VERITEK

Electricity Industry Participation Code Audit Report

For

Class B Approved Test House

Prepared by Brett Piskulic – Veritek Limited

Date of Audit: 13/05/21

Date Audit Report Complete: 03/06/21

Date Audit Report Due: 04/06/21

Executive Summary

Wells is a Class B Approved Test House and is required to undergo an audit by 4 June 2021, in accordance with clause 16A.19(b).

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

The audit report records 18 non-compliances, with five areas of non-compliance from the last audit now cleared. These related mainly to the incorrect provision of an audit report and the certification of non-compliant data storage devices.

12 of the non-compliances relate to changes to the Code that were announced on 15th December 2020 and implemented on 1st February 2021.
The Code now requires the ATH to record each services access interface and the associated maximum interrogation cycles for each.
The ATH must determine the range that the in-service burden must be within to ensure the measuring transformer remains accurate when certifying a measuring transformer. When certifying metering installations with measuring transformers the ATH must ensure that the in-service burden is within the burden range of the measuring transformers.
Wells has updated its processes to meet the requirements of most of the changes to the code but was unable to make all of the necessary changes to its workflows to ensure that compliance was achieved for all installations in the audit period. A number of the areas of non-compliance relate to jobs that were created in previous versions of the workflows before the changes were made.

A change was made to the Code requirements for conducting raw meter data tests. This requires the ATH to ensure that the change in the meter register that occurs when conducting a raw meter data test is at least "1" in the least significant digit, or one mark if the least significant digit does not have numerical markings. This has caused non-compliance when conducting certification of metering installations for one MEP which has meters with no decimal places in the meter register.

Other areas of non-compliance are as follows:

- missing or inaccurate information recorded in certification reports,
- ICP 0000015643TR39C had an absolute error and uncertainty test result of 1.54%, meaning at least one of the components is operating outside its class,
- all information regarding lower category certification not included in the certification reports for three metering installations,
- certification tests not completed at two metering installations certified using the selected component method,
- incorrect use of comparative recertification method for one installation,
- certification expiry date incorrectly calculated for one category 2 metering installation, and

- current transformers certified without calibration being carried out when metering installation certification is conducted using the comparative recertification method.

Three recommendations are repeated from the last audit. Two are made regarding improvements to the comparative recertification error and uncertainty calculation process. Wells has done some investigation in relation to these, but they are still in progress. One relates to the lack of clarity with metering installation certification reports, this has been acknowledged but will require more time to complete.
I have added a recommendation that Wells develop validation reporting that is regularly run to identify inaccuracies in metering installation certification reports.

The date of the next audit is determined by the Electricity Authority and is dependent on the level of compliance during this audit. The Future Risk Rating table provides some guidance on this matter and recommends a next audit frequency of three months. Wells has made considerable changes to its processes in order to meet the requirements of the code changes implemented on 1st February 2021. Due to the short period of time between notice and implementation of the code changes Wells were not able to be apply the new processes to all jobs conducted after 1st February 2021. Wells has identified clear plans to change processes and remedy non-compliant metering installations in the areas of low burden and incorrect certification dates. I therefore recommend that a nine-month timeframe would be more appropriate.

The matters found are shown in the tables below:

Table of Non-Compliance

Subject	Section	Clause	Non-compliance	Controls	Audit Risk Rating	Breach Risk Rating	Remedial Action
Accurate information	2.2	10.6 of Part 10	Each services access interface and metering installation type not recorded for 47 of 76 metering installations certified since 1/02/21.	Moderate	Low	2	Cleared
			Maximum interrogation cycle not recorded for each services access interface in 68 metering installations.				Identified
			Certification expiry dates incorrectly calculated for one category 2 metering installations.				Identified
			One category 1 metering installation certified using the selected component method had the method incorrectly recorded on the certification report as comparative recertification.				Identified
Metering Installation Type	3.2	8(2) of Schedule 10.7	Each services access interface and metering installation type not recorded for 47 of 76 metering installations certified since 1/02/21.	Strong	Low	1	Cleared
Services Access Interface	3.5	10 of Schedule 10.4	Each services access interface not recorded for 47 of 76 metering installations certified since 1/02/21.	Strong	Low	1	Cleared
Certification at a Lower Category	3.10	6(4) Of Schedule 10.7	All information regarding lower category certification not included in the certification reports for three metering installations.	Moderate	Medium	4	Investigating

Subject	Section	Clause	Non-compliance	Controls	Audit Risk Rating	Breach Risk Rating	Remedial Action
Maximum interrogation cycle	3.14	36(3) & (4) of Schedule 10.7	Maximum interrogation cycle not recorded for each services access interface in 68 metering installations.	Moderate	Low	2	Identified
Compliance with part 10	5.1	8(1) Of Schedule 10.7	Six category 2 installations certified with in-service burden lower than the burden range of the CTs. ICP 0000015643TR39C had an absolute error and uncertainty test result of 1.54%, meaning at least one of the components is operating outside its class.	Moderate	Medium	4	Identified
Certification tests	5.12	9(1) of Schedule 10.7	Meter register not incrementing when raw meter date tests conducted on Intellihub Elster gRex meters.	Weak	Low	3	Cleared
Test results	5.16	10(1)&(2) Of Schedule 10.7	Six category 2 installations certified with in-service burden lower than the burden range of the CTs. ICP 0000015643TR39C had an absolute error and uncertainty test result of 1.54%, meaning at least one of the components is operating outside its class.	Weak	Medium	6	Identified
Selected component certification	5.18	11(4) of Schedule 10.7	Certification tests not completed at two metering installations certified using the selected component method.	Moderate	Low	2	Identified
Comparative Recertification	5.19	12(2) of Schedule 10.7	Incorrect use of comparative recertification method for one installation.	Moderate	Low	2	Identified

Subject	Section	Clause	Non-compliance	Controls	Audit Risk Rating	Breach Risk Rating	Remedial Action
Certification Validity Periods	5.28	17 of Schedule 10.7	Certification expiry date incorrectly calculated for one category 2 metering installation.	Moderate	Low	2	Identified
Determine Metering Installation Certification Expiry Date	5.34	27(1) & (2) Of Schedule 10.7	Certification expiry date incorrectly calculated for one category 2 metering installation.	Moderate	Low	2	Identified
Measuring Transformers used in a Certified Metering Installation	5.37	28(4) Of Schedule 10.7	Six category 2 installations certified with in-service burden lower than the burden range of the CTs.	Moderate	Low	2	Identified
Measuring Transformer Certification Expiry Date	5.38	29 of Schedule 10.7	CT Certification expiry dates incorrectly calculated for one category 2 metering installation.	Moderate	Low	2	Identified
Low burden	5.40	31 Of Schedule 10.7	Six category 2 installations certified with in-service burden lower than the burden range of the CTs.	Moderate	Low	2	Identified
Measuring Transformer Certification	5.67	3 of Schedule 10.8	Burden range not recorded in CT certification reports for two metering installations. Incorrect burden ranges recorded for nine category 2 metering installations. Seven category 2 metering installations with CTs certified without calibration being carried out.	Moderate	Low	2	Identified

Subject	Section	Clause	Non-compliance	Controls	Audit Risk Rating	Breach Risk Rating	Remedial Action
Measuring transformers in-service burden.	5.68	2(1)(E) Of Schedule 10.8	Burden range not recorded in CT certification reports for two metering installations. Incorrect burden ranges recorded for nine category 2 metering installations.	Moderate	Low	2	Identified
Notification of metering installations inaccurate or not fit for purpose	7.1	10.43(3) of Part 10	MEP was not notified that six metering installations with the in-service burden lower than the burden range of the CTs are not fit for purpose and therefore have cancelled certification.	Moderate	Medium	4	Identified
					Future Risk Rating	**45**	
					Indicative Audit Frequency	**3 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
Provision of Accurate Information	2.2	10.6 of Part 10	Develop validation reporting that is regularly run to identify inaccuracies in metering installation certification reports.	Investigating
Certification & Calibration Reports	3.6	11(1) of Schedule 10.4	Change the layout of the certification report to include the more relevant items clearly on the front page.	Investigating
Error calculation	5.30	22 of Schedule 10.7	Regarding the comparative recertification error and uncertainty calculation process - review the application of the ambient temperature influence to determine if the adjustment of the overall error figure is necessary.	Investigating
			Regarding the comparative recertification error and uncertainty calculation process - investigate the possibility of using pulses from the meter or determine and add an allowance in the uncertainty calculation for the influence of the reaction time.	Investigating

Persons Involved in This Audit

Auditor:
Brett Piskulic
Veritek Limited
Electricity Authority Approved Auditor

Wells personnel assisting in this audit were:

Name	Title
Graham Wells	Managing Director
Leith Robertson	Engineering 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

Wells is a Class B ATH and this audit was performed at their request, to encompass the Electricity Industry Participation Code requirement for an audit, in accordance with clause 16A.19(b).

The Authority has stipulated that the next audit was due by 4 June 2021, in accordance with clause 16A.19(b).

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

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

Class B Approval

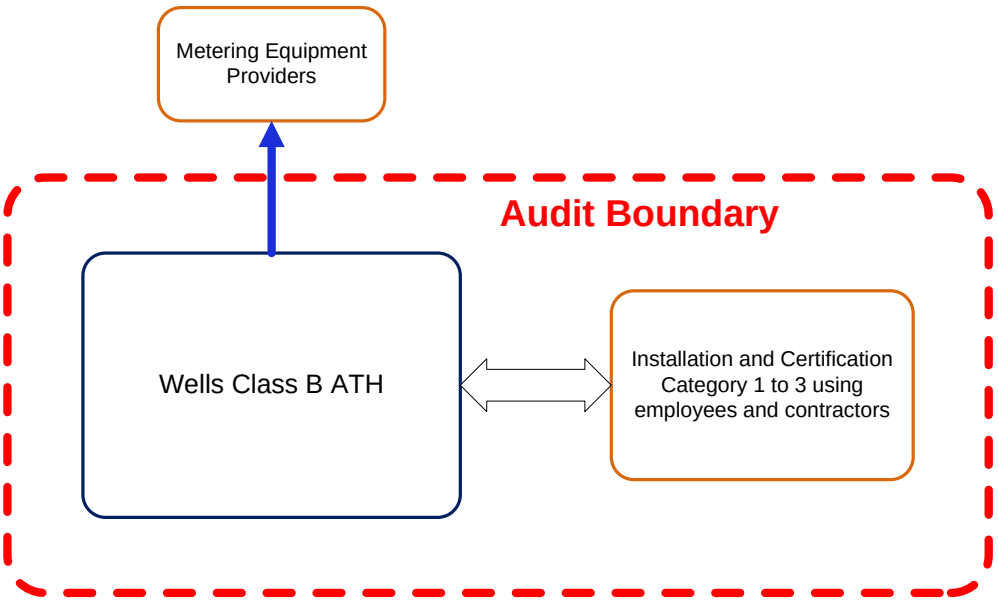
(a) calibration of class 0.5 meters, class 1 meters and class 2 meters, and class 0.5 current transformers and class 1.0 current transformers, provided that the calibrations are carried out under their approved quality certification and in accordance with this Part, and included within the ATH audit for approval:
(b) installation and modification of metering installations:
(c) installation and modification of metering components:
(d) calibration of metering components on site:
(e) certification, using the selected component certification method, of:
    (i) category 1 metering installations:
    (ii) category 2 metering installations:
    (iii) category 3 metering installations with a primary voltage of less than 1kV:
(f) certification, using the fully calibrated certification method, of—
    (i) category 1 metering installations:
    (ii) category 2 metering installations:
    (iii) category 3 metering installations with a primary voltage of less than 1kV:
(g) certification, using the comparative recertification method, of category 2 metering installations:
(h) issuing of certification reports in respect of certifications of metering installations under paragraphs (e) to (g):
(i) inspection of:
    (i) category 1 metering installations:
    (ii) category 2 metering installations:

(iii) category 3 metering installations with a primary voltage of less than 1kV.

Wells also requires approval to certify metering components. I note that the Class B functions listed in Clause 4(2) of Schedule 10.3 do not include certification of metering components.

Wells provides Test House services to metering equipment owners in respect of the installation and/or re-certification of Category 1 to Category 3 metering. Wells provides training, and also conducts internal audits to ensure the on-going compliance and competence of employees and contractors.

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



1.3 Previous Audit Results

The last audit was conducted in December 2020 by Brett Piskulic of Veritek. The audit found 19 non-compliance issues, and four recommendations were made. The current status of these matters is shown in the tables below.

