit period</p> <p>Potential impact: Medium</p> <p>Actual impact: Low</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		
<b>Medium</b>	<p>Controls are assessed as moderate because despite the considerable efforts made to improve the position during the audit period, there is still a significant risk of the position deteriorating. The audit risk rating is recorded as medium due to the accumulative numbers of category 2 and above metering installations which may have an impact on settlement outcomes.</p>		
Actions taken to resolve the issue		Completion date	Remedial action status
<p>During the audit period the total Connected Expired metering installations dropped to a low of 681 (January 2020) compared to the Dec 2018 total of 1,046. Unfortunately a large number of metering installations previously certified under the statistical sampling regime expired in the February to April 2020 period which pushed the total expired certification metering installations to a high of 1,500.</p> <p>This has now reduced to 1,366 metering installations in mid-August. Of these, 126 or 9.2% are sitting with the retailer to provide access to the metering installation or address safety issues with their customer.</p>			Identified
Preventative actions taken to ensure no further issues will occur		Completion date	
<p>A further two dedicated Test House field staff have been employed during August to complement the existing Test House contractors in a concerted effort to reduce the number of connected expired metering installations. We also follow up retailers periodically to resolve access or safety issues.</p>			

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

### Code reference

*Clause 10.38(b) and clause 9 of Schedule 10.6*

### Code related audit information

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

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

### Audit observation

This was discussed with Northpower MEP staff, and relevant Network Connection documentation available on The Northpower website was examined, the registry was also checked. Fifteen category 1, two category 2 and one category 3 metering installation commissioning reports/certificates were examined

### Audit commentary

Northpower MEP uses the following ATHs:

Approved Test house	Metering Installation Category	Approved Certification Scope
Northpower (class B)	<ul style="list-style-type: none"><li>• Cat 1</li><li>• Cat 2</li><li>• Cat 3 LV</li></ul>	Y
AccuCal (class A)	<ul style="list-style-type: none"><li>• Cat 3 HV</li><li>• Cat 4 HV</li><li>• Cat 5 HV</li></ul>	Y

It was observed that arrangements with ATHs was largely verbal with no formal agreements in place to specify Northpower MEP expectations. A draft service level agreement was viewed. To ensure code requirements are met it is suggested that a comprehensive service level agreement be agreed with the ATHs. It was noted that the network connection documentation published on the Northpower website contained some of the detail required.

### Audit outcome

Compliant

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

### Code reference

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

### Code related audit information

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

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

- a) *import active energy*
- b) *import reactive energy*



- c) export reactive energy.

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

*All other installations must measure and separately record:*

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

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

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

#### **Audit observation**

The Registry, LIS, EDA, PR255 files were checked for the audit period. This was also discussed with Northpower MEP staff

#### **Audit commentary**

All relevant metering is compliant with this clause.

#### **Audit outcome**

Compliant

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

#### **Code reference**

*Clause 10.37(2)(b)*

#### **Code related audit information**

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

#### **Audit observation**

Northpower MEP does not provide MEP services to local services metering in grid substations

#### **Audit commentary**

This clause is not applicable. Compliance was not assessed.

#### **Audit outcome**

Not applicable

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

#### **Code reference**

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

#### **Code related audit information**

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

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

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

#### **Audit observation**

The Registry, LIS, EDA, PR255 files were checked for the audit period. This was also discussed with Northpower MEP staff

#### **Audit commentary**

Northpower MEP staff state that the MEP does not allow other load to be connected to current transformers (CT)

Northpower MEP do not provide MEP services for grid metering.

Northpower MEP staff advised CT burdening was only carried out at metering installation or re-certification, consequently the installing ATH carries out the burdening.

Northpower MEP has 10 HV metering installations where Voltage Transformers (VT) are part of the metering installation. Two VT are part of separate metering units and eight are integrated with the switchgear and are shared with the protection equipment. Alterations are only carried out with ATH approval (AccuCal).

Site	ICP	VT Configuration	Comment
Oil Refinery BRB0331	0000546127NRA4F	Integrated with HV substation switchgear	Shared metering & protection
Golden Bay Cement MPE1101	0000546038NR638	Separate Metering Units containing CT's and VT's	No sharing
Wairua Power Station	0000100001NR87B	Separate Metering Units containing CT's and VT's	No sharing
Fonterra Kauri	0000546037NR9E6	Substation VT's in indoor 33kV switchgear	Customer owned & controlled. Metering is certified by ATH
Fonterra Maungaturoto	0000545312NR81F	Integrated with HV substation switchgear	Customer owned & controlled. Metering is certified by ATH
Balance Agri-Nutrients Fertiliser works	0000500092NR2E3	Integrated with HV substation switchgear	Customer owned & controlled.

