

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



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Audit report due date: 01-Jul-18

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EXECUTIVE SUMMARY

Delta is a Metering Equipment Provider (MEP) and is required to undergo an audit by 01/07/18, in accordance with clause 1(1)(b) of schedule 10.5.

The audit identified four non-compliances.

The matter of uncertainty calculations has been an ongoing non-compliance for the past five years, where Delta has disputed the need to follow what I believe are clear requirements in the Code. During this audit, Delta stated an intention to obtain the latest uncertainty calculator from MSL and they intend to start calculating uncertainty including all potential sources.

Delta has only conducted recertification for 20 metering installations during the audit period. 19 Category 2 installations and one Category 1 installation. I check 10 Category 2 records and the one Category 1 record. Seven of the 10 Category 2 installations were certified after the certification had expired, and there were five installations with expired certification at the time of the audit. Controls require improvement in this area to ensure installations are certified prior to expiry.

There were a small number of registry discrepancies and some records were updated late.

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 it recommends an audit frequency of 12 months.

AUDIT SUMMARY

NON-COMPLIANCES

Subject	Section	Clause	Non-Compliance	Controls	Audit Risk Rating	Breach Risk Rating	Remedial Action
Uncertainty calculations	4.3	4(1) of Schedule 10.7	Error and uncertainty calculations not conducted correctly for up to 50 Category 2 metering installations.	None	Low	5	Identified
Changes to registry records	4.10	3 of Schedule 11.4	Some records updated to the registry later than 10 business days.	Weak	Low	3	Identified
Accuracy of registry records	6.2	7 (1), (2) and (3) of Schedule 11.4	Some registry records incomplete or incorrect.	Moderate	Low	2	Identified
Certification and maintenance	7.1	10.38 (a)	Certification expired for five ICPs. Certification late for 7 of 10 ICPs.	Weak	Low	3	Identified
Future Risk Rating						13	
Indicative Audit Frequency						12 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

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.

