ELECTRICITY INDUSTRY PARTICIPATION CODE
RECONCILIATION PARTICIPANT AUDIT REPORT

For

MERCURY NZ LIMITED

Prepared by: Steve Woods and Tara Gannon

Date audit commenced: 26 March 2019

Date audit report completed: 6 May 2019

Audit report due date: 28 April 2019

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EXECUTIVE SUMMARY

This Electricity Industry Participation Code Reconciliation Participant audit was performed at the request of **Mercury NZ Limited (Mercury),** to support their application for renewal of certification in accordance with clauses 5 and 7 of schedule 15.1. The audit was conducted in accordance with the Guideline for Reconciliation Participant Audits version 7.2.

This audit evaluated the codes MRPL for HHR activities and MEEN for both NHH and HHR activities. Findings relate to both codes unless specifically stated otherwise.

The audit found Mercury has resolved a small number of issues identified in the previous audit, but in general the overall level of compliance has not improved.

The audit found 34 non-compliance issues, three recommendations are made, and no issues are raised. 12 of the non-compliance issues relate to switching (two more than the 2018 audit), and eight relate to registry management and new connections (a reduction from nine in the 2018 audit). The number of non-compliances has remained the same, but the overall future risk rating has increased from 104 to 115, which is a continuing upward trend.

The Authority made recommendations to Mercury that they focus on the following areas prior to this audit:

1. **Management of compliance** – it appears that Mercury is relying on the audit process to identify issues. As a result, issues are not detected between audits, and action to correct errors is not started until after the auditor has completed their work. We would recommend that Mercury take a proactive approach to understanding and complying with its Code obligations.
2. **System issues affecting switching** – it appears that the information Mercury is providing in switching files is not always correct. This has been identified in previous audits. We would recommend that Mercury ensures that the system is corrected prior to the next audit.
3. **Quantification of electricity conveyed including for DUML** – Mercury NZ Ltd is switching in DUML ICPs without ensuring a DUML database or other mechanism for quantifying the electricity conveyed is in place. Where electricity is quantified using a DUML database, there are errors that are affecting the accuracy of Mercury NZ Ltd's submission information.
4. **Electrical connection of ICPs** – it appears that Mercury was not aware of its obligation to ensure that when an ICP is electrically connected the metering installation is certified within five business days of electrical connection. We would recommend that Mercury develop processes and arrangements with its metering agents to ensure that this work is done.

The audit found that the points above were still present and in some cases, the issues have a higher breach risk rating than during the previous audit.

The main findings are as follows:

- the new connections process requires improvement to ensure the timeliness and accuracy of registry updates and to ensure certification occurs within five business days;
- the switching process continues to have system and process issues leading to non-compliance, some of which have an impact on other traders and on submission accuracy;
- not all consumption related corrections occurred as soon as practicable;
- an incorrect compensation factor was not identified, leading to under submission (outside the 14-month window) of approx. 279,000 kWh. an incorrect compensation factor was not identified, leading to under submission (outside the 14-month window) of approx. 279,000 kWh. Mercury has made the appropriate correction and will resolve this through the revision process in the most recent 14 month window; and
- a large number of telecommunications ICPs do not have databases to record the items of load.

There have been some positive actions since the audit, which will result in improved compliance. Responsibility for managing compliance is now with the Pricing Operations and Energy Services Manager.

This means an increased level of focus, which is already evident with the proposed actions to remedy the non-compliances. Mercury is undertaking a process automation project, designed to improve system related controls, which should resolve many of the switching and registry related issues. This project is expected to be in place in approx. 12 months. The issues regarding switch event meter readings will be resolved much sooner, progress is already underway on these remedial actions. All of the issues regarding submission revisions were resolved immediately after the audit.

The date of the next audit is determined by the Electricity Authority and is dependent on the level of compliance during this audit. The table below provides some guidance on this matter and contains a future risk rating score of 113, which results in an indicative audit frequency of three months.

I have considered this result in conjunction with Mercury's responses. The next audit date recommendation needs to balance the current level of compliance with the timeframe to resolve the issues with enduring solutions. I have a high level of confidence that Mercury's approach to compliance will result in significant improvements, but some remedial actions will not be fully automated until the completion of the process automation project. There is some merit in delaying the next audit until the completion of the system changes. My recommendation for the next audit date is 12 to 15 months.

The matters raised are shown in the tables below:

AUDIT SUMMARY

NON-COMPLIANCES

Subject	Section	Clause	Non-Compliance	Controls	Audit Risk Rating	Breach Risk Rating	Remedial Action
Relevant information	2.1	10.6,11.2 & 15.2	Some registry discrepancies. Consumption on inactive ICPs not corrected as soon as practicable. Between 14 and 73 ICPs with distributed generation not quantified or submitted. Some submission corrections not conducted as soon as practicable. Under submission of 280,000 kWh for Thames Coromandel DUML.	Moderate	High	6	Identified

Subject	Section	Clause	Non-Compliance	Controls	Audit Risk Rating	Breach Risk Rating	Remedial Action
Electrical Connection of Point of Connection	2.11	10.33A	Mercury was not recorded as the responsible participant in the registry on the active date for 152 ICPs. Up to 134 ICPs not certified within five business days of electrical connection. At least 73 ICPs not certified within five business days of electrical reconnection. 14 meters were not recertified when they were unbridged.	Weak	Low	3	Identified
MEP arrangements	2.13	10.36	Arrangement not in place with IntelliHub.	Strong	Low	1	Identified
Changes to registry information	3.3	10 of schedule 11.1	Registry not updated within 5 business days of the event for some status updates, MEP nominations and trader updates.	Weak	Medium	6	Identified
Trader responsibility for an ICP	3.4	11.18	Some invalid MEP nominations were sent.	Weak	Low	3	Identified
Provision of information to the registry manager	3.5	9 of Schedule 11.1	Registry information not provided within 5 business days of commencement of supply.	Moderate	Low	2	Identified
ANZSIC codes	3.6	9 (1(k) of Schedule 11.1	Up to 269 active ICPs with no or “Don’t know” ANZSIC codes invalidly assigned. 10 of the 90 ICPs checked had incorrect ANZSIC codes assigned.	Moderate	Low	2	Identified
Changes to unmetered load	3.7	9(1)(f) of Schedule 11.1	Incorrect unmetered load is recorded for ICP 0015723581ELA43.	Moderate	Medium	4	Identified

Subject	Section	Clause	Non-Compliance	Controls	Audit Risk Rating	Breach Risk Rating	Remedial Action
Management of "active" status	3.8	17 Schedule 11.1	Seven NHH new connections with incorrect active dates. One HHR new connection with an incorrect active date. 12 reconnections updates were invalidly processed.	Weak	Medium	6	Identified
Management of "inactive" status	3.9	19 Schedule 11.1	Six ICPs with incorrect inactive status dates or status reason codes. One inactive ICP was incorrectly recorded as active. 10 ICPs with incorrect Inactive status where consumption is present.	Moderate	Low	2	Identified
Inform registry of switch request	4.1	2 Schedule 11.3	One switch move was incorrectly sent as a transfer switch.	Strong	Low	1	Identified
Losing trader response to switch request and event dates - standard switch	4.2	3 & 4 of schedule 11.3	Five of the seven AN files checked contained incorrect response codes. Two late AN files.	Moderate	Low	2	Identified
Losing trader must provide final information - standard switch	4.3	5 of schedule 11.3	Some incorrect CS file content including estimated daily kWh, last actual read dates, switch event readings, and switch event read types. At least five late transfer CS files	Weak	Medium	6	Identified

Subject	Section	Clause	Non-Compliance	Controls	Audit Risk Rating	Breach Risk Rating	Remedial Action
Retailers must use same reading - standard switch	4.4	(1) and 6A Schedule 11.3	One RR was sent with a read type of actual when Mercury did not have an actual reading on the event date. Two RRs were not supported by two validated actual readings. 18 late RR files and two late AC files for transfer switches. In some cases where a high switch reading is provided, and an RR is not issued, Mercury will modify the switch reading to match their first actual reading.	Moderate	Low	2	Identified
Losing trader provides information - switch move	4.8	10 of schedule 11.3	Two of the six AN files checked contained incorrect response codes. 36 ANs had non-compliant proposed event dates. Four late switch move AN files.	Moderate	Low	2	Identified
Losing trader determines a different date - switch move	4.9	10(2) Schedule 11.3	36 ANs had non-compliant proposed event dates.	Moderate	Low	2	Identified
Losing trader must provide final information - switch move	4.10	11 of schedule 11.3	Some incorrect CS file content including estimated daily kWh, last actual read dates, switch event readings, and switch event read types.	Weak	Medium	6	Identified

Subject	Section	Clause	Non-Compliance	Controls	Audit Risk Rating	Breach Risk Rating	Remedial Action
Gaining trader changes to switch meter reading - switch move	4.11	12 Schedule 11.3	Three RRs were sent with a read type of actual when Mercury did not have an actual reading on the event date. 27 late RR files and 16 late AC files for switch moves. In some cases where a high switch reading is provided, and an RR is not issued, Mercury will modify the switch reading to match their first actual reading.	Moderate	Low	2	Identified
Losing trader provision of information - gaining trader switch	4.13	15 Schedule 11.3	Two late AN files for HH switches.	Moderate	Low	2	Identified
Gaining trader to advise the registry manager - gaining trader switch	4.14	16 of schedule 11.3	12 late CS files for HH switches.	Moderate	Low	2	Identified
Withdrawal of switch requests	4.15	17 & 18 of schedule 11.3	184 late NW files and 29 late AC files. Three switch withdrawals not resolved within ten business days.	Moderate	Low	2	Identified
Metering information	4.16	21 Schedule 11.3	Some incorrect CS file switch event readings.	Weak	Medium	6	Identified
Unmetered threshold	5.2	10.14 (2)(b)	Nine standard unmetered ICPs with unmetered consumption over 6,000 kWh per annum.	Weak	Medium	6	Identified

Subject	Section	Clause	Non-Compliance	Controls	Audit Risk Rating	Breach Risk Rating	Remedial Action
Unmetered threshold exceeded	5.3	10.14 (5)	Nine standard unmetered ICPs with unmetered consumption over 6,000 kWh per annum were not corrected within the required timeframe.	Weak	Medium	6	Identified
Distributed unmetered load	5.4	11 Schedule 15.3, Clause 15.37B	Errors found in eight databases. The specific findings are detailed in the DUML database audit reports.	Weak	High	9	Identified
Electricity conveyed & notification by embedded generators	6.1	10.13	While meters were bridged, energy was not metered and quantified according to the code for 21 ICPs. Between 14 and 73 ICPs with distributed generation not quantified.	Moderate	Low	2	Disputed
Responsibility for metering at GIP	6.2	10.26 (6), (7) and (8)	Six meter certification expiry dates were updated late.	Weak	Low	3	Identified
NHH reading application	6.7	6(a)(ii) of Schedule 15.2	14 switch event meter readings not for 24.00 on the day before the switch.	Moderate	Medium	4	Investigating
Interrogate meters once	6.8	7(1) and (2) Schedule 15.2	The best endeavours requirement was not met for four ICPs unread during the period of supply.	Moderate	Low	2	Identified
Electricity supplied	11.3	15.7	Incorrect electricity supplied figure for one vacant ICP.	Strong	Low	1	Investigating
HHR aggregates information provision to the reconciliation manager	11.4	15.8	HHR aggregates file does not contain electricity supplied information.	Strong	Low	1	Unknown

Subject	Section	Clause	Non-Compliance	Controls	Audit Risk Rating	Breach Risk Rating	Remedial Action
Accuracy of submission information	12.7	15.12	Inaccurate submission as follows: • 10 ICPs with inactive consumption • DG kWh for 14 ICPs • 2 incorrect multipliers • 4 corrections not conducted since the last audit	Moderate	High	6	Mostly cleared
Forward estimate process	12.12	6 Schedule 15.3	The accuracy threshold was not met for all months and revisions.	Moderate	Low	2	Identified
Historical estimate reporting to RM	13.3	10 of Schedule 15.3	Historic estimate thresholds were not met for some revisions.	Strong	Low	1	Identified
					Future Risk Rating	**113**	

Future risk rating	0	1-3	4-15	16-40	41-55	55+
Indicative audit frequency	36 months	24 months	18 months	12 months	6 months	3 months

RECOMMENDATIONS

Subject	Section	Description	Recommendation
Relevant information	2.1	Relevant information	Identify changes to distributor installation and generation details, and unmetered load details. When changes occur, confirm that Mercury's data is correct.
Unmetered load	3.7	Confirm whether unmetered load is connected.	Confirm the details of any unmetered load connected for the 12 ICPs with distributor unmetered load details and no trader unmetered load details recorded.
Unmetered load	3.7	Check daily unmetered kWh	Confirm the daily unmetered kWh for the 20 ICPs where the daily unmetered kWh based on the distributor's unmetered load details is more than ± 1 kWh from the trader unmetered daily kWh.

ISSUES

Subject	Section	Description	Issue
		Nil	

1. ADMINISTRATIVE

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

Code reference

Section 11 of Electricity Industry Act 2010.

Code related audit information

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

Audit observation

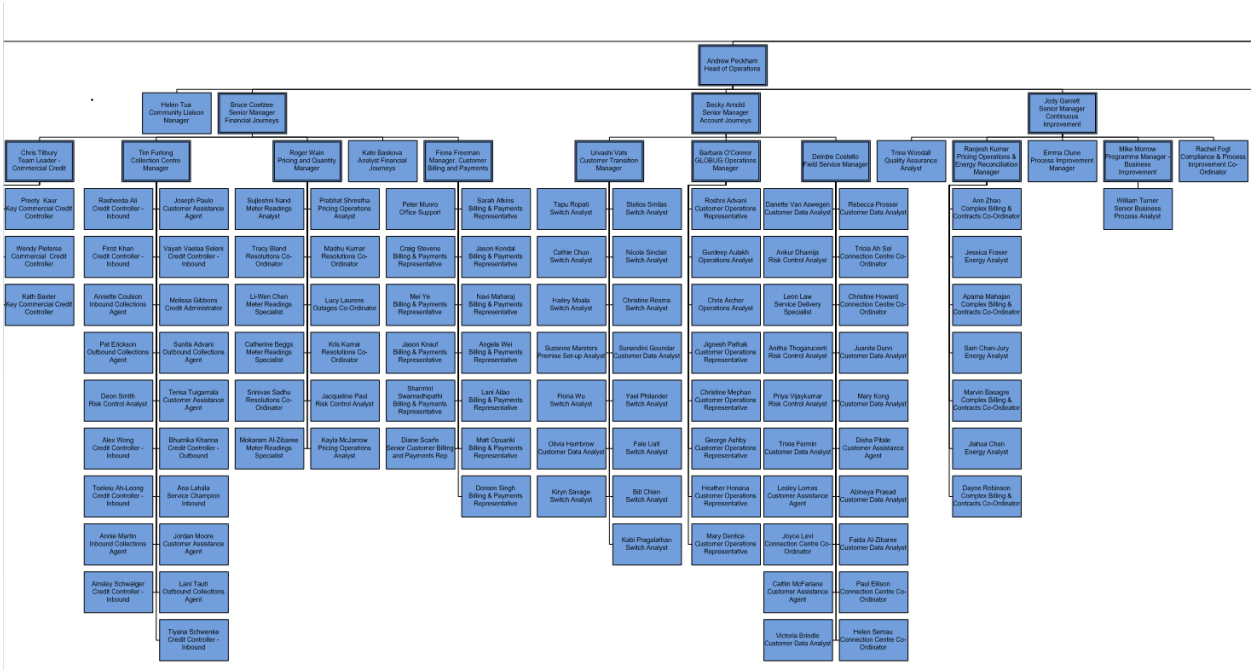
Current code exemptions were reviewed on the Electricity Authority website.

Audit commentary

Mercury has been granted exemption No. 233. This allows them to provide half-hour ("HHR") submission information instead of non half-hour ("NHH") submission information for distributed unmetered load ("DUML"). This exemption expires on 31 October 2023.

1.2. Structure of Organisation

Mercury provided their current organisational structure, which also includes Bosco:



1.3. Persons involved in this audit

Auditors:

Name	Company	Role
Steve Woods	Veritek Limited	Lead Auditor
Tara Gannon	Veritek Limited	Supporting Auditor

Mercury personnel assisting in this audit were:

Name	Title
Andrew Robertson	Regulatory and Compliance Strategist
Arpana Mahajan	Complex Billing and Contract Coordinator
Tricia Ah Sei	Connection Centre Coordinator
Navi Maharaj	Complex Billing and Contract Coordinator
Tapu Ropati	Switch Analyst
Urvashi Vats	Customer Transition Manager
Dayne Robinson	Customer Data Analyst
Deirdre Costello	Field Services Manager
Jacqueline Paul	Risk Control Analyst
Fiona Wu	Energy Analyst
Mokram Al-Zibaree	Validations Analyst – Team Leader
Ranjesh Kumar	Pricing Operations and Energy Services Manager
Roger Wain	Manager Price and Quantity

Other personnel assisting in this audit were:

Name	Title	
Craig Simpson	Operations Manager	Wells
Hannah Kelly	Solution Support Specialist	EDMI
Julie Feasey	Senior Data Analyst	Vector Advanced Metering Services

1.4. Use of Agents (Clause 15.34)

Code reference

Clause 15.34

Code related audit information

A reconciliation participant who uses an agent

- *remains responsible for the contractor's fulfilment of the participant's Code obligations*
- *cannot assert that it is not responsible or liable for the obligation due to something the agent has or has not done.*

Audit observation

Use of agents was discussed with Mercury.

Audit commentary

Mercury uses some agents for functions covered by the scope of this audit. They are identified in **section 1.9**.

- AMS and EDMI provide HHR data.
- EMS provides HHR data to the pricing manager.
- Councils provide HHR and NHH DUML data.
- Wells provide NHH data.

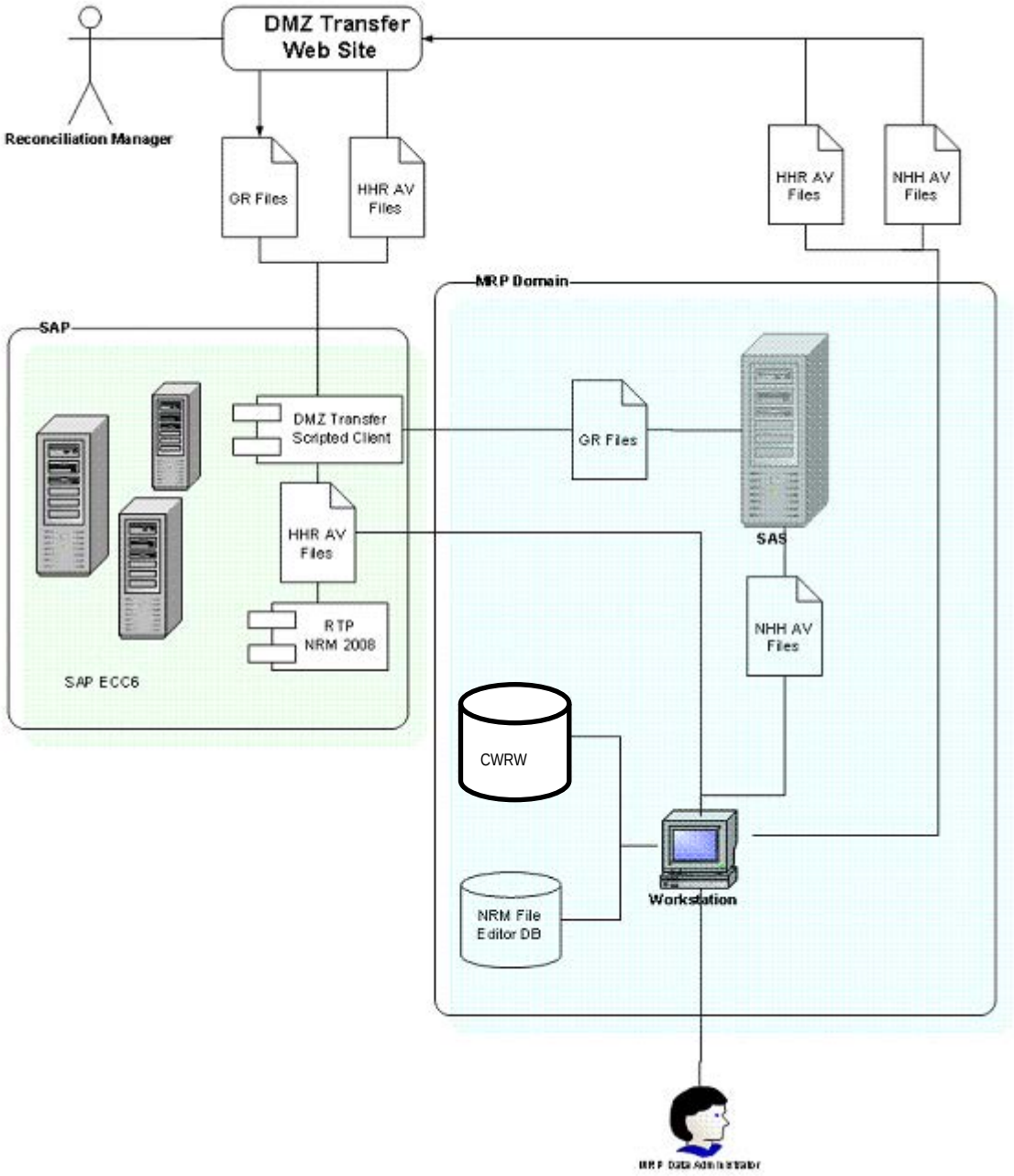
Where the agent audit report was more than seven months old on the audit due date, I confirmed with the agent that that there had been no changes to systems or processes which could affect Mercury's compliance.

AMS, Metrix, and Arc provide AMI data as MEPs, and are subject to a separate audit regime.

1.5. Hardware and Software

A diagram of Mercury's system configuration is shown below.

Information on backup processes was provided, and these processes are in accordance standard industry procedures.



1.6. Breaches or Breach Allegations

No breaches have been alleged during the audit period.

1.7. ICP Data

All active ICPs are summarised by metering category in the table below. 1,005 of the 1110 active ICPs with a metering category of 9 or blank have unmetered load recorded, the remainder are active but have no metering details entered on the registry.

Metering Category	**2019**	**2018**	**2017**	**2016**
1	348131	345,836	338,896	321,299
2	3299	3,100	3,288	3,297
3	556	550	622	612
4	181	160	159	127
5	19	19	16	16
9	472	469	107	186
Blank	638	590	304	556

Status	Number of ICPs (2019)	Number of ICPs (2018)	Number of ICPs (2017)	Number of ICPs (2016)
Active (2,0)	353,296	350,724	343,392	326,093
Inactive – new connection in progress (1,12)	1	3	2	2
Inactive – electrically disconnected vacant property (1,4)	4,068	3,998	4,201	3,575
Inactive - reconciled elsewhere (1,5)	3	1	5	5
Inactive – electrically disconnected ready for decommissioning (1,6)	171	313	511	714
Inactive – electrically disconnected remotely by AMI meter (1,7)	23	24	13	5
Inactive – electrically disconnected at pole fuse (1,8)	16	14	10	1
Inactive – electrically disconnected due to meter disconnected (1,9)	1,568	1,373	226	25
Inactive – electrically disconnected at meter box fuse (1,10)	-	1	-	-
Inactive – electrically disconnected at meter box switch (1,11)	2	4	-	-
Decommissioned (3)	23,480	22,751	21,852	20,269

1.8. Authorisation Received

Mercury provided all information requested; a letter of authorisation was not required.

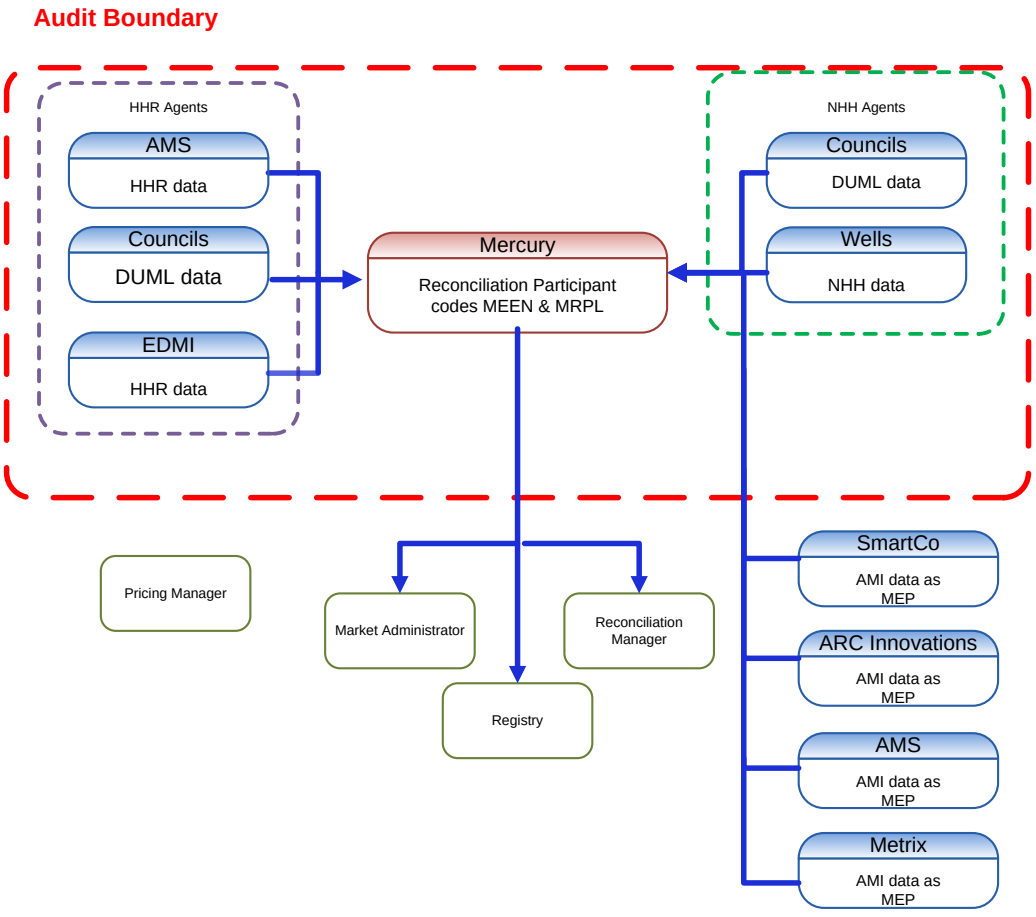
1.9. Scope of Audit

This Electricity Industry Participation Code Reconciliation Participant audit was performed at the request of Mercury, to support their application for renewal of certification in accordance with clauses 5 and 7 of schedule 15.1.

The audit was conducted in accordance with the Guideline for Reconciliation Participant Audits V7.2.

The audit was carried out at Mercury's premises in Auckland on 26-28 March 2019.

The scope of the audit is shown in the diagram below, with the Mercury audit boundary shown for clarity. This report is for the MEEN and MRPL participant codes.



The table below shows the tasks under clause 15.38 of part 15, for which Mercury requires certification. This table also lists those agents who assist with these tasks.

Tasks Requiring Certification Under Clause 15.38(1) of Part 15	Agents Involved in Performance of Tasks
(a) - Maintaining registry information and performing customer and embedded generator switching	
(b) – Gathering and storing raw meter data	Wells – NHH AMS – HHR EDMI – HHR
(c)(iii) - Creation and management of HHR and NHH volume information	AMS – HHR EDMI – HHR Various Councils – DUML data
(d) – Calculation of ICP days	
(da) - delivery of electricity supplied information under clause 15.7	
(db) - delivery of information from retailer and direct purchaser half hourly metered ICPs under clause 15.8	
(e) – Provision of submission information for reconciliation	
(f) - Provision of metering information to the Grid Owner	

ARC, AMS, Smartco and Metrix conduct AMI data collection as MEPs and not as agents to reconciliation participants.

Mercury receives distributed unmetered load (DUML) data from 12 Councils, who are considered agents under clause 15.34. Veritek has audited these Councils and the audit reports are separately submitted.

The audit reports for the remaining agents listed above will be submitted with this audit. This report only contains details of those areas where issues were identified or where additional analysis was conducted specifically for Mercury. The agents' reports contain all the remaining detail. Where the report was more than seven months old on the audit due date, I confirmed with the agent that that there had been no changes to systems or processes which could affect Mercury's compliance.

1.10. Summary of previous audit

Mercury provided a copy of their previous audit report conducted in April 2018 by Rebecca Elliot (lead auditor) of Veritek Limited. The summary tables below show that some of the issues have been resolved and some are still existing. Further comment is made in the relevant sections of this report.

