

ELECTRICITY INDUSTRY PARTICIPATION CODE METERING EQUIPMENT PROVIDER AUDIT REPORT

For

POWERNET

Prepared by: Ewa Glowacka of TEG & Associates Ltd

Date audit commenced: 22 October 2019

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Audit report due date: 27-Oct-19

TABLE OF CONTENTS

Executive summary	5
Audit summary	6
Non-compliances	6
Recommendations	6
Issues 6	
1. Administrative	7
1.1. Exemptions from Obligations to Comply With Code (Section 11)	7
1.2. Structure of Organisation	7
1.3. Persons involved in this audit.....	8
1.4. Use of Agents (Clause 10.3).....	8
1.5. Hardware and Software	8
1.6. Breaches or Breach Allegations.....	8
1.7. ICP Data	8
1.8. Authorisation Received	9
1.9. Scope of Audit	9
1.10. Summary of previous audit	10
2. Operational Infrastructure	11
2.1. MEP responsibility for services access interface (Clause 10.9(2)).....	11
2.2. Dispute Resolution (Clause 10.50(1) to (3))	11
2.3. MEP Identifier (Clause 7(1) of Schedule 10.6).....	11
2.4. Communication Equipment Compatibility (Clause 40 Schedule 10.7).....	12
2.5. Participants to Provide Accurate Information (Clause 11.2 and Clause 10.6)	12
3. Process for a Change of MEP	14
3.1. Change of metering equipment provider (Clause 10.22).....	14
3.2. Registry Notification of Metering Records (Clause 2 of Schedule 11.4)	14
3.3. Provision of Metering Records to Gaining MEP (Clause 5 of Schedule 10.6).....	14
3.4. Termination of MEP Responsibility (Clause 10.23)	15
4. Installation and Modification of Metering Installations	17
4.1. Design Reports for Metering Installations (Clause 2 of Schedule 10.7).....	17
4.2. Contracting with ATH (Clause 9 of Schedule 10.6).....	17
4.3. Metering Installation Design & Accuracy (Clause 4(1) of Schedule 10.7)	18
4.4. Subtractive Metering (Clause 4(2)(a) of Schedule 10.7)	18
4.5. HHR Metering (Clause 4(2)(b) of Schedule 10.7)	18
4.6. NSP Metering (Clause 4(3) of Schedule 10.7).....	19
4.7. Responsibility for Metering Installations (Clause 10.26(10))	19
4.8. Suitability of Metering Installations (Clause 4(4) of Schedule 10.7)	20
4.9. Installation & Modification of Metering Installations (Clauses 10.34(2), (2A) and (3))	20
4.10. Changes to Registry Records (Clause 3 of Schedule 11.4).....	21
4.11. Metering Infrastructure (Clause 10.39(1))	21
4.12. Decommissioning of an ICP (Clause 10.23A).....	22
4.13. Measuring Transformer Burden and Compensation Requirements (Clause 31(4) and (5) of Schedule 10.7)	22
4.14. Changes to Software ROM or Firmware (Clause 39(1) and 39(2) of Schedule 10.7)	23
4.15. Temporary Electrical Connection (Clauses 10.29A)	23

4.16. Temporary Electrical Connection (Clause 10.30A)	24
4.17. Temporary Electrical Connection (Clause 10.31A)	24
5. Metering Records.....	26
5.1. Accurate and Complete Records (Clause 4(1)(a) and (b) of Schedule 10.6, and Table 1, Schedule 11.4)	26
5.2. Inspection Reports (Clause 4(2) of Schedule 10.6)	26
5.3. Retention of Metering Records (Clause 4(3) of Schedule 10.6)	27
5.4. Provision of Records to ATH (Clause 6 Schedule 10.6).....	27
6. Maintenance of Registry Information.....	28
6.1. MEP Response to Switch Notification (Clause 1(1) of Schedule 11.4)	28
6.2. Provision of Registry Information (Clause 7 (1), (2) and (3) of Schedule 11.4)	28
6.3. Correction of Errors in Registry (Clause 6 of Schedule 11.4)	28
6.4. Cancellation of Certification (Clause 20 of Schedule 10.7)	29
6.5. Registry Metering Records (Clause 11.8A)	30
7. Certification of Metering Installations	31
7.1. Certification and Maintenance (Clause 10.38 (a), clause 1 and clause 15 of Schedule 10.7).....	31
7.2. Certification Tests (Clause 10.38(b) and clause 9 of Schedule 10.6).....	32
7.3. Active and Reactive Capability (Clause 10.37(1) and 10.37(2)(a))	32
7.4. Local Service Metering (Clause 10.37(2)(b))	33
7.5. Measuring Transformer Burden (Clause 30(1) and 31(2) of Schedule 10.7)	33
7.6. Certification as a Lower Category (Clauses 6(1)(b) and (d), and 6(2)(b) of Schedule 10.7)	34
7.7. Insufficient Load for Certification Tests (Clauses 14(3) and (4) of Schedule 10.7)	35
7.8. Insufficient Load for Certification – Cancellation of Certification (Clause 14(6) of Schedule 10.7)	35
7.9. Alternative Certification Requirements (Clauses 32(2), (3) and (4) of Schedule 10.7)	36
7.10. Timekeeping Requirements (Clause 23 of Schedule 10.7).....	36
7.11. Control Device Bridged Out (Clause 35 of Schedule 10.7)	37
7.12. Control Device Reliability Requirements (Clause 34(5) of Schedule 10.7).....	37
7.13. Statistical Sampling (Clauses 16(1) and (5) of Schedule 10.7).....	38
7.14. Compensation Factors (Clause 24(3) of Schedule 10.7).....	38
7.15. Metering Installations Incorporating a Meter (Clause 26(1) of Schedule 10.7).....	39
7.16. Metering Installations Incorporating a Measuring Transformer (Clause 28(1) of Schedule 10.7)	40
7.17. Metering Installations Incorporating a Data Storage Device (Clause 36(1) of Schedule 10.7).....	41
7.18. Notification of ATH Approval (Clause 7 (3) Schedule 10.3).....	41
7.19. Interim Certification (Clause 18 of Schedule 10.7).....	42
8. Inspection of metering installations	43
8.1. Category 1 Inspections (Clause 45 of Schedule 10.7).....	43
8.2. Category 2 to 5 Inspections (Clause 46(1) of Schedule 10.7).....	44
8.3. Inspection Reports (Clause 44(5) of Schedule 10.7)	45
8.4. Broken or removed seals (Clause 48(4) and (5) of Schedule 10.7)	45
9. Process for Handling Faulty Metering Installations	47
9.1. Investigation of Faulty Metering Installations (Clause 10.43(4) and (5))	47
9.2. Testing of Faulty Metering Installations (Clause 10.44).....	47
9.3. Statement of Situation (Clause 10.46(2)).....	48
10. Access to and Provision of Raw meter Data and Metering Installations.....	49