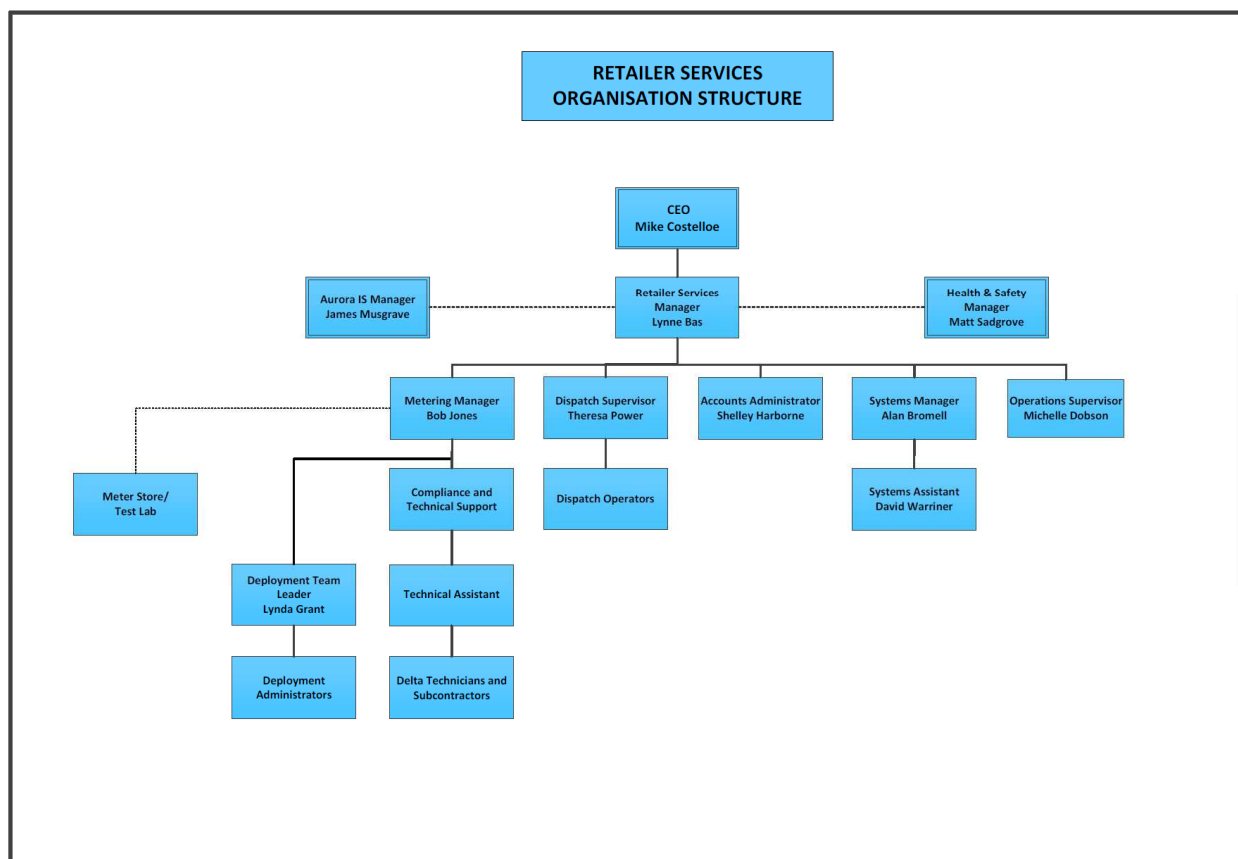
Audit observation

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: Steve Woods

Veritek Limited

Electricity Authority Approved Auditor

Delta personnel assisting in this audit were:

Name	Title
Bob Jones	Metering Services Manager
Harrison Orme	Metering Compliance Coordinator
Richard Starkey	Commercial Development 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

Delta 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

Delta 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

MEP data is held in GTV, which has an interface with the registry.

Backup is in accordance with standard industry protocols.

1.6. Breaches or Breach Allegations

Delta confirm there are no breach allegations related to the scope of this audit.

1.7. ICP Data

Metering Category	Number of ICPs
1	5,704
2	123
3	0
4	0
5	0
9	4

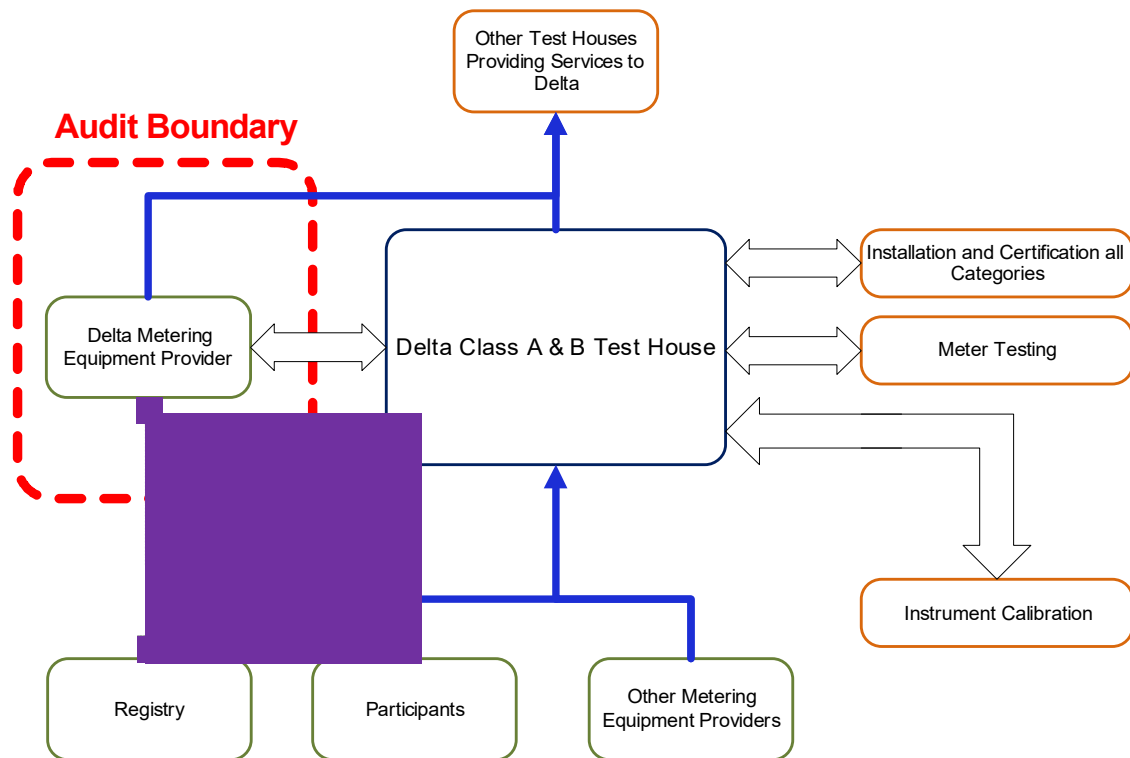
1.8. Authorisation Received

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 V2.1, which was published by the Electricity Authority.