			Metering is certified by ATH
Northland Polytech	0000545360NRDC7	Integrated with HV substation switchgear	Metering only
CHH Sawmill HV	0000553396NR17E	Integrated with HV substation switchgear	Metering only
Marusumi Wood Chip Mill	0000546039NRA7D	Integrated with HV substation switchgear	Customer owned & controlled. Metering is certified by ATH
Northport Deep Water Port	0000549009NR4E5	Integrated with HV substation switchgear  Burdening resistors fitted to VT	Customer owned & controlled. Metering is certified by ATH  MEP switch to AMCI in proposed.

## Audit outcome

Compliant

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

### Code reference

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

### Code related audit information

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

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

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

*If a meter is certified in this manner:*

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

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

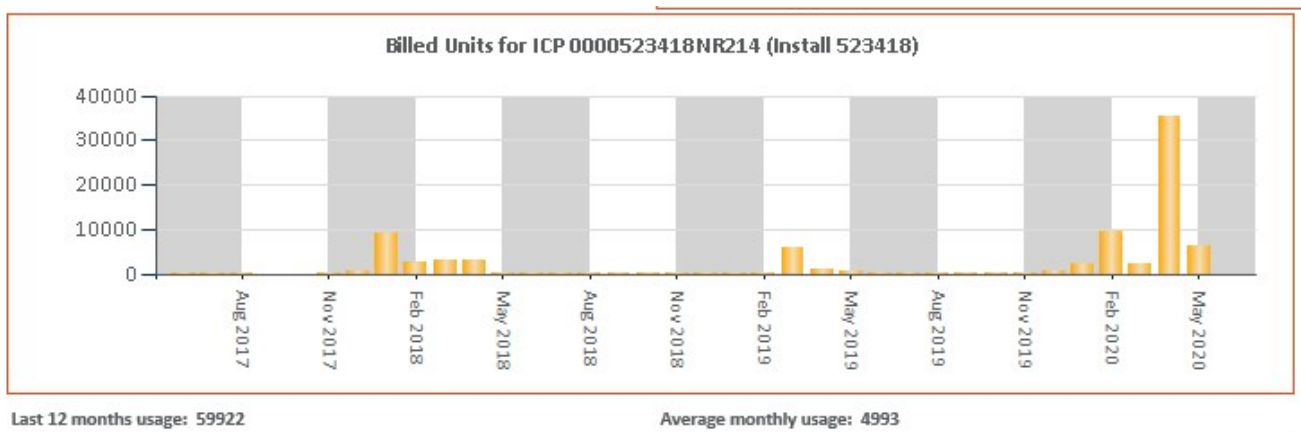
#### Audit observation

The Registry, LIS, EDA, PR255 files were checked for the audit period. This was also discussed with Northpower MEP staff

#### Audit commentary

Northpower MEP is responsible for one Metering installation certified as a lower category ICP 0000523418NR214.

Northpower MEP uses metering data provided for distributor billing to verify the downgraded metering installation continues to operate within the category two threshold.



#### 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

This was discussed with Northpower MEP staff

#### Audit commentary

Northpower does not provide MEP services for new installations. The situation would only arise for recertification of an existing metering installations where there would typically be sufficient load for testing.

Northpower MEP staff state there were no metering installations where there was insufficient load for certification testing during this audit period.

#### **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**

This was discussed with Northpower MEP staff

#### **Audit commentary**

Northpower MEP staff state there were no metering installations where certification tests demonstrated that the metering installation was not within the relevant maximum permitted error, during this audit period.

#### **Audit outcome**

Compliant

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

#### **Code reference**

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

#### **Code related audit information**

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

- *advise the Authority, by no later than 10 business days after the date of certification of the metering installation, of the details in clause 32(2)(a) of Schedule 10.7*
- *respond, within 5 business days, to any requests from the Authority for additional information*
- *ensure that all of the details are recorded in the metering installation certification report*
- *take all steps to ensure that the metering installation is certified before the certification expiry date.*

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

#### **Audit observation**

The LIS, EDA, PR255 and Audit Compliance Summary files were checked for the audit period. This was also discussed with Northpower MEP staff

#### **Audit commentary**

Northpower MEP staff state there were no metering installations it was responsible for where alternative certification requirements were used during this audit period.