Subject	Section	Clause	Non compliance	Status
Relevant information	2.1	10.6,11.2 & 15.2	Some registry discrepancies, and one example of misleading information.	Still existing
Temporary Electrical Connection of an ICP	2.10	10.33(1)	One ICP was temporarily electrically connected where Mercury was not recorded as the responsible participant in the registry.	Cleared
Electrical Connection of Point of Connection	2.11	10.33A	73 ICPs electrically connected where Mercury was not recorded as the responsible participant in the registry. 3 ICPs not certified within five business days of electrical connection. 89 ICPs not certified within five business days of electrical reconnection.	Still existing
Changes to registry information	3.3	10 of schedule 11.1	Registry not updated within 5 business days of the event for MEP changes, reconnections, and disconnections.	Still existing
Trader responsibility for an ICP	3.4	11.18	The sending of erroneous MEP nominations when an AW file is sent.	Still existing
Provision of information to the registry manager	3.5	9 of Schedule 11.1	Registry information not provided within 5 business days of commencement of supply.	Still existing
ANZSIC codes	3.6	9 (1(k) of Schedule 11.1	390 ICPs active ICPs with no or "Don't know" ANZSIC codes assigned. 11 of 40 industry coded ICPs checked had an incorrect ANZSIC code.	Still existing
Changes to unmetered load	3.7	9(1)(f) of Schedule 11.1	Incorrect unmetered load is recorded for five ICPs.	Some non-compliance is still existing
Management of "active" status	3.8	17 Schedule 11.1	Four newly connected ICPs with incorrect active dates. Disconnected ICPs being incorrectly updated to active in the registry.	Cleared Still existing

Subject	Section	Clause	Non compliance	Status
Management of "inactive" status	3.9	19 Schedule 11.1	One ICP incorrectly at "inactive - new connection in progress" status.	Cleared Some other non-compliance was identified
Losing trader response to switch request and event dates - standard switch	4.2	3 & 4 of schedule 11.3	Incorrect sending of the AA AN response code for two ICPs with AMI metering for transfer switches. 16 late AN files.	Still existing
Losing trader must provide final information - standard switch	4.3	5 of schedule 11.3	Incorrect last read date for ICPs that close on an estimate. SAP transposing reads in the CS file for meters with two registers. Actual read not sent for the event date. Some late CS files.	Still existing No evidence of recurrence Still existing Still existing
Retailers must use same reading - standard switch	4.4	(1) and 6A Schedule 11.3	11 late RR files and one late AC file sent. In some cases where a high switch reading is provided, and an RR is not issued, Mercury will modify the switch reading to match their first actual reading.	Still existing
Losing trader provides information - switch move	4.8	10 of schedule 11.3	Incorrect sending of the AA AN response code for sites with AMI metering for move switches. Six late AN files.	Still existing Still existing
Losing trader determines a different date - switch move	4.9	10(2) Schedule 11.3	15 ICPs where the event date was set earlier than the gaining traders requested date. 1 ICP where the event date was set greater than ten business days from the NT receipt date.	Still existing Cleared
Losing trader must provide final information - switch move	4.10	11 of schedule 11.3	Incorrect last read date for ICPs that close on an estimate. SAP transposing reads in the CS file for meters with two registers. Actual read not sent for the event date.	Still existing No evidence of recurrence Still existing

Subject	Section	Clause	Non compliance	Status
Gaining trader changes to switch meter reading - switch move	4.11	12 Schedule 11.3	One RR sent without two validated reads being gained. 33 late RR files and one late AC file sent. In some cases where a high switch reading is provided, and an RR is not issued, Mercury will modify the switch reading to match their first actual reading.	Cleared Still existing Still existing
Losing trader provision of information - gaining trader switch	4.13	15 Schedule 11.3	Four late ANs.	Still existing
Gaining trader to advise the registry manager - gaining trader switch	4.14	16 of schedule 11.3	Seven late CS files.	Still existing
Withdrawal of switch requests	4.15	17 & 18 of schedule 11.3	58 switch withdrawals sent later than 2 months of the event date. 2 switch withdrawals not resolved within ten business days.	Still existing Still existing
Unmetered threshold	5.2	10.14 (2)(b)	Nine standard unmetered ICPs with greater than 6,000 kWh per annum.	Still existing
Unmetered threshold exceeded	5.3	10.14 (5)	Nine ICPs with greater than 6,000 kWh per annum not corrected within the required timeframe.	Still existing
Distributed unmetered load	5.4	11 Schedule 15.3, Clause 15.37B	Errors found in eight databases. The specific findings are detailed in the DUML database audit reports.	Still existing
Electricity conveyed & notification by embedded generators	6.1	10.13	While meters were bridged, energy was not metered and quantified according to the code for nine ICPs. NHH ICPs with distributed generation do not have the PV1 profile recorded on the registry.	Still existing
Responsibility for metering at GIP	6.2	10.26 (6), (7) and (8)	Three meter certification expiry dates were updated late.	Still existing
Interrogate meters once	6.8	7(1) and (2) Schedule 15.2	The best endeavours requirement was not met for eight ICPs unread during the period of supply.	Still existing
Correction of NHH meter readings	8.1	19(1) Schedule 15.2	One correction for a bridged meter and three corrections for defective meters were not processed correctly due to a calculation errors.	Cleared

Subject	Section	Clause	Non compliance	Status
NHH metering information data validation	9.5	16 Schedule 15.2	Where a subsequent reading is lower than a switch in reading, consumption may be temporarily zeroed out by creating a zero estimate until reads catch up, or permanently zeroed out by adjusting the switch in read to match the first actual read after switch in.	Cleared
Electronic meter readings and estimated readings	9.6	17 Schedule 15.2	AMI event information not adequately obtained and monitored.	Cleared
HHR aggregates information provision to the reconciliation manager	11.4	15.8	HHR aggregates file does not contain electricity supplied information.	Still existing
Accuracy of submission information	12.7	15.12	One correction for a bridged meter and three corrections for defective meters were not processed correctly due to a calculation errors.	Cleared for 2018 examples. Further examples in 2019.
Permanence of meter readings for reconciliation	12.8	4 of Schedule 15.2	Some estimates were not replaced by revision 14.	Still existing
Forward estimate process	12.12	6 Schedule 15.3	The accuracy threshold was not met for all months and revisions.	Still existing
Historical estimate reporting to RM	13.3	10 of Schedule 15.3	Historic estimate thresholds were not met for some revisions.	Still existing

Subject	Section	Clause	Recommendation	Remedial Action
Relevant information	2.1	Relevant information	Test automated processes to confirm that they are producing the expected results.	Automated processes have been reviewed, and interim actions have been put in place to reduce the impact of these issues.
Temporary Electrical Connection of an ICP	2.10	Temporary Electrical Connection of an ICP	Use the “inactive - new connection status” to ensure that Mercury is recorded as the responsible participant in the registry.	Not implemented.
Electrical Connection of Point of Connection	2.11	Electrical Reconnection of Point of Connection	Review process to ensure uncertified sites at point of reconnection get recertified within five business days.	Process had been reviewed, but no change.

2. OPERATIONAL INFRASTRUCTURE

2.1. Relevant information (Clause 10.6, 11.2, 15.2)

Code reference

Clause 10.6, 11.2, 15.2

Code related audit information

A participant must take all practicable steps to ensure that information that the participant is required to provide is:

a) complete and accurate
b) not misleading or deceptive
c) not likely to mislead or deceive.

If the participant becomes aware that in providing information under this Part, the participant has not complied with that obligation, the participant must, as soon as practicable, provide such further information as is necessary to ensure that the participant does comply.

Audit observation

The process to find and correct incorrect information was examined. The registry validation process was examined in detail in relation to the achievement of this requirement. The registry list as at 13/02/19 was examined to identify any registry discrepancies, and to confirm that all information was correct and not misleading.

Audit commentary

Trader and status information is maintained within SAP, and then transferred to the registry, but is also manually updated using the registry interface where necessary. The 2018 audit found that some invalid registry status and trader information updates had been processed by SAP. Mercury has investigated this issue and found that the invalid updates are being caused by the switch in loader and switch out loader processes.

- Where an ICP returns to active status after a period of being inactive, the previous inactive time slice is sometimes automatically updated to active as well.
- Invalid MEP nominations are sometimes being issued.

These invalid updates are still occurring. Mercury has put processes in place to identify and correct invalid registry updates, and this is discussed further in **section 3.3**.

Changes to registry data managed by other participants, such as NSP changes, installation type changes, and distributor unmetered load details are automatically updated in SAP through the registry notification process. An error case is created if there are any issues with the update, but there is no notification if a field changes which could impact on the accuracy of Mercury's data, such as changes to installation details or distributor unmetered load details. I recommend a check is added to identify these changes.

Description	Recommendation	Audited party comment	Remedial action
Monitoring of distributor data changes which are related to trader data	Identify changes to distributor installation and generation details, and unmetered load details. When changes occur, confirm that Mercury's data is correct.	Mercury has prioritised the issue and will be rectified via Process Automation project which just has been commissioned, requirements will be gathered in next few months to resolve the root cause of the issue.	Identified

Because registry data is imported into SAP, SAP and the registry should normally align. Data discrepancies are identified daily through SAP's processes, and error cases are created for investigation and resolution. The discrepancy reports focus on recent activity on the registry. I viewed examples of the errors cases which included:

Error case	Description
Cannot be decommissioned	Produced where an ICP has status 3, but still has open meters in SAP.
Retailer mismatch, and not allowed to change retailer	Where the retailer recorded in the registry does not match SAP, usually due to switch timing. Any issues are referred to the switching team.
Invalid event date	Reversals that occurred while MEEN was the trader, which are checked to confirm they are valid.
Deleting multiple time slices	It is normally expected only one time slice is deleted at a time. This shows any ICPs where multiple time slices have been deleted, which are checked to confirm they are valid. Corrections are processed as necessary.
Registry attempted to change status	ICPs where the registry status differs from SAP. The ICP is checked to confirm the correct status and the systems are updated.
Reg error	ICPs where an incomplete registry update has been sent, e.g. a trader update with a field missing.

The list file was analysed, and I found the following:

Issue	2019 Qty	2018 Qty	2017 Qty	2016 Qty	Comments
Active with blank ANZSIC	2	2	2	4	See **section 3.6**
Active with ANZSIC "T999" not stated	-	-	2	0	See **section 3.6**
Active with ANZSIC "T994" don't know	269	388	1,662	3,454	See **section 3.6**
Status 1,7 -De-energised remotely	23	0	0	5	See **section 3.9**
Status 1,8 -De-energised at pole fuse	16	0	0	1	See **section 3.9**
Status 1,9 - De-energised due to meter disconnected	1,568	0	0	25	See **section 3.9**
UML load = zero	6	3	3	3	These are all SB ICPs and compliance is confirmed. See **section 3.7**.
Incorrect UML load	TBC	6	2	1	See **section 3.7**

Issue	2019 Qty	2018 Qty	2017 Qty	2016 Qty	Comments
No MEP recorded or nominated and UML= "N"	105	2	2	1	See **3.7**
UML load removed and an MEP is nominated but is still UML in SAP	0	0	2	-	Compliant
Shared unmetered load incorrect	0	0	0	7	Compliant
ICPs with different UNM load to that recorded by the Distributor	35	40	2	5	These are being investigated with the network and customer to confirm which unmetered load is correct. See **section 3.7**.
ICPs with Distributor unmetered load populated but retail unmetered load is blank and UML flag =N	23	13	45	63	These are being investigated with the network and customer to confirm if unmetered load is present or not. See **section 3.7**.
Incorrect profile	3,010	1	1	0	Refer to **section 6.1**. PV1 profile incorrect.
Incorrect statuses or status event dates	26	-	-	-	One HHR and seven NHH new connections with incorrect active dates. See **section 3.8**. 12 reconnection updates were invalidly processed. See **section 3.8**. Six ICPs with incorrect inactive status dates or status reason codes. See **section 3.9**.

The 2017 and 2018 audit recorded that a new connection initial electrical connection date alignment check was to be completed. This was intended to compare the distributor's initial electrical connection date, to Mercury's active date and the MEP's meter certification date, to identify potential connection date issues. System enhancements were required before this check could be implemented, and this has not been completed.

Ten ICPs were identified with consumption where the status was inactive. All ten were corrected in the registry between 26/02/19 and 04/03/19, backdated to months between May 2018 and January 2019, which indicates these updates were not as soon as practicable.

As recorded in **section 6.1**, 3,010 ICPs have distributed generation recorded and import/export metering. Submission data for a sample of ten of these ICPs was checked, and I found the PV1 profile was correctly applied in the AV080 NHH submissions for NHH ICPs with generation, but the PV1 profile was not recorded against the ICPs on the registry.

75 of the 3,113 ICPs with generation recorded by the distributor do not have import/export metering recorded on the registry. Population of distributed generation details on the registry is a MEP requirement and not the responsibility of the retailer, but it is the retailer's responsibility to ensure that electricity is quantified in accordance with the code. A typical sample of 16 ICPs without injection/export metering were reviewed to determine whether distributed generation was present. The findings are listed below:

- two ICPs do not have generation installed;
- one ICP has since had generation metering installed, and generation consumption is being measured and reported in accordance with the code;
- eight ICPs are under investigation to determine if generation is installed; and
- five ICPs have had meter change jobs booked but these were not completed due to access issues.

Reporting is in place to compare the distributor's generation fields against Mercury's records, but this report has not been actively worked on in recent months.

Other submission related issues are as follows:

- Two ICPs with incorrect multipliers were identified by Mercury during the audit period. In both cases, the errors were corrected, and consumption flowed through to revision files. For ICP 0007151984RN22C, the incorrect compensation factor of 1 was used instead of 100 since the meter was installed on 10/07/13. The revision process has only dealt with 14 months of this period. The total amount revised is 130,383 and the total amount not submitted is 278,982. The monthly reporting to identify compensation factor discrepancies was not identifying all issues and this example had not been found. Mercury has made the appropriate correction and will resolve this through the revision process in the most recent 14 month window.
- The 2018 audit found that for ICP 1001295041LC8D8 a calculation error caused an incorrect closing reading (967 instead of 1022), resulting in under reporting of 55 kWh. This ICP switched out on 04/10/18 and the correction had not been made by then. The correction was made soon after the audit on 29/04/19 for the correct period prior to the switch out.
- The 2018 audit found three ICPs where there were errors in the correction calculations; the estimated consumption was added to a read prior to the meter removal read resulting in under estimation of consumption during the defective period. I checked these ICPs again and the adjustments had not been made at the time of the audit but were made on 29/04/19 and the consumption will be revised within the most recent 14 month period when the next revision is run.

-

ICP	Correction Date	Correct estimated read	Applied read	Difference
0002215194WEF25	07/07/2017	4879	4869	10
1001270441LCE84	11/08/2017	53607	53103	504
0000250924UN01C	07/07/2017	34862	34858	4
			Total	**518**

Audit outcome

Non-compliant

Non-compliance	Description
Audit Ref: 2.1 With: Clause 10.6,11.2 & 15.2 From: 01-Apr-18 To: 13-Feb-18	Some registry discrepancies. Consumption on inactive ICPs not corrected as soon as practicable. Between 14 and 73 ICPs with distributed generation not quantified or submitted. Some submission corrections not conducted as soon as practicable. Potential impact: High Actual impact: High Audit history: Multiple Controls: Moderate Breach risk rating: 6
Audit risk rating	**Rationale for audit risk rating**
High	The controls are rated as moderate as they will mitigate risk most of the time, but there is room for errors to occur. The audit risk rating high because of the impact of the under submission for the period until corrections were made, particularly the incorrect compensation factor issue.
Actions taken to resolve the issue	**Completion date** / **Remedial action status**

1) Registry discrepancies **Response:** Non compliance accepted and remedial action on-going **Action:** Mercury will investigate the best course of action for the registry discrepancies in general. Corrective actions will be carried out and implemented via the Process automation project which has been approved. Registry issues will be prioritised.	May 2020	Identified
2) Consumption on inactive sites **Response:** Non compliance accepted and remedial action on-going **Action:** Mercury will review and change the process to ensure corrections are made as soon as practical	To be completed by Aug 2019	
3) Between 14 and 73 ICPs with distributed generation not quantified or submitted **Response:** Partial non compliance accepted and remedial action on-going **Action:** We have reviewed the process and a gap was identified which has been changed to action them on monthly basis. Report in place to investigate sites that are showing "reverse power" as indicated by the meter owner and appropriate action is taken Some of the ICP's marked as generation do not have import/export meters as they are as 'gift', Mercury send a list to RM to notify these as required by the code thus we believe Mercury is compliant.	Completed	
4) Some submission corrections not conducted as soon as practicable **Response:** Non compliance accepted and remedial action on-going **Action:** Corrections has been made and evidence has been sent to the auditors to have these cleared. Mercury has also changed its process to peer review all the spreadsheet used to calculate the energy correction.	Completed	

Issue was identified with one of the formula's in the spreadsheet which has been rectified. 5) Under submission of 280,000 kWh for Thames Coromandel DUML **Response:** Non compliance disputed **Action:** NZTA load is submitted by Genesis which has been confirmed, thus no under submission has occurred.	n/a	
Preventative actions taken to ensure no further issues will occur	**Completion date**	
As stated above, Mercury has invested in Process automation project and Registry issues will be prioritised and actioned: System root cause analysis will be carried out Detailed business requirement Implementation and Testing Go live	By May 2020	

2.2. Provision of information (Clause 15.35)

Code reference

Clause 15.35

Code related audit information

If an obligation exists to provide information in accordance with Part 15, a participant must deliver that information to the required person within the timeframe specified in the Code, or, in the absence of any such timeframe, within any timeframe notified by the Authority. Such information must be delivered in the format determined from time to time by the Authority.

Audit observation

Processes to provide information were reviewed and observed throughout the audit.

Audit commentary

This area is discussed in a number of sections in this report.

Audit outcome

Compliant

2.3. Data transmission (Clause 20 Schedule 15.2)

Code reference

Clause 20 Schedule 15.2

Code related audit information

Transmissions and transfers of data related to metering information between reconciliation participants or their agents, for the purposes of the Code, must be carried out electronically using systems that ensure the security and integrity of the data transmitted and received.

Audit observation

NHH read data is transferred via SFTP by Metrix (for Metrix and Counties Power meters), AMS (for AMS, Smartco and Arc meters) and Wells.

HHR volume data is transferred via SFTP by AMS and EDMI.

Generation data is received via SFTP, and automatically imported into SAP.

To confirm the process, I traced a sample of reads for 10 NHH ICPs, and five HHR ICPs from the source files to SAP.

Audit commentary

The data transfer method varies depending on the MEP or agent, and type of data being transferred.

NHH

For Metrix, a read request is provided two days ahead of the scheduled read date. Metrix then provides reads for the requested reads via SFTP for Metrix and Counties Power meters.

AMS provide a daily file containing AMI reads for all ICPs for AMS, Smartco and Arc meters. Reads for the scheduled read date are extracted and imported into SAP.

Wells provide a daily file for all reads obtained the previous day via FTP. Wells also provide some special (out of cycle) readings via email. These reads are typically used to validate and verify other meter readings and are entered with a read type of unbillable. I did not see any examples where these emailed readings had been treated as actual.

I traced a sample of two readings each for Metrix (including Counties Power), AMS, Smartco, Arc and Wells from the source files to SAP. All readings matched.

HHR

HHR read data is transferred via SFTP for EDMI and AMS. I traced a sample of volume data for five ICPs for EDMI and AMS. All volumes matched.

Generation

Generation station data is received via SFTP, and automatically imported into SAP. Generation station information was checked by comparing the data imported into SAP against check meter information provided. No issues were identified.

Audit outcome

Compliant

2.4. Audit trails (Clause 21 Schedule 15.2)

Code reference

Clause 21 Schedule 15.2

Code related audit information

Each reconciliation participant must ensure that a complete audit trail exists for all data gathering, validation, and processing functions of the reconciliation participant.

The audit trail must include details of information:

- *provided to and received from the registry manager*
- *provided to and received from the reconciliation manager*
- *provided and received from other reconciliation participants and their agents.*

The audit trail must cover all archived data in accordance with clause 18.

The logs of communications and processing activities must form part of the audit trail, including if automated processes are in operation.

Logs must be printed and filed as hard copy or maintained as data files in a secure form, along with other archived information.

The logs must include (at a minimum) the following:

- *an activity identifier (clause 21(4)(a))*
- *the date and time of the activity (clause 21(4)(b))*
- *the operator identifier (clause 21(4)(c)).*

Audit observation

A complete audit trail was checked for all data gathering, validation and processing functions. I reviewed audit trails for a small sample of events. Large samples were not necessary because audit trail fields are expected to be the same for every transaction of the same type.

Audit commentary

A complete audit trail was viewed for all data gathering, validation and processing functions. The logs of these activities for Mercury and all agents include the activity identifier, date and time and an operator identifier.

Audit outcome

Compliant

2.5. Retailer responsibility for electricity conveyed - participant obligations (Clause 10.4)

Code reference

Clause 10.4

Code related audit information

If a participant must obtain a consumer's consent, approval, or authorisation, the participant must ensure it:

- *extends to the full term of the arrangement*
- *covers any participants who may need to rely on that consent.*

Audit observation

I reviewed Mercury's current terms and conditions.

Audit commentary

Mercury's current terms and conditions with their customers includes consent to access for authorised parties for the duration of the contract.

Audit outcome

Compliant

2.6. Retailer responsibility for electricity conveyed - access to metering installations (Clause 10.7(2),(4),(5) and (6))

Code reference

Clause 10.7(2),(4),(5) and (6)

Code related audit information

The responsible reconciliation participant must, if requested, arrange access for the metering installation to the following parties:

- *the Authority*
- *an ATH*
- *an auditor*
- *an MEP*
- *a gaining metering equipment provider.*

The trader must use its best endeavours to provide access:

- *in accordance with any agreements in place*
- *in a manner and timeframe which is appropriate in the circumstances.*

If the trader has a consumer, the trader must obtain authorisation from the customer for access to the metering installation, otherwise it must arrange access to the metering installation.

The reconciliation participant must provide any necessary facilities, codes, keys or other means to enable the party to obtain access to the metering installation by the most practicable means.

Audit observation

I reviewed Mercury's current terms and conditions and discussed compliance with these clauses.

Audit commentary

Mercury's contract with their customers includes consent to access for authorised parties for the duration of the contract. Mercury confirmed that they have been able to arrange access for other parties when requested.

Audit outcome

Compliant

2.7. Physical location of metering installations (Clause 10.35(1)&(2))

Code reference

Clause 10.35(1)&(2)

Code related audit information

A reconciliation participant responsible for ensuring there is a category 1 metering installation or category 2 metering installation must ensure that the metering installation is located as physically close to a point of connection as practical in the circumstances.

A reconciliation participant responsible for ensuring there is a category 3 or higher metering installation must:

a) if practical in the circumstances, ensure that the metering installation is located at a point of connection; or
b) if it is not practical in the circumstances to locate the metering installation at the point of connection, calculate the quantity of electricity conveyed through the point of connection using a loss compensation process approved by the certifying ATH.

Audit observation

The physical meter location point is not specifically mentioned in the Terms and Conditions, but the existing practices in the electrical industry achieve compliance.

Mercury was requested to provide details of any installations with loss compensation.

Audit commentary

Mercury confirmed they do not deal with any installations with loss compensation.

Audit outcome

Compliant

2.8. Trader contracts to permit assignment by the Authority (Clause 11.15B)

Code reference

Clause 11.15B

Code related audit information

A trader must at all times ensure that the terms of each contract between a customer and a trader permit:

- *the Authority to assign the rights and obligations of the trader under the contract to another trader if the trader commits an event of default under paragraph (a) or (b) or (f) or (h) of clause 14.41 (clause 11.15B(1)(a)); and*
- *the terms of the assigned contract to be amended on such an assignment to—*
- *the standard terms that the recipient trader would normally have offered to the customer immediately before the event of default occurred (clause 11.15B(1)(b)(i)); or*
- *such other terms that are more advantageous to the customer than the standard terms, as the recipient trader and the Authority agree (clause 11.15B(1)(b)(ii); and*
- *the terms of the assigned contract to be amended on such an assignment to include a minimum term in respect of which the customer must pay an amount for cancelling the contract before the expiry of the minimum term (clause 11.15B(1)(c)); and*

- *the trader to provide information about the customer to the Authority and for the Authority to provide the information to another trader if required under Schedule 11.5 (clause 11.15B(1)(d));* ***and***
- *the trader to assign the rights and obligations of the trader to another trader (clause 11.15B(1)(e)).*

The terms specified in subclause (1) must be expressed to be for the benefit of the Authority for the purposes of the Contracts (Privacy) Act 1982, and not be able to be amended without the consent of the Authority (clause 11.15B(2)).

Audit observation

I reviewed Mercury's current terms and conditions.

Audit commentary

Mercury's terms and conditions contain the appropriate clauses to achieve compliance with this requirement.

Audit outcome

Compliant

2.9. Connection of an ICP (Clause 10.32)

Code reference

Clause 10.32

Code related audit information

A reconciliation participant must only request the connection of a point of connection if they:

- *accept responsibility for their obligations in Parts 10, 11 and 15 for the point of connection; and*
- *have an arrangement with an MEP to provide one or more metering installations for the point of connection.*

Audit observation

The new connection process was examined in detail to evaluate the strength of controls. The list file for 01/04/18 to 13/02/19 and event detail report for 01/04/18 to 08/02/19 were analysed to confirm the process is compliant and controls are functioning as expected.

Audit commentary

NHH New Connections

New connections on the Vector and Powerco networks are advised by the network. For the other networks, the application is received from the customer's agent such as the electrician. Mercury then contact the network to request the creation of an ICP.

Mercury accept responsibility for the ICP and work with the MEP and electrician to progress the connection. ICPs are claimed and moved to active status once confirmation of initial electrical connection is received. The MEP is also nominated at this time. The "new connection in progress" status is not used for NHH new connections.

No examples were found of NHH ICPs with backdated creation dates.

HHR New Connections

HHR new connections are initiated by the commercial operations team and monitored using the WIP spreadsheet, and by the customer's account manager.

Mercury only uses the "new connection in progress" status if it is expected that a new connection will be delayed. ICPs are normally claimed and moved to active status once confirmation of initial electrical connection is received. The MEP is also nominated at this time.

No examples were found of HHR ICPs with backdated creation dates.

Audit outcome

Compliant

2.10. Temporary Electrical Connection of an ICP (Clause 10.33(1))

Code reference

Clause 10.33(1)

Code related audit information

A reconciliation participant may temporarily electrically connect a point of connection, or authorise an MEP to temporarily electrically connect a point of connection, only if:

- *they are recorded in the registry as being responsible for the ICP; and*
- *one or more certified metering installations are in place at the ICP in accordance with Part 10; and*
- *for an ICP that has not previously been electrically connected, the network owner has given written approval.*

Audit observation

The new connection process was examined in detail to evaluate the strength of controls. The list file for 01/04/18 to 13/02/19 and event detail report for 01/04/18 to 08/02/19 were analysed to confirm process compliance and controls are functioning as expected.

I identified all ICPs certified prior to their active date and reviewed them to determine whether they had been temporarily electrically connected.

Audit commentary

The 2018 audit recommended that the "inactive - new connection" status be used for all NHH and HHR new connections. Mercury decided not to implement this recommendation and is unlikely to be recorded as the proposed trader if an ICP is temporarily electrically connected.

Mercury was not aware of any new connections which were temporarily electrically connected during the audit period.

<u>NHH New Connections</u>

Review of the registry list and event detail report identified five NHH ICPs which had their meters certified prior to Mercury's earliest active date. I confirmed that none were temporarily electrically connected:

- ICPs 1002037904LC880 and 1002058309LC6E9 had incorrect active dates recorded and should have been made active on the date that the meter was certified. The incorrect active dates are recorded as non-compliance in **section 3.8**.
- For three ICPs incorrect meter certification dates were recorded on the registry. The paperwork confirmed that the meters were not connected until the active date.

<u>Half Hour New Connections</u>

Review of the registry list and event detail report identified two HHR ICPs which had their meters certified prior to Mercury's earliest active date. I checked certification details for both ICPs and confirmed that they were not temporarily electrically connected.

Audit outcome

Compliant

2.11. Electrical Connection of Point of Connection (Clause 10.33A)

Code reference

Clause 10.33A(1)

Code related audit information

A reconciliation participant may electrically connect or authorise the electrical connection of a point of connection only if:

- *they are recorded in the registry as being responsible for the ICP; and*
- *one or more certified metering installations are in place at the ICP in accordance with Part 10; and*
- *for an ICP that has not previously been electrically connected, the network owner has given written approval.*

Audit observation

The new connection and reconnection process was examined in detail to evaluate the strength of controls.

The registry list as at 13/02/19, meter installation details report, and list file for 01/04/18 to 13/02/19 and event detail report for 01/04/18 to 08/02/19 were analysed to confirm process compliance and that controls are functioning as expected.