10.1. Access to Raw Meter Data (Clause 1 of Schedule 10.6).....	49
10.2. Restrictions on Use of Raw Meter Data (Clause 2 of Schedule 10.6).....	49
10.3. Access to Metering Installations (Clause 3(1), (3) and (4) of Schedule 10.6).....	50
10.4. Urgent Access to Metering Installations (Clause 3(5) of Schedule 10.6)	50
10.5. Electronic Interrogation of Metering Installations (Clause 8(2), 8(3), 8(5) and 8(6) of Schedule 10.6)	51
10.6. Security of Metering Data (Clause 10.15(2))	51
10.7. Time Errors for Metering Installations (Clause 8(4) of Schedule 10.6)	52
10.8. Event Logs (Clause 8(7) of Schedule 10.6).....	52
10.9. Comparison of HHR Data with Register Data (Clause 8(9) of Schedule 10.6)	53
10.10. Correction of Raw Meter Data (Clause 10.48(2),(3))	53
Conclusion	54
Participant response	54

EXECUTIVE SUMMARY

This participant audit was performed at the request of PowerNet 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 company provides the MEP services for 1 NSP (INV0331), 6 interconnection points between Electricity Invercargill and The Power Company, and the gate meter to an embedded network in Wanaka. The interconnection points do not have ICP identifiers. The interconnections are recorded in the Network Supply Points table maintained by the reconciliation manager. The volumes recorded by the meters are not traded.

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

No non-compliances were identified during this audit.

We would like to thank PowerNet for its complete and thorough cooperation in this audit.

AUDIT SUMMARY

NON-COMPLIANCES

Subject	Section	Clause	Non Compliance	Controls	Audit Risk Rating	Breach Risk Rating	Remedial Action
Future Risk Rating						0	

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

RECOMMENDATIONS

Subject	Section	Description	Recommendation
			Nil

ISSUES

Subject	Section	Description	Issue
			Nil

1. ADMINISTRATIVE

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

Code reference

Section 11 of Electricity Industry Act 2010.

