

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

For

BROADSPECTRUM LIMITED

Prepared by: Brett Piskulic – Veritek Limited

Date audit commenced: 16 July 2019

Date audit report completed: 11 September 2019

Audit report due date: 28-Jul-19

TABLE OF CONTENTS

Executive summary	5
Audit summary	5
Non-compliances	5
Recommendations	8
Issues	8
1. Administrative	9
1.1. Exemptions from Obligations to Comply with Code (Section 11)	9
1.2. Structure of Organisation	9
1.3. Persons involved in this audit	10
1.4. Use of Agents (Clause 10.3)	10
1.5. Hardware and Software	10
1.6. Breaches or Breach Allegations	11
1.7. ICP Data	11
1.8. Authorisation Received	11
1.9. Scope of Audit	11
1.10. Summary of previous audit	11
Table of Non-Compliance	11
Table of Recommendations	13
1.11. Audit Requirement (Clause 10.17A & 16A.17)	13
2. Operational Infrastructure	15
2.1. MEP responsibility for services access interface (Clause 10.9(2))	15
2.2. Dispute Resolution (Clause 10.50(1) to (3))	15
2.3. MEP Identifier (Clause 7(1) of Schedule 10.6)	15
2.4. Communication Equipment Compatibility (Clause 40 Schedule 10.7)	16
2.5. Participants to Provide Accurate Information (Clause 11.2 and Clause 10.6)	16
3. Process for a Change of MEP	18
3.1. Payment of Costs to Losing MEP (Clause 10.22)	18
3.2. Registry Notification of Metering Records (Clause 2 of Schedule 11.4)	18
3.3. Provision of Metering Records to Gaining MEP (Clause 5 of Schedule 10.6)	19
3.4. Termination of MEP Responsibility (Clause 10.23)	19
4. Installation and Modification of Metering Installations	21
4.1. Design Reports for Metering Installations (Clause 2 of Schedule 10.7)	21
4.2. Contracting with ATH (Clause 9 of Schedule 10.6)	22
4.3. Metering Installation Design & Accuracy (Clause 4(1) of Schedule 10.7)	22
4.4. Subtractive Metering (Clause 4(2)(a) of Schedule 10.7)	24
4.5. HHR Metering (Clause 4(2)(b) of Schedule 10.7)	25
4.6. NSP Metering (Clause 4(3) of Schedule 10.7)	25
4.7. Responsibility for Metering Installations (Clause 10.26(10))	25
4.8. Suitability of Metering Installations (Clause 4(4) of Schedule 10.7)	26
4.9. Installation & Modification of Metering Installations (Clauses 10.34(2), (2A) and (3)) ..	26
4.10. Changes to Registry Records (Clause 3 of Schedule 11.4)	27
4.11. Metering Infrastructure (Clause 10.39(1))	29
4.12. Responsibility for Metering at ICP (Clause 11.18B(3))	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 Energisation (Clause 10.28(6)).....	31
5.	Metering Records.....	32
5.1.	Accurate and Complete Records (Clause 4(1)(a) and (b) of Schedule 10.6, and Table 1, Schedule 11.4)	32
5.2.	Inspection Reports (Clause 4(2) of Schedule 10.6)	33
5.3.	Retention of Metering Records (Clause 4(3) of Schedule 10.6)	34
5.4.	Provision of Records to ATH (Clause 6 Schedule 10.6).....	34
6.	Maintenance of Registry Information.....	35
6.1.	MEP Response to Switch Notification (Clause 1(1) of Schedule 11.4)	35
6.2.	Provision of Registry Information (Clause 7 (1), (2) and (3) of Schedule 11.4)	36
6.3.	Correction of Errors in Registry (Clause 6 of Schedule 11.4)	37
6.4.	Cancellation of Certification (Clause 20 of Schedule 10.7)	38
6.5.	Registry Metering Records (Clause 11.8A).....	42
7.	Certification of Metering Installations.....	44
7.1.	Certification and Maintenance (Clause 10.38 (a), clause 1 and clause 15 of Schedule 10.7)	44
7.2.	Certification Tests (Clause 10.38(b) and clause 9 of Schedule 10.6).....	46
7.3.	Active and Reactive Capability (Clause 10.37(1) and 10.37(2)(a))	46
7.4.	Local Service Metering (Clause 10.37(2)(b))	47
7.5.	Measuring Transformer Burden (Clause 30(1) and 31(2) of Schedule 10.7)	47
7.6.	Certification as a Lower Category (Clauses 6(1)(b) and (d), and 6(2)(b) of Schedule 10.7).....	48
7.7.	Insufficient Load for Certification Tests (Clauses 14(3) and (4) of Schedule 10.7)	49
7.8.	Insufficient Load for Certification – Cancellation of Certification (Clause 14(6) of Schedule 10.7)	50
7.9.	Alternative Certification Requirements (Clauses 32(2), (3) and (4) of Schedule 10.7) ...	50
7.10.	Timekeeping Requirements (Clause 23 of Schedule 10.7).....	51
7.11.	Control Device Bridged Out (Clause 35 of Schedule 10.7)	51
7.12.	Control Device Reliability Requirements (Clause 34(5) of Schedule 10.7).....	52
7.13.	Statistical Sampling (Clauses 16(1) and (5) of Schedule 10.7).....	52
7.14.	Compensation Factors (Clause 24(3) of Schedule 10.7).....	53
7.15.	Metering Installations Incorporating a Meter (Clause 26(1) of Schedule 10.7).....	53
7.16.	Metering Installations Incorporating a Measuring Transformer (Clause 28(1) of Schedule 10.7)	53
7.17.	Metering Installations Incorporating a Data Storage Device (Clause 36(1) of Schedule 10.7)	54
7.18.	Notification of ATH Approval (Clause 7 (3) Schedule 10.3).....	54
7.19.	Interim Certification (Clause 18 of Schedule 10.7).....	55
8.	Inspection of metering installations	56
8.1.	Category 1 Inspections (Clause 45 of Schedule 10.7).....	56
8.2.	Category 2 to 5 Inspections (Clause 46(1) of Schedule 10.7)	57
8.3.	Inspection Reports (Clause 44(5) of Schedule 10.7)	58
8.4.	Broken or removed seals (Clause 48(4) and (5) of Schedule 10.7)	58
9.	Process for Handling Faulty Metering Installations	60
9.1.	Investigation of Faulty Metering Installations (Clause 10.43(4) and (5)).....	60

9.2. Testing of Faulty Metering Installations (Clause 10.44).....	60
9.3. Statement of Situation (Clause10.46(2)).....	61
10. Access to and Provision of Raw meter Data and Metering Installations.....	62
10.1. Access to Raw Meter Data (Clause 1 of Schedule 10.6).....	62
10.2. Restrictions on Use of Raw Meter Data (Clause 2 of Schedule 10.6).....	62
10.3. Access to Metering Installations (Clause 3(1), (3) and (4) of Schedule 10.6).....	63
10.4. Urgent Access to Metering Installations (Clause 3(5) of Schedule 10.6).....	63
10.5. Electronic Interrogation of Metering Installations (Clause 8 of Schedule 10.6).....	64
10.6. Security of Metering Data (Clause 10.15(2)).....	65
10.7. Time Errors for Metering Installations (Clause 8(4) of Schedule 10.6).....	65
10.8. Event Logs (Clause 8(7) of Schedule 10.6).....	65
10.9. Comparison of HHR Data with Register Data (Clause 8(9) of Schedule 10.6).....	66
10.10. Correction of Raw Meter Data (Clause 10.48(2),(3)).....	66
Conclusion	68
Participant response	69

EXECUTIVE SUMMARY

Broadspectrum Energy Limited (Broadspectrum) is a Metering Equipment Provider (MEP) and was required to undergo an audit by 26 October 2015, in accordance with clause 16A.14. This audit is over three years overdue, and during the period the audit was not conducted the level of compliance has reduced.