Table of Non-Compliance

Subject	Section	Clause	Non-compliance	Status
Accurate information	2.2	10.6 of Part 10	Services access interface incorrectly recorded for 2 of 44 records. Maximum interrogation cycle not recorded correctly for 3 of 44 records. Certification expiry dates incorrectly calculated for five category 2 metering installations. Audit report not provided with ATH application for approval.	Still existing Still existing Still existing Cleared
ATH Approval	2.4	10.40 of Part 10	Audit report not provided with ATH application for approval.	Cleared
Metering Installation Type	3.2	8(2) of Schedule 10.7	Services access interface incorrectly recorded for 2 of 44 records.	Still existing
Services Access Interface	3.5	10 of Schedule 10.4	Services access interface incorrectly recorded for 2 of 44 records.	Still existing
Meter Requirements	3.11	26(4) of Schedule 10.7	Maximum interrogation cycle recorded incorrectly for 3 metering installations.	Cleared
Maximum interrogation cycle	3.14	36(3) of Schedule 10.7	Maximum interrogation cycle recorded incorrectly for 3 metering installations.	Still existing
Data Storage Device Certification	4.12	5 of Schedule 10.8	472 data storage devices certified when they do not comply with the Code, as recorded in the type test report.	Cleared

Subject	Section	Clause	Non-compliance	Status
Compliance with part 10	5.1	8(1) Of Schedule 10.7	7 Category 2 metering installations certified with burden lower than 25% of the rated burden. ICP 0230120008PN0F0 had an absolute error and uncertainty test result of 2.47%, meaning at least one of the components is operating outside its class.	Still existing Still existing
Test results	5.16	10(1)&(2) Of Schedule 10.7	7 Category 2 metering installations certified with low burden. 472 data storage devices certified when they don't comply with the Code, as recorded in the type test report. ICP 0230120008PN0F0 had an absolute error and uncertainty test result of 2.47%, meaning at least one of the components is operating outside its class.	Still existing Cleared Still existing
Selected component certification	5.18	11(4) of Schedule 10.7	461 installations certified as HHR despite the data storage devices not being accurate or fit for purpose.	Cleared
Comparative Recertification	5.19	12(2) of Schedule 10.7	Incorrect use of comparative recertification method for one installation.	Still existing
Certification Validity Periods	5.28	17 of Schedule 10.7	Certification expiry dates incorrectly calculated for 5 category 2 metering installations.	Still existing
Determine Metering Installation Certification Expiry Date	5.34	27(1) & (2) Of Schedule 10.7	Certification expiry dates incorrectly calculated for 5 category 2 metering installations.	Still existing
Measuring Transformer Certification Expiry Date	5.38	29 of Schedule 10.7	CT Certification expiry dates incorrectly calculated for 5 category 2 metering installations.	Still existing
Low burden	5.40	31 Of Schedule 10.7	7 installations had low burden and burden resistors were not installed.	Still existing

Subject	Section	Clause	Non-compliance	Status
Data storage device requirements	5.45	5(1) of Schedule 10.8	472 data storage devices certified when they don't comply with the Code, as recorded in the type test report. 461 installations certified as HHR despite the data storage devices not being accurate or fit for purpose.	Cleared
Measuring Transformer Certification	5.66	3 of Schedule 10.8	CTs are certified without calibration being carried out.	Still existing
Measuring transformers in-service burden.	5.67	2(1)(C) Of Schedule 10.8	7 installations had low burden and burden resistors were not installed.	Still existing
Notification of metering installations inaccurate or not fit for purpose	7.1	10.43(3) of Part 10	MEP not notified that 7 metering installations with low burden are not fit for purpose and therefore have cancelled certification.	Still existing

Table of Recommendations

Subject	Section	Clause	Recommendation for improvement	Status
Certification & Calibration Reports	3.6	11(1) of Schedule 10.4	Change the layout of the certification report to include the more relevant items clearly on the front page.	Still existing
Category 2 certification tests	5.1	8(1) Of Schedule 10.7	I recommend Wells sets a pass/fail threshold for Category 2 comparative testing which takes into account the class of the metering components.	Cleared
Error calculation	5.30	22 of Schedule 10.7	Regarding the comparative recertification error and uncertainty calculation process - review the application of the ambient temperature influence to determine if the adjustment of the overall error figure is necessary.	Still existing
			Regarding the comparative recertification error and uncertainty calculation process - investigate the possibility of using pulses from the meter or determine and add an allowance in the uncertainty calculation for the influence of the reaction time.	Still existing

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

I checked Wells understands of this requirement by conducting a walk-through of contractor and employee management processes. I checked the audit regime in place to ensure contractors and employees are competent and are following Wells' instructions.

Audit commentary

Wells uses employees and "field service partners" (contractors) to conduct field activities. All technicians are subject to the same training and monitoring program, which includes initial training by a specialised trainer followed by two days of fieldwork with a "buddy". Audits are completed of 5% of all jobs completed in the first four weeks followed by an on-going requirement of 3% and at least one "field observation" per year alongside on-going photo checking of all completed jobs. I checked the competency records to ensure they were complete and accurate. The competency matrix is up to date and recognises different levels of competence for different job types.

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

As mentioned in **section 2.1**, the photo checking process also checks the accuracy of recorded details, including meter readings and tariffs. If any discrepancies are identified the record can be sent back to the technician's PDA so they can make the correction to the source data. The checking process occurs on a daily basis and generally meets the requirement to ensure data is corrected "as soon as practicable".

It appears there are some gaps in the checking process. Four issues were identified during the audit but not during the checking process. The issues are as follows:

- each services access interface not recorded for 47 of 76 metering installations certified since 1 February 2021 (**sections 3.2** and **3.5**),
- maximum interrogation cycle not recorded for each services access interface in 68 metering installations (**section 3.14**),
- certification expiry date incorrectly calculated for one category 2 metering installation (**sections 5.28, 5.34** and **5.38**), and
- one category 1 metering installation certified using the selected component method had the method incorrectly recorded on the certification report as comparative recertification - ICP 0000346010WT-A41 (Job No 4964894).

I recommend that Wells develop validation reporting that is regularly run to identify inaccuracies in metering installation certification reports.

Recommendation	Description	Audited party comment	Remedial action
10.6 of Part 10	Develop validation reporting that is regularly run to identify inaccuracies in metering installation certification reports.	Wells recognizes the benefit in having the ability to incorporate this within our compliance regime and is currently investigating as to what might be able to be done to achieve this.	Investigating

Audit outcome

Non-compliant

Non-compliance	Description
Audit Ref: 2.2 With: Clause 10.6 of Part 10 From: 01-Feb-21 To: 13-May-21	1) Each services access interface and metering installation type not recorded for 47 of 76 metering installations certified since 1/02/21. 2) Maximum interrogation cycle not recorded for each services access interface in 68 metering installations. 3) Certification expiry date incorrectly calculated for one category 2 metering installation. 4) One category 1 metering installation certified using the selected component method had the method incorrectly recorded on the certification report as comparative recertification. Potential impact: Low Actual impact: Low Audit history: Twice Controls: Moderate Breach risk rating: 2

Audit risk rating	Rationale for audit risk rating
Low	The controls are recorded as moderate because they mitigate risk most of the time but there is room for improvement. The MEP has correctly recorded the certification information in the registry therefore the impact is recorded as low.

Actions taken to resolve the issue	Completion date	Remedial action status
1) This item is related to the code changes of the 1st Feb and the practicality of achieving all that was required in the timeframe as has been articulated by the auditor in various sections of this audit report and in Well's overall response in the final section of this audit report.	Completed	Cleared
2) This is an item which was required to conform to the code changes of the 1st Feb 2021. It is acknowledged that the changes incorporated within our workflows may not have covered the full requirements and this is now being addressed to ensure full conformance with the code.	25th June 2021	Identified
3) The Certification Documentation will be updated, and the MEP will be requested to change the Certification expirer date till 10 years after the Electrical Connection of the installation (from 25th Jan 2021).	11th June 2021	Identified
4) The Certification Documentation will be updated, and the MEP will be requested to change the Certification to selected component method.	11th June 2021	Identified
Preventative actions taken to ensure no further issues will occur	**Completion date**	
1) The workflow was changed on the 28th Jan 2021 and all tasks initiated and inputted into our metering system from that date onwards comply with this requirement.	Completed	
2) Wells will investigate how the provision of the Maximum Interrogation Period for multiple Service Access Interfaces will be addressed.	25th June 2021	
3) Cease undertaking Cat 2 Metering tasks for this MEP until assurances are received that they will provide accurate information and fully conform to the EIPC requirements when issuing Wells with metering tasks	4th June 2021	
4) Ensure that it is clearly stipulated that the certification method is not changed by our compliance conformance team without appropriate consultation with the technician involved and full consideration is given to the overarching situation.	4th June 2021	

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 Wells during the audit period.

Audit commentary

Wells 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 Part 16A*
- *is a fit and proper person for approval.*

Audit observation

I checked the most recent application for re-certification.

Audit commentary

Wells has appropriate facilities and procedures to meet the minimum requirements of the Code.

An audit was completed in December 2020 and the report was submitted to the Authority.

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

Wells has only conducted activities that fall within the scope of their approval. I have concluded from this audit that Wells has met the requirements of this clause.

I checked compliance with other enactments, specifically the electricity regulations with regard to safety practices and I confirm the following critical points are managed in a robust manner:

- access to basic insulation,
- livening practices; specifically polarity testing,
- safety practices with regard to the management of asbestos switchboards - training for this includes an asbestos awareness presentation then a workshop trial followed by supervision on site, and
- general safety practices and the appropriate use and testing of personal protective equipment.

Updates of field procedures are communicated via weekly technical metering reminders. The reminders are sent through Microsoft Teams and require acknowledgement via responses to questions by technicians.

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 ISO report to confirm the scopes were appropriate and that certification was in place.

Audit commentary

Wells has ISO 9001:2008 registration for the Class B Test House. The scope is appropriate and is noted as:

- *Supply and installation of metering equipment*
- *The reading and data collection services for non-half hour electricity meters*
- *The supply of electricity field services including prescribed electrical work*
- *The supply of gas meter and water meter reading services*
- *The design and development of software for field services and task information management systems by E-Merge Data Solutions Limited from the New Plymouth office*
- *The design supply of electrical installation and maintenance services to commercial, industrial and domestic users by Wells Instrument and Electrical (MW) Limited*

Wells provided a copy of their most recent ISO 9001:2015 audit report, dated 20th July 2020, which was conducted by Telarc SAI Limited. No non-conformances were recorded and eight opportunities for improvement were identified.

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

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 test house; and a quality manager (however named), with responsibility for the quality management certification and the implementation of the quality management system. Leith Robertson is appointed as Technical Manager and is currently covering the vacant position of Quality Manager. Leith has appropriate qualifications and experience in these roles.

An ATH must ensure that all staff who perform or supervise work or activities regulated under this Part are technically competent, experienced, qualified, and trained for the functions they perform. I checked the training and competency assessment processes and I confirm compliance with this clause.

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 B quality documentation, and I reviewed the relevant ISO report.

Audit commentary

The quality management system meets the requirements of the Code.

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

Wells is not approved as a class A ATH.

Audit commentary

Wells is not approved as a class A ATH.

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

Wells has not conducted any material changes.

Audit commentary

Wells has not conducted any material changes.

Audit outcome

Not applicable

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

Wells is currently undergoing an audit and the report will be provided with a compliance plan.

Audit commentary

Wells is currently undergoing an audit and the report will be provided with a compliance plan.

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

Wells does not operate a laboratory function; their scope is limited to field installation work.

Audit commentary

Wells does not operate a laboratory function; their scope is limited to field installation work.

Audit outcome

Not applicable

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

I checked the documentation in relation to compensation factors and I checked 76 certification reports.

Audit commentary

The documentation achieves compliance with the Code and checks of the certification reports confirmed accuracy.

Audit outcome

Compliant

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 Wells' 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

I audited this clause by exception.

Audit commentary

I did not identify any interference by Wells during the audit.

Audit outcome

Compliant

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

I checked whether Wells had certified any installations with loss compensation.

Audit commentary

Wells has not been required to conduct any loss compensation calculations.

Audit outcome

Compliant

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, non-half hour or half hour and non-half hour metering.
The metering installation certification report must also record each services access interface and the conditions under which each services access interface may be used.

Audit observation

I checked 76 certification reports to confirm compliance.

Audit commentary

This clause was changed from 1st February 2021 to require the ATH to record each services access interface and the conditions under which each services access interface may be used and whether the installation is half hour, non-half hour or half hour and non-half hour metering. The code change was announced on 15th December 2021. Prior to this change the ATH was required to determine and record a single services access interface and whether the installation is half hour or non-half hour.
Wells updated all its workflows to record all possible options of services access interface and whether the installation is half hour, non-half hour or half hour and non-half hour metering prior to 1st February 2021. When certification jobs are received and created by Wells they are assigned to the latest version of workflow so the change was applied to all jobs received after the workflow changes were made. Due to the short timeframe to implement the change there were a number of jobs received prior to the workflow changes which were assigned to the previous version of the workflows.

All 76 of the certification records checked took place after 1st February 2021.
29 of the 76 certification records identified all services access interfaces and whether the installation is half hour, non-half hour or half hour and non-half hour metering.
47 of the 76 certification records identified the services access interface as remote and the installation type as half hour. It is also possible that the installation type can be non-half hour and the services access interface may be local for these metering installations if there are problems communicating with

the meters. I have recorded non-compliance as Wells has not recorded each available services access interface and installation type in the certification report for these 47 metering installations. All 47 were certification jobs received prior to the workflow changes being implemented.

Audit outcome

Non-compliant

Non-compliance	Description
Audit Ref: 3.2 With: Clause 8(2) of Schedule 10.7 From: 01-Feb-21 To: 12-Apr-21	Each services access interface and metering installation type not recorded for 47 of 76 metering installations certified since 1/02/21. Potential impact: Low Actual impact: None Audit history: Once Controls: Strong Breach risk rating: 1
Audit risk rating	**Rationale for audit risk rating**
Low	I have recorded the controls as strong as the Wells processes have been updated to record each services access interface and installation type. There is no impact because the MEP normally determines the location of the services access interface and metering installation type; therefore, the audit risk rating is low.