#### **Audit outcome**

Compliant

### **7.10. Timekeeping Requirements (Clause 23 of Schedule 10.7)**

#### **Code reference**

*Clause 23 of Schedule 10.7*

#### **Code related audit information**

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

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

#### **Audit observation**

This was discussed with Northpower MEP staff who stated Northpower does not have any time keeping devices that have the functionality to switch a meter register.

#### **Audit commentary**

This clause is not applicable. Compliance was not assessed.

#### **Audit outcome**

Not applicable

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

#### **Code reference**

*Clause 35 of Schedule 10.7*

#### **Code related audit information**

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

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

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

#### **Audit observation**

This was discussed with Northpower MEP staff.

### Audit commentary

Northpower service staff who investigate no hot water faults carry spare load control devices and will replace faulty equipment when on site. In the unlikely event a load control device is not or cannot be replaced at the time the faulty device may be bridged out. If this occurs the Northpower MEP is notified and a service request will be raised to have the load control device replaced the next working day.

### Audit outcome

Compliant

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

### Code reference

*Clause 34(5) of Schedule 10.7*

### Code related audit information

*If the MEP is advised by an ATH that the likelihood of a control device not receiving signals would affect the accuracy or completeness of the information for the purposes of Part 15, the MEP must, within 3 business days inform the following parties of the ATH's determination (including all relevant details):*

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

### Audit observation

This was discussed with Northpower MEP staff.

### Audit commentary

Northpower MEP staff state they have not been notified by any party of any metering installations where a control device could affect the accuracy or completeness of volumes for the purpose of Part 15 during this audit period.

### 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

This was discussed with Northpower MEP staff, they stated the MEP did not conduct any statistical sampling for recertification during this audit period.

### Audit commentary

Northpower MEP staff advise the last statistical sampling programme for recertification of category one metering installations was completed in October 2015.

This clause is not applicable. Compliance was not assessed.

#### **Audit outcome**

Not applicable

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

#### **Code reference**

*Clause 24(3) of Schedule 10.7*

#### **Code related audit information**

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

*In all other cases the MEP must update the compensation factor recorded in the registry in accordance with Part 11.*

#### **Audit observation**

This was discussed with Northpower MEP staff, they stated the MEP is not responsible for any NSP metering

#### **Audit commentary**

This clause is not applicable. Compliance was not assessed.

#### **Audit outcome**

Not applicable

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

#### **Code reference**

*Clause 26(1) of Schedule 10.7*

#### **Code related audit information**

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

#### **Audit observation**

The LIS, EDA, PR255 and Audit Compliance Summary files were checked for the audit period. This was also discussed with Northpower MEP staff

#### **Audit commentary**

For category one metering installations it is the meter certification date that drives the installation certificate expiry date. There were 1368 metering installation certificates that expired during the audit period.

The certification method used for category two metering installations is selected component with the CTs, meter and installation having the same effective certification date expiry would by default occur at the same time (when the first metering component certificate expires the installation automatically expires), as a consequence 32 meter certifications at these installations will have expired during the audit period.

#### **Audit outcome**

Non-compliant



## NON-COMPLIANCE

Non-compliance	Description		
<p>Audit Ref: 7.15</p> <p>With: <i>Clause 26(1) of Schedule 10.7</i></p> <p>From: 02-Jul-19</p> <p>To: 01-Jul-20</p>	<p>Certification Expired for 1368 category 1 meters and 32 category 2 meters during the audit period.</p> <p>Potential impact: Medium</p> <p>Actual impact: Low</p> <p>Audit history: Multiple times</p> <p>Controls: Weak</p> <p>Breach risk rating: 3</p>		
Audit risk rating	Rationale for audit risk rating		
<b>Low</b>	<p>Controls are assessed as weak because there is nothing in place to avoid meter certificates expiring. The audit risk rating is recorded as low as the likelihood of significant meter inaccuracy is relatively low and that there is a low chance that this non-compliance on its own may have an impact on settlement outcomes.</p>		
Actions taken to resolve the issue		Completion date	Remedial action status
<p>During the audit period the total Connected Expired metering installations dropped to a low of 681 (January 2020) compared to the Dec 2018 total of 1,046. Unfortunately a large number of metering installations previously certified under the statistical sampling regime expired in the February to April 2020 period which pushed the total expired certification metering installations to a high of 1,500.</p> <p>This has now reduced to 1,366 metering installations in mid-August.</p>			Identified
Preventative actions taken to ensure no further issues will occur		Completion date	
<p>A further two dedicated Test House field staff have been employed during August to complement the existing Test House contractors in a concerted effort to reduce the number of connected expired metering installations.</p>			