The diagram below shows the audit boundary. Delta does not have any AMI installations or metering infrastructure.



1.10. Summary of previous audit

The previous audit was conducted in November 2016 by Steve Woods of Veritek Limited. The table below shows that some of the issues have been cleared.

Table of Non-Compliance

Subject	Section	Clause	Non-compliance	Status
Accuracy of registry records		7(1) of schedule 11.4 & 11.2(1)(a) of part 11 & 10.6(1)(a) of part 10	Some registry records incomplete or incorrect.	Still existing
Changes to registry records		3 of schedule 11.4	Some records updated on the registry later than 10 business days.	Still existing

Subject	Section	Clause	Non-compliance	Status
Certification of metering installations	7.1	10.38(a) of part 10 & 15(1) of schedule 10.	Expired certification for 6 Category 1 installations.	Cleared for these installations but others have expired certification.

Table of Recommendations

Subject	Section	Clause	Recommendation for improvement	Status
Uncertainty calculations	4.3.1	4(1) of schedule 10.7	Liaise with MSL to evaluate the comparative certification uncertainty calculator to determine if it clarifies the effect of temperature on error calculations.	Identified

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

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

Audit commentary

Delta does not have AMI or data collection facilities, therefore the services access interface is at the meter in all cases.

The location of the services access interface was correctly recorded for a sample of 11 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

Delta 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

Delta uses the DELT identifiers for all MEP functions.

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

Delta is not the MEP for any metering installations where communication equipment is present.

Audit commentary

Delta is not the MEP for any metering installations where communication equipment is present.

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

As mentioned in **Section 6** there are small number of incorrect records. Delta has taken all practicable steps to provide accurate information but in some cases, other MEPs have not updated their records to remove Delta as the MEP.

Audit outcome

Compliant

3. PROCESS FOR A CHANGE OF MEP

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

Code reference

Clause 10.22

Code related audit information

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

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

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

Audit observation

I checked if Delta had sent or received any invoices.

Audit commentary

Delta has not sent or received any invoices yet.

Audit outcome

Compliant

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

Code reference

Clause 2 of Schedule 11.4

Code related audit information

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

Audit observation

I checked the event detail for the audit period for any ICPs where Delta became the MEP to evaluate the timeliness of updates.

Audit commentary

I examined an event detail report for the period 01/01/17 to 30/04/18 in relation to this clause. Delta had not become the MEP for any metering installations during this period.

Audit outcome

Compliant

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

Code reference

Clause 5 of Schedule 10.6

Code related audit information

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

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

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

Audit observation

I checked with Delta 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 MEPs obligations terminate only when;

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

Audit observation

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

Audit commentary

Delta has ceased to be responsible for some metering installations and they still continue with their responsibilities, mainly in relation to the storage or records, which are kept indefinitely. I checked a directory of records from 2013 to confirm this.

Audit outcome

Compliant

4. INSTALLATION AND MODIFICATION OF METERING INSTALLATIONS

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

Code reference

Clause 2 of Schedule 10.7

Code related audit information

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

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

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

Audit observation

I checked the design reports prepared by Delta to confirm compliance.

Audit commentary

Delta has prepared design reports and has provided these to all relevant parties. At the time of the audit, the reports included all of the requirements noted above, including a signature of the person who prepared the reports.

Audit outcome

Compliant

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

Code reference

Clause 9 of Schedule 10.6

Code related audit information

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

Audit observation

Delta has only used the Delta ATH during the audit period, and they have an appropriate and current scope of approval.

Audit commentary

Delta has only used the Delta ATH during the audit period, and they have an appropriate and current 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 Delta to ensure compliance with the design and with the error thresholds stipulated in Table 1. I also checked the certification records for 10 metering installations.

Audit commentary

Delta does not fully comply with the requirements in relation to error determination.