Actions taken to resolve the issue	Completion date	Remedial action status
This item is related to the code changes of the 1st Feb and the impracticality of achieving all that was required and incorporating the additional requirements in tasks that were already 'in flow' in the timeframe as has been notated by the auditor in various sections of this audit report and more extensively in Well's overall response in the final section of this audit report	Completed	Cleared
Preventative actions taken to ensure no further issues will occur	**Completion date**	
Wells will review the changes made to all workflows to facilitate the 1 Feb 2021 code changes to ensure that all the requirements of this subclause have been fulfilled.	30th June 2021	

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

I checked 76 certification reports to confirm compliance.

Audit commentary

All reports correctly recorded the metering category.

Audit outcome

Compliant

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

Wells does not calibrate components.

Audit commentary

Wells does not calibrate components.

Audit outcome

Not applicable

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 services access interfaces and the conditions under which each services access interface may be used. 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

I checked the design reports and a sample of 76 certification records to confirm compliance.

Audit commentary

This clause was changed from 1st February 2021 to require the ATH to record each services access interface and the conditions under which each services access interface may be used. The code change was announced on 15th December 2021. Prior to this change the ATH was required to determine and record a single services access interface.

Wells updated all its workflows to record all possible options of services access interface prior to 1st February 2021. When certification jobs are received and created by Wells they are assigned to the latest version of workflow so the change was applied to all jobs received after the workflow changes were made. Due to the short timeframe to implement the change there were a number of jobs received prior to the workflow changes which were assigned to the previous version of the workflows.

All 76 of the certification records checked took place after 1st February 2021.

29 of the 76 certification records identified all services access interfaces.

47 of the 76 certification records identified the services access interface as remote. It is also possible that the services access interface may be local for these metering installations if there are problems communicating with the meters. I have recorded non-compliance as Wells has not recorded each available services access interface in the certification report for these 47 metering installations. All 47 were certification jobs received prior to the workflow changes being implemented.

Audit outcome

Non-compliant

Non-compliance	Description
Audit Ref: 3.5 With: Clause 10 of Schedule 10.4 From: 01-Feb-21 To: 12-Apr-21	Each services access interface not recorded for 47 of 76 metering installations certified since 1/02/21. Potential impact: Low Actual impact: None Audit history: Once Controls: Strong Breach risk rating: 1
Audit risk rating	**Rationale for audit risk rating**
Low	I have recorded the controls as strong as the Wells processes have been updated to record each services access interface. There is no impact because the MEP normally determines the location of the services access interface; therefore, the audit risk rating is low.

Actions taken to resolve the issue	Completion date	Remedial action status
This item is related to the code changes of the 1st Feb and the impracticality of achieving all that was required and incorporating the additional requirements in tasks that were already 'in flow' in the timeframe as has been notated by the auditor in various sections of this audit report and more extensively in Well's overall response in the final section of this audit report	Completed	Cleared
Preventative actions taken to ensure no further issues will occur	**Completion date**	
Wells will review the changes made to all workflows to facilitate the 1 Feb 2021 code changes to ensure that all the requirements of this subclause have been fulfilled.	30th June 2021	

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

I requested a sample of 76 certification records to confirm compliance.

Audit commentary

I reviewed Wells' records for each MEP where they provide ATH services. Certification reports are produced for all installations; certification reports are produced for all components.

CTs are certified in accordance with the Code.

The certification reports are very difficult for other participants to read and understand. As noted in previous audit reports, I repeat the recommendation that Wells changes the layout of the report to include the more relevant items clearly on the front page, as follows:

- ICP,
- metering installation certification date,
- metering installation certification expiry date,
- metering category,
- certification type (selected component, comparative, fully calibrated, alternative, insufficient load, lower category),
- HHR or NHH,
- compensation factor, and
- electrical connection date (if known and if the ATH is also the agent).

Recommendation	Description	Audited party comment	Remedial action
11(1) of Schedule 10.4	Change the layout of the certification report to include the more relevant items clearly on the front page.	This is being investigated and will be decided upon by 31 July 2021	Investigating

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 checked the certification records for 76 metering installations along with the storage practices.

Audit commentary

All records were available, and records are stored indefinitely.

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 checked the certification records for 76 metering installations along with the storage practices.

Audit commentary

All records were available, and 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

I checked the processes and KPIs in place to determine compliance.

Audit commentary

The targets in place are to provide 90% of records within one day of certification and 100% within two days. There are some instances where this is not achieved due to follow up activities in relation to specific sites. The Code actually requires the ATH to send records within five business days of creation of the record, not from the certification date. I have therefore concluded that compliance is achieved with this requirement because the record has not been "created" until all of the information is complete.

Wells confirmed that they are not acting as an agent to any MEPs for the storage of records.

Audit outcome

Compliant

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

I checked the process for certification as a lower category and the certification records for five metering installations certified at a lower category.

Audit commentary

The five certification records were for metering installations which were nominally category 3 and had been certified as category 2. Details of the certifications are included in the table below:

ICP	Job No	CT Ratio	Nominal Category	Certified Category	Protection rating	MEP advised to monitor
0006533760RN189	4884676	1200/5	3	2	400 amps	Not required
0005895545RN5D5	4890638	1200/5	3	2	300 amps	Not required
0000100483UNF01	4918017	800/5	3	2	Not recorded	No
0089205100PC544	4918086	800/5	3	2	Not recorded	No
0007067674RNDB4	4888194	1200/5	3	2	Not recorded	No

Two of the five reports included the required details including reference to protection devices with current ratings lower than the maximum limit for the certified category.

Three of the five reports did not include all the required information. There was no reference to protection devices or any advice to the MEP of the requirement to monitor load to ensure the category limit is not exceeded.

Audit outcome

Non-compliant

Non-compliance	Description
Audit Ref: 3.10 With: Clause 6(4) Of Schedule 10.7 From: 03-Feb-21 To: 18-Feb-21	All information regarding lower category certification not included in the certification reports for three metering installations. Potential impact: Low Actual impact: None Audit history: None Controls: Moderate Breach risk rating: 4
Audit risk rating	**Rationale for audit risk rating**
Medium	I have recorded the controls as moderate because there is room for improvement. The impact is moderate because if the MEP does not monitor load each month certification will be cancelled; therefore, the audit risk rating is medium.
Actions taken to resolve the issue	**Completion date** / **Remedial action status**

Our understanding was that there is a requirement for MEPs to monitor loads of all installations to ensure that the category limit is not exceeded. Wells was not of the understanding that there is a requirement to advise the MEP to undertake this activity, but this will be investigated further.	30TH June 2021	Investigating
Preventative actions taken to ensure no further issues will occur	**Completion date**	
Wells will however carry out an investigation on this matter and as to how it might provide such advice to MEP's in the future.	31 July 2021	

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 checked process documentation, conducted a walk-through of the process, and checked 76 certification records.

Audit commentary

As a Class B ATH, Wells is unlikely to deal with any meters where maintenance is required. All AMI devices installed have battery monitoring conducted as part of the data collection function.

The maximum interrogation cycle is recorded in the certification reports. I have recorded non-compliance in **section 3.14** as the maximum interrogation cycle was not recorded for each services access interface.

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

I checked 76 certification records to confirm compliance.

Audit commentary

Meter certification expiry dates are recorded in the certification reports. As recorded in **sections 5.28** and **5.34**, non-compliance exists for the meter certification expiry date being incorrectly calculated for one metering installation.

Audit outcome

Compliant

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

I checked whether any measuring transformers required maintenance.

Audit commentary

Wells has not installed any measuring transformers where maintenance is required.

Audit outcome

Compliant

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 each services access interface 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

I checked processes and the records for 76 metering installations to confirm compliance.

Audit commentary

All 76 certification reports included one maximum interrogation cycle. This clause was changed from 1st February 2021 to require the ATH to record the maximum interrogation cycle for each services access interface.

Wells has made changes to its workflows to ensure that each services access interface is recorded but has not added the maximum interrogation cycle for each. There were 68 reports where AMI meters were installed but the non-AMI maximum interrogation cycle of was not recorded.

I have recorded non-compliance with this clause as the maximum interrogation cycle was not recorded for each services access interface.

Audit outcome

Non-compliant

Non-compliance	Description

Audit Ref: 3.14 With: Clause 36(3) & (4) of Schedule 10.7 From: 19-Oct-20 To: 01-Dec-20	Maximum interrogation cycle not recorded for each services access interface in 68 metering installations. Potential impact: None Actual impact: None Audit history: Once Controls: Moderate Breach risk rating: 2
Audit risk rating	**Rationale for audit risk rating**
Low	I have recorded the controls as moderate because there is room for improvement. There is no impact on MEPs because they are the source of this information anyway; therefore, the audit risk rating is low.

Actions taken to resolve the issue	**Completion date**	**Remedial action status**
This is an item which was required to conform to the code changes of the 1st Feb 2021. It is acknowledged that the changes incorporated within our workflows may not have covered the full requirements and this is now being addressed to ensure full conformance with the code.	25th June 2021	Identified
Preventative actions taken to ensure no further issues will occur	**Completion date**	
Wells will investigate how the provision of the Maximum Interrogation Period for multiple Service Access Interfaces will be addressed.	25th June 2021	

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

Wells does not operate a laboratory function; their scope is limited to field installation work. Temperature is measured and recorded when comparative certification is conducted.

Audit commentary

Wells does not operate a laboratory function; their scope is limited to field installation work. Temperature is measured and recorded when comparative certification is conducted.

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 the test points to confirm compliance.

Audit commentary

Wells 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

Wells maintains a register of equipment, including test equipment. I confirmed this was up to date and that all relevant equipment is regularly checked and tested.

Audit commentary

Wells maintains a register of equipment, including test equipment. I confirmed this was up to date and that all relevant equipment is regularly checked and tested.

A class B ATH must have and maintain procedures for the purchase of test equipment and associated consumables. The relevant operating procedure was demonstrated during the audit. The relevant consumables are seals, sealing tools and stickers.

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 the calibration records and processes for calibration of Wells test equipment.

Audit commentary

Wells has 10 Hioki working standards, including three owned by contractors, used for comparative certification of Category 2 metering installations. All of these standards have current calibration certificates. The Test Equipment Register in SharePoint sends an automated email notification when recalibration is due.

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 the calibration records and processes for calibration of Wells test equipment.

Audit commentary

Wells has 10 Hioki working standards, including three owned by contractors, used for comparative certification of Category 2 metering installations. All of these standards have current calibration certificates, and the calibrations are completed within the 12-month interval required by this clause.

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

Wells does not have a reference standard.

Audit commentary

Wells does not have a reference standard.

Audit outcome

Not applicable

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

Wells does not use HV working standards.

Audit commentary

Wells does not use HV working standards.

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

Wells does not conduct calibration of metering components and does not have a test bench.

Audit commentary

Wells does not conduct calibration of metering components and does not have a test bench.

Audit outcome

Not applicable

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 Wells' understanding of this requirement through interview. I checked whether this situation had occurred.

Audit commentary

Wells understands the requirements of this clause. There are no examples of standards with calibration errors.

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

Wells conducts comparative certification, which does not fully meet the definition of calibration, therefore Wells has not conducted any calibration activities.

Audit commentary

Wells conducts comparative certification, which does not fully meet the definition of calibration, therefore Wells has not conducted any calibration activities.

Audit outcome

Not applicable

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

I checked whether Wells calibrates components in accordance with this clause.

Audit commentary

Wells does not calibrate components.

Audit outcome

Not applicable

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 checked the certification records for 76 metering installations to confirm compliance.

Audit commentary

Wells certifies data storage devices in accordance with these clauses. The certification report is combined with the metering installation certification report and contains the required details. Wells has confirmation from MEPs that type test reports are available and have been checked.

In the previous audit non-compliance was recorded for the certification of data storage devices when they do not comply with the Code for the ARC MEP. Wells has ceased certification of metering installations containing these devices.

Audit outcome

Compliant

4.13 Metering Component Stickers (Clause 8(1) and 8(4) 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.
If an ATH certifies the metering component on the same day it certifies the metering installation that the metering component is installed in, the ATH may combine the certification stickers and attach it to the metering installation in accordance with clause 41 of Schedule 10.7.

Audit observation

I checked Wells' component stickers to confirm compliance.

Audit commentary

All component stickers are compliant with this clause. I checked photos of 76 metering installations which confirmed they were correctly applied.

Wells has not used combined component and installation certification stickers.

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 Wells' component stickers to confirm compliance.

Audit commentary

All component stickers are compliant with this clause. I checked photos of 76 installations which confirmed they were correctly applied.

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 checked the quality documentation and a sample of 76 certification records to confirm compliance.

Audit commentary

The quality manual contains a section for the management and application of seals.

Individually numbered seals are available for use and there is a process for their application. The most common method is "wire and ferrule" with numbered sealing tools. During the audit it was confirmed that the sealing tool register is up to date. I checked the photos for 76 installations to confirm the correct application of seals. Compliance is confirmed.

When a seal is discovered to be broken or missing, there is a procedure to ensure the meter owner is notified. Wells records any seals they have broken as an ATH.

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

I checked a sample of 76 certification records to confirm compliance.

Audit commentary

Clause 31 of schedule 7 was changed from 1st February 2021 to require the ATH to ensure that the in-service burden is within the burden range of the measuring transformers. The code change was announced on 15th December 2021. Wells updated all its workflows to record the burden range prior to 1st February 2021. When certification jobs are received and created by Wells they are assigned to the latest version of workflow so the change was applied to all jobs received after the workflow changes were made. Due to the short timeframe to implement the change there were a number of jobs received prior to the workflow changes which were assigned to the previous version of the workflows. The recording of burden ranges is discussed in **section 5.67**.