Broadspectrum is the MEP for 88 HHR ICPs. They do not operate a data collection system and they do not have any mass market ICPs. Broadspectrum is also an Approved Test House (ATH). The ATH function was not audited, although there is an overlap between the two operations.

The controls require strengthening in many of the areas relevant to the MEP function. 14 non-compliances were identified. The major issues are as follows:

- 15 ICPs had expired certification;
- 22 ICPs have cancelled certification because inspections were not conducted;
- six ICPs have cancelled certification because low burden was not addressed;
- uncertainty calculations are not conducted in accordance with the Code; and
- some registry errors exist, and registry validation is not conducted.
- monitoring not conducted for two installations certified at a lower category.

The date of the next audit is determined by the Electricity Authority and is dependent on the level of compliance during this audit. The table below provides some guidance on this matter and recommends an audit frequency of three months. This timeframe may not provide enough time to allow recertification to occur at the 45 installations with expired or cancelled certification. I therefore recommend the next audit is conducted in six months.

AUDIT SUMMARY

NON-COMPLIANCES

Subject	Section	Clause	Non-Compliance	Controls	Audit Risk Rating	Breach Risk Rating	Remedial Action
Audit requirements	1.11	10.17A & 16A.17	Audit completed late.	Moderate	Low	2	Identified
Provision of accurate information	2.5	11.2 and Clause 10.6	All practicable steps have not been taken to ensure information is complete and accurate.	Weak	Low	3	Identified
Design reports	4.1	2 of Schedule 10.7	Maximum interrogation cycle not recorded for 3 of 19 records	Weak	Low	3	Identified
Error and uncertainty	4.3	4(1) of Schedule 10.7	Uncertainty calculations not conducted in accordance with the Code.	Moderate	Low	2	Disputed
Design consultation	4.9	10.34(2), (2A) and (3)	Liaison has not occurred with traders and distributors for newly	Weak	Low	3	Disputed

			installed metering installations.				
Changes to registry records	4.10	3 of Schedule 11.4	Records updated on the registry later than 10 business days.	Weak	Low	3	Identified
Accurate and complete records	5.1	4(1)(a) and (b) of Schedule 10.6, and Table 1, Schedule 11.4	Certification records not provided for 9 metering installations. Inspection reports not provided for four metering installations.	Weak	Low	3	Identified
Response to switch notification	6.1	1(1) of Schedule 11.4	2 acceptances later than 10 business days.	Weak	Low	3	Identified
Registry accuracy	6.2	7 (1), (2) and (3) of Schedule 11.4	Incorrect registry information.	Weak	Low	3	Identified
Registry error correction	6.3	6 of Schedule 11.4	Registry validation not conducted.	None	Low	5	Identified
Cancellation of certification	6.4	20 of Schedule 10.7	Certification cancelled, and registry not updated for: <ul style="list-style-type: none"> • 22 installations without inspections within the window. • six installations with low burden. • Monitoring not conducted for two installations certified at a lower category. 	None	Medium	8	Identified
Certification of metering installations	7.1	10.38 (a), clause 1 and clause 15 of Schedule 10.7	Certification expired for 15 metering installations.	Weak	Medium	6	Identified
Certification as a Lower Category	7.6	6(1)(b) and (d), and 6(2)(b)	Monitoring not conducted for two installations certified at a lower category.	None	Low	5	Identified

		of Schedule 10.7					
Inspections	8.2	46(1) of schedule 10.7	Inspections not conducted within the allowable window for four installations.	None	Medium	8	Identified
Future Risk Rating						57	
Indicative Audit Frequency						3 months	

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

RECOMMENDATIONS

Subject	Section	Recommendation	Description
		Nil	

ISSUES

Subject	Section	Recommendation	Description
			Nil

1. ADMINISTRATIVE

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

Code reference

Section 11 of Electricity Industry Act 2010.

Code related audit information

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

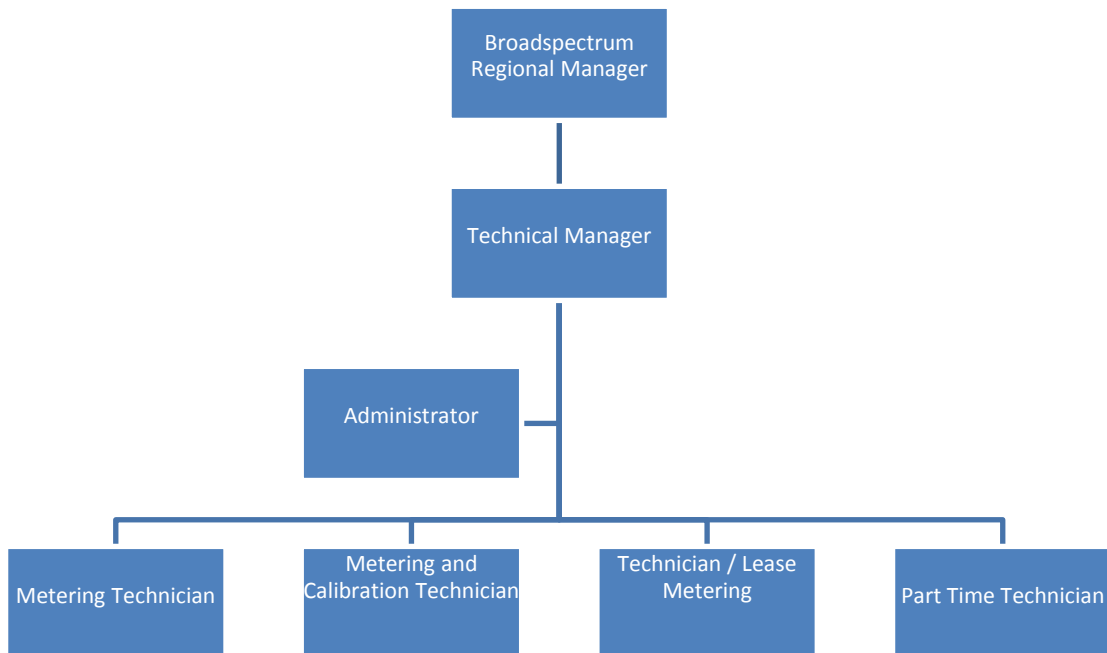
Audit observation

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

Audit commentary

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

1.2. Structure of Organisation



1.3. Persons involved in this audit

Auditor: Brett Piskulic

Veritek Limited

Electricity Authority Approved Auditor

Broadspectrum personnel assisting in this audit were:

Name	Title
Malcolm Hoare	Technical Manager

1.4. Use of Agents (Clause 10.3)

Code reference

Clause 10.3

Code related audit information

A participant who uses a contractor

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

Audit observation

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

Audit commentary

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

1.5. Hardware and Software

Broadspectrum MEP data is held in Lotus Notes which is subject to backup arrangements in accordance with standard industry protocols.