## 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

The LIS, EDA, PR255 and Audit Compliance Summary files were checked for the audit period. This was also discussed with Northpower MEP staff

### Audit commentary

The certification method used for category two metering installations is selected component with the CTs, meter and installation having the same effective certification date expiry would by default occur at the same time (when the first metering component certificate expires the installation automatically expires), as a consequence 32 CT certifications at these installations will have expired during the audit period.

### Audit outcome

Non-compliant

## NON-COMPLIANCE

Non-compliance	Description		
<p>Audit Ref: 7.16</p> <p>With: <i>Clause 28(1) of Schedule 10.7</i></p> <p>From: 02-Jul-19</p> <p>To: 01-Jul-20</p>	<p>Certification expired for 32 category 2 CTs during the audit period.</p> <p>Potential impact: Medium</p> <p>Actual impact: Low</p> <p>Audit history: Multiple times</p> <p>Controls: Weak</p> <p>Breach risk rating: 3</p>		
Audit risk rating	Rationale for audit risk rating		
<b>Low</b>	<p>Controls are assessed as weak because there is nothing in place to avoid CT certificates expiring. The audit risk rating is recorded as low as the likelihood of CTs being inaccurate is relatively low and that there is a low chance that this non-compliance on its own may have an impact on settlement outcomes.</p>		
Actions taken to resolve the issue		Completion date	Remedial action status
<p>Northpower currently engages AccuCal to complete mid-life inspection and recertification work for those metering installations of category 3 and above HV. This has allowed Northpower to meet the Code requirements for these ICPs.</p> <p>Unfortunately there is a lack of appropriately skilled resource available in the market to complete the same work at category 2 and 3 LV metering installations. Northpower MEP continues to look for contractors who can complete this work.</p>			Identified
Preventative actions taken to ensure no further issues will occur		Completion date	
<p>Northpower has actively approached other MEPs and retailers to encourage them to displace the Northpower owned metering assets at these category 2 and above metering installations. This has been partly successful with 65 ICP moved to other MEPs since 1/1/2019.</p> <p>Northpower will continue to encourage the displacement of our metering assets, and the transfer of the MEP responsibilities, at these ICPs while attempting to find a qualified resource who can undertake the required inspection/recertification work under the Code.</p>			

#### 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**

This was discussed with Northpower MEP staff.

##### **Audit commentary**

Northpower MEP staff state the MEP is not responsible for any metering installation where a separate data storage device is installed.

##### **Audit outcome**

Compliant

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

##### **Code reference**

*Clause 7 (3) Schedule 10.3*

##### **Code related audit information**

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

##### **Audit observation**

This was discussed with Northpower MEP staff. The Registry was also checked.

##### **Audit commentary**

Northpower MEP staff stated they were aware of this clause and if this occurred would take the appropriate action.

##### **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**

The LIS, EDA, PR255 and Audit Compliance Summary files were checked for the audit period. This was also discussed with Northpower MEP staff

### Audit commentary

There are currently 170 active interim certified metering installations remaining. An improvement from the 404 from the last audit indicating the enhancements Northpower MEP have put in place during the audit period are having a positive outcome. In addition, a proportion of these will be sitting with retailers to provide access to the metering installation under the Code or address safety issues with their customers.

