

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

For

INTELLIHUB LIMITED
NZBN:9429047189027

Prepared by: Brett Piskulic, Veritek Limited

Date audit commenced: 19 April 2022

Date audit report completed: 8 June 2022

Audit report due date: 06-Apr-22

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EXECUTIVE SUMMARY

Intellihub NZ Limited ceased to operate on 29th March 2022 and the responsibilities of the MEP functions under the IHUB identifier were transferred to Intellihub Limited. The participant register was updated with the change effective from 1st May 2022. When this change took place an MEP audit was already in progress under Intellihub NZ Limited. This audit has now been completed as a material change audit of Intellihub Limited (Intellihub) to meet the requirement for a material change audit in accordance with clause 11 of Part 16A. This audit relates to MEP functions in relation to ICPs with the IHUB identifier only. The next audit for Intellihub Limited will include the IHUB, MTRX and BOPE participant codes.

This audit found that there is no impact on compliance caused by the change to Intellihub Limited. There have been no changes to the systems and processes used or personnel involved in the management of the MEP functions.

There are 12 non-compliances identified and three recommendations made.

The main areas of non-compliance are related to the following issues:

- inaccurate or incomplete certification records,
- late updating of registry information,
- inaccurate registry information,
- cancelled certification,
- all required certification tests not completed by ATHs, and
- time is not monitored every 12 months for two ICPs with time dependent registers.

The date of the next audit is determined by the Electricity Authority and is dependent on the level of compliance during this audit. The audit risk rating of 19 indicates that the next audit be undertaken in 12 months. In the recent Intellihub Limited audit I recommended that the next audit be in nine months. I recommend that the next audit date is aligned for all Intellihub's MEP operations.

AUDIT SUMMARY

NON-COMPLIANCES

| Subject | Section | Clause | Non-Compliance | Controls | Audit Risk Rating | Breach Risk Rating | Remedial Action |
|-----------------------------------|---------|--|--|----------|-------------------|--------------------|-----------------|
| Material change audit | 1.11 | 16A.11 | Material change audit not completed within five business days of change. | Strong | Low | 1 | Cleared |
| Provision of accurate information | 2.5 | 11.2 and 10.6 | All practicable steps not taken to ensure data is correct and that incorrect data is corrected as soon as practicable. | Moderate | Low | 2 | Investigating |
| Registry changes | 3.2 | 2 of Schedule 11.4 | 179 registry updates late. | Strong | Low | 1 | Investigating |
| Registry updates | 4.10 | Clause 3 of Schedule 11.4 | Some records updated on the registry later than 10 business days. | Moderate | Low | 2 | Investigating |
| Accurate and complete records | 5.1 | 4(1)(a) and (b) of Schedule 10.6, and Table 1, Schedule 11.4 | Some fields not accurate and complete in a sample of 49 certification records. | Moderate | Low | 2 | Identified |
| Provision of Registry Information | 6.2 | Clause 7 (1), (2) and (3) of Schedule 11.4 | Two incorrect registry records. | Strong | Low | 1 | Cleared |
| Error correction | 6.3 | 6 of Schedule 11.4 | Discrepancies not always resolved within five business days. | Moderate | Low | 2 | Identified |
| Cancellation of Certification | 6.4 | 20 of Schedule 10.7 | Certification cancelled and registry not updated within 10 business days for 336 ICPs with failed sum-checks. | Strong | Low | 1 | Cleared |

| | | | | | | | |
|--|------|-----------------------|---|----------|-----|---|---|
| Certification | 7.1 | 10.38 (a) | 869 ICPs with cancelled certification. | Moderate | Low | 2 | Identified |
| Certification Tests | 7.2 | 10.38(b) | All required tests not conducted for five category 1 metering installations. | Moderate | Low | 2 | Investigating |
| Timekeeping | 7.10 | 23 of Schedule 10.7 | Two ICPs with time dependant meter registers are not monitored every 12 months. | Moderate | Low | 2 | Investigating |
| Time errors for metering installations | 10.7 | 8(4) of Schedule 10.6 | 43 examples of clock errors outside the allowable thresholds in the most recent reports. Incorrect threshold applied for reporting time errors of Category 2 meters. | Strong | Low | 1 | Identified for time errors outside the allowable thresholds Cleared for Category 2 reporting threshold |
| Future Risk Rating | | | | | | | 19 |
| 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 | Description | Remedial Action |
|---------------------------------|---------|--|-----------------|
| Temporary Electrical Connection | 4.17 | Update the temporary electrical connection process to include an authorisation step by the trader and network owner. | Investigating |
| Accurate and complete records | 5.1 | Check metering installation certification reports to ensure compliance and improve controls to ensure certification records are complete and accurate. | Investigating |
| Certification Tests | 7.2 | Require ATHs to include details and results of all testing completed in the metering installation certification reports provided. | Investigating |

| | | | |
|--------------------------|------|---|---------------|
| Timekeeping Requirements | 7.10 | to identify meters which become subject to the timekeeping requirements of Clause 23 of Schedule 10.7 and ensure the time is monitored and corrected as required. | Investigating |
|--------------------------|------|---|---------------|

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 related to the IHUB identifier.

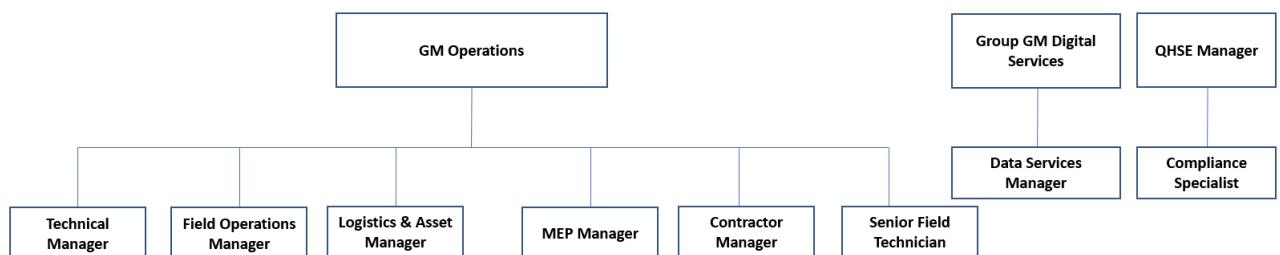
Audit commentary

I checked the Electricity Authority website and I confirm there are no exemptions in place related to the IHUB identifier.

1.2. Structure of Organisation

Intellihub's organisation structure is shown below.

Team Members involved in MEP Audit



1.3. Persons involved in this audit

Auditor: Brett Piskulic

Veritek Limited

Electricity Authority Approved Auditor

Intellihub personnel assisting in this audit were:

| Name | Title |
|-----------------|--|
| David Boyle | GM Operations Manager NZ |
| Niu Nelson | MEP Manager |
| Chris Chambers | Quality & Compliance Officer |
| Paul Thornton | Technical Manager |
| Paul Wilson | Contractor Manager |
| Dennis Baldwin | Engineering Performance Operations Manager |
| Hamish Sukha | Meter Data Manager NZ |
| Gus Wolfgramm | Asset Engineer |
| George Diederer | Technical Specialist |
| Shane Broome | Logistics and Assets Manager |
| Andrew Doel | Senior Field Technician |
| Chris Otutaha | Field Operations 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

I checked whether there were any agents or contractors involved in the performance of functions within the scope of the audit.