1.6. Breaches or Breach Allegations

There is an open investigation in progress, Broadspectrum is alleged by the Market Administrator to have breached clause 10.38(a) and clause 20(2) of Schedule 10.7 by failing to maintain certification for metering installations or components of metering installations for which it is responsible, and failing to update the registry when the certification was cancelled.

1.7. ICP Data

Metering Category	Number of ICPs
1	3
2	17
3	34
4	19
5	15
9	0

1.8. Authorisation Received

A letter of authorisation was not required or requested.

1.9. Scope of Audit

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

Broadspectrum is the MEP for 90 HHR ICPs. They do not operate a data collection system and they do not have any mass market ICPs. Broadspectrum is also an Approved Test House (ATH). The ATH function was not audited, although there is an overlap between the two operations.

1.10. Summary of previous audit

The previous audit was conducted in January 2019 by Steve Woods. The table below shows the status of the issues raised.

Table of Non-Compliance

Subject	Section	Clause	Non-compliance	Status
Audit requirements	1.11	10.17A & 16A.17	Audit completed late	Still existing
Services access interface	2.1	10.9(2)	Services access interface not recorded for five ICPs.	Cleared
Provision of accurate information	2.5	11.2 and Clause 10.6	All practicable steps have not been taken to ensure information is complete and accurate.	Still existing

Subject	Section	Clause	Non-compliance	Status
Design reports	4.1	2 of Schedule 10.7	Maximum interrogation cycle not recorded for 21 of 30 records.	Still existing
Error and uncertainty	4.3	4(1) of Schedule 10.7	Uncertainty calculations not conducted in accordance with the Code.	Still existing
Design consultation	4.9	10.34(2), (2A) and (3)	Liaison has not occurred with traders and distributors for newly installed metering installations.	Still existing
Changes to registry records	4.10	3 of Schedule 11.4	Most records updated on the registry later than 10 business days.	Still existing
Response to switch notification	6.1	1(1) of Schedule 11.4	2 of 4 acceptances later than 10 business days.	Still existing
Registry accuracy	6.2	7 (1), (2) and (3) of Schedule 11.4	Incorrect registry information.	Still existing
Registry error correction	6.3	6 of Schedule 11.4	Registry validation not conducted.	Still existing
Cancellation of certification	6.4	20 of Schedule 10.7	Certification cancelled, and registry not updated for: <ul style="list-style-type: none"> 27 installations without inspections within the window four installations with low burden.	Still existing
Certification of metering installations	7.1	10.38 (a), clause 1 and clause 15 of Schedule 10.7	Certification expired for 27 metering installations.	Still existing
Inspections	8.2	46(1) of schedule 10.7	Inspections not conducted within the allowable window for 27 installations.	Still existing

Table of Recommendations

Subject	Section	Clause	Recommendation for improvement	Status
			Nil	

1.11. Audit Requirement (Clause 10.17A & 16A.17)

Code reference

Clause 10.17A & 16A.17

Code related audit information

Each metering equipment provider must arrange to be audited regularly in accordance with Part 16A in respect of the metering equipment provider's obligations under this Part.

In relation to audits required under clauses 10.17A and 11.8B, a metering equipment provider must ensure that audits are completed as specified by the Authority under clause 16A.14.

Audit observation

Broadspectrum is a Metering Equipment Provider (MEP) and was required to undergo an audit by 28 July 2019, in accordance with clause 16A.14. The audit was not conducted by the required timeframe. Broadspectrum sought to extend the audit period as there had been little progress in making improvements in their back-office systems. The focus since the last audit has been on improving the compliance of metering installations.

Audit outcome

Non-compliant

Non-compliance	Description		
Audit Ref: 1.11 With: Clause 10.17A & 16A.17 From: 28-Jul-19 To: 01-Aug-19	Audit completed late. Potential impact: Low Actual impact: Low Audit history: Once Controls: Moderate Breach risk rating: 2		
Audit risk rating	Rationale for audit risk rating		
Low	Broadspectrum has controls in place to ensure audits are completed on time. The impact is recorded as low because of the short period between the audit due date and audit date.		
Actions taken to resolve the issue		Completion date	Remedial action status
This audit was planned and started prior to the date was required to be submitted, but for circumstances beyond my control, the audit was not completed on time		16/9/19	Identified

Preventative actions taken to ensure no further issues will occur	Completion date	
This audit was not missed, but because of the previously mention circumstances it has not been completed on time	16/9/19	

2. OPERATIONAL INFRASTRUCTURE

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

Code reference

Clause 10.9(2)

Code related audit information

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

Audit observation

I checked certification records for 19 metering installations.

Audit commentary

I checked 19 certification records and found the services access interface was recorded for all 19 ICPs.

Audit outcome

Compliant

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

Code reference

Clause 10.50(1) to (3)

Code related audit information

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

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

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

Audit observation

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

Audit commentary

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

Audit outcome

Compliant

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

Code reference

Clause 7(1) of Schedule 10.6

Code related audit information

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

Audit observation

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

Audit commentary

Broadspectrum uses the TRSV identifier in all cases.

Audit outcome

Compliant

2.4. Communication Equipment Compatibility (Clause 40 Schedule 10.7)

Code reference

Clause 40 Schedule 10.7

Code related audit information

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

Audit observation

I checked that the ATH has a process to check the relevant type test certificates to ensure compliance with this clause.

Audit commentary

Broadspectrum ensures all communication equipment is appropriately certified with the relevant telecommunications standards. This is recorded in type test certificates. Telecommunications providers no longer provide “approval” but the type test reports confirm no interference will occur.

Audit outcome

Compliant

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

Code reference

Clause 11.2 and Clause 10.6

Code related audit information

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

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

Audit observation

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

Audit commentary

The content of this audit report indicates that Broadspectrum has not taken all practicable steps to ensure that information is complete and accurate. There are many incorrect registry records and registry validation is not conducted in accordance with the Code.

Audit outcome

Non-compliant

Non-compliance	Description		
Audit Ref: 2.5 With: Clauses 11.2 and Clause 10.6 From: 26-Nov-14 To: 16-Jul-19	All practicable steps have not been taken to ensure information is complete and accurate. Potential impact: Medium Actual impact: Low Audit history: Once Controls: Weak Breach risk rating: 3		
Audit risk rating	Rationale for audit risk rating		
Low	The controls are recorded as weak because they will not ensure errors are mitigated. The impact on settlement and participants is minor; therefore, the audit risk rating is low.		
Actions taken to resolve the issue		Completion date	Remedial action status
We have not knowingly provided any incorrect information, yes there are some historical problems that may need to be fixed, these are being fixed as they are found.		On-going.	Identified
Preventative actions taken to ensure no further issues will occur		Completion date	
We are currently concentrating on getting the metering installations up to date and fully certified, as part of this the registry will for these installations will be updated, after completion of the metering installation certifications, we will look into the registry validation process and get this back up and running.		On-going	

3. PROCESS FOR A CHANGE OF MEP

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

Code reference

Clause 10.22

Code related audit information

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

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

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

Audit observation

I checked if Broadspectrum had sent or received any invoices.