My checks of 42 category 2 metering installation certification reports found six of the reports had in-service burden lower than the burden range of the CTs, the table below shows details of the six installations,

ICP	Job No	CT make & model	CT Ratio	Rated burden	Burden range VA	Lowest in-service burden	Burden resistors added
0000100483UNF01	4918017	Smith Hobson Ltd	800/5	10VA	2.5-10	1.67	Yes
0001417892UN20E	4918066	TWL-3.3	300/5	10VA	2.5-5	2	Yes
0000015643TR39C	4948489	TWS-EV84A	150/5	5VA	1.25-5	0.53	No
0001433456UN7AA	4952623	TWS-SEV86A	300/5	5VA	1.25-5	0.7	No
0000013613TCEFE	4951884	TWS-SEV86A	300/5	5VA	1.25-5	0.49	No
0120110022PNAAC	4959944	TWS-SEV86A	300/5	5VA	1.25-5	0.38	No

0000015643TR39C (Job No 4948489) had an absolute error and uncertainty test result of 1.54%, which included a known test equipment uncertainty of 0.34%. The meter is a Class 1 and the CTs are class 0.5, so this error means at least one of the components is operating outside its class,

when the certification tests were conducted, which does not comply with the Code. In the last audit it was recommended that Wells sets a pass/fail threshold for category 2 comparative testing which takes into account the class of the metering components. For example, with Class 1 meters and Class 0.5 CTs there should not be errors greater than 1.5%. Wells demonstrated that the workflows for category 2 comparative recertification have been updated in line with recommendation. The certification at ICP 0000015643TR39C was conducted prior to the workflows being updated.

Audit outcome

Non-compliant

Non-compliance	Description
Audit Ref: 5.1 With: Clause 8(1) Of Schedule 10.7 From: 01-Feb-21 To: 13-May-21	Six category 2 installations certified with in-service burden lower than the burden range of the CTs. ICP 0000015643TR39C had an absolute error and uncertainty test result of 1.54%, meaning at least one of the components is operating outside its class. Potential impact: Medium Actual impact: Medium Audit history: Twice Controls: Moderate Breach risk rating: 4
Audit risk rating	**Rationale for audit risk rating**
Medium	The controls are recorded as moderate because there is room for improvement in order to identify such situations. The impact on settlement could be moderate, and the impact on MEPs is moderate because certification is cancelled, leading to non-compliance for the MEP in addition to non-compliance for Wells; therefore, the audit risk rating is medium.

Actions taken to resolve the issue	Completion date	Remedial action status
Wells recognises and accepts the six sites identified during the audit have been certified with the in-service burden lower than the burden range of the CTs and as a result, the site certification is invalid and therefor cancelled. To remedy these sites, Wells will reattend and retest the sites, bring the burden up to within the acceptable range and then once all tests are complete, certify the sites.	30 June 2021	Identified
Preventative actions taken to ensure no further issues will occur	**Completion date**	
Wells will also carry out further investigation into CT Burdening with the manufacturer to address a possible ambiguity with the understanding of which CTs are recognised as having proven low burden accuracy.	30 June 2021	

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

I checked certification records for 76 metering installations to confirm compliance.

Audit commentary

All 76 certification reports had the metering category recorded correctly.

Audit outcome

Compliant

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

I checked the current suite of design reports and the certification records for 76 metering installations.

Audit commentary

Wells uses design reports modified in conjunction with MEPs. These reports contain all of the required information, including configuration schemes and schematic drawings. A design report reference was recorded in all of the 76 certification records checked.

Audit outcome

Compliant

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

I checked the current suite of design reports and the certification records for 76 metering installations.

Audit commentary

Wells uses design reports modified in conjunction with MEPs. These reports contain all of the required information, including configuration schemes and schematic drawings. A design report reference was recorded in all of the 76 certification records checked.

Audit outcome

Compliant

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

I checked the process for certification as a lower category and the certification records for five metering installations certified at a lower category.

Audit commentary

Two of the five certifications were of nominally category 3 installations certified at category 2 on the basis of there being protection installed which limits the maximum current to a level lower than 500 amps. As recorded in **section 3.10** the required details including reference to protection devices with current ratings were included in the certification reports. Details of the certifications are included in the table below:

ICP	Job No	CT Ratio	Nominal Category	Certified Category	Protection rating	MEP advised to monitor
0006533760RN189	4884676	1200/5	3	2	400 amps	Not required
0005895545RN5D5	4890638	1200/5	3	2	300 amps	Not required

Audit outcome

Compliant

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

I checked the process for certification as a lower category and the certification records for five metering installations certified at a lower category.

Audit commentary

Two of the five certifications were of nominally category 3 metering installations certified at category 2 on the basis of there being protection installed which limits the maximum current to a level lower than 500 amps. As recorded in **section 3.10** the required details including reference to protection devices with current ratings were included in the certification reports. Details of the certifications are included in the table below:

ICP	Job No	CT Ratio	Nominal Category	Certified Category	Protection rating	MEP advised to monitor
0006533760RN189	4884676	1200/5	3	2	400 amps	Not required
0005895545RN5D5	4890638	1200/5	3	2	300 amps	Not required

Audit outcome

Compliant

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

I checked the process for certification as a lower category and the certification records for five metering installations certified at a lower category.

Audit commentary

Three of the five certifications were of nominally category 3 metering installations certified at category 2. The metering installations were certified at a lower category on the basis that the expected load will be lower than 500 amps. Details of the certifications are included in the table below:

ICP	Job No	CT Ratio	Nominal Category	Certified Category	Protection rating	MEP advised to monitor
0000100483UNF01	4918017	800/5	3	2	Not recorded	No
0089205100PC544	4918086	800/5	3	2	Not recorded	No
0007067674RNDB4	4888194	1200/5	3	2	Not recorded	No

I have recorded non-compliance in **section 3.10** for these three metering installations as the certification reports did not include reference to the lower category certification or advice to the MEP of the requirement to monitor load to ensure the category limit is not exceeded.

Audit outcome

Compliant

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

I checked the process for certification as a lower category and the certification records for five metering installations certified at a lower category.

Audit commentary

In all five examples checked Wells visited the site at the time of certification and determined that the metering installations were suitable to be determined to be a lower category.

Audit outcome

Compliant

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

I checked certification records for 76 metering installations to confirm compliance.

Audit commentary

Wells uses the comparative recertification method of certification for recertification of Category 2 metering installations and the selected component method for new installations or where components are replaced.

Audit outcome

Compliant

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

I checked certification records for 76 metering installations to confirm compliance.

Audit commentary

Wells uses the comparative method of certification for recertification of category 2 metering installations and the selected component method for new installations or where components are replaced.
Wells has not conducted statistical sampling recertification during the audit period.

Audit outcome

Compliant

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

Wells has not conducted certification of installations above Category 2 during the audit period.

Audit commentary

Wells has not conducted certification of installations above Category 2 during the audit period.

Audit outcome

Compliant

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.

To carry out a raw meter data output test for a category 1 metering installation or category 2 metering installation, the ATH must apply a load on each phase that is:

- *greater than 5% of the meter's maximum rated current for category 1 installations,*
- *10 amps on each phase for category 2 metering installations.*

In addition, the ATH must use either the working standard referred to in subclause (1)(a) or an ammeter in good working order with an accuracy range of +/-5% to measure the load applied to the metering installation and recording the resulting increment of the meter register value over a measured period of time or recording the resulting accumulation of pulses from the load over a measured period of time.

The ATH must also ensure that the change in the meter register that occurs under subclause (ii)(A) or (ii)(B) is at least "1" in the least significant digit, or one mark if the least significant digit does not have numerical markings.

If the meter is a Ferraris disc meter, the ATH must undertake two raw meter data output tests in which the second test must have a load applied to the meter that is at least double the load applied in the first test.

To carry out a raw meter data output test for a half-hour installation, the ATH must either compare the output from a working standard to the raw meter data from the metering installation for a minimum of 1 trading period, or if the raw meter data is to be used for the purposes of Part 15, confirm that the MEP's back-office processes include a comparison of:

- *the increment of the accumulating meter registers, and*
- *the sum of the half-hour metering raw meter data for the same period..*

Audit observation

I checked process documentation and 76 certification reports to confirm compliance.

Audit commentary

This clause was changed from 1st February 2021 introducing minimum load requirements for ATHs when conducting raw meter data tests. The minimum load required on each phase is:

- greater than 5% of the meter's maximum rated current for category 1 installations,
- 10 amps on each phase for category 2 metering installations.

When conducting a raw meter data test the code change also requires the ATH to record either:

- the resulting increment of the meter register value over a measured period of time, or
- the resulting accumulation of pulses from the load over a measured period of time.

Prior to this change there was no specified minimum load requirement and the ATH was not required to record the increment of the meter register value or the resulting accumulation of pulses. All of the records checked were for certifications that took place after 1st February 2021.

The metering installation certification reports included details of the load at the time of the test, the resulting accumulation of pulses and time taken. The minimum load requirements were met for all raw meter data tests conducted.

The ATH must also ensure that the change in the meter register that occurs when conducting a raw meter data test is at least "1" in the least significant digit, or one mark if the least significant digit does not have numerical markings. Wells records the meter register advance in the metering installation certification report. My checks confirmed that in all but two of the reports checked the meter had advanced by at least "1" in the least significant digit. The two examples where the register had not advanced were Elster gRex meters owned by the Intellihub Limited MEP. These meters do not have any decimals places in the meter register, so the least significant digit is 1 kWh. Wells had previously been advised by Intellihub that the requirement to conduct a register advance test was met by confirming that the meter pulsed with the application of load. This meets the requirements for a register advance test both before and after the 1st February changes. It does not meet the requirement for the increment of the meter register whilst conducting the raw meter data test which was implemented on 1st February, I have therefore recorded non-compliance.

Raw meter data output tests for an HHR metering installation which are category 1 or category 2 must be conducted by either:

- comparing the output from a working standard to the raw meter data from the metering installation for a minimum of one trading period, or
- confirming that the metering equipment provider's back-office processes include a comparison of the difference in the increment of the meter registers to the half-hour metering raw meter data, if the raw meter data is to be used for the purposes of Part 15.

Wells compares the output from a working standard to the raw meter data from the metering installation for a minimum of one trading period for category 2 installations, the results are recorded in the metering installation certification report. For category 1 installations Wells has received confirmation from the MEP that the comparison occurs.

Prevailing load tests must be conducted on a metering installation or metering component by using a working standard connected to the metering installation. Wells has conducted prevailing load tests in accordance with this clause using a working standard when conducting category 2 certifications.

The design report reference is included in certification records and this serves the purpose of confirming the configuration scheme.

Audit outcome

Non-compliant

Non-compliance	Description
Audit Ref: 5.12 With: Clause 9(1) of Schedule 10.7 From: 01-Feb-21 To: 13-May-21	Meter register not incrementing when raw meter date tests conducted on Intellihub Elster gRex meters. Potential impact: None Actual impact: None Audit history: None Controls: Weak Breach risk rating: 3
Audit risk rating	**Rationale for audit risk rating**
Low	I have recorded the controls as weak with regard to these meter types as the process does not always ensure that the testing requirements are met. The requirement is met for all other MEPs. There is no impact as the MEP has confirmed that the meter register will increment when the meter pulses; therefore, the audit risk rating is low.

Actions taken to resolve the issue	Completion date	Remedial action status
This requirement has now been identified as having not been included in the workflows modified prior to the 1st Feb 2021 code changes. We accept that we have not been complying with this requirement where the EA had previously granted approval for certain meters (Elstra gREX owned by Intellihub) not need to have an 'actual' register advancement. The requirement to now carry out a text to ensure that the register has advanced by at least "1" in the least significant digit effectively means that this will be able to be achieved by undertaking the full register advancement check as is undertaken for other meters.	Completed	Cleared
Preventative actions taken to ensure no further issues will occur	**Completion date**	
The requirement to fulfill this has now been put into place.	Completed	

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

I checked process documentation and 76 certification reports to confirm compliance.

Audit commentary

Wells has a letter from relevant MEPs confirming that they have a back-office validation process.

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

I checked process documentation to confirm whether Wells conducts this test.

Audit commentary

Wells uses pulse outputs or meter registers for testing.

Audit outcome

Compliant

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

I checked process documentation and records for 76 metering installations to confirm compliance.

Audit commentary

The records checked confirmed that the test results were within the accuracy tolerances set out in Table 1 of Schedule 10.1.

Audit outcome

Compliant

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

I checked process documentation and records for 76 metering installations to confirm compliance.

Audit commentary

As recorded in **sections 5.1** and **5.40**, there were six metering installations that do not meet the requirements for certification because the in-service burden is lower than the burden range of the CTs. less than the lowest test point.

Section 5.1 records that ICP 0000015643TR39C (Job No 4948489) had an absolute error and uncertainty test result of 1.54%, which included a known test equipment uncertainty of 0.34%. The meter is a Class 1 and the CTs are class 0.5, so this error means at least one of the components is operating outside its class, which does not comply with the Code. In the last audit it was recommended that Wells sets a pass/fail threshold for category 2 comparative testing which takes into account the class of the metering components. For example, with Class 1 meters and Class 0.5 CTs there should not be errors greater than 1.5%. Wells demonstrated that the workflows for category 2 comparative recertification have been updated in line with recommendation. The certification at ICP 0000015643TR39C was conducted prior to the workflows being updated.