### Audit outcome

Non-compliant

## NON-COMPLIANCE

Non-compliance	Description		
Audit Ref: 7.19 With: <i>Clause 18 of Schedule 10.7</i>  From: 02-Jul-19 To: 01-Jul-20	170 active interim certified metering installations during the audit period Potential impact: Medium Actual impact: Low Audit history: Multiple times Controls: Moderate Breach risk rating: 2		
Audit risk rating	Rationale for audit risk rating		
Low	Controls are assessed as moderate because even with some improvement during the audit period, there is risk due to the overall slow progress of addressing these certifications. The audit risk rating is recorded as low despite the length of time these metering installations have been out of certification there has been no evidence that this may have an impact on settlement outcomes.		
Actions taken to resolve the issue		Completion date	Remedial action status
During the audit period the total Connected Expired metering installations dropped to a low of 681 (January 2020) compared to the Dec 2018 total of 1,046. Unfortunately a large number of metering installations previously certified under the statistical sampling regime expired in the February to April 2020 period which pushed the total expired certification metering installations to a high of 1,500.  This has now reduced to 1,366 metering installations in mid-August. Of these, 126 or 9.2% are sitting with the retailer to provide access to the metering installation or address safety issues with their customer.			Identified

Preventative actions taken to ensure no further issues will occur	Completion date	
<p>A further two dedicated Test House field staff have been employed during August to complement the existing Test House contractors in a concerted effort to reduce the number of connected expired metering installations. We also follow up retailers periodically to resolve access or safety issues.</p>		

## 8. INSPECTION OF METERING INSTALLATIONS

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

#### Code reference

*Clause 45 of Schedule 10.7*

#### Code related audit information

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

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

*Before a sample inspection process can be carried out, the MEP must submit a documented process for selecting the sample to the Electricity Authority, at least 2 months prior to first date on which the inspections are to be carried out, for approval (and promptly provide any other information the Authority may request).*

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

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

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

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

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

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

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

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

#### Audit observation

Northpower MEP statistical sampling process documents were observed, the Report of inspection of Category 1 metering installations 2020 provided to the EA was reviewed and this was also discussed with Northpower MEP staff.

#### Audit commentary

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

#### **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**

Northpower MEP Inspection process documents were observed and this was also discussed with Northpower MEP staff.

#### **Audit commentary**

Northpower MEP planned to inspect 29 x category 2 and 1 x category 3 metering installations during the audit period.

The inspections did not take place for 28 of the category 2 and 1 category 3 metering installations and consequently the certifications were cancelled for those installations.

Northpower MEP staff stated the lack of appropriate resources available to complete the work in the region was the key reason the planned inspections could not be achieved. Northpower MEP staff are working to find the capability to complete categories 2 and above inspection and metering installation.

#### **Audit outcome**

Non-compliant



## NON-COMPLIANCE

Non-compliance	Description		
<p>Audit Ref: 8.2</p> <p>With: <i>Clause 46(1) of Schedule 10.7</i></p> <p>From: 02-Jul-19</p> <p>To: 01-Jul-20</p>	<p>32 x category 2 and 1 x category 3 metering installations were not inspected when due during the audit period. Their certifications were cancelled</p> <p>Potential impact: Low</p> <p>Actual impact: Low</p> <p>Audit history: Multiple times</p> <p>Controls: Moderate</p> <p>Breach risk rating: 2</p>		
Audit risk rating	Rationale for audit risk rating		
<b>Low</b>	<p>Controls are assessed as moderate because process and procedures are in place however they were not able to be executed. The audit risk rating is recorded as low as there is a small likelihood that this may have an impact on settlement outcomes.</p>		
Actions taken to resolve the issue		Completion date	Remedial action status
<p>Northpower currently engages AccuCal to complete mid-life inspection and recertification work for those metering installations of category 3 and above HV. This has allowed Northpower to meet the Code requirements for these ICPs.</p> <p>Unfortunately there is a lack of appropriately skilled resource available in the market to complete the same work at category 2 and 3 LV metering installations. Northpower MEP continues to look for contractors who can complete this work.</p>			Identified
Preventative actions taken to ensure no further issues will occur		Completion date	
<p>Northpower has actively approached other MEPs and retailers to encourage them to displace the Northpower owned metering assets at these category 2 and above metering installations. This has been partly successful with 65 ICP moved to other MEPs since 1/1/2019.</p> <p>Northpower will continue to encourage the displacement of our metering assets, and the transfer of the MEP responsibilities, at these ICPs while attempting to find a qualified resource who can undertake the required inspection/recertification work under the Code.</p>			

### 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

Inspection process and examples of reports were observed this was also discussed with Northpower MEP staff.

#### Audit commentary

A well-developed check list returns good quality information from the field inspections, allowing the information to be checked against Gentrack records. If required Gentrack information is updated and subsequently the Registry.