Audit commentary

Active ICPs without metering

1,005 of the 1110 active ICPs with a metering category of 9 or blank have unmetered load recorded. The other 105 ICPs were examined and found:

- 91 were timing differences where an MEP nomination was been made and accepted, or the ICP had become inactive, decommissioned, or had unmetered load added since the registry list report was provided;
- ICP 0000033468CP85C had its metering removed and should have been made inactive, this is recorded as non-compliance in **section 3.9**;
- ICP 0001264717UNC3A has a DUML database, but the registry will not allow an update to the trader details until an MEP is registered for a HHR site although it is a DUML ICP; and
- the other ten ICPs have distributor unmetered load recorded but no trader unmetered load details, a recommendation to confirm whether unmetered load is connected is made in **section 3.7**.

New Connections

The 2018 audit recommended that Mercury consider using the "new connection in progress" status so that the ICP could be claimed and MEP nominated prior to the electrical connection date. Mercury considered the recommendation but decided not to implement it. As discussed in **section 2.9**, Mercury's new connections process only use the "inactive - new connection in progress" status for HHR new connections which are expected to be delayed.

Service requests are sent directly to the MEP, and MEP nominations are processed when the ICP becomes active on the registry. If a new connection is backdated more than five business days, Mercury is unlikely to be recorded as the responsible retailer in the registry as required by this clause. The 152 late new connections identified in **section 3.5** which did not have a "new connection in progress" record created are non-compliant.

Analysis of the list file and event detail report found 143 (6.2%) of the 2,293 new connections were not certified within five business days of electrical connection. Certification is an MEP responsibility, but their delay has caused Mercury to be non-compliant.

A sample of ten late certifications were checked. For nine ICPs certification was completed within five business days of the ICP becoming active, but the MEP had entered a different certification date on the registry. For one ICP, the certification was genuinely late. Given the high proportion of certification dates that did not match the MEP's paperwork, I recommend that unexpected certification dates should be checked with the MEP to reduce the likelihood of future non-compliance.

Description	Recommendation	Audited party comment	Remedial action
Meter certification	Advise the MEP where meter certification dates appear incorrect on the registry.	Mercury believes that the responsibility should sit with the MEP. MEP should be accountable for their own errors.	Not planned

Reconnected ICPs

Certification details were checked on the metering installation details report and event detail report for all 3,852 reconnections where the event state was active.

- 3,529 ICPs (91.6%) had full certification when they were reconnected.
- 253 ICPs (6.6%) did not have a certification record on the event detail report or PR255 report. Certification records were checked on the registry for a typical sample of 30 ICPs, and I found that three were genuinely uncertified at the time of reconnection.
- 70 ICPs (1.8%) had expired certification at the time of reconnection. 56 of those had expired interim certification and 14 had expired full certification.

The 2018 audit recommended Mercury review their processes to ensure that ICPs are certified on reconnection. Because Mercury uses their own contractors rather than the MEP to reconnect ICPs, it is not practical for uncertified meters to be certified upon reconnection. Mercury notes that it can be necessary to reconnect ICPs on switch in, and to ensure customer wellbeing. Delaying or refusing to connect these ICPs could be detrimental to customers.

Bridged meters

Mercury confirmed 21 ICPs were bridged to reconnect during the audit period and were later unbridged. Seven of the affected meters were recertified when they were unbridged, and the other 14 were not.

Audit outcome

Non-compliant

Non-compliance	Description
Audit Ref: 2.11 With: 10.33A From: 03-Apr-18 To: 31-Jan-19	Mercury was not recorded as the responsible participant in the registry on the active date for 152 ICPs. Up to 134 ICPs not certified within five business days of electrical connection. At least 73 ICPs not certified within five business days of electrical reconnection. 14 meters were not recertified when they were unbridged. Potential impact: Low Actual impact: Low Audit history: Multiple Controls: Weak Breach risk rating: 3
Audit risk rating	**Rationale for audit risk rating**
Low	The controls are rated as weak as Mercury does not use the "inactive - new connection in progress" status therefore late new connections also cause late MEP nomination. Controls are not in place to ensure reconnected ICPs with uncertified metering are certified within five business days, or on un-bridging. The audit risk rating is low as this has no direct impact on reconciliation.

Actions taken to resolve the issue	Completion date	Remedial action status

Response: Non compliance accepted and remedial action on-going **Action:** 1) Mercury was not recorded as the responsible participant in the registry on the active date for 152 ICPs: Mercury will review and implement a process to advise MEPs that their meters are uncertified when we commerce supply. With 93% of our new connections were compliant this indicates that our controls are high. Mercury believe it will be detrimental to customers to not to supply customer and reconnect their power due to certification issues. **Action:** 2) Up to 134 ICPs not certified within five business days of electrical connection 3) At least 73 ICPs not certified within five business days of electrical reconnection. 4) 14 meters were not recertified when they were unbridged Mercury will review and rectify all the uncertified ICP's which are electrically connected or when they are bridged Mercury also notes that this is a MEP non-compliance and not a retailer non-compliance. We do not wish to refuse to supply power to customers due to MEP certification issues.	Dec 2019	Identified
Preventative actions taken to ensure no further issues will occur	**Completion date**	
Mercury will review all the existing process and will implement a process to advise the MEPs if the certification dates appear incorrect in a best practical manner	Dec 2019	

2.12. Arrangements for line function services (Clause 11.16)

Code reference

Clause 11.16

Code related audit information

Before providing the registry manager with any information in accordance with clause 11.7(2) or clause 11.18(4), a trader must ensure that it, or its customer, has made any necessary arrangements for the provision of line function services in relation to the relevant ICP

Before providing the registry manager with any information in accordance with clause 11.7(2) or clause 11.18(4), a trader must have entered into an arrangement with an MEP for each metering installation at the ICP.

Audit observation

The process to ensure an arrangement is in place before trading commences on a Network was examined, and controls within SAP were checked.

Audit commentary

Mercury demonstrated the existence of either a UoSA or other trading arrangement for all networks it trades on.

Audit outcome

Compliant

2.13. Arrangements for metering equipment provision (Clause 10.36)

Code reference

Clause 10.36

Code related audit information

A reconciliation participant must ensure it has an arrangement with the relevant MEP prior to accepting responsibility for an installation.

Audit observation

The process to ensure an arrangement is in place with the metering equipment provider before an ICP can be created or switched in was checked, and a check of controls within SAP.

Audit commentary

Mercury has an arrangement in place with most MEPs that manage metering in relation to their customer base. The new connection process also contains a step that requires the nomination of an MEP.

IntelliHub is a new MEP and whilst they now own Metrix, they are both separate MEPs and separate legal entities. Mercury does not have an arrangement in place with IntelliHub.

Audit outcome

Non-compliant

Non-compliance	Description
Audit Ref: 2.13 With: Clause 10.36 From: 01-Jan-19 To: 31-Mar-19	Arrangement not in place with IntelliHub. Potential impact: Low Actual impact: Low Audit history: None Controls: Strong Breach risk rating: 1
Audit risk rating	**Rationale for audit risk rating**
Low	The controls are recorded as strong because arrangements are in place with all other MEPs. The impact could be minor; therefore, the audit risk rating is low.

Actions taken to resolve the issue	Completion date	Remedial action status
Mercury is currently working with IntelliHub to have an agreement in place	Oct 2019	Identified
Preventative actions taken to ensure no further issues will occur	**Completion date**	
Mercury will ensure that before accepting a new MEP, an agreement is in place	Oct 2019	

3. MAINTAINING REGISTRY INFORMATION

3.1. Obtaining ICP identifiers (Clause 11.3)

Code reference

Clause 11.3

Code related audit information

The following participants must, before assuming responsibility for certain points of connection on a local network or embedded network, obtain an ICP identifier for the point of connection:

a) a trader who has agreed to purchase electricity from an embedded generator or sell electricity to a consumer
b) an embedded generator who sells electricity directly to the clearing manager
c) a direct purchaser connected to a local network or an embedded network
d) an embedded network owner in relation to a point of connection on an embedded network that is settled by differencing
e) a network owner in relation to a shared unmetered load point of connection to the network owner's network
f) a network owner in relation to a point of connection between the network owner's network and an embedded network.

ICP identifiers must be obtained for points of connection at which any of the following occur:

- *a consumer purchases electricity from a trader 11.3(3)(a)*
- *a trader purchases electricity from an embedded generator 11.3(3)(b)*
- *a direct purchaser purchases electricity from the clearing manager 11.3(3)(c)*
- *an embedded generator sells electricity directly to the clearing manager 11.3(3)(d)*
- *a network is settled by differencing 11.3(3)(e)*
- *there is a distributor status ICP on the parent network point of connection of an embedded network or at the point of connection of shared unmetered load 11.3(3)(f).*

Audit observation

The "new connections" process was examined in detail to confirm compliance with the requirement to obtain ICP identifiers for points of connection to local or embedded networks.

Audit commentary

This requirement is well managed and understood by Mercury. The process is detailed in **section 2.9** above.

Audit outcome

Compliant

3.2. Providing registry information (Clause 11.7(2))

Code reference

Clause 11.7(2)

Code related audit information

Each trader must provide information to the registry manager about each ICP at which it trades electricity in accordance with Schedule 11.1.

Audit observation

The new connection process was examined in detail. The registry list as at 13/02/19 and event detail report for 01/04/18 to 08/02/19 were analysed to evaluate registry updates for new connections. This clause links directly to **section 3.5** below, which assesses the timeliness of registry updates.

Audit commentary

The new connection process is detailed in **sections 2.9** and **3.5**. The process in place ensures that trader information is populated as required by this clause.

Audit outcome

Compliant

3.3. Changes to registry information (Clause 10 Schedule 11.1)

Code reference

Clause 10 Schedule 11.1

Code related audit information

If information provided by a trader to the registry manager about an ICP changes, the trader must provide written notice to the registry manager of the change no later than five business days after the change.

Audit observation

The process to manage status changes is discussed in detail in **sections 3.8** and **3.9** below. The process to manage MEP nominations and trader updates was discussed.

In this section I have examined the event detail report for 01/04/18 to 08/02/19, to identify all late status updates, MEP nominations, and trader updates. To determine the reasons for the late updates, I examined:

- 20 late updates to active made over 30 business days after the event date;
- a sample of ten late updates over 30 business days (or all late updates over 30 business days) for each inactive status type;
- 20 late HHR MEP nominations made over 30 business days after the event date and 30 late HHR MEP nominations made over 30 business days after the event date; and
- 20 late trader updates over 30 business days were checked.

Audit commentary

The event detail report was examined to confirm whether the registry is updated within five business days when information referred to in clause 9 of schedule 11.1 changes. Overall, the timeliness of status updates has improved since the 2018 audit.

Event	Year	Total ICPs	ICPs notified within 5 days	ICPs notified greater than 5 days	Average notification days	Percentage compliant
Status updates						
Change to active - Reconnections	2016	847	657	190	24	78%
	2017	1,182	977	205	21.2	83%
	2018	2,899	2,141	758	26.3	74%
	2019	**3,991**	**3,200**	**791**	**17.6**	**80.1%**
Change to electrically disconnected vacant (excluding new connection in progress and ready for decommissioning statuses)	2016	148	59	89	230	40%
	2017	1,865	1,653	212	12.2	89%
	2018	2,750	2,555	195	7.09	93%
	2019	**3,381**	**3,088**	**293**	**10**	**91.3%**
Change to electrically disconnected - ready for decommissioning	2016	231	59	172	66	26%
	2017	906	302	604	69.2	33%
	2018	501	276	225	74.1	55%
	2019	**972**	**677**	**295**	**16**	**70%**
Trader updates						
Change of MEP	2017	978	126	852	24.6	13%
	2018	2,837	2,788	49	*-26	98%
	2019	**12,149**	**9,861**	**2,288**	**4**	**81%**
Trader updates (excluding MEP nominations and NT updates)	**2019**	**85,069**	**8,117**	**76,952**	**37**	**9.5%**

**The average notification days includes ICPs where the nomination has been sent well in advance of the meter being recertified hence it is a negative number.*

Status updates - reconnections

The level of compliance for reconnections has improved by 4% during the audit period. The process for reconnections is largely automated. The closing of a service request triggers an update to SAP and then the registry. Where the automatic update fails the registry and SAP are updated manually.

Field services jobs are closely monitored to ensure that they are completed, and paperwork is returned. Daily reminders are issued to contractors where paperwork is due. This process is automated for Wells using a B2B system. A report of open jobs for other contractors is generated, and Mercury's inboxes are checked for paperwork before issuing reminders. In addition, a weekly report is generated for all ICPs which are disconnected but have an active customer account. This report identifies ICPs which are likely to have been reconnected so that paperwork can be followed up.

791 updates were completed more than five business days after the event date. 146 of those were more than 30 business days after the event date, 94 were more than 120 business days after the event date and 22 were more than 1,000 business days after the event date.

Analysis of 20 updates more than 30 business days after the event date found:

- 12 late updates were caused by invalid updates created where the ICP returned to active status after a period of being inactive, and the previous inactive time slice was automatically updated to active as well - the incorrect statuses are recorded as non-compliance in **section 3.8**;
- five late updates were status corrections;
- two ICPs were reconnected on switch in, and the update was delayed by a backdated switch completion; and
- one status update appears to be late due to late receipt of paperwork.

Status updates – inactive for reasons other than ready for decommissioning

Field services jobs are closely monitored to ensure that they are completed, and paperwork is returned, using the same processes as for reconnections. Status updates for credit disconnections are updated on a weekly basis, back to the first full day with no power.

The process is automated so that the status in SAP is updated when the service request is completed. Where an ICP is disconnected and promptly reconnected, paperwork may be received out of order. This can result in the reconnection being processed before the disconnection, leaving the ICP with an incorrect status in SAP and on the registry. Processes are in place to identify and correct statuses where paperwork has been processed out of order, including monitoring of consumption on inactive ICPs.

The table above shows 293 of the 3,381 ICPs updated to inactive for reasons other than decommissioning were updated more than five business days of the event date. 115 were updated more than 30 business days after the event date, 55 were more than 120 business days after the event date and 13 were more than 1,000 business days after the event date.

A sample of ten late updates over 30 business days (or all late updates over 30 business days) for each inactive status type were checked:

- 12 late updates were status corrections following the correct status being confirmed;
- 13 late updates were caused by a combination of late paperwork confirming the disconnection and/or a delay in processing the paperwork; and
- four late updates were delayed while Mercury queried the disconnection information with the contractor and/or network.

Status updates – inactive ready for decommissioning

The request for ICPs to be decommissioned can come from the MEP, the customer, or the Network. Mercury always checks the customer is ready for the ICP to be decommissioned (if the ICP is occupied), and that paperwork is received from the network prior to updating to ready for decommissioning status.

677 (70%) of the 972 updates to ready for decommissioning status occurred on time. 295 updates were late. I checked a sample of ten late updates over 30 business days and found:

- nine updates were delayed by late notice that the ICP was to be decommissioned; and
- one update was backdated at the network's request - the ICP was requested to be decommissioned in August 2018, but the network later advised that it should be decommissioned from June 2018.

Change of MEP

For HHR ICPs MEP nominations are managed directly on the registry. For NHH ICPs MEP nominations are normally created from SAP but may also be created manually on the registry. MEP nominations for bulk meter roll outs are uploaded to the registry via files.

Some invalid MEP nominations continue to be issued in error by SAP's switch in loader and switch out loader processes. To identify and correct these invalid nominations, a weekly SAS query is run to identify MEP reversals, which compares MEP nominations in SAP and the registry. Any nominations created by the switch in loader or switch out loader processes are checked and reversed if invalid.

The nomination date was compared to the metering event effective date to identify any ICPs that were not nominated within five business days. 9,861 (85%) of the 12,149 MEP nominations were made within five business days. 2,288 nominations were late, and 79 nominations were backdated more than 30 business days.

20 late HHR MEP nominations were checked, to determine the reasons for the late updates:

- 14 were invalid nominations created by the switch in or switch out loader;
- four were delayed by late confirmation of the metering change; and
- two were delayed while Mercury confirmed whether the ICP was to be NHH or HHR.

30 late NHH MEP nominations more than 30 business days after the event date were checked, to determine the reasons for the late updates:

- 16 were invalid nominations created by the switch in or switch out loader;
- five late updates were to correct previous incorrect nominations, as part of the MEP reversal project which finds and corrects invalid MEP nominations;
- three nominations were backdated at the MEP's request;
- two nominations were backdated to correct nominations made by the previous retailer; and
- four nominations were missed at the time the meters were replaced, and backdated corrections were processed once the missing nominations were identified.

Trader updates

8,117 (9.5%) of the 85,069 trader updates made were within five business days of the event date. 76,952 updates were late. 5,080 of those were more than 30 business days after the event date, 2,639 were more than 120 business days, and 675 were more than 1,000 business days.

A sample of 20 late trader updates over 700 business days were examined.

- 15 late updates were backdated ANZSIC code corrections. When correcting ANZSIC codes Mercury would update the code effective from the beginning of the most recent time slice, which caused backdated updates. The process has been changed to update ANZSIC codes from the date the correction is processed.
- One late update was a correction to trader information for an unmetered load ICP.
- Four late updates were to replace invalid MEP nominations, before the MEP nomination was accepted. MEP nominations are typically identified by matching the trader event to the meter nomination acceptance event, so these appeared as trader updates in my analysis.

Audit outcome

Non-compliant

Non-compliance	Description
Audit Ref: 3.3 With: Clause 10 of schedule 11.1 From: 03-Apr-18 To: 21-Jan-19	Registry not updated within 5 business days of the event for some status updates, MEP nominations and trader updates. Potential impact: Medium Actual impact: Low Audit history: Multiple Controls: Weak Breach risk rating: 6
Audit risk rating	**Rationale for audit risk rating**
Medium	The controls are rated as weak because automated processes are contributing to the volume of backdated and incorrect updates to active and MEP nominations. The audit risk rating is assessed to be medium, based on the number of backdated records and number of days backdated, and that some of the updates are invalid.

Actions taken to resolve the issue	Completion date	Remedial action status
Response: Non compliance accepted and remedial action on-going **Action:** A process change to ANSIC code updates has been made which will result in a dramatically less late updates. A further review is under way to identify how Trader and MEP updates can be made to improve on our compliance	Completed On going	Identified
Preventative actions taken to ensure no further issues will occur	**Completion date**	
Once review is completed, Mercury will be implementing a MEP rejections reversal process to reduce the inaccuracies. The focus will continue to improve to meet the code obligation however we would like to mention that small number on non-compliance will continue to occur.	Dec 2019	

3.4. Trader responsibility for an ICP (Clause 11.18)

Code reference

Clause 11.18

Code related audit information

A trader becomes responsible for an ICP when the trader is recorded in the registry as being responsible for the ICP.

A trader ceases to be responsible for an ICP if:

- *another trader is recorded in the registry as accepting responsibility for the ICP (clause 11.18(2)(a)); or*
- *the ICP is decommissioned in accordance with clause 20 of Schedule 11.1 (clause 11.18(2)(b)).*
- *if an ICP is to be decommissioned, the trader who is responsible for the ICP must (clause 11.18(3)):*
    - *arrange for a final interrogation to take place prior to or upon meter removal (clause 11.18(3)(a)); and*
    - *advise the MEP responsible for the metering installation of the decommissioning (clause 11.18(3)(b)).*

A trader who is responsible for an ICP (excluding UML) must ensure that an MEP is recorded in the registry for that ICP (clause 11.18(4)).

A trader must not trade at an ICP (excluding UML) unless an MEP is recorded in the registry for that ICP (clause 11.18(5)).

Audit observation

Retailers Responsibility to Nominate and Record MEP in the Registry

The new connection process was discussed and the registry list as at 13/02/19 was examined to confirm whether all active ICPs have an MEP recorded.

1,268 MEP nomination rejections were identified on the event detail report, and 20 HHR and 20 NHH rejections were reviewed.

ICP Decommissioning

The process for the decommissioning of ICPs was examined. A selection of ten decommissioned ICPs were checked using the typical case method of sampling to prove the process and confirm controls are in place.

Audit commentary

Retailers Responsibility to Nominate and Record MEP in the Registry

The new connection process is discussed in detail in **section 2.9**. Mercury nominate the MEP at the same time the ICP becomes "active". This means that if the status update to active is late, the MEP nomination is also expected to be late. The timeliness of MEP nominations is discussed further in **section 3.3**.

Some invalid MEP nominations continue to be issued in error by SAP's switch in loader and switch out loader process. Mercury has put processes in place to help to identify and correct these invalid nominations as described in **section 3.3**.

Rejected MEP nominations are not actively monitored, but Mercury is considering how best to monitor these in the future. I reviewed a sample of 20 rejected HHR nominations and 20 rejected nominations and found:

- all 20 rejected HHR nominations had been created in error by the switch in or switch out loader;
- 16 of the rejected NHH nominations had been created in error by the switch in or switch out loader; and
- four nominations were rejected by the MEP because deployment was turned down, or an incorrect nomination was made.

The list file was examined and identified 105 active ICPs with no MEP recorded, or with meter category nine recorded and the UML flag set to "N". These ICPs were examined in **section 3.7**, and found to be timing differences, or potentially had unmetered load connected. One ICP had not been updated to inactive status and is recorded as non-compliance in **section 3.8**.

Active ICPs without metering or unmetered load details identified in the 2018 audit (but not resolved by when the report was finalised) were followed up. All the issues were cleared:

- 0000034607DE089 now has Metrix recorded as the MEP and metering details are recorded; and
- ICPs 0002273985CN646, 0447814877LCA25, and 1000007362BPC29 are now decommissioned.

ICP Decommissioning

Mercury continues with their obligations under this clause. ICPs that are vacant and active, or inactive are still maintained in SAP.

In all cases, an attempt is made to read the meter at the time of removal and if this is not possible then the last actual meter reading is used. This last actual reading is normally the one taken at the time of de-energisation. Mercury also advise the MEP responsible that a site is to be decommissioned. A sample of ten ICPs were examined to confirm an attempt to read the meter was made at the time of removal and the MEP was notified.

Audit outcome

Non-compliant

Non-compliance	Description
Audit Ref: 3.4 With: Clause 11.18 From: 16-May-18 To: 31-Jan-19	Some invalid MEP nominations were sent. Potential impact: Low Actual impact: Low Audit history: Twice Controls: Weak Breach risk rating: 3
Audit risk rating	**Rationale for audit risk rating**
Low	The controls are rated as weak because automated processes are contributing to the volume of invalid MEP nominations. The audit risk rating is low as this has no direct impact on reconciliation.

Actions taken to resolve the issue	Completion date	Remedial action status
Response: Non compliance accepted and remedial action on-going **Action:** Reporting has been changed to monitor these on weekly basis as an interim measure until a permanent solution is implemented.	Completed	Identified
Preventative actions taken to ensure no further issues will occur	**Completion date**	
Mercury is aware of the issue that causes these invalid MEP nominations and are working on a permanent solution with ICT.	May 2020	

3.5. Provision of information to the registry manager (Clause 9 Schedule 11.1)

Code reference

Clause 9 Schedule 11.1

Code related audit information

Each trader must provide the following information to the registry manager for each ICP for which it is recorded in the registry as having responsibility:

- *a) the participant identifier of the trader, as approved by the Authority (clause 9(1)(a))*
- *b) the profile code for each profile at that ICP, as approved by the Authority (clause 9(1)(b))*
- *c) the metering equipment provider for each category 1 metering or higher (clause 9(1)(c))*
- *d) the type of submission information the trader will provide to the RM for the ICP (clause 9(1)(ea)*
- *e) if a settlement type of UNM is assigned to that ICP, either:*
  - *the code ENG if the load is profiled through an engineering profile in accordance with profile class 2.1 (clause 9(1)(f)(i)); or*
  - *in all other cases, the daily average kWh of unmetered load at the ICP (clause 9(1)(f)(ii)).*
  - *the type and capacity of any unmetered load at each ICP (clause 9(1)(g))*
  - *the status of the ICP, as defined in clauses 12 to 20 (clause 9(1)(j))*
  - *except if the ICP exists for the purposes of reconciling an embedded network or the ICP has distributor status, the trader must provide the relevant business classification code applicable to the customer (clause 9(1)(k)).*

The trader must provide information specified in (a) to (j) above within five business days of trading (clause 9(2)).

The trader must provide information specified in 9(1)(k) no later than 20 business days of trading (clause 9(3)).

Audit observation

The new connection process was examined in detail to evaluate the strength of controls.

The registry list as at 13/02/19, meter installation details report, and event detail report for 01/04/18 to 08/02/19 were analysed to confirm process compliance and that controls are functioning as expected.

Audit commentary

The table below shows a significant improvement in compliance for status updates to active for new connections.

Event	Year	Total ICPs	ICPs Notified Within 5 Days	ICPs Notified Greater Than 5 Days	Average Notification Days	Percentage Compliant
Change to active - New connections	2016	413	355	58	4.1	86%
	2017	1,523	1,323	200	3.9	87%
	2018	*349	276	73	4.3	79%
	2019	**2,293**	**2,140**	**153**	**3.3**	**93%**
Change to new connection in progress	2016	6	1	5	19	83%
	2017	17	8	9	24.2	76%

	2018	1	1	0	2	100%
	2019	**16**	**5**	**11**	**32**	**31%**

**The volume of new connections is less than last time as I only selected those ICPS where MEEN/MRPL was the nominated trader – if subsequent network event strips out the proposed trader these ICPs will be ignored.*

NHH status updates

The non-half hour new connections team do not use the "new connection in progress" status. The ICP is claimed and status is updated to active once confirmation is received from the field that the ICP is connected.

139 of the 2,259 updates to active for NHH new connections were made more than five business days after the event date. The ten latest status updates were checked, including all updates more than 35 business days after the event date and found

- eight of the updates were delayed by late paperwork;
- one was delayed because the meter as installed against the wrong ICP, and an investigation was carried out to confirm the correct details before the registry was updated; and
- ICP 0000569665NR7C0 was recorded with an active date of 15/06/18 but should have been recorded with 17/08/18, this means that the update was on time, but for an incorrect date. The incorrect status date is recorded as non-compliance in **section 3.8**.

The late updating of the registry to active is recorded as non-compliance below.

HHR status updates

14 of the 34 updates to active for HHR new connections were made more than five business days after the event date. Ten late updates were checked and found to be delayed by late confirmation of the correct active date.

All late updates to new connection in progress status were checked and found to have been processed prior to the ICP becoming active. All updates to new connection in progress status were compliant.

Audit outcome

Non-compliant

Non-compliance	Description
Audit Ref: 3.5 With: Clause 9 of schedule 11.1 From: 03-May-18 To: 18-Jan-19	Registry information not provided within 5 business days of commencement of supply. Potential impact: Low Actual impact: Low Audit history: Multiple Controls: Moderate Breach risk rating: 2
Audit risk rating	**Rationale for audit risk rating**

Low	The controls are rated as moderate as they will mitigate risk most of the time but there is room for errors to occur. The audit risk rating is low as the average cycle time to complete is still below 5 days, and only nine new connections were updated more than 35 business days after the event date.

Actions taken to resolve the issue	Completion date	Remedial action status
Response: Non compliance accepted and remedial action on-going **Action:** Mercury note's that it has made significant improvement in this area moving from 79% to 93% due to the process improvements made to date. We believe that our controls should be rated as strong based on the above improvement. Some of these are caused by third party delays however Mercury will continue to make further improvements to ensure we are compliant in this area.	Dec 2019	Identified
Preventative actions taken to ensure no further issues will occur	**Completion date**	
All the existing process will be reviewed, and gaps will be implemented to meet the code obligations	May 2020	

3.6. ANZSIC codes (Clause 9 (1(k) of Schedule 11.1)

Code reference

Clause 9 (1(k) of Schedule 11.1

Code related audit information

Traders are responsible to populate the relevant ANZSIC code for all ICPs for which they are responsible.

Audit observation

The process to capture and manage ANZISC codes was examined.

The registry list as at 15/02/19 was reviewed to check ANZSIC codes. To confirm the validity of the ANZSIC codes, I checked a diverse sample of 90 active ICPs across ten different ANZSIC codes which made up more than 0.2% of the total ICPs, and ten ICPs with unknown ANZSIC codes.

Audit commentary

ANZSIC codes are confirmed as part of the customer application process. SAS queries to identify missing and unknown ANZSIC codes are run weekly. The query results are reviewed to identify ICPs which require ANZSIC code updates.

Missing ANZSIC codes

Analysis of active ICPs in the list file found two ICPs with no ANZSIC code, as recorded in the 2018 audit. The registry will not allow an update to the trader details until an MEP is registered for a HHR site even though these are DUML ICPs.