Code related audit information

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

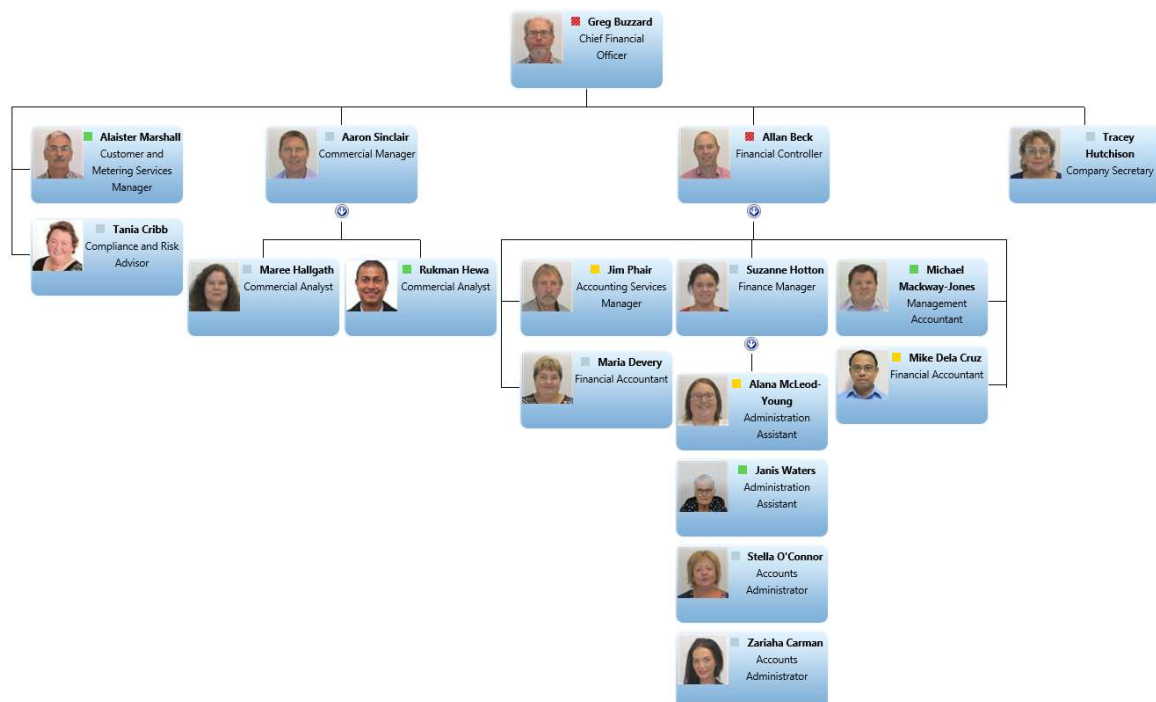
Audit observation

The exemption No 167 was granted for the interconnection ELL0111TPCONP/ELL0111ELINNP, which is an emergency back-up supply to Southland Hospital. The exemption was issued on 09/04/13 and will expire on 31/03/23.

Audit commentary

We checked the Electricity Authority website and confirm that the exemption is in place.

1.2. Structure of Organisation



1.3. Persons involved in this audit

Name	Title	Company
Alaister Marshall	Customer and Metering Services Manager	PowerNet
Ewa Glowacka	Electricity Authority Approved Auditor	TEG & Associates Ltd

1.4. Use of Agents (Clause 10.3)

Code reference

Clause 10.3

Code related audit information

A participant who uses a contractor

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

Audit observation

PowerNet does not use agents for the functions covered by this audit.

Audit commentary

All the MEP's functions are performed by PowerNet itself.

1.5. Hardware and Software

There is no specific software which is used by PowerNet. Asset information is stored in a distributor database.

1.6. Breaches or Breach Allegations

The Electricity Authority has no record of breaches of the Electricity Industry Act 2010, various related Regulations and the Electricity Industry Participation Code 2010.

1.7. ICP Data

Metering Category	Number of ICPs
1	0
2	0
3	1
4	0
5	0

Only one metering installation for which the company provides MEP services has an ICP – Northlake embedded network gate meter.

The company provides the MEP services for 6 interconnection points between Electricity Invercargill and The Power Company and 1 NSP (INV0331). The NSP and interconnection points do not have ICP identifiers assigned therefore they are not listed in the registry. Each interconnection allows the current to flow, interchangeably, from one network to another and this is the reason the RM assigned two names to each interconnection. The table below lists all interconnection points.

NSP	POC code	Network participant	Metering category	Comment
ELL0111ELINNP ELL0111TPCONP	ELL0111	ELIN	3	Not metered (exempted)
		TPCO		
BLF0111ELINNP BLF0111TPCONP	BLF0111	ELIN	5	
		TPCO		
LEV0331ELINNP LEV0331TPCONP	LEV0331	ELIN	5	
		TPCO		
OCB0111ELINNP OCB0111TPCONP	OCB0111	ELIN	5	
		TPCO		
SOU0331ELINNP SOU0331TPCONP	SOU0331	ELIN	5	
		TPCO		
STD0111ELINNP STD0111TPCONP	STD0111	ELIN	3	
		TPCO		

1.8. Authorisation Received

PowerNet provided a letter of authorisation to TEG & Associates permitting the collection of data from other parties for matters directly related to the audit.

1.9. Scope of Audit

This participant audit was performed at the request of PowerNet to encompass the Authority's request for an audit as required by clause 16A.18 of Part 16A, of the Electricity Industry Participation Code. The audit was conducted on 22 October 2019.

The audit covered the following functions:

- Process for changing a MEP
- Installation and modification of metering installations
- Metering records

- Certification of metering installations
- Inspection of metering installations
- Process of handling faulty metering installations
- Access to and provision of raw meter data and metering installations

1.10. Summary of previous audit

The last audit was conducted on 20 July 2017 by Ewa Glowacka of TEG & Associates Ltd. No non-compliances were found.

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

PowerNet provides the MEP services for metering installations of category 3 to 5. These meters are read remotely by EMS.

Audit commentary

As a part of recertification and inspections, the service interface is checked. If there is a problem with the communication with a meter, PowerNet will be notified by EMS and it will attend to it. Since the last audit no problem with communication was recorded.

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

PowerNet has been managing Electricity Invercargill and The Power Company networks' assets for a number of years. The company already has a procedure in place, detailing how disputes between participants will be resolved, if the need arises.