Audit commentary

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

Audit outcome

Not applicable

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

Code reference

Clause 2 of Schedule 11.4

Code related audit information

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

Audit observation

There were no examples found in the event detail report because Broadspectrum has not become the MEP for any ICPs other than new connections.

Audit commentary

There were no examples found in the event detail report because Broadspectrum has not become the MEP for any ICPs other than new connections.

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

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

Audit commentary

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

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 MEP's obligations terminate only when;

- *the ICP changes under clause 10.22(1)(a);*
- *the NSP changes under clause 10.22(1)(b), in which case the MEPs obligations terminate from the date on which the gaining MEP assumes responsibility;*
- *the metering installation is no longer required for the purposes of Part 15; or*
- *the load associated with an ICP is converted to be used solely for unmetered load.*

Audit observation

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

Audit commentary

There were no cases during the audit period where Broadspectrum ICPs were decommissioned. Broadspectrum keeps records indefinitely, so will meet the requirement when it arises.

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

Broadspectrum has engaged Accucal and Vircom as ATHs and Broadspectrum is an ATH themselves. The ATHs have provided design reports for this work, which I have checked.

Audit commentary

The design reports were prepared by a person with the appropriate level of skills, expertise, experience and qualifications. The Broadspectrum design reports are compliant in most respects but the maximum interrogation cycle is not recorded for 3 of 19 records.

Audit outcome

Non-compliant

Non-compliance	Description		
Audit Ref: 4.1 With: Clause 2 of Schedule 10.7 From: 01-Nov-18 To: 16-Jul-19	Maximum interrogation cycle not recorded for 3 of 19 records Potential impact: Low Actual impact: Low Audit history: Once Controls: Weak Breach risk rating: 3		
Audit risk rating	Rationale for audit risk rating		
Low	The controls are recorded as moderate because they mitigate risk most of the time but there is room for improvement. The impact on settlement and participants is minor; therefore, the audit risk rating is low.		
Actions taken to resolve the issue		Completion date	Remedial action status

As can be seen by the fact that it is only three out of nineteen it shows that recording this is part of the process, but the checking failed to pick up this missing information	On-going	Identified
Preventative actions taken to ensure no further issues will occur	Completion date	
More rigorous checking of the design reports	On-going	

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

Code reference

Clause 9 of Schedule 10.6

Code related audit information

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

Audit observation

I confirmed that Broadspectrum has used Accucal, Vircom and their own ATH during the audit period.

Audit commentary

I checked the Authority's website and confirm that Broadspectrum has an appropriate scope of approval.

Audit outcome

Compliant

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

Code reference

Clause 4(1) of Schedule 10.7

Code related audit information

The MEP must ensure:

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

Audit observation

I checked the processes used by Broadspectrum to ensure compliance with the design and with the error thresholds stipulated in Table 1. I also checked the certification records for 19 metering installations.

Audit commentary

Whilst error and uncertainty calculations are undertaken by the ATH, the Code requires the MEP function to ensure the measured error and uncertainty does not exceed the maximum permitted error in Table 1.

The processes used by the VEMS and ACCL ATHs were compliant.

I checked one example of comparative recertification conducted by the Broadspectrum ATH. The error and uncertainty calculations for this comparative recertification were not compliant. Broadspectrum uses 0.57%, which is a conservative estimate. There is no direct link to the calibration report of the Hioki working standard and temperature is not taken into account.

Consideration of temperature is relevant for Hioki standards due to their temperature coefficient being quite high. The “Conditions of Guaranteed Accuracy” are shown below and indicate a guaranteed accuracy within the range 18° to 28°.

Conditions of Guaranteed Accuracy

Conditions of guaranteed accuracy	After 30 min warm-up, when measuring AC voltage; sine-wave input, PF=1, synchronized PLL
Temperature and humidity for guaranteed accuracy	23 ±5°C (73±9°F), 80% RH or less (applies to all specifications unless otherwise noted)

Further to this, the temperature characteristic indicates the 3196 working standard is within ± 0.03% per degree Celsius. When using this figure, it appears the combination of the working standard and clamp uncertainties may result in uncertainties greater than 0.6% at temperatures under approx. 10 degrees Celsius.

Other Characteristics

Frequency characteristic	69Hz to 1kHz: ±3% f.s. 1kHz to 3kHz: ±10% f.s. (RMS voltage and current), ±15% f.s. (active power)
Temperature characteristic	AC: Within ±0.03% f.s./°C at 50 or 60 Hz measurement, Within ±0.05% f.s./°C at 400 Hz measurement (from 0 to 18°C and from 28 to 40°C) DC: Within ±0.1% f.s./°C (from 0 to 18°C and from 28 to 40°C)

ICP 0009803084AL81C was certified on 15/05/19 with an uncertainty of 0.57%, excluding temperature.

With regard to the design of the installation (including data storage device and interrogation system), Broadspectrum ensures 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. There are no components installed where “coarse” rounding is in place for the data or where meters with a low pulse rate are connected to separate data storage devices.

Broadspectrum ensures the metering installation complies with the design report and the requirements of Part 10 by requiring their ATH to confirm the installations match the design, or by requiring updates to be provided if the installation does not match the design.

Audit outcome

Non-compliant

Non-compliance	Description		
Audit Ref: 4.3 With: Clause 4(1) of Schedule 10.7 From: 01-Nov-18 To: 16-Jul-19	Uncertainty calculations not conducted in accordance with the Code. Potential impact: Low Actual impact: Low Audit history: Once Controls: Moderate Breach risk rating: 2		
Audit risk rating	Rationale for audit risk rating		
Low	The controls are recorded as moderate because they mitigate risk most of the time but there is room for improvement. The impact on settlement is likely to be minor; therefore, the audit risk rating is low.		
Actions taken to resolve the issue		Completion date	Remedial action status
Why are different requirements being put in place when we use our own Test house, The paperwork clearly shows that the error and uncertainty are within the limits for a CAT 2 installation.		N/A	Disputed
Preventative actions taken to ensure no further issues will occur		Completion date	
None required		N/A	

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

Code reference

Clause 4(2)(a) of Schedule 10.7

Code related audit information

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

Audit observation

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

Audit commentary

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

Audit outcome

Not applicable

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

Code reference

Clause 4(2)(b) of Schedule 10.7

Code related audit information

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

Audit observation

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

Audit commentary

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

Audit outcome

Compliant

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

Code reference

Clause 4(3) of Schedule 10.7

Code related audit information

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

Audit observation

I checked if Broadspectrum is responsible for any NSP metering.

Audit commentary

Broadspectrum is not responsible for any NSP metering.

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

I checked if Broadspectrum is responsible for any GXP metering by reviewing the NSP Mapping Table.

Audit commentary

Broadspectrum is not responsible for any grid metering.

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

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

Audit commentary

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

Audit outcome

Compliant

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

Code reference

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

Code related audit information

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

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

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

Audit observation

I checked whether appropriate consultation had occurred.

Audit commentary

Two new connections occurred during the audit period, but liaison did not occur with the relevant distributor and trader.