Audit outcome

Non-compliant

<table>
<tr><th>Non-compliance</th><th colspan="3">Description</th></tr>
<tr><td>Audit Ref: 5.16
With: Clause 10(1) & (2) of Schedule 10.7

From: 01-Feb-21
To: 13-May-21</td><td colspan="3">Six category 2 installations certified with in-service burden lower than the burden range of the CTs.
ICP 0000015643TR39C had an absolute error and uncertainty test result of 1.54%, meaning at least one of the components is operating outside its class.
Potential impact: Medium
Actual impact: Medium
Audit history: Three times
Controls: Weak
Breach risk rating: 6</td></tr>
<tr><th>Audit risk rating</th><th colspan="3">Rationale for audit risk rating</th></tr>
<tr><td>Medium</td><td colspan="3">The controls are recorded as weak because they do not always identify instances of non-compliance prior to certification being applied.
Certification is cancelled for these installations which impacts on the compliance of the MEPs; therefore, the audit risk rating is medium.</td></tr>
<tr><th colspan="2">Actions taken to resolve the issue</th><th>Completion date</th><th>Remedial action status</th></tr>
<tr><td colspan="2">Wells recognises and accepts the six sites identified during the audit have been certified with the in-service burden lower than the burden range of the CTs and as a result, the site certification is invalid and therefor cancelled.
To remedy these sites, Wells will reattend and retest the sites, bring the burden up to within the acceptable range and then once all tests are complete, certify the sites.</td><td>30 June 2021</td><td rowspan="2">Identified</td></tr>
<tr><th colspan="2">Preventative actions taken to ensure no further issues will occur</th><th>Completion date</th></tr>
</table>

Wells will also carry out further investigation into CT Burdening with the manufacturer to address a possible ambiguity with the understanding of which CTs are recognised as having proven low burden accuracy.	30 June 2021	

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

I checked process documentation and records for 47 metering installations to confirm compliance.

Audit commentary

The process documentation is clear, and all selected component certification reports were compliant.

Audit outcome

Compliant

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

I checked process documentation and records for 47 metering installations to confirm compliance.

Audit commentary

Wells provided certification reports for 47 installations certified using the selected component method. 45 of the certification reports confirmed that all of the above requirements were met.

There were two examples where all the required tests in Table 3 of Schedule 10.1 were not completed.

- ICP 1000020768BPF14 (Job No 4957863) is a category 1 installation with 3 meters. Wells replaced one of the meters and completed the required tests for the replaced meter. Tests were not completed on the other two meters in the metering installation.
- ICP 0157795004LCB80 (Job No 4953127). Wells went to site to reseal and recertify the category 1 metering installation. The metering installation certification report states that the metering installation was recertified on 5 February 2021 and included photos of new certification stickers.

I have recorded non-compliance as the tests were not completed.

Audit outcome

Non-compliant

<table>
<tr><th>Non-compliance</th><th colspan="3">Description</th></tr>
<tr><td>Audit Ref: 5.18
With: Clause 11(4) of Schedule 10.7

From: 03-Feb-21
To: 13-May-21</td><td colspan="3">Certification tests not completed at two metering installations certified using the selected component method.

Potential impact: Low
Actual impact: Low
Audit history: None
Controls: Moderate
Breach risk rating: 2</td></tr>
<tr><th>Audit risk rating</th><th colspan="3">Rationale for audit risk rating</th></tr>
<tr><td>Low</td><td colspan="3">The controls are recorded as moderate because certification tests are completed in most cases.
The impact is likely to be low as certification tests had been carried out on the meters during previous certifications; therefore, the audit risk rating is low.</td></tr>
<tr><th colspan="2">Actions taken to resolve the issue</th><th>Completion date</th><th>Remedial action status</th></tr>
<tr><td colspan="2">1) Wells acknowledges that the testing of the existing meters did not occur as it seems to be now required and will revisit the installation and carry out the require testing on all meters.
2) Wells acknowledges that in following the MEP's clear instructions it failed to carry out the testing required. Once clarification has been provided as to whether a prevailing load test, as now stipulated in Table 3, or raw meter data output tests are required Wells will revisit the installation and carry out the required testing.</td><td>30th June 2021

Within 10 days of clarification of requirements is received.</td><td rowspan="3">Identified</td></tr>
<tr><th colspan="2">Preventative actions taken to ensure no further issues will occur</th><th>Completion date</th></tr>
<tr><td colspan="2">1) Provide further clarification and training throughout Wells as to what is now required.
2) Provide clarification as to what is required once this has been received and, should a Prevailing Load Test be required, then propose to the MEP that it will be preferable to change the meters rather than carrying out the new requirements on a 'recertify and reseal" task</td><td>30th June 2021

Within 10 days of clarification of requirements is received.</td></tr>
</table>

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

I checked process documentation and records for 29 metering installations to confirm compliance.

Audit commentary

The process documentation is clear, and the metering installation certification reports for 28 of the 29 records contained confirmation the meter was replaced by another certified meter and the certification of the current transformers in the metering installation expired before the meter certification expiry date.

The certification report for ICP 1099580601CN3F0 (Job No 4950437) stated that the certification was carried out using the comparative recertification method on 10th February 2021. The existing meter and current transformers were not replaced. The registry information shows that the existing meter and current transformers were first installed and certified on the initial electrical connection date of 25th January 2021 and both had the expiry date of 25th January 2031. Whilst the registry information correctly records that the meters and current transformers were installed on 25th January 2021, the initial installation certification was not done by the Wells ATH as recorded in the registry.

Audit outcome

Non-compliant

Non-compliance	Description
Audit Ref: 5.19 With: Clause 12(2) of Schedule 10.7 From: 10-Feb-21 To: 13-May-21	Incorrect use of comparative recertification method for one installation. Potential impact: Low Actual impact: Low Audit history: None Controls: Moderate Breach risk rating: 2
Audit risk rating	**Rationale for audit risk rating**
Low	I have recorded the controls as moderate because there is room for improvement. There is no impact on the accuracy of the metering installation; therefore, the audit risk rating is low.

Actions taken to resolve the issue	Completion date	Remedial action status
NB: The installation had not been previously certified by Wells or any other ATH as has been claimed by the MEP. The Certification Documentation will be updated, and the MEP will be requested to change the Certification expirer date till 10 years after the Electrical Connection of the installation (from 25th Jan 2020)	11 June 2021	Identified
Preventative actions taken to ensure no further issues will occur	**Completion date**	

Cease undertaking Cat 2 Metering tasks for this MEP until assurances are received that they will provide accurate information and fully conform to the EIPC requirements when requesting that Wells undertake metering tasks for them.	4th June 2021	

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

I checked process documentation and records for 29 metering installations to confirm compliance.

Audit commentary

The certification reports confirmed that appropriate testing was conducted and that the total accuracy was within the requirements of table 1. A certification report was provided for each metering installation.

Audit outcome

Compliant

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

Wells does not conduct certification under this clause.

Audit commentary

Wells does not conduct certification under this clause.

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

Wells does not conduct certification under this clause.

Audit commentary

Wells does not conduct certification under this clause.

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

Wells does not conduct certification under this clause.

Audit commentary

Wells does not conduct certification under this clause.

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

Wells does not conduct certification under this clause.

Audit commentary

Wells does not conduct certification under this clause.

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 increments 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

Wells has not conducted insufficient load certification.

Audit commentary

Wells has not conducted insufficient load certification. The Wells process requires technicians to add load to ensure testing can be conducted.

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

Wells has not conducted statistical certification.

Audit commentary

Wells has not conducted statistical certification.

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

Wells has not conducted statistical certification.

Audit commentary

Wells has not conducted statistical certification.

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

I checked 76 metering installation certification records to confirm compliance.

Audit commentary

The commissioning date and expiry date is calculated and recorded correctly in the metering installation certification reports for 75 of the 76 installations.

There was one category 2 installation certified for the Counties MEP with incorrect certification expiry dates. The registry information shows that this installation had been previously certified by another ATH. Wells certified the installation and applied new certification validity periods and expiry dates to the existing metering components and installation. Details of this installation are as follows:

ICP	Job No	Initial installation and certification date	Initial expiry date	Wells certification date	New expiry date
1099580601CN3F0	4950437	25/01/2021	25/01/2031	10/02/2021	10/02/2031

Whilst the registry information correctly records that the meters and current transformers were installed on 25th January 2021, the initial installation certification was not done by the Wells ATH as recorded in the registry, the ATH has been incorrectly recorded by the MEP.

Audit outcome

Non-compliant

Non-compliance	Description

Audit Ref: 5.28 With: Clause 17 of Schedule 10.7 From: 10-Feb-21 To: 13-May-21	Certification expiry date incorrectly calculated for one category 2 metering installation. Potential impact: Low Actual impact: Low Audit history: Once Controls: Moderate Breach risk rating: 2

Audit risk rating	Rationale for audit risk rating
Low	I have recorded the controls as moderate because there is room for improvement. There is no impact on the accuracy of the metering installation; therefore, the audit risk rating is low.

Actions taken to resolve the issue	Completion date	Remedial action status
NB: The installation had not been previously certified by Wells or any other ATH contrary to what the MEP may have claimed. The Certification Documentation will be updated, and the MEP will be requested to change the Certification expiry date till 10 years after the Electrical Connection of the installation (from) 25th Jan 2020).	11th June 2021	Identified
Preventative actions taken to ensure no further issues will occur	**Completion date**	
Cease undertaking Cat 2 Metering tasks for this MEP until assurances are received that they will provide accurate information and fully conform to the EIPC requirements when requesting that Wells undertake metering tasks for them.	4th June 2021	

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

I checked 76 metering installation certification records to confirm compliance.

Audit commentary

The Wells comparative recertification workflows ensure that installations are not certified if the uncertainty is greater than 0.6% or the overall error and uncertainty exceeds the requirements of Table 1 of Schedule 10.1. The error and uncertainty is recorded on the certification reports.

The error and uncertainty processes are discussed in more detail in **section 5.30**.

Audit outcome

Compliant

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

I checked 19 metering installation certification records and discussed the process for error calculation.

Audit commentary

Wells conducts comparative recertification tests using a working standard as required by this clause. The error and uncertainty results are recorded in the metering installation certification report. The workflow prevents the technician from completing certification if the uncertainty is greater than 0.6%.

Wells has considered the sources of uncertainty and included the influence of ambient temperature on the accuracy of the Hioki working standard. Ambient temperature is measured and recorded by the technician on-site. The uncertainty calculation includes an allowance based on the difference between the calibrated temperature of the working standard to the ambient temperature based on the temperature drift specification of the device. This influence is also added as an absolute figure to the overall error measurement. It appears that the influence of the ambient temperature is being applied twice. I repeat the recommendation from the last audit that Wells review the application of the ambient temperature influence to determine if the adjustment of the overall error figure is necessary.

The comparative recertification process includes a comparison between the meter register and the Hioki working standard. The technician starts and stops the Hioki by pushing a button when the least significant digit on the meter registers advances. The uncertainty process does not include any potential error introduced by the reaction time of the technician when pushing the button. I repeat the recommendation from the previous audit that Wells investigate the possibility of using pulses from the meter or determine and add an allowance in the uncertainty calculation for the influence of the reaction time.

Wells has done some investigations into the two recommendations and is seeking advice from MSL.

Recommendation	Description	Audited party comment	Remedial action

Regarding 22 of Schedule 10.7	Regarding the comparative recertification error and uncertainty calculation process - review the application of the ambient temperature influence to determine if the adjustment of the overall error figure is necessary.	Wells are undertaking an investigation into this.	Investigating

Recommendation	Description	Audited party comment	Remedial action
Regarding 22 of Schedule 10.7	Regarding the comparative recertification error and uncertainty calculation process - investigate the possibility of using pulses from the meter or determine and add an allowance in the uncertainty calculation for the influence of the reaction time.	Wells are undertaking an investigation into this.	Investigating

Audit outcome

Compliant

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

I checked 76 metering installation certification records, and process documentation.

Audit commentary

Wells has a documented process for the management of compensation factors (multipliers). The testing procedures provide confirmation of the multiplier and CT ratio, the multiplier is recorded on the metering installation certification report. Wells only deals with multipliers, not loss or error compensation factors.

Audit outcome

Compliant

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

I checked 76 metering installation certification records, and process documentation.

Audit commentary

Wells has a documented process for the management of compensation factors (multipliers). The testing procedures provide confirmation of the multiplier and CT ratio, the multiplier is recorded on the metering installation certification report. Wells only deals with multipliers, not loss or error compensation factors.

Audit outcome

Compliant

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

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

Audit commentary

This clause is designed to allow switchboard manufacturers to install measuring transformers in switchboards at the time of manufacture. This clause does not allow the installation of meters or data loggers. Wells has a documented process to ensure compliance with this clause. There were no specific examples to examine during the audit.

Audit outcome

Compliant

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

I checked 76 certification records to confirm compliance.

Audit commentary

The commissioning date and expiry date is calculated and recorded correctly in the metering installation certification reports for 75 of the 76 installations.