Audit commentary

There were no disputes related to installations for which PowerNet provides the MEP services.

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

We checked the “Network_supply_points_table” posted on the Authority website and we confirm that the 4-letter code of PWNT is used for PowerNet MEP.

Audit commentary

For ICP 0000505609CE056, no MEP (PWNT) or trader is recorded in the registry because this ICP is assigned to the gate meter to the embedded network, Northlake Wanaka.

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

All meters are read remotely by EMS using cell phones. The communication equipment complies with the communication network operator.

Audit commentary

If any incompatibility was discovered between a communication network operator and equipment installed on site, it would be addressed promptly. No such incident was reported.

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

PowerNet takes all practicable steps to provide accurate information if requested.

Audit commentary

Interconnection installations for which PowerNet provides the MEP services are well established. PowerNet has set-up a solid process to monitor the accuracy of information and timeliness of inspections and certifications.

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

PowerNet understands their obligations as a MEP may only cease when the responsible participants enter into an arrangement with another MEP.

Audit commentary

The company is very familiar with this part of the Code because it also manages the MEP services for The Power Company (TPCO) and Electricity Invercargill (ELIN), which are audited regularly. The MEP code, PWNT, is not recorded in the registry.

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 interconnections do not have ICPs assigned therefore they are not listed in the registry. The registry does not hold details of the MEP for ICP 0000505609CE056 therefore it is not possible to upload metering information.

Audit commentary

This clause is not applicable. Compliance was not assessed.

Audit outcome

Not applicable

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

If such a situation was to arise, PowerNet will provide access to metering records.

Audit commentary

No such request has been made by any other MEP since the last audit. The MEP switch can only occur outside of the registry as interconnections do not have ICP identifiers assigned and the MEP for Northlake's gate meter is not recorded in the registry.

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

All documents are scanned and retained electronically. The company will follow this process and continue to keep metering records even if PowerNet ceases to be responsible for an installation.

Audit commentary

PowerNet showed us evidence that all records are stored electronically in a secure location. The records will be kept indefinitely.

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

PowerNet has been providing the MEP services for these installations for a number of years. Any modification to these installations, if it occurs, will be discussed with the respective Approved Test House, in this case AccuCal.

Audit commentary

During this audit, all installation's certifications were sighted. All information listed in this clause was recorded on certificates.

Audit outcome

Compliant

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

Code reference

Clause 9 of Schedule 10.6

Code related audit information

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

Audit observation

AccuCal is the ATH which provides certification services to PowerNet.

Audit commentary

According to the Electricity Authority's website AccuCal holds the certifications appropriate for the work which is required to be undertaken.

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

PowerNet provides the MEP services for category 3 and 5 metering installations.

Audit commentary

These installations are certified by Approved Test House - AccuCal. Each time PowerNet receives the certification for any installation it is checked and verified before it is stored securely.

Audit outcome

Compliant

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

Code reference

Clause 4(2)(a) of Schedule 10.7

Code related audit information

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

Audit observation

Any installations for which PowerNet is responsible do not use subtraction to determine submission information.

Audit commentary

No subtraction method is used 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

PowerNet, as the MEP, is responsible for category 3 and 5 metering installations. All interconnections have half-hour meters installed.

Audit commentary

We sighted the certification and confirm that HHR meters are 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

The installation of the gate meter of Northlake Wanaka embedded network does not use subtraction to determine submission information.

Audit commentary

Compliance confirmed based on a viewing of the certificates.

Audit outcome

Compliant

4.7. Responsibility for Metering Installations (Clause 10.26(10))

Code reference

Clause 10.26(10)

Code related audit information

The MEP must ensure that each point of connection to the grid for which there is a metering installation that it is responsible for has a half hour metering installation.

Audit observation

PowerNet is not a MEP for any metering installation for point of connection to the grid.

Audit commentary

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

The metering installations for interconnections between Electricity Invercargill and The Power Company were designed many years ago in conjunction with Transpower and AccuCal. Each of these companies contributed their knowledge to make sure that the design takes into consideration the physical and electrical characteristics of these installations. The same principle applied to the Northlake gate meter; it was designed by AccuCal.

Audit commentary

For each installation for which PowerNet provided the MEP services, PowerNet uses companies with sufficient knowledge and experience to assure that the physical and electrical characteristics of the proposed installation are taken into consideration.

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

PowerNet is the MEP for 6 interconnections and one gate meter. PowerNet, being responsible for both networks, is in a good position to provide agreement between parties concerned before the design of a metering installation is finalised.

Audit commentary

PowerNet consulted with Aurora, the distributor, on which the Northlake embedded network is placed, to make sure that their requirements were met.

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 interconnections are not recorded in the registry. The MEP for Northlake embedded network is not recorded in the registry.

Audit commentary

This clause is not applicable. Compliance was not assessed.

Audit outcome

Not applicable

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

AccuCal ATH, working for PowerNet, follows the best industry practise. Each certification or re-certification requires a specific test to be conducted to make sure that each metering component is compatible with, and does not interfere with, any other component. A design is followed, and all components integrated to provide a functioning system.