Audit outcome

Non-compliant

Non-compliance	Description		
Audit Ref: 4.9 With: Clauses 10.34(2), (2A) and (3) From: 01-Nov-18 To: 16-Jul-19	Liaison has not occurred with trader and distributor for two newly installed metering installations. Potential impact: Low Actual impact: Low Audit history: Multiple times Controls: Weak Breach risk rating: 3		
Audit risk rating	Rationale for audit risk rating		
Low	The controls are recorded as weak because there is not a distinct process in place for this. There is unlikely to be any impact, because none of the parties have requested any changes to design, therefore the audit risk rating is low.		
Actions taken to resolve the issue		Completion date	Remedial action status
While two new connections/ICPs were commissioned these were both at the same site and were extensions to existing agreements already in place and all the requirements were known, and we had obviously discussed it with them for the installation to take place and the calibrations to be completed.		N/A	Disputed
Preventative actions taken to ensure no further issues will occur		Completion date	
No additional actions to be taken.		N/A	

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

Code reference

Clause 3 of Schedule 11.4

Code related audit information

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

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

Audit observation

I checked the event detail report for the period 01/11/18 to 16/07/19 to evaluate the timeliness of registry updates.

Audit commentary

The table below shows that the two new connections were updated late and 75% of the updates and corrections were updated late.

Event	Audit Year	Total ICPs	ICPs Notified Within 10 Days	ICPs Notified Greater Than 10 Days	Average Notification Days	Percentage Compliant
New connection	2018	4	1	3	83.5	25%
Update	2018	125	12	113	563	9.6%
New connection	2019	2	0	2	27	0%
Update	2019	65	16	49	785	24.6%

Audit outcome

Non-compliant

Non-compliance	Description		
Audit Ref: 4.10 With: Clause 3 of Schedule 11.4 From: 01-Nov-18 To: 16-Jul-19	Records updated on the registry later than 10 business days. Potential impact: Low Actual impact: Low Audit history: Multiple times Controls: Weak Breach risk rating: 3		
Audit risk rating	Rationale for audit risk rating		
Low	I have recorded the controls as weak in this area because they don't seem to be sufficient to minimise late updates. The impact on participants, customers or settlement is likely to be minor, therefore the audit risk rating is low.		
Actions taken to resolve the issue		Completion date	Remedial action status
We would all like to live in a perfect world, but I have difficulty getting paperwork out of subcontractors in 10 days, let alone updating the registry.		N/A	Identified
Preventative actions taken to ensure no further issues will occur		Completion date	
Attempt to get the paperwork from subcontractors quicker		N/A	

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

Broadspectrum does not operate a data collection system. I checked whether their installations met the requirements of this clause.

Audit commentary

The type test reports, design reports and certification reports confirm that the infrastructure will operate in a compliant manner.

Audit outcome

Compliant

4.12. Responsibility for Metering at ICP (Clause 11.18B(3))

Code reference

Clause 10.23A

Code related audit information

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

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

- (i) arrange for a final interrogation to take place before the metering installation is decommissioned; and*
- (ii) provide the raw meter data from the interrogation to the trader that is recorded in the registry as being responsible for the ICP; or*

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

- (i) of the date and time of the decommissioning; and*
- (ii) that the participant must carry out a final interrogation.*

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

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

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

Audit observation

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

Audit commentary

There were no examples of decommissioned metering installations.

Audit outcome

Compliant

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

Code reference

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

Code related audit information

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

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

Audit observation

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

Audit commentary

There have not been any examples of burden changes occurring during the audit period except at the time of recertification.

Audit outcome

Compliant

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

Code reference

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

Code related audit information

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

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

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

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

Audit observation

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

Audit commentary

There were no firmware changes conducted during the audit period.

Audit outcome

Compliant

4.15. Temporary Energisation (Clause 10.28(6))

Code reference

Clause 10.28(6)

Code related audit information

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

Audit observation

I checked whether there were any examples of temporary energisation for the purposes of testing.

Audit commentary

I checked whether there were any examples of temporary energisation for the purposes of testing. None were identified.

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

I requested certification records for 28 metering installations to evaluate compliance with this clause. I requested inspection reports for four ICPs due for inspection during the audit period.

Audit commentary

Of the certification records that I requested only 19 of the 28 were provided. The 19 certification records I checked were complete and accurate, and the inspection process did not identify any information related issues.

Broadspectrum were unable to provide inspection reports or confirm if inspections were completed for the four ICPs due for inspection during the audit period. This is also recorded as non-compliance in **sections 6.4 and 8.2.**

Audit outcome

Non-compliant

Non-compliance	Description		
Audit Ref: 5.1 With: Clause 4(1)(a) and (b) of Schedule 10.6, and Table 1, Schedule 11.4 From: 01-Nov-18 To: 16-Jul-19	Certification records not provided for 9 metering installations. Inspection reports not provided for four metering installations. Potential impact: Low Actual impact: Low Audit history: None Controls: Weak Breach risk rating: 3		
Audit risk rating	Rationale for audit risk rating		
Low	The controls are recorded as weak as some certification reports were not provided. The impact on settlement and participants is minor; therefore, the audit risk rating is low.		
Actions taken to resolve the issue		Completion date	Remedial action status
Historically yes we have managed to loose some inspection/certification reports, but all our installations are certified in our Lotus Notes database, and therefore we have records of the calibrations and the certification of the installations. But the inspection/certification reports may be missing.		On-going	Identified
Preventative actions taken to ensure no further issues will occur		Completion date	
Better record keeping – and obtaining paperwork from the field		On-going	

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

Code reference

Clause 4(2) of Schedule 10.6

Code related audit information

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

Audit observation

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

Audit commentary

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

Audit outcome

Compliant

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

Code reference

Clause 4(3) of Schedule 10.6

Code related audit information

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

Audit observation

I checked the policy for retention of metering records.

Audit commentary

Broadspectrum's policy is the same as it was during the last audit, which is to 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

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

Audit commentary

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

Audit outcome

Not applicable

6. MAINTENANCE OF REGISTRY INFORMATION

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

Code reference

Clause 1(1) of Schedule 11.4

Code related audit information

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

Audit observation

I checked the event detail report for the period 01/11/18 to 16/07/19 to confirm whether all responses were within 10 business days.

Audit commentary

There were no examples of Broadspectrum becoming the MEP for existing ICPs. There were two new connections and the acceptance was late for both.

Audit outcome

Non-compliant

Non-compliance	Description		
Audit Ref: 6.1 With: Clause 1(1) of Schedule 11.4 From: 01-Nov-18 To: 16-Jul-19	2 acceptances later than 10 business days. Potential impact: Low Actual impact: Low Audit history: Once Controls: Weak Breach risk rating: 3		
Audit risk rating	Rationale for audit risk rating		
Low	The controls do not appear to be sufficiently strong to minimise or eliminate late updates. The impact is minor; therefore the audit risk rating is low.		
Actions taken to resolve the issue		Completion date	Remedial action status
I'm not sure how these dates are specified and recorded but these for these two installations, we tried to accept the ICPs but due to some setup issues we were unable to. I went in via the web and there was no acceptances available to us, the retailer made some changes and then I was able to accept them.		N/A	Identified
Preventative actions taken to ensure no further issues will occur		Completion date	
No additional actions to be taken.		N/A	

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

Code reference

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

Code related audit information

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

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

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

Audit observation

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

Audit commentary

Analysis of the list file and an event detail report for all BROADSPECTRUM ICPs found a small number of issues. The table below shows the issues found.