There was one category 2 installation certified for the Counties MEP with incorrect certification expiry dates. The registry information shows that this installation had been previously certified by another ATH. Wells certified the installation and applied new certification validity periods and expiry dates to the existing metering components and installation. Details of this installation are as follows:

ICP	Job No	Initial installation and certification date	Initial expiry date	Wells certification date	New expiry date
1099580601CN3F0	4950437	25/01/2021	25/01/2031	10/02/2021	10/02/2031

Whilst the registry information correctly records that the meters and current transformers were installed on 25th January 2021, the initial installation certification was not done by the Wells ATH as recorded in the registry, the ATH has been incorrectly recorded by the MEP.

Audit outcome

Non-compliant

Non-compliance	Description
Audit Ref: 5.34 With: Clause 27(1) & (2) Of Schedule 10.7 From: 10-Feb-21 To: 13-May-21	Certification expiry date incorrectly calculated for one category 2 metering installation. Potential impact: Low Actual impact: Low Audit history: Once Controls: Moderate Breach risk rating: 2
Audit risk rating	**Rationale for audit risk rating**
Low	I have recorded the controls as moderate because there is room for improvement. There is no impact on the accuracy of the metering installation; therefore, the audit risk rating is low.

Actions taken to resolve the issue	Completion date	Remedial action status
NB: The installation had not been previously certified by Wells or any other ATH contrary to what the MEP may have claimed. The Certification Documentation will be updated, and the MEP will be requested to change the Certification expirer date till 10 years after the Electrical Connection of the installation (from the 25th Jan 2020).	11th June 2021	Identified
Preventative actions taken to ensure no further issues will occur	**Completion date**	

Cease undertaking Cat 2 Metering tasks for this MEP until assurances are received that they will provide accurate information and fully conform to the EIPC requirements when requesting that Wells undertake metering tasks for them.	4th June 2021	

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

Code related audit information

If a 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

I checked 76 certification records to confirm compliance.

Audit commentary

Wells understands the requirements of this clause and ensures that all meters are certified at the time of installation.

Audit outcome

Compliant

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

I checked 42 certification records to confirm compliance.

Audit commentary

All of the installations had measuring transformers that had been certified.

Audit outcome

Compliant

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 maximum permitted error is calculated in accordance with clause 22 for the fully calibrated certification method or the comparative recertification method

- 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 in-service burden (magnitude and phase angle, where appropriate), complies with clause 31.

Audit observation

I checked 42 certification records, and process documentation to confirm compliance.

Audit commentary

The certification reports and process documentation confirmed compliance with regard to all of the above points with the exception of the total in-service burden requirements. Clause 31 of schedule 7 was changed from 1st February 2021 to require the ATH to ensure that the in-service burden is within the burden range of the measuring transformers. The code change was announced on 15th December 2021. Wells updated all its workflows to record the burden range prior to 1st February 2021. When certification jobs are received and created by Wells they are assigned to the latest version of workflow so the change was applied to all jobs received after the workflow changes were made. Due to the short timeframe to implement the change there were a number of jobs received prior to the workflow changes which were assigned to the previous version of the workflows. The recording of burden ranges is discussed in **section 5.67**.

My checks of 42 category 2 metering installation certification reports found six of the reports had in-service burden lower than the burden range of the CTs, the table below shows details of the six installations:

ICP	Job No	CT make & model	CT Ratio	Rated burden	Burden range VA	Lowest in-service burden	Burden resistors added
0000100483UNF01	4918017	Smith Hobson Ltd	800/5	10VA	2.5-10	1.67	Yes
0001417892UN20E	4918066	TWL-3.3	300/5	10VA	2.5-5	2	Yes
0000015643TR39C	4948489	TWS-EV84A	150/5	5VA	1.25-5	0.53	No
0001433456UN7AA	4952623	TWS-SEV86A	300/5	5VA	1.25-5	0.7	No
0000013613TCEFE	4951884	TWS-SEV86A	300/5	5VA	1.25-5	0.49	No
0120110022PNAAC	4959944	TWS-SEV86A	300/5	5VA	1.25-5	0.38	No

Wells has implemented a process for the addition of burden, but it has not been applied to all installations. In two of the examples above the burden resistors added were not sufficient to ensure the in-service burden was within the burden range of the CTs.

Audit outcome

Non-compliant

Non-compliance	Description

Audit Ref: 5.37 With: Clause 28(4) Of Schedule 10.7 From: 10-Feb-21 To: 13-May-21	Six category 2 installations certified with in-service burden lower than the burden range of the CTs. Potential impact: Low Actual impact: Low Audit history: None Controls: Moderate Breach risk rating: 2

Audit risk rating	Rationale for audit risk rating
Low	There is a process to install burden resistors, but it is not applied to all current transformers therefore the controls are moderate. The impact on settlement is likely to be minor because the overall error of the installations is measured and recorded.

Actions taken to resolve the issue	Completion date	Remedial action status
Wells recognises and accepts the six sites identified during the audit have been certified with the in-service burden lower than the burden range of the CTs and as a result, the site certification is invalid and therefor cancelled. To remedy these sites, Wells will reattend and retest the sites, bring the burden up to within the acceptable range and then once all tests are complete, certify the sites.	30th June 2021	Identified
Preventative actions taken to ensure no further issues will occur	**Completion date**	
Wells will also carry out further investigation into CT Burdening with the manufacturer to address a possible ambiguity with the understanding of which CTs are recognised as having proven low burden accuracy.	30th June 2021	

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

I checked 14 category 2 selected component certification records to confirm compliance.

Audit commentary

The current transformer certification expiry date is calculated and recorded correctly in the metering installation certification reports for 13 of the 14 installations.

There was one category 2 installation certified for the Counties MEP with incorrect current transformer certification expiry dates. The registry information shows that this installation had been previously

certified by another ATH. Wells certified these installations and applied new certification validity periods and expiry dates to the existing metering components and installations. Details of this installation are as follows:

ICP	Job No	Initial installation and certification date	Initial expiry date	Wells certification date	New expiry date
1099580601CN3F0	4950437	25/01/2021	25/01/2031	10/02/2021	10/02/2031

Whilst the registry information correctly records that the meters and current transformers were installed on 25th January 2021, the initial installation certification was not done by the Wells ATH as recorded in the registry, the ATH has been incorrectly recorded by the MEP.

Audit outcome

Non-compliant

Non-compliance	Description
Audit Ref: 5.38 With: Clause 29 of Schedule 10.7 From: 10-Feb-21 To: 13-May-21	CT certification expiry dates incorrectly calculated for one category 2 metering installation. Potential impact: Low Actual impact: Low Audit history: Once Controls: Moderate Breach risk rating: 2
Audit risk rating	**Rationale for audit risk rating**
Low	I have recorded the controls as moderate because there is room for improvement. There is no impact on the accuracy of the metering installation; therefore, the audit risk rating is low.

Actions taken to resolve the issue	Completion date	Remedial action status
NB: The installation had not been previously certified by Wells or any other ATH as has been claimed by the MEP. The Certification Documentation will be updated, and the MEP will be requested to change the Certification expirer date till 10 years after the Electrical Connection of the installation (from the 25th Jan 2020).	11th June 2021	Identified
Preventative actions taken to ensure no further issues will occur	**Completion date**	
Cease undertaking Cat 2 Metering tasks for this MEP until assurances are received that they will provide accurate information and fully conform to the EIPC requirements when requesting that Wells undertake metering tasks for them.	4th June 2021	

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

I checked whether the situation arises where other equipment is connected to measuring transformers.

Audit commentary

This scenario is not likely to occur with the scope of the Wells ATH operation, and no examples were available to review.

Audit outcome

Compliant

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 metering installation incorporating a measuring transformer:

- *ensure that the in-service burden does not exceed the upper limit of the range specified for the measuring transformer, if specified in the design report for the metering installation.*
- *ensure that the in-service burden on the measuring transformer is within the range specified in the certification report by installing burdening resistors if necessary,*
- *confirm that a class A ATH has confirmed by calibration that the accuracy of the measuring transformer will not be adversely affect by the in-service burden being less than the lowest burden test point specified in the standard, if the primary voltage of the measuring transformer is greater than 1kV,*

- *confirm that the measuring transformer's manufacturer has confirmed that the accuracy of the measuring transformer will not be adversely affected by the in-service burden being less than the lowest burden test point specified in the standard.*

Audit observation

I checked processes and the records for 42 category 2 metering installations to confirm compliance.

Audit commentary

The certification reports and process documentation confirmed compliance with regard to all of the above points with the exception of the total in-service burden requirements. Clause 31 of schedule 7 was changed from 1st February 2021 to require the ATH to ensure that the in-service burden is within the burden range of the measuring transformers. The code change was announced on 15th December 2021. Wells updated all its workflows to record the burden range prior to 1st February 2021. When certification jobs are received and created by Wells they are assigned to the latest version of workflow so the change was applied to all jobs received after the workflow changes were made. Due to the short timeframe to implement the change there were a number of jobs received prior to the workflow changes which were assigned to the previous version of the workflows. The recording of burden ranges is discussed in **section 5.67**.

My checks of 42 category 2 metering installation certification reports found six of the reports had in-service burden lower than the burden range of the CTs, the table below shows details of the six installations,

ICP	Job No	CT make & model	CT Ratio	Rated burden	Burden range VA	Lowest in-service burden	Burden resistors added
0000100483UNF01	4918017	Smith Hobson Ltd	800/5	10VA	2.5-10	1.67	Yes
0001417892UN20E	4918066	TWL-3.3	300/5	10VA	2.5-5	2	Yes
0000015643TR39C	4948489	TWS-EV84A	150/5	5VA	1.25-5	0.53	No
0001433456UN7AA	4952623	TWS-SEV86A	300/5	5VA	1.25-5	0.7	No
0000013613TCEFE	4951884	TWS-SEV86A	300/5	5VA	1.25-5	0.49	No
0120110022PNAAC	4959944	TWS-SEV86A	300/5	5VA	1.25-5	0.38	No

Wells has implemented a process for the addition of burden, but it has not been applied to all installations. In two of the examples above the burden resistors added were not sufficient to ensure the in-service burden was within the burden range of the CTs.

Audit outcome

Non-compliant

Non-compliance	Description
Audit Ref: 5.40 With: Clause 31 Of Schedule 10.7 From: 10-Feb-21 To: 13-May-21	Six category 2 installations certified with in-service burden lower than the burden range of the CTs. Potential impact: Low Actual impact: Low Audit history: Three times Controls: Moderate Breach risk rating: 2

Audit risk rating	Rationale for audit risk rating
Low	There is a process to install burden resistors, but it is not applied to all current transformers therefore the controls are moderate. The impact on settlement is likely to be minor because the overall error of the installations is measured and recorded.

Actions taken to resolve the issue	Completion date	Remedial action status
Wells recognises and accepts the six sites identified during the audit have been certified with the in-service burden lower than the burden range of the CTs and as a result, the site certification is invalid and therefor cancelled. To remedy these sites, Wells will reattend and retest the sites, bring the burden up to within the acceptable range and then once all tests are complete, certify the sites.	30th June 2021	Identified
Preventative actions taken to ensure no further issues will occur	**Completion date**	
Wells will also carry out further investigation into CT Burdening with the manufacturer to address a possible ambiguity with the understanding of which CTs are recognised as having proven low burden accuracy.	30th June 2021	

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

I checked the process documentation and whether any examples had occurred.

Audit commentary

Wells has not applied alternative certification, but the process documentation is compliant.

Audit outcome

Compliant

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

I checked certification records for 12 metering installations to confirm compliance.

Audit commentary

Wells is certifying control devices and correctly applying stickers. The control device certification expiry date is correctly recorded in the installation certification report. MEPs have stated in writing that there are no signal propagation issues they are aware of.

All points above are met.

Audit outcome

Compliant

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

I checked correspondence in relation to this matter to determine compliance.

Audit commentary

Wells has appropriate fields in the metering installation certification report to confirm compliance with this clause. Wells checked with all MEPs whether there were any known control signal issues they needed to be aware of, and it was confirmed there were no areas in this category.

Audit outcome

Compliant

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

I checked processes and the records for 74 metering installations to confirm compliance.

Audit commentary

All data storage devices are recertified prior to being reinstalled.

Audit outcome

Compliant

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

I checked the availability of type test reports, and processes for determining environmental suitability.

Audit commentary

The points above, apart from point “d” are documented in the type test report, which is checked as part of the certification process for the data storage device. Wells is ensuring data storage devices are certified and the maximum interrogation cycle is recorded.

In the previous audit non-compliance was recorded for the certification of data storage devices when they do not comply with the Code for the ARC MEP. Wells has ceased certification of metering installations containing these devices.

Audit outcome

Compliant

5.46 Location of Metering Installation Certification Stickers (Clause 41(1) and 41(9) 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.
When attaching a metering installation certification sticker, the ATH must remove or obscure any invalid or expired certification stickers.

Audit observation

I checked the photos for 76 metering installations to confirm compliance.

Audit commentary

In all cases, the certification stickers contained the appropriate detail and were correctly applied. Old certification stickers are either removed or obscured.

Audit outcome

Compliant

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

I checked with Wells whether this scenario had arisen.

Audit commentary

This scenario has not arisen and is unlikely to arise.

Audit outcome

Compliant

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

I checked the photos for 76 metering installations to confirm compliance.

Audit commentary

In all cases, the certification stickers contained the appropriate detail and were correctly applied.