Audit commentary

During certification of an installation, the integrity and functionality is checked. If an installation fails the test it won't be certified. All installations for which PowerNet provides the MEP services are certified.

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

If any of the interconnections are decommissioned PowerNet will arrange for a final read. The same will apply to the gate meter. It will be done by EMS.

Audit commentary

It is very unlikely that any of the interconnections will be decommissioned. It would require a major re-configuration of both networks. PowerNet has a process for the decommissioning of an ICP for ELIN and TPCO.

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

All installations for which PowerNet is the MEP contain VTs and CTs. Any changes to installations which would require the addition of, or change to, the burden or compensation factor of a measuring transformer will be consulted with AccuCal.

Audit commentary

Such a situation has not occurred since the last audit. PowerNet confirmed that there are no changes made to a CTs burden or compensation factor unless the site is recertified

Audit outcome

Compliant

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

Code reference

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

Code related audit information

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

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

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

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

Audit observation

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

Audit commentary

Data storage device software is an integral part of a meter. If any changes to a data storage device are required a meter will be replaced.

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

PowerNet does not provide the MEP services for such connections.

Audit commentary

This clause is not applicable. Compliance was not assessed.

Audit outcome

Not applicable

4.16. Temporary Electrical Connection (Clause 10.30A)

Code reference

Clause 10.30A

Code related audit information

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

Audit observation

PWNT has not become the MEP to any new embedded network since the last audit.

Audit commentary

Compliance confirmed in the statement from the company.

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

PowerNet does not provide the MEP services to such connections.

Audit commentary

This clause is not applicable. Compliance was not assessed.

Audit outcome

Not applicable

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

Metering records for the interconnections and the Northlake embedded network gate meter are stored in DMS (Document Management System). The certifications for these installations are stored as electronic documents provided by AccuCal. The certification documents contain all relevant information which is listed as a requirement in the above clauses.

Audit commentary

PowerNet showed us evidence of where information is stored.

Audit outcome

Compliant

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

Code reference

Clause 4(2) of Schedule 10.6

Code related audit information

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

Audit observation

It was discussed during the audit.

Audit commentary

The only party who could ask for a signed inspection report for interconnection would be Transpower. It will be made available to them if requested but such a request was not made. The gate meter of Northlake has not been inspected yet.

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

Records of all installations components are stored in the Document Management System, even if these components are removed.

Audit commentary

PowerNet will keep records indefinitely.

Audit outcome

Compliant

5.4. Provision of Records to ATH (Clause 6 Schedule 10.6)

Code reference

Clause 6 Schedule 10.6

Code related audit information

If the MEP contracts with an ATH to recertify a metering installation and the ATH did not previously certify the metering installation, the MEP must provide the ATH with a copy of all relevant metering records not later than 10 business days after the contract comes into effect.

Audit observation

PowerNet uses AccuCal as the Approved Test House. There are no plans to use another ATH but if a change occurs the previous certification documentation will be provided to the newly appointed ATH.

Audit commentary

If ever PWNT decides to change the ATH, the records will be provided if requested.

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 interconnections do not have ICP identifiers therefore they are not listed in the registry. The gate meter of the Northlake embedded network ICP is recorded in the registry but the registry does not provide the functionality to nominate a new MEP.

Audit commentary

Compliance not assessed because the registry does not provide the functionality to nominate a new MEP. It would happen outside of the registry.

Audit outcome

Not applicable

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

There is no provision in the registry to provide metering information for the gate meters.

Audit commentary

This clause is not applicable. Compliance was not assessed.

Audit outcome

Not applicable

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 interconnections do not have ICP identifiers therefore they are not listed in the registry. The gate meter of the Northlake embedded network ICP is recorded in the registry but the registry does not provide the functionality to uploaded metering information.

Audit commentary

This clause is not applicable. Compliance was not assessed.

Audit outcome

Not applicable

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 interconnections metering installations do not have ICPs assigned therefore they are not listed in the registry. ICP 0000505609CE056 has the reconciliation status "LE", the registry functionality does not allow the MEP to upload any metering information including a certification expiry date.

Audit commentary

This clause is not applicable. Compliance was not assessed.

Audit outcome

Not applicable

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

There is no option to upload metering information into the registry for any installation for which PowerNet provides the MEP services.

Audit commentary

This clause is not applicable. Compliance was not assessed.

Audit outcome

Not applicable

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

PowerNet provides the MEP services for category 3 and 5 metering installations. There is a recertification programme and inspection schedule in place. As some metering installations contain many components, such as a meter, CT, and VT, each component has a different certification period which has to be managed accordingly. PowerNet has designed and maintains a spreadsheet which covers all components of the installations. The spreadsheet shows certification expiry dates for each component, installation expiry dates and the date of inspections.