ICP	SAP ANZSIC	Registry ANZSIC
0001264718UN3E4	O753	Blank
0001264719UNFA1	O753	Blank

Unknown ANZSIC codes

There were 269 ICPs with ANZSIC code T994 "Don't know". This is a reduction of a further 31% from the 388 ICPs reported in the last audit and an excellent reduction from the 3,454 in 2016. A sample of ten ICPs were checked. Three were vacant and genuinely unknown. ANZSIC codes could be determined for the other seven ICPs as shown below.

ICP	ANZSIC	ANZSIC description	Customer industry
0000006348DEA9B	T994	Don't know	Personal Care Service
0000007513UN9EE	T994	Don't know	Residential
0000026568UNA0A	T994	Don't know	Residential
0000034060WEAFB	T994	Don't know	Department Store
0000035993UN2C4	T994	Don't know	Residential
0000038909UN592	T994	Don't know	Residential
0000040150HR6D5	T994	Don't know	Tertiary Education

Accuracy of ANZSIC codes

I checked a sample of 90 active ICPs across ten different ANZSIC codes which made up more than 0.2% of the total ICPs. 58 appeared correct, 22 appeared reasonable based on the information available. Ten codes appeared to be incorrect as shown below.

ICP	ANZSIC	ANZSIC description	Customer industry
1001252215LCB0D	E329	Other Construction Services	Accountant
0493734619LC1E9	L671	Property Operators	Engineering
0407259066LC4F0	H440	Accommodation	Gardens
0002421620CND4A	S953	Other Personal Services	Residential
0527734853LC4E7	H440	Accommodation	Property Operators
1000567287PC9A3	E329	Other Construction Services	Cowshed
1000573382PC389	E329	Other Construction Services	Pump shed
0331960036LC8DB	H440	Accommodation	Residential
0354727361LC091	H440	Accommodation	Residential

ICP	ANZSIC	ANZSIC description	Customer industry
1099564609CNA19	A016	Dairy Cattle Farming	Road freight

Audit outcome

Non-compliant

Non-compliance	Description
Audit Ref: 3.6 With: 9 (1(k) of Schedule 11.1 From: 15-Feb-19 To: 15-Feb-19	Up to 269 active ICPs with no or "Don't know" ANZSIC codes invalidly assigned. 10 of the 90 ICPs checked had incorrect ANZSIC codes assigned. Potential impact: Low Actual impact: Low Audit history: Multiple Controls: Moderate Breach risk rating: 2
Audit risk rating	**Rationale for audit risk rating**
Low	The controls are rated as moderate and are improving. Most ICPs have a valid ANZSIC code assigned. This has no direct impact on reconciliation therefore the audit risk rating is low. There is an impact on reporting by the Electricity Authority.

Actions taken to resolve the issue	Completion date	Remedial action status
Response: Non compliance accepted and remedial action on-going **Action:** Mercury have made a great improvement to ensure updates are being made in timely manner. 1) Up to 269 active ICPs with no or "Don't know" ANZSIC codes invalidly assigned Reporting will change to weekly basis to ensure discrepancies are resolved and compliance are met 2) 10 of the 90 ICPs checked had incorrect ANZSIC codes assigned Mercury will investigate how best to update the codes and also validate the existing codes with other information available in the market.	Dec 2019	Identified
Preventative actions taken to ensure no further issues will occur	**Completion date**	

Mercury will investigate how best to update the codes and also validate the existing codes with other information available in the market.	May 2020	

3.7. Changes to unmetered load (Clause 9(1)(f) of Schedule 11.1)

Code reference

Clause 9(1)(f) of Schedule 11.1

Code related audit information

If a settlement type of UNM is assigned to that ICP, the trader must populate:

-the code ENG - if the load is profiled through an engineering profile in accordance with profile class 2.1 (clause 9(1)(f)(i)); or

-the daily average kWh of unmetered load at the ICP - in all other cases (clause 9(1)(f)(ii)).

Audit observation

The process to manage unmetered load was examined. The list file as at 13/02/19 was examined to identify any ICPs where:

- unmetered load is identified by the distributor, but none is recorded by Mercury; and
- Mercury's unmetered load figure does not match with the Distributor's figure (where it was possible to calculate this if the Distributor is using the recommended format) and the variance is greater than 1.0kWh per day. 1.0 kWh per day was chosen as a sample only; this does not indicate compliance is achieved if an error is found that is less than 1.0 kWh per day.

Audit commentary

Management of unmetered load information

All unmetered load new connections or capacity changes require an application to Mercury, which then follows the new connections process.

Unmetered daily kWhs are recorded in two locations in SAP; the retailer time slice table (which reflects the SAP value) and the installation facts (which reflects the registry value). Every two months reports are run in SAS to identify discrepancies between the registry and retailer time slice table, and the registry and installation facts. I saw evidence that any differences are investigated and corrected.

As recorded in **section 2.1**, there is no process to identify changes to distributor unmetered load details which could indicate that the details Mercury holds are incorrect, and I have recommended that a check for changes to distributor details is added.

Registry discrepancy reporting is in place to identify unmetered load discrepancies. This is run against all ICPs with UML flag "Y" and against any ICPs with UML indicated by the Distributor where the UML flag is "N". Currently the comparison is run only against those records that detail wattage and not kilowatt figures.

Active ICPs with no metering or unmetered load recorded by Mercury

105 ICPs are recorded on the registry with no MEP nominated, no metering and UML set to "N". These were examined and found:

- 91 were timing differences where an MEP nomination has been made and accepted, or the ICP has become inactive, decommissioned, or had unmetered load added since the registry list report was provided;

- ICP 0000033468CP85C has had its metering removed and should have been made inactive - this is recorded as non-compliance in **section 3.9**;
- ICP 0001264717UNC3A has a DUML database, but the registry will not allow an update to the trader details until an MEP is registered for a HHR site even though it is a DUML ICP; and
- the other ten ICPs have distributor unmetered load recorded but no trader unmetered load details and are discussed below.

ICPs with unmetered load recorded by the Distributor but not by Mercury

23 active ICPs with unmetered load recorded by the distributor do not have unmetered load recorded by Mercury. 11 were confirmed to have DUML databases, but the registry will not allow an update to the trader details until an MEP is registered for a HHR site although these are DUML ICPs. I recommend that the other 12 ICPs are checked with the customer and/or distributor to confirm whether there is unmetered load connected.

ICP	Distributor unmetered load details
0000022790DE681	125:24:FLOW METER
0000027531TR72B	1/01/2012
0000185059HBED9	0.126KW_UVL
0000960747TU125	METERED - CURRENT
0001433781UN421	0.00kW:24:PCM Sites
0001440169UN2D0	0.00kW:24:Vodaphone Cell
0010432623EL07D	1110x1
0015834974EL9EC	1110x2
0042250804PC175	CURRENT - METERED
0900085208PC624	CHEETAM
1001145515LC43A	AS PER VECT20081218124003B
1001248890LCFA3	INCORRECTLY SET UP

Description	Recommendation	Audited party comment	Remedial action
Confirm whether unmetered load is connected.	Confirm the details of any unmetered load connected for the 12 ICPs with distributor unmetered load details and no trader unmetered load details recorded.	Mercury will work with the relevant parties to confirm and update the details as required.	Identified

ICPs with unmetered load recorded by Mercury but not the distributor

618 ICPs have unmetered load details recorded by Mercury, but not the distributor. 557 of these are telecommunications ICPs, and Mercury is working with the customer to confirm the unmetered load details and update the registry.

I checked a sample of 17 other ICPs with no unmetered load recorded by the distributor and found all are genuinely unmetered.

Accuracy of trader unmetered daily kWh

Mercury supplies 1,771 ICPs with unmetered load recorded. Review of the registry list found all ICPs with the unmetered flag set to Y have unmetered load populated.

There are six ICPs with zero populated in the daily UML kWh field. All are residual load SB ICPs and are compliant.

For 403 ICPs, the distributor had populated the unmetered load details in a format that allowed recalculation of the unmetered load based on their data. I found 35 of the 403 ICPs had differences of more than ± 1 kWh. 15 of these are telecommunications ICPs, and Mercury is working with the customer to confirm the unmetered load details and update the registry. For the other 20 ICPs, Mercury is unsure of the correct unmetered load details, and I recommend these are checked and updated:

ICP	Distributor unmetered load details	Trader unmetered load details	Trader kWh	Distrib kWh[1]
1099569132CN617	15;24;Radio Repeater	0460;24;RadioRepeater	11.04	0.36
0001416957UN00A	0.23kW:24:PCM UNIT 300W	1X500W CABINET;24HRS	12	5.52
0304334049LC7CA	0.02kW:24:18Watts 24hrs	6336.95;1.00;UNM_UnKnown	6.34	0.48
0000038455HR926	0040;24;CCTV Camera	0200;24;CCTV	4.8	0.96
0000038462HR314	0040;24;CCTV Camera	0200;24;CCTV	4.8	0.96
1001162338LCD9F	0.01kW:24:10Watts 24hrs	0.01kW:24:10Watts 24hrs	2.78	0.24
1001277262LCD77	0.05kW:24:VECT Auto Gate	0.05kW:24:VECT Auto Gate	2.88	1.20
1001241755UNCB8	0.05kW:24:AUTOMATIC GATE	0.05kW:24:VECTAutoGate	2.78	1.20
1001241757UNC3D	0.05kW:24:AUTOMATIC GATE	0.05kW:24:AUTOMATIC GATE	2.78	1.20
0282046071LCEB5	0.18kW:24:VECT Sign 90W	0.072;24;Sign	1.73	0.43
1001131269UNB56	0.05kW:24:REMOTE MONITOR	0.10:24:RemoteMonitor	2.4	1.20
0424109425LC789	0.02kW:24:18Watts 24hrs	0.060;24;PAYPHONE	1.44	0.48
0450253090LCAAF	0.02kW:24:18Watts 24hrs	0.060;24;PAYPHONE	1.44	0.48
1001257012LCBE0	0.05kW:24:VECT Auto Gate	0.05kW:24:VECTAutoGate	0.05	1.20

[1] Calculated based on the distributor unmetered load details

ICP	Distributor unmetered load details	Trader unmetered load details	Trader kWh	Distrib kWh[1]
0752453375LC473	0.70kW:ENG:700Watts 12hrs	700.00;10.00;UNM_UnKnown	7	8.40
1001239338LCDBF	0.40kW:ENG:400Watts 12hrs	0.40kW:ENG:400Watts 12hrs	2.78	4.80
1001152175LCB4A	0.36kW:ENG:360Watts 12hrs	180.00;12.00;0.36kW:ENG:360Watts12hrs	2.16	4.32
0000104926WADB5	0.011:24.00:Gatekeeper	0.011:24.00:Gatekeeper	0.264	2.64
1001153738UNB06	0.015kW:24:CCTV Camera	0.015;24;CCTV	0.36	3.60
1001144070LC220	0.36kW:24:VECT Unmetered	0.36;12;VMSSign	4.32	8.64

Description	Recommendation	Audited party comment	Remedial action
Check daily unmetered kWh	Confirm the daily unmetered kWh for the 20 ICPs where the daily unmetered kWh based on the distributor's unmetered load details is more than ± 1 kWh from the trader unmetered daily kWh.	Mercury will work with the relevant parties to confirm and update the details as required.	Identified

ICP 0015723581ELA43 has a single-phase meter on a telecommunications amplifier in the Kapiti Coast region. The issue is that there are 101 such amplifiers and the ICP has a multiplier of 101. The other amplifiers are unmetered at locations unknown in the Kapiti area, but the load is being incorrectly reconciled against this ICP. This ICP has been identified in both the previous retailers and associated MEP's reports. This matter is also recorded in **section 5.4**, because there is no DUML database for this load. This is recorded as non-compliance below.

Audit outcome

Non-compliant

Non-compliance	Description
Audit Ref: 3.7 With: Clause 9(1)(f) of Schedule 11.1 From: 1-Apr-18 To: 28-Mar-19	Incorrect unmetered load is recorded for ICP 0015723581ELA43. Potential impact: Low Actual impact: Unknown Audit history: Multiple Controls: Moderate Breach risk rating: 4
Audit risk rating	**Rationale for audit risk rating**

Medium	I have rated the controls as moderate as the registry discrepancy process will identify most errors. The audit risk rating is medium due to the unknown impact of the Kapiti coast ICP that has may have incorrect volumes being reconciled against the incorrect GXP and balancing area.

Actions taken to resolve the issue	Completion date	Remedial action status
Response: Non compliance accepted based on the auditor's comments **Action:** Mercury will investigate and rectify the incorrect unmetered load is recorded for ICP 0015723581ELA43, however we believe that breach risk rating is very high due to the unknown or non-factual.	Dec 2019	Identified
Preventative actions taken to ensure no further issues will occur	**Completion date**	
Mercury will investigate and rectify the incorrect unmetered load is recorded for ICP 0015723581ELA43. We will also review the entire DUML process to ensure compliance are met.	Dec 2019	

3.8. Management of "active" status (Clause 17 Schedule 11.1)

Code reference

Clause 17 Schedule 11.1

Code related audit information

The ICP status of "active" is be managed by the relevant trader and indicates that:

- *the associated electrical installations are electrically connected (clause 17(1)(a))*
- *the trader must provide information related to the ICP in accordance with Part 15, to the reconciliation manager for the purpose of compiling reconciliation information (clause 17(1)(b)).*

Before an ICP is given the "active" status, the trader must ensure that:

- *the ICP has only one customer, embedded generator, or direct purchaser (clause 17(2)(a))*
- *the electricity consumed is quantified by a metering installation or a method of calculation approved by the Authority (clause 17(2)(b)).*

Audit observation

The connection and reconnection processes were examined. The event detail report for 01/04/18 to 08/02/19 was analysed. Findings on the timeliness of active status updates are recorded in **sections 3.3** and **3.5**.

The list file as at 15/02/19 was analysed and found one ICP at "new connection in progress" status, which did not have an initial electrical connection date populated.

For new connections which had been electrically connected during the audit period, the initial electrical connection date, earliest active date and meter certification date were compared to determine the accuracy of the connection dates for all 27 active HHR new connection records and 2,251 active NHH new connection records:

- 15 HHR "active" new connection status records with date discrepancies were identified and checked; and
- 244 NHH "active" new connection status records with date discrepancies were identified, and a sample of 19 were checked.

I also checked the accuracy of reconnection updates for a sample of 20 ICPs.

Audit commentary

The status of an ICP is only changed to "active" once confirmation has been received from a contractor. Submission information is provided for all "active" ICPs. SAP will not allow more than one party per ICP nor will it allow an ICP to be set up without either a meter, or if it is unmetered, the daily kWh.

NHH New connections

I found 244 of the 2,251 NHH "active" new connection status records had discrepancies between the active date, initial electrical connection date (IECD), and meter certification date. Of those 90 active dates were different to the IECD, and 173 were different to the meter certification date. I note that metering certification may not occur on the same day as electrical connection.

19 ICPs with date discrepancies were checked, and I found:

- Mercury had recorded the correct active date for 12 ICPs; and
- for the seven ICPs below, incorrect active dates were recorded:

ICP	Active date	Minimum cert date	Initial electrical connection date	Correct active date
1002045604UN462	29/03/2018	29/06/2018	29/06/2018	29/06/2018
0000569665NR7C0	15/06/2018	17/08/2018	17/08/2018	17/08/2018
1002052520LCDAB	21/08/2018	31/08/2018	31/08/2018	31/08/2018
1000578459PC0FD	10/10/2018	17/10/2018	17/10/2018	17/10/2018
1099578040CN38A	11/01/2019	18/01/2019	18/01/2019	18/01/2019
1002037904LC880	30/06/2018	21/06/18	21/07/2018	21/06/2018
1002058309LC6E9	16/01/2019	15/01/2019	15/01/2019	15/01/2019

The 2018 audit stated Mercury were awaiting a system enhancement before could deploy comparisons between initial electrical connection dates, meter certification dates and active dates recommended in the 2017 audit. These system enhancements have not been completed.

HHR new connections

The Analysis of the list and event detail files identified 15 HHR new connections had discrepancies between the active date, initial electrical connection date and meter certification date.

For 14 ICPs Mercury had recorded the correct active date. For one ICP Mercury had recorded an incorrect active date.

ICP	Active date	Minimum cert date	Initial electrical connection date	Correct active date
1000578212PCA8A	14/09/2018	23/10/2018	23/10/2018	23/10/2018

Reconnections

As discussed in **sections 2.1** and **3.3**, where an ICP returns to active status after a period of being inactive, the previous inactive time slice is sometimes automatically updated to active as well. A sample of 20 reconnections were checked, and I found the following status updates to active were invalid:

ICP	Event date	Update date	Status
0000018125HR0B3	12/04/2013	11/07/2018	002
0005128061WADCC	3/02/2014	17/12/2018	002
0461471388LCBDB	3/02/2014	23/11/2018	002
0901260329LC27E	3/02/2014	7/11/2018	002
0000175384UN050	3/02/2014	8/10/2018	002
0000042111UN9DF	6/10/2014	18/06/2018	002
0401719530LC1AD	5/07/2017	18/12/2018	002
1001107317LCA6C	1/05/2017	5/07/2018	002
0212449001LC5EB	23/05/2018	15/01/2019	002
0031619259LCCAE	13/09/2017	27/04/2018	002
0000163566WED09	6/04/2018	2/11/2018	002
0000528417NR22A	18/06/2018	1/10/2018	002

Mercury has put processes in place to identify and correct invalid registry updates, and this is discussed further in **section 3.3**.

Audit outcome

Non-compliant

Non-compliance	Description
Audit Ref: 3.8 With: Clause 17 Schedule 11.1 From: 27-Apr-18 To: 15-Jan-19	Seven NHH new connections with incorrect active dates. One HHR new connection with an incorrect active date. 12 reconnections updates were invalidly processed. Potential impact: Low Actual impact: Unknown Audit history: Multiple Controls: Weak Breach risk rating: 6
Audit risk rating	**Rationale for audit risk rating**

Medium	The controls are rated as weak as automated update processes were found to be incorrectly backdating and updating ICPs with incorrect information. The audit risk rating is medium as the issues identified are affecting an unknown number of ICPs with incorrect status updates.

Actions taken to resolve the issue	Completion date	Remedial action status
Response: Non compliance accepted and remedial action on-going however we believe we have moderate control in place. **Action:** 1) Seven NHH new connections with incorrect active dates. All the seven incorrect active dates have been corrected. 2) One HHR new connection with an incorrect active date. One HHR have been corrected. 3) 12 reconnections updates were invalidly processed 4 out of 12 reconnection updates are currently being investigated by ICT for system issues.	Aug 2019	Identified
Preventative actions taken to ensure no further issues will occur	**Completion date**	
Mercury will further review the root cause of the issue with the help with our ICT team and implement a change as required.	Dec 2019	

3.9. Management of "inactive" status (Clause 19 Schedule 11.1)

Code reference

Clause 19 Schedule 11.1

Code related audit information

The ICP status of "inactive" must be managed by the relevant trader and indicates that:

- *electricity cannot flow at that ICP (clause 19(a)); or*
- *submission information related to the ICP is not required by the reconciliation manager for the purpose of compiling reconciliation information (clause 19(b)).*

Audit observation

The disconnection process was discussed. The event detail report for 01/04/18 to 08/02/19 was analysed to identify all disconnections during the period.

A typical sample of at least ten ICPs at each inactive status (or all ICPs if less than ten were available) were checked using the typical characteristics methodology.

The inactive status of "new connections in progress" is only used for HHR new connections if they are expected to be delayed. The list file was examined to identify any ICPs that had been at the "Inactive - new connection in progress" for greater than 24 months.

Findings on the timeliness of inactive status updates are recorded in **section 3.3**.

Audit commentary

The status of "Inactive" is only used once a Mercury approved contractor has confirmed that the ICP has been disconnected.

4,369 updates to inactive statuses occurred during the audit period. I checked a sample of 39 updates to inactive and confirmed that the correct statuses and dates were applied except for:

ICP	Registry status date	Correct status date	Registry status	Correct status
0000173690UNB32	22/11/2016	22/11/2018	1,6	same
0420460063LC962	21/11/2018	22/11/2018	1,8	same
0000549358NR3AB	22/06/2018	same	1,9	1,6
0007153305RN269	11/12/2017	12/12/2017	1,9	same
0304568023LC338	10/01/18	10/04/18	1,9	same

As discussed in **section 2.11**, ICP 0000033468CP85C the MEP updated the registry to show that the metering had been removed effective from 23/02/2017 on 15/11/2018. The status should have been updated to "inactive" by Mercury.

Mercury provided a list of 189 ICPs with consumption recorded during a period with "inactive" status. 16 examples were examined. 10 needed to have the status changed to "active" back to when consumption started and six had incorrect disconnection readings and no actual consumption was present. The ten updated ICPs were all changed on the registry between 26/02/19 and 04/03/19, backdated to months between May 2018 and January 2019, which indicates these exceptions may need to be dealt with more regularly. Submission will now be correct for all of these ICPs. The total consumption being revised is approx. 1,000 kWh.

Audit outcome

Non-compliant

Non-compliance	Description
Audit Ref: 3.9 With: Clause 19 Schedule 11.1 From: 16-May-18 To: 17-Jan-19	Six ICPs with incorrect inactive status dates or status reason codes. One inactive ICP was incorrectly recorded as active. 10 ICPs with incorrect Inactive status where consumption is present. Potential impact: Low Actual impact: Low Audit history: Multiple Controls: Moderate Breach risk rating: 2
Audit risk rating	**Rationale for audit risk rating**
Low	The controls are rated as moderate because the disconnection process is normally automated, but a small number of updates were incorrect. The audit risk rating is low because a small number of ICPs were affected.

Actions taken to resolve the issue	Completion date	Remedial action status
Response: Non compliance accepted and remedial action on-going. **Action:** Mercury will further investigate items raised in section 3.9 and will have an action plan in place	Dec 2019	Identified
Preventative actions taken to ensure no further issues will occur	**Completion date**	
Mercury will further investigate items raised in section 3.9 above and will have put an action plan in place to meet the code obligation	May 2020	

3.10. ICPs at new or ready status for 24 months (Clause 15 Schedule 11.1)

Code reference

Clause 15 Schedule 11.1

Code related audit information

If an ICP has had the status of "New" or "Ready" for 24 calendar months or more, the distributor must ask the trader whether it should continue to have that status and must decommission the ICP if the trader advises the ICP should not continue to have that status.

Audit observation

Whilst this is a Distributor's code obligation, I investigated whether any queries had been received from Distributors in relation to ICPs at the "new" or "ready" status for more than 24 months and the process in place to manage and respond to such requests.

I analysed a registry list of ICPs with "new" or "ready" status and Mercury as the proposed trader, and reviewed processes to monitor new connections.

Audit commentary

Mercury has received requests for information on NHH ICPs at "new" or "ready" status for more than 24 months from Vector and Powerco during the audit period. The ICPs on the requests are investigated to determine whether they are still required, and responses are provided back to the network.

No requests for information on HHR ICPs at "new" or "ready" have been received.

NHH new connections are tracked through field service order monitoring processes, and HHR review connections are monitored using the WIP sheet and account managers also track new connection progress.

Analysis of the registry list found 28 ICPs at "ready" status for two years or more, and six ICPs at "new" status for two years or more. I checked the five oldest ICPs with "ready" status, and the five oldest ICPs at "new" status. Findings are as follows:

- No application received for four ICPs at New. MEEN should not be the proposed trader
- Distributor has been asked to decommission one ICP at New
- The distributor has been advised to decommission one ICP at Ready

- Another trader will claim one ICP at Ready
- Mercury is still attempting to contact customers for two Ready ICPs
- Investigation is ongoing for one Ready ICP.

Mercury demonstrated they have a process in place to manage ICPs at New and Ready for more than 24 months.

Audit outcome

Compliant

4. PERFORMING CUSTOMER AND EMBEDDED GENERATOR SWITCHING

4.1. Inform registry of switch request for ICPs - standard switch (Clause 2 Schedule 11.3)

Code reference

Clause 2 Schedule 11.3

Code related audit information

The standard switch process applies where a trader and a customer or embedded generator enters into an arrangement in which the trader commences trading electricity with the customer or embedded generator at a non-half hour or unmetered ICP at which another trader supplies electricity, or the trader assumes responsibility for such an ICP.

If the uninvited direct sale agreement applies to an arrangement described above, the gaining trader must identify the period within which the customer or embedded generator may cancel the arrangement in accordance with section 36M of the Fair Trading Act 1986. The arrangement is deemed to come into effect on the day after the expiry of that period.

A gaining trader must advise the registry manager of a switch no later than two business days after the arrangement comes into effect and include in its advice to the registry manager that the switch type is TR and one or more profile codes associated with that ICP.

Audit observation

The switch gain process was examined to determine when Mercury deem all conditions to be met. A typical sample of five ICPs were checked to confirm that these were notified to the registry within two business days, and that the correct switch type was selected.

Audit commentary

Mercury's processes are compliant with the requirements of Section 36M of the Fair Trading Act 1986. NT files are sent as soon as all pre-conditions are met, and the withdrawal process is used if the customer changes their mind.

Transfer switch type is applied where a customer is transferring between retailers at an address. This information is collected as part of the customer application process.

The five NT files checked were sent within two business days of pre-conditions being cleared. The correct switch type was selected for four of the five NT files checked, but one switch move was incorrectly sent as a transfer switch.

Audit outcome

Non-compliant

Non-compliance	Description
Audit Ref: 4.1 With: Clause 2 Schedule 11.3 From: 16-Oct-18 To: 16-Oct-18	One switch move was incorrectly sent as a transfer switch. Potential impact: None Actual impact: None Audit history: None Controls: Strong Breach risk rating: 1

Audit risk rating	Rationale for audit risk rating		
Low	I have rated the controls as strong, because they will normally ensure that files are sent with the correct switch type. I have recorded the audit risk rating as low as there is no direct effect on settlement outcomes in relation to this clause.		
Actions taken to resolve the issue		**Completion date**	**Remedial action status**
Response: Non compliance accepted. **Action:** Mercury have a strong control however a human error caused the issue and is not a common occurrence. Staff have been re-trained.		Completed	Identified
Preventative actions taken to ensure no further issues will occur		**Completion date**	
Mercury will ensure staff are trained and understands about switching.		Aug 2019	

4.2. Losing trader response to switch request and event dates - standard switch (Clauses 3 and 4 Schedule 11.3)

Code reference

Clauses 3 and 4 Schedule 11.3

Code related audit information

Within three business days after receiving notice of a switch from the registry manager, the losing trader must establish a proposed event date. The event date must be no more than 10 business days after the date of receipt of such notification, and in any 12-month period, at least 50% of the event dates must be no more than five business days after the date of notification. The losing trader must then:

- *provide acknowledgement of the switch request by (clause 3(a) of Schedule 11.3):*
- *providing the proposed event date to the registry manager and a valid switch response code (clause 3(a)(i) and (ii) of Schedule 11.3); or*
- *providing a request for withdrawal of the switch in accordance with clause 17 (clause 3(c) of Schedule 11.3).*

When establishing an event date for clause 4, the losing trader must disregard every event date established by the losing trader for a customer who has been with the losing trader for less than two calendar months (clause 4(2) of Schedule 11.3).

Audit observation

An event detail report for 01/04/18 to 31/01/19 was reviewed to identify AN files issued by Mercury during the audit period, and:

- a sample of two ANs per response code were reviewed to determine whether the codes had been correctly applied; and
- assess compliance with the requirement to meet the setting of event dates requirement.

The switch breach report was examined for the audit period.

Audit commentary

AN timeliness

Generation of AN files is automated in SAP. The automatic generation of the AN will fail if another retailer requests a vacant ICP as transfer switch. In these instances, Mercury sends an email to make sure the other trader is aware that the ICP is vacant before proceeding with the switch.

Users can normally clear the validation error in SAP which will allow the AN file to be released, but occasionally SAP will not allow the file to be released and it must be processed manually on the registry. These late files appear on the daily switch breach report. Mercury intends to investigate why this issue occurs.

The switch breach report recorded two late AN files for transfer switches.

- One was delayed because it had failed validations and could not be released from SAP and needed to be processed manually.
- ICPs with meter category 1 or 2 and HHR profile are switched as TR or MI switches. The switching console used to monitor switches with HHR profile was found to have a fault, and was not advising the correct due date for switch files which led to a delay in submitting a TR AN. These issues have now been resolved.

AN content

I reviewed the AN codes applied for seven transfer AN files, and found incorrect codes were applied for five ANs:

ICP	Event date	AN code	Correct AN code
0000464159WE09D	21/11/2018	AA Acknowledge and accept	AD Advanced metering
0001322280PC34D	19/12/2018	AA Acknowledge and accept	AD Advanced metering
0409254827LCA72	20/12/2018	AD Advanced metering	AA Acknowledge and accept
0000527499NRD9B	8/01/2019	AD Advanced metering	AA Acknowledge and accept
0008013175WEC66	3/08/2018	PD Premises electrically disconnected	AD Advanced metering

All the ANs with incorrect codes were generated automatically by SAP. It appears the logic to select the codes is not operating as expected. At the time of the 2018 audit, Mercury was aware that AA and AD codes were not always applied as expected but had put a system to correct this on hold while the Authority's switching technical group reviewed switching processes.