Quantity 2019	Issue
2	Incorrect maximum interrogation cycle
6	Incorrect certification dates
2	Incorrect certification expiry dates
3	Incorrect metering category
16	Incorrect ATH

Audit outcome

Non-compliant

Non-compliance	Description
Audit Ref: 6.2 With: Clause 7 (1), (2) and (3) of Schedule 11.4 From: 01-Nov-18 To: 16-Jul-19	Incorrect registry information Potential impact: Low Actual impact: Low Audit history: Multiple times Controls: Weak Breach risk rating: 3
Audit risk rating	Rationale for audit risk rating

Low	<p>The controls do not appear to be strong enough to minimise the incorrect registry updates, particularly certification and expiry dates, which drive the next inspection and certification events.</p> <p>Some incorrect dates can lead to installations not being inspected or certified, therefore the audit risk rating is low.</p>		
Actions taken to resolve the issue		Completion date	Remedial action status
As previously stated as installations are made compliant and the Registry updated the errors in the registry will be updated.		On-going	Identified
Preventative actions taken to ensure no further issues will occur		Completion date	
Registry checking will start after we have completed most of the outstanding work.		On-going	

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

Code reference

Clause 6 of Schedule 11.4

Code related audit information

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

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

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

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

Audit observation

I checked the validation processes to confirm compliance.

Audit commentary

Broadspectrum does not have a database actively used for recording metering information, therefore there is no validation conducted.

Audit outcome

Non-compliant

Non-compliance	Description		
Audit Ref: 6.3 With: Clause 6 of Schedule 11.4 From: 01-Nov-18 To: 16-Jul-19	Registry validation not conducted. Potential impact: Low Actual impact: Low Audit history: Multiple times Controls: None Breach risk rating: 5		
Audit risk rating	Rationale for audit risk rating		
Low	A process is not in place to validate registry data. The impact is minor; therefore, the audit risk rating is low.		
Actions taken to resolve the issue		Completion date	Remedial action status
As stated previously we are concentrating on getting the installations certified, then move on to the required registry checking.		On-going	Identified
Preventative actions taken to ensure no further issues will occur		Completion date	
Re-instate Registry checking once all installations are fully certified.		On-going	

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:

- the metering installation is modified otherwise than under sub clause 19(3) or 19(6)
- 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
- 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
- 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
- an inspection of the metering installation, that is required under this Part, is not carried out in accordance with the relevant clauses of this Part

- f) if the metering installation has been determined to be a lower category under clause 6 and the maximum current conveyed through the metering installation at any time exceeds the current rating of its metering installation category as set out in Table 1 of Schedule 10.1
- g) the metering installation is certified under clause 14 and sufficient load is available for full certification testing and has not been retested under clause 14(4)
- h) a control device in the metering installation certification is, and remains for a period of at least 10 business days, bridged out under clause 35(1)
- i) the metering equipment provider responsible for the metering installation is advised by an ATH under clause 48(6)(b) that a seal has been removed or broken and the accuracy and continued integrity of the metering installation has been affected.

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

Audit observation

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

Audit commentary

During the audit period, four inspections were not conducted within the required window. Certification is cancelled from the last date of the inspection window, but the registry has not been updated. The table below shows the four ICPs where inspections were due during the audit period.

ICP	Cat	Cert Date	Cert Exp date	Inspection date NOMINAL	Inspection window	Inspection date and comments
0000066809CP3B1	3	04-02-14	20-06-23	04-02-19	4/11/18 to 4/05/19	Not inspected
0800682068LC4B6	4	23-03-16	20-05-19	23-09-18	23/06/18 to 23/11/2018	Not inspected
0007131360RN1CE	5	15-09-17	15-09-19	15-03-19	15/02/19 to 15/04/19	Not inspected
0007131361RND8B	5	15-09-17	15-09-19	15-03-19	15/02/19 to 15/04/19	Not inspected

During the previous audit there were 27 metering installations that did not have inspections completed during the required inspection window. Certification was therefore cancelled for all 27 metering installations. I checked the registry and found that of the 27 metering installations 18 have not had their certification cancelled and have not been recertified. The table on the following page below shows these 18 metering installations.

ICP	Install No	Category	Certification date	Expiry date	Inspection earliest date	Inspection date and comments	Inspection latest date
0000007033EP933	1	3	1/06/2012	27/10/2021	1/03/2017	No inspection conducted	1/09/2017
0000100255UN5CA	1	3	22/10/2010	22/10/2020	22/07/2015	Recertified on 18/5/18 but registry not updated	22/01/2016
0000159078UN217	1	1	2/04/2007	27/02/2022	2/10/2016	No inspection conducted	2/10/2017
0001905982WA8C8	1	1	2/02/2007	27/02/2022	2/08/2016	09/09/2015, inspection conducted early	2/08/2017
0007148097RN909	1	3	8/11/2012	8/11/2022	8/08/2017	No inspection conducted	8/02/2018
0007151491RN0C6	1	3	15/05/2013	15/08/2022	15/02/2018	No inspection conducted	15/08/2018
0007151493RN043	1	3	15/05/2013	15/08/2022	15/02/2018	No inspection conducted	15/08/2018
0009803940AL7F0	1	5	8/02/2017	8/02/2020	8/07/2018	No inspection conducted	8/09/2018
0009803940AL7F0	2	5	1/03/2017	1/03/2020	1/08/2018	No inspection conducted	1/10/2018
0009999011ML76F	1	3	20/01/2011	30/06/2020	20/10/2015	No inspection record located	20/04/2016
0009999012MLBAF	1	3	20/01/2011	30/06/2020	20/10/2015	No inspection record located	20/04/2016
0009999013ML7EA	1	3	20/01/2011	30/06/2020	20/10/2015	No inspection record located	20/04/2016
0009999014MLA20	1	3	20/01/2011	30/06/2020	20/10/2015	No inspection record located	20/04/2016
0800239067LC33E	1	3	23/09/2012	15/05/2022	23/06/2017	No inspection conducted	23/12/2017
0800616065LCAA9	1	3	19/03/2012	15/09/2021	19/12/2016	17/12/2015, inspection conducted early	19/06/2017
0800616065LCAA9	2	3	19/03/2012	13/07/2021	19/12/2016	17/12/2015, inspection conducted early	19/06/2017
1001262783LC14C	1	5	6/05/2014	21/07/2020	6/10/2015	Recertified 21/07/17, registry not updated	6/12/2015
1001262783LC14C	2	5	6/05/2014	21/07/2020	6/10/2015	Recertified 21/07/17, registry not updated	6/12/2015

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

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

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

The memo also states:

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

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

The Authority confirmed on 01/03/18 that certification is cancelled for installations where low burden is not addressed.

Analysis of the certification records for 16 Category 2 and above metering installations found that ICPs 0137841035LCBAC and 0000890104TU8B6 had been certified by the VEMS ATH with burden lower than the lowest test point, without a Class A ATH confirming that the measuring transformers will not be adversely affected. Therefore, in accordance with the Authority's memo, these metering installations are not considered "fit for purpose". This means certification is cancelled, the registry has not been updated with the cancellation.

There were four ICPs identified in the previous audit that had been certified with burden lower than the lowest test point, without a Class A ATH confirming that the measuring transformers will not be adversely affected. ICPs 0000100345UN663, 0000190598WA1D4, 0000469472UN078 and 0800219066LC6B6, certification for all four of these ICPs has not been cancelled on the registry.