This clause is relevant to Category 2 certification conducted using the comparative method. All comparative certification was conducted by the Delta ATH during the audit period. I have previously recorded that uncertainties are calculated per installation and the calculation includes the working standard, clamps and a temperature range of 0° Celsius to 40° Celsius, within which the standard can operate. The operating range of 0° Celsius to 40° Celsius is recorded in the manufacturer's specifications, as shown below. Delta has taken this to mean the working standard will be accurate within this range.

- This product is designed for indoor use, and operates reliably from 0°C to 40°C. It can be used in the temperature range -10°C to 0°C, but LCD operation and accuracy are not assured. Further, 9459 BATTERY PACK and PC Card operation are not guaranteed.

However, two other sections contain additional information relating to temperature. 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 working standard is within ± 0.03% per degree Celsius. In the absence of any additional test results this figure needs to be used in the calculation.

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)

I recommended during the previous audit that Delta should liaise with MSL on this matter to ensure their practices were compliant. Delta has consistently disputed the need to consider temperature in their

uncertainty calculations, but the Code is clear on this matter and requires “all sources of measurement error” to be considered. I have therefore recorded non-compliance for Delta as an MEP because they have not ensured “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 Delta ATH is also non-compliant as recorded in their audit report.

Delta now accepts their uncertainty calculation practice is non-compliant and they intend to obtain the latest version of the MSL calculator so they can become compliant.

50 Category 2 metering installations were certified since August 2013.

Audit outcome

Non-compliant

Non-compliance	Description		
Audit Ref: 4.3 With: Clause 4(1) of Schedule 10.7 From: 29-Aug-13 To: 06-Jun-18	Error and uncertainty calculations not conducted correctly for up to 50 Category 2 metering installations. Potential impact: Medium Actual impact: Low Audit history: Multiple times Controls: None Breach risk rating: 5		
Audit risk rating	Rationale for audit risk rating		
Low	Delta disputed this matter for many years and did not change practices to ensure compliance was achieved. There were therefore no controls in place to ensure compliance. There could be a minor impact on metering installation accuracy; therefore, the audit risk rating is low.		
Actions taken to resolve the issue		Completion date	Remedial action status
Delta have obtained the latest MSL uncertainty calculator. Delta will utilize this to include additional uncertainty due to temperature.		3-9-18	Identified
Preventative actions taken to ensure no further issues will occur		Completion date	
Delta have obtained the latest MSL uncertainty calculator. Delta will utilize this to include additional uncertainty due to temperature.		3-9-18	

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

Audit commentary

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

Audit outcome

Compliant

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

Code reference

Clause 4(2)(b) of Schedule 10.7

Code related audit information

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

Audit observation

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

Audit commentary

I checked Delta's list file to confirm compliance with this requirement. There are no installations above Category 2.

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 Delta is responsible for any NSP metering.

Audit commentary

Delta is not the MEP for any NSP metering.

Audit outcome

Compliant

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

Code reference

Clause 10.26(10)

Code related audit information

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

Audit observation

Delta is not responsible for any grid metering.

Audit commentary

Delta 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

Delta's instructions to ATH's include several clauses in relation to physical and electrical characteristics. Compliance is confirmed.

Audit commentary

Delta's instructions to ATH's include several clauses in relation to physical and electrical characteristics. Compliance is confirmed.

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

The Authority determined that Delta is not required to consult with distributors and traders unless the design of an installation is altered. There have not been any changes to any designs during the audit period.

Audit commentary

The Authority determined that Delta is not required to consult with distributors and traders unless the design of an installation is altered. There have not been any changes to any designs during the audit period.

Audit outcome

Compliant

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

Code reference

Clause 3 of Schedule 11.4

Code related audit information

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

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

Audit observation

I checked the event detail report for the period 01/01/17 to 30/04/18 to evaluate the timeliness of registry updates.

Audit commentary

Delta has not dealt with any new connections as an MEP.

The event detail report contains 466 updates to metering records and 205 of these were over 10 days. Of the 205 over 10 days, Delta was the MEP for only 32. It appears that when Delta removes a component in Gentrack, a record is sent to the registry for a prior event date when Delta was the MEP.

The result of this issue is that incorrect historic information is loaded to the registry.

I also checked the timeliness of registry updates for a selection of 10 Category 2 certification updates and they were all within 10 business days.