The event detail report was reviewed for all 13,474 transfer ANs to assess compliance with the setting of event dates requirements.

- 6,906 (51.3%) had a proposed event date within five business days of the NT receipt date.
- 13,471 (99.9%) had proposed event dates within ten business days of the NT receipt date. The three ANs with proposed event dates more than ten business days after the NT receipt date had a proposed AN date which matched the proposed NT date and are compliant.

Audit outcome

Non-compliant

Non-compliance	Description
Audit Ref: 4.2 With: Clauses 3 & 4 of schedule 11.3 From: 03-Aug-18 To: 08-Jan-19	Five of the seven AN files checked contained incorrect response codes. Two late AN files. Potential impact: None Actual impact: None Audit history: Twice Controls: Moderate Breach risk rating: 2
Audit risk rating	**Rationale for audit risk rating**
Low	I have rated the controls as moderate, because • some AN codes assigned automatically by SAP were incorrect, and • users being unable to automatically clear validation issues is contributing to the late files. I have recorded the audit risk rating as low as there is no direct effect on settlement outcomes, information on ICP metering is available on the registry, and a very small number of AN files were one day late.

Actions taken to resolve the issue	Completion date	Remedial action status
Mercury will continue to investigate the incorrect response codes to ensure code obligations are met however we believe that we have moderate control in place rather the weak based on the number of switching activities.	Dec 2019	Identified
Preventative actions taken to ensure no further issues will occur	**Completion date**	
System enhancement required to rectify the issue. There is a small enhancement to update the current SAP logic so that we can ensure our AN files are compliant, however, is on hold as EA is currently exploring options for the acknowledge switch notification. Mercury would like to wait for the outcome before investing further.	with EA	

4.3. Losing trader must provide final information - standard switch (Clause 5 Schedule 11.3)

Code reference

Clause 5 Schedule 11.3

Code related audit information

If the losing trader provides information to the registry manager in accordance with clause 3(a) of Schedule 11.3 with the required information, no later than five business days after the event date, the losing trader must complete the switch by:

- *providing event date to the registry manager (clause 5(a)); and*
- *provide to the gaining trader a switch event meter reading as at the event date, for each meter or data storage device that is recorded in the registry with accumulator of C and a settlement indicator of Y (clause 5(b)); and*

- *if a switch event meter reading is not a validated reading, provide the date of the last meter reading (clause 5(c)).*

Audit observation

An event detail report for 01/04/18 to 08/02/19 was reviewed to identify CS files issued by Mercury during the audit period. The accuracy of the content of CS files was confirmed by checking a sample of ten files. The content checked included:

- correct identification of meter readings and correct date of last meter reading;
- accuracy of meter readings; and
- accuracy of average daily consumption.

CS files with an average daily kWh that was negative, zero, or over 200 kWh were identified. A sample of ten of these CS files were checked to determine whether the average daily consumption was correct.

The process to manage the sending of the CS file within five business days was examined, and the switch breach history report for the audit period was reviewed to identify late CS files.

Audit commentary

CS timeliness

Switch timeliness is managed using the switch breach report, which is monitored daily. The switching team focuses on triggered CS files for ICPs with five or six days until they breach. Mercury has found that in some instances, triggered CS files are not sent to the registry by SAP. They now check ICPs which they are expecting to switch on the registry each afternoon. If SAP has not sent the CS file, they manually process the switch on the registry. For some days with heavy switching workloads it is not possible to manually check every ICP, and this can lead to further delays.

The switch breach history report contained 299 late transfer CS files. Two related to T2 breaches and were not genuine late transfer CS files. 297 related to E2 breaches.

- 274 (92.2%) were one day overdue. A sample of 35 were checked and found not to be genuine breaches.
- All 23 files over one business day overdue were checked. 18 were not genuine, and the five genuine late files were checked. Four were triggered in SAP, but the file was not sent to the registry. The late files were identified on the switch breach report and sent the following day. One file was delayed while Mercury attempted to obtain final readings, during a period the Christmas to new year holiday period.

CS content

Mercury advised that estimated daily kWh is calculated based on the daily average consumption for previous 12 months. The registry functional specification requires this to be based on the average daily consumption for the last read to read period.

Analysis estimated daily kWh on the event detail report identified:

Count of transfer CS files	Estimated daily kWh
Negative	-
Zero	57
More than 200 kWh	21

A sample of ten of these ICPs were checked (five with zero and five with more than 200 kWh). I found that four of the zeros were correctly calculated, but the average daily kWh for the other six ICPs differed from the consumption for the last read to read period as shown below:

ICP	Event date	Daily avg kWh in the CS file	Daily avg kWh for last read to read period	Difference
0000054523CPB11	3/12/2018	334	401.1	-67.1
0000101637DE511	3/09/2018	1269	5.1	1263.9
0004903390CA92D	31/08/2018	9147	0.0	9147.0
0000007725DE791	24/04/2018	19169	0.0	19169.0
1002037549LC972	6/04/2018	33333	0.0	33333.0
0000569569NR7DD	25/01/2019	0	1.4	-1.4

Based on the system ID which updated the registry, all these CS files were automatically generated by SAP. I note that the average daily consumption for some of the ICPs was also not consistent with the average daily consumption over the past year.

I reviewed a sample of ten transfer switch CS files, all of which were created by SAP. The sample focussed on ICPs where there appeared to be read issues, particularly where the last actual read date recorded was inconsistent with the switch read type. If the last actual read date is the day before the switch event date, it is expected that the switch event reading will be actual. If the last actual read date is more than one day before the switch event date, it is expected that the switch event read will be estimated.

I found that many of these switches had been later withdrawn, and Mercury advised that reads are sometimes removed from SAP where this occurs. I took into account that this could affect the accuracy of the assessment of last actual read dates and switch event reads, however, I still found that in some cases reads relating to a date earlier than Mercury's last day of responsibility are sometimes being sent as actual switch event readings in CS files. Most commonly, the CS reading corresponded to the last actual read date recorded in the CS file and last read recorded against an active customer account at the time of the switch. The estimated daily consumption did not usually match the last read to read period consumption at the time of switch out, as expected since this is believed to be calculated based on consumption over the past year.

ICP	Event date	Est daily kWh	Last actual read date	Switch event read	Switch event read type	NW
0000064629CPBAF	24/01/2019	Incorrect	Correct 22/01/19	Reflects actual read on 22/01/19 and site was occupied	Actual but was not an actual read for the event date	CX ELKI
0000198543UNB2E	23/01/2019	Incorrect	Correct 21/01/19	Reflects actual read on 21/01/19 (44008/11218), actuals on 23/01/19 were 44012/11222	Actual but was not an actual read for the event date	CX ELKI

ICP	Event date	Est daily kWh	Last actual read date	Switch event read	Switch event read type	NW
0000543702NRB73	22/01/2019	Incorrect	20/01/19, should be 21/01/19	Reflects actual read on 20/01/19 (11749/4716), actuals on event date were 11757/4719	Actual but was not an actual read for the event date	CX MEEN
0000525702NRCEB	14/01/2019	Incorrect	12/01/19, should be 13/01/19	Reflects actual read on 12/01/19 (2914/9678/8251), actuals on event date were 2918/9690/8266	Actual but was not an actual read for the event date	CX MEEN
0001070375PCB91	5/12/2018	Incorrect	03/12/18, should be 04/12/18	Correct	Correct	CX MEEN
1000018033BPAE6	23/07/2018	Incorrect	21/07/18, should be 30/06/18	One read in line with history, the other (6675) is lower than the 30/06 read for the meter (6728)	Actual but was not an actual read for the event date	CX MEEN
0000101156DE9A6	18/07/2018	Incorrect	16/07/18, should be 17/07/18	Correct	Correct	CX MEEN
0000032617CP978	28/09/2018	Incorrect	25/09/18, should be 24/09/18	Reflects actual read on 24/09/18 and site was occupied	Actual but was not an actual read for the event date	CX MEEN
0000284235WT3C0	28/09/2018	Incorrect	27/09/18, should be 25/09/18	Correct, reasonable estimate	Correct	CX MEEN
0327433027LC417	28/09/2018	Incorrect	27/09/18, should be 21/09/18	Read appears in line with history	Actual but was not an actual read for the event date	CX MEEN

The 2018 audit recorded that some readings for two register meters had been transposed, but I did not see any evidence of this issue during the audit. I also did not find any transfer switches where an estimated read date was recorded as the last actual read date, but I did see evidence of this for switch moves.

Audit outcome

Non-compliant

Non-compliance	Description
Audit Ref: 4.3 With: Clause 5 of schedule 11.3 From: 11-May-18 To: 25-Jan-19	Some incorrect CS file content including estimated daily kWh, last actual read dates, switch event readings, and switch event read types. At least five late transfer CS files. Potential impact: Low Actual impact: Medium Audit history: Twice Controls: Weak Breach risk rating: 6
Audit risk rating	**Rationale for audit risk rating**
Medium	I have rated the controls as weak, because of the incorrect content for system generated CS files. The audit risk rating is assessed to be medium, based on the impact the incorrect CS content could have on other participants.

Actions taken to resolve the issue	Completion date	Remedial action status
Response: Non compliance accepted and remedial action is underway **Action:** Switching process is a very automated, and we have liaised with Readings management team to look in to those ICPs and amend the process going forward to depict the last read date and the read. Mercury process for applying meter readings to switch events has changed and is now compliant with NHH meter reading application (Clause 6 Schedule 15.2). Mercury is using the last available reading for the switch date. Evidence has been sent to the auditors and we believe that control and breach rating should change to reflect that. MEEN is aware that System enhancement is required to calculate correct Average daily consumption and is on hold as EA is currently exploring options for Average daily consumption. Mercury would like to wait for the outcome before investing further.	Completed May 2020	Identified Post audit comment. An example was provided confirming an estimate was correctly labelled in a CS file for ICP 0000171244WE47A, but the date of last read was incorrect. The estimate was from a prior date and was used as a switch read because the ICP was vacant. Confirmation is required that the date of last read is correct, that actual readings from the correct date are used and another example is required to confirm estimates from the correct date are used, preferably for an ICP without a vacant period prior to switch.
Preventative actions taken to ensure no further issues will occur	**Completion date**	

MEEN is aware that System enhancement is required to calculate correct Average daily consumption and is on hold as EA is currently exploring options for Average daily consumption. Mercury would like to wait for the outcome before investing further.	Awaiting on EA	

4.4. Retailers must use same reading - standard switch (Clause 6(1) and 6A Schedule 11.3)

Code reference

Clause 6(1) and 6A Schedule 11.3

Code related audit information

The losing trader and the gaining trader must both use the same switch event meter reading as determined by the following procedure:

- *if the switch event meter reading provided by the losing trader differs by less than 200 kWh from a value established by the gaining trader, the gaining trader must use the losing trader's validated meter reading or permanent estimate (clause 6(a)); or*
- *the gaining trader may dispute the switch meter reading if the validated meter reading or permanent estimate provided by the losing trader differs by 200 kWh or more (clause 6(b)).*

If the gaining trader disputes a switch meter reading because the switch event meter reading provided by the losing trader differs by 200 kWh or more, the gaining trader must, within four calendar months of the actual event date, provide to the losing trader a changed switch event meter reading supported by two validated meter readings.

- *the losing trader can choose not to accept the reading however must advise the gaining trader no later than five business days after receiving the switch event meter reading from the gaining trader (clause 6A(a)); or*
- *if the losing trader notifies its acceptance or does not provide any response, the losing trader must use the switch event meter reading supplied by the gaining trader (clause 6A(b)).*

Audit observation

The process for the management of read change requests was examined.

The event detail report for 01/04/18 to 31/01/19 was analysed to identify all read change requests and acknowledgements during the audit period. Ten RR files issued by Mercury, and ten AC files issued by Mercury were checked (including all acceptances and five rejections).

I also checked a sample of five estimated CS files provided by other traders where no RR was issued to determine whether the correct readings were recorded in SAP.

The switch breach report was reviewed to identify late RR and AC files.

Audit commentary

Timeliness of RR and AC files

RR and AC files are triggered in SAP by the switching team. As for AN and CS files, sometimes files which have been triggered fail to be sent to the registry. The switching team endeavours to check the expected RR and AC files on the registry each afternoon to make sure they have been received, and if not they are processed manually. For some days with heavy switching workloads it is not possible to manually check every ICP, and this can lead to further delays. Late ACs will be identified the following morning using the switch breach report.

The switch breach report recorded 21 late RRs for transfer switches, 18 of those were genuine. The ten latest files were checked and were caused by delays in obtaining two actual reads to confirm an RR was required. Whilst these are technically late Mercury are compliant with the requirement to provide complete and accurate information.

The switch breach report recorded two late ACs for transfer switches, both were one business day late. One file was late because the AC was rejected in SAP, but the file was not successfully transferred to the registry. The other was late because files were not processed on Auckland Anniversary day.

Content and handling of RR and AC files

RR requests are generally initiated via email between the two parties and only once an agreement has been reached is an RR file sent to complete. All RR requests are evaluated and validated against the ICP information. If the request is within validation requirements these are accepted.

SAP records any negative reading as implausible, and the read will be locked and not used for billing or reconciliation. Where a switch in read is too high the first read received by Mercury may be lower than the switch read. If the difference is over 250 kWh, Mercury will request a read renegotiation. If the difference is less than 250 kWh Mercury will estimate zero consumption while they wait for actual reads to catch up to and exceed the switch in read. Where they believe it will take an extended period for the actual reads to exceed the switch in reads Mercury will provide a refund to the customer and change the switch read to match the actual read. No examples of this were found during the audit, but this process is recorded as non-compliance below.

Mercury issued 362 RR files for transfer switches. 277 were accepted and 85 were rejected. For the sample checked there was a genuine reason for Mercury's RRs, and the reads recorded in Mercury's system reflected the outcome of the RR process. The following issues were identified:

- The RR for 0041268000WR924 recorded a read type of actual in error. A customer reading was obtained for the event date and the RR reading should have been classified as an estimate.
- Two RRs were not supported by at least two validated actual readings

ICP	Event date	Comment
0041268000WR924	3/10/2018	One actual and one customer read
0006601070MLC92	4/10/2018	One meter removal read only

Mercury issued 15 AC files for transfer switches. Four were accepted and 11 were rejected. A sample of five AC rejections and all acceptances were checked. All were rejected for valid reasons SAP reflected the correct outcome of the RR process.

Review of five transfer CS files with estimated reads where no RR was issued confirmed that the correct readings were recorded in Mercury's systems.

Audit outcome

Non-compliant

Non-compliance	Description
Audit Ref: 4.4 With: Clauses 6(1) and 6A Schedule 11.3 From: 22-Jun-18 To: 18-Jan-19	One RR was sent with a read type of actual when Mercury did not have an actual reading on the event date. Two RRs were not supported by two validated actual readings. 18 late RR files and two late AC files for transfer switches. In some cases where a high switch reading is provided, and an RR is not issued, Mercury will modify the switch reading to match their first actual reading. Potential impact: Low Actual impact: Low Audit history: Twice Controls: Moderate Breach risk rating: 2
Audit risk rating	**Rationale for audit risk rating**
Low	Controls are rated as moderate overall as: • in most cases the reads recorded by Mercury match the switch reads, there are isolated instances where the switch read is modified, and no examples were found during the audit. • Additional monitoring controls have been put in place to improve the timeliness of RR and AC files. The audit risk rating is low because: • the late RRs increase the level of accuracy in reconciliation. • no examples of modified switch in reads were identified during the audit. • Issues were found for a small number of RR files.

Actions taken to resolve the issue	Completion date	Remedial action status

Response: Non compliance accepted and remedial action is underway **Action:** 1) One RR was sent with a read type of actual when Mercury did not have an actual reading on the event date. Mercury have appropriate control in place however a human error caused the issue and is not a common occurrence. Staff have been re-trained 2) Two RRs were not supported by two validated actual readings. MEEN agreed to amend the reads based on customer read and we could not validate as not being the retailer. To avoid this in future, guidelines have been issued to Contact centre staff to raise RR with the customer read if we have two validated actual reads. 3) 18 late RR files and two late AC files for transfer switches. This has been raised in EA forum to get guidance on how to be compliant in situations where a RR is required but it is outside of the allowed timeframe. 4) In some cases where a high switch reading is provided, and an RR is not issued, Mercury will modify the switch reading to match their first actual reading. Mercury will investigate this further to comply with the code.	May 2020	Identified
Preventative actions taken to ensure no further issues will occur	**Completion date**	
As per above	May 2020	

4.5. Non-half hour switch event meter reading - standard switch (Clause 6(2) and (3) Schedule 11.3)

Code reference

Clause 6(2) and (3) Schedule 11.3

Code related audit information

If the losing trader trades electricity from a non-half hour meter, with a switch event meter reading that is not from an AMI certified meter flagged Y in the registry: and

- *the gaining trader will trade electricity from a meter with a half hour submission type in the registry (clause 6(2)(b);*
- *the gaining trader within five business days after receiving final information from the registry manager, may provide the losing trader with a switch event meter reading from that meter. The losing trader must use that switch event meter reading.*

Audit observation

The event detail report for the period from 01/04/18 to 08/02/19 was reviewed to identify all read change requests and acknowledgements where clause 6(2) and (3) of schedule 11.3 applied.

Audit commentary

These RR requests are processed in the same way as those received for greater than 200 kWh. Each request is evaluated and validated against the ICP information. If the request is within validation requirements these are accepted.

Mercury did not issue any read change requests where clause 6(2) and (3) of schedule 11.3 applied.

I identified 14 RR files issued within five business days of CS completion where the NT specified a HHR profile. 11 of these were rejected. For ten I found that the rejections were valid, because the CS contained actual readings and the switches were later withdrawn.

The RR for ICP 0000158193UNEDD was rejected although the CS file contained estimated readings, so that the switch could be withdrawn due to customer cancellation. This is compliant.

Audit outcome

Compliant

4.6. Disputes - standard switch (Clause 7 Schedule 11.3)

Code reference

Clause 7 Schedule 11.3

Code related audit information

A losing trader or gaining trader may give written notice to the other that it disputes a switch event meter reading provided under clauses 1 to 6. Such a dispute must be resolved in accordance with clause 15.29 (with all necessary amendments).

Audit observation

I confirmed with Mercury whether any disputes have needed to be resolved in accordance with this clause.

Audit commentary

Mercury confirms that no disputes have needed to be resolved in accordance with this clause.

Audit outcome

Compliant

4.7. Gaining trader informs registry of switch request - switch move (Clause 9 Schedule 11.3)

Code reference

Clause 9 Schedule 11.3

Code related audit information

The switch move process applies where a gaining trader has an arrangement with a customer or embedded generator to trade electricity at an ICP using non half-hour metering or an unmetered ICP, or to assume responsibility for such an ICP, and no other trader has an agreement to trade electricity at that ICP, this is referred to as a switch move and the following provisions apply:

If the "uninvited direct sale agreement" applies, the gaining trader must identify the period within which the customer or embedded generator may cancel the arrangement in accordance with section 36M of the Fair Trading Act 1986. The arrangement is deemed to come into effect on the day after the expiry of that period.

In the event of a switch move, the gaining trader must advise the registry manager of a switch and the proposed event date no later than two business days after the arrangement comes into effect.

In its advice to the registry manager the gaining trader must include:

- *a proposed event date (clause 9(2)(a)); and*
- *that the switch type is "MI" (clause 9(2)(b); and*
- *one or more profile codes of a profile at the ICP (clause 9(2)(c)).*

Audit observation

The switch gain process was examined to determine when Mercury deem all conditions to be met. A typical sample of five ICPs were checked to confirm that these were notified to the registry within two business days, and that the correct switch type was selected.

Audit commentary

Mercury's processes are compliant with the requirements of Section 36M of the Fair Trading Act 1986. NT files are sent as soon as all pre-conditions are met, and the withdrawal process is used if the customer changes their mind.

Switch move is applied where a new customer is moving into an address. This information is collected as part of the customer application process.

The five NT files checked were sent within two business days of pre-conditions being cleared, and the correct switch type was selected.

Audit outcome

Compliant

4.8. Losing trader provides information - switch move (Clause 10(1) Schedule 11.3)

Code reference

Clause 10(1) Schedule 11.3

Code related audit information

10(1) Within five business days after receiving notice of a switch move request from the registry manager—

- *10(1)(a) If the losing trader accepts the event date proposed by the gaining trader, the losing trader must complete the switch by providing to the registry manager:*
  - *confirmation of the switch event date; and*
  - *a valid switch response code; and*
  - *final information as required under clause 11; or*
- *10(1)(b) If the losing trader does not accept the event date proposed by the gaining trader, the losing trader must acknowledge the switch request to the registry manager and determine a different event date that—*
  - *is not earlier than the gaining trader's proposed event date, and*
  - *is no later than 10 business days after the date the losing trader receives notice; or*
- *10(1)(c) request that the switch be withdrawn in accordance with clause 17.*

Audit observation

An event detail report for 01/04/18 to 31/01/19 was reviewed to identify AN files issued by Mercury during the audit period, and:

- a sample of two ANs per response code were reviewed to determine whether the codes had been correctly applied;
- assess compliance with the requirement to meet the setting of event dates requirement.

The switch breach report was examined for the audit period.

Audit commentary

AN timeliness

The switch breach report recorded four late AN files for switch moves.

ICPs with meter category 1 or 2 and HHR profile are switched as TR or MI switches. The switching console used to monitor switches with HHR profile was found to have a fault and was not advising the correct due date for switch files which led to a delay in submitting the four late switch move ANs.

AN file content

I reviewed the AN codes applied for six switch move AN files, and found incorrect codes were applied for two ANs:

ICP	Event date	AN code	Correct AN code
0307938352LC352	7/12/2018	AA Acknowledge and accept	AD Advanced metering
0000523476NRE7F	25/01/2019	AA Acknowledge and accept	AD Advanced metering

All the ANs with incorrect codes were generated automatically by SAP. It appears the logic to select the codes is not operating as expected. At the time of the 2018 audit, Mercury was aware that AA and AD codes were not always applied as expected but had put system to correct this this on hold while the Authority's switching technical group reviewed switching processes.

The event detail report was reviewed for all 1,832 switch move ANs to assess compliance with the setting of event dates requirements:

- all had proposed event dates within ten business days of NT receipt; and
- 36 AN proposed event dates were before the gaining trader's proposed event date.

All the ANs with incorrect codes and invalid proposed event dates were generated automatically by SAP. It appears the logic to select the codes and proposed event dates is not consistently operating as expected.

Audit outcome

Non-compliant

Non-compliance	Description
Audit Ref: 4.8 With: Clause 10 of schedule 11.3 From: 01-May-18 To: 30-Jan-19	Two of the six AN files checked contained incorrect response codes. 36 ANs had non-compliant proposed event dates. Four late switch move AN files. 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	I have rated the controls as moderate, because some AN codes and proposed event dates assigned automatically by SAP were incorrect. I have recorded the audit risk rating as low as there is no direct effect on settlement outcomes, information on ICP metering is available on the registry, and a small number of AN files were one day late. 16 of the switches with non-compliant proposed event dates were switched out on the event date requested by the gaining trader, and 20 were withdrawn before the switch was completed.

Actions taken to resolve the issue	Completion date	Remedial action status
Response: Non compliance accepted **Action:** Remedial action same as above noted in section 4.2	Dec 2019	Identified
Preventative actions taken to ensure no further issues will occur	**Completion date**	
System enhancement required to rectify the issue. There is a small enhancement to update the current SAP logic so that we can ensure our files are compliant, however, is on hold as EA is currently exploring options for the acknowledge switch notification. Mercury would like to wait for the outcome before investing further	Awaiting EA	

4.9. Losing trader determines a different date - switch move (Clause 10(2) Schedule 11.3)

Code reference

Clause 10(2) Schedule 11.3

Code related audit information

If the losing trader determines a different date, the losing trader must also complete the switch by providing to the registry manager as described in subclause (1)(a):

- *the event date proposed by the losing trader; and*
- *a valid switch response code; and*
- *final information as required under clause 1.*

Audit observation

An event detail report for 01/04/18 to 31/01/19 was reviewed to identify AN files issued by Mercury during the audit period, and assess compliance with the requirement to meet the setting of event dates requirement.

Audit commentary

Analysis found all switch move ANs had a valid switch response code. 36 ANs had proposed event dates earlier than the gaining trader's proposed date; this is recorded as non-compliance in **section 4.8**. All other event dates were compliant.

16 of the switches with non-compliant proposed event dates were switched out on the event date requested by the gaining trader, and 20 were withdrawn before the switch was completed.

Audit outcome

Non-compliant

Non-compliance	Description
Audit Ref: 4.9 With: Clause 10(2) Schedule 11.3 From: 09-Apr-18 To: 10-Jan-19	36 ANs had non-compliant proposed event dates. Potential impact: Low Actual impact: None Audit history: Once Controls: Moderate Breach risk rating: 2
Audit risk rating	**Rationale for audit risk rating**
Low	The controls are rated as moderate as the controls will mitigate risk most of the time but there is room for improvement. The audit risk rating is low as the CS was sent for the gaining trader's requested date or withdrawn in all instances.

Actions taken to resolve the issue	Completion date	Remedial action status
Response: Non compliance accepted **Action:** This was raised with ICT and turned out to be correct as per SAP however somehow shows set earlier than the requested date. Mercury will investigate further.	July 2019	Identified
Preventative actions taken to ensure no further issues will occur	**Completion date**	
Mercury will investigate the root cause further as it is unclear how it occurred	May 2020	

4.10. Losing trader must provide final information - switch move (Clause 11 Schedule 11.3)

Code reference

Clause 11 Schedule 11.3

Code related audit information

The losing trader must provide final information to the registry manager for the purposes of clause 10(1)(a)(ii), including—

- *the event date (clause 11(a)); and*
- *a switch event meter reading as at the event date for each meter or data storage device that is recorded in the registry with an accumulator type of C and a settlement indicator of Y (clause 11(b)); and*
- *if the switch event meter reading is not a validated meter reading, the date of the last meter reading of the meter or storage device (clause (11(c)).*

Audit observation

An event detail report for 01/04/18 to 08/02/19 was reviewed to identify CS files issued by Mercury during the audit period. The accuracy of the content of CS files was confirmed by checking a sample of ten files. The content checked included:

- correct identification of meter readings and correct date of last meter reading
- accuracy of meter readings
- accuracy of average daily consumption.

CS files with an average daily kWh that was negative, zero, or over 200 kWh were identified. A sample of ten of these CS files were checked to determine whether the average daily consumption was correct.

The process to manage the sending of the CS file within five business days was examined, and the switch breach history report for the audit period was reviewed to identify late CS files.

Audit commentary

<u>CS timeliness</u>

As recorded in **section 4.3**, switch timeliness is managed using the switch breach report, which is monitored daily. The switching team focuses on triggering CS files for ICPs with five or six days until they breach. Mercury has found that in some instances, triggered CS files are not sent to the registry by SAP. They now check ICPs which they are expecting to switch on the registry each afternoon. If SAP has not sent the CS file, they manually process the switch on the registry. For some days with heavy switching workloads it is not possible to manually check every ICP, and this can lead to further delays.

The switch breach history report contained 1,680 late switch move CS files.

- 1667 related to E2 breaches are unlikely to be genuine as this records files which are late in relate to the event date rather than the NT receipt date. A sample of ten that appeared to be genuine breaches were checked and I found all were delayed by NW processed completed before switch completion.
- 9 related to CS breaches and were not genuine. The files were delayed by NW processes completed before switch completion.
- Four related to T2 breaches and were confirmed not be genuine.

<u>CS content</u>

Estimated daily kWh is calculated based on the daily average consumption for the previous 12 months. The registry functional specification requires this to be based on the average daily consumption for the last read to read period.

Analysis estimated daily kWh on the event detail report identified:

Count of switch move CS files	Estimated daily kWh
Negative	-
Zero	54
More than 200 kWh	10

A sample of ten of these ICPs were checked (five with zero and five with more than 200 kWh). I found that two of the zeros were correctly calculated, and seven other ICPs differed from the consumption for the last read to read period as shown below. Consumption for ICP 1002055090LCE7C was sent as zero, but it unknown. It was a new connection and no actual reads were received during the period of supply.