Audit outcome

Compliant

5.49 Combining certification stickers (Clause 41(5) – Clause 41(8) of Schedule 10.7)

Code related audit information

If an ATH certifies a metering component on the same day that the ATH certifies the metering installation, the ATH may combine the metering installation certification sticker with the metering component certification sticker.
If the certification sticker is combined, the ATH must:

- *ensure that the combined sticker shows all the information required by subclause (2) and clause 8(2) of Schedule 10.8,*
- *meet the requirements of subclauses (1), (3) and (4), as if the combined sticker were a metering installation certification sticker.*

The combined sticker is immediately invalid if:

- *the metering installation certification expiry date changes; or*
- *a metering component to which the combined certification sticker relates is removed from the metering installation.*

Audit observation

Wells has not used a combined metering installation and component sticker.

Audit commentary

Wells has not used a combined metering installation and component sticker.

Audit outcome

Compliant

5.50 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

I checked the photos for 76 metering installations to confirm compliance.

Audit commentary

Although this clause only refers to enclosures other than the metering enclosure, I have considered this clause to apply to metering enclosures as well.

The photos for 76 metering installations showed that all enclosures were appropriate for the environment, and the Wells certification sticker has an appropriate warning. Wells reviews photos of all installations to confirm enclosure suitability.

Wells has developed and implemented the use of a separate sticker for CT chambers. This was recommended in the last audit.

Audit outcome

Compliant

5.51 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

I checked the processes for storage of components, and the records for 38 metering installations to confirm compliance.

Audit commentary

As mentioned in earlier sections, Wells has ensured each metering component is certified prior to certification of metering installations.

Wells has appropriate arrangements for storage and transportation, and they have letters on file from MEPs confirming that storage and transportation arrangements are appropriate from the factory to Wells.

Audit outcome

Compliant

5.52 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

I checked process documentation, design reports and the photos for 76 metering installations to confirm compliance.

Audit commentary

The process documentation, design reports and the photos for 76 metering installations confirm compliance.

Audit outcome

Compliant

5.53 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

I checked process documentation, design reports and the photos for 76 metering installations to confirm compliance.

Audit commentary

The process documentation, design reports and the photos for 76 metering installations confirm compliance. The warning label is installed in a prominent position.

Audit outcome

Compliant

5.54 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, design reports and the photos for 76 metering installations to confirm compliance.

Audit commentary

The process documentation, design reports and the photos for 76 metering installations confirm compliance. The certification records contain the relevant details required by this clause.

Audit outcome

Compliant

5.55 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

I checked the process documentation to confirm compliance.

Audit commentary

When a seal is discovered to be broken or missing there is a procedure to ensure the MEP is notified. Wells also has a procedure and instruction to notify the MEP if any issues are present due to broken or damaged seals. Wells records any seals they have broken as an ATH.

Audit outcome

Compliant

5.56 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 1 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

I checked process documentation, design reports and the photos for 76 metering installations to confirm compliance.

Audit commentary

The process documentation, design reports and the photos for 76 metering installations confirm compliance.

Audit outcome

Compliant

5.57 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

I checked process documentation, design reports and the photos for 42 category 2 metering installations to confirm compliance.

Audit commentary

The checks demonstrated compliance with this requirement.

Audit outcome

Compliant

5.58 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

I checked process documentation, design reports and 76 certification reports to confirm compliance.

Audit commentary

All certified components have calibration reports and stickers.

Audit outcome

Compliant

5.59 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

I checked process documentation, design reports and 76 certification reports to confirm compliance.

Audit commentary

All certified components have calibration reports and stickers.

Audit outcome

Compliant

5.60 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

The Wells Class B ATH does not calibrate components.

Audit commentary

The Wells Class B ATH does not calibrate components.

Audit outcome

Not applicable

5.61 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

The Wells Class B ATH does not calibrate components.

Audit commentary

The Wells Class B ATH does not calibrate components.

Audit outcome

Not applicable

5.62 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

The Wells Class B ATH does not calibrate components.

Audit commentary

The Wells Class B ATH does not calibrate components.

Audit outcome

Not applicable

5.63 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

The Wells Class B ATH does not calibrate components.

Audit commentary

The Wells Class B ATH does not calibrate components.

Audit outcome

Not applicable

5.64 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

I checked the certification records for 76 metering installations to confirm compliance.

Audit commentary

My checks of 76 certification records confirmed that all meters were certified. Wells provided calibration reports for the meters certified in each certification record. I checked a folder containing copies of type test certificates for each meter type.

Audit outcome

Compliant

5.65 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

I checked processes and the records for 76 metering installations to confirm compliance.

Audit commentary

Wells ensures that all meters are calibrated by a class A ATH prior to being reinstalled.

Audit outcome

Compliant

5.66 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

Wells certifies CTs based on calibration reports provided by a Class A ATH.

Audit commentary

Wells certifies CTs based on calibration reports provided by a Class A ATH, which covers the points raised above.

Audit outcome

Compliant

5.67 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 range that the in-service burden must be within
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

I checked the Wells processes for certification of current transformers and the certification records for 42 category 2 metering installations.

Audit commentary

When conducting selected component certification of category 2 metering installations Wells certifies the CTs based on calibration reports provided by a Class A ATH, which covers the points raised above. This clause was changed from 1st February 2021 to require the ATH to record the burden range of the measuring transformers in the transformer certification report. The code change was announced on 15th December 2021. Wells updated all its workflows to record the burden range prior to 1st February 2021. When certification jobs are received and created by Wells they are assigned to the latest version of workflow so the change was applied to all jobs received after the workflow changes were made. Due to the short timeframe to implement the change there were a number of jobs received prior to the workflow changes which were assigned to the previous version of the workflows. Of the 14 category 2 selected component certification records checked, two did not have burden ranges recorded in the certification reports. These were jobs received prior to the workflow changes being implemented.
Of the 12 certification reports with burden ranges recorded, three were recorded correctly and nine were recorded incorrectly. Details of the CTs and burden ranges are shown in the table below:

ICP	Job No	CT make & model	CT Ratio	Rated burden	Recorded burden range VA	Correct burden range VA
0001410819UNDF0	4954366	TWS-EV86A	300/5	5VA	0-5	1.25-5
1099578278CNC61	4962431	TWS-SEW29	500/5	5VA	1.25-5	0-5
0000013613TCEFE	4951884	TWS-SEV86A	300/5	5VA	1.25-5	1.25-5
0000010080TC93F	4957748	TWS-SEW29	500/5	5VA	0-5	0-5
0120110022PNAAC	4959944	TWS-SEV86A	300/5	5VA	1.25-5	1.25-5
0007401166TUA49	4949966	TWS-SEW29	500/5	5VA	None	0-5
0007200063RN235	4955158	TWS-SEW34A	500/5	5VA	1.25-5	0-5
0000511870DED2B	4956020	TWS-SEW34A	500/5	5VA	1.0-5	0-5
0007199593RN0F7	4960938	TWS-SEW29	500/5	5VA	1.25-5	0-5
0007200020RNC50	4960939	TWS-SEW29	500/5	5VA	1.25-5	0-5
0007200625RN719	4963125	TWS-SEW29	500/5	5VA	1.25-5	0-5
0000564444WT4A8	4951791	TWS-SEW29	500/5	5VA	1.25-5	0-5
0007199464RN42E	4946281	TWS-SEW34A	500/5	5VA	None	0-5
0007199738RNC3B	4954238	TWS-SEW29	500/5	5VA	1.25-5	0-5

The TWS 500/5 CTs have been confirmed to be accurate below the lowest test point by the manufacturer so should be certified with a burden range of 0 to 5 VA.
The TWS 300/5 CTs have not been confirmed as accurate at in-service burdens below the lowest burden test point of 25% of the rated burden. Therefore, the burden range can only be determined as being between 25% and 100% of rated burden.

I have recorded non-compliance for the nine incorrect burden ranges and two unrecorded burden ranges.

In the last audit it was recorded that when conducting comparative recertification of category 2 installations Wells records that the CTs have been certified and applies certification stickers for the CTs. Wells has recently amended its processes to not certify existing CTs under comparative recertification. My checks found that there were seven category 2 installations where the CTs were certified during comparative recertification. I have recorded non-compliance as the CTs are certified without calibration being carried out.

Audit outcome

Non-compliant

Non-compliance	Description
Audit Ref: 5.67 With: Clause 3 of Schedule 10.8 From: 01-Feb-21 To: 13-May-21	Burden range not recorded in CT certification reports for two metering installations. Incorrect burden ranges recorded for nine category 2 metering installations. Seven category 2 metering installations with CTs certified without calibration being carried out. Potential impact: Low Actual impact: Low Audit history: Once Controls: Moderate Breach risk rating: 2
Audit risk rating	**Rationale for audit risk rating**
Low	I have recorded that the controls are moderate as Wells has updated it's processes to record burden ranges but the range is not always correct, the process to certify CTs during comparative recertification has been amended recently. The impact on settlement and participants is minor; therefore, the audit risk rating is low.

Actions taken to resolve the issue	Completion date	Remedial action status

1) The Burden range will be recorded and provided to the MEP for the two installations which this did not occur. 2) The recorded burden range will be corrected, and the corrected data supplied to the MEP for the eight installations with TWS 500/5 CTs to 0-5 VA. The Installation with the TWS 300/5 CTs which falls outside of the acceptable range will be revisited, tested and the required burdening resisters installed as appropriate to meet the audited outcome. 3) Wells will look to further highlight the fact that when undertaking Comparative Recertification CT's are not necessarily certified and should not have a certification sticker applied when undertaking such recertification.	4th June 2020 0001410819UNDF0 Recertified 30th June 2020	Identified
Preventative actions taken to ensure no further issues will occur	**Completion date**	
1) Wells will carry out further training to ensure that all Cat 2 and above technicians are aware of the need to input the Recorded Burden Range. 2) Wells will carry out further training to ensure that all Cat 2 and above technicians are aware of the need to be accurate input the Recorded Burden Range. 3) Wells will carry out further training to ensure that all Cat 2 and above technicians are aware of the fact that they are not to affix certification stickers to CT's when carrying out Comparative Certification.	4th June 2020	

5.68 Measuring Transformers in service burden range (Clause 2(1)(E) Of Schedule 10.8)

Code related audit information

Before certifying a measuring transformer, the ATH must determine the range that the in-service burden must be within to ensure the measuring transformer remains accurate, by using one or more of the following:

- *the measuring transformer's nameplate rating*
- *the calibration report for the measuring transformer*
- *the manufacturer's documentation for the measuring transformer*
- *the standard set out in Table 5 of Schedule 10.1 the measuring transformer was manufactured to.*

Audit observation

I checked 14 category 2 selected component certification records to confirm compliance.

Audit commentary

The requirement to determine the range that the in-service burden must be within to ensure the measuring transformer remains accurate was introduced on 1st February 2021. The code change was

announced on 15th December 2021. Wells updated all its workflows to record the burden range prior to 1st February 2021. When certification jobs are received and created by Wells they are assigned to the latest version of workflow so the change was applied to all jobs received after the workflow changes were made. Due to the short timeframe to implement the change there were a number of jobs received prior to the workflow changes which were assigned to the previous version of the workflows. Of the 14 category 2 selected component certification records checked two did not have burden ranges recorded in the certification reports. These were jobs received prior to the workflow changes being implemented. Of the 12 certification reports with burden ranges recorded three were recorded correctly and nine were recorded incorrectly. Details of the CTs and burden ranges are shown in the table below:

ICP	Job No	CT make & model	CT Ratio	Rated burden	Recorded burden range VA	Correct burden range VA
0001410819UNDF0	4954366	TWS-EV86A	300/5	5VA	0-5	1.25-5
1099578278CNC61	4962431	TWS-SEW29	500/5	5VA	1.25-5	0-5
0000013613TCEFE	4951884	TWS-SEV86A	300/5	5VA	1.25-5	1.25-5
0000010080TC93F	4957748	TWS-SEW29	500/5	5VA	0-5	0-5
0120110022PNAAC	4959944	TWS-SEV86A	300/5	5VA	1.25-5	1.25-5
0007401166TUA49	4949966	TWS-SEW29	500/5	5VA	None	0-5
0007200063RN235	4955158	TWS-SEW34A	500/5	5VA	1.25-5	0-5
0000511870DED2B	4956020	TWS-SEW34A	500/5	5VA	1.0-5	0-5
0007199593RN0F7	4960938	TWS-SEW29	500/5	5VA	1.25-5	0-5
0007200020RNC50	4960939	TWS-SEW29	500/5	5VA	1.25-5	0-5
0007200625RN719	4963125	TWS-SEW29	500/5	5VA	1.25-5	0-5
0000564444WT4A8	4951791	TWS-SEW29	500/5	5VA	1.25-5	0-5
0007199464RN42E	4946281	TWS-SEW34A	500/5	5VA	None	0-5
0007199738RNC3B	4954238	TWS-SEW29	500/5	5VA	1.25-5	0-5

The TWS 500/5 CTs have been confirmed to be accurate below the lowest test point by the manufacturer so should be certified with a burden range of 0 to 5 VA.

The TWS 300/5 CTs have not been confirmed as accurate at in-service burdens below the lowest burden test point of 25% of the rated burden. Therefore, the burden range can only be determined as being between 25% and 100% of rated burden.

I have recorded non-compliance for the nine incorrect burden ranges and two unrecorded burden ranges.