Audit outcome

Non-compliant

Non-compliance	Description		
Audit Ref: 4.10 With: Clause 3 of Schedule 11.4 From: 01-Jan-17 To: 30-Apr-18	Some records updated to the registry later than 10 business days. Potential impact: Medium 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 because they do not mitigate risk most of the time. The only impact of these backdated updates is that it will be difficult to determine which devices were installed during any given period, therefore the audit risk rating is low.		
Actions taken to resolve the issue		Completion date	Remedial action status
Delta will make contact with Gentrack to discuss if this is a generic problem and ways to resolve this technical issue.		3-9-18	Identified
Preventative actions taken to ensure no further issues will occur		Completion date	
Delta will make contact with Gentrack to discuss if this is a generic problem and ways to resolve this technical issue.		3-9-18	

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

Delta does not manage a data collection system that would be considered “metering infrastructure”.

Audit commentary

Delta does not manage a data collection system that would be considered “metering infrastructure”.

Audit outcome

Compliant

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

Code reference

Clause 11.18B(3)

Code related audit information

If an ICP is to be decommissioned, the MEP who is responsible for each metering installation for the ICP must:

- *advise the trader no later than three business days prior to decommissioning that the trader must, as part of the decommissioning, carry out a final interrogation; or*
- *if the MEP is responsible for the interrogation of the metering installation, arrange for a final interrogation to take place.*

Audit observation

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

Audit commentary

Delta has provided a letter to all traders, informing them of their responsibilities to carry out a final interrogation.

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 Delta whether they had approved any burden changes during the audit period.

Audit commentary

Delta arranges for the installation of CPD metering on some Category 2 metering installations and in all cases, the metering installation is recertified in accordance with this clause. Burden is managed in a compliant manner by Delta.

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

Delta is not the MEP for any metering installations where these changes would occur.

Audit commentary

Delta is not the MEP for any metering installations where these changes would occur.

Audit outcome

Compliant

4.15. Temporary Energization (Clause 10.28(6))

Code reference

Clause 10.28(6)

Code related audit information

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

Audit observation

I asked Delta if there were any examples of temporary electrical connection.

Audit commentary

Delta confirmed there were no examples.

Audit outcome

Compliant

5. METERING RECORDS

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

Code reference

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

Code related audit information

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

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

Audit observation

I checked certification records for 10 metering installations to evaluate compliance with this clause.

Audit commentary

The information relevant to this clause was available and included in the certification records. Delta had recently changed the format of some records, and the metering installation certification date was not completely clear. Delta resolved this matter prior to finalisation of the audit report.

Audit outcome

Compliant

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

Code reference

Clause 4(2) of Schedule 10.6

Code related audit information

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

Audit observation

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

Audit commentary

Delta has not been requested to supply any Category inspection reports.

Audit outcome

Compliant

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

Code reference

Clause 4(3) of Schedule 10.6

Code related audit information

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

Audit observation

I checked historic metering records from 2013 to confirm compliance.

Audit commentary

Delta intends to keep records indefinitely and my checks confirmed old records were available.

Audit outcome

Compliant

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

Code reference

Clause 6 Schedule 10.6

Code related audit information

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

Audit observation

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

Audit commentary

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

Audit outcome

Compliant

6. MAINTENANCE OF REGISTRY INFORMATION

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

Code reference

Clause 1(1) of Schedule 11.4

Code related audit information

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

Audit observation

I checked the event detail report for the period 01/01/17 to 30/04/18 to confirm whether all responses were within 10 business days.

Audit commentary

Delta has not been nominated as an MEP during the audit period.

Audit outcome

Compliant

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

Code reference

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

Code related audit information

The MEP must provide the information indicated as being 'required' in Table 1 of clause 7 of Schedule 11.4 to the registry, 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 PR255 file for all ICPs found some discrepancies. The table below shows these and includes a comparison with the previous audit results.