The table below is the extract from the spreadsheet showing the expiry date for each installation:

NSP	POC	Network Participant	MEP	Meter Cat	Installation Certification Date	Installation Certification Expiry
INV0331ELINGN	INV0331	ELIN	PWNT	5	CB 2732 03/07/19 CB 2772 03/07/19 CB 2792 04/07/19 CB 2862 04/07/19 CB 2872 04/07/19	CB 2732 03/07/22 CB 2772 03/07/22 CB 2792 04/07/22 CB 2862 04/07/22 CB 2872 04/07/22
BLF0111ELINNP BLF0111TPCONP	BLF0111	ELIN TPCO	PWNT	5	CB4 01/05/19 CB5 01/05/19	CB4 01/05/22 CB5 01/05/22
LEV0331ELINNP LEV0331TPCONP	LEV0331	ELIN TPCO	PWNT	5	13/09/18	19/09/20
OCB0111ELINNP OCB0111TPCONP	OCB0111	ELIN TPCO	PWNT	5	CB5 05/07/19 CB13 05/07/19	CB5 05/07/22 CB13 05/07/22
SOU0331ELINNP SOU0331TPCONP	SOU0331	ELIN TPCO	PWNT	5	12/09/18	19/09/20

STD0111ELINNP STD0111TPCONP	STD0111	ELIN TPCO	PWNT	3	25/07/18	25/07/28
NLK0111 (Northlake Wanaka 0000505609CE056)	NLK0111	LLNW	PWNT	3	27/07/18	27/07/27
ELL0111ELIN ELL0111TPCO		ELIN TPCO	Exempt from Metering No 167 Expires 31/03/23			

Audit commentary

All installations hold current certification. Every time an installation recertification occurs PowerNet updates its records. We reviewed how information is recorded and we confirm compliance. At the time of re-certification, batteries are checked and replaced if necessary.

Audit outcome

Compliant

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

PowerNet uses ATH – AccuCal which, according to the Electricity Authority’s website, holds the certification of Test House, class A, which is sufficient to certify category 3 and 5 metering installations.

Audit commentary

Certificates of Compliance issued by AccuCal are very detailed. They list each test conducted for each component of an installation. PowerNet always reviews the certificates before filing.

Audit outcome

Compliant

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

Code reference

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

Code related audit information

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

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

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

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

All other installations must measure and separately record:

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

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

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

Audit observation

We reviewed all certifications and confirm that all of them are programmed to record kWh/kVArh import and kWh/kVArh export

Audit commentary

Compliance confirmed based on documentation provided by PowerNet.

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

PowerNet does not provide the MEP functionality for metering installations for a point of connection to the grid.

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

CTs installed as part of metering installations are used only for metering purposes. VTs are commonly shared in big installations between metering and protection circuits as it is not practical to use separate VTs for metering and protection purposes. Clause 30(1) of Schedule 10.7 makes provision for this multi-use of VTs.

Audit commentary

If a protection relay change arises it is always like for like; so the impact is negligible. At the time of the next recertification of the metering installation, the measuring of the transformer burden is recalculated by AccuCal. PowerNet confirmed that since the last audit no protection relays were changed.

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

All installations are certified based on the primary rating of the current.

Audit commentary

No metering installations were certified as a lower category. Compliance confirmed based on review of Certifications of Compliance.

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

Since the last audit PowerNet had not had a situation where there is insufficient electricity conveyed through a POC to allow the ATH to complete a prevailing load test for a metering installation.

Audit commentary

Since the last audit 5 interconnections had to be re-certified. AccuCal was able to complete a prevailing load test for all of them and certify as HHR metering installations.

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

All metering installations are certified by AccuCal on the request of PowerNet. If the metering installation does not pass the tests it will not be certified until satisfactory results are achieved.

Audit commentary

PowerNet confirmed, there is no option to certify an installation if it does not fully pass all tests. Since the last audit such a situation did not occur.

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

There are no such installations where PowerNet has a problem with access issues to CTs to certify a metering installation.

Audit commentary

It was discussed during the audit. The interconnection metering installations are positioned within substations with easy access to CT/VTs. There is also no access issue to CTs for ICP 0000505609CE056 (gate meter for embedded network). No alternative certification process was used.

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

PowerNet provides the MEP services for category 3 and 5 metering installations. Time keeping devices are not used in such installations.

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

PowerNet provides the MEP services for category 3 and 5 metering installation. Control devices are not used in such installations.

Audit commentary

This clause is not applicable. Compliance was not assessed.

Audit outcome

Not applicable

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

PowerNet provides the MEP services for category 3 to 5 metering installation. Control devices are not used in such installations.

Audit commentary

This clause is not applicable. Compliance was not assessed.

Audit outcome

Not applicable

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

PowerNet provides the MEP services for category 3 to 5 metering installation.

Audit commentary

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

The interconnection installations and the gate meter do not have compensation factors which need to be applied to volumes.

Audit commentary

We checked the Certificates of Compliance for all installations and confirm no compensation factor needs to be applied to volumes.