#### Audit outcome

Compliant

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

#### Code reference

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

#### Code related audit information

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

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

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

*The MEP must make the above arrangements within*

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

#### Audit observation

Northpower MEP process documents were observed and this was also discussed with Northpower MEP staff.

#### Audit commentary

Northpower MEP has recently updated its broken seal process. It appears to meet code requirement.

#### 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

Northpower MEP process documents were observed and this was also discussed with Northpower MEP staff.

#### Audit commentary

Northpower MEP generally receive service requests from retailers to investigate metering issues. In the first instance a Northpower ATH serviceperson will be dispatched next day to investigate, resolve any issues if possible and report back. Remedial work is integrated with the certification expiry programme and an Intellihub replacement metering will be installed where possible, or otherwise a replacement Northpower legacy meter. AccuCal will be requested to investigate and remediate Category 3 and above metering.

#### Audit outcome

Compliant

### 9.2. Testing of Faulty Metering Installations (Clause 10.44)

#### Code reference

Clause 10.44

#### Code related audit information

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

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

- a) test the metering installation*
- b) provide the MEP with a statement of situation within 5 business days of:*
- c) becoming aware that the metering installation may be inaccurate, defective or not fit for purpose; or*
- d) reaching an agreement with the participant.*

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

#### Audit observation

This was discussed with Northpower MEP staff. One example was followed through end to end.

#### **Audit commentary**

Northpower MEP generally receive service requests from retailers to investigate metering issues. In the first instance a Northpower ATH serviceperson will be dispatched next day to investigate, resolve any issues if possible and report back. Remedial work is integrated with the certification expiry programme and an Intellihub replacement metering will be installed. AccuCal will be requested to investigate and remediate Category 3 and above metering.

If accuracy testing of a suspected faulty meter is requested this will be carried out by an external ATH. The results are sent to the requesting retailer along with the proposed resolution. Northpower MEP stores copies of all reports and communications with the Retailer.

#### **Audit outcome**

Compliant

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

#### **Code reference**

*Clause10.46(2)*

#### **Code related audit information**

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

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

#### **Audit observation**

This was discussed with Northpower MEP staff. One example was followed through end to end.

#### **Audit commentary**

For the example a suitable statement of situation as a meter test report and proposed remediation was provided to the Retailer.

#### **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

This was discussed with Northpower MEP staff, and relevant Network Connection documentation available on The Northpower website examined.

#### Audit commentary

The services access interface for all Northpower MEP meters is at the meter.

Traders are given access to the meters to enable meter readings to be collected. This includes meter set up information and passwords.

Category 1 and most category 2 meters are manually read by third party meter reading companies engaged by Traders.

Category 3, 4, and 5 metering installations and category 2 ICPs with TOU meters are read remotely by third party data collection companies engaged by Traders.

At some ICPs for which Northpower is the MEP and TOU meters are installed, Northpower may remotely read the meters using MV90. The HHR data is only used for Northpower's internal purposes such as monitoring the end to end data communications to identify any potential problems and facilitate repairs if Traders report any issues. This functionality allows prompt, appropriate remedial action to be taken.

#### 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

This was discussed with Northpower MEP staff, and relevant Network Connection documentation available on The Northpower website examined.

### Audit commentary

Northpower MEP does not have access to raw NHH meter data. Retailers engage meter readers to collect that data.

At some ICPs for which Northpower is the MEP and TOU meters are installed, Northpower may remotely read the meters using MV90. The HHR data is only used for Northpower's internal purposes it is not disclosed to any third parties.

### 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

This was discussed with Northpower MEP staff, and relevant Network Connection documentation available on The Northpower website examined.

### Audit commentary

Northpower MEP staff state that during this audit period they have had no requests for physical access to metering installations under this clause, and advises it would use its best endeavours to provide physical access to a metering installation to subject to health and safety requirements.

### 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

This was discussed with Northpower MEP staff, and relevant Network Connection documentation available on The Northpower website examined.

##### Audit commentary

During this audit period Northpower MEP has not been asked to provide urgent physical access to a metering installation, and advises it would use its best endeavours to provide physical access to an installation subject to health and safety requirements.