ICP	Event date	Daily avg kWh in the CS file	Daily avg kWh for last read to read period	Difference
0313070024LCD6B	7/10/2018	0	25.0	-25.0
1002050992LC0D0	2/11/2018	0	21.0	-21.0
0136612024LC07F	2/09/2018	288	266.9	21.1
0002501721TU31E	18/12/2018	602	282.8	319.2
0001931480PCCE3	9/11/2018	4,460	6.6	4,453.4
0000700935TUAB8	2/05/2018	999,958	42.0	999,916.0
0283187948LC9D0	18/10/2018	999,981	18.0	999,963.0

Another retailer advised me of a switch move CS which contained invalid estimated daily kWh:

ICP	Event date	Daily avg kWh in the CS file	Daily avg kWh for last read to read period	Difference
0000792855TE06	05/02/2018	124,999	6.0	-25.0

Based on the system ID which updated the registry, all these CS files were automatically generated by SAP. I note that the average daily consumption for some of the ICPs was also not consistent with the average daily consumption over the past year.

I reviewed a sample of ten switch move CS files, nine were created by SAP and the CS for 0061296500WR46B was created using the registry interface. The sample focussed on ICPs where there appeared to be read issues, particularly where the last actual read date recorded was inconsistent with the switch read type. If the last actual read date is the day before the switch event date, it is expected that the switch event reading will be actual. If the last actual read date is more than one day before the switch event date, it is expected that the switch event read will be estimated.

I found that many of these switches had been later withdrawn or had an RR issued, and Mercury advised that reads are sometimes removed from SAP where this occurs. I took into account that this could affect the accuracy of the assessment of last actual read dates and switch event reads, however, I still

found that in some cases reads relating to a date earlier than Mercury's last day of responsibility are sometimes being sent as actual switch event readings in CS files. Most commonly, the CS reading corresponded to the last actual read date recorded in the CS file and last read recorded against an active customer account at the time of the switch. The estimated daily consumption did not usually match the last read to read period consumption at the time of switch out, as expected since this is calculated based on consumption over the past year. The last actual read date still appears to include estimated reads.

ICP	Event date	Est daily kWh	Last actual read date	Switch event read	Switch event read type	NW or RR
1002055090LCE7C	24/01/2019	Correct	15/01/19 (estimate) should be 30/10/18	Reflects customer read on 05/12/18 (12) actual read on 23/01/19 is 81.	Actual but was not an actual read for the event date	DF TRUS
1099562336CN2FA	24/01/2019	Correct	Correct 07/01/19	Reflects actual read on 07/01/19 (2772), actual on 23/01/19 is 2776.	Actual but was not an actual read for the event date	-
0001954850PC8D5	18/01/19	Incorrect	Correct 14/01/19	Read appears in line with history	Actual but was not an actual read for the event date	CX GBUG
1000502798PCCAD	9/11/2018	Incorrect	Correct 07/08/17	Reflects actual read on 07/08/17 (7483/6670), actual on 09/11/19 are 9477/9867 consistent with Trustpower's RR	Actual but was not an actual read for the event date	RR TRUS
0288156374LC4D0	20/10/2018	Incorrect	18/10/18, should be 08/10/18	Read appears in line with history	Actual but was not an actual read for the event date	CE GEOL
0000547435NR4C2	1/10/2018	Incorrect	29/09/18, should be 30/09/18	Correct	Correct	WP MERI
0000109115UN8CC	2/09/2018	Incorrect	31/08/18, should be 01/09/18	Correct	Correct	WP MEEN

ICP	Event date	Est daily kWh	Last actual read date	Switch event read	Switch event read type	NW or RR
0331544067LC115	15/08/2018	Incorrect	14/08/18, should be 14/07/18	Read appears in line with history	Correct	DF MEEN
0000043010DEF31	13/06/2018	Incorrect	11/06/18, should be 12/06/18	Reflects estimate on 11/06/18 (62989) actual on 12/06/18 is 63030	Actual but was not an actual read for the event date	CX MEEN
0061296500WR46B	26/07/18	Incorrect	Correct 12/07/18	Reflects actuals on 12/07/18 (4488/2462), actuals on 31/07/18 are much higher (7953/3915)	Actual but was not an actual read for the event date	DF MERI

The 2018 audit recorded that some readings for two register meters had been transposed, but I did not see any evidence of this issue during the audit.

Audit outcome

Non-compliant

Non-compliance	Description
Audit Ref: 4.10 With: Clause 11 of schedule 11.3 From: 01-Aug-18 To: 24-Jan-19	Some incorrect CS file content including estimated daily kWh, last actual read dates, switch event readings, and switch event read types. Potential impact: Low Actual impact: Medium Audit history: Twice Controls: Weak Breach risk rating: 6
Audit risk rating	**Rationale for audit risk rating**
Medium	I have rated the controls as weak, because of the incorrect content for system generated CS files. The audit risk rating is assessed to be medium, based on the impact the incorrect CS content could have on other participants.

Actions taken to resolve the issue	Completion date	Remedial action status
Response: Non compliance accepted		Identified

Action: Switching process is a very automated, and we have liaised with Readings management team to look in to those ICPs and amend the process going forward to depict the last read date and the read. Mercury process for applying meter readings to switch events has changed and is now compliant with NHH meter reading application (Clause 6 Schedule 15.2). Mercury is using the last available reading for the switch date. Evidence has been sent to the auditors and we believe that control and breach rating should change to reflect that. Estimated Daily kWh MEEN is aware that System enhancement is required to calculate correct Average daily consumption and is on hold as EA is currently exploring options for Average daily consumption. Mercury would like to wait for the outcome before investing further.	Complete May 2020	Post audit comment. An example was provided confirming an estimate was correctly labelled in a CS file for ICP 0000171244WE47A, but the date of last read was incorrect. The estimate was from a prior date and was used as a switch read because the ICP was vacant. Confirmation is required that the date of last read is correct, that actual readings from the correct date are used and another example is required to confirm estimates from the correct date are used, preferably for an ICP without a vacant period prior to switch.
Preventative actions taken to ensure no further issues will occur	**Completion date**	
System enhancement required to rectify the issue. There is a small enhancement to update the current SAP logic so that we can ensure our files are compliant, however, is on hold as EA is currently exploring options for the acknowledge switch notification. Mercury would like to wait for the outcome before investing further. Furthermore - Mercury process for applying meter readings to switch events has changed and is now compliant with NHH meter reading application (Clause 6 Schedule 15.2). Mercury is using the last available reading for the switch date. Evidence has been sent to the auditors and we believe that control and breach rating should change to reflect that appropriately.	With EA	

4.11. Gaining trader changes to switch meter reading - switch move (Clause 12 Schedule 11.3)

Code reference

Clause 12 Schedule 11.3

Code related audit information

The gaining trader may use the switch event meter reading supplied by the losing trader or may, at its own cost, obtain its own switch event meter reading. If the gaining trader elects to use this new switch event meter reading, the gaining trader must advise the losing trader of the switch event meter reading and the actual event date to which it refers as follows:

- *if the switch meter reading established by the gaining trader differs by less than 200 kWh from that provided by the losing trader, both traders must use the switch event meter reading provided by the gaining trader (clause 12(2)(a)); or*
- *if the switch event meter reading provided by the losing trader differs by 200 kWh or more from a value established by the gaining trader, the gaining trader may dispute the switch meter reading. In this case, the gaining trader, within four calendar months of the actual event date, must provide to the losing trader a changed validated meter reading or a permanent estimate supported by two validated meter readings and the losing trader must either (clause 12(2)(b) and clause 12(3)):*
- *advise the gaining trader if it does not accept the switch event meter reading and the losing trader and the gaining trader must resolve the dispute in accordance with the disputes procedure in clause 15.29 (with all necessary amendments) (clause 12(3)(a)); or*
- *if the losing trader notifies its acceptance or does not provide any response, the losing trader must use the switch event meter reading supplied by the gaining trader (clause 12(3)(b)).*

12(2A) If the losing trader trades electricity from a non-half hour meter, with a switch event meter reading that is not from an AMI certified meter flagged Y in the registry,

- *the gaining trader will trade electricity from a meter with a half hour submission type in the registry (clause 12(2A)(b));*
- *the gaining trader no later than five business days after receiving final information from the registry manager, may provide the losing trader with a switch event meter reading from that meter. The losing trader must use that switch event meter reading (clause 12(2B)).*

Audit observation

The process for the management of read change requests was examined.

The event detail report for 01/04/18 to 31/01/19 was analysed to identify all read change requests and acknowledgements during the audit period. Ten RR files issued by Mercury, and ten AC files issued by Mercury were checked (including five acceptances and five rejections).

I also checked a sample of five estimated CS files provided by other traders where no RR was issued to determine whether the correct readings were recorded in SAP.

The switch breach report was reviewed to identify late RR and AC files.

Audit commentary

Timeliness of RR and AC files

RR and AC files are triggered in SAP by the switching team. As for other switching files, sometimes files which have been triggered fail to be sent to the registry. The switching team endeavours to check the expected RR and AC files on the registry each afternoon to make sure they have been received, and if not, they are processed manually. For some days with heavy switching workloads it is not possible to manually check every ICP, and this can lead to further delays. Late ACs will be identified the following morning using the switch breach report.

The switch breach report recorded 33 late RRs for transfer switches, 27 of those were genuine. The ten latest files were checked and were caused by delays in obtaining two actual reads to confirm an RR was required. Whilst these are technically late Mercury is compliant with the requirement to provide complete and accurate information.

The switch breach report recorded 16 late ACs for switch moves. The ten latest files were checked and found:

- two files were one day late because files were not processed on Auckland anniversary day; and

- eight files were one day late because the AC was processed in SAP, but the file was not successfully transferred to the registry.

Content and handling of RR and AC files

RR requests are generally initiated via email between the two parties and only once an agreement has been reached an RR file is sent to complete. All RR requests are evaluated and validated against the ICP information. If the request is within validation requirements these are accepted.

SAP records any negative reading as implausible, and the read will be locked and not used for billing or reconciliation. Where a switch in read is too high, the first read received by Mercury may be lower than the switch read. If the difference is over 250 kWh, Mercury will request a read renegotiation. If the difference is less than 250 kWh Mercury will estimate zero consumption while they wait for actual reads to catch up to and exceed the switch in read. Where they believe it will take an extended period for the actual reads to exceed the switch in reads, Mercury will provide a refund to the customer and change the switch read to match the actual read. No examples of this were found during the audit, but this process is recorded as non-compliance below.

Mercury issued 604 RR files for switch moves. 459 were accepted and 145 were rejected. For the sample checked there was a genuine reason for Mercury's RRs, the requests were supported by two validated readings, and the reads recorded in Mercury's system reflected the outcome of the RR process. One issue was identified; the RR readings for 0030392915PCDC6, 0099555377CN519 and 0138720290LC58F were sent as actual but should have been sent as estimates, because Mercury did not have an actual reading recorded on the event date.

Mercury issued 14 AC files for switch moves. Seven were accepted and seven were rejected. A sample of five AC rejections and five acceptances were checked. All were rejected for valid reasons and SAP reflected the outcome of the RR process. For ICP 0439363926LC98E the accepted RR reading was recorded with a read type of actual instead of estimate, due to a data entry error. There is no impact on settlement, estimated switch event readings are treated as permanent estimates. The incorrect read classification is recorded as non-compliance in **section 9.1**.

Review of five transfer CS files with estimated reads where no RR was issued confirmed that the correct readings were recorded in Mercury's systems.

Audit outcome

Non-compliant

Non-compliance	Description
Audit Ref: 4.11 With: Clause 12 Schedule 11.3 From: 08-Jun-18 To: 08-Feb-19	Three RRs were sent with a read type of actual when Mercury did not have an actual reading on the event date. 27 late RR files and 16 late AC files for switch moves. In some cases where a high switch reading is provided, and an RR is not issued, Mercury will modify the switch reading to match their first actual reading. Potential impact: Low Actual impact: Low Audit history: Twice Controls: Moderate Breach risk rating: 2
Audit risk rating	**Rationale for audit risk rating**

Low	Controls are rated as moderate overall as: • in most cases the reads recorded by Mercury match the switch reads, there are isolated instances where the switch read is modified, and no examples were found during the audit; and • additional monitoring controls have been put in place to improve the timeliness of RR and AC files. The audit risk rating is low because: • the late RRs increase the level of accuracy in reconciliation; • no examples of modified switch in reads were identified during the audit; and • issues were found for a small number of RR files.

Actions taken to resolve the issue	Completion date	Remedial action status
Same as comments covered in section 4.4	May 2020	Identified
Preventative actions taken to ensure no further issues will occur	**Completion date**	
Same as comments covered in section 4.4	May 2020	

4.12. Gaining trader informs registry of switch request - gaining trader switch (Clause 14 Schedule 11.3)

Code reference

Clause 13 Schedule 11.3

Code related audit information

The gaining trader switch process applies when a trader has an arrangement with a customer or embedded generator to trade electricity through or assume responsibility for:

- *a half hour metering installation (that is not a category 1 or 2 metering installation) at an ICP with a submission type of half hour in the registry and an AMI flag of "N"; or*
- *a half hour metering installation at an ICP that has a submission type of half hour in the registry and an AMI flag of "N" and is traded by the losing trader as non-half hour; or*
- *a non half hour metering installation at an ICP at which the losing trader trades electricity through a half hour metering installation with an AMI flag of "N".*

If the uninvited direct sale agreement applies to an arrangement described above, the gaining trader must identify the period within which the customer or embedded generator may cancel the arrangement in accordance with section 36M of the Fair Trading Act 1986. The arrangement is deemed to come into effect on the day after the expiry of that period.

A gaining trader must advise the registry manager of the switch and expected event date no later than three business days after the arrangement comes into effect.

14(2) The gaining trader must include in its advice to the registry manager:

a) a proposed event date; and
b) that the switch type is HH.

14(3) The proposed event date must be a date that is after the date on which the gaining trader advises the registry manager, unless clause 14(4) applies.

14(4) The proposed event date is a date before the date on which the gaining trader advised the registry manager, if:

> *14(4)(a) – the proposed event date is in the same month as the date on which the gaining trader advised the registry manager; or*
>
> *14(4)(b) – the proposed event date is no more than 90 days before the date on which the gaining trader advises the registry manager and this date is agreed between the losing and gaining traders.*

Audit observation

The HHR switch process was examined and a sample of five ICPs using the typical sampling methodology were checked to confirm that these were notified to the registry within two business days.

Audit commentary

The Half Hour team are advised as soon as the contract pre-conditions have been satisfied. All switch requests are actioned the same day as they are received.

The five NT files checked were sent within three business days of pre-conditions being cleared and the correct switch type was applied.

Audit outcome

Compliant

4.13. Losing trader provision of information - gaining trader switch (Clause 15 Schedule 11.3)

Code reference

Clause 15 Schedule 11.3

Code related audit information

Within three business days after the losing trader is informed about the switch by the registry manager, the losing trader must:

> *15(a) - provide to the registry manager a valid switch response code as approved by the Authority; or*
>
> *15(b) - provide a request for withdrawal of the switch in accordance with clause 17.*

Audit observation

The HHR switch process was examined and the event detail report and switch breach report were analysed to identify all HHR switch files sent during the audit period. The switch breach report recorded two AN breaches and these were both analysed.

Audit commentary

The switching console manages HHR switch losses. The NT receipt starts the process. The HHR team pass this through to sales team to review and once cleared an AN or NW is sent as appropriate.

In November 2018 Mercury discovered an error in the switching console resulting in incorrect calculation of file due dates. This has since been resolved and the switch breach report is also run daily to identify files that are due.

Analysis of the two late AN files showed they were one day late. One file was late due to human error, and one was late because there was confusion about whether it was to switch as HHR or NHH. It had been NHH with Mercury, but another trader had requested it as a HH switch.

Audit outcome

Non-compliant

Non-compliance	Description
Audit Ref: 4.13 With: Clause 15 Schedule 11.3 From: 24-Apr-18 To: 06-Sep-18	Two late AN files for HH switches. 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 rated the controls as moderate as the switch console will mitigate risk most of the time. The audit risk rating is low due to the small volume of late ANs.

Actions taken to resolve the issue	Completion date	Remedial action status
Response: Non compliance accepted **Action:** Due to human error process was over looked. Staff have been trained.	complete	Identified
Preventative actions taken to ensure no further issues will occur	**Completion date**	
Mercury will ensure adequate training are provided to avoid the non-compliance	On going	

4.14. Gaining trader to advise the registry manager - gaining trader switch (Clause 16 Schedule 11.3)

Code reference

Clause 16 Schedule 11.3

Code related audit information

The gaining trader must complete the switch no later than three business days, after receiving the valid switch response code, by advising the registry manager of the event date.

If the ICP is being electrically disconnected, or if metering equipment is being removed, the gaining trader must either-

> *16(a)- give the losing trader or MEP for the ICP an opportunity to interrogate the metering installation immediately before the ICP is electrically disconnected or the metering equipment is removed; or*
>
> *16(b)- carry out an interrogation and, no later than five business days after the metering installation is electrically disconnected or removed, advise the losing trader of the results and metering component numbers for each data channel in the metering installation.*

Audit observation

The HHR switching process was examined and the switch breach report was analysed. The switch breach report recorded 47 late CS files. These were all examined.

Audit commentary

The switching console manages HHR switch gains. The NT generation starts the process.

In November 2018 Mercury discovered an error in the switching console resulting in incorrect calculation of file due dates. This has since been resolved and the switch breach report is also run daily to identify files that are due.

The 47 late CS files recorded were examined and found 12 were genuinely late.

- One was delayed because the gain date was in dispute.
- 11 were delayed because the switching console did not calculate the correct number of days until the due date.

CS content was as expected apart from two CS files which were sent with METERINSTALL, METERCOMP and METERCHANNEL rows. The error occurred because the meters were replaced with FCLM smart meters not long prior to switching, and the rows were added in error.

Audit outcome

Non-compliant

Non-compliance	Description
Audit Ref: 4.14 With: Clause 16 of schedule 11.3 From: 27-Apr-18 To: 22-Nov-18	12 late CS files for HH switches. Two HH CS files were sent with METERINSTALL, METERCOMP and METERCHANNEL rows. Potential impact: Low Actual impact: Low Audit history: Twice Controls: Moderate Breach risk rating: 2
Audit risk rating	**Rationale for audit risk rating**
Low	I have rated the controls as moderate as the switch console will mitigate risk most of the time. I have recorded the audit risk rating as low as the HHR CS is for notification purposes only. Submission is unaffected by a late CS.
Actions taken to resolve the issue	**Completion date** / **Remedial action status**

Response: Non-compliance accepted. **Action:** 1) 12 late CS files for HH switches. We have a robust process in place. Withdrawals are also handled via breach report to ensure we do not miss the date. Breach was due to system error as files were sent from SAP & not updated in the registry. This has been rectified since. 2) Two HH CS files were sent with METERINSTALL, METERCOMP and METERCHANNEL rows Yes it was an legitimate error and MEEN has taken expedient measures to rectify and resolve the issue. Process was changed in Nov 2018 to monitor these.	July 2019	Identified
Preventative actions taken to ensure no further issues will occur	**Completion date**	
Mercury notes that risk is low however will continue to improve the process further.	Dec 2019	

4.15. Withdrawal of switch requests (Clauses 17 and 18 Schedule 11.3)

Code reference

Clauses 17 and 18 Schedule 11.3

Code related audit information

A losing trader or gaining trader may request that a switch request be withdrawn at any time until the expiry of two calendar months after the event date of the switch.

If a trader requests the withdrawal of a switch, the following provisions apply:

- *for each ICP, the trader withdrawing the switch request must provide the registry manager with (clause 18(c)):*
  - *the participant identifier of the trader making the withdrawal request (clause 18(c)(i)); and*
  - *the withdrawal advisory code published by the Authority (clause 18(c)(ii))*
- *within five business days after receiving notice from the registry manager of a switch, the trader receiving the withdrawal must advise the registry manager that the switch withdrawal request is accepted or rejected. A switch withdrawal request must not become effective until accepted by the trader who received the withdrawal (clause 18(d))*
- *on receipt of a rejection notice from the registry manager, in accordance with clause 18(d), a trader may re-submit the switch withdrawal request for an ICP in accordance with clause 18(c). All switch withdrawal requests must be resolved within 10 business days after the date of the initial switch withdrawal request (clause 18(e))*
- *if the trader requests that a switch request be withdrawn, and the resolution of that switch withdrawal request results in the switch proceeding, within two business days after receiving notice from the registry manager in accordance with clause 22(b), the losing trader must comply*

with clauses 3,5,10 and 11 (whichever is appropriate) and the gaining trader must comply with clause 16 (clause 18(f)).

Audit observation

An event detail report for 01/04/18 to 31/01/19 was reviewed to:

- identify all switch withdrawal requests issued by Mercury, the content of a sample of at least two ICPs from the event detail report for each withdrawal code, including 12 withdrawal requests rejected by other traders;
- identify all switch withdrawal acknowledgements issued by Mercury, a sample of ten rejections were checked; and
- confirm timeliness of switch requests, as this is not currently being identified in the switch breach report.

The switch breach reports were checked for any late switch withdrawal requests or acknowledgements.

Audit commentary

NW timeliness

The switch breach report recorded eight late NW files, but none of the breaches were genuine. No NW files were sent for the affected ICPs.

184 (1.2%) of the 14,284 NWs were issued more than 60 business days after the event date. 90 of those used the code for wrong premises, and I note that this issue often does not become apparent for an extended period after a switch completes. The ten latest NW files were checked, and I found:

- eight were delayed while investigation was carried out to determine whether a withdrawal was required; and
- two were issued in error because an incorrect event type was selected in SAP, both switches were later reinstated.

The switch breach report recorded three breaches were recorded for not completing the withdrawal cycle within ten business days, all related to issues confirming whether the switch was to be withdrawn and negotiations with the other retailer.

AW timeliness

Like the other switching files, NW and AW files are triggered in SAP by the switching team, and sometimes files which have been triggered fail to be sent to the registry. Late AW files will be identified the following morning using the switch breach report.

The switch breach report recorded 29 late AW files, all of which were sent within seven business days of receipt of the NW file. A sample of 20 late files were checked and found:

- three files were one day late because files were not processed on Auckland anniversary day; and
- 17 files were one day late because the AW was processed in SAP, but the file was not successfully transferred to the registry.

Content and handling of NW and AW

Each switch withdrawal request is assessed and actioned based on the staff member's findings. Analysis of the switch withdrawal codes confirmed all were correctly coded.

158 (5.4%) of the 2,945 AWs issued by Mercury were rejections. I reviewed a sample of ten rejections by Mercury, and confirmed they were rejected based the information available at the time the response was issued. One NW was rejected twice in error before being accepted.

Audit outcome

Non-compliant

Non-compliance	Description
Audit Ref: 4.15 With: Clauses 17 & 18 of schedule 11.3 From: 27-Apr-18 To: 29-Jan-19	184 late NW files and 29 late AC files. Three switch withdrawals not resolved within ten business days. Potential impact: Low Actual impact: Low Audit history: Twice Controls: Moderate Breach risk rating: 2
Audit risk rating	**Rationale for audit risk rating**
Low	I have rated the controls as moderate as controls mitigate risk most of the time, but a small number of human errors were evident. The audit risk rating is low as the volume of backdated switch withdrawals is low but processing of these increases submission accuracy.

Actions taken to resolve the issue	Completion date	Remedial action status
Response: Non compliance accepted, We have a robust process in place. Withdrawals are handled via breach report to ensure we do not miss the date. Breach was due to system error as files were sent from SAP & not updated in the registry. **Action:** Mercury will investigate and update reports to ensure code obligations are met at all times	Dec 2019	Identified
Preventative actions taken to ensure no further issues will occur	**Completion date**	
Mercury will investigate and update reports to ensure code obligations are met at all times.	Dec 2019	

4.16. Metering information (Clause 21 Schedule 11.3)

Code reference

Clause 21 Schedule 11.3

Code related audit information

For an interrogation or validated meter reading or permanent estimate carried out in accordance with Schedule 11.3:

> *21(a)- the trader who carries out the interrogation, switch event meter reading must ensure that the interrogation is as accurate as possible, or that the switch event meter reading is fair and reasonable.*

21(b) and (c) - the cost of every interrogation or switch event meter reading carried out in accordance with clauses 5(b) or 11(b) or (c) must be met by the losing trader. The costs in every other case must be met by the gaining trader.

Audit observation

The meter reading process in relation to meter reads for switching purposes was examined.

Audit commentary

The reads applied in switching files were examined in **section 4.3** for standard switches, **section 4.10** for switch moves, and **sections 4.4** and **4.11** for read changes. The meter readings used in the switching process are validated meter readings or permanent estimates.

As discussed in **sections 4.3** and **4.10**, in some cases the switch event reading did not reflect the actual reading (or best estimate of consumption) on the switch event date. This is recorded as non-compliance below.

Mercury's policy regarding the management of meter reading expenses is compliant.

Audit outcome

Non-compliant

Non-compliance	Description
Audit Ref: 4.16 With: Clause 21 Schedule 11.3 From: 23-Jul-18 To: 25-Jan-19	Some incorrect CS file switch event readings. Potential impact: Low Actual impact: Medium Audit history: None Controls: Weak Breach risk rating: 6
Audit risk rating	**Rationale for audit risk rating**
Medium	I have rated the controls as weak, because of the incorrect content for system generated CS files. The audit risk rating is assessed to be medium, based on the impact the incorrect CS content could have on other participants.

Actions taken to resolve the issue	Completion date	Remedial action status
Response: Non compliance accepted		Identified

Action: Switching process is a very automated, and we have liaised with Readings management team to look in to those ICPs and amend the process going forward to depict the last read date and the read. Mercury process for applying meter readings to switch events has changed and is now compliant with NHH meter reading application (Clause 6 Schedule 15.2). Mercury is using the last available reading for the switch date. Evidence has been sent to the auditors and we believe that control and breach rating should change to reflect that. Estimated Daily kWh MEEN is aware that System enhancement is required to calculate correct Average daily consumption and is on hold as EA is currently exploring options for Average daily consumption. Mercury would like to wait for the outcome before investing further.	Completed Awaiting on EA	Post audit comment. An example was provided confirming an estimate was correctly labelled in a CS file for ICP 0000171244WE47A, but the date of last read was incorrect. The estimate was from a prior date and was used as a switch read because the ICP was vacant. Confirmation is required that the date of last read is correct, that actual readings from the correct date are used and another example is required to confirm estimates from the correct date are used, preferably for an ICP without a vacant period prior to switch.
Preventative actions taken to ensure no further issues will occur	**Completion date**	
MEEN is aware that System enhancement is required to calculate correct Average daily consumption and is on hold as EA is currently exploring options for Average daily consumption. Mercury would like to wait for the outcome before investing further.	May 2020	

4.17. Switch saving protection (Clause 11.15AA to 11.15AB)

Code reference

Clause 11.15AA to 11.15AB

Code related audit information

A trader that buys electricity from the clearing manager may elect to have a switch saving protection by giving notice to the Authority in writing.

If a protected trader enters into an arrangement with a customer of another trader (the losing trader), or a trader enters into an arrangement with a customer of a protected trader, to commence trading electricity with the customer, the losing trader must not, by any means, initiate contact with the customer to attempt to persuade the customer to terminate the arrangement during the period from the receipt of the NT to the event date of the switch including by:

11.15AB(4)(a) - making a counter offer to the customer; or

11.15AB(4)(b) - offering an enticement to the customer.

Audit observation

The Electricity Registry switch save protected retailer list was examined to confirm that Mercury is not a save protected retailer.

Win back processes were examined to determine whether they are compliant.

I checked the event detail report from 01/04/18 to 08/02/19 identify any withdrawn switches with a CX code applied prior to the switch completion date in relation to any switch save protected retailers.

Audit commentary

Mercury exclude any switch save protected retailer files from their pre switch completion save programme, and all staff have been trained in relation to these requirements.

Review of the event detail report identified no NWs issued with a CX withdrawal reason code prior to completion of the switch.

Audit outcome

Compliant

5. MAINTENANCE OF UNMETERED LOAD

5.1. Maintaining shared unmetered load (Clause 11.14)

Code reference

Clause 11.14

Code related audit information

The trader must adhere to the process for maintaining shared unmetered load as outlined in clause 11.14:

> *11.14(2) - The distributor must give written notice to the traders responsible for the ICPs across which the unmetered load is shared, of the ICP identifiers of the ICPs.*
>
> *11.14(3) - A trader who receives such a notification from a distributor must give written notice to the distributor if it wishes to add or omit any ICP from the ICPs across which unmetered load is to be shared.*
>
> *11.14(4) - A distributor who receives such a notification of changes from the trader under (3) must give written notice to the registry manager and each trader responsible for any of the ICPs across which the unmetered load is shared.*
>
> *11.14(5) - If a distributor becomes aware of any change to the capacity of a shared unmetered load ICP or if a shared unmetered load ICP is decommissioned, it must give written notice to all traders affected by that change as soon as practicable after that change or decommissioning.*
>
> *11.14(6) - Each trader who receives such a notification must, as soon as practicable after receiving the notification, adjust the unmetered load information for each ICP in the list for which it is responsible to ensure that the entire shared unmetered load is shared equally across each ICP.*
>
> *11.14(7) - A trader must take responsibility for shared unmetered load assigned to an ICP for which the trader becomes responsible as a result of a switch in accordance with Part 11.*
>
> *11.14(8) - A trader must not relinquish responsibility for shared unmetered load assigned to an ICP if there would then be no ICPs left across which that load could be shared.*
>
> *11.14(9) - A trader can change the status of an ICP across which the unmetered load is shared to inactive status, as referred to in clause 19 of Schedule 11.1. In that case, the trader is not required to give written notice to the distributor of the change. The amount of electricity attributable to that ICP becomes UFE.*

Audit observation

The process to identify and monitor unmetered load was discussed. The registry list for 13/02/19 was reviewed to identify all shared unmetered load.