Quantity of ICPs 2018	Quantity of ICPs 2016	Quantity of ICPs 2015	Issue	Resolution
4	7	11	Blank metering records on the registry.	Other MEPs have been nominated for 3 ICPs and one appears to be unmetered
1	0	1	Category 2 on the registry but with interim certification.	Metrix has been nominated as the MEP and has accepted
0	1	2	Incorrect certification duration.	
1	0	1	Distributed generation installation without an injection register.	It appears another MEP's metering is installed at this ICP
1	1	4	Category 2 installations without CTs recorded on the registry.	MTRX has accepted a nomination for this ICP in 2014
0	1	141	ICPs with controlled load and no load control device recorded on the registry, where the certification flag is "Y"	The control device has now been added to the registry
1	3	129	IN register content code but no control device on the registry, where the certification flag is "Y"	These control devices do not need to be certified and the field could be changed to "N"
0	1	10	ICPs with a register content code of CN only.	
0	1	4	Day without night.	
0	75	128	Night without day.	
4	-	-	UN with a relay	One confirmed as removed. One is a CPD relay. Two are unknown
13	17	218	Controlled profiles without certified control device.	This is a Trader responsibility.

Audit outcome

Non-compliant

Non-compliance	Description		
Audit Ref: 6.2 With: Clause 7 (1), (2) and (3) of Schedule 11.4 From: 01-Jan-17 To: 30-Apr-18	Some registry records incomplete or incorrect. Potential impact: Medium Actual impact: Low Audit history: Multiple times Controls: Moderate Breach risk rating: 2		
Audit risk rating	Rationale for audit risk rating		
Low	I have recorded the controls as moderate in this area. There are still a small number of areas where improvement can be made. Some of the discrepancies have a minor impact on participants, customers or settlement. The relevant ones in this regard are tariff related. The audit risk rating is low.		
Actions taken to resolve the issue		Completion date	Remedial action status
Delta are working with the data administrator to resolve discrepancies highlighted in the table.		3-9-18	Identified
Preventative actions taken to ensure no further issues will occur		Completion date	
Delta are working with the data administrator to resolve discrepancies highlighted in the table.		3-9-18	

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

Code reference

Clause 6 of Schedule 11.4

Code related audit information

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

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

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

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

Audit observation

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

Audit commentary

This clause is specific and prescriptive and it requires a complete metering record comparison to be undertaken. This is being undertaken and discrepancies are being resolved as soon as they are confirmed as discrepancies.

Audit outcome

Compliant

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

Code reference

Clause 20 of Schedule 10.7

Code related audit information

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

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

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

Audit observation

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

Audit commentary

I checked all of the points above and confirm there are no metering installations where certification needs to be cancelled. Compliance is confirmed.

Audit outcome

Compliant

6.5. Registry Metering Records (Clause 11.8A)

Code reference

Clause 11.8A

Code related audit information

The MEP must provide the registry 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 Delta 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 Delta 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
- I checked ICPs where certification was cancelled to ensure the registry was updated accordingly.

Audit commentary

At the time of my analysis, five ICPs were showing as having expired certification.

The table below shows the details.

ICP	Certification Type	Category	Expiry Date	Comments
0000007019DEC75	F	2	24-09-17	Recertified 14/05/18. Was uncertified for a 7 month period.
0000007170DE4D0	F	2	18-02-18	Recertified 25/05/18. Was uncertified for a 3 month period.
0000021629DE186	F	2	05-02-18	The Category 2 installation for the ICP has been recertified but there is a Category 1 installation yet to be done.
0000029699DEE34	F	2	08-04-18	Recertified 25/05/18. Was uncertified for a 1 month period.
0979774282LC664	I	2	01-04-15	Metrix is the proposed MEP and has accepted the nomination.

I checked the records for 10 Category 2 metering installations recertified during the audit period and seven of the 10 were recertified after the expiry of the previous certification.

Audit outcome

Non-compliant

Non-compliance	Description		
Audit Ref: 7.1 With: Clause 10.38 (a) From: 01-Jan-17 To: 31-May-18	Certification expired for five ICPs. Certification late for 7 of 10 ICPs. Potential impact: High 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 certification has been expired for a number of months for some ICPs and the controls do not appear to be achieving certification on time for most ICPs. The impact on settlement is recorded as low because no inaccuracies were found; therefore the audit risk rating is low.		
Actions taken to resolve the issue		Completion date	Remedial action status
CT trained staff have caught up on overdue work and expired sites.		2-7-18	Cleared
Preventative actions taken to ensure no further issues will occur		Completion date	
Delta produce a report from Gentrack containing all ICPs that are due to expire in the next 90 days. Work is planned and completed in a timely manner. Additional staff will be trained to perform CT work resulting in no staff shortage and work being completed on time.		2-7-18	

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 11 metering installations to confirm compliance. ATHs have shown that their processes include all tests and reports confirm tests are completed.