Monitoring was not conducted for two installations certified at a lower category, certification is therefore cancelled. This is also recorded in **section 7.6**.

Audit outcome

Non-compliant

Non-compliance	Description		
Audit Ref: 6.4 With: Clause 20 of Schedule 10.7 From: 01-Nov-18 To: 16-Jul-19	Certification cancelled, and registry not updated for: <ul style="list-style-type: none"> 22 installations without inspections within the window six installations with low burden. Monitoring not conducted for two installations certified at a lower category. Potential impact: Medium Actual impact: Medium Audit history: Multiple Controls: None Breach risk rating: 8		
Audit risk rating	Rationale for audit risk rating		
Medium	There is no process in place to identify ICPs where certification is cancelled. The impact on settlement and participants could be moderate; therefore, the audit risk rating is medium.		
Actions taken to resolve the issue		Completion date	Remedial action status
The spreadsheet that we are now running identifies the calibration expiry date when inspections are due and when the inspections become overdue.		Completed	Identified
Preventative actions taken to ensure no further issues will occur		Completion date	
See above		Completed	

6.5. Registry Metering Records (Clause 11.8A)

Code reference

Clause 11.8A

Code related audit information

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

Audit observation

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

Audit commentary

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

Audit outcome

Compliant

7. CERTIFICATION OF METERING INSTALLATIONS

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

Code reference

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

Code related audit information

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

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

Audit observation

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

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

Audit commentary

At the time of the audit there were 15 installations with expired certification. Broadspectrum has reporting in place to identify ICPs due for recertification but the timeframes are not being achieved. The list below shows those installations with expired certification.

ICP	Install No	Highest Meter cat	Cert Date	Cert Exp date
0000036598HR056	1	5	19/09/2015	24/07/2018
0000100431UND36	1	3	16/01/2015	21/11/2016
0000103286TRC70	1	2	12/02/2014	13/10/2018
0000156978TR8A6	1	4	3/03/2016	3/07/2018
0001000641UN0B9	1	3	2/02/2014	17/05/2017
0005934354RN61F	1	3	19/06/2009	2/04/2017
0006726143RN103	1	4	10/01/2014	10/01/2018
0007134502RNF9D	1	4	5/11/2012	1/06/2017
0007134503RN3D8	1	4	21/01/2014	30/04/2018

0007159999RNADA	1	5	1/05/2015	1/05/2018
0007160000RNFE9	1	5	1/05/2015	1/05/2018
0084040035WED39	1	4	24/04/2013	24/04/2017
0084040077WEF19	1	3	20/04/2002	24/10/2017
0800210069LC5C8	1	2	13/08/2009	24/01/2018
0800682068LC4B6	1	4	23/03/2016	20/05/2019

Audit outcome

Non-compliant

Non-compliance	Description		
<p>Audit Ref: 7.1</p> <p>With: Clause 10.38 (a), clause 1 and clause 15 of Schedule 10.7</p> <p>From: 21-Nov-16</p> <p>To: 16-Jul-19</p>	<p>Certification expired for 15 metering installations.</p> <p>Potential impact: High</p> <p>Actual impact: Medium</p> <p>Audit history: Multiple</p> <p>Controls: Weak</p> <p>Breach risk rating: 6</p>		
Audit risk rating	Rationale for audit risk rating		
Medium	<p>Whilst reporting is in place, the controls are recorded as weak with regard to ensuring recertification is conducted prior to expiry.</p> <p>The impact on settlement or participants unknown, but these are all higher category ICPs and if any are recording inaccurately the impact will be at least moderate, therefore the audit risk rating is recorded as medium. There is an increased likelihood of failure or inaccuracy for metering installations with expired certification.</p>		
Actions taken to resolve the issue		Completion date	Remedial action status
We are working to bring all installations up to specification, while this may not be happening as quickly as we would like, progress is being made.		On-Going	Identified
Preventative actions taken to ensure no further issues will occur		Completion date	
A technician has been appointed, to look after the requirements of the MEP role.		completed	

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

Code reference

Clause 10.38(b) and clause 9 of Schedule 10.6

Code related audit information

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

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

Audit observation

I checked the certification records for 19 metering installations to confirm compliance. Broadspectrum has shown that their processes include all tests and the reports confirm tests are completed.

Audit commentary

All certification activities have been conducted by Broadspectrum ATH. The most recent audit report confirms the appropriate testing is conducted.

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

All relevant metering is compliant with this clause.

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

This clause relates to Transpower as an MEP.

Audit commentary

This clause relates to Transpower as an MEP.

Audit outcome

Not applicable

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

Code reference

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

Code related audit information

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

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

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

Audit observation

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

Audit commentary

There are no examples of burden changes having occurred.

Audit outcome

Not applicable

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

Code reference

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

Code related audit information

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

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

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

If a meter is certified in this manner:

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

Audit observation

I checked all ICPs for examples where the CT ratio was above the threshold to confirm that protection was appropriate or that monitoring was in place.

Audit commentary

There were two installations certified during the audit period where the CT ratio was above the category threshold as follows;

- ICP 0000890104TU8B6 was certified as category 3 and has 1500/5 CTs. The certification report states that the MEP must monitor load.
- ICP 0137841035LCBAC was certified as category 2 and has 600/5 CTs. The certification report states that the MEP must monitor load.

Broadspectrum were unable to confirm that monitoring had occurred for these two ICPs in any of the months since certification.

Audit outcome

Non-compliant

Non-compliance	Description		
Audit Ref: 7.6 With: Clause 6(1)(b) and (d), and 6(2)(b) of Schedule 10.7 From: 14-Jan-19 To: 16-Jul-19	Monitoring not conducted for two installations certified at a lower category. Potential impact: Low Actual impact: Low Audit history: None Controls: None Breach risk rating: 5		
Audit risk rating	Rationale for audit risk rating		
Low	As there is no process in place for monitoring the controls are recorded as weak. The impact on settlement and participants could be minor if the threshold was exceeded and not identified; therefore, the audit risk rating is low.		
Actions taken to resolve the issue		Completion date	Remedial action status
Broadspectrum has previously made the decision not to certify at a lower category. These installations were certified for us by others, and we failed to identify that this had happened. We will start monitoring these two installations for max load		N/A	Identified
Preventative actions taken to ensure no further issues will occur		Completion date	
Continue the policy of not downgrading installations		N/A	

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

Code reference

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

Code related audit information

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

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

Audit observation

I checked if there were any examples of Insufficient load certifications

Audit commentary

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

Audit outcome

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

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

Audit commentary

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

Audit outcome

Compliant

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

Code reference

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

Code related audit information

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

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

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

Audit observation

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

Audit commentary

Alternative certification was applied to 3 metering installations at ICP 0836896378LC16B due to access problems. I checked the records for these installations and the appropriate notification was provided.

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

I asked Broadspectrum whether there were any metering installations with timeclocks.

Audit commentary

Broadspectrum confirmed there are no metering installations with timeclocks.

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, notify the following parties:

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

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

Audit observation

Broadspectrum does not have any installations with control devices.

Audit commentary

Broadspectrum does not have any installations with control devices.