Audit outcome

Compliant

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

Code reference

Clause 26(1) of Schedule 10.7

Code related audit information

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

Audit observation

PowerNet provided the certifications issued by AccuCal for all installations. The table showing detail is below:

NSP	POC	Network Participant	MEP	Meter Cat	Meter Certification Expiry	Installation Certification Expiry
INV0331ELINGN	INV0331	ELIN	PWNT	5	CB 2732 03/07/22 CB 2772 03/07/22 CB 2792 04/07/22 CB 2862 04/07/22 CB 2872 04/07/22	CB 2732 03/07/22 CB 2772 03/07/22 CB 2792 04/07/22 CB 2862 04/07/22 CB 2872 04/07/22
BLF0111ELINNP BLF0111TPCONP	BLF0111	ELIN TPCO	PWNT	5	CB4 01/05/22 CB5 01/05/22	CB4 01/05/22 CB5 01/05/22
LEV0331ELINNP LEV0331TPCONP	LEV0331	ELIN TPCO	PWNT	5	19/09/20	19/09/20
OCB0111ELINNP OCB0111TPCONP	OCB0111	ELIN TPCO	PWNT	5	CB5 05/07/22 CB13 05/07/22	CB5 05/07/22 CB13 05/07/22
SOU0331ELINNP SOU0331TPCONP	SOU0331	ELIN TPCO	PWNT	5	19/09/20	19/09/20
STD0111ELINNP STD0111TPCONP	STD0111	ELIN TPCO	PWNT	3	25/07/28	25/07/28
NLK0111 (Northlake Wanaka 0000505609CE056)	NLK0111	LLNW	PWNT	3	27/07/27	27/07/27

Audit commentary

The table above shows that all meters are certified. We viewed the AccuCal certificates.

Audit outcome

Compliant

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

Code reference

Clause 28(1) of Schedule 10.7

Code related audit information

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

Audit observation

PowerNet provided the certifications issued by AccuCal for all installations. The table showing detail is below:

NSP	POC	Network Participant	MEP	Meter Cat	CTVT Certification Expiry
INV0331ELINGN	INV0331	ELIN	PWNT	5	VTs – TPwr owned T3 VT 17/12/25 T5 VT 13/10/27 CTs – PNL owned CB 2732 14/11/27 CB 2772 16/11/27 CB 2792 13/11/27 CB 2862 24/01/28 CB 2872 21/12/27
BLF0111ELINNP BLF0111TPCONP	BLF0111	ELIN TPCO	PWNT	5	CB4 11kV CT/VT 15/11/27 CB5 11kV CT/VT 09/09/26
LEV0331ELINNP LEV0331TPCONP	LEV0331	ELIN TPCO	PWNT	5	33kV VT 13/09/28 33kV CT 13/09/28
OCB0111ELINNP OCB0111TPCONP	OCB0111	ELIN TPCO	PWNT	5	T1 VT 26/07/28 CB5 CT 26/07/28 T2 VT 04/02/24 CB13 CT 04/02/24
SOU0331ELINNP SOU0331TPCONP	SOU0331	ELIN TPCO	PWNT	5	33kV VT 12/09/28 33kV CT 12/09/28
STD0111ELINNP STD0111TPCONP	STD0111	ELIN TPCO	PWNT	3	11kV CT/VT 25/07/28

NLK0111 (Northlake Wanaka 0000505609CE056)	NLK0111	LLNW	PWNT	3	11kV CT/VT 27/07/27
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Audit commentary

The table above shows that all CTs are certified. We viewed the AccuCal certificates.

Audit outcome

Compliant

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

Code reference

Clause 36(1) of Schedule 10.7

Code related audit information

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

Audit observation

PowerNet does not provide the MEP services for metering installations where data storage devices are separately installed.

Audit commentary

For all installations data storage devices are an integral part of the meter.

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

PowerNet understands clause 7 and, if it occurs, will take appropriate action. We would expect that it would be a major undertaking for all participants, if AccuCal were to lose their certification.

Audit commentary

The process will be followed if such a situation arises.

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

PWNT provides the MEP services for metering installations of category 3 to 5 only.

Audit commentary

This clause is not applicable. Compliance was not assessed.

Audit outcome

Not applicable

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

PowerNet does not provide the MEP services for category 1 metering installations.

Audit commentary

This clause is not applicable. Compliance was not assessed.

Audit outcome

Not applicable

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

The majority of PowerNet sites are metering installations of category 5. The code requires them to be inspected every 18 months and re-certified every 36 months.

Audit commentary

The table below shows a summary of inspection schedules for the interconnections and the Northlake gate meter.

NSP	POC	Network Participant	Meter Cat	Installation Certification Date	Installation Certification Expiry	Inspection	
						Due	Last Completed
INV0331ELINGN	INV0331	ELIN	5	CB 2732 03/07/19	CB 2732 03/07/22	03/12/20 – 03/02/21	CB 2732 02/05/19
				CB 2772 03/07/19	CB 2772 03/07/22	03/12/20 – 03/02/21	CB 2772 02/05/19
				CB 2792 04/07/19	CB 2792 04/07/22	04/12/20 – 04/02/21	CB 2792 02/05/19
				CB 2862 04/07/19	CB 2862 04/07/22	04/12/20 – 04/02/21	CB 2862 19/08/15
				CB 2872 04/07/19	CB 2872 04/07/22	04/12/20 – 04/02/21	CB 2872 19/08/15
BLF0111ELINNP BLF0111TPCONP	BLF0111	ELIN TPCO	5	CB4 01/05/19	CB4 01/05/22	CB4 01/10/20 – 01/12/20	CB4 08/10/14
				CB5 01/05/19	CB5 01/05/22	CB5 01/10/20 – 01/12/20	CB5 14/02/18
LEV0331ELINNP LEV0331TPCONP	LEV0331	ELIN TPCO	5	13/09/18	19/09/20	13/02 – 13/04/20	11/05/16