Audit commentary

Mercury supplies 87 ICPs with shared unmetered load. All have the unmetered flag set to Y and daily unmetered kWh recorded.

For all 87 ICPs, the distributor had populated the unmetered load details in a format that allowed recalculation of the unmetered load based on their data. I found my recalculation was within ± 1 kWh of Mercury's estimated daily consumption in all cases.

Audit outcome

Compliant

5.2. Unmetered threshold (Clause 10.14 (2)(b))

Code reference

Clause 10.14 (2)(b)

Code related audit information

The reconciliation participant must ensure that unmetered load does not exceed 3,000 kWh per annum, or 6,000 kWh per annum if the load is predictable and of a type approved and published by the Authority.

Audit observation

The registry list for 13/02/19 was reviewed to identify all unmetered load over 3,000 kWh per annum.

Audit commentary

37 ICPs had a load between 3,000 and 6,000 kWh and were all of an approved load type.

32 ICPs had a load greater than 6,000 kWh. 23 of these are of an approved load type and are managed as distributed unmetered loads as detailed in **section 5.4**. The remaining nine ICPs were all examined and found to be held by one customer. Mercury has been unable to confirm the correct loads to date. Mercury is working with the customer to confirm the unmetered load details and update the registry and create DUML databases as necessary. There is currently no usable data available.

ICP	Switch in date	Annual kWh
0000190118TR62B	09/06/17	200,666
0001261460UN08E	09/06/17	37,931
0001393839UN86B	12/06/17	66,065
0001409085UN545	12/06/17	15,943
0007106261RN1C3	09/06/17	30,660
0007143499RN973	14/06/17	8,030
0007145198RN5F3	14/06/17	10,074
0007146145RN50A	14/06/17	10,074
1001146090UN1CE	12/06/17	1,619,870
Total		**1,999,313**

Audit outcome

Non-compliant

Non-compliance	Description
Audit Ref: 5.2 With: Clause 10.14 (2)(b) From: 09-Jun-17 To: 28-Mar-19	Nine standard unmetered ICPs with unmetered consumption over 6,000 kWh per annum. Potential impact: Medium Actual impact: Medium Audit history: None Controls: Weak Breach risk rating: 6
Audit risk rating	**Rationale for audit risk rating**
Medium	The controls are rated as weak as these have been with Mercury since June 2017 but are yet to be resolved. The audit risk rating is medium as the combined volume could, if incorrect, have a material impact on reconciliation.

Actions taken to resolve the issue	Completion date	Remedial action status
Response: Non compliance accepted and remedial action on-going. Unmetered load is an industry wide issue which all the traders struggles with and are sometimes traders reluctant to switch them in. **Action:** Mercury inherited missing DUML database for some from previous retailer's and with no previous audits conducted for the sites. Customer has limited or no knowledge of installations. Mercury is working with the customer to establish a database and rectify issues raised as non-compliance.	May 2020	Identified
Preventative actions taken to ensure no further issues will occur	**Completion date**	
Non compliance accepted and remedial action on-going. Unmetered load is an industry wide issue which all the traders struggles with and are sometimes traders reluctant to switch them in. Mercury inherited missing DUML database for some from previous retailer's and with no previous audits conducted for the sites. Customer has limited or no knowledge of installations. Mercury is working with the customers to establish a database and rectify issues raised as non-compliance.	May 2020	

5.3. Unmetered threshold exceeded (Clause 10.14 (5))

Code reference

Clause 10.14 (5)

Code related audit information

If the unmetered load limit is exceeded the retailer must:

- *within 20 business days, commence corrective measure to ensure it complies with Part 10*
- *within 20 business days of commencing the corrective measure, complete the corrective measures*
- *no later than 10 business days after it becomes aware of the limit having been exceeded, advise each participant who is or would be expected to be affected of:*
    - *the date the limit was calculated or estimated to have been exceeded*
    - *the details of the corrective measures that the MEP proposes to take or is taking to reduce the unmetered load.*

Audit observation

The registry list for 13/02/19 was reviewed to identify all unmetered load over 3,000 kWh per annum.

Audit commentary

37 ICPs had a load between 3,000 and 6,000 kWh and were all of an approved load type.

32 ICPs had a load greater than 6,000 kWh. 23 of these are of an approved load type and are managed as distributed unmetered loads as detailed in **section 5.4**.

As discussed in **section 5.2**, Mercury is working with the customer to confirm the unmetered loads and update the registry and create DUML databases as necessary for the other nine ICPs. This process has not been completed within the 20 business days as required by this clause. Due to the complexities of such loads it is difficult to comply with the 20 days allowed however, the affected ICPs have been supplied by Mercury for 21 months and are yet to be resolved.

Audit outcome

Non-compliant

Non-compliance	Description
Audit Ref: 5.3 With: Clause 10.14 (5) From: 09-Jun-17 To: 28-Mar-19	Nine standard unmetered ICPs with unmetered consumption over 6,000 kWh per annum were not corrected within the required timeframe. Potential impact: Medium Actual impact: Medium Audit history: None Controls: Weak Breach risk rating: 6
Audit risk rating	**Rationale for audit risk rating**
Medium	The controls are rated as weak as these ICPs have been supplied by Mercury since June 2017 but are yet to be resolved, suggesting controls are weak. The audit risk rating is medium as the combined volume could, if incorrect, have a material impact on reconciliation.

Actions taken to resolve the issue	Completion date	Remedial action status

Response: Non compliance accepted and remedial action on-going. Unmetered load is an industry wide issue which all the traders struggles with and are sometimes traders reluctant to switch them in. **Action:** Mercury inherited missing DUML database for some from previous retailer's and with no previous audits conducted for the sites. Customer has limited or no knowledge of installations. Mercury is working with the customer to establish a database and rectify issues raised as non-compliance.	May 2020	Identified
Preventative actions taken to ensure no further issues will occur	**Completion date**	
Non compliance accepted and remedial action on-going. Unmetered load is an industry wide issue which all the traders struggles with and are sometimes traders reluctant to switch them in. Mercury inherited missing DUML database for some from previous retailer's and with no previous audits conducted for the sites. Customer has limited or no knowledge of installations. Mercury is working with the customers to establish a database and rectify issues raised as non-compliance.	May 2020	

5.4. Distributed unmetered load (Clause 11 Schedule 15.3, Clause 15.37B)

Code reference

Clause 11 Schedule 15.3, Clause 15.37B

Code related audit information

An up-to-date database must be maintained for each type of distributed unmetered load for which the retailer is responsible. The information in the database must be maintained in a manner that the resulting submission information meets the accuracy requirements of clause 15.2.

A separate audit is required for distributed unmetered load data bases.

The database must satisfy the requirements of Schedule 15.5 with regard to the methodology for deriving submission information.

Audit observation

Mercury has 13 distributed unmetered load databases; excluding the Minginui Village ICP which was disconnected in February 2019.

Audit commentary

Mercury has been granted exemption No. 233. This allows them to provide half-hour ("HHR") submission information instead of non half-hour ("NHH") submission information for distributed unmetered load ("DUML"). This exemption expires on 31 October 2023.

Section 5.2 identified nine standard unmetered ICPs with unmetered consumption over 6,000 kWh per annum. Mercury is working with the customer to confirm the unmetered load details and update the registry and create DUML databases as necessary.

ICP	Switch in date	Annual kWh
0000190118TR62B	09/06/17	200,666
0001261460UN08E	09/06/17	37,931
0001393839UN86B	12/06/17	66,065
0001409085UN545	12/06/17	15,943
0007106261RN1C3	09/06/17	30,660
0007143499RN973	14/06/17	8,030
0007145198RN5F3	14/06/17	10,074
0007146145RN50A	14/06/17	1,0074
1001146090UN1CE	12/06/17	1,619,870
Total		**1,999,313**

The table below indicates all of the DUML databases held by Mercury and the current level of compliance.

		Compliance Achieved (Yes/No)								
Database	DUML Audit completed 16A.26 and 17.295F	Deriving submission information 11(1) of schedule 15.3	ICP identifier 11(2)(a) of schedule 15.3	Location of items of load 11(2)(b) of schedule 15.3	Description of load 11(2)(c)&(d) of schedule 15.3	All load recorded in database 11(2A) of schedule 15.3	Tracking of load changes 11(3) of schedule 15.3	Audit trail 11(4) of schedule 15.3	Database accuracy 15.2 and 15.37B(b)	Volume information accuracy 15.2 and 15.37B(c)
Palmerston North Airport-	2/8/17	Yes	No	Yes	Yes	Yes	No	Yes	Yes	Yes
Rotorua Lakes DC	23/11/18	No	Yes	Yes	Yes	Yes	Yes	Yes	No	No
Matamata Piako DC	7/5/18	No	Yes	Yes	No	No	Yes	Yes	No	No
Avondale Business Association	15/5/18	No	Yes	Yes	Yes	No	Yes	Yes	No	No
Ardmore	15/5/18	No	Yes	Yes	Yes	No	Yes	Yes	Yes	No
NuLite	15/5/18	No	Yes	Yes	No	No	Yes	Yes	No	No
Acacia Cove	15/5/18	No	Yes	No	No	Yes	No	Yes	No	No
Metrix Gatekeeper ICPs	15/5/18	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Thames Coromandel DC	23/11/18	No	Yes	Yes	No	No	Yes	Yes	No	No
Hauraki DC	First audit for Mercury is due to be completed by 01/10/19									
South Waikato DC	First audit for Mercury is due to be completed by 30/11/19									
Selwyn DC	First audit for Mercury is due to be completed by 31/05/19									
Vodafone	A database does not exist for Vodafone, Mercury is working with the customer to create one.									

		Compliance Achieved (Yes/No)								
Database	DUML Audit completed 16A.26 and 17.295F	Deriving submission information 11(1) of schedule 15.3	ICP identifier 11(2)(a) of schedule 15.3	Location of items of load 11(2)(b) of schedule 15.3	Description of load 11(2)(c)&(d) of schedule 15.3	All load recorded in database 11(2A) of schedule 15.3	Tracking of load changes 11(3) of schedule 15.3	Audit trail 11(4) of schedule 15.3	Database accuracy 15.2 and 15.37B(b)	Volume information accuracy 15.2 and 15.37B(c)
Minginui Village	ICP was decommissioned effective 12/02/19.									

Audit outcome

Non-compliant

Non-compliance	Description
Audit Ref: 5.4 With: Clauses 11(1) of schedule 15.3, 10.14 & 15.13 From: 01-Apr-18 To: 28-Mar-19	Errors found in eight databases. The specific findings are detailed in the DUML database audit reports. Potential impact: High Actual impact: High Audit history: Multiple Controls: Weak Breach risk rating: 9
Audit risk rating	**Rationale for audit risk rating**
High	The controls are rated as weak due to the level of errors found. The impact is assessed to be high, based on the kWh differences found in the DUML audits.

Actions taken to resolve the issue	Completion date	Remedial action status
Response: Non compliance accepted and remedial action on-going. Unmetered load is an industry wide issue which all the traders struggle with and are sometimes reluctant to switch. **Action:** Mercury inherited missing DUML database for some from previous retailer's and with no previous audits conducted for the sites. Customer has limited or no knowledge of installations. Mercury is working with the customer to establish a database and rectify issues raised as non-compliance.	Dec 2019	Identified
Preventative actions taken to ensure no further issues will occur	**Completion date**	
Unmetered load is an industry wide issue which all the traders struggle with and are sometimes reluctant to switch. Mercury inherited missing DUML database for some from previous retailer's and with no previous audits conducted for the sites. Customer has limited or no knowledge of installations. Mercury is working with the customers to establish a database and rectify issues raised as non-compliance.	May 2020	

6. GATHERING RAW METER DATA

6.1. Electricity conveyed & notification by embedded generators (Clause 10.13, Clause 10.24 and 15.13)

Code reference

Clause 10.13, Clause 10.24 and Clause 15.13

Code related audit information

A participant must use the quantity of electricity measured by a metering installation as the raw meter data for the quantity of electricity conveyed through the point of connection.

This does not apply if data is estimated or gifted in the case of embedded generation under clause 15.13.

A trader must, for each electrically connected ICP that is not also an NSP, and for which it is recorded in the registry as being responsible, ensure that:

- *there is one or more metering installations*
- *all electricity conveyed is quantified in accordance with the Code*
- *it does not use subtraction to determine submission information for the purposes of Part 15.*

An embedded generator must give notification to the reconciliation manager for an embedded generating station, if the intention is that the embedded generator will not be receiving payment from the clearing manager or any other person through the point of connection to which the notification relates.

Audit observation

The registry list for 13/02/19 and meter installation details report were examined to determine whether any ICPs with generation were supplied during the audit period and check metering information. Processes for distributed generation were reviewed.

Audit commentary

Metering installations installed

The list file was examined and identified 105 active ICPs with no MEP recorded, or with meter category nine recorded and the UML flag set to "N". These ICPs were examined in **section 3.7** and found to be timing differences or potentially had unmetered load recorded. One ICP had not been updated to inactive status and is recorded as non-compliance in **section 3.8**.

Mercury's new connection process includes a check that metering is installed before electrical connection occurs, and that any unmetered load is quantified.

No ICPs have submission information determined by subtraction.

Distributed generation

The list file contained 3,113 active ICPs with distributed generation recorded by the Distributor. All had RPS, HHR or HHM profiles.

3,010 ICPs have distributed generation recorded and import/export metering. Submission data for a sample of ten of these ICPs was checked, and I found the PV1 profile was correctly applied in the AV080 NHH submissions for NHH ICPs with generation, but the PV1 profile was not recorded against the ICPs on the registry. The incorrect profiles on the registry are recorded as non-compliance in **section 2.1**.

75 of the 3,113 ICPs with generation recorded by the distributor do not have import/export metering recorded on the registry. Population of distributed generation details on the registry is a MEP requirement and not the responsibility of the retailer, but it is the retailer's responsibility to ensure that electricity is quantified in accordance with the code. A typical sample of 16 ICPs without injection/export

metering were reviewed to determine whether distributed generation was present. The findings are listed below:

- two ICPs do not have generation installed;
- one ICP has since had generation metering installed, and generation consumption is being measured and reported in accordance with the code;
- eight ICPs are under investigation to determine if generation is installed; and
- five ICPs have had meter change jobs booked but these were not completed due to access issues.

Reporting is in place to compare the distributor's generation fields against Mercury's records, but this report has not been actively worked on in recent months.

Bridged meters

Mercury confirmed 21 ICPs were bridged to reconnect during the audit period and were later unbridged. Consumption was not quantified by the meter during this period.

Audit outcome

Non-compliant

Non-compliance	Description
Audit Ref: 6.1 With: Clause 10.13 From: 03-Feb-18 To: 13-Feb-19	While meters were bridged, energy was not metered and quantified according to the code for 21 ICPs. Between 14 and 73 ICPs with distributed generation not quantified. Potential impact: Low Actual impact: Low Audit history: Multiple times Controls: Moderate Breach risk rating: 2
Audit risk rating	**Rationale for audit risk rating**
Low	Controls are rated as moderate as they are sufficient to reduce the risk most of the time. The audit risk rating is low: • bridging only occurs where a soft reconnection cannot be performed after hours and the customer urgently requires their energy supply for health and safety reasons - for all 21 examples reviewed, corrections for consumption during the bridged period had been processed; and • correct profiles are applied for reconciliation submissions.

Actions taken to resolve the issue	Completion date	Remedial action status
Response:	Dec 2019	Disputed

Non compliance disputed as the energy was quantified according to the code. non compliance disputed for ICPs with distributed generation not quantified due to "gifting' Remedial action on-going. **Action:** 1) Between 14 and 73 ICPs with distributed generation not quantified or submitted **Action:** We have reviewed the process and a gap was identified which has been changed to action them on monthly basis. Report in place to investigate sites that are showing "reverse power" as indicated by the meter owner and appropriate action is taken Some of the ICP's marked as generation do not have import/export meters as they are as 'gift', Mercury send a list to RM to notify these as required by the code thus we believe Mercury is compliant		Post audit comment. When meters are bridged, quantification does not occur by the metering installation as required by the Code. The list of "gifted" ICPs has not been evaluated to confirm it includes all relevant ICPs.
Preventative actions taken to ensure no further issues will occur	**Completion date**	
As above	Dec 2019	

6.2. Responsibility for metering at GIP (Clause 10.26 (6), (7) and (8))

Code reference

Clause 10.26 (6), (7) and (8)

Code related audit information

For each proposed metering installation or change to a metering installation that is a connection to the grid, the participant, must:

- *provide to the grid owner a copy of the metering installation design (before ordering the equipment)*
- *provide at least three months for the grid owner to review and comment on the design*
- *respond within three business days of receipt to any request from the grid owner for additional details or changes to the design*
- *ensure any reasonable changes from the grid owner are carried out.*

The participant responsible for the metering installation must:

- *advise the reconciliation manager of the certification expiry date not later than 10 business days after certification of the metering installation*
- *become the MEP or contract with a person to be the MEP*
- *advise the reconciliation manager of the MEP identifier no later than 20 days after entering into a contract or assuming responsibility to be the MEP.*

Audit observation

The NSP table was reviewed to confirm the GIPs which Mercury is responsible for, and the certification expiry date for those GIPs.

Changes to the NSP table were reviewed to determine whether they had been processed accurately.

Audit commentary

Mercury is responsible for the GIPs shown in the table below. Certification was current for all metering installations at the time of review.

Responsible party	POC	Description	NSP	MEP	Certification expiry date (NSP table)	Reconciliation Type
MRPL	ARA2201	ARATIATIA	ARA2201MRPLGG	MRPL	25/08/2019	GG
MRPL	ARI1101	ARAPUNI	ARI1101MRPLGG	MRPL	13/01/2020	GG
MRPL	ARI1102	ARAPUNI	ARI1102MRPLGG	MRPL	8/05/2019	GG
MRPL	ATI0111	ATIAMURI	ATI0111LINENP	MRPL	7/02/2021	NP
MRPL	ATI0111	ATIAMURI	ATI0111MRPDNP	MRPL	7/02/2021	NP
MRPL	ATI0112	ATIAMURI	ATI0112HAWKNP	MRPL	6/08/2021	NP
MRPL	ATI0112	ATIAMURI	ATI0112MRPDNP	MRPL	6/08/2021	NP
MRPL	ATI2201	ATIAMURI	ATI2201MRPLGN	MRPL	8/02/2021	GN
MRPL	KAW1101	KAWERAU GEOTHERMAL	KAW1101KRGLGG	MRPL	27/08/2019	GG
MRPL	KPO1101	KARAPIRO	KPO1101MRPLGG	MRPL	26/03/2021	GG
MRPL	MTI2201	MARAETAI	MTI2201MRPLGG	MRPL	3/10/2019	GG
MRPL	NAP2202	NGATAMARIKI	NAP2202MRPLGG	MRPL	26/03/2021	GG
MRPL	OHK2201	OHAKURI	OHK2201MRPLGG	MRPL	4/12/2020	GG
MRPL	SWN2201	SOUTHDOWN	SWN2201MRPLGG	MRPL	1/02/2020	GG
MRPL	WKM2201	WHAKAMARU	WKM2201MRPLGG	MRPL	16/08/2020	GG
MRPL	WKM2201	WHAKAMARU	WKM2201TUARGN	MRPL	7/07/2019	GN
MRPL	WPA2201	WAIPAPA	WPA2201MRPLGG	MRPL	23/02/2021	GG

The process to make changes to the NSP table was stepped through, and changes to the NSP table in the past year were reviewed. The Mercury Senior Electrical Engineer advises the Mercury Energy Services team of any changes to the NSP table required via email. The Energy Services team create an AV180 report detailing the NSP changes and submit it to the Reconciliation Manager.

For all changes reviewed, the details provided to the Reconciliation Manager matched the information provided by the Senior Electrical Engineer. Six certification expiry date changes were processed more than 10 business days after re-certification. This is recorded as non-compliance below.

NSP	Certification date	Certification expiry date	Date updated	Days between cert and update
ARA2201MRPLGG	12/10/2018	25/08/2019	5/12/2018	54
ATI0111LINENP	7/02/2018	7/02/2021	13/04/2018	65
ATI0111MRPDNP	7/02/2018	7/02/2021	13/04/2018	65
ATI2201MRPLGN	11/12/2018	8/02/2021	29/03/2019	108
KPO1101MRPLGG	21/05/2018	26/03/2021	8/06/2018	18
MTI2201MRPLGG	11/12/2018	3/10/2019	11/02/2019	62

No new NSPs were created during the audit period.

Audit outcome

Non-compliant

Non-compliance	Description
Audit Ref: 6.2 With: Clause 10.26 (6), (7) and (8) From: 01-Jun-17 To: 19-Feb-18	Six meter certification expiry dates were updated late. Potential impact: Low Actual impact: None Audit history: Twice Controls: Weak Breach risk rating: 3
Audit risk rating	**Rationale for audit risk rating**
Low	The controls are assessed as weak. Many of the updates were well after certification occurred. The risk is low because the meters were appropriately certified at all times.

Actions taken to resolve the issue	Completion date	Remedial action status
Response:	Dec 2019	Identified

Non-compliance accepted however we dispute the control rating. We believe we have strong controls in place. The longer delivery times are usually due to the requirement of the EA for the testing house to perform on-load testing following certification in all cases. If an installation for an out-of-service generator is certified the on-load tests in some cases cannot occur until many weeks later and the timing for the on-load testing is often a moving variable with many dependents. **Action:** Mercury continues to meet the code obligation at a high level however sometimes it is beyond our reach to meet the compliance. To be discussed with EA the findings of the sampling carried out to identify ways of complying within the required timeframes.		Post audit comment. It is expected that the date of the "insufficient load" certification expiry will be uploaded prior to the completion of the remaining tests because the expiry date will not change.
Preventative actions taken to ensure no further issues will occur	**Completion date**	
Mercury continues to meet the code obligation at a high level however sometimes it is beyond our reach to meet the compliance. To be discussed with EA the findings of the sampling carried out to identify ways of complying within the required timeframes.	Dec 2019	

6.3. Certification of control devices (Clause 33 Schedule 10.7 and clause 2(2) Schedule 15.3)

Code reference

Clause 33 Schedule 10.7 and clause 2(2) Schedule 15.3

Code related audit information

The reconciliation participant must advise the metering equipment provider if a control device is used to control load or switch meter registers.

The reconciliation participant must ensure the control device is certified prior to using it for reconciliation purposes.

Audit observation

A registry list with history was reviewed for 01/04/18 to 13/02/19 to determine the profiles assigned by Mercury, and whether they require control device certification.

Audit commentary

Mercury has applied the DFP, HHR, HHM, PTM, RPS, and UML profiles during the period.

The profiles used by Mercury do not rely on use of control devices for reconciliation purposes.

Audit outcome

Compliant

6.4. Reporting of defective metering installations (Clause 10.43(2) and (3))

Code reference

Clause 10.43(2) and (3)

Code related audit information

If a participant becomes aware of an event or circumstance that lead it to believe a metering installation could be inaccurate, defective, or not fit for purpose they must:

- *advise the MEP*
- *include in the advice all relevant details.*

Audit observation

Processes relating to defective metering were examined.

A sample of defective meters were reviewed, to determine whether the MEP was advised, and if appropriate action was taken.

Audit commentary

Defective meters are typically identified through the meter reading validation process, or from information provided by the meter reader, agent, the MEP, or the customer. Upon identifying a possible defective meter, a field services job is raised to investigate and resolve the defect.

I reviewed 13 examples of potential defective meters, and 21 bridged meters. In all cases a field services job was raised, and the MEP advised.

Because AMS and EDMI's audits were completed more than seven months ago, I checked defective meters identified since their May 2018 audits and noted that corrections had been processed where necessary. HHR corrections are discussed in **section 8.2**.

Audit outcome

Compliant

6.5. Collection of information by certified reconciliation participant (Clause 2 Schedule 15.2)

Code reference

Clause 2 Schedule 15.2

Code related audit information

Only a certified reconciliation participant may collect raw meter data, unless only the MEP can interrogate the meter, or the MEP has an arrangement which prevents the reconciliation participant from electronically interrogating the meter:

> *2(2) - The reconciliation participant must collect raw meter data used to determine volume information from the services interface or the metering installation or from the MEP.*
>
> *2(3) - The reconciliation participant must ensure the interrogation cycle is such that is does not exceed the maximum interrogation cycle in the registry.*
>
> *2(4) - The reconciliation participant must interrogate the meter at least once every maximum interrogation cycle.*
>
> *2(5) - When electronically interrogating the meter the participant must:*
>
> *a) ensure the system is to within +/- 5 seconds of NZST or NZDST*
> *b) compare the meter time to the system time*

c) *determine the time error of the metering installation*
d) *if the error is less than the maximum permitted error, correct the meter's clock*
e) *if the time error is greater than the maximum permitted error then:*
   i) *correct the metering installation's clock*
   ii) *compare the metering installation's time with the system time*
   iii) *correct any affected raw meter data.*
f) *download the event log.*

2(6) – The interrogation systems must record:

- *the time*
- *the date*
- *the extent of any change made to the meter clock.*

Audit observation

Mercury's agents and MEPs are responsible for the collection of HHR and AMI data. Collection of data and clock synchronisation were reviewed as part of their agent and MEP audits.

Audit commentary

All information used to determine volume information is collected from the services interface or the metering installation by Mercury, one of their agents, or the MEP.

Compliance with this clause has been demonstrated by Mercury's agents and MEPs as part of their agent audits. Because AMS and EDMI's audits were completed more than seven months ago, I confirmed that there were no issues with HHR data collection processes or clock synchronisation since their May 2018 audits.

Clock synchronisation event information is emailed to Mercury by its agents and MEPs. No recent examples of HHR clock synchronisation events requiring action had been received by Mercury. I reviewed some recent examples of clock synchronisation events sent by AMS and Metrix for AMI meters and noted that no action by Mercury had been required.

Mercury's generation engineers monitor generation consumption and metering in real time and notify Energy Services if any issues are identified.

Audit outcome

Compliant

6.6. Derivation of meter readings (Clause 3(1), 3(2) and 5 Schedule 15.2)

Code reference

Clause 3(1), 3(2) and 5 Schedule 15.2

Code related audit information

All meter readings must in accordance with the participants certified processes and procedures and using its certified facilities be sourced directly from raw meter data and, if appropriate, be derived and calculated from financial records.

All validated meter readings must be derived from meter readings.

A meter reading provided by a consumer may be used as a validated meter reading only if another set of validated meter readings not provided by the consumer are used during the validation process.

During the manual interrogation of each NHH metering installation the reconciliation participant must:

a) *obtain the meter register*

b) *ensure seals are present and intact*
c) *check for phase failure (if supported by the meter)*
d) *check for signs of tampering and damage*
e) *check for electrically unsafe situations.*

If the relevant parts of the metering installation are visible and it is safe to do so.

Audit observation

The data collection process was examined.

Processes to provide meter condition information were reviewed as part of Wells' agent audit. Mercury's processes to manage meter condition information were reviewed.

Processes for customer and photo reads were reviewed.

Audit commentary

Wells readings

Wells' data collection processes were reviewed as part of their agent audit in June 2018 and found to be compliant. I confirmed with Wells that there were no changes to their processes or systems since their May 2018 audit that could have a negative impact on Mercury's compliance.

Wells provides information on meter condition along with the daily reads. This meter condition information is pulled into the readers' notes database. It is possible for staff to run queries to identify ICPs where meter condition issues such as tampering, or damage are present. Staff work through the notes provided each day, and the database is used to provide additional information and support when investigating ICPs. Suspected tampering and faulty meters are addressed as top priority. I walked through the review process, including checking examples of missing and broken seals, tampering and damage and unsafe situations. I noted that field services jobs had been raised to resolve issues where required.

Wells also provide a monthly summary report containing all tampering events.

I checked a sample of ten readings provided by Wells and confirmed that they are loaded into SAP as actual readings and are validated.

Customer and photo readings

Customer readings are handled manually, and may be provided by telephone, in writing or by sending in a photograph of their meter. Customer reads are entered into SAP with type 01-02 (customer) after being validated against another set of actual readings provided by an MEP or agent. I reviewed two examples of customer readings and found that all had been appropriately validated against actual readings from other sources and were correctly classified.