Audit commentary

Delta has ensured ATH's have the appropriate approval for metering installation certification and recertification. I examined the certification records for 11 metering installations and I confirm the appropriate tests are conducted and the results are recorded. The instructions to field technicians are complete and accurate, making clear reference to Delta's requirements.

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

Delta is not the MEP for any HHR metering installations.

Audit commentary

Delta is not the MEP for any HHR metering installations.

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

Audit commentary

Delta deals with situations when CPD metering is installed. In all cases, the installation is recertified by an ATH. There were no specific examples but I have checked examples in the past.

Audit outcome

Compliant

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

Code reference

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

Code related audit information

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

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

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

If a meter is certified in this manner:

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

Audit observation

I checked 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 are no examples of ICPs certified as a lower category.

Audit outcome

Compliant

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

Code reference

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

Code related audit information

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

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

Audit observation

I checked if there were any examples of Insufficient load certifications.

Audit commentary

This clause only applies to HHR installations and Delta is not the MEP for any HHR installations.

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 one business day:*
- *the MEP must follow the procedure for handling faulty metering installations (clause 10.43 - 10.48).*

Audit observation

I checked if there were any examples of Insufficient load certifications.

Audit commentary

This clause only applies to HHR installations and Delta is not the MEP for any HHR installations.

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 has not occurred. I confirmed this by checking the list file.

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 Delta whether there were any metering installations with timeclocks.

Audit commentary

Delta does not have any metering installations with timeclocks. These were all either sold or removed.

Audit outcome

Compliant

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

Code reference

Clause 35 of Schedule 10.7

Code related audit information

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

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

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

Audit observation

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

Audit commentary

Delta is not aware of any control devices which have been bridged out. If any are bridged out they will notify as required by this clause. Five examples were identified where Delta was the ATH, but none where they were the MEP.

Audit outcome

Compliant

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

Code reference

Clause 34(5) of Schedule 10.7

Code related audit information

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

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

Audit observation

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

Audit commentary

Delta's instruction is that control devices must not be installed to control registers if there is a signal propagation problem in a particular area. There are no known signal propagation issues. Most metering is on the Aurora network where there is 317 hz plant in operation resulting in good propagation.

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

Statistical sampling has not occurred during the audit period.

Audit outcome

Compliant

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

Code reference

Clause 24(3) of Schedule 10.7

Code related audit information

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

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

Audit observation

I checked the certification records against the registry for 10 Category 2 metering installations and they were correct in all cases.

Audit commentary

I checked the certification records against the registry for 10 Category 2 metering installations and they were correct in all cases.

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 11 metering installations to confirm compliance.

Audit commentary

Meters were certified for all 11 metering 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 10 metering installations to confirm compliance.

Audit commentary

I checked the records for 10 CT metered installations and I confirm CTs are certified in accordance with this clause.

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

Delta is not the MEP for any HHR or AMI metering installations.

Audit commentary

Delta is not the MEP for any HHR or AMI metering installations.

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 is one metering installation with interim certification as recorded in **Section 7.1**. Metrix has accepted an MEP nomination in 2014 but the records are not yet updated.

Audit outcome

Compliant

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 the process and results for Category 1 inspections.

Audit commentary

Delta is conducting Category 1 inspections in accordance with a process approved by the Authority. The required number of inspections were completed by 31/12/17.

95 inspections were completed by 31/12/17. The results are shown in the table below:

Quantity	Comments
95	Total inspections
95	Data checked and confirmed as accurate
6	Missing seals
0	Defective installations

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

Delta has not been required to conduct any Category 2 inspections.

Audit commentary

Delta has not been required to conduct any Category 2 inspections.

Audit outcome

Compliant

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

Code reference

Clause 44(5) of Schedule 10.7

Code related audit information

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

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

Audit observation

I checked that Delta had checked their records and resolved any issues.

Audit commentary

Delta's records were checked and accuracy was confirmed.

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

Delta has a documented process in place for the management of seals and any subsequent investigation and reporting. This process was followed when seals were found to be missing during inspections.