##### Audit outcome

Compliant

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

##### Code reference

*Clause 8(2), 8(3), 8(5) and 8(6) of Schedule 10.6*

##### Code related audit information

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

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

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

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

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

*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**

This was discussed with Northpower MEP staff, and relevant Network Connection documentation available on The Northpower website examined.

#### **Audit commentary**

NHH Meters are manually read by Retailers.

Northpower MEP does not offer data collection services and does not read meters from their “back office”.

This clause is not applicable. Compliance was not assessed.

#### **Audit outcome**

Not applicable

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

#### **Code reference**

*Clause 10.15(2)*

#### **Code related audit information**

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

#### **Audit observation**

This was discussed with Northpower MEP staff, and relevant Network Connection documentation available on The Northpower website examined.

#### **Audit commentary**

Northpower MEP does not offer data collection services and does not read meters from their “back office”.

This clause is not applicable. Compliance was not assessed.

#### **Audit outcome**

Not applicable

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

#### **Code reference**

*Clause 8(4) of Schedule 10.6*

#### **Code related audit information**

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

#### **Audit observation**

This was discussed with Northpower MEP staff, and relevant Network Connection documentation available on The Northpower website examined.



### Audit commentary

Northpower MEP does not offer data collection services and does not read meters from their “back office”.

This clause is not applicable. Compliance was not assessed.

### Audit outcome

Not applicable

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

### Code reference

*Clause 8(7) of Schedule 10.6*

### Code related audit information

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

- a) ensure an interrogation log is generated*
- b) review the event log and:
  - i. take appropriate action*
  - ii. pass the relevant entries to the reconciliation participant.**
- c) ensure the log forms part of an audit trail which includes:
  - i. the date and*
  - ii. time of the interrogation*
  - iii. operator (where available)*
  - iv. unique ID of the data storage device*
  - v. any clock errors outside specified limits*
  - vi. method of interrogation*
  - vii. identifier of the reading device used (if applicable).**

### Audit observation

This was discussed with Northpower MEP staff, and relevant Network Connection documentation available on The Northpower website examined.

### Audit commentary

Northpower MEP does not offer data collection services and does not read meters from their “back office”.

This clause is not applicable. Compliance was not assessed.

### Audit outcome

Not applicable

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

### Code reference

*Clause 8(9) of Schedule 10.6*

### Code related audit information

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

### **Audit observation**

This was discussed with Northpower MEP staff, and relevant Network Connection documentation available on The Northpower website examined.

### **Audit commentary**

Northpower MEP does not offer data collection services and does not read meters from their “back office”.

This clause is not applicable. Compliance was not assessed.

### **Audit outcome**

Not applicable

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

### **Code reference**

*Clause 10.48(2),(3)*

### **Code related audit information**

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

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

### **Audit observation**

This was discussed with Northpower MEP staff, and relevant Network Connection documentation available on The Northpower website examined.

### **Audit commentary**

Northpower MEP does not offer data collection services and does not read meters from their “back office”.

This clause is not applicable. Compliance was not assessed.

### **Audit outcome**

Not applicable

## CONCLUSION

## PARTICIPANT RESPONSE

Northpower has focused on improving its meter certification compliance over the last 18 months, and has delivered significant improvements over this time. Process improvements include:

- engaging sub-contractors to complete meter replacement work
- implementing a CRM to manage workflows and track individual cases to conclusion
- entering into an arrangement with Intellihub under which we displace expired Northpower meters with Intellihub meters where possible
- obtaining supplies of legacy meters to install where a smart meter is declined by the customer.

To the end of July 2020 we have either replaced or displaced 1,383 expired meters, more than the 1,046 which were expired when we began work to improve our compliance. Unfortunately batch certified meters continue to expire, with 1,685 metering installations expiring since that date, resulting in 1,329 metering installations being expired at the end of July. Of the 1,329 expired installations, around 150 are under action either with the Network (e.g. to upgrade fuses) or with the Retailer (to provide access or address safety issues relating to private assets).

The average age of an expired meter had at the time of the audit fallen from 4.1 years to 1.2 years, demonstrating the significant inroads made and reducing the risk of expired meters being of an age where they read incorrectly.

Since Covid-19, additional resource has lifted our meter replacement from circa 80 a month to circa 150 per month. We expect this to further lift with the employment of 2 permanent full time metering technicians about to come online.

We continue to have a resource gap at Category 2 level, but we are negotiating with a potential sub-contractor to provide this capacity and close this gap.