In the rare event that customer readings are obtained by Wells, a no read is recorded, and the customer reading is inserted in the notes. On initial import they fail validation due to the read type being customer, and during the validation checks the customer read is entered manually with read type 01-02 (customer).

If unvalidated, or there are any concerns about the accuracy of a customer reading they will be loaded with a read type of unbillable.

Audit outcome

Compliant

6.7. NHH meter reading application (Clause 6 Schedule 15.2)

Code reference

Clause 6 Schedule 15.2

Code related audit information

For NHH switch event meter reads, for the gaining trader the reading applies from 0000 hours on the day of the relevant event date and for the losing trader at 2400 hours at the end of the day before the relevant event date.

In all other cases, All NHH readings apply from 0000hrs on the day after the last meter interrogation up to and including 2400hrs on the day of the meter interrogation.

Audit observation

The process of the application of meter readings was examined.

Audit commentary

NHH readings apply from 0000hrs on the day after the last meter interrogation up to and including 2400hrs on the day of the meter interrogation except in the case of a switch event meter reading which applies to the end of the day prior to the event date for the losing trader and the start of the event date for the gaining trader as required by this clause.

All AMI systems have a clock synchronisation function, which ensures correct time-stamping. Manual readings taken by Wells are applied correctly.

Application of reads was reviewed as part of the historic estimate checks in **section 12.11** and found to be compliant.

The content of CS and RR files was examined in **sections 4.3**, **4.4**, **4.10** and **4.11**. As recorded in **sections 4.3** and **4.10** there were 14 examples where the switch event meter readings were not for 24.00 on the day before the switch.

Audit outcome

Non-compliant

Non-compliance	Description
Audit Ref: 6.7 With: Clause 6(a)(ii) of Schedule 15.2 From: 01-May-18 To: 28-Feb-19	14 switch event meter readings not for 24.00 on the day before the switch. 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 they mitigate risk most of the time but there is room for improvement. The audit risk rating is assessed to be medium, based on the impact the incorrect CS content could have on other participants.
Actions taken to resolve the issue	**Completion date** / **Remedial action status**

Response: Non compliance accepted and remedial action is underway **Action:** Mercury process for applying meter readings to switch events has changed and is now compliant with NHH meter reading application (Clause 6 Schedule 15.2). Evidence has been sent to the auditors and we believe that control and breach rating should change to reflect that.	Completed	Investigating Post audit comment. The examples provided did not demonstrate compliance. Evidence needs to show an AMI read from midnight on the day before the switch date is present in the CS file. Evidence is also required to show that readings from other dates will not be included as actual reads.
Preventative actions taken to ensure no further issues will occur	**Completion date**	
As above	Completed	

6.8. Interrogate meters once (Clause 7(1) and (2) Schedule 15.2)

Code reference

Clause 7(1) and (2) Schedule 15.2

Code related audit information

Each reconciliation participant must ensure that a validated meter reading is obtained in respect of every meter register for every non half hour metered ICP for which the participant is responsible, at least once during the period of supply to the ICP by the reconciliation participant and used to create volume information.

This may be a validated meter reading at the time the ICP is switched to, or from, the reconciliation participant.

If exceptional circumstances prevent a reconciliation participant from obtaining the validated meter reading, the reconciliation participant is not required to comply with clause 7(1).

Audit observation

The process to manage missed reads was examined, including review of reports used in the process and individual unread ICPs.

Audit commentary

The Energy Services team provides a monthly no reads report, which shows ICPs unread in the previous four and 12 months. The Risk Control team works through these reports starting with the sites that are unread for the longest period and adds comments to the report detailing any action taken. Any previous work done to obtain a read for the site is considered during this review.

I saw evidence that vacant sites were passed on to the vacant team, and communication and metering issues were referred to the Premise and Metering team so that field services jobs can be raised. For access issues the Risk Control team works with the customer to resolve the issues or arrange for AMI metering to be installed.

Non-communicating meters are also identified by the Meter Validations team, and MEPs provide information on non-communicating meters so they can be moved to manual meter reading routes and field services jobs can be raised. Meters with intermittent communications are harder to identify and continue to cause read attainment issues. Mercury normally imports one AMI read per month on the scheduled read date. Where a read is not available on the scheduled read date, an estimate is entered on the read date and billed. If an actual read is available on a nearby date, the read is imported into SAP but marked as unbillable. Unbillable reads are not used for reconciliation, billing or read attainment reporting. This practice affects Mercury's read attainment results, submission accuracy and historic estimate proportions. To ensure good customer service, Mercury will only reverse and rebill if the read will result in a material difference to the customer's invoice.

In general, the Risk Control team is still working through the ICPs unread for 12 months by the time the next month's report is received from Energy Services. During the previous audit, Mercury was testing a new partially automated read attainment process which was expected to be implemented in May 2018. The new process will generate emails, texts, and letters to customers whose ICPs have not received reads for three months or six months. The process to change ICPs between AMI and manual meter reading routes will also become more automated. These changes are expected to further improve meter read attainment. The changes are not yet implemented.

I observed an alert built into SAP, where a message pops up if a customer account is viewed where no actual reads have been received for the past 90 days. This prompts the staff member speaking to the customer to discuss the meter reading issues if the customer makes contact.

Mercury provided a list of 68 ICPs unread during the period of supply, where the period of supply ended between 1 June 2018 and 31 January 2019. I checked 20 of these ICPs and found the "best endeavours" requirement was not met for four ICPs and in all cases this was due to a short period of supply.

Audit outcome

Non-compliant

Non-compliance	Description
Audit Ref: 6.8 With: Clause 7(1) and (2) Schedule 15.2 From: 01-Apr-18 To: 28-Mar-19	The best endeavours requirement was not met for four ICPs unread during the period of supply. Potential impact: Low Actual impact: Low Audit history: Multiple times 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 risk is rated as low, as only a small number of ICPs were affected.

Actions taken to resolve the issue	Completion date	Remedial action status
Response: Non compliance accepted and remedial action on-going, however Mercury would like to highlight that ICP's switch in and out within short time period, as it was picked up in the audit, sometimes it is not possible to get actual reads. **Action:** Mercury will review the process further to establish how "best endeavours" requirement can be met.	Proposed: Dec 2019	Identified
Preventative actions taken to ensure no further issues will occur	**Completion date**	
As above	Proposed: Dec 2019	

6.9. NHH meters interrogated annually (Clause 8(1) and (2) Schedule 15.2)

Code reference

Clause 8(1) and (2) Schedule 15.2

Code related audit information

At least once every 12 months, each reconciliation participant must obtain a validated meter reading for every meter register for non half hour metered ICPs, at which the reconciliation participant trades continuously for each 12-month period.

If exceptional circumstances prevent a reconciliation participant from obtaining the validated meter reading, the reconciliation participant is not required to comply with clause 8(1).

Audit observation

The meter reading process was examined. Monthly reports for April 2018 to January 2019 were provided and reviewed to determine whether they met the requirements of clauses 8 and 9 of schedule 15.2.

A sample of ten ICPs not read in the previous 12 months were reviewed to determine whether reasonable endeavours were used to attain reads, and if exceptional circumstances existed.

Audit commentary

The monthly meter reading reports provided were reviewed.

Month	Total NSPs where ICPs were supplied > 12 months	NSPs <100% read	ICPs unread for 12 months	Overall percentage read
Apr 18	289	26	460	99.75%
May 18	296	22	478	99.74%
Jun 18	300	51	654	99.66%

Month	Total NSPs where ICPs were supplied > 12 months	NSPs <100% read	ICPs unread for 12 months	Overall percentage read
Jul 18	302	57	670	99.65%
Aug 18	304	57	675	99.65%
Sep 18	304	63	696	99.60%
Oct 18	307	64	681	99.57%
Nov 18	305	63	684	99.57%
Dec 18	306	70	710	99.55%
Jan 19	307	70	741	99.54%

As discussed in **section 6.8**, there are processes in place monitor read attainment, and attempt to resolve issues preventing read attainment.

I reviewed ten ICPs not read in the previous 12 months determine whether exceptional circumstances exist, and if Mercury had used their best endeavours to obtain readings.

- Two ICPs were vacant sites, where access could not be gained to read or disconnect. Exceptional circumstances applied.
- Eight ICPs were unread due to health and safety issues.

I reviewed meter reading reports for April 2018 to January 2019 and confirmed that they met the meter reading frequency report requirements. I confirmed that the October 2018 to January 2019 reports were submitted by the 20th business day of the month following the report period.

Audit outcome

Compliant

6.10. NHH meters 90% read rate (Clause 9(1) and (2) Schedule 15.2)

Code reference

Clause 9(1) and (2) Schedule 15.2

Code related audit information

In relation to each NSP, each reconciliation participant must ensure that for each NHH ICP at which the reconciliation participant trades continuously for each four months, for which consumption information is required to be reported into the reconciliation process. A validated meter reading is obtained at least once every four months for 90% of the non half hour metered ICPs.

A report is to be sent to the Authority providing the percentage, in relation to each NSP, for which consumption information has been collected no later than 20 business days after the end of each month.

If exceptional circumstances prevent a reconciliation participant from obtaining the validated meter reading, the reconciliation participant is not required to comply with clause 9(1).

Audit observation

The meter reading process was examined. Monthly reports for April 2018 to January 2019 were provided and reviewed to determine whether they met the requirements of clauses 8 and 9 of schedule 15.2.

A sample of ten ICPs not read in the previous four months at NSPs where less than 90% of ICPs were read were reviewed to determine whether exceptional circumstances existed and if Mercury had used their best endeavours to obtain readings.

Audit commentary

The monthly meter reading reports provided were reviewed.

Month	Total NSPs where ICPs were supplied > 4 months	NSPs <90% read	Total ICPs unread for 4 months	Overall percentage read
Apr 18	313	13	3081	98.67%
May 18	313	11	2977	98.69%
Jun 18	317	11	2919	98.76%
Jul 18	320	13	3195	98.63%
Aug 18	318	16	3105	98.67%
Sep 18	319	14	3105	98.55%
Oct 18	321	13	3084	98.45%
Nov 18	322	16	3132	98.42%
Dec 18	327	20	3210	98.38%
Jan 19	327	19	3219	98.39%

As discussed in **section 6.8**, there are processes in place monitor read attainment, and attempt to resolve issues preventing read attainment.

I reviewed a sample of ten ICPs not read in the previous four months determine whether exceptional circumstances exist, and if Mercury had used their best endeavours to obtain readings. In all cases, multiple attempts had been made to obtain meter readings.

Audit outcome

Compliant

6.11. NHH meter interrogation log (Clause 10 Schedule 15.2)

Code reference

Clause 10 Schedule 15.2

Code related audit information

The following information must be logged as the result of each interrogation of the NHH metering:

10(a) - the means to establish the identity of the individual meter reader

10(b) - the ICP identifier of the ICP, and the meter and register identification

10(c) - the method being used for the interrogation and the device ID of equipment being used for interrogation of the meter.

10(d) - the date and time of the meter interrogation.

Audit observation

NHH data is collected by MEPs and Wells. The data interrogation log requirements were reviewed as part of their agent and MEP audits.

Audit commentary

Compliance with this clause has been demonstrated by Mercury's agents and MEPs as part of their own audits.

I confirmed with Wells that there were no changes to their processes or systems since their May 2018 audit that could have a negative impact on Mercury's compliance.

Audit outcome

Compliant

6.12. HHR data collection (Clause 11(1) Schedule 15.2)

Code reference

Clause 11(1) Schedule 15.2

Code related audit information

Raw meter data from all electronically interrogated metering installations must be obtained via the services access interface.

This may be carried out by a portable device or remotely.

Audit observation

HHR data is collected by EDMI and AMS. HHR interrogation data requirements were reviewed as part of their agent audits.

Generation data is collected by Mercury.

Audit commentary

Compliance with this clause has been demonstrated by AMS and EDMI as part of their agent audits. Because AMS and EDMI's audits were completed more than seven months ago, I confirmed that there were no issues with HHR data collection processes since their 2018 audits.

Generation data is collected by Mercury via the services access interface.

Audit outcome

Compliant

6.13. HHR interrogation data requirement (Clause 11(2) Schedule 15.2)

Code reference

Clause 11(2) Schedule 15.2

Code related audit information

The following information is collected during each interrogation:

11(2)(a) - the unique identifier of the data storage device

11(2)(b) - the time from the data storage device at the commencement of the download unless the time is within specification and the interrogation log automatically records the time of interrogation

11(2)(c) - the metering information, which represents the quantity of electricity conveyed at the point of connection, including the date and time stamp or index marker for each half hour period. This may be limited to the metering information accumulated since the last interrogation

11(2)(d) - the event log, which may be limited to the events information accumulated since the last interrogation

11(2)(e) - an interrogation log generated by the interrogation software to record details of all interrogations.

The interrogation log must be examined by the reconciliation participant responsible for collecting the data and appropriate action must be taken if problems are apparent or an automated software function flags exceptions.

Audit observation

HHR data is collected by EDMI and AMS. HHR interrogation data requirements were reviewed as part of their agent audits.

Generation data is collected by Mercury.

Audit commentary

Compliance with this clause has been demonstrated by AMS and EDMI as part of their agent audits. Because AMS and EDMI's audits were completed more than seven months ago, I confirmed that there were no issues with HHR data collection processes since their 2018 audits.

Generation data is collected by Mercury via the services access interface, and interrogation data is obtained.

Audit outcome

Compliant

6.14. HHR interrogation log requirements (Clause 11(3) Schedule 15.2)

Code reference

Clause 11(3) Schedule 15.2

Code related audit information

The interrogation log forms part of the interrogation audit trail and, as a minimum, must contain the following information:

11(3)(a)- the date of interrogation

11(3)(b)- the time of commencement of interrogation

11(3)(c)- the operator identification (if available)

11(3)(d)- the unique identifier of the meter or data storage device

11(3)(e)- the clock errors outside the range specified in Table 1 of clause 2

11(3)(f)- the method of interrogation

11(3)(g)- the identifier of the reading device used for interrogation (if applicable).

Audit observation

HHR data is collected by EDMI and AMS. HHR interrogation data requirements were reviewed as part of their agent audits.

Generation data is collected by Mercury.

Audit commentary

Compliance with this clause has been demonstrated by AMS and EDMI as part of their agent audits. Because AMS and EDMI's audits were completed more than seven months ago, I confirmed that there were no issues with HHR data collection processes since their 2018 audits.

Generation data is collected by Mercury via the services access interface, including an interrogation log. Generation data is monitored by Mercury's generation engineers and any events that may affect accuracy are reported to the Energy Services team.

Audit outcome

Compliant

7. STORING RAW METER DATA

7.1. Trading period duration (Clause 13 Schedule 15.2)

Code reference

Clause 13 Schedule 15.2

Code related audit information

The trading period duration, normally 30 minutes, must be within ±0.1% (±2 seconds).

Audit observation

Trading period duration was reviewed as part of the MEP and agent audits.

Mercury's clock synchronisation process ensures that trading period duration for generation meters is normally 30 minutes within ± 2 seconds. A sample of clock synchronisation events were reviewed.

Audit commentary

Compliance with this clause has been demonstrated by the agents and MEPs and is discussed in their audit reports. Because AMS and EDMI's audits were completed more than seven months ago, I confirmed that there were no changes to HHR processes since their 2018 audits.

Mercury's clock synchronisation process for generation meters is discussed in **section 6.5**. There were no clock errors during the audit period which led to corrections being required.

Audit outcome

Compliant

7.2. Archiving and storage of raw meter data (Clause 18 Schedule 15.2)

Code reference

Clause 18 Schedule 15.2

Code related audit information

A reconciliation participant who is responsible for interrogating a metering installation must archive all raw meter data and any changes to the raw meter data for at least 48 months, in accordance with clause 8(6) of Schedule 10.6.

Procedures must be in place to ensure that raw meter data cannot be accessed by unauthorised personnel.

Meter readings cannot be modified without an audit trail being created.

Audit observation

Processes to archive and store raw meter data were reviewed.

Audit commentary

When this data reaches SAP the level of security is also robust, and unauthorised personnel cannot access data. Metering, Billing, Energy Services and Risk Control staff have access to modify meter reading information in SAP.

I reviewed raw NHH meter data from 2015, and HHR and generation meter data from 2015 recorded in SAP, confirming that meter reading data is retained for at least 48 months.

Readings cannot be modified without an audit trail being created. Validation occurs in a temporary table before it becomes a permanent record and meter readings are not edited. I viewed these audit trails, and they are discussed in further detail in **section 2.4**.

No paper-based readings are received.

Audit outcome

Compliant

7.3. Non metering information collected / archived (Clause 21(5) Schedule 15.2)

Code reference

Clause 21(5) Schedule 15.2

Code related audit information

All relevant non-metering information, such as external control equipment operation logs, used in the determination of profile data must be collected, and archived in accordance with clause 18.

Audit observation

Processes to record non-metering information were discussed.

Audit commentary

Mercury collects unmetered data in relation to streetlights, and this information is appropriately archived.

Audit outcome

Compliant

8. CREATING AND MANAGING (INCLUDING VALIDATING, ESTIMATING, STORING, CORRECTING AND ARCHIVING) VOLUME INFORMATION

8.1. Correction of NHH meter readings (Clause 19(1) Schedule 15.2)

Code reference

Clause 19(1) Schedule 15.2

Code related audit information

If errors are detected during validation of non-half hour meter readings, one of the following must be undertaken:

19(1)(a) - confirmation of the original meter reading by carrying out another meter reading

19(1)(b) - replacement of the original meter reading by another meter reading (even if the replacement meter reading may be at a different date)

19(1)(c) - if the original meter reading cannot be confirmed or replaced by a meter reading from another interrogation, then an estimated reading is substituted, and the estimated reading is marked as an estimate and it is subsequently replaced in accordance with clause 4(2).

Audit observation

Processes for correction of NHH meter readings were reviewed, including examining a sample of corrections.

Audit commentary

Where errors are detected during validation of NHH meter readings, a check reading is performed, or AMI data for surrounding days is reviewed. If an original meter reading cannot be confirmed, an estimated reading is used. These estimates are calculated using data from a period with a quantity and profile similar to the period requiring estimation. The estimated reading is labelled as an estimate and a system note is entered which describes the reason for the change.

Defective meters

Where a meter is found to be stopped or faulty it is replaced. The meter is closed on an estimated read which includes estimated consumption for the affected period, and the new meter is opened on its starting read. Mercury's process is to correct the consumption for the entire period and to then apportion it over the previous 14 months to ensure all consumption is accounted for.

I checked 13 examples of suspected stopped or faulty meters to determine whether corrections had been processed. In all cases, the correction was processed accurately, and consumption flowed through to submission files.

The 2018 audit found three ICPs where there were errors in the correction calculations; the estimated consumption was added to a read prior to the meter removal read resulting in under estimation of consumption during the defective period. I checked these ICPs again and the adjustments have not been made. Non-compliance is recorded in Section 12.7

ICP	Correction Date	Correct estimated read	Applied read	Difference
0002215194WEF25	07/07/2017	4879	4869	10
1001270441LCE84	11/08/2017	53607	53103	504
0000250924UN01C	07/07/2017	34862	34858	4

ICP	Correction Date	Correct estimated read	Applied read	Difference
			Total	**518**

Incorrect multipliers

Two ICPs with incorrect multipliers were identified by Mercury during the audit period. In both cases, the errors were corrected, and consumption flowed through to revision files. For ICP 0007151984RN22C, the incorrect compensation factor of 1 was used instead of 100 since the meter was installed on 10/07/13. The revision process has only dealt with 14 months of this period. The total amount revised is 130,383 kWh and the total amount not submitted is 278,982. The monthly reporting to identify compensation factor discrepancies was not identifying all issues and this example had not been found. Reporting is now improved.

Bridged meters

When AMI meters have been bridged, the consumption during the bridged period is estimated and flows through to submission files. The meter is closed on an estimated read which captures the estimated consumption during the bridged period, and then restarted on the meter read that applied when the meter was unbridged.

I reviewed 21 examples of bridged meters and noted that consumption during the bridged period had been estimated.

The 2018 audit found that for ICP 1001295041LC8D8 a calculation error caused an incorrect closing reading (967 instead of 1022), resulting in under reporting of 55 kWh. This ICP switched out on 04/10/18 and the correction had not been made by then. This matter is recorded as non-compliance in Sections 2.1 and 12.7.

Consumption while inactive

Consumption that has occurred while an ICP is inactive will only be reported if the status is corrected back to active. The historic estimate process apportions consumption between reads to the days that the ICP has been active during the read period.

Mercury provided a list of 189 ICPs where consumption had been recorded after the ICP became inactive. For 112 of these, the difference was 1 kWh suggesting that the last digit may have been between digits at the time of disconnection and has been read inconsistently.

I reviewed an extreme case sample of all 16 ICPs where consumption of over 20 kWh had been detected during a disconnected period. 10 needed to have the status changed to Active back to when consumption started and six had incorrect disconnection readings and no actual consumption was present. The ten updated ICPs were all changed on the registry between 26/02/19 and 04/03/19, backdated to months between May 2018 and January 2019, which indicates these exceptions may need to be dealt with more regularly. Submission will now be correct for all of these ICPs. The total consumption being revised is approx. 1,000 kWh.

Transposed meters

When a meter reading is found to be transposed, Mercury swaps the readings between registers and the corrected readings are appropriately recorded as estimates.

The process to correct meter readings is compliant. The other issues raised in relation to incorrect submission information, are recorded as non-compliance in **section 12.7**.

Audit outcome

Compliant

8.2. Correction of HHR metering information (Clause 19(2) Schedule 15.2)

Code reference

Clause 19(2) Schedule 15.2

Code related audit information

If errors are detected during validation of half hour metering information the correction must be as follows:

> *19(2)(a) - if a check meter or data storage device is installed at the metering installation, data from this source may be substituted*
>
> *19(2)(b) - in the absence of any check meter or data storage device, data may be substituted from another period if the total of all substituted intervals matches the total consumption recorded on the meter, if available, and the pattern of consumption is considered materially similar to the period in error.*

Audit observation

Processes for correction of HHR meter readings were reviewed.

Audit commentary

Where errors are detected during validation of HHR metering information, and check metering data is not available, then data from a period with a quantity and profile similar to that expected is used. SAP has a dropdown list for the user to select the correction technique. The common techniques are as follows:

- extrapolate - a previous similar time period is used;
- interpolate - a previous time period is used, and the result is permanent;
- divide/multiply - this technique is used for examples like phase failure;
- add - data is added to existing data; and
- type in - if a manual calculation is performed or if check metering is used the result can be entered in.

When previous time periods are used, the day of the week is considered, so if data is missing for a Tuesday, the data for the same time period on the previous Tuesday will be considered. Statutory holidays are also taken into consideration. SAP has a built-in audit trail for all estimations and corrections.

Mercury and AMS provided two examples of HHR data corrections during the audit period; both were appropriately corrected. In both cases, AMS had calculated the correction and provided replacement data to Mercury as their agent.

Audit outcome

Compliant

8.3. Error and loss compensation arrangements (Clause 19(3) Schedule 15.2)

Code reference

Clause 19(3) Schedule 15.2

Code related audit information

If error compensation and loss compensation are carried out as part of the process of determining accurate data, the compensation process must be documented and must comply with audit trail requirements.

Audit observation

Error and loss compensation arrangements were discussed.

Audit commentary

Mercury does not deal with any loss and compensation arrangements.

Where loss compensation is required, Mercury's HHR agents adjust the data. ICPs requiring loss compensation are identified through the load check process employed at the time of certification or recertification.

Audit outcome

Compliant

8.4. Correction of HHR and NHH raw meter data (Clause 22(1) and (2) Schedule 15.2)

Code reference

Clause 22(1) and (2) Schedule 15.2

Code related audit information

In correcting a meter reading in accordance with clause 19, the raw meter data must not be overwritten. If the raw meter data and the meter readings are the same, an automatic secure backup of the affected data must be made and archived by the processing or data correction application.

If data is corrected or altered, a journal must be generated and archived with the raw meter data file. The journal must contain the following:

22(2)(a) - the date of the correction or alteration

22(2)(b) - the time of the correction or alteration

22(2)(c) - the operator identifier of the reconciliation participant

22(2)(d) - the half-hour metering data or the non half hour metering data corrected or altered, and the total difference in volume of such corrected or altered data

22(2)(e) - the technique used to arrive at the corrected data

22(2)(f) - the reason for the correction or alteration.

Audit observation

Corrections are discussed in **sections 8.1** and **8.2**, which confirmed that raw meter data is not overwritten as part of the correction process. Audit trails are discussed in **section 2.4**.

Raw meter data retention for MEPs was reviewed as part of their MEP audits.

Audit commentary

I reviewed journals for HHR and NHH data corrections and noted that they were compliant with the requirements of this clause.

Audit outcome

Compliant

9. ESTIMATING AND VALIDATING VOLUME INFORMATION

9.1. Identification of readings (Clause 3(3) Schedule 15.2)

Code reference

Clause 3(3) Schedule 15.2

Code related audit information

All estimated readings and permanent estimates must be clearly identified as an estimate at source and in any exchange of metering data or volume information between participants.

Audit observation

A sample of reads and volumes were traced from the source files to Mercury's systems in **section 2.3**.

Provision of estimated reads to other participants during switching was reviewed in **sections 4.3**, **4.4**, **4.10** and **4.11**.

Correct identification of estimated reads, and review of the estimation process was completed in **sections 8.1** and **8.2**.

Audit commentary

Readings are clearly identified as required by this clause.

Audit outcome

Compliant

9.2. Derivation of volume information (Clause 3(4) Schedule 15.2)

Code reference

Clause 3(4) Schedule 15.2

Code related audit information

Volume information must be directly derived, in accordance with Schedule 15.2, from:

3(4)(a) - validated meter readings

3(4)(b) - estimated readings

3(4)(c) - permanent estimates.

Audit observation

A sample of submission data was reviewed in **sections 11** and **12**, to confirm that volume was based on readings as required.

Audit commentary

Review of submission data confirmed that it is based on readings as required by this clause.

Audit outcome

Compliant

9.3. Meter data used to derive volume information (Clause 3(5) Schedule 15.2)

Code reference

Clause 3(5) Schedule 15.2

Code related audit information

All meter data that is used to derive volume information must not be rounded or truncated from the stored data from the metering installation.

Audit observation

A sample of submission data was reviewed in **sections 11** and **12**, to confirm that volume was based on readings as required.

NHH and HHR data is collected by MEPs and agents. Compliance was assessed as part of their MEP and agent audits.

Audit commentary

The MEPs and agents retain the raw, unrounded data.

Compliance with this clause has been demonstrated by the MEPs and agents as part of their audits. Because the Wells, AMS and EMS agent reports were more than seven months old on the audit due date, I confirmed that there had been no changes to agent systems or processes which could affect Mercury's compliance.

The HHR aggregates file does not have decimals, but the AV090 files (which contain volume information) do have two decimals.

Audit outcome

Compliant

9.4. Half hour estimates (Clause 15 Schedule 15.2)

Code reference

Clause 15 Schedule 15.2

Code related audit information

If a reconciliation participant is unable to interrogate an electronically interrogated metering installation before the deadline for providing submission information, the submission to the reconciliation manager must be the reconciliation participant's best estimate of the quantity of electricity that was purchased or sold in each trading period during any applicable consumption period for that metering installation.

The reconciliation participant must use reasonable endeavours to ensure that estimated submission information is within the percentage specified by the Authority.

Audit observation

The HHR estimate process was examined, and a sample of five estimates were reviewed.

Audit commentary

When Mercury has not received data prior to the deadline for providing submission information, then estimated data is provided. There is a requirement to use "reasonable endeavours" to ensure this data is accurate to within 10%.

A sample of five HHR estimates were reviewed. Two related to estimation of consumption during a meter change, one related to faulty metering, one was a "gap and a spike" and one was where the data could not be downloaded from a decommissioned installation.

Consumption was estimated using standard techniques. Reasonable endeavours were used.

Audit outcome

Compliant

9.5. NHH metering information data validation (Clause 16 Schedule 15.2)

Code reference

Clause 16 Schedule 15.2

Code related audit information

Each validity check of non half hour meter readings and estimated readings must include the following:

16(2)(a) - confirmation that the meter reading or estimated reading relates to the correct ICP, meter, and register

16(2)(b) - checks for invalid dates and times

16(2)(c) - confirmation that the meter reading or estimated reading lies within an acceptable range compared with the expected pattern, previous pattern, or trend

16(2)(d) - confirmation that there is no obvious corruption of the data, including unexpected 0 values.

Audit observation

I reviewed and observed the NHH data validation process, including checking a sample of data validations.

Audit commentary

Data validation for NHH metering information occurs at multiple levels.

Meter reader validation

For manually read