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 three business days inform the following parties of the ATH's determination (including all relevant details):

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

Audit observation

Broadspectrum does not have any installations with control devices.

Audit commentary

Broadspectrum does not have any installations with control devices.

Audit outcome

Compliant

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

Code reference

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

Code related audit information

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

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

Audit observation

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

Audit commentary

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

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 advise the registry of the compensation factor.

Audit observation

I checked the records for 19 CT metered metering installations to confirm that compensation factors were correctly recorded.

Audit commentary

Compensation factors have been updated accurately on the registry. In all cases, compensation factors are programmed into the meters.

Audit outcome

Compliant

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

Code reference

Clause 26(1) of Schedule 10.7

Code related audit information

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

Audit observation

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

Audit commentary

Meters were certified for all 19 installations.

Audit outcome

Compliant

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

Code reference

Clause 28(1) of Schedule 10.7

Code related audit information

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

Audit observation

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

Audit commentary

Measuring transformers were certified for all 19 installations.

Audit outcome

Compliant

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

Code reference

Clause 36(1) of Schedule 10.7

Code related audit information

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

Audit observation

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

Audit commentary

The 19 certification records that I checked confirmed that data storage devices are being correctly certified.

Audit outcome

Compliant

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

Code reference

Clause 7 (3) Schedule 10.3

Code related audit information

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

Audit observation

I checked the ATH register to confirm compliance.

Audit commentary

All relevant ATHs have appropriate approval.

Audit outcome

Compliant

7.19. Interim Certification (Clause 18 of Schedule 10.7)

Code reference

Clause 18 of Schedule 10.7

Code related audit information

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

Audit observation

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

Audit commentary

There are no interim certified metering installations.

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 two months prior to first date on which the inspections are to be carried out, for approval (and promptly provide any other information the Authority may request).

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

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

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

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

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

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

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

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

Audit observation

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

Audit commentary

Sample inspections have not been conducted.

Audit outcome

Compliant

8.2. Category 2 to 5 Inspections (Clause 46(1) of Schedule 10.7)

Code reference

Clause 46(1) of Schedule 10.7

Code related audit information

The MEP must ensure that each category 2 or higher metering installation is inspected by an ATH at least once within the applicable period. The applicable period begins from the date of the metering installation's most recent certification and extends to:

- 120 months for Category 2
- 60 months for Category 3
- 30 months for Category 4
- 18 months for Category 5.

Audit observation

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

Audit commentary

As recorded in **section 6.4**, none of the four inspections due have been conducted, leading to cancellation of certification.

Audit outcome

Non-compliant

Non-compliance	Description		
Audit Ref: 8.2 With: Clause 46(1) of schedule 10.7 From: 22-Jul-15 To: 16-Aug-19	Inspections not conducted within the allowable window for four installations. Potential impact: Medium Actual impact: Medium Audit history: Multiple Controls: None Breach risk rating: 8		
Audit risk rating	Rationale for audit risk rating		
Medium	There is no process in place to ensure inspections are conducted within the inspection window. The impact is unknown but there is a moderate risk that issues could be present and not identified, therefore the audit risk rating is recorded as medium.		
Actions taken to resolve the issue		Completion date	Remedial action status
We are now running a spreadsheet to Identify when inspections are due, as reminders from our database have stopped working after infrastructure changes within the company.		1/5/19	Identified

Preventative actions taken to ensure no further issues will occur	Completion date	
A spreadsheet is now being used to monitor when inspections are due.	1/5/19	

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

Code reference

Clause 44(5) of Schedule 10.7

Code related audit information

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

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

Audit observation

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

Audit commentary

As recorded in **section 8.2**, Broadspectrum did not conduct inspections within the audit period.

Audit outcome

Compliant

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

Code reference

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

Code related audit information

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

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

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

The MEP must make the above arrangements within

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

Audit observation

I checked for examples of notification of missing seals.

Audit commentary

Broadspectrum has a documented process in place for the management of seals and any subsequent investigation and reporting. There were no examples found during the audit period, which is an expected result given that most installations are located in secure areas.

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

Broadspectrum has a process which is compliant with the Code. There were no recent examples.

Audit commentary

Broadspectrum has a process which is compliant with the Code. There were no recent examples.

Audit outcome

Compliant

9.2. Testing of Faulty Metering Installations (Clause 10.44)

Code reference

Clause 10.44

Code related audit information

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

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

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

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

Audit observation

Broadspectrum has a process which is compliant with the Code. There were no recent examples.

Audit commentary

Broadspectrum has a process which is compliant with the Code. There were no recent examples.

Audit outcome

Compliant

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

Code reference

Clause10.46(2)

Code related audit information

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

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

Audit observation

Broadspectrum has a process which is compliant with the Code. There were no recent examples.

Audit commentary

Broadspectrum has a process which is compliant with the Code. There were no recent examples.

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

Broadspectrum does not have a data collection system, but they will assist with access to Raw meter data if possible.

Audit commentary

Broadspectrum does not have a data collection system, but they will assist with access to Raw meter data if possible.

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

Broadspectrum does not have a data collection system, but they will assist with access to Raw meter data if possible.

Audit commentary

Broadspectrum does not have a data collection system, but they will assist with access to Raw meter data if possible.

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 as required. No requests have been made.

Audit commentary

Access will be provided as required. No requests have been made.

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 as required. No requests have been made.

Audit commentary

Access will be provided as required. No requests have been made.

Audit outcome

Compliant

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

Code reference

Clause 8 of Schedule 10.6

Code related audit information

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

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

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

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

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

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

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

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

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

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

in a form that is accessible to authorised personnel.

Audit observation

Broadspectrum does not have a data collection system.

Audit commentary

Broadspectrum does not have a data collection system.

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

Broadspectrum does not have a data collection system.

Audit commentary

Broadspectrum does not have a data collection system.

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

Broadspectrum does not have a data collection system.

Audit commentary

Broadspectrum does not have a data collection system.

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

Broadspectrum does not have a data collection system.

Audit commentary

Broadspectrum does not have a data collection system.

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

Broadspectrum does not have a data collection system.

Audit commentary

Broadspectrum does not have a data collection system.

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

Broadspectrum does not have a data collection system.

Audit commentary

Broadspectrum does not have a data collection system.

Audit outcome

Not applicable

CONCLUSION

Broadspectrum is the MEP for 88 HHR ICPs. They do not operate a data collection system and they do not have any mass market ICPs. Broadspectrum is also an Approved Test House (ATH). The ATH function was not audited, although there is an overlap between the two operations.

The controls require strengthening in many of the areas relevant to the MEP function. 14 non-compliances were identified. The major issues are as follows:

- 15 ICPs had expired certification;
- 22 ICPs have cancelled certification because inspections were not conducted;
- six ICPs have cancelled certification because low burden was not addressed;
- uncertainty calculations are not conducted in accordance with the Code; and
- some registry errors exist, and registry validation is not conducted.
- monitoring not conducted for two installations certified at a lower category.

PARTICIPANT RESPONSE

While We do have some problems, we have been trying to sort these out, any yes our progress has not been as rapid as we would like. We have now employed another resource and allocated the role of looking after the MEP requirements to them. This will expedite the fixing of the metering installations that require it.

Although we have been trying to complete this outstanding work, many things have been working against us, including getting subcontractors to complete work, this is not helping with completing this work in a timely manner.