OCB0111ELINNP OCB0111TPCONP	OCB0111	ELIN TPCO	5	CB5 05/07/19 CB13 05/07/19	CB5 05/07/22 CB13 05/07/22	CB5 05/12/20 – 05/02/21 CB13 05/12/20 – 05/02/21	CB5 10/04/18 CB13 12/06/18
SOU0331ELINNP SOU0331TPCONP	SOU0331	ELIN TPCO	5	12/09/18	19/09/20	12/02 – 12/04/20	11/05/16
STD0111ELINNP STD0111TPCONP	STD0111	ELIN TPCO	3	25/07/18	25/07/28	25/04 – 25/10/23	08/12/11
NLK0111 (Northlake Wanaka 0000505609CE056)	NLK0111	LLNW	3	27/07/18	27/07/27	27/04/ – 26/10/23	New site 2018 First Insp 2023

We confirm that all metering installation inspections were conducted except for the gate meter for Northlake Wanaka embedded network, which was installed in 2018.

Audit outcome

Compliant

8.3. Inspection Reports (Clause 44(5) of Schedule 10.7)

Code reference

Clause 44(5) of Schedule 10.7

Code related audit information

The MEP must, within 20 business days of receiving an inspection report from an ATH:

- undertake a comparison of the information received with its own records
- investigate and correct any discrepancies
- update the metering records in the registry.

Audit observation

PowerNet confirm that it has a process in place to review inspection reports as soon as they are received from AccuCal.

Audit commentary

Inspection reports are reviewed and if any anomalies are discovered they are attended to.

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

If PowerNet were to be advised that a seal was found broken or removed, a job would be issued to assess the situation and have the installation recertified, if required. Such a situation is unlikely because the interconnection metering installations are within restricted areas and only appropriately qualified/responsible people have access. The gate meter of Northlake embedded network is also located in enclosed area.

Audit commentary

If such a situation arises the appropriate action will be taken. PowerNet also manages the MEP for ELIN and TPCO and a process is already in place.

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

Once PowerNet is made aware of a meter being inaccurate or defective, a job request is created and the ATH is called and asked to investigate.

Audit commentary

Since the last audit such a situation has not occurred. PowerNet also manages the MEP services for ELIN and TPCO and a process is already in place.

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

The job is issued and AccuCal (ATH) will conduct tests and reports back to PowerNet with their findings and recommendations.

Audit commentary

The process is that PowerNet will request AccuCal (ATH) to test the metering installation and provide a 'statement of situation'. Since the last audit no metering installations were reported faulty.

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

PowerNet confirmed that there were no instances, since the last audit, where a half-hour installation was faulty and inaccuracies in raw data were discovered as a result. The process, if any HHR is reported being faulty, is to ask AccuCal to investigate and provide a statement of situation. A statement of situation is provided to a trader.

Audit commentary

If such a situation occurs the only trader which needs to be advised is Electricity Southland (Northlake embedded network). The interconnections volumes are not traded. They are used by the reconciliation manager for internal calculations.

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

PowerNet does not read meters themselves, they are read by EMS. PowerNet can authorise the release of raw meter data when asked. No such requests were received since the last audit.

Audit commentary

No requests for access to raw meter data were received since the last audit.

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

PowerNet won't authorise raw meter data from the gate meter of Northlake embedded network to an unauthorised party. The interconnection volumes are not traded.

Audit commentary

No requests for access to raw meter data, from the gate meter, were received since the last audit.

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

Access will be provided if requested. Some interconnections are within Transpower substations therefore their access protocols must be observed.

Audit commentary

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

Audit outcome

Compliant

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

Code reference

Clause 3(5) of Schedule 10.6

Code related audit information

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

Audit observation

Access will be provided if requested. Some interconnections are within Transpower substations therefore their access protocols must be observed.

Audit commentary

PowerNet will use its best endeavours to arrange access to a metering installation if requested. It will be solely dependent on the customer's availability or health and safety concerns that determines if access is granted and within what time frame. PowerNet has not been approached with such a request since the last audit.

Audit outcome

Compliant

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

Code reference

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

Code related audit information

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

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

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

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

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

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

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

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

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

Audit observation

PowerNet does not read meters via their back office, they are read by EMS.

Audit commentary

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

PowerNet does not read meters via their back office, they are read by EMS.

Audit commentary

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

PowerNet does not read meters via their back office, they are read by EMS.

Audit commentary

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

PowerNet does not read meters via their back office, they are read by EMS.

Audit commentary

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

PowerNet does not read meters via their back office, they are read by EMS.

Audit commentary

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

PowerNet does not read meters via their back office, they are read by EMS.

Audit commentary

This clause is not applicable, compliance was not assessed.

Audit outcome

Not applicable

CONCLUSION

PARTICIPANT RESPONSE