Audit outcome

Non-compliant

Non-compliance	Description

Audit Ref: 5.68 With: Clause 2(1)(E) Of Schedule 10.8 From: 01-Feb-21 To: 13-May-21	Burden range not recorded in CT certification reports for two metering installations. Incorrect burden ranges recorded for nine category 2 metering installations. Potential impact: Low Actual impact: Low Audit history: None Controls: Moderate Breach risk rating: 2

Audit risk rating	Rationale for audit risk rating
Low	I have recorded that the controls are moderate as Wells has updated its processes to record burden ranges, but the range is not always correct. The impact on settlement and participants is minor; therefore, the audit risk rating is low.

Actions taken to resolve the issue	Completion date	Remedial action status
1) The Burden range will be recorded and provided to the MEP for the two installations which this did not occur. 2) The recorded burden range will be corrected, and the corrected data supplied to the MEP for the eight installations with TWS 500/5 CTs to 0-5 VA. The Installation with the TWS 300/5 CTs which falls outside of the acceptable range will be revisited, tested and the required burdening resisters installed as appropriate to meet the audited outcome.	4th June 2020 0001410819UNDF0 Recertified 30th June 2020	Identified
Preventative actions taken to ensure no further issues will occur	**Completion date**	
1) Wells will carry out further training to ensure that all Cat 2 and above technicians are aware of the need to input the Recorded Burden Range. 2) Wells will carry out further training to ensure that all Cat 2 and above technicians are aware of the need to be accurate in inputting the Recorded Burden Range.	4th June 2020	

5.69 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

I checked the policy regarding epoxy CTs.

Audit commentary

Epoxy insulated CTs are discarded upon discovery.

Audit outcome

Compliant

5.70 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

I checked the certification records for 12 metering installations to confirm compliance.

Audit commentary

Wells certifies control devices in accordance with these clauses. The certification report is combined with the metering installation certification report and contains the required details.

Audit outcome

Compliant

5.71 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

I checked the certification records for 74 metering installations and the process documentation to confirm compliance.

Audit commentary

All data storage devices are integrated with the meters and are recalibrated prior to being reinstalled.

Audit outcome

Compliant

5.72 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

Wells does not conduct onsite calibration of metering components.

Audit commentary

Wells does not conduct onsite calibration of metering components.

Audit outcome

Not applicable

5.73 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

Wells does not conduct onsite calibration of metering components.

Audit commentary

Wells does not conduct onsite calibration of metering components.

Audit outcome

Not applicable

5.74 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

Wells conducts comparative recertification but does not conduct onsite calibration of metering components.

Audit commentary

Wells conducts comparative recertification but does not conduct onsite calibration of metering components.

Audit outcome

Not applicable

5.75 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

I checked the records for 74 metering installations to confirm compliance.

Audit commentary

All data storage devices are integrated with the meters and in all cases the data storage devices expiry date is the same as the meter and is recorded in the certification report.

Audit outcome

Compliant

5.76 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

I checked the records for 76 metering installations to confirm compliance.

Audit commentary

There was no evidence of incomplete functions.

Audit outcome

Compliant

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

Wells has not conducted any inspections in the audit period.

Audit commentary

Wells has not conducted any inspections in the audit period.

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

Wells has not conducted any inspections in the audit period.

Audit commentary

Wells has not conducted any inspections in the audit period.

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

Wells has not conducted any inspections in the audit period.

Audit commentary

Wells has not conducted any inspections in the audit period.

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

Wells has not conducted any inspections in the audit period.

Audit commentary

Wells has not conducted any inspections in the audit period.

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

Wells has not conducted any Category 2 or above inspections in the audit period.

Audit commentary

Wells has not conducted any Category 2 or above inspections in the audit period.

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

I checked Wells' process documentation and five examples of faulty metering installation investigations to confirm compliance. I also checked the content of this report for any examples of metering installations that were faulty, inaccurate, defective, or not fit for purpose.

Audit commentary

Wells has a process which is compliant with the Code. Five examples where faulty meters were replaced and the metering installations recertified were examined. The certification reports contain sufficient information to report to the MEP.

The six installations mentioned in **section 5.40** are deemed to be "not fit for purpose" because the in-service burden is lower than the burden range of the CTs, therefore certification is cancelled.

The table below shows details of the six installations,

ICP	Job No	MEP	CT make & model	CT Ratio	Rated burden	Burden range VA	Lowest in-service burden	Burden resistors added
0000100483UNF01	4918017	NGCM	Smith Hobson Ltd	800/5	10VA	2.5-10	1.67	Yes
0001417892UN20E	4918066	NGCM	TWL-3.3	300/5	10VA	2.5-5	2	Yes
0000015643TR39C	4948489	NGCM	TWS-EV84A	150/5	5VA	1.25-5	0.53	No
0001433456UN7AA	4952623	NGCM	TWS-SEV86A	300/5	5VA	1.25-5	0.7	No
0000013613TCEFE	4951884	FCLM	TWS-SEV86A	300/5	5VA	1.25-5	0.49	No
0120110022PNAAC	4959944	FCLM	TWS-SEV86A	300/5	5VA	1.25-5	0.38	No

I have concluded that Wells should have notified the relevant MEPs and recorded non-compliance for not notifying the MEP.

Audit outcome

Non-compliant

Non-compliance	Description
Audit Ref: 7.1 With: Clause 10.43(3) of Part 10 From: 01-Feb-20 To: 13-May-21	MEP was not notified that six metering installations with the in-service burden lower than the burden range of the CTs are not fit for purpose and therefore have cancelled certification. Potential impact: Medium Actual impact: Medium Audit history: None Controls: Moderate Breach risk rating: 4
Audit risk rating	**Rationale for audit risk rating**
Medium	The controls are recorded as moderate because there is room for improvement in order to identify and report on such situations. The impact on settlement could be moderate and the impact on MEPs is moderate because certification is cancelled, leading to non-compliance for the MEP in addition to non-compliance for Wells; therefore, the audit risk rating is medium.

Actions taken to resolve the issue	Completion date	Remedial action status
Wells recognises that the auditor has raised the fact that the six sites identified during the audit have been certified with the in-service burden lower than the burden range of the CTs and as a result, the site certification is invalid and therefor cancelled. Wells will therefor notify the MEPs. To address what has been raised, Wells will look to review the certification documents against the return to site and retest the metering installations, bring the burden up to within the range which has been indicated is required and then once all tests are complete, certify the sites.	31 July 2021	Identified
Preventative actions taken to ensure no further issues will occur	**Completion date**	
Wells will also carry out further investigation into CT Burdening with the manufacturer to address a possible ambiguity with the understanding of which CTs are recognised as having proven low burden accuracy.	30th June 2021	

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

I checked the results of the process followed for five examples of faulty metering installations.

Audit commentary

In all five cases, appropriate testing and reporting was conducted immediately. The meters were replaced, and the metering installations were recertified in all five cases. Details of the testing completed, and actions taken were recorded in the certification reports. The certification reports contain sufficient information to report to relevant parties and meet the requirements for a statement of situation.

Audit outcome

Compliant

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

I checked the results of the process followed for five examples of faulty metering installations.

Audit commentary

In all five cases, appropriate testing and reporting was conducted immediately. The meters were replaced, and the metering installations were recertified in all five cases. Details of the testing completed, and actions taken were recorded in the certification reports. The certification reports contain sufficient information to report to relevant parties and meet the requirements for a statement of situation.

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

I checked the results of the process followed for five examples of faulty metering installations.

Audit commentary

In all five cases, appropriate testing and reporting was conducted immediately. The meters were replaced, and the metering installations were recertified in all five cases. Details of the testing completed, and actions taken were recorded in the certification reports. The certification reports contain sufficient information to report to relevant parties and meet the requirements for a statement of situation.

Audit outcome

Compliant

8. Conclusions

The audit report records 18 non-compliances, with five areas of non-compliance from the last audit have been cleared. These related mainly to the incorrect provision of an audit report and the certification of non-compliant data storage devices.

12 of the non-compliances relate to changes to the Code that were announced on 15th December 2020 and implemented on 1st February 2021.
The Code now requires the ATH to record each services access interface and the associated maximum interrogation cycles for each.
The ATH must determine the range that the in-service burden must be within to ensure the measuring transformer remains accurate when certifying a measuring transformer. When certifying metering installations with measuring transformers the ATH must ensure that the in-service burden is within the burden range of the measuring transformers.
Wells has updated its processes to meet the requirements of most of the changes to the code but was unable to make all of the necessary changes to its workflows to ensure that compliance was achieved for all installations in the audit period. A number of the areas of non-compliance relate to jobs that were created in previous versions of the workflows before the changes were made.
A change was made to the Code requirements for conducting raw meter data tests. This requires the ATH to ensure that the change in the meter register that occurs when conducting a raw meter data test is at least "1" in the least significant digit, or one mark if the least significant digit does not have numerical markings. This has caused non-compliance when conducting certification of metering installations for one MEP which has meters with no decimal places in the meter register.

Other areas of non-compliance are as follows:

- missing or inaccurate information recorded in certification reports,
- ICP 0000015643TR39C had an absolute error and uncertainty test result of 1.54%, meaning at least one of the components is operating outside its class,
- all information regarding lower category certification not included in the certification reports for three metering installations,
- certification tests not completed at two metering installations certified using the selected component method,
- incorrect use of comparative recertification method for one installation,
- certification expiry date incorrectly calculated for one category 2 metering installation, and
- current transformers certified without calibration being carried out when metering installation certification is conducted using the comparative recertification method.

Three recommendations are repeated from the last audit. Two are made regarding improvements to the comparative recertification error and uncertainty calculation process. Wells has done some investigation in relation to these, but they are still in progress. One relates to the lack of clarity with metering installation certification reports, this has been acknowledged but will require more time to complete.
I have added a recommendation that Wells develop validation reporting that is regularly run to identify inaccuracies in metering installation certification reports.

The date of the next audit is determined by the Electricity Authority and is dependent on the level of compliance during this audit. The Future Risk Rating table provides some guidance on this matter and recommends a next audit frequency of three months. Wells has made considerable changes to its processes in order to meet the requirements of the code changes implemented on 1st February 2021. Due to the short period of time between notice and implementation of the code changes Wells were not able to be apply the new processes to all jobs conducted after 1st February 2021. Wells has identified clear plans to change processes and remedy non-compliant metering installations in the areas of low burden and incorrect certification dates. I therefore recommend that a nine-month timeframe would be more appropriate.

9. Wells Response

Wells was last audited pursuant to Part 16A of the code and the Audit Report was presented to the Electricity Authority (EA) by the due date of 4th February 2021.
Wells disputed several of the findings of the audit for various reasons and so a meeting was arranged with the EA to discuss the various concerns.
This meeting occurred in the EA's office in Wellington on the 25th March 2021
The reasons for us raising the concerns seemed to be generally well received by the EA and we awaited their response so that we could decide on what might be needed to be put in place to address some of the various audit outcomes.
On the 3rd May we requested a telephone or teams meeting with the EA to follow up on their response to the matters raised with them in the late March meeting, but we received no reply to that request.
This has meant that we have not been able to appropriately address some of the identified items from our last audit.
The most significant items from that audit, which we raised with the EA, were due to the apparent behaviours of some MEPs in relation to:

1) not providing ATH's with information which they had in their possession related to the certification of items of metering equipment and also failing to inform ATH's after such matters had been identified to them through an MEP audit,
2) knowingly providing false information on the state of an installation which resulted in the ATH unknowingly breaching the code and
3) Incorrectly providing data into the registry which claimed that metering installations had been certified when in fact they had not been.

Some of the results of these matters have been identified in this audit.
Wells believes that if an MEP, through their actions or inactions, contributes significantly to an ATH inadvertently breaching the code then this should be recognised and appropriately addressed by the EA with the MEP responsible. The ATH's limited contribution to the undesirable outcome should be recognised as might be appropriate in the circumstances.
In addition to the above there were numerous non-conformances identified by the auditor in our previous audit which Wells disputed, and Wells sought advice on from the EA. Many of these were raised with the EA in our meeting of 25th March 2021 and we are still awaiting a response so that any remedial actions which may be required after receiving that response can be implemented. It is because of this that many of these have been raised once again in this audit report.

The other matter which Wells would like to now raise is what we feel is the unacceptable timing requirements of the recent code changes. On the 15th December 2020 the EA released information on some code changes. There was a requirement for these to be implemented and being applied by participants by the 1st February 2021. When considering what is generally accepted as a two-week period of substantial business break over the Christmas/New Year period, this meant that the industry was only given approximately one month to implement the required changes. This was completely impracticable particularly when metering tasks generally need to be imported into ATH systems sometime well before they are undertaken, and the tasks are generally locked into the requirements of the workflows that are in place at the time of them being imported.
Wells had introduced all the changes which it understood were required to comply with the code changes and had modified all 20+ workflows prior to the 1st February 2021. It was however not possible to incorporate the changes for tasks which had already been imported into the workflow management system prior to those changes having been implemented.
This has resulted in some of the non-compliances which are included within this audit.

Wells has identified an apparent error in the latest version of Table 3 in that it calls for a Prevailing Load Test be undertaken on metering devices of a Cat 1 installation when a site is undergoing “Recertified with no meters replaced”. That implies that when a device needs to be resealed and a site recertified, then this is required whereas Prevailing Load Testing is not required when Recertification is required, and a meter is replaced when at least one existing meter remains (and the metering installation expiry date is not changed).

Wells is committed to ensure that it addresses the items raised in this audit report in a timely fashion, but it does need to receive the appropriate guidance from the Electricity Authority and appropriate input from the MEPs who we are undertaking ATH activities for.