VERITEK

Electricity Industry Participation Code Audit Report

For

Class A Approved Test House

Prepared by Steve Woods – Veritek Limited

Date of Audit: 07/03/19

Date Audit Report Complete: 13/03/19

Date Audit Report Due: 08/04/19

Executive Summary

Landis + Gyr is a meter manufacturer with an associated National Association of Testing Authorities Australia (NATA) approved Electricity Metering Laboratory. Landis + Gyr is also an Electricity Authority approved Test House. This audit was performed at their request, to encompass the Electricity Participation Code requirement for an audit, in accordance with clause 2 of schedule 10.3.

The audit found compliance with the Code. Robust controls were demonstrated in all areas of the operation, which has a well-established and stable quality system in place.

The date of the next audit is determined by the Electricity Authority and is dependent on the level of compliance during this audit. The table below provides some guidance on this matter and recommends a next audit frequency of 36 months.

The matters raised are shown in the tables below.

Table of Non-Compliance

Subject	Section	Clause	Non compliance	Controls	Audit Risk Rating	Breach Risk Rating	Remedial Action
			Nil				
Future Risk Rating						**0**	
Indicative Audit Frequency						**36 months**	

Future risk rating	1-3	4-6	7-8	9-17	18-26	27+
Indicative audit frequency	36 months	24 months	18 months	12 months	6 months	3 months

Table of Recommendations

Subject	Section	Clause	Recommendation for improvement	Remedial Action

Persons Involved in This Audit

Auditor:

Steve Woods
Veritek Limited
Electricity Authority Approved Auditor

Landis + Gyr personnel assisting in this audit were:

Name	Title
Jorge Anquetil	Quality Manager

Contents

1. ADMINISTRATIVE

1.1 Exemptions from Obligations to Comply with Code (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 Authority's website for any relevant exemptions.

Audit commentary

There are no exemptions in place.

1.2 Scope of Audit

Landis + Gyr is a meter manufacturer with an associated NATA approved Electricity Metering Laboratory. Landis + Gyr is also an Electricity Authority approved Test House. This audit was performed at their request, to encompass the Electricity Participation Code requirement for an audit, in accordance with clause 2 of schedule 10.3.

Landis + Gyr wishes its ATH approval to include the following functions of Clauses 3(2) 4(2) of Schedule 10.3:

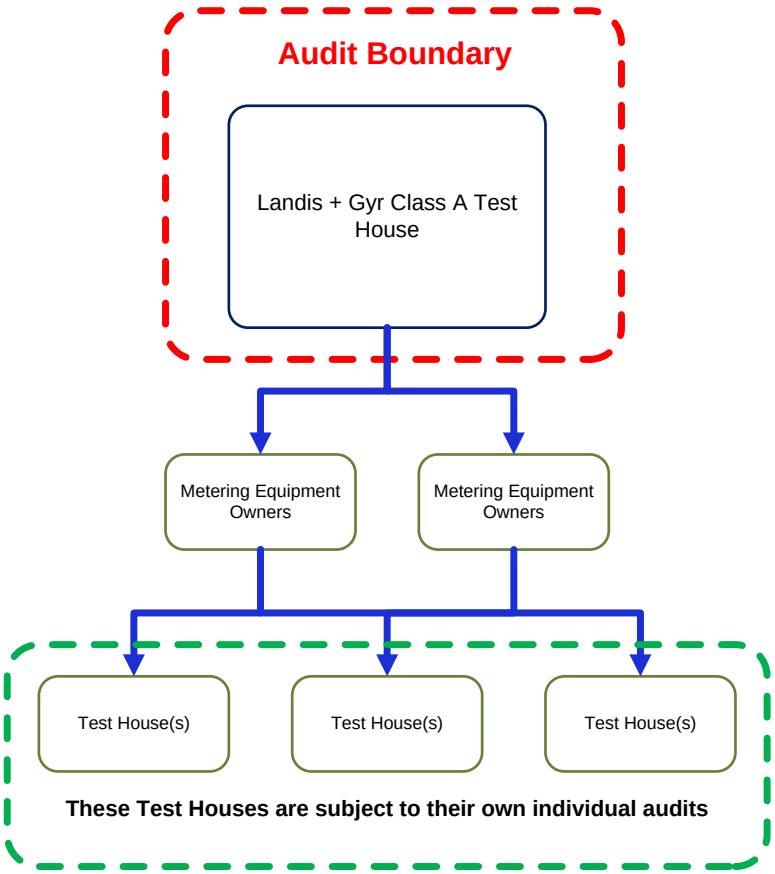
Class A Approval:
(a) calibration of—
    (i) working standards:
    (ii) metering components (other than a calibration referred to in paragraph (c)):
(b) issuing calibration reports:

Landis + Gyr also requires approval to certify metering components. I note that the Class A functions listed in Clause 3(2) of Schedule 10.3 do not include certification of metering components.

Landis + Gyr does not perform any field installation or certification work, however they do provide certification and calibration reports to metering equipment owners and other Test Houses that will form part of the site certification documentation for the relevant installations.

Many audit requirements of the Class A Test House are covered in their external ISO 17025 audit, conducted at 12-month intervals by NATA.

The boundaries of this audit are shown below for greater clarity.



The audit was conducted in accordance with the ATH Audit Guidelines V1.3 produced by the Electricity Authority.

1.3 Previous Audit Results

The last audit was conducted in 2016 by Steve Woods of Veritek. This audit found compliance with the Code. One recommendation was made, which is now resolved.

Table of Non-Compliance

Subject	Section	Clause	Non compliance	Status
			Nil	

Table of Recommendations

Subject	Section	Clause	Recommendation for improvement	Status
Organisation and management	3.7	15 of schedule 10.4	Include the specific responsibilities of the Technical Manager in the quality manual.	Cleared

2. ATH REQUIREMENTS

2.1 Use of Contractors (Clause 10.3 of Part 10)

Code related audit information

A participant may perform its obligations and exercise its rights under this Part by using a contractor. A participant who uses a contractor to perform the participant's obligation under this Part remains responsible and liable for, and is not released from, the obligation, or any other obligation under this Part.

Audit observation

Landis + Gyr does not use any contractors in any part of their operation.

Audit commentary

Landis + Gyr does not use any contractors in any part of their operation.

Audit outcome

Compliant

2.2 Provision of Accurate Information (Clause 10.6 of Part 10)

Code related audit information

A participant must take all practicable steps to ensure that information that it provides under this Part is:

- *complete and accurate*
- *not misleading or deceptive*
- *not likely to mislead or deceive.*

If a participant, having provided information under this Part, becomes aware that the participant has not complied with these requirements, the participant must, except if clause 10.43 applies, as soon as practicable provide such further information, or corrected information, as is necessary to ensure that the participant complies.

Audit observation

I checked compliance with this clause at the end of the audit to determine whether compliance had been achieved.

Audit commentary

I did not find any information that was not complete and accurate, or likely to mislead or deceive.

Audit outcome

Compliant

2.3 Dispute Resolution (Clause 10.50(1) to (3) of Part 10)

Code related audit information

Participants must in good faith use 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 by Landis + Gyr during the audit period.

Audit commentary

Landis + Gyr has not needed to resolve any disputes in accordance with these clauses.

Audit outcome

Compliant

2.4 ATH Approval (Clause 10.40 of Part 10)

Code related audit information

A person wishing to be approved as an ATH, or an ATH wishing to renew its approval, must apply to the Authority:

- *at least two months before the intended effective date of the approval or renewal*
- *in writing*
- *in the prescribed form*
- *in accordance with Schedule 10.3.*

A person making an application must satisfy the Authority (providing, where appropriate, suitable evidence) that the person:

- *has the facilities and procedures to reliably meet, for the requested term of the approval, the minimum requirements of this Code for the class or classes of ATH for which it is seeking approval*
- *has had an audit under Schedule 10.3*
- *is a fit and proper person for approval.*

Audit observation

I checked the most recent application for re-certification.

Audit commentary

Landis + Gyr has appropriate approval and appropriate facilities and procedures to meet the minimum requirements of the Code.

Audit outcome

Compliant

2.5 ATH Requirements (Clause 10.41 of Part 10)

Code related audit information

An ATH must, when carrying out activities under this Part:

- *only carry out activities for which it has been approved by the Authority*
- *exercise a degree of skill, diligence, prudence, foresight, and economic management, taking into account the technological complexity of the metering components and metering installations being tested:*
  - *determined by reference to good industry practice*
  - *that would reasonably be expected from a skilled and experienced ATH engaged in the management and operation of an approved ATH*
- *comply with all applicable safety, employment, environmental, and other enactments*
- *exercise any discretion given to it under this Part by:*
  - *taking into account the relevant circumstances of the particular instance*
  - *acting professionally*
- *recording the manner in which it carried out its activities and its reasons for carrying the activities out in that manner.*

Audit observation

I checked policy and process documentation to confirm compliance with these clauses.

Audit commentary

Landis + Gyr has only conducted activities that fall within the scope of their approval. I have concluded from this audit that Landis + Gyr has met the requirements of this clause. I checked compliance with other enactments, specifically those related to safety and environmental practices. Landis + Gyr has ISO 18001 accreditation for Occupational Health and Safety Management and ISO 14001 for Environmental Management. I checked the most recent ISO 18001 and 14001 audit reports, which did not contain any issues relevant to the Class A laboratory operation, therefore I believe compliance is achieved.

Audit outcome

Compliant

2.6 Quality Management Systems (Clauses 3(1) & 4(1) of Schedule 10.3)

Code related audit information

An ATH must establish, document, implement, maintain, and comply with a quality management system which records its processes and procedures to ensure compliance with this Part.

An applicant applying for approval or renewal of approval, as a class A ATH must, as part of its application, confirm that it holds and complies with AS/NZS ISO 17025 accreditation, for at least the requested term of the approval.

An applicant applying for approval, or renewal of approval, as a class B ATH must, as part of its application to the Authority, confirm that it holds and complies with AS/NZS ISO 9001:2008 or AS/NZS ISO 9001:2016 certification for at least the requested term of the approval.

Audit observation

I obtained and reviewed the most recent NATA report to confirm the scopes were appropriate and that certification was in place.

Audit commentary

Landis + Gyr provided a copy of their most recent ISO/IEC 17025:2017 audit report, from September 2018.

The site audited is noted as "Gas and Electricity Meter Testing Laboratories" and the field of test is noted as "Calibration".

Signatories are noted as:

Jorge Anquetil – Meter Test Laboratory and Verification Laboratory
Gerard Meichan – Verification Laboratory
Leonel Ramirez - Meter Test Laboratory and Verification Laboratory
Juhandi Pit - Meter Test Laboratory and Verification Laboratory
Shitao Tan - Meter Test Laboratory and Verification Laboratory

Two minor issues were recorded but these both related to gas metering, not electricity metering.

Audit outcome

Compliant

2.7 Organisation and Management (Clause 15 of Schedule 10.4)

Code related audit information

An ATH must ensure that it has managerial staff who, unless otherwise permitted in the relevant approval, all have the authority and resources needed to discharge their duties; and the responsibilities, authority, and functional relationships of all its personnel are fully and accurately specified and recorded in the ATH's records.

An ATH must appoint a technical manager (however named) with overall responsibility for technical operations, who must have appropriate engineering qualifications and experience in the operation of an approved ATH; and a quality manager (however named), with responsibility for the quality management certification and the implementation of the quality management system.

Audit observation

I checked records in the quality manual to confirm compliance.

Audit commentary

Landis + Gyr has a functional and easily understood system of authority that includes the functions of Technical Manager (Gerard Meichan) and Quality Manager (Jorge Anquetil). The quality manual contains a paragraph describing the responsibilities of the Technical and Quality Managers.

During the audit, I confirmed that managerial staff are at an appropriate level in the organisation and that they have the education, skill and experience to discharge their duties. Landis + Gyr have a robust talent management system and this was viewed during the audit.

The "Skills Matrix" was also viewed, and it is up to date. The skills matrix contains a comprehensive list of skills and each person is deemed competent with the requirement through an achievement level rating system that includes the following levels:

- able to train others;
- fully trained and competent;
- trained and occasional supervision required; and
- being trained under supervision.

I checked the training records, including specific records for one individual. These records detail what training was undertaken, who the trainer was, and the date training was conducted.

Staff regularly attend measurement and uncertainty courses run by NMI.

Audit outcome

Compliant

2.8 Document Processes and Procedures (Clause 16 Of Schedule 10.4)

Code related audit information

An ATH must establish, document, implement, maintain, and comply with a quality management system which records its processes and procedures.

Audit observation

I checked the Class A quality documentation and I reviewed the relevant ISO reports.

Audit commentary

Landis + Gyr's Quality Manual was reviewed, and it is comprehensive, well laid out and appropriate for the functions performed. The manual exists electronically on the Landis + Gyr system.

Audit outcome

Compliant

2.9 Quality Standard Required for Field Work (Clause 17 Of Schedule 10.4)

Code related audit information

If a class A ATH arranges for another person to carry out field work, it must ensure that person is certified to the relevant AS/NZS ISO9001:2008 or AS/NZS ISO9001:2016 standard at all times while the person carries out the work.

Audit observation

Landis + Gyr does not carry out field work.

Audit commentary

Landis + Gyr does not carry out field work.

Audit outcome

Not applicable

2.10 Material Change Requirements (Clause 16A.11)

Code related audit information

If the ATH intends to make a material change to any of its facilities, processes, procedures, or the scope of the ATH's ISO accreditation is reduced, the ATH must arrange for an additional audit at least five business days before the change or reduction in scope take place.

Audit observation

I checked whether Landis + Gyr had made any material changes during the audit period.

Audit commentary

Landis + Gyr has not conducted any material changes during the audit period.

Audit outcome

Compliant

2.11 Audit Required for ATH Approval (Clause 16A.12 and 16A.13)

Code related audit information

The ATH must provide an audit report to the Authority by the due date. If there are areas where compliance is not achieved, the ATH must also submit a compliance plan which specifies the actions that the ATH intends to address, any issues identified in the audit report and the time frames to complete those actions.

Audit observation

Landis + Gyr is currently undergoing an audit and the report will be provided.

Audit commentary

Landis + Gyr is currently undergoing an audit and the report will be provided.

Audit outcome

Compliant

2.12 Accommodation & Environment (Clause 1 of Schedule 10.4)

Code related audit information

An ATH must maintain a list of personnel who are authorised to access and use its laboratory and *storage facilities and restrict access to its laboratory and storage facilities to:*
(i) the personnel specified
(ii) the Authority
(iii) an auditor conducting an audit
(iv) any other person who is, at all times, directly supervised by a member of personnel specified.

Audit observation

I checked records to confirm compliance.

Audit commentary

The laboratory is always manned or locked and there is a list of authorised personnel on the door. Compliance is confirmed.

During the audit I confirmed that access to the laboratory and to records is limited to those personnel who are authorised and have a “swipe card” and a login for access to records. Any other personnel who enter the laboratory area (including myself) are directly supervised by an authorised person.

An ATH must restrict access to its metering records to:

(i) The relevant metering equipment provider

(ii) The Authority

(iii) An auditor conducting an audit

(iv) The relevant metering equipment owner.

Landis + Gyr’s records are all electronic and are secure by way of password protection. Backup is in accordance with standard industry protocols.

An ATH must ensure that the environment in which its activities are undertaken does not, or could not reasonably be expected to, invalidate test results or adversely affect the required accuracy of measurement; and they must monitor and record the environmental conditions within its approved ATH’s laboratory and storage facilities; and comply with the specific requirements of the applicable standard listed in Table 5 of Schedule 10.1 for the calibrations or tests being carried out.

Landis + Gyr controls their laboratory environment to 23ºC ± 2ºC. If the temperature is outside these limits, an alarm alerts relevant personnel and all calibration work is stopped.

As mentioned at the beginning of this section, the environment is suitably maintained and monitored in accordance with IEC standards.

Audit outcome

Compliant

2.13 Compensation Factors (Clause 8 of Schedule 10.4)

Code related audit information

If an ATH is approved to certify metering installations, the ATH must have a documented process for the determination of compensation factors.

Audit observation

Landis + Gyr does not certify metering installations.

Audit commentary

Landis + Gyr does not certify metering installations.

Audit outcome

Not applicable

2.14 Metering Component Stickers (Clause 8(3) of Schedule 10.8)

Code related audit information

An ATH must ensure that a certification sticker is:
- made of weather-proof material
- permanently attached
- filled out using permanent markings.

Audit observation

I checked the Landis + Gyr component stickers to confirm compliance.

Audit commentary

All component stickers are compliant with this clause.

Audit outcome

Compliant

2.15 Interference with Metering Installations (Clause 10.12)

Code related audit information

An ATH may not directly or indirectly interfere with a metering installation unless it is also the MEP or has been instructed to do so by the existing or gaining MEP for the installation.

Audit observation

Landis + Gyr does not certify metering installations.

Audit commentary

Landis + Gyr does not certify metering installations.

Audit outcome

Not applicable

3. METERING RECORDS AND REPORTS

3.1 Physical Location of Metering Installations (Clause 10.35 of Part 10)

Code related audit information

If it is not practical in the circumstances to locate the metering installation at the point of connection, the reconciliation participant must calculate the quantity of electricity conveyed through the point of connection using a loss compensation process approved by the certifying ATH.

If this occurs the ATH must record the calculation, measurements, and assumptions in the installation certification report.

Audit observation

Landis + Gyr does not certify metering installations.

Audit commentary

Landis + Gyr does not certify metering installations.

Audit outcome

Not applicable

3.2 Metering Installation Type (Clause 8(2) of Schedule 10.7)

Code related audit information

The metering installation certification report must specify whether the installation is half hour or non-half hour metering. It must also record where the services access interface is.

Audit observation

Landis + Gyr does not certify metering installations.

Audit commentary

Landis + Gyr does not certify metering installations.

Audit outcome

Not applicable

3.3 Record Metering Installation Category (Clause 8(4) Of Schedule 10.7)

Code related audit information

An ATH must record the category of the metering installation in the metering installation certification report.

Audit observation

Landis + Gyr does not certify metering installations.

Audit commentary

Landis + Gyr does not certify metering installations.

Audit outcome

Not applicable

3.4 Calibration Test Points (Clause 7(7) Of Schedule 10.4)

Code related audit information

An ATH may select a test point other than those specified in the relevant standard listed in Table 5 of Schedule 10.1, or at a lower burden than specified in the standard, but must, if it does this, document its reasons for the selection of these test points in the calibration report.

Audit observation

I checked with Landis + Gyr whether any different test points had been used.

Audit commentary

There were no different test points used other than those specified in the standards.

Audit outcome

Compliant

3.5 Services Access Interface (Clause 10 of Schedule 10.4)

Code related audit information

An ATH must, when preparing a metering installation certification report, determine, and record in the certification report, the location of the services access interface. The services access interface means the point, at which access may be gained to the services available from a metering installation, that is:

- *recorded in the certification report by the certifying ATH for the metering installation*
- *where information received from the metering installation can be made available to another person*
- *where signals for services such as remote control of load (but not ripple control) can be injected.*

Audit observation

Landis + Gyr does not certify metering installations.

Audit commentary

Landis + Gyr does not certify metering installations.

Audit outcome

Not applicable

3.6 Certification & Calibration Reports (Clause 11(1) of Schedule 10.4)

Code related audit information

An ATH must, for each metering installation that it certifies, produce a certification report in accordance with Schedule 10.7. An ATH must, for each metering component:

- *that it calibrates, produce a calibration report in accordance with Schedule 10.8*
- *that it certifies, produce a certification report in accordance with Schedule 10.8.*

Audit observation

Landis + Gyr demonstrated the end to end process for testing, calibration, certification and logistics.

Audit commentary

Landis + Gyr demonstrated that the meters currently being supplied to New Zealand have appropriate type test certificates. Each calibration report is for a group of meters and includes a table of results for each individual meter. Certified meters have an appropriate certification report.

Audit outcome

Compliant

3.7 ATH Record Keeping Requirements (Clause 12 of Schedule 10.4)

Code related audit information

The ATH must document and maintain its record keeping system for certificates, reports, and any other records. The records can be stored in any media, such as hard copy or electronically. The records should be stored in a manner that prevents deterioration or damage and that retrieval of a record cannot result in change or damage to the record. Electronic storage should be backed up.
The ATH must securely store all records, certificates, and reports and ensure that each metering installation is:
- uniquely identified
- sufficiently detailed to verify the tests carried out including test conditions, the test equipment used and the personnel carrying out the tests.

Audit observation

I conducted a walk-through of the process for preparing records.

Audit commentary

All records are stored securely and are kept indefinitely. Backups occur in accordance with standard industry protocols.

Audit outcome

Compliant

3.8 Retention of Records (Clause 13 of Schedule 10.4)

Code related audit information

The ATH must keep all records, certificates, and calibration reports for all components and installations certified for at least 48 months after the date of decommissioning.

Audit observation

I conducted a walk-through of the process for preparing and storing records.

Audit commentary

Records are stored indefinitely.

Audit outcome

Compliant

3.9 Advise MEP of Records, Certificates or Reports for A Metering Installation (Clause 14 Of Schedule 10.4)

Code related audit information

The ATH must provide the MEP responsible for the metering installation with the record, certificate, or report for the metering installation within five business days of certification. The ATH must ensure the MEP receives the record. This can be either as an electronic copy or any other agreed format.

Audit observation

Landis + Gyr does not certify metering installations.

Audit commentary

Landis + Gyr does not certify metering installations.

Audit outcome

Not applicable

3.10 Certification at a Lower Category (Clause 6(4) Of Schedule 10.7)

Code related audit information

If the ATH makes a determination to certify a metering installation at a lower category under clause 6 of Schedule 10.7, the certification report must include all information required to demonstrate compliance.

Audit observation

Landis + Gyr does not certify metering installations.

Audit commentary

Landis + Gyr does not certify metering installations.

Audit outcome

Not applicable

3.11 Meter Requirements (Clause 26(3) & (4) of Schedule 10.7)

Code related audit information

The ATH needs to document the following in the metering records:

- the meter manufacturer's required recommendations for regular maintenance
- any maintenance that has been carried out on the meter, such as battery monitoring and replacement.

An ATH must record in the metering installation certification report, the maximum interrogation cycle for the metering installation before it certifies a metering installation incorporating a meter.

Audit observation

I conducted a walk-through of the calibration and certification process.

Audit commentary

Landis + Gyr does not certify metering installations and therefore does not produce meter installation certification reports.

None of the meters certified require maintenance. Battery monitoring is conducted by MEPs at the time of data collection.

Audit outcome

Compliant

3.12 Meter Certification Expiry Date (Clause 27(5) of Schedule 10.7)

Code related audit information

The ATH must record the certification expiry date for each meter in a metering installation in the metering installation certification report and the meter certification report.

Audit observation

Landis + Gyr does not certify metering installations.

Audit commentary

Landis + Gyr does not certify metering installations.

Audit outcome

Not applicable

3.13 Measuring Transformer Requirements (Clause 28(3) of Schedule 10.7)

Code related audit information

The ATH needs to document the following in the metering records:
- the manufacturer's recommendations for any regular maintenance required for the measuring transformer
- any maintenance that has been carried out on the measuring transformer.

Audit observation

Landis + Gyr does not certify metering installations or measuring transformers.

Audit commentary

Landis + Gyr does not certify metering installations or measuring transformers.

Audit outcome

Not applicable

3.14 Determine Maximum Interrogation Cycle (Clause 36(3) & (4) Of Schedule 10.7)

Code related audit information

An ATH must record the maximum interrogation cycle for the metering installation. The maximum interrogation cycle for a metering installation is the shortest of the following periods:
- the period of inherent data loss protection for the metering installation
- the period of memory availability given the data storage device configuration
- the period in which the accumulated drift of a data storage device clock is expected to exceed the maximum time error set out in Table 1 of clause 2 of Schedule 15.2 for the category of the metering installation.

Audit observation

Landis + Gyr does not certify metering installations or measuring transformers.

Audit commentary

Landis + Gyr does not certify metering installations or measuring transformers.

Audit outcome

Not applicable

4. CALIBRATION AND CERTIFICATION OF METERING COMPONENTS

4.1 Accommodation and Environment (Clause 1(D)-(E) Of Schedule 10.4)

Code related audit information

The ATH must ensure that the environment in which its activities are undertaken is monitored, appropriate for the tests being carried out and unlikely to affect the required accuracy.

Audit observation

I checked the NATA report which confirmed the test laboratory environment was appropriate.

Audit commentary

Landis + Gyr controls their laboratory environment to 23ºC ± 2ºC. If the temperature is outside these limits, an alarm alerts relevant personnel and all calibration work is stopped.

Audit outcome

Compliant

4.2 Use of Measurement Standards (Clause 1(F) Of Schedule 10.4)

Code related audit information

The ATH must comply with the specific requirements of the applicable standard listed in Table 5 of Schedule 10.1.

Audit observation

I checked the standards being used and some test points to confirm compliance.

Audit commentary

Landis + Gyr uses the correct standards.

Audit outcome

Compliant

4.3 Test Equipment (Clause 2 of Schedule 10.4)

Code related audit information

An ATH must, at all times, ensure that it has access to all items of equipment required for the performance of the calibrations and tests it is approved to undertake under this Part; and each item of equipment it uses is maintained in accordance with the manufacturer's recommendations and this Code. A class B ATH must have and maintain procedures for the purchase of test equipment and associated consumables.

Audit observation

I checked records to confirm compliance.

Audit commentary

Landis + Gyr has a comprehensive maintenance programme with detailed records for all test equipment. This system was demonstrated during the audit. Each test board has a weekly maintenance schedule, which includes cleaning of terminals and checking that the "pickups" are correctly set.

Audit outcome

Compliant

4.4 Calibration of Reference & Working Standards (Clause 3(1)(a), (b)(i) and (6) of Schedule 10.4)

Code related audit information

An ATH must ensure that any reference standard is calibrated by an approved calibration laboratory and that any working standard is calibrated by an approved calibration laboratory or class A ATH. The calibration reports for the calibrated standards must be held by the ATH and indicate that the standard is within the manufacturer's accuracy specifications.

Audit observation

I checked all of the Landis + Gyr reference and working standards to confirm they had current calibration certificates.

Audit commentary

Landis + Gyr has 15 "Test Boards" which would be considered "test benches" in the Electricity Industry Participation Code. These Test Boards are also considered working standards and are calibrated against a Radian standard (reference standard) on a continuous rotating basis during the year, and at the end of each year a calibration report is prepared based on the results. There are two polyphase and two single phase Radians (one polyphase spare and one single phase spare), which are calibrated against a "Master" Radian, which is calibrated by PLUS ES (formerly Ausgrid).

I checked Landis + Gyr's calibration schedule and results and I confirm compliance.

Audit outcome

Compliant

4.5 Calibration Interval (Clause 3(2) of Schedule 10.4)

Code related audit information

Each reference standard or working standard must be calibrated within the applicable calibration interval set out in Table 1 of Schedule 10.4.

Audit observation

I checked all of the Landis + Gyr reference and working standards to confirm they had current calibration certificates.

Audit commentary

Compliance is recorded in **section 4.4**.

Audit outcome

Compliant

4.6 Calibration of Reference Standards (Clause 3(1)(B)(Ii), (2), (3)(C), (4) And (5) Of Schedule 10.4)

Code related audit information

Class A ATHs must ensure that in calibration of reference standards, any uncertainties are sufficiently small so that the overall uncertainty in the measurements used to test a metering installation does not exceed one third of the maximum permitted error set out in Table 1 of Schedule 10.1 for the category of metering installation that the reference standard will be used to calibrate.
If a reference standard is used in conditions that deviate from those in the calibration report, the class A ATH must calculate and apply adjustments using its own processes and procedures so that the reference standard achieves the reference conditions.
If a reference standard is used in conditions that deviate from those in the calibration report, the class A ATH must calculate and apply adjustments using its own processes and procedures so that the reference standard achieves the reference conditions.

Audit observation

I checked all of the Landis + Gyr reference standards to confirm they had current calibration certificates.

Audit commentary

There were no situations where calibration had not occurred, or standards were used in non-reference situations.

Audit outcome

Compliant

4.7 33kv Or Above Calibrated By An Approved Calibration Laboratory (Clause 3(3)(B) Of Schedule 10.4)

Code related audit information

Class A ATHs must ensure that a working standard on a system operating at a voltage of 33kV or above has been calibrated by an approved calibration laboratory.

Audit observation

Landis + Gyr does not certify metering installations.

Audit commentary

Landis + Gyr does not certify metering installations.

Audit outcome

Not applicable

4.8 Metering Component Testing System (Clause 4 of Schedule 10.4)

Code related audit information

An ATH may use a complete calibrated metering component testing system (a test bench) as an alternative to a separately calibrated working standard only if the ATH:
- calibrates the test bench as if it was a working standard
- carries out a testing system accuracy test, using approved reference standards before completing the calibration report.

Audit observation

Compliance is confirmed in **section 4.4.**

Audit commentary

Compliance is confirmed in **section 4.4.**

Audit outcome

Compliant

4.9 Calibration Errors (Clause 5 of Schedule 10.4)

Code related audit information

A Standard cannot be used if the ATH believes is has a calibration error. If an error is found then all ATH's that have used the standard must be notified. All metering installations certified using the standard must be treated as defective in accordance with Clause 10.43.

Audit observation

I checked the understanding of this requirement through interview with Landis + Gyr. I checked whether this situation had occurred.

Audit commentary

There are no examples of standards being found to have calibration errors. Daily comparison checks are conducted so calibration errors, although unlikely to occur, would be picked up at the earliest opportunity.

Audit outcome

Compliant

4.10 Measurement Traceability (Clause 6 of Schedule 10.4)

Code related audit information

An ATH must document, maintain, and comply with a system that ensures, whenever it undertakes a calibration test or measurement, the ATH can replicate the test or measurement in every respect and the results of the measurements are traceable.

Audit observation

I checked this by reviewing the NATA audit report.

Audit commentary

The NATA report confirms compliance.

Audit outcome

Compliant

4.11 Calibration Methods (Clause 7(6) of Schedule 10.4)

Code related audit information

An ATH must only use components that have been certified by an ATH or calibration laboratory.

A Class B ATH must follow 17025 calibration methods for components.

The test points must be those listed in the relevant IEC standard.

An ATH must ensure that uncertainty of measurement does not exceed one third of the error listed in the relevant IEC standard listed in Table 5.

If a CT is to be used in a Metering Installation is certified using the selected component method, then it must be tested for errors at 5% to 120% of rated current.

An ATH must have documented instructions for calibration that match the IEC standard.

Audit observation

Landis + Gyr is an approved calibration laboratory and an approved Test House. Landis + Gyr calibrates meters and they also certify them for those participants who request certification.

Landis + Gyr does not certify metering installations.

I checked the NATA report to confirm compliance.

Audit commentary

The NATA report confirms compliance with the relevant points above.

Audit outcome

Compliant

4.12 Data Storage Device Certification (Clause 5 of Schedule 10.8)

Code related audit information

All data storage devices must be certified before they can be used in a metering installation. The ATH must ensure that the data storage devices in a metering installation have been type tested by an approved test laboratory, that the results for data storage devices are appropriate for that model and version and have a calibration report.

Audit observation

I conducted a walk-through of the calibration and certification process.

Audit commentary

Landis + Gyr demonstrated that the meters currently being supplied to New Zealand have appropriate type test certificates. The process for calibrating meters and producing a calibration report was demonstrated during the audit. Each calibration report is for a group of meters and includes a table of results for each individual meter. Certified data storage devices have an appropriate certification report.

Audit outcome

Compliant

4.13 Metering Component Stickers (Clause 8(1) of Schedule 10.8)

Code related audit information

An ATH must confirm certification by attaching a metering component certification sticker to the metering component or, if not practicable, provide the sticker with the metering component.

Audit observation

I checked the Landis + Gyr component stickers to confirm compliance.

Audit commentary

All component stickers are compliant with this clause.

Audit outcome

Compliant

4.14 Metering Component Stickers (Clause 8(2) of Schedule 10.8)

Code related audit information

A metering component certification sticker must show:

- the name of the metering component owner (if available)
- if the metering component is a meter or a measuring transformer:
a) *the name of the ATH or the approved calibration laboratory who calibrated the metering component*
b) the name of the ATH who certified the metering component
c) the date on which the metering component was certified
d) the initials or other unique identifier of the person who carried out the certification of the metering component.

Audit observation

I checked the Landis + Gyr component stickers to confirm compliance.

Audit commentary

All component stickers are compliant with this clause.

Audit outcome

Compliant

4.15 Sealing and Monitoring of Seals (Clause 9 of Schedule 10.4 & Clause 47(7) of Schedule 10.7)

Code related audit information

An ATH is required to have a documented system for applying seals to a metering installation to ensure that each metering component in the metering installation that could be expected to affect the accuracy or reliability of the metering installation is sealed. The system of sealing will ensure monitoring of the integrity of the metering installation and that unauthorised access to the metering installation will be identifiable so that the MEP can be notified.

The sealing system will identify:
- the ATH who affixed the seal
- the person (or the sealing tool) who applied the seal
- when the seal was applied.

Audit observation

I conducted a walk-through of the sealing process.

Audit commentary

Certification of metering installations is not conducted by Landis + Gyr; therefore, this matter is outside the scope of this audit. Despite this, I still checked the process for the application of seals to meter covers during the manufacturing process. The wire and ferrule method is used and the ferrules have a number provided by the National Measurement Institute (NMI). The documentation in the quality manual was appropriate and included diagrams and pictures to ensure clarity.

Audit outcome

Compliant

5. CALIBRATION AND CERTIFICATION OF METERING INSTALLATIONS

5.1 ATH Must Not Certify Metering Installations under Certain Circumstances (Clause 8(1) Of Schedule 10.7)

Code related audit information

The ATH must not certify a metering installation if the installation does not comply with Part 10.

Audit observation

Landis + Gyr does not certify metering installations.

Audit commentary

Landis + Gyr does not certify metering installations.

Audit outcome

Not applicable

5.2 Determination of Metering Categories (Clause 5 of Schedule 10.7 & Clause 10.11)

Code related audit information

An ATH is required to determine the category of the metering installation in accordance with Table 1 of Schedule 10.1 before it certifies a metering installation.

Audit observation

Landis + Gyr does not certify metering installations.

Audit commentary

Landis + Gyr does not certify metering installations.

Audit outcome

Not applicable

5.3 Requirement for Metering Installation Design Report (Clause 2(4) Of Schedule 10.7)

Code related audit information

The ATH must receive a design report from the MEP before installing or modifying a metering installation or a component in a metering installation.

Audit observation

Landis + Gyr does not certify metering installations.

Audit commentary

Landis + Gyr does not certify metering installations.

Audit outcome

Not applicable

5.4 ATH Design Report Obligations (Clause 3 of Schedule 10.7)

Code related audit information

Before certifying a metering installation, the ATH must check the design report to confirm the metering installation will function as designed and that the metering installation will comply with Part 10.

The certifying ATH must update the design report with any changes and provide it to the MEP responsible for the installation within 10 days of installation certification.

Audit observation

Landis + Gyr does not certify metering installations.

Audit commentary

Landis + Gyr does not certify metering installations.

Audit outcome

Not applicable

5.5 Certification as a Lower Category (Clause 6(1) of Schedule 10.7)

Code related audit information

An ATH may determine that the metering category of a current transformer installation is lower than would otherwise be the case and certify the installation at that lower category only if:
- a protection device, like a fuse or a circuit breaker, is installed so that it limits the maximum current; or
- the MEP provides evidence from historical data that the maximum current will be lower than the current setting of the protection device for the category that metering installation is currently certified at; or
- the components in the metering installation will use less than 0.5 GWh in any 12-month period; or
- the MEP provides evidence from historical data that the installation will use less than 0.5 GWh in any 12-month period.

Audit observation

Landis + Gyr does not certify metering installations.

Audit commentary

Landis + Gyr does not certify metering installations.

Audit outcome

Not applicable

5.6 Use of Current Transformer Rating Lower Than Supply Capacity (Clause 6(2)(a) of Schedule 10.7)

Code related audit information

If the ATH determines the category of a current transformer metering installation is lower than would otherwise be the case and a current limiting device is used, the ATH must:
- confirm the suitability and operational condition of the protection device
- record the rating and setting of the protection device in the metering records
- seal the protection device
- apply, if practicable, a warning tag or label to the seal.

Audit observation

Landis + Gyr does not certify metering installations.

Audit commentary

Landis + Gyr does not certify metering installations.

Audit outcome

Not applicable

5.7 Determining Metering Installation Category at a Lower Category Using Current Transformer Rating (Clause 6(2)(b) & (d) of Schedule 10.7)

Code related audit information

The ATH may determine the metering installation category according to the metering installation's expected maximum current, if:
- there has been a request to do so from the MEP;
- the MEP provides evidence from historical data that the maximum current will be lower than the current setting of the protection device for the category that metering installation is currently certified; and
- the ATH considers it is appropriate to do so in the circumstances.
The MEP must obtain the maximum current that flows through the installation each month from the participant interrogating the installation. From this data the ATH can calculate the maximum current from the raw meter data by either calculation from the kVA by trading period if available or from a maximum current indicator if fitted. If the MEP does not receive the monthly report from the participant interrogating the installation or if the current exceeds the maximum calculated rating of the installation, the certification of the installation is automatically cancelled.

Audit observation

Landis + Gyr does not certify metering installations.

Audit commentary

Landis + Gyr does not certify metering installations.

Audit outcome

Not applicable

5.8 Suitability of Determination Of a Metering Installation Category at a Lower Category Using Current Transformer Rating (Clause 6(3) Of Schedule 10.7)

Code related audit information

Before the ATH determines a metering installation to be a lower category, the ATH must first visit the site of the metering installation to ensure it is suitable for the metering installation to be determined to be a lower category.

Audit observation

Landis + Gyr does not certify metering installations.

Audit commentary

Landis + Gyr does not certify metering installations.

Audit outcome

Not applicable

5.9 Use of Metering Installation Certification Methods (Clause 7(1) Of Schedule 10.7)

Code related audit information

When certifying a metering installation, the ATH must use either of the following methods:
a) the selected component certification method if the metering installation is category 1, 2, or 3; or
b) the fully calibrated certification method.

Audit observation

Landis + Gyr does not certify metering installations.

Audit commentary

Landis + Gyr does not certify metering installations.

Audit outcome

Not applicable

5.10 Certification of a Metering Installation Using Statistical Sampling or Comparative Recertification (Clause 7(2) Of Schedule 10.7)

Code related audit information

In addition to the selected component and fully calibrated methods, the ATH may also recertify an installation using:
a) an approved statistical sampling process for category 1 metering installations; or
b) the approved comparative recertification method for a category 2 metering installation

Audit observation

Landis + Gyr does not certify metering installations.

Audit commentary

Landis + Gyr does not certify metering installations.

Audit outcome

Not applicable

5.11 Metering Installation Certification Requirements (Clause 8(3) Of Schedule 10.7)

Code related audit information

An ATH may only certify a metering installation as category 3 or higher if the metering installation incorporates a half hour meter.

Audit observation

Landis + Gyr does not certify metering installations.

Audit commentary

Landis + Gyr does not certify metering installations.

Audit outcome

Not applicable

5.12 Certification Tests (Clause 9(1) of Schedule 10.7)

Code related audit information

An ATH, when required to carry out tests specified in Tables 3 or 4 of Schedule 10.1, must comply with the provisions of clause 9(1) of Schedule 10.7 for the following tests:
- a prevailing load test
- an installation or component configuration test
- a raw meter data output test.
A prevailing load test is defined in the Code as a test that is carried out by comparing the output of the metering installation against a working standard connected to the metering installation. For a category 2 or higher metering installation, the prevailing load check must be done against a calibrated instrument (working standard). For a category 1 metering installation industry, best practice has defined a prevailing load test as a measurement of disk revolutions or pulses compared with time and current measurements. The revolutions or pulses are compared against a table or chart to validate the accuracy of the measurement. The prevailing load check is more than simply confirming that the meter operates but is only intended to identify a "gross error" like a phase missing or reversed or a significant metering error.
If the ATH carries out an installation or component configuration test on a metering installation or a metering component, it must ensure that the test equipment configuration is the same as the metering installation or component configuration recorded in the design report.
A raw meter data output test is carried out for a category 1 metering installation or category 2 metering installation by comparing a known load change against the increment of the sum of the meter registers.

Audit observation

Landis + Gyr does not certify metering installations.

Audit commentary

Landis + Gyr does not certify metering installations.

Audit outcome

Not applicable

5.13 Raw Meter Data Test For All Metering Installations (Clause 9(1A) Of Schedule 10.7)

Code related audit information

If the ATH performs a raw meter data output test under sub-clause (1)(c) or sub-clause (1)(d), for a metering installation that will be certified for remote meter reading, the ATH must:
a) *obtain the raw meter data from the back office system where the raw meter data is held; or*
b) ensure that the metering equipment provider responsible for the metering installation has a process to validate a meter reading taken at the time of the metering installation certification with a meter reading from the metering equipment provider's back office system.

Audit observation

Landis + Gyr does not certify metering installations.

Audit commentary

Landis + Gyr does not certify metering installations.

Audit outcome

Compliant

5.14 Alternate Raw Meter Data Test for Category 1 And 2 Metering Installations (Clause 9(1)(C) Of Schedule 10.7)

Code related audit information

A raw meter data output test is carried out for a category 1 metering installation or category 2 metering installation by comparing a known load change against the increment of the sum of the meter registers.

Audit observation

Landis + Gyr does not certify metering installations.

Audit commentary

Landis + Gyr does not certify metering installations.

Audit outcome

Not applicable

5.15 Raw Meter Data Output Test (Clause 9(2) And 9(3) Of Schedule 10.7)

Code related audit information

If the ATH performs a raw meter data output test that requires a comparison between two quantities, the ATH must not certify the metering installation unless the test demonstrates that the difference between the two quantities is within the applicable accuracy tolerances set out in Table 1 of Schedule 10.1.

Audit observation

Landis + Gyr does not certify metering installations.

Audit commentary

Landis + Gyr does not certify metering installations.

Audit outcome

Not applicable

5.16 Test Results (Clause 10(1) & (2) of Schedule 10.7)

Code related audit information

An ATH must not certify a metering installation if the results of tests on the metering installation or any of its metering components find that:
- a metering component did not pass all the tests
- the metering installation did not meet the requirements for certification.
Within five business days of reviewing the tests, the ATH must advise the relevant MEP why it did not certify the metering installation.

Audit observation

Landis + Gyr does not certify metering installations.

Audit commentary

Landis + Gyr does not certify metering installations.

Audit outcome

Not applicable

5.17 Selected Component Certification (Clause 11(2) of Schedule 10.7)

Code related audit information

An ATH may only use the selected component certification method to certify a metering installation which complies with the categories and component specifications set out in Table 1 of Schedule 10.1.

Audit observation

Landis + Gyr does not certify metering installations.

Audit commentary

Landis + Gyr does not certify metering installations.

Audit outcome

Not applicable

5.18 Selected Component - Circumstances Where Method May Be Used (Clause 11(3) Of Schedule 10.7)

Code related audit information

An ATH must only use the selected component certification method to certify the metering installation if:
- the required tests in Table 3 of Schedule 10.1 are carried out
- each data storage device, meter, and measuring transformer has been calibrated and certified
- each data storage device is certified in accordance with clause 5 of Schedule 10.8
- the ATH provides a certification report for the metering installation.

Audit observation

Landis + Gyr does not certify metering installations.

Audit commentary

Landis + Gyr does not certify metering installations.

Audit outcome

Not applicable

5.19 Comparative Recertification – Circumstances Where Method May be Used (Clause 12(2) of Schedule 10.7)

Code related audit information

An ATH may only use the comparative recertification method to recertify a category 2 metering installation if:
- the certification of the current transformers in the metering installation expire before the meter certification expiry date
- each data storage device and/or meter has been calibrated and certified.

Audit observation

Landis + Gyr does not certify metering installations.

Audit commentary

Landis + Gyr does not certify metering installations.

Audit outcome

Not applicable

5.20 Comparative Recertification Tests (Clause 12(3) And 12(5)(A) Of Schedule 10.7)

Code related audit information

An ATH must, when recertifying the category 2 metering installation using the comparative recertification metering installation certification method, ensure that:
- the metering installation has passed the tests set out in Table 3 of Schedule 10.1 using a working standard

- the accuracy of the current measurement sensor (current transformer or high accuracy Rogowski coil) enables the metering installation to meet the specified accuracy requirements of Table 1 of Schedule 10.1
- the overall metering installation accuracy meets the requirements of Table 1 of Schedule 10.1 and
- the ATH provides a certification report for the metering installation.

Audit observation

Landis + Gyr does not certify metering installations.

Audit commentary

Landis + Gyr does not certify metering installations.

Audit outcome

Not applicable

5.21 Fully Calibrated – Circumstances Where Method May be Used (Clause 13(3) of Schedule 10.7)

Code related audit information

An ATH must use the fully calibrated certification method to certify the metering installation:
- by carrying out the tests set out in Table 4 of Schedule 10.1
- if each of the components (the data storage device, meter, and measuring transformer) has been calibrated and certified.

Audit observation

Landis + Gyr does not certify metering installations.

Audit commentary

Landis + Gyr does not certify metering installations.

Audit outcome

Not applicable

5.22 Fully Calibrated - Certify Each Metering Component (Clause 13(4) Of Schedule 10.7)

Code related audit information

Each individual metering component in the metering installation must have a current certification report that confirms that the metering component complies with the requirements of its accuracy class; and includes the certification date of the metering component.

Audit observation

Landis + Gyr does not certify metering installations.

Audit commentary

Landis + Gyr does not certify metering installations.

Audit outcome

Not applicable

5.23 Fully Calibrated - Additional Metering Installation Certification Report Requirements (Clause 13(5) & (6) Of Schedule 10.7)

Code related audit information

The ATH must provide a certification report for the metering installation. The certification report must include confirmation that:
- the ATH has checked the design report of the metering installation to confirm the metering installation functions in accordance with the report
- the overall metering installation accuracy meets the requirements of Table 1 of Schedule 10.1
- the accuracy of the metering installation remains within the maximum permitted error for the relevant metering installation
- each metering component in the metering installation is used only in a permitted combination as set out in table 1 of Schedule 10.1.

Audit observation

Landis + Gyr does not certify metering installations.

Audit commentary

Landis + Gyr does not certify metering installations.

Audit outcome

Not applicable

5.24 Fully Calibrated – Use Meter Class Accuracy (Clause 13(7) Of Schedule 10.7)

Code related audit information

An ATH must, before it certifies a metering installation, ensure that the ATH uses the meter class accuracy, and not the actual accuracy, to calculate whether the actual error is within the maximum permitted error.

Audit observation

Landis + Gyr does not certify metering installations.

Audit commentary

Landis + Gyr does not certify metering installations.

Audit outcome

Not applicable

5.25 Insufficient Load (Clause 14 of Schedule 10.7)

Code related audit information

Every metering installation requires a test to ensure that the installation is correctly recording the energy used at the installation. The tests required are defined in Tables 3 and 4 of Schedule 10.1. The checks range from a minimum check that the meter registers increment through to a full raw meter data output check against a working standard and a check against the back office data for a half hour installation.

If the ATH decides to certify half hour metering installation that has insufficient load to complete a prevailing load check, the ATH must ensure that:
- it performs an additional integrity check of the metering installation wiring, and records the results of this check in the certification report
- it records in the certification report that the metering installation is certified under clause 14 of Schedule 10.7.
Once load is present and following a request from the MEP, the ATH must carry out prevailing load tests. If the tests demonstrate that the metering installation performs within the maximum permitted error, the certifying ATH must:
- update the metering installation certification report, within five business days of completing the tests, to include the results of the tests carried out
- leave the original metering installation certification expiry date unchanged.

Audit observation

Landis + Gyr does not certify metering installations.

Audit commentary

Landis + Gyr does not certify metering installations.

Audit outcome

Not applicable

5.26 Statistical Sampling (Clause 16 of Schedule 10.7)

Code related audit information

A group of meters can be sampled by the ATH and the results of the sample group can be extended to a larger group of the same meters. This is a process of certification by statistical sampling. The ATH must select a sample using a statistical sampling process that is:
- detailed in AS/NZS1284 (or approved and published by the Authority)
- recertify the group by recertifying each metering installation in the sample using the fully calibrated certification method
- advise the MEP as soon as reasonably practicable whether the sample passes or fails the recertification requirements.
If the ATH carries out a statistical sampling process when recertifying a group of category 1 metering installations on behalf of an MEP, it must document and record:
- the process it follows for selecting samples
- any assumptions about those samples
- the metering installations in the sample
- the metering installations in the recertified group.
An ATH that recertifies a group of metering installations using a statistical sampling process does not need to apply a certification sticker to the remainder of the metering installations in the family or group that was sample tested.

Audit observation

Landis + Gyr does not certify metering installations.

Audit commentary

Landis + Gyr does not certify metering installations.

Audit outcome

Not applicable

5.27 Statistical Sampling - Certification Method (Clause 7(3) Of Schedule 10.7)

Code related audit information

If the ATH uses statistical sampling, it must use either the selected component method or the fully calibrated method, as applicable, to certify each metering installation in the sample.

Audit observation

Landis + Gyr does not certify metering installations.

Audit commentary

Landis + Gyr does not certify metering installations.

Audit outcome

Not applicable

5.28 Certification Validity Periods (Clause 17 of Schedule 10.7)

Code related audit information

A metering installation certification expiry date is the earliest of:
a) the date of commissioning plus the maximum certification validity period for the relevant category of metering installation, as set out in Table 1 of Schedule 10.1; or
b) the earliest metering component certification expiry date; or
c) a date determined by the ATH if the ATH believes that the circumstances and condition of the components in a metering installation warrant deviation from Table 1 of Schedule 10.1.
The expiry date for a metering installation in a group recertified using a statistical sampling process, is the earliest expiry date of the metering installations in the sample

Audit observation

Landis + Gyr does not certify metering installations.

Audit commentary

Landis + Gyr does not certify metering installations.

Audit outcome

Not applicable

5.29 Metering Installation Accuracy (Clause 21 of Schedule 10.7)

Code related audit information

An ATH must, before it certifies a metering installation, ensure that the metering installation does not exceed the relevant maximum permitted error after the application of any external compensation factors.

Audit observation

Landis + Gyr does not certify metering installations.

Audit commentary

Landis + Gyr does not certify metering installations.

Audit outcome

Not applicable

5.30 Error Calculation (Clause 22 of Schedule 10.7)

Code related audit information

If a metering installation is certified using the comparative recertification or fully calibrated methods, the ATH must calculate and record the percentage of overall error of the metering installation. The ATH must calculate this using appropriate mathematical methods that include:
- all sources of measurement error including test instrument errors, reference standard variations when used in conditions that deviate from those in the calibration report, variations in repeated observations, the instrument resolution or discrimination threshold and any assumptions incorporated in the measurement method and procedure
- the error calculation must include the uncertainty in the measurement at a 95% level of confidence using JCGM 100:2008
- the error and its calculation must be recorded in the certification report.
The ATH must not certify the metering installation if the uncertainty is greater than the maximum permitted site uncertainty or the combined error that includes the measured error and the uncertainty, is greater than the maximum permitted installation error.

Audit observation

Landis + Gyr does not certify metering installations.

Audit commentary

Landis + Gyr does not certify metering installations.

Audit outcome

Not applicable

5.31 Compensation Factors (Clause 24(1)(b) of Schedule 10.7)

Code related audit information

Before it certifies a metering installation that requires a compensation factor to adjust raw meter data, the ATH must:
- advise the MEP of the compensation factor
- ensure that the compensation factor that will be applied to raw meter data external to the metering installation is applied as follows:
a) for ratio compensation, on a category 1 metering installation or higher category of metering installation; or
b) for error compensation, on a metering installation that quantifies electricity conveyed through a point of connection to the grid; or
c) for loss compensation, only on a category 3 or higher metering installation.

Audit observation

Landis + Gyr does not certify metering installations.

Audit commentary

Landis + Gyr does not certify metering installations.

Audit outcome

Not applicable

5.32 Record Metering Installation Compensation Factor (Clause 24(2) Of Schedule 10.7)

Code related audit information

If a compensation factor is applied to a metering installation, the ATH must record in the certification report, the methodology, assumptions, measurements, calculation and details of each compensation factor that is included within the internal configuration of the metering installation and each compensation factor that must be applied to the raw meter data.

Audit observation

Landis + Gyr does not certify metering installations.

Audit commentary

Landis + Gyr does not certify metering installations.

Audit outcome

Not applicable

5.33 Installation of Metering Components (Clause 25 of Schedule 10.7)

Code related audit information

Before it certifies a metering installation, the ATH must ensure that the installation of the metering components was carried out by an ATH. However, a suitably qualified person such as a switchboard manufacturer may install the measuring transformers and any required associated burden, the test facilities, potential fuses and switchboard wiring.
Before it certifies a metering installation, the ATH must ensure that each metering component is installed in accordance with the installation design report.

Audit observation

Landis + Gyr does not certify metering installations.

Audit commentary

Landis + Gyr does not certify metering installations.

Audit outcome

Not applicable

5.34 Determine Metering Installation Certification Expiry Date (Clause 27(1) & (2) Of Schedule 10.7)

Code related audit information

The ATH needs to determine the meter certification expiry date for each meter in a metering installation. The meter certification expiry date must be the earliest end date of the following periods, calculated from the date of commissioning of the metering installation:
a) the maximum metering installation certification validity period for the relevant category of metering installation; or
b) the maximum meter certification validity period set out in Table 2 of Schedule 10.1 for the relevant class of meter for the metering installation; or
c) the certification period specified in the meter certification report.

Audit observation

Landis + Gyr does not certify metering installations.

Audit commentary

Landis + Gyr does not certify metering installations.

Audit outcome

Not applicable

5.35 Electromechanical Meter Certification Shelf Life (Clause 27(4) Of Schedule 10.7)

Code related audit information

If an electromechanical meter is not installed in a metering installation within 24 months of the date of the meter's certification report, the meter must be recertified before it is installed.

Audit observation

Landis + Gyr does not certify metering installations.

Audit commentary

Landis + Gyr does not certify metering installations.

Audit outcome

Not applicable

5.36 Measuring Transformers Must Be Certified (Clause 28(2) Of Schedule 10.7)

Code related audit information

All measuring transformers must be certified before they can be used in a metering installation. If a measuring transformer has previously been used in another metering installation, the ATH must ensure that the measuring transformer has been recalibrated since it was removed from the previous metering installation. This must be undertaken either by an approved calibration laboratory or an ATH.

Audit observation

Landis + Gyr does not certify metering installations.

Audit commentary

Landis + Gyr does not certify metering installations.

Audit outcome

Not applicable

5.37 Measuring Transformers Used in A Certified Metering Installation (Clause 28(4) Of Schedule 10.7)

Code related audit information

To certify any metering installation incorporating measuring transformers, the ATH must ensure that:
- the installation has certified measuring transformers
- the installation has a test facility which has provision for isolation, installed as physically close to the meter as practical in the circumstances
- the test facility is fitted with a transparent cover
- the installation has securely mounted measuring transformers which are, if practicable, in a sealed enclosure
- the ATH uses the measuring transformer's actual accuracy (rather than class accuracy) when calculating the maximum permitted error for the relevant metering installation category
- any voltage supplies from a voltage transformer to a meter or that other equipment in the metering installation is protected by appropriately rated fuses or circuit breakers dedicated to the supply. All fuses and circuit breakers must be suitably sealed or located in sealed enclosures
- the measuring transformer's secondary circuit is earthed and that it is earthed at no more than one point
- the total burden (magnitude and phase angle, where appropriate), including burden resistors if used, on the measuring transformer does not exceed its name plate rating or an alternative rating lower than the name plate rating, if specified in the metering installation design report.

Audit observation

Landis + Gyr does not certify metering installations.

Audit commentary

Landis + Gyr does not certify metering installations.

Audit outcome

Not applicable

5.38 Measuring Transformer Certification Expiry Date (Clause 29 of Schedule 10.7)

Code related audit information

The ATH needs to determine the measuring transformer certification expiry date for each measuring transformer in a metering installation. The measuring transformer certification expiry must be within the validity period specified in the measuring transformer certification report.

Audit observation

Landis + Gyr does not certify metering installations.

Audit commentary

Landis + Gyr does not certify metering installations.

Audit outcome

Not applicable

5.39 Other Equipment Connected to Measuring Transformers (Clause 30 of Schedule 10.7)

Code related audit information

If the ATH certifies a metering installation incorporating a measuring transformer used by another metering installation, it must ensure that where voltage transformers are connected to more than one meter:
- the meters are included in the metering installation being certified
- appropriate fuses or circuit breakers are provided to protect the metering circuit from short circuits or overloads affecting the other meter.
While it is desirable that only metering equipment is connected to measuring transformers in a metering installation if, in some circumstances, the MEP connects other equipment to measuring transformers, the ATH must ensure that:
- the accuracy of the metering installation remains within the maximum permitted error for the relevant metering installation category
- the metering installation certification report confirms that the accuracy of the metering installation remains within the maximum permitted error for the relevant metering installation
- any wiring between the equipment and any part of the metering installation is continuous
- the equipment is labelled appropriately, including with any de-energisation restrictions
- the connection details of the other equipment are recorded in the metering installation design report
- there are appropriate fuses or circuit breakers provided to protect the voltage transformer and metering circuit from short circuits or overloads affecting the other equipment.

Audit observation

Landis + Gyr does not certify metering installations.

Audit commentary

Landis + Gyr does not certify metering installations.

Audit outcome

Not applicable

5.40 Burden & Compensation (Clause 31 of Schedule 10.7)

Code related audit information

An ATH may certify a metering installation for a POC to the grid that includes error compensation factors as an alternative to the use of burden resistors only if the ATH is satisfied the error compensation factors will provide a more accurate result than the use of burden resistors.
An ATH may change the burden on a voltage transformer, without obtaining the approval of the MEP, if the ATH confirms in the certification report that the difference between the new burden and the burden at the time of the most recent metering installation certification is:

a) less than or equal to 1/30th of the VA rating of the voltage transformer, if the voltage transformer is rated at less than 30 VA; or
b) no greater than 1 VA, if the voltage transformer is rated at equal to or greater than 30 VA.
Before it certifies a measuring transformer where the in-service burden is less than the lowest burden test point specified in a standard set out in Table 5 of Schedule 10.1, the ATH must install burdening resistors to increase the in-service burden to be equal to or greater than the lowest test point of the measuring transformer certification test or confirm from the manufacturer of the instrument transformer that the accuracy will not be adversely affected by the low in service burden.

Audit observation

Landis + Gyr does not certify metering installations.

Audit commentary

Landis + Gyr does not certify metering installations.

Audit outcome

Not applicable

5.41 Alternative Certification (Clause 32(1) of Schedule 10.7)

Code related audit information

If the ATH cannot comply with the requirements for certifying a measuring transformer solely due to the inability to obtain physical access to test the measuring transformers, it can certify the metering installation for a period not exceeding 24 months only if:
- the measuring transformer has not previously been certified due to failure to obtain access
- the ATH is satisfied that the metering installation will comply with the applicable accuracy requirements
- the ATH has advised the MEP that the metering installation has been certified by this method
- the MEP has advised the registry of the certification.

Audit observation

Landis + Gyr does not certify metering installations.

Audit commentary

Landis + Gyr does not certify metering installations.

Audit outcome

Not applicable

5.42 Installations Incorporating Control Devices (Clause 33(2) of Schedule 10.7)

Code related audit information

Before the ATH can certify a metering installation incorporating a control device that must be certified, it must ensure:
- that the certification expiry date for each control device is the same as the metering installation certification expiry date and record that date in the installation certification report
- that the control device complies with the applicable standards listed in Table 5 of Schedule 10.1
- the control device is fit for purpose

- if the metering installation contains a control device that has previously been used in another metering installation, that the control device is still fit for service.
- that the control device is:
a) likely to receive control signals
b) correctly connected
c) correctly programmed.

Audit observation

Landis + Gyr does not certify metering installations.

Audit commentary

Landis + Gyr does not certify metering installations.

Audit outcome

Not applicable

5.43 Control Device Reliability (Clause 34(1) & (3) to (5) of Schedule 10.7)

Code related audit information

In order to ensure control device accuracy or the completeness of reconciliation information, the ATH must determine the likelihood of the control device not receiving control signals before it certifies a metering installation incorporating a control device.
If the ATH believes the likelihood of the control device not receiving control signals would affect the accuracy or completeness of the information for consumption reconciliation, the ATH may certify the remainder of the metering components and the installation, excluding the control device. The ATH must advise the MEP within three business days of its decision. The MEP is then responsible for advising both the reconciliation participant for the POC for the metering installation and the control signal provider of the ATH's determination.

Audit observation

Landis + Gyr does not certify metering installations.

Audit commentary

Landis + Gyr does not certify metering installations.

Audit outcome

Not applicable

5.44 Data Storage Devices (Clauses 36(2) of Schedule 10.7)

Code related audit information

If a data storage device has previously been used in another metering installation, the ATH must ensure that the data storage device has been recalibrated since it was removed from the previous metering installation by an approved calibration laboratory, an approved test laboratory, or an ATH.

Audit observation

Landis + Gyr does not certify metering installations.

Audit commentary

Landis + Gyr does not certify metering installations.

Audit outcome

Not applicable

5.45 Data storage device requirements (Clause 38(1) and (2) of Schedule 10.7 and clause 5(1) of Schedule 10.8)

Code related audit information

An ATH must ensure that each data storage device in the metering installation:
- is installed so that on-site interrogation is possible without the need to interfere with seals
- has a dedicated power supply unless the data storage device is integrated with another metering component
- is compatible with each other metering component of the metering installation
- is suitable for the electrical and environmental site conditions in which it is installed
- has all of its outputs and inputs appropriately electrically isolated and rated for purpose
- has no outputs that will interfere with the operation of the metering installation
- records periods of data identifiable or deducible by both date and time on interrogation
- has memory capacity and functionality that is suitable for the proposed functions of the data storage device specified in the design report for the metering installation
- has availability of memory for a period that is suitable for the proposed functions as set out in the design report for the metering installation, and at least for a minimum continuous period of 15 days.
The data storage device must have an event log which records the following:
a) loss of power supply
b) critical internal alarms
c) meter phase failure if integral to the meter
d) software configuration changes
e) a record of time changes.

Audit observation

Landis + Gyr does not certify metering installations.

Audit commentary

Landis + Gyr does not certify metering installations.

Audit outcome

Not applicable

5.46 Location of Metering Installation Certification Stickers (Clause 41(1) of Schedule 10.7)

Code related audit information

An ATH must confirm the metering installation certification by attaching a metering installation certification sticker as close as possible to the meter, while maintaining reasonable visibility of the certification sticker and the meter.

Audit observation

Landis + Gyr does not certify metering installations.

Audit commentary

Landis + Gyr does not certify metering installations.

Audit outcome

Not applicable

5.47 Alternate Location of Metering Installation Certification Sticker (Clause 41(4) Of Schedule 10.7)

Code related audit information

If attaching a certification sticker is not practicable, the ATH must devise and use an alternative means of documenting the information and keep any metering component certification sticker with the documented information.

Audit observation

Landis + Gyr does not certify metering installations.

Audit commentary

Landis + Gyr does not certify metering installations.

Audit outcome

Not applicable

5.48 Contents of Metering Installation Certification Sticker (Clause 41(2) Of Schedule 10.7)

Code related audit information

The metering installation certification sticker must show:
- the name of the ATH who certified the metering installation
- the certification date of the installation
- the metering installation category
- the ICP
- the certification number for the metering installation.

Audit observation

Landis + Gyr does not certify metering installations.

Audit commentary

Landis + Gyr does not certify metering installations.

Audit outcome

Not applicable

5.49 Enclosures (Clause 42 of Schedule 10.7)

Code related audit information

An ATH must, before it certifies a metering installation, ensure that, if a metering component in the metering installation is housed in a separate enclosure from the meter enclosure, the enclosure is appropriate to the environment in which it is located and has a warning label attached stating that the enclosure houses a metering component.

Audit observation

Landis + Gyr does not certify metering installations.

Audit commentary

Landis + Gyr does not certify metering installations.

Audit outcome

Not applicable

5.50 Metering Component Certification (Clause 43(1) of Schedule 10.7)

Code related audit information

Before certifying an installation, the ATH must ensure that each component has been certified by an ATH and has been stored appropriately since component certification.

Audit observation

Landis + Gyr does not certify metering installations.

Audit commentary

Landis + Gyr does not certify metering installations.

Audit outcome

Not applicable

5.51 Sealing Requirements (Clause 47(2) (3) (4) and (5) Of Schedule 10.7)

Code related audit information

Before an ATH certifies a metering installation or leaves it unattended, the ATH must ensure that each metering component that could reasonably be expected to affect the accuracy or reliability of the metering installation is sealed.
The metering components which must be sealed include:
- each part and connection of a data storage device in, or attached to, the metering installation except for a port for on-site reading that is not capable of carrying out any other function
- the main switch cover, if the main switch:
a) is on the supply side of the metering installation
b) has provision for sealing.

Audit observation

Landis + Gyr does not certify metering installations.

Audit commentary

Landis + Gyr does not certify metering installations.

Audit outcome

Not applicable

5.52 Seals for Metering Component Enclosures (Clause 47(6) Of Schedule 10.7)

Code related audit information

When applying a seal to a metering component in an enclosure, the ATH must attach a warning label in a prominent position inside the enclosure.

Audit observation

Landis + Gyr does not certify metering installations.

Audit commentary

Landis + Gyr does not certify metering installations.

Audit outcome

Not applicable

5.53 Requirements for Sealing System (Clause 47(7) Of Schedule 10.7)

Code related audit information

An ATH must use a sealing system that enables identification of:
- the ATH who affixed the seal
- the person (or the sealing tool) who applied the seal
- when the seal was applied.

Audit observation

I checked process documentation and conducted a walk-through of sealing processes.

Audit commentary

Certification of metering installations is not conducted by Landis + Gyr; therefore, this matter is outside the scope of this audit. Despite this, I still checked the process for the application of seals to meter covers during the manufacturing process. The wire and ferrule method is used and the ferrules have a number provided by the National Measurement Institute (NMI). The documentation in the quality manual was appropriate and included diagrams and pictures to ensure clarity.

Audit outcome

Compliant

5.54 Removal or Breakage of Seals (Clause 48(6) of Schedule 10.7)

Code related audit information

When the ATH investigates an unauthorised removal or breakage, it must assess the accuracy and continued integrity of the metering installation. If the ATH considers the accuracy and continued integrity is unaffected, it must replace the removed or broken seals.
If the accuracy and continued integrity is affected, the ATH must replace the removed or broken seal and advise the MEP that the metering installation is potentially inaccurate, defective, or not fit for purpose.

Audit observation

Landis + Gyr does not certify metering installations.

Audit commentary

Landis + Gyr does not certify metering installations.

Audit outcome

Not applicable

5.55 Wiring (Clause 6 of Schedule 10.8)

Code related audit information

An ATH must, before it certifies a metering installation, ensure that all wiring in the metering installation is suitable for the environment in which the metering installation is located, fit for purpose, securely fastened, and compliant with all applicable requirements and enactments.
The ATH must ensure that the wiring between metering components in the metering installation:
- is run as directly as practicable
- is appropriately sized and protected
- does not, to the extent practicable, include intermediate joints for any measuring transformer circuits
- includes conductors that are clearly and permanently identified, by the use of any one or more of the following:
a) colour coding
b) marker ferrules
c) conductor numbering.
If it is not practicable to exclude intermediate joints for any measuring transformer circuits, the ATH must ensure that the intermediate joints are sealed or in a sealed enclosure.

Audit observation

Landis + Gyr does not certify metering installations.

Audit commentary

Landis + Gyr does not certify metering installations.

Audit outcome

Not applicable

5.56 Fuses and Circuit Breakers (Clause 7 of Schedule 10.8)

Code related audit information

An ATH must, before it certifies a metering installation, ensure that all fuses and circuit breakers that are part of the metering installation are appropriately rated for the electrical duty and discrimination required, clearly labelled and sealed or located in sealed enclosures.

Audit observation

Landis + Gyr does not certify metering installations.

Audit commentary

Landis + Gyr does not certify metering installations.

Audit outcome

Not applicable

5.57 Calibration of Metering Components Where Relevant (Clause 7(1) Of Schedule 10.4)

Code related audit information

Before the ATH certifies a metering installation or metering component, it must ensure that the metering components have been calibrated by an approved calibration laboratory or an ATH with appropriate approval under Schedule 10.3.

Audit observation

Landis + Gyr certifies metering components but not metering installations. The end to end process was demonstrated during the audit.

Audit commentary

Landis + Gyr demonstrated that the meters currently being supplied to New Zealand have appropriate type test certificates. The process for calibrating meters and producing a calibration report was demonstrated during the audit. Each calibration report is for a group of meters and includes a table of results for each individual meter. Certified meters have an appropriate certification report.

Audit outcome

Compliant

5.58 Requirement for Calibration of Metering Components (Clause 7(2) Of Schedule 10.4)

Code related audit information

Before the ATH certifies a metering component it must ensure that the component is calibrated or adjusted under the physical and electrical conditions specified in Table 5 of schedule 10.1 and the conditions permit the calculation of uncertainties at the reference conditions.

Audit observation

Landis + Gyr certifies metering components but not metering installations. The end to end process was demonstrated during the audit.

Audit commentary

Landis + Gyr demonstrated that the meters currently being supplied to New Zealand have appropriate type test certificates. The process for calibrating meters and producing a calibration report was demonstrated during the audit. Each calibration report is for a group of meters and includes a table of results for each individual meter. Certified meters have an appropriate certification report. The NATA report confirms uncertainty calculations are compliant.

Audit outcome

Compliant

5.59 Metering Component Calibration Method (Clause 7(3) Of Schedule 10.4)

Code related audit information

A class B ATH must follow the relevant requirements of ISO17025 for calibration of components and only use methodologies that have been verified in their most recent audit.

Audit observation

Landis + Gyr is a Class A ATH only.

Audit commentary

Landis + Gyr is a Class A ATH only.

Audit outcome

Not applicable

5.60 Metering Component Calibration Test Points (Clause 7(4) Of Schedule 10.4)

Code related audit information

If the ATH calibrates a component it must ensure that the test points that it uses are either:
- no less than the test points in Table 5 of Schedule 10.1 or
- sufficient to calculate the metering installation error as defined in clause 22 of Schedule 10.7.

Audit observation

I checked the test points used by Landis + Gyr.

Audit commentary

Landis + Gyr uses the test points stipulated in the relevant standards.

Audit outcome

Compliant

5.61 Determine Metering Component Error and Record (Clause 7(5) Of Schedule 10.4)

Code related audit information

An ATH must, when calibrating a metering component:
- if necessary, adjust and document the error compensation
- ensure that any adjustment carried out is appropriate to achieve an error as close as practicable to zero
- ensure that the uncertainty of measurement during the calibration of the metering component does not exceed one third of the maximum permitted error in the relevant standard listed in Table 5 of Schedule 10.1.
If the metering component is intended for a metering installation which will be certified using the selected component certification method, the ATH must ensure that the ATH records the errors of a current transformer from 5 % to 120 % of rated primary current.

Audit observation

Landis + Gyr certifies metering components but not metering installations. The end to end process was demonstrated during the audit.

Audit commentary

Landis + Gyr demonstrated that the meters currently being supplied to New Zealand have appropriate type test certificates. The process for calibrating meters and producing a calibration report was demonstrated during the audit. Each calibration report is for a group of meters and includes a table of results for each individual meter. Certified meters have an appropriate certification report. The NATA report confirms uncertainty calculations are compliant.

Audit outcome

Compliant

5.62 Class B ATH Calibrating Metering Components (Clause 2(3) Of Schedule 10.3)

Code related audit information

If a class B ATH wishes to calibrate components (such as class 0.5 meters, class 1 meters, class 2 meters, class 0.5 current transformers, and class 1.0 current transformers) this must be carried out under the relevant provisions and methodologies of ISO 17025. The final audit report must include a list of all relevant requirements of ISO 17025 for calibrating these metering components and all relevant methodologies audited.

Audit observation

Landis + Gyr is a Class A ATH only.

Audit commentary

Landis + Gyr is a Class A ATH only.

Audit outcome

Not applicable

5.63 Meter Certification (Clause 1 of Schedule 10.8)

Code related audit information

All meters must be certified before they can be used in a metering installation. The ATH must ensure that the meters in a metering installation have been type tested by an approved test laboratory, that the results for the meter are appropriate for that meter model and version and have a calibration report.

Audit observation

Landis + Gyr does not certify metering installations.

Audit commentary

Landis + Gyr does not certify metering installations.

Audit outcome

Not applicable

5.64 Meter Requirements When Meter Is Relocated (Clause 26(2) Of Schedule 10.7 and Clause 43(2) Of Schedule 10.7)

Code related audit information

If a meter has previously been used in another metering installation, the ATH must ensure that the meter has been recalibrated since it was removed from the previous metering installation by an approved calibration laboratory or an ATH unless it is less than 12 months since the meter was commissioned in the previous installation.

Audit observation

Landis + Gyr does not certify metering installations.

Audit commentary

Landis + Gyr does not certify metering installations.

Audit outcome

Not applicable

5.65 Measuring Transformer Error Testing (Clause 2(1)(A) & (B) Of Schedule 10.8)

Code related audit information

Before certifying a measuring transformer, an ATH must test the measuring transformer's errors at a range of primary values at their rated burdens. If the measuring transformer is a multi-tap current transformer, an ATH must carry out the calibration tests and only certify the transformer for the ratios that have been calibrated.

Audit observation

Landis + Gyr does not certify metering installations or measuring transformers.

Audit commentary

Landis + Gyr does not certify metering installations or measuring transformers.

Audit outcome

Not applicable

5.66 Measuring Transformer Certification (Clause 3 of Schedule 10.8)

Code related audit information

Before it certifies a measuring transformer, the ATH must ensure that:
- the measuring transformer has a current calibration report issued by an approved calibration laboratory or an ATH approved to carry out calibration
- the measuring transformer calibration report:
- confirms that the measuring transformer complies with the standards listed in Table 5 of Schedule 10.1
- records any tests the ATH has performed to confirm compliance
- confirms that the measuring transformer has passed the tests
- records any recommendations made by the ATH on error compensation
- includes any manufacturer's calibration test reports.
The ATH is required to produce a measuring transformer certification report that includes:
- the date on which it certified the measuring transformer
- the certification validity period for the measuring transformer, which must be no more than 120 months
- whether the certification was based on batch test certificates
- if the certification was based on batch test certificates, confirmation that the manufacturer's batch testing facility is, in the ATH's opinion, of an acceptable standard
The ATH must provide confirmation that the ATH has inspected the manufacturer's test certificates, and carried out any additional tests it considers necessary, to satisfy itself that the measuring transformer meets the accuracy requirements.

Audit observation

Landis + Gyr does not certify metering installations or measuring transformers.

Audit commentary

Landis + Gyr does not certify metering installations or measuring transformers.

Audit outcome

Not applicable

5.67 Measuring Transformers In Service Burden Lower Than Calibration Test Point Burden (Clause 2(1)(C) Of Schedule 10.8)

Code related audit information

If the in-service burden of a measuring transformer is lower than a test point specified in a standard listed in Table 5 of Schedule 10.1, the ATH must confirm the accuracy of the measuring transformer at the in-service burden by:
a) obtaining confirmation of accuracies at the in-service burden from the measuring transformer's manufacturer; or
b) if the primary voltage of the measuring transformer is greater than 1 kV, a class A ATH calibrating the measuring transformer at the in-service burden.

Audit observation

Landis + Gyr does not certify metering installations or measuring transformers.

Audit commentary

Landis + Gyr does not certify metering installations or measuring transformers.

Audit outcome

Not applicable

5.68 Measuring Transformer - Epoxy Insulated (Clause 2(2) Of Schedule 10.8)

Code related audit information

Before it certifies an epoxy insulated current transformer, the ATH must ensure that the certification tests allow for, and the metering installation certification report shows, the current transformer's age, temperature, and batch.

Audit observation

Landis + Gyr does not certify metering installations or measuring transformers.

Audit commentary

Landis + Gyr does not certify metering installations or measuring transformers.

Audit outcome

Not applicable

5.69 Control Device Certification (Clause 4 of Schedule 10.8)

Code related audit information

Before it certifies a new control device, the ATH must produce a certification report that:
- confirms that the control device complies with the applicable standards listed in Table 5 of Schedule 10.1
- includes the details and results of any test that the ATH has carried out to confirm compliance under paragraph (a)
- confirms that the control device has passed such tests.
Before it certifies an existing installed control device, the ATH must produce a certification report that confirms:
- that the control device is fit for purpose
- the control device certification validity period that the ATH considers appropriate, which must be no more than 180 months.

Audit observation

Landis + Gyr does not certify metering installations or control devices.

Audit commentary

Landis + Gyr does not certify metering installations or control devices.

Audit outcome

Not applicable

5.70 Data Storage Devices (Clause 36(2) Of Schedule 10.7)

Code related audit information

If a data storage device has previously been used in another metering installation, the ATH must ensure that the data storage device has been recalibrated since it was removed from the previous metering installation by an approved calibration laboratory, an approved test laboratory, or an ATH.

Audit observation

Landis + Gyr does not certify metering installations.

Audit commentary

Landis + Gyr does not certify metering installations.

Audit outcome

Not applicable

5.71 On-site Calibration and Certification (Clause 9(1) of Schedule 10.8)

Code related audit information

An ATH may only calibrate a metering component on site in the metering component's normal environment by measuring the influence of all on-site variables and including their estimated effects in the uncertainty calculation. An ATH must ensure that:
- the effects of any departures from the reference conditions can accurately and reliably be calculated
- the metering installation, in which the metering component is incorporated, is within the applicable accuracy tolerances set out in Table 1 of Schedule 10.1 after taking into account all known influences including temperature and temperature co-efficient measurements.

Audit observation

Landis + Gyr does not certify metering installations.

Audit commentary

Landis + Gyr does not certify metering installations.

Audit outcome

Not applicable

5.72 On Site Metering Component Calibration (Clause 9(2) Of Schedule 10.8)

Code related audit information

If the ATH calibrates a metering component on site using manual methods, computers, or automated equipment for the capture, processing, manipulation, recording, reporting, storage, or retrieval of calibration data, it must ensure that its computer software:
- is documented in the ATH's procedures
- can manipulate the variables that affect the performance of the metering component in a manner that will produce results that would correctly indicate the level of compliance of the metering component with this Code.

Audit observation

Landis + Gyr does not certify metering installations.

Audit commentary

Landis + Gyr does not certify metering installations.

Audit outcome

Not applicable

5.73 On site metering component calibration records (Clause 9(3) of Schedule 10.8)

Code related audit information

An ATH that certifies a metering component on site must include confirmation in the metering component certification report that:
- it has calculated the uncertainty of measurement taking into account all environmental factors for both the metering component being calibrated and the working standards
- the calculation of the uncertainty comprises all uncertainties in the chain of calibration
- the ATH has used a calibration procedure to calibrate the metering component that was included in the ATH's most recent audit and is appropriate for on-site calibration.

Audit observation

Landis + Gyr does not certify metering installations.

Audit commentary

Landis + Gyr does not certify metering installations.

Audit outcome

Not applicable

5.74 Data Storage Device Certification Expiry Date (Clause 37 of Schedule 10.7)

Code related audit information

Before certifying a meter installation which incorporates a data storage device, the ATH must determine the expiry date of the data storage device. The ATH must record the expiry date in the certification report for the metering installation and the certification report for the data storage device.

Audit observation

Landis + Gyr does not certify metering installations.

Audit commentary

Landis + Gyr does not certify metering installations.

Audit outcome

Not applicable

5.75 All Functions and Activities Must Be Completed (Clause 10.42(2))

Code related audit information

Where Part 10 requires the ATH to complete a function or activity before a metering installation is certified, the ATH must complete that function or activity as part of the process for certifying the metering installation.

Audit observation

Landis + Gyr does not certify metering installations.

Audit commentary

Landis + Gyr does not certify metering installations.

Audit outcome

Not applicable

6. INSPECTION OF METERING INSTALLATIONS

6.1 General Inspection Requirements (Clause 44 (1) (a) to (e) of Schedule 10.7)

Code related audit information

When carrying out an inspection of a metering installation, the ATH must:
- check and confirm that the data storage device in the metering installation operates as required
- check and confirm that the expected remaining lifetime of each battery in the metering installation will be reasonably likely to meet or exceed the metering installation certification expiry date
- ensure that no modifications have been made to the metering installation without the change having been documented and certification requirements satisfied
- visually inspect all seals, enclosures, metering components, and wiring of the metering installation for evidence of damage, deterioration, or tampering
- ensure that the metering installation and its metering components carry appropriate certification stickers.

Audit observation

Landis + Gyr does not conduct inspections.

Audit commentary

Landis + Gyr does not conduct inspections.

Audit outcome

Not applicable

6.2 Raw Meter Data Test (Clause 44(1)(F) Of Schedule 10.7)

Code related audit information

When carrying out an inspection of a category 1 metering installation, the ATH must also check and confirm there is no difference between the volume of electricity recorded by the master accumulation register of a data storage device, and the sum of the meter registers.

Audit observation

Landis + Gyr does not conduct inspections.

Audit commentary

Landis + Gyr does not conduct inspections.

Audit outcome

Not applicable

6.3 Prepare Inspection Report (Clause 44(2) Of Schedule 10.7)

Code related audit information

An ATH must prepare an inspection report for each inspection of a metering installation that it carries out, which includes the following:
- details of the checks carried out, the results, and the installation certification expiry date
- the serial numbers of all components in the metering installation
- any non-compliances and the action taken to remedy the non-compliance
- the name of the inspector and the date on the inspection.

Audit observation

Landis + Gyr does not conduct inspections.

Audit commentary

Landis + Gyr does not conduct inspections.

Audit outcome

Not applicable

6.4 Provide Inspection Report to MEP (Clause 44(3) Of Schedule 10.7)

Code related audit information

The ATH must, within 10 business days of carrying out the inspection, provide the inspection report to the MEP.

Audit observation

Landis + Gyr does not conduct inspections.

Audit commentary

Landis + Gyr does not conduct inspections.

Audit outcome

Not applicable

6.5 Inspections for Category 2 & Above Installations (Clause 46(2) of Schedule 10.7)

Code related audit information

When carrying out an inspection of a category 2 or higher metering installation, the ATH must also conduct the following additional checks:
- a visual inspection of each metering component in the metering installation for damage, tampering, or defect
- if the current transformer can be safely accessed, check the position of the current transformer tap to ensure it is still appropriate for the expected maximum current for the metering installation
- check for the presence of appropriate voltages at the metering installation
- check the voltage circuit alarms and fault indicators.

Audit observation

Landis + Gyr does not conduct inspections.

Audit commentary

Landis + Gyr does not conduct inspections.

Audit outcome

Not applicable

7. PROCESS FOR HANDLING FAULTY METERING INSTALLATIONS

7.1 Investigation of Faulty Metering Installations (Clause 10.43(3) of Part 10)

Code related audit information

As a participant, the ATH must inform the MEP if it believes a metering installation is faulty, inaccurate, defective, or not fit for purpose.

Audit observation

Landis + Gyr does not conduct field work.

Audit commentary

Landis + Gyr does not conduct field work.

Audit outcome

Compliant

7.2 Testing of Faulty Metering Installations (Clause 10.44 of Part 10)

Code related audit information

When advised by an MEP that a metering installation is faulty, inaccurate, defective, or not fit for purpose, the ATH must test the metering installation as soon as practical and provide a statement of situation.

Audit observation

Landis + Gyr does not conduct field work.

Audit commentary

Landis + Gyr does not conduct field work.

Audit outcome

Not applicable

7.3 Statement of Situation (Clause 10.46(1) of Part 10)

Code related audit information

The ATH must include the following in the statement of situation:
- the details and results of the tests carried out
- a conclusion, with reasons, as to whether or not the metering installation is faulty
- an assessment of the risk to the completeness and accuracy of the raw meter data
- the remedial action proposed or undertaken
- any correction factors to apply to raw meter data to ensure that the volume information is accurate
- the period over which the correction factor must be applied to the raw meter data.

Audit observation

Landis + Gyr does not conduct field work.

Audit commentary

Landis + Gyr does not conduct field work.

Audit outcome

Compliant

7.4 Correction of Defects (Clause 10.47 of Part 10)

Code related audit information

When taking action to remedy an inaccuracy or defect within a metering installation, the ATH must ensure that records of any modifications that are carried out to the metering installation are kept for each metering component of the metering installation in the metering records and in a manner reasonable in the circumstances to ensure that further investigation can be carried out.

Audit observation

Landis + Gyr does not conduct field work.

Audit commentary

Landis + Gyr does not conduct field work.

Audit outcome

Not applicable

8. Conclusions

The audit found compliance with the Code. Robust controls were demonstrated in all areas of the operation, which has a well-established and stable quality system in place.

9. Landis + Gyr Response