Audit commentary

Delta has a documented process in place for the management of seals and any subsequent investigation and reporting. This process was followed when seals were found to be missing during inspections.

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

Delta has a documented process in place for the management of faulty metering installations and any subsequent investigation and reporting. No specific examples were identified during the audit period.

Audit commentary

Delta has a documented process in place for the management of faulty metering installations and any subsequent investigation and reporting. No specific examples were identified during the audit period.

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

Delta has a documented process in place for the management of faulty metering installations and any subsequent investigation and reporting. No specific examples were identified during the audit period.

Audit commentary

Delta has a documented process in place for the management of faulty metering installations and any subsequent investigation and reporting. No specific examples were identified during the audit period.

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

Delta has a documented process in place for the management of faulty metering installations and any subsequent investigation and reporting. No specific examples were identified during the audit period.

Audit commentary

Delta has a documented process in place for the management of faulty metering installations and any subsequent investigation and reporting. No specific examples were identified during the audit period.

Audit outcome

Compliant

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

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

Code reference

Clause 1 of Schedule 10.6

Code related audit information

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

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

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

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

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

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

Audit observation

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

Audit commentary

Delta is not the MEP for any AMI or HHR metering installations so raw data can only be obtained from meter registers. Delta will assist with access to raw meter data when required, but there have not been any specific requests.

Audit outcome

Compliant

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

Code reference

Clause 2 of Schedule 10.6

Code related audit information

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

Audit observation

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

Audit commentary

Delta is not the MEP for any AMI or HHR metering installations so raw data can only be obtained from meter registers. Delta will assist with access to raw meter data when required, but there have not been any specific requests.

Audit outcome

Compliant

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

Code reference

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

Code related audit information

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

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

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

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

Audit observation

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

Audit commentary

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

Audit outcome

Compliant

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

Code reference

Clause 3(5) of Schedule 10.6

Code related audit information

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

Audit observation

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

Audit commentary

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

Audit outcome

Compliant

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

Code reference

Clause 8 of Schedule 10.6

Code related audit information

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

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

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

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

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

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

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

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

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

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

in a form that is accessible to authorised personnel.

Audit observation

Delta does not conduct electronic data collection.

Audit commentary

Delta does not conduct electronic data collection.

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

Delta does not conduct electronic data collection.

Audit commentary

Delta does not conduct electronic data collection.

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

Delta does not conduct electronic data collection.

Audit commentary

Delta does not conduct electronic data collection.

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

Delta does not conduct electronic data collection.

Audit commentary

Delta does not conduct electronic data collection.

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

Delta does not conduct electronic data collection.

Audit commentary

Delta does not conduct electronic data collection.

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

Delta does not conduct electronic data collection.

Audit commentary

Delta does not conduct electronic data collection.

Audit outcome

Not applicable

CONCLUSION

The audit identified four non-compliances.

The matter of uncertainty calculations has been an ongoing non-compliance for the past five years, where Delta has disputed the need to follow what I believe are clear requirements in the Code. During this audit, Delta stated an intention to obtain the latest uncertainty calculator from MSL and they intend to start calculating uncertainty including all potential sources.

Delta has only conducted recertification for 20 metering installations during the audit period. 19 Category 2 installations and one Category 1 installation. I check 10 Category 2 records and the one Category 1 record. Seven of the 10 Category 2 installations were certified after the certification had expired and there were five installations with expired certification at the time of the audit. Controls require improvement in this area to ensure installations are certified prior to expiry.

There were a small number of registry discrepancies and some records were updated late.

PARTICIPANT RESPONSE

Delta aim to adopt industry standard methods and using the MSL uncertainty calculator intend to start calculating uncertainty including all potential sources. The MSL uncertainty calculator will be utilized to calculate the additional uncertainties due to temperature.

Calibration of the Hioki PWS will be completed to obtain a new baseline uncertainty that does not incorporate an inbuilt percentage to accommodate miscellaneous uncertainties (including temp) as used in the past. This Hioki PWS uncertainty will then be used in conjunction with the MSL uncertainty calculator to calculate uncertainty including all potential sources on a site by site basis.

Due to staff changes a backlog of expired ICPs was created. This has now been cleared and controls put in place to ensure compliance work is undertaken before expiry of the certification of an ICP.

Delta will work with Gentrack and Aurora to resolve registry discrepancies and ensure accurate updating in the future.