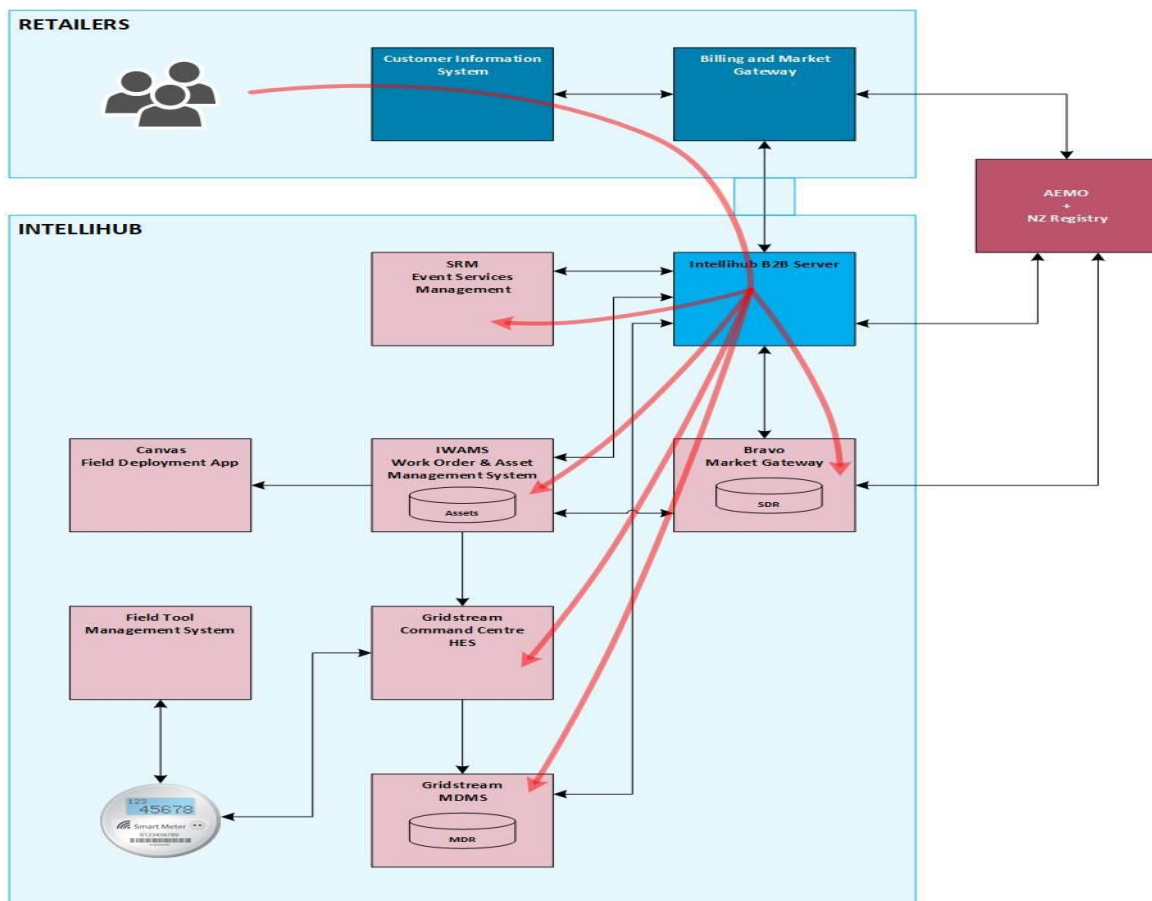
Audit commentary

Intellihub engages the Delta, Intellihub and Wells ATHs to conduct certification activities. These parties are not considered agents for this activity. With the exception of the Delta ATH, Intellihub do not engage them to store certification records. The Delta ATH is considered to be an agent for the storage of records in accordance with clauses 4(1)(v)&(viii) of schedule 10.6. I confirmed that records were available from the Delta ATH. The provision and accuracy of records is discussed further in **section 5.1**.

1.5. Hardware and Software

I checked whether there were any systems used in the performance of functions relevant to the scope of the audit and confirmed that there is no change in systems due to the change to Intellihub Limited.

The relevant systems are shown in the diagram below.



Intellihub provided a “Data Backup and Retention” work instruction, which is reviewed annually. The document contains the following summary of backup arrangements:

On each Database VM (SQL and Oracle) backups are saved to a separate locally attached disk. Copies of the Database Backup files are then replicated to an Azure Cloud Storage account every hour. This Storage account is Geo-Replicated and has four copies.

The current Backup schedule is as follows:

- a. full database monthly backup (kept for 13 months, then a yearly copy taken),
- b. full database weekly backup (kept for five weeks),
- c. incremental backup is taken on a daily basis (kept for eight days), and
- d. hourly Database log backup (kept for two days).

To verify the validity of the backup processes a sample of VM and DB backups are to ‘test restored’ at least quarterly.

1.6. Breaches or Breach Allegations

There are no breach allegations relevant to the scope of the audit.

1.7. ICP Data

The table below shows active ICPs under the IHUB identifier as of 15 April 2022.

| Metering Category | Number of ICPs 2022 | Number of ICPs 2021 | Number of ICP 2020s | Number of ICPs 2019 |
|-------------------|---------------------|---------------------|---------------------|---------------------|
| 1 | 115,233 | 94,411 | 56,429 | 14,647 |
| 2 | 61 | 12 | 12 | 10 |
| 3 | 0 | 0 | 0 | 0 |
| 4 | 0 | 0 | 0 | 0 |
| 5 | 0 | 0 | 0 | 0 |
| 9 | 4 | 0 | 1 | 0 |

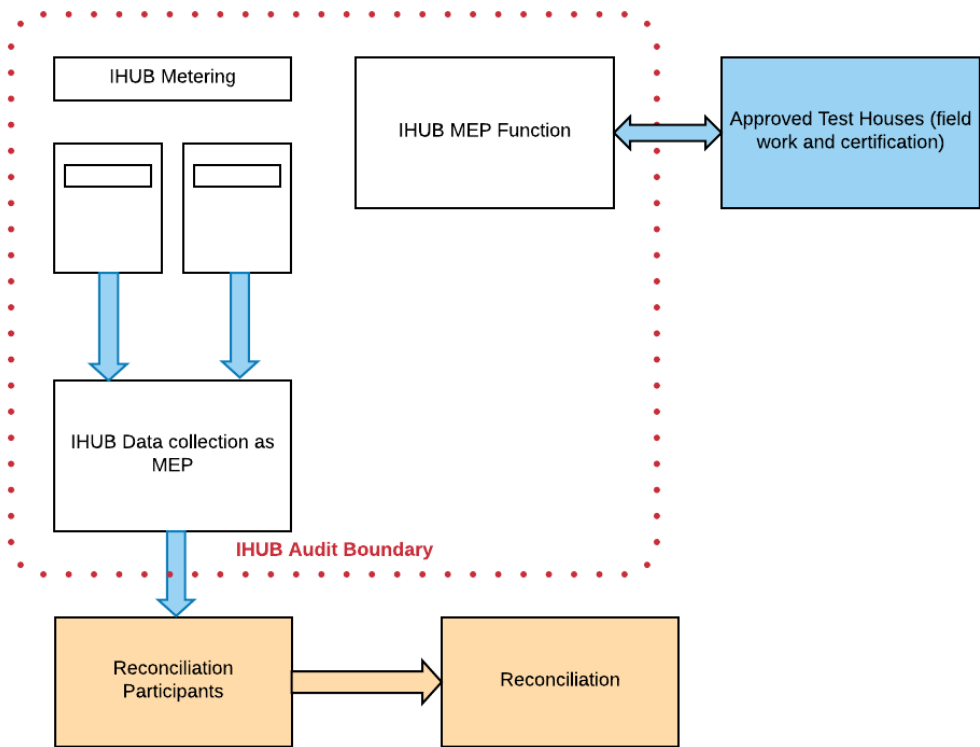
1.8. Authorisation Received

A letter of authorisation was not required or requested.

1.9. Scope of Audit

Intellihub NZ Limited ceased to operate on 29th March 2022 and the responsibilities of the MEP functions under the IHUB identifier were transferred to Intellihub Limited. The participant register was updated with the change effective from 1st May 2022. When this change took place an MEP audit was already in progress under Intellihub NZ Limited. This audit was completed as a material change audit of Intellihub Limited (Intellihub) to meet the requirement for a material change audit in accordance with clause 11 of Part 16A. This audit relates to MEP functions in relation to ICPs with the IHUB identifier only.

The diagram below shows the audit boundary.



1.10. Summary of previous audit

The previous audit was conducted by Brett Piskulic of Veritek in August 2021. The status of the issues raised is recorded in the tables below.

NON-COMPLIANCES

| Subject | Section | Clause | Non- Compliance | Status |
|-----------------------------------|---------|--|--|----------------|
| Services access interface | 2.1 | 10.9(2) | Each services access interface not identified for 25 metering installations. | Cleared |
| Provision of accurate information | 2.5 | 11.2 and 10.6 | All practicable steps not taken to ensure data is correct and that incorrect data is corrected as soon as practicable. | Still existing |
| Registry changes | 3.2 | 2 of Schedule 11.4 | 179 late registry updates. | Still existing |
| Registry updates | 4.10 | Clause 3 of Schedule 11.4 | Some records updated on the registry later than 10 business days. | Still existing |
| Accurate and complete records | 5.1 | 4(1)(a) and (b) of Schedule 10.6, and Table 1, Schedule 11.4 | A high number of fields not accurate and complete in a sample of 49 certification records. | Still existing |
| Error correction | 6.3 | 6 of Schedule 11.4 | Discrepancies not always resolved within 5 business days. | Still existing |

| | | | | |
|---|-------|---|---|----------------|
| Cancellation of Certification | 6.4 | 20 of Schedule 10.7 | Certification cancelled, and registry not updated within 10 business days for: - one ICP with low burden, - 35 ICPs not interrogated during the maximum interrogation cycle, and - 863 ICPs with failed sum-checks. | Still existing |
| Certification | 7.1 | 10.38 (a) | 76 ICPs with cancelled certification. Certification cancelled, and registry not updated within 10 business days for: - one ICP with low burden, - 35 ICPs not interrogated during the maximum interrogation cycle, and - 863 ICPs with failed sum-checks. | Still existing |
| Certification Tests | 7.2 | 10.38(b) | Prevailing load test not conducted for one category 1 metering installation. | Still existing |
| Max interrogation cycle | 10.5 | 8(2)(a) of Schedule 10.6 | Maximum interrogation cycle exceeded for 35 ICPs. | Cleared |
| Time errors for metering installations | 10.7 | 8(4) of Schedule 10.6 | 136 examples of clock errors outside the allowable thresholds in the most recent reports. | Still existing |
| Sum-check validation | 10.9 | 8(9) of Schedule 10.6 | 863 meters failed sum-check. | Cleared |
| Investigation of AMI interrogation failures | 10.12 | 8(11), 8(12) and 8(13) of Schedule 10.6 | Reporting and processes not in place to resolve interrogation issues or change the AMI flag to "N" at 25% of the MIC or 30 days. | Cleared |

RECOMMENDATIONS

| Subject | Section | Description | Status |
|-------------------------------|---------|---|----------------|
| Accurate and complete records | 5.1 | Check metering installation certification reports to ensure compliance and improve controls to ensure certification records are complete and accurate. | Still existing |
| Certification Tests | 7.2 | Require ATHs to include details and results of all testing completed in the metering installation certification reports provided. | Still existing |
| Timekeeping Requirements | 7.10 | Develop a process to identify meters which become subject to the timekeeping requirements of Clause 23 of Schedule 10.7 and ensure the time is monitored and corrected as required. | Still existing |

1.11. Material change audit (Clause 16A.11)

Code reference

Clause 16A(11)

Code related audit information

If there is a material change to any of a participant's systems or processes that are the subject of regular audits under clause 10.17A, 11.8B, 11.10, 15.37A or 15.37B, the participant must arrange for an additional audit, which must be completed in accordance with this Part no later than 5 business days before the change is implemented.

Audit observation

Intellihub requested Veritek to undertake this material change audit for Intellihub Ltd taking over the Intellihub NZ Ltd functions from 29 March 2022.

Audit commentary

This audit confirms that the requirement to undertake a material change audit has been met but it was unable to be completed within five business days of the change.

Audit outcome

Non-compliant

| Non-compliance | Description | | |
|--|---|-----------------|------------------------|
| Audit Ref: 1.11 With: Clause 16A.11 From: 06-Apr-22 To: 11-May-22 | Material change audit not completed within five business days of change. Potential impact: Medium Actual impact: Low Audit history: None Controls: Strong Breach risk rating:1 | | |
| Audit risk rating | Rationale for audit risk rating | | |
| Low | I have recorded the controls as strong as the Intellihub MEP staff are aware of this requirement but in this case were not made aware of the change in sufficient time to arrange the audit. The impact is assessed to be low, as this has no direct impact on reconciliation. | | |
| Actions taken to resolve the issue | | Completion date | Remedial action status |
| Intellihub agrees with the auditors' comments. | | Date | Cleared |
| Preventative actions taken to ensure no further issues will occur | | Completion date | |
| Intellihub agrees with the auditors' comments and will be cognizant of these requirements if a similar scenario should arise in future | | Date | |

2. OPERATIONAL INFRASTRUCTURE

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

Code reference

Clause 10.9(2)

Code related audit information

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

Audit observation

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

Audit commentary

The Code places responsibility for maintaining the services access interface on the MEP and places responsibility for determining and recording it with ATHs. The code was changed from 1st February 2021 to require the ATH to record each services access interface and the conditions under which each services access interface may be used.

I checked 49 certification records and found that each services access interface was recorded correctly by the ATHs for all 49 of the certifications.

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 in relation to this audit.

Audit commentary

Intellihub 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

Intellihub uses the IHUB code for all information.

Audit commentary

Intellihub uses the IHUB code for all information.

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 ATHs have a process to check the relevant type test certificates to ensure compliance with this clause.

Audit commentary

Intellihub ensures all communication equipment is appropriately certified with the relevant telecommunications standards. This is recorded in type test certificates and other approval documents.

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 recorded in **sections 5 and 6** there are some registry and certification records which are not complete and accurate. Intellihub is attempting to correct information as soon as practicable. There are some metering installations with cancelled certification and the registry has not been updated as soon as practicable.

Audit outcome

Non-compliant

| Non-compliance | Description | | |
|--|---|-----------------|------------------------|
| Audit Ref: 2.5 With: Clause 11.2 and Clause 10.6 From: 01-Aug-21 To: 15-Apr-22 | All practicable steps not taken to ensure data is correct and that incorrect data is corrected as soon as practicable. Potential impact: Medium Actual impact: Low Audit history: Multiple times Controls: Moderate Breach risk rating: 2 | | |
| Audit risk rating | Rationale for audit risk rating | | |
| Low | I have recorded the controls as moderate in this area because there are still a small number of areas where improvements can be made. Very few of the registry related discrepancies have an impact on participants, customers or settlement. The only relevant ones in this regard are tariff related and there were only a small number. The audit risk rating is low. | | |
| Actions taken to resolve the issue | | Completion date | Remedial action status |
| Intellihub will put in place resource to focus on data quality for all ATH's. Intellihub is working with the ATH's and our IT team to implement long term solutions and we continue to work to identify areas for improvement as part of a continuous improvement cycle. | | Ongoing | Investigating |
| Preventative actions taken to ensure no further issues will occur | | Completion date | |
| As above | | Ongoing | |

3. PROCESS FOR A CHANGE OF MEP

3.1. Change of metering equipment provider (Clause 10.22)

Code reference

Clause 10.22

Code related audit information

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

The losing MEP must notify the gaining MEP of the proportion of the costs within 40 business days of the gaining MEP assuming responsibility. The gaining MEP must pay the losing MEP within 20 business days of receiving notification from the losing MEP.

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.

The gaining MEP is not required to pay costs if:

- *the losing MEP has agreed in writing that the gaining MEP is not required to pay costs, or the losing MEP has failed to provide notice within 40 business days.*
- *within 3 business days, the gaining MEP replaces, removes or recertifies the metering component or metering installation*
- *the losing MEP has failed to provide notice of the costs to the gaining MEP within 40 business days.*

Audit observation

Intellihub has not sent or received any invoices in relation to this clause.

Audit commentary

Intellihub has not sent or received any invoices in relation to this clause.

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 audit compliance report for the audit period to ensure updates were within 15 business days.

Audit commentary

The table below shows that 97.09% of updates were within 15 business days. 435 late updates occurred from a total of 14,948 updates. 65 of the 435 late updates were due to the trader's nomination being later

than five business days. Intellihub provided details of the causes of the late updates for a sample of 40 records which are listed below:

- processing delays causing late updates by the MEP for five examples,
- inability to update the registry until losing MEP reversed a metering event dated after Intellihub event for two examples,
- late field notification or exceptions found in information from the ATH requiring follow-up for seven examples,
- updating of the AMI flag for meters with communication issues for 10 examples, and
- correction of metering data identified for 16 examples.

| Year | Late notifications | Percentage compliant |
|-------------|--------------------|----------------------|
| 2018 | 0 | 100% |
| 2019 | 10 | 99.92% |
| 2020 | 724 | 98.11% |
| 2021 | 179 | 99.40% |
| 2022 | 435 | 97.09% |

Audit outcome

Non-compliant

| Non-compliance | Description |
|---|---|
| Audit Ref: 3.2 With: Clause 2 of Schedule 11.4 From: 01-Aug-21 To: 15-Apr-22 | 435 late registry updates. Potential impact: Low Actual impact: Low Audit history: Three times previously Controls: Strong Breach risk rating: 1 |
| Audit risk rating | Rationale for audit risk rating |
| Low | The controls are recorded as strong as the process is robust and accuracy of records is required before updates occur. 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 |
|--|-----------------|------------------------|
| Intellihub is continuing to review the mechanisms for interacting with contracted ATH's with a view to reducing time delays in retrieving data. Intellihub will also be investigating opportunities to improve work order exchanges with Traders. We will also be working with our IT team to implement long term solutions. | Ongoing | Investigating |
| Preventative actions taken to ensure no further issues will occur | Completion date | |
| As above Intellihub will continue to provide feedback on exceptions to ATH's and remind them of their obligations to promptly return paperwork. | Ongoing | |

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 Intellihub to confirm whether there had been any requests from other MEPs.

Audit commentary

No requests have been made. Intellihub confirmed metering records will be provided as required.

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 Intellihub has ceased to be responsible for some metering installations by checking the event detail report.

Audit commentary

Intellihub continues with their responsibilities, mainly in relation to the storage of records, which are kept indefinitely. I checked the records for two decommissioned ICPs where the meters had been removed, and the records were still available.

Audit outcome

Compliant

4. INSTALLATION AND MODIFICATION OF METERING INSTALLATIONS

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

Code reference

Clause 2 of Schedule 10.7

Code related audit information

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

Clause 2(2) and (3)—The design report must be prepared by a person with the appropriate level of skills, expertise, experience and qualifications and must include a schematic drawing, details of the configuration scheme that programmable metering components are to include, confirmation that the configuration scheme has been approved by an approved test laboratory, maximum interrogation cycle for each services access interface, 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 suite of design reports provided by Intellihub to relevant ATHs, and I checked that ATHs were correctly recording the design report in the certification records.

Audit commentary

The design reports include all relevant details required by the Code, and ATHs had correctly recorded the design for all 49 metering installations checked. Intellihub implemented a new suite of design reports in September 2021. All relevant details are included in the new design reports and approval was gained from relevant distributors and traders.

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

Intellihub has used Wells, Intellihub, and Delta ATHs and all have appropriate scopes of approval.

Audit commentary

Intellihub has used Wells, Intellihub, and Delta ATHs and all have appropriate scopes of approval.

Audit outcome

Compliant

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

Code reference

Clause 4(1) of Schedule 10.7

Code related audit information

The MEP must ensure:

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

Audit observation

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

Audit commentary

Intellihub ensures the metering installation complies with the design report and the requirements of Part 10 by requiring ATH's to confirm the installation matches the design, or by requiring updates to be provided if the installation does not match the design. The design report was correctly recorded in the certification records for the 49 installations I checked.

My certification checks included 12 Category 2 metering installations certified using the comparative recertification method by the Wells and Delta ATHs. The certification records confirmed that the error and uncertainty was correctly calculated and recorded.

Audit outcome

Compliant

4.4. Net Metering metering and Subtractive Metering (Clause 10.13A and 4(2)(a) of Schedule 10.7)

Code reference

Clause 10.13A and Clause 4(2)(a) of Schedule 10.7

Code related audit information

MEPs must ensure that the metering installation records imported electricity separately from exported electricity. For category 1 and 2 installations the MEP must ensure the metering installation records imported and exported electricity separately for each phase. For category 3 or higher installations, the MEP does not need to ensure that imported and exported electricity is recorded separately for each phase.

If the metering installation contains multiple phases, the MEP may aggregate together the amounts of imported electricity recorded on different phases, or the amounts of exported electricity recorded on different phases. However, the MEP must not aggregate imported and exported electricity together. 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 Intellihub to confirm whether subtraction was used for any metering installations where they were the MEP and checked the configuration of meters used for recording import and export electricity.

Audit commentary

Intellihub will not deal with higher category metering, and it is unlikely they will deal with any installations with subtraction. None were identified.

Intellihub meters are correctly configured to record import and export electricity separately.

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

Intellihub is not responsible for any metering installations at or above category 3.

Audit commentary

Intellihub is not responsible for any metering installations at or above category 3.

Audit outcome

Not applicable

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

Intellihub is not responsible for any NSP metering.

Audit commentary

Intellihub 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

Intellihub is not responsible for any Grid metering.

Audit commentary

Intellihub 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 checked the certification records for all ATHs to confirm this point is being considered at the time of certification.

Audit commentary

The certification records for all ATHs contain a field or a statement 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), (2D) and (3))

Code reference

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

Code related audit information

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

- *required functionality*
- *terms of use*
- *required interface format*
- *integration of the ripple receiver and the meter*

- *functionality for controllable load.*

This includes where the MEP is proposing to replace a metering component or metering installations with the same or similar design and functionality but excludes where the MEP has already consulted on the design with the distributor and trader.

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 there were any new or modified designs during the audit period.

Audit commentary

Intellihub implemented a new suite of design reports in September 2021. All relevant details are included in the new design reports and approval was gained from relevant distributors and traders prior to implementation.

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

If the MEP has an arrangement with the trader the MEP must advise the registry manager of the registry metering records, or any change to the registry metering records, for each metering installation for which it is responsible at the ICP, no later than 10 business days following:

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

If the MEP is updating the registry in accordance with 8(11)(b) of Schedule 10.6, it must do so within 10 business days after the most recent unsuccessful interrogation.

If the MEP is updating the registry in accordance with clause 8(13) of Schedule 10.6, it must do so within 3 business days following the expiry of the time period or date from which the MEP determines it cannot restore communications.

Audit observation

I examined the audit compliance report for the audit period to to evaluate the timeliness of registry updates.

Audit commentary

The table below shows that registry updates were on time for 88.11% of the 3,272 new connections completed in the audit period. 56 of the 389 late updates had trader nominations later than five business days. Intellihub provided details of the causes of the late updates for a sample of 35 records which are listed below:

- late field notification or generation of certification report for 17 examples,
- correction of metering data identified for 13 examples, and
- updating of the AMI flag for meters with communication issues for five examples.

| Event type | Year | Updated Late | % Compliant |
|----------------|-------------|--------------|---------------|
| New connection | 2019 | 0 | N/A |
| | 2020 | 675 | 43.32% |
| | 2021 | 252 | 92.47% |
| | 2022 | 389 | 88.11% |

I was unable to accurately determine the total number of updates after recertification due to duplicates in the audit compliance report AC020MEP04 (Metering update after recertification). None of the reports account for reversed and replaced events, which leads to inaccurate reporting.

Audit outcome

Non-compliant

| Non-compliance | Description | | |
|--|--|-----------------|------------------------|
| Audit Ref: 4.10 With: Clause 3 of Schedule 11.4 From: 01-Aug-21 To: 15-Apr-22 | Some records updated on the registry later than 10 business days. Potential impact: Low Actual impact: Low Audit history: Three times previously 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 and participants is minor; therefore, the audit risk rating is low. | | |
| Actions taken to resolve the issue | | Completion date | Remedial action status |
| Field technicians have been advised of the importance of the accurate and timely return of paperwork, as well as the timely generation of certification reports. | | Ongoing | Investigating |
| Preventative actions taken to ensure no further issues will occur | | Completion date | |
| Intellihub will continue to provide feedback on exceptions to contractors and remind them of their obligations to return paperwork promptly | | Ongoing | |

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

The AMI metering and data collection system is considered “metering infrastructure”. The design report and type test report were checked to confirm compliance.

Audit commentary

The type test report, design report and this audit report confirm that the system will operate in a compliant manner.

Audit outcome

Compliant

4.12. Decommissioning of an ICP (Clause 10.23A)

Code reference

Clause 10.23A

Code related audit information

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

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

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

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

Audit observation

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

Audit commentary

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

Audit outcome

Compliant

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

Code reference

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

Code related audit information

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

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

Audit observation

It is unlikely that Intellihub will be required to approve any burden changes. This is normally limited to HV installations.

Audit commentary

It is unlikely that Intellihub will be required to approve any burden changes. This is normally limited to HV installations.

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

Intellihub advised that there were no firmware or software changes during the audit period.

Audit outcome

Compliant

4.15. Temporary Electrical Connection (Clauses 10.29A)

Code reference

Clause 10.29A

Code related audit information

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

Audit observation

Intellihub is not responsible for any grid metering.

Audit commentary

Intellihub is not responsible for any grid metering.

Audit outcome

Not applicable

4.16. Temporary Electrical Connection (Clause 10.30A)

Code reference

Clause 10.30A

Code related audit information

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

Audit observation

Intellihub is not responsible for any NSP metering.

Audit commentary

Intellihub is not responsible for any NSP metering.

Audit outcome

Not applicable

4.17. Temporary Electrical Connection (Clause 10.31A)

Code reference

Clause 10.31A

Code related audit information

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

Audit observation

I checked for examples where the metering installation certification date was prior to the initial electrical energisation date of the ICP, to determine whether there were any examples of temporary electrical connection for the purpose of testing and certification.

Audit commentary

Four ICPs were temporarily electrically connected during the audit period for the purpose of testing and certification. Clause 10.31A relates to situations where the MEP requests the distributor to temporarily electrically connect, but Intellihub did not request the distributor to temporarily electrically connect for any of the four ICPs. Therefore, it appears that clause 10.33 applies, which means Intellihub temporarily electrically connected and required authorisation from the trader, who must have written approval from the network owner. Intellihub did not have explicit authorisation from the trader and the trader did not have written approval from the network owner, therefore clause 10.33A(4) appears to be relevant, which states “No participant may electrically connect a point of connection, or authorise the electrical connection of a point of connection, other than a trader in the circumstances described in subclauses (1) to (3); or a distributor in the circumstances described in clause 10.31B.” Service orders are provided to Intellihub for each ICP authorising metering and electrical connection, and Intellihub believes this also allows temporary electrical connection. It seems that traders are non-compliant because there is no written permission from network owners but it’s not as clear whether Intellihub is non-compliant, therefore I recommend Intellihub updates their process to include an authorisation step, which will ensure compliance for all parties.

| Recommendation | Description | Audited party comment | Remedial action |
|---|--|---|-----------------|
| Regarding clause 10.31A, 10.33 and 10.33A | Update the temporary electrical connection process to include an authorisation step by the trader and network owner. | Intellihub agrees to review its existing procedures, and work with the applicable participants to ensure that all required authorisations are in place. | Investigating |

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 49 certification records to confirm compliance.

Audit commentary

All 49 certification reports were available. I also requested metering component calibration reports for all 49 certifications, which were provided. I found some errors and incomplete information in the metering installation certification reports. There has been improvement in this area since the last audit with all of the ATHs improving the recording of maximum interrogation cycle, services access interface and installation type. The table below shows a breakdown of the number of records checked for each ATH.

| ATH | Total reports checked |
|------------|-----------------------|
| Intellihub | 8 |
| Wells | 21 |
| Delta | 20 |
| Total | 49 |

The errors identified are shown in the table below.

| Error | Intellihub | Wells | Delta |
|---|------------|-------|-------|
| Test results missing | 1 | 2 | 10 |
| Comparative certification with CTs stickered as certified | - | 1 | - |
| Incorrect certification method recorded | - | 1 | - |

I repeat the recommendation from the last audit that Intellihub checks all certification reports from relevant ATHs to ensure they are compliant and fit for purpose and improve controls to ensure certification records are complete and accurate.

| Recommendation | Description | Audited party comment | Remedial action |
|---|--|--|-----------------|
| Regarding Clause 4(1)(a) and (b) of Schedule 10.6 | Check metering installation certification reports to ensure compliance and improve controls to ensure certification records are complete and accurate. | Intellihub MEP will include this communication within the summary of all technical and compliance issues identified with Installation Certification Reports to all ATH's during the course of this audit. We will also look to enhance our internal audit of the certification reports | Investigating |

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-Aug-21 To: 15-Apr-22 | Some fields not accurate and complete in a sample of 49 certification records. Potential impact: Low Actual impact: Low Audit history: Twice Controls: Moderate Breach risk rating: 2 | | |
| Audit risk rating | Rationale for audit risk rating | | |
| Low | I have recorded the controls as moderate because 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 |

| | | |
|--|------------------------|------------|
| Intellihub MEP will continue to communicate with ATHs and provide them with the summary of all technical and compliance issues identified with Installation Certification Reports during the course of this audit. We will also look to enhance our internal audit of certification reports | Ongoing | Identified |
| Preventative actions taken to ensure no further issues will occur | Completion date | |
| <p>Intellihub will continue to engage with ATH's on better clarity and presentation of certification reports to ensure these are fit for purpose.</p> <p>Over the past nine months, Intellihub has instigated monthly Technical Compliance sessions with contracted Approved Test Houses Wells and Delta with the objectives of improving communication, alignment and ensuring we both meet Code Compliance. We have already seen good value out of these meetings, these will remain ongoing as avenues to discuss any Code or Technical issues as they arise.</p> | Ongoing | |

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

Intellihub will not need to conduct inspections for several years.

Audit commentary

Intellihub will not need to conduct inspections for several years.

Audit outcome

Not applicable

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

Intellihub intends to keep records indefinitely.

Audit commentary

Intellihub intends to keep records indefinitely. All records are available from the time Intellihub commenced operating as an MEP.

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

Intellihub will supply records as required. There were no examples to examine.

Audit commentary

Intellihub will supply records as required. There were no examples to examine.

Audit outcome

Compliant

6. MAINTENANCE OF REGISTRY INFORMATION

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

Code reference

Clause 1(1) of Schedule 11.4

Code related audit information

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

Audit observation

I checked the switch breach detail report for the period 1 August 2021 to 14 April 2022 to confirm whether all responses were within 10 business days.

Audit commentary

All responses were sent on time.

Audit outcome

Compliant

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

Code reference

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

Code related audit information

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

The MEP does not need to provide 'required' information if the information is only for the purpose of a distributor direct billing consumers on its network.

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

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

Audit observation

I checked the audit compliance report to identify discrepancies.

Audit commentary

Two Category 1 ICPs with incorrect certification and certification expiry dates were identified by the audit compliance reports. Details of the incorrect dates are as follows:

| ICP | Certification date | Registry certification date | Certification expiry date | Registry certification expiry date | Actions taken |
|-----------------|--------------------|-----------------------------|---------------------------|------------------------------------|------------------|
| 0002270655MLAC3 | 12/10/2021 | 11/10/2021 | 12/10/2036 | 11/10/2036 | Registry updated |
| 0006632315MLEE2 | 15/03/2022 | 13/03/2022 | 15/03/2037 | 13/03/2037 | Registry updated |

Audit outcome

Non-compliant

| Non-compliance | Description | | |
|--|---|-----------------|------------------------|
| <p>Audit Ref: 6.2</p> <p>With: Clause 7 (1), (2) and (3) of Schedule 11.4</p> <p>From: 01-Aug-21</p> <p>To: 15-Apr-22</p> | <p>Two incorrect registry records.</p> <p>Potential impact: Medium</p> <p>Actual impact: Low</p> <p>Audit history: None</p> <p>Controls: Strong</p> <p>Breach risk rating: 1</p> | | |
| Audit risk rating | Rationale for audit risk rating | | |
| Low | <p>I have recorded the controls as strong in this area. Sound validations are in place to ensure data is accurate.</p> <p>The discrepancies found have no impact on participants, customers or settlement.</p> <p>The audit risk rating is low.</p> | | |
| Actions taken to resolve the issue | | Completion date | Remedial action status |
| These appears to both have been simple typographical data entry errors and we have not seen any other instances of the same issue. | | 21/04/2022 | Cleared |
| Preventative actions taken to ensure no further issues will occur | | Completion date | |
| As above | | 21/04/2022 | |

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 data validation processes and results to ensure compliance.

Audit commentary

Intellihub uses its DCN-Rec process to compare check for any differences between Intellihub’s records and the registry. A check on the reports confirmed that the requirement to complete the comparison each month is met. The report is checked on the same day it is run but corrections are not always able to be made within five business days.

Audit outcome

Non-compliant

| Non-compliance | Description | | |
|--|--|-----------------|------------------------|
| Audit Ref: 6.3 With: Clause 6 of Schedule 11.4 From: 01-Aug-21 To: 15-Apr-22 | Discrepancies not always resolved within five business days. Potential impact: Medium Actual impact: Low Audit history: Once Controls: Moderate Breach risk rating: 2 | | |
| Audit risk rating | Rationale for audit risk rating | | |
| Low | I have recorded the controls as moderate in this area because there is room for improvement. Very few of the discrepancies have an impact on participants, customers or settlement. The audit risk rating is low. | | |
| Actions taken to resolve the issue | | Completion date | Remedial action status |
| Intellihub will continue to resolve discrepancies which have the highest impact on participants. | | Ongoing | Identified |
| Preventative actions taken to ensure no further issues will occur | | Completion date | |
| Intellihub is committed to an ongoing focus on continuous improvements to the quality and completeness of all of its transactions. | | Ongoing | |

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), 19(3A) or 19(3C)
- 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:
 - (i) the MEP has not received the report under 6(2A)(a) or 6(2A)(b); or
 - (ii) the report demonstrates the maximum current is higher than permitted; or
 - (iii) the report demonstrates the electricity conveyed exceeds the amount permitted,
- 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.
- j) the installation is an HHR AMI installation certified after 29 August 2013 and
 - (i) the metering installation is not interrogated within the maximum interrogation cycle; or
 - (ii) the HHR and NHH register comparison is not performed; or
 - (iii) the HHR and NHH register comparison for the same period finds a difference of greater than 1 kWh and the issue is not remediated within three business days.

A metering equipment provider must (unless the installation has been recertified within the 10 business days) 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.

If any of the events in Clause 20(1)(j) of Schedule 10.7 have occurred, update the AMI flag in the registry to 'N'.

Audit observation

I checked all the points above to determine whether certification was cancelled for any installations.

Audit commentary

I checked all of the points mentioned above as follows,

Bridged meters

I checked five examples of bridged meters and confirmed that the metering installation certification was cancelled as soon as Intellihub was advised of the bridging in all five examples. Compliance is confirmed.

Bridged control devices

Intellihub provided the details of 53 examples of bridged control devices. In all 53 examples the metering installation certification was cancelled at the time Intellihub was advised of the bridging. Compliance is confirmed.

Current transformer in-service burden

I checked the certification records for a sample of 15 Category 2 metering installations certified during the audit period. My checks confirmed that the in-service burden was appropriate in all 15 records. Intellihub requires ATHs to install burden resistors when required to ensure the in-service burden is within the burden range of the current transformers.

Maximum interrogation cycle

I checked for examples where meters were not interrogated within the maximum interrogation and the AMI flag is still “Y” and certification was not cancelled. As recorded in **section 10.5** the Intellihub process ensures that the AMI flag is changed to “N” prior the maximum interrogation cycle being reached. Compliance is recorded.

Comparison of HHR Data with Register Data (Sum-check)

I checked for examples where certification was not cancelled after meters had failed a sum-check, or a sum-check was not performed within 30 days or 25% of the maximum interrogation cycle and the AMI flag is still “Y”. As recorded in **section 10.9**, Intellihub was unable to identify ICPs requiring cancellation between 10th December 2021 and 19th April 2022 due a technical issue following the implementation of a new meter data management system. The reporting subsequently identified 336 ICPs during this period where certification was cancelled but the registry was not able to be updated within 10 business days. Non-compliance is recorded for these 336 ICPs.

Audit outcome

Non-compliant

| Non-compliance | Description |
|--|--|
| Audit Ref: 6.4 With: Clause 20 of Schedule 10.7 From: 10-Jan-22 To: 19-Apr-22 | Certification cancelled and registry not updated within 10 business days for 336 ICPs with failed sum-checks. Potential impact: Low Actual impact: Low Audit history: Once Controls: Strong Breach risk rating: 1 |
| Audit risk rating | Rationale for audit risk rating |

| | | |
|---|---|-------------------------------|
| Low | I have recorded the controls as strong in this area as Intellihub has reinstated a process to identify failed sum-checks. 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 recorded in the audit observations, Intellihub was unable to identify ICPs requiring cancellation for a temporary period due to a technical issue following the implementation of a new meter data management system. This issue has since been resolved, and Intellihub is now able to identify ICPs requiring cancellation within the required timeframes. | 19/04/2022 | Cleared |
| Preventative actions taken to ensure no further issues will occur | Completion date | |
| As above | 19/04/2022 | |

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 Intellihub 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 Intellihub 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 certifications 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 checked the audit compliance report for the audit period to ensure all ICPs had current certification and I checked **section 6.4** for ICPs with cancelled certification.

Audit commentary

The audit compliance report identified 869 ICPs with cancelled certification. Due to the age of the Intellihub meters there are no ICPs with expired certification. Intellihub provided details of the reasons for cancellation as follows:

- 726 ICPs with failed sum-checks,
- 35 ICPs not interrogated during the maximum interrogation cycle from the previous audit period,
- 98 ICPs with possible bridging of meters or control devices advised by traders,
- six Category 2 ICPs have had certification cancelled due to low burden, and
- four ICPs where Intellihub has cancelled certification due to unspecified issues with certification.

Intellihub provided a copy of a letter sent to the Authority dated 29th October 2021 detailing it's plans for recertification of uncertified metering installations under the IHUB identifier by December 2022 through meter replacement and recertification of ICPs with cancelled certification. It is noted in the letter that this is dependent on retailers to provide the service requests, enable access and work collaboratively to solve UTCs (unable to completes) along with engagement from their customers.

Audit outcome

Non-compliant

| Non-compliance | Description |
|--|--|
| Audit Ref: 7.1 With: Clause 10.38 (a) From: 01-Aug-21 To: 15-Apr-22 | 869 ICPs with cancelled certification. Potential impact: Low Actual impact: Low Audit history: Twice Controls: Moderate Breach risk rating: 2 |

| Audit risk rating | Rationale for audit risk rating | | |
|--|--|-----------------|------------------------|
| Low | <p>The controls are recorded as moderate because they mitigate risk most of the time but there is room for improvement.</p> <p>The impact on settlement and participants is minor, therefore the audit risk rating is low.</p> | | |
| Actions taken to resolve the issue | | Completion date | Remedial action status |
| <p>Intellihub has an ongoing programme of recertification using the selected component method for metering installations with cancelled certification (and for which recertification by statistical sampling is not an available option).</p> <p>Intellihub is in the process of recertifying the six Category 2 ICPs which have had certification cancelled due to low burden</p> | | Ongoing | Identified |
| Preventative actions taken to ensure no further issues will occur | | Completion date | |
| As above | | Ongoing | |

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

Code reference

Clause 10.38(b) and clause 9 of Schedule 10.6

Code related audit information

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

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

Audit observation

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

Audit commentary

Category 1 certification tests

I checked a sample of 34 certification reports for Category 1 metering installations to confirm if all required testing had been completed. All 34 certification reports contained a statement confirming testing had been completed. 12 of the reports including all nine by the Delta ATH did not include details and results of all testing completed. I repeat the recommendation from the last audit that Intellihub requires ATHs to include details and results of all testing completed in the metering installation certification reports provided.

A breakdown of the Category 1 certification reports checked and recording of test results is detailed in the table below:

| ATH | Total certification reports checked | Reports with test results not recorded |
|-----|-------------------------------------|--|
| | | |

| | | |
|------------|----|----|
| Intellihub | 7 | 1 |
| Wells | 18 | 2 |
| Delta | 9 | 9 |
| Total | 34 | 12 |

| Recommendation | Description | Audited party comment | Remedial action |
|---------------------------|---|---|-----------------|
| Regarding Clause 10.38(b) | Require ATHs to include details and results of all testing completed in the metering installation certification reports provided. | Intellihub will include this recommendation along with any identified areas of non compliance, when communicating with Approved Test Houses | Investigating |

There were five examples of Category 1 metering installations recertified by the Wells ATH without all certification tests being conducted, the following table details the tests not conducted:

| ICP | Certification date | Detail of tests not conducted |
|-----------------|--------------------|---|
| 0001131578ML684 | 17/03/2022 | Prevailing load test not conducted when metering installation recertified without the meter being changed after control device unbridged. No testing conducted on second meter in metering installation. |
| 0000952724TU079 | 28/10/2021 | Prevailing load test not conducted when metering installation recertified without the meter being changed after control device unbridged. |
| 0000961935TU356 | 20/10/2021 | Prevailing load test not conducted when metering installation recertified without the meter being changed after control device unbridged. |
| 0000914673TU2EA | 2/12/2021 | Prevailing load test not conducted when metering installation recertified without the meter being changed after control device unbridged. |
| 0000902977TU1CE | 1/02/2022 | Prevailing load test not conducted when metering installation recertified without the meter being changed after control device unbridged. |

Table 3 of Schedule 10.1 requires that a prevailing load test is conducted when a category 1 metering installation is recertified without the meter being changed. Clause 9(1)(a) requires that prevailing load tests must be conducted using a working standard connected to the metering installation. I have recorded non-compliance as the ATH did not conduct a prevailing load test using a working standard.

Category 2 certification tests

I checked a sample of 15 Category 2 certification reports. The certification reports confirmed that all testing had been completed and the results were recorded.

Audit outcome

Non-compliant

| Non-compliance | Description | | |
|--|--|-----------------|------------------------|
| Audit Ref: 7.2 With: Clause 10.38(b) From: 23-Oct-20 To: 27-May-21 | All required tests not conducted for five category 1 metering installations. Potential impact: Low Actual impact: Low Audit history: None Controls: Moderate Breach risk rating: 2 | | |
| Audit risk rating | Rationale for audit risk rating | | |
| Low | The controls are recorded as moderate as Intellihub has confirmed that tests are normally conducted by the ATHs, though further checking is required to ensure all required testing is conducted by ATHs. The impact is low as the accuracy of the metering installation is unlikely to have been impacted by the prevailing load test not being completed, the audit risk rating is low. | | |
| Actions taken to resolve the issue | | Completion date | Remedial action status |
| RE: Prevailing load test not conducted for five Category 1 metering installations. Intellihub interpretation of Line 2 of Table 3 in Part 10 is that a Prevailing Load Test should not be required when a meter is not being changed, and the installation certification expiry date remains unchanged. We are currently awaiting a response from the Authority to clarify this. In the interim, Intellihub is ensuring that all other tests and checks are completed including a raw meter data output test to confirm installation accuracy. RE: No testing conducted on second meter in metering installation; Intellihub has followed this up with the Approved Test House. The reason for the site visit was to install an aerial to improve communication. The ATH did not believe the integrity of the metering was compromised. For the avoidance of doubt, the ATH conducted comprehensive tests/checks to ensure that the metering installation certification was maintained. | | Ongoing | Investigating |
| Preventative actions taken to ensure no further issues will occur | | Completion date | |
| As above | | Ongoing | |

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

I checked the type test reports to confirm compliance.

Audit commentary

The type test reports confirm compliance.

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

Audit commentary

It is unlikely that burden will change for any Category 2 metering installations without recertification occurring.

I checked one example of a Category 2 certification where the CTs were also used for Control Period Demand metering installed in series with the meter. The certification record included all relevant details in relation to the non-metering equipment connected.

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 whether there were any installations certified as a lower category.

Audit commentary

There were 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 for examples of insufficient load certification.

Audit commentary

There were no examples of insufficient load certification. It is intended that ATHs will connect additional load to carry out certification testing at the time of certification.

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

I checked for examples of insufficient load certification.

Audit commentary

There were no examples of insufficient load certification. It is intended that ATHs will connect additional load to carry out certification testing at the time of certification.

Audit outcome

Compliant

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

Code reference

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

Code related audit information

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

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

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

Audit observation

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

Audit commentary

Alternative certification has not been applied to any metering installations.

Audit outcome

Compliant

7.10. Timekeeping Requirements (Clause 23 of Schedule 10.7)

Code reference

Clause 23 of Schedule 10.7

Code related audit information

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

- 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 Intellihub whether there were any metering installations with time switches switching meter registers or any metering installations with time dependant register content codes where the AMI flag had been changed to “N” for more than 12 months.

Audit commentary

Intellihub confirmed that there are no metering installations with meter registers controlled by time switches.

Intellihub has AMI meters with configurations using multiple registers that are remotely monitored to meet the requirements of Clause 8(4) of Schedule 10.6. In cases where AMI meters fail to communicate the MEP switches the AMI flag in the registry to “N” to avoid cancellation of certification. When the meter is not communicating its time is no longer monitored and it becomes subject to the requirements of this clause if there are registers switched by the time of meter. Two active ICPs (0000023108EA6FC and 0000033313TR29C) with time dependant register content codes (D/N) where the AMI flag had been changed to “N” due to an inability to communicate for more than 12 months were identified. I have recorded non-compliance for these ICPs as the requirement to monitor and correct time at least once every 12 months has not been met.

I repeat the recommendation from the previous audit that Intellihub develops a process to identify meters which become subject to the timekeeping Requirements of Clause 23 of Schedule 10.7 and ensure the time is monitored and corrected as required.

| Recommendation | Description | Audited party comment | Remedial action |
|---------------------------|---|--|-----------------|
| Regarding Clause 10.38(b) | Develop a process to identify meters which become subject to the timekeeping Requirements of Clause 23 of Schedule 10.7 and ensure the time is monitored and corrected as required. | Intellihub agrees with this recommendation, and will develop a process to identify meters which become subject to the timekeeping Requirements of Clause 23 of Schedule 10.7 and ensure the time is monitored and corrected as required. | Investigating |

Audit outcome

Non-compliant

| Non-compliance | Description |
|---|--|
| Audit Ref: 7.10 With: Clause 23 of Schedule 10.7 From: 30-Oct-21 To: 11-May-22 | Two ICPs with time dependent meter registers with time are not monitored every 12 months. Potential impact: Low Actual impact: Low Audit history: None Controls: Moderate Breach risk rating: 2 |

| Audit risk rating | Rationale for audit risk rating | | |
|--|---|-----------------|------------------------|
| Low | I have recorded the controls as moderate as Intellihub has the capability to identify this, but regular monitoring has not taken place. The impact on settlement and participants could be minor; therefore, the audit risk rating is low. | | |
| Actions taken to resolve the issue | | Completion date | Remedial action status |
| Intellihub will arrange a site visits to appropriately resolve these issues. | | Ongoing | Investigating |
| Preventative actions taken to ensure no further issues will occur | | Completion date | |
| As above | | Date | |

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

Intellihub provided process documentation which is compliant with this clause. I also checked the details of 53 examples of bridged relays.

Audit commentary

Intellihub provided process documentation which is compliant with this clause.

I checked the details of 53 examples of bridged control devices. In all 53 examples the metering installation certification was cancelled at the time Intellihub was advised of the bridging and recertified at the time of unbridging. Notification was provided to the traders in each case. Compliance is confirmed.

Audit outcome

Compliant

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

Code reference

Clause 34(5) of Schedule 10.7

Code related audit information

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

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

Audit observation

I checked whether any notification had been provided.

Audit commentary

Intellihub has not received notification in relation to this clause.

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 recertification by statistical sampling had occurred during the audit period.

Audit commentary

No recertification by statistical sampling has taken place in 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 an external compensation factor must be applied to a metering installation that is an NSP, the MEP must advise the reconciliation participant responsible for the metering installation of the compensation factor within 10 days of certification of the installation.

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

Audit observation

I checked the records for 49 metering installations to confirm that compensation factors were correct.

Audit commentary

The compensation factors were correct for all 49 metering installations.

Audit outcome

Compliant

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

Code reference

Clause 26(1) of Schedule 10.7

Code related audit information

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

Audit observation

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

Audit commentary

All meters were certified in accordance with this clause.

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 Intellihub's approach to CT certification and the certification records for two Category 2 metering installations certified using the selected component method.

Audit commentary

Intellihub purchases pre-certified CTs from TWS for any installations where CTs need to be installed or replaced. The CTs were certified in the two examples checked.

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 46 metering installations with data storage devices to confirm compliance.

Audit commentary

All data storage devices were certified in accordance with this clause.

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

Intellihub is aware of this clause and monitors the ATH approval details on the website.

Audit commentary

Intellihub is aware of this clause and monitors the ATH approval details on the website. All relevant ATHs have current 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

This clause is not relevant to Intellihub as they were not an MEP in 2015.

Audit commentary

This clause is not relevant to Intellihub as they were not an MEP in 2015.

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 126 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, ensure an ATH has completed inspections of a sample of the category 1 metering installations selected under clause 45(2) of Schedule 10.7.*

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

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

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

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

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

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

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

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

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

Audit observation

Intellihub provided a copy of the report sent to the Authority on 25th March 2022 which confirmed that there were no inspections required in 2021.

Audit commentary

Intellihub provided a copy of the report sent to the Authority on 25th March 2022 which confirmed that there were no inspections required in 2021.

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:

- *126 months for Category 2*
- *63 months for Category 3*
- *33 months for Category 4*
- *19 months for Category 5.*

Audit observation

I checked the registry information and confirmed that there were no Category 2 metering installations due for inspection in the audit period.

Audit commentary

I checked the registry information and confirmed that there were no Category 2 metering installations due for inspection in the audit period.

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

There were no inspections conducted during the audit period.

Audit commentary

There were no inspections conducted during 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 the Intellihub processes and I whether there were any examples of broken or missing seals during the audit period.

Audit commentary

The Intellihub processes are compliant with this clause. There were no examples available during the audit period.

Audit outcome

Compliant

9. PROCESS FOR HANDLING FAULTY METERING INSTALLATIONS

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

Code reference

Clause 10.43(4) and (5)

Code related audit information

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

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

Audit observation

I checked the Intellihub processes and an example where Intellihub had become aware of suspected faulty metering installation.

Audit commentary

The Intellihub processes are compliant with this clause. I checked an example where the trader had requested a Category 1 meter be removed and sent for testing following a customer query regarding the accuracy of the meter (special test). In this case the meter was confirmed to be accurate by the test laboratory. The timeframe between the initial request from the trader to the testing being completed and results being provided to the trader was seven business days. Compliance is confirmed.

Audit outcome

Compliant

9.2. Testing of Faulty Metering Installations (Clause 10.44)

Code reference

Clause 10.44

Code related audit information

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

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

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

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

Audit observation

I checked the Intellihub processes and five examples where Intellihub had become aware of faulty metering installations, where the control device had been bridged.

Audit commentary

The Intellihub processes are compliant with this clause. In all five examples the faulty metering installations were investigated and recertified. The forms completed in the field by the ATH contained sufficient information to report to relevant parties and meet the requirement for the provision of a statement of situation.

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

I checked the Intellihub processes. I checked five examples where Intellihub had become aware of faulty metering installations, where the control device had been bridged.

Audit commentary

The Intellihub processes are compliant with this clause. The information returned by the ATH met the requirement for the provision of a statement of situation. Intellihub provided this information to the trader.

Audit outcome

Compliant

9.4. Timeframe for correct defects and inaccuracies (Clause10.46A)

Code reference

Clause 10.46A

Code related audit information

When the metering equipment provider is advised under 10.43 or becomes aware a metering installation it is responsible for is inaccurate, defective or not fit for purpose the metering equipment provider must undertake remedial actions to address the issue.

The metering equipment provider must use its best endeavours to complete the remedial action within 10 business days of the date it is required to provide a report to participants under 10.43(4)(c).

Audit observation

I checked the Intellihub processes. I checked five examples where Intellihub had become aware of faulty metering installations, where the control device had been bridged.

Audit commentary

The Intellihub processes are compliant with this clause. I checked an example where the meter had been bridged during the audit period. The bridge was removed, and the installation was recertified two days after the bridging took place therefore cancelling the previous certification. Appropriate notification was provided to the trader.

The Intellihub processes are compliant with this clause. In all five examples the faulty metering installations were investigated and recertified within the required timeframe.

Audit outcome

Compliant

9.5. Meter bridging (Clause 10.33C)

Code reference

Clause 10.33(C)

Code related audit information

An MEP may only electrically connect an ICP in a way that bypasses a meter that is in place (“bridging”) if the MEP has been authorised by the responsible trader.

The MEP can then only proceed with bridging the meter if, despite best endeavours:

- *the MEP is unable to remotely electrically connect the ICP*
- *the MEP cannot repair a fault with the meter due to safety concerns*
- *the consumer will likely be without electricity for a period which would cause significant disadvantage to the consumer*

If the MEP bridges a meter, the MEP must notify the responsible trader within one business day and include the date of bridging in its advice.

Audit observation

I checked for examples of bridged meters.

Audit commentary

Intellihub provided details of five examples where meters had been bridged. In all five examples the meters were bridged by the trader not the MEP. Intellihub does not bridge meters as an MEP.

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

Intellihub will provide data as required by this clause.

Audit commentary

Intellihub will provide data as required by this clause. There were no examples of data 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

Intellihub will provide data in compliance with this clause.

Audit commentary

Intellihub will provide data as required by this clause. There were no examples of data 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

Intellihub will provide access as required.

Audit commentary

Intellihub will provide access as required. There were no examples of requests for access to metering installations.

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

Intellihub will provide access as required.

Audit commentary

Intellihub will provide access as required. There were no examples of requests for access to metering installations.

Audit outcome

Compliant

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

Code reference

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

Code related audit information

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

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

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

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

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

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

When raw meter data can only be obtained from an MEP's back office, the MEP must, when interrogating a metering installation, download the event log, check the event log for evidence of an events that may affect the integrity or operation of the metering installation, such as malfunctioning or tampering.

The MEP must investigate and remediate any events and advise the reconciliation participant.

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

I conducted a walk-through of the process and I checked reporting of meters not read during the maximum interrogation cycle.

Audit commentary

Interrogation cycle

I conducted a walk-through of the process and I checked reporting of meters not read during the maximum interrogation cycle.

Clock synchronisation

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

Event logs

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

Security of raw meter data

I checked the security and storage of data by looking at examples of data and by checking security protocols.

Audit commentary

Interrogation cycle

A daily report is run by Intellihub to identify any meters that have not communicated for the earliest of 30 days or 25% of the maximum interrogation cycle. All meters identified have the AMI Comm flag to “N” on the registry. This is backed up by a second report run weekly which will identify meters that have not communicated within 60% of the maximum interrogation cycle. I checked reporting provided by Intellihub which confirmed that all meters with an AMI flag of “Y” were interrogated within the maximum interrogation cycle.

Security of raw meter data

All users have login and password to access working data and only certain IT experts can access raw data. There are no business processes that allow data to be edited. Event data is archived along with consumption data. This part of the process is compliant.

Event logs and clock synchronisation processes are discussed in **sections 10.7** and **10.8**.

Audit outcome

Compliant

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

I conducted a walkthrough of the data security processes.

Audit commentary

Data is transmitted securely by SFTP and is only accessible to authorised persons with appropriate passwords.

Audit outcome

Compliant

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

Code reference

Clause 8(4) of Schedule 10.6

Code related audit information

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

Audit observation

I checked Intellihub's time synchronisation processes and reporting.

Audit commentary

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. The relevant part of this table is shown below:

| Metering Installation Category | HHR Metering Installations (seconds) | NHH Metering Installations (seconds) |
|--------------------------------|--------------------------------------|--------------------------------------|
| 1 | ±30 | ±60 |
| 2 | ±10 | ±60 |

The Intellihub clock synchronisation setting is 5 seconds to 10 seconds. Any clock errors between these times are adjusted automatically. Any errors outside these times are adjusted by a separate schedule. Clock errors over 30 seconds are reported to retailers. I examined examples of emails sent to each retailer to confirm this. Intellihub had applied the 30 second threshold for reporting to retailers to both Category 1 and 2 meters. I have recorded non-compliance as the requirement for Category 2 HHR meters is 10 seconds as detailed in the table above.

I checked a time synchronisation report for the period 11 to 17 April 2022. There were a total of 43 Category 1 meters corrected which had exceeded the limit of 30 seconds for category 1 HHR metering installations. 17 of the 43 meters were synchronised at or shortly after the time of installation.

This clause is clear that when errors are outside the threshold, compliance is not achieved. The exact text is as follows:

"A metering equipment provider must ensure that a data storage device in a metering installation for which it is responsible for interrogating does not exceed the maximum time error set out in Table 1 of sub-clause (5)."

Audit outcome

Non-compliant

| Non-compliance | Description |
|---|---|
| Audit Ref: 10.7 With: Clause 8(4) of Schedule 10.6 From: 11-Apr-22 To: 17-Apr-22 | 43 examples of clock errors outside the allowable thresholds in the most recent reports. Incorrect threshold applied for reporting time errors of Category 2 meters. Potential impact: Medium Actual impact: Low Audit history: Once Controls: Strong Breach risk rating: 1 |

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

Audit commentary

Intellihub downloads the event log as required by this clause. All critical events are evaluated, and appropriate action is taken. Relevant events are sent to reconciliation participants. The relevant events can be summarised as follows:

- tamper (initially filtered by Intellihub to remove false records),
- phase failure,
- memory failure,
- temperature alarm,
- reverse power (detecting unexpected generation flow),
- load side voltage detection (to detect bridging of remotely disconnected devices),
- clock synchronisation,
- time synchronisation failure (because outside the threshold),
- re-programming, and
- manual download.

I checked an example of the event reporting sent to reconciliation participants, the report includes a “Job Notes” field which provides advice on the cause and follow actions required for each event.

Audit outcome

Compliant

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

Code reference

Clause 8(9) of Schedule 10.6

Code related audit information

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

Audit observation

The sum-check process and associated reporting was examined.

Audit commentary

Sum-check validation occurs daily and is based on midnight-to-midnight NZST. The “fail” setting is 1 kWh, and all trading periods must be present for a pass to occur. A report is generated which identifies failures which are unable to be resolved within three business days. This reporting is used to update the registry with cancellation of certification. The reporting was unable to be run between 10th December 2021 and 19th 2022 due a technical issue following the implementation of a new meter data management system. The reporting subsequently identified 336 ICPs during this period where certification was cancelled but the registry was not able to be updated within 10 business days. Non-compliance is recorded in **section 6.4** for these 336 ICPs.

Audit outcome

Compliant

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

Code reference

Clause 10.48(2),(3)

Code related audit information

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

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

Audit observation

Intellihub has a process in place to achieve compliance with this requirement. No specific examples were available to examine.

Audit commentary

Intellihub has a process in place to achieve compliance with this requirement. No specific examples were available to examine.

Audit outcome

Compliant

10.11. Raw meter data and compensation factors (Clause 8(10) of Schedule 10.6)

Code reference

Clause 8(10) of Schedule 10.6

Code related audit information

The MEP must not apply the compensation factor recorded in the registry to raw meter data downloaded as part of the interrogation of the metering installation.

Audit observation

I checked whether Intellihub was applying compensation factors to raw meter data.

Audit commentary

Intellihub is not applying compensation factors to raw meter data.

Audit outcome

Compliant

10.12. Investigation of AMI interrogation failures (Clause 8(11), 8(12) and 8(13) of Schedule 10.6)

Code reference

Clause 8(11), 8(12) and 8(13) of Schedule 10.6

Code related audit information

If an interrogation does not download all raw meter data, the MEP must investigate the registry why or update the registry to show the meter is no longer AMI.

If the MEP chooses to investigate the reasons for the failure the MEP has no more than 30 days or 25% of the maximum interrogation cycle, from the date of the last successful interrogation (whichever is shorter).

If the MEP does not restore communications within this time or determines they will be unable to meet this timeframe they must update the registry to show the meter is no longer AMI.

Audit observation

I checked whether Intellihub had reporting in place for installations not interrogated within 30 days or 25% of the maximum interrogation cycle.

Audit commentary

A “missing data export” report identifies meters where there are gaps in either the interval or register data. These are followed up to attempt to retrieve the missing data from the meter or update the AMI flag to “N” on the registry or certification is cancelled and a recertification job is created. I checked reporting provided by Intellihub which confirmed that all meters with an AMI flag of “Y” were interrogated within the maximum interrogation cycle.

Audit outcome

Compliant

CONCLUSION

This audit found that there is no impact on compliance caused by the change to Intellihub Limited. There have been no changes to the systems and processes used or personnel involved in the management of the MEP functions.

There are 12 non-compliances identified and three recommendations made.

The main areas of non-compliance are related to the following issues:

- inaccurate or incomplete certification records,
- late updating of registry information,
- inaccurate registry information,
- cancelled certification,
- all required certification tests not completed by ATHs, and
- time is not monitored every 12 months for two ICPs with time dependent registers.

The date of the next audit is determined by the Electricity Authority and is dependent on the level of compliance during this audit. The audit risk rating of 19 indicates that the next audit be undertaken in 12 months. In the recent Intellihub Limited audit I recommended that the next audit be in nine months. I recommend that the next audit date is aligned for all Intellihub's MEP operations.

PARTICIPANT RESPONSE

As mentioned in both the Executive Summary and in the Conclusion, this audit was bought forward as a result of a change of ownership. Intellihub NZ Limited ceased to operate on 29th March 2022 and the responsibilities of the MEP functions under the IHUB identifier were transferred to Intellihub Limited. This audit relates to MEP functions in relation to ICPs with the IHUB identifier only.

Intellihub is pleased to note that this audit found that there is no impact on compliance caused by the change to Intellihub Limited.

Over the past 12 months, Intellihub has continued with its expansion plans and has increased its footprint into new Network areas.

Intellihub will continue to work closely with its service providers to focus on areas where compliance opportunities have been identified, with a focus on continuous improvement.

There is one area of the February 2021 Code changes where Intellihub has concerns that the Code was not implemented in line with the “Decision Document” published in December 2020, as follows: Intellihub interpretation of Line 2 of Table 3 in Part 10 is that a Prevailing Load Test should not be required when a meter is not being changed, and the installation certification expiry date remains unchanged.

Our understanding is that this view is also shared by the majority of MEP’s and ATH’s.

Intellihub formally sought clarification from the Authority on this matter, soon after the Code changes came into effect on 01/02/2021. We are still currently awaiting a response to clarify this. In the interim, Intellihub is ensuring that all other metering installation commissioning tests and checks are completed including the raw meter data output test to confirm overall installation accuracy.

Over the past nine months, Intellihub has instigated monthly Technical Compliance sessions with contracted Approved Test Houses Wells and Delta with the objectives of improving communication, alignment and ensuring we both meet Code Compliance. We have already seen good value out of these meetings, these will remain ongoing as avenues to discuss any Code or Technical issues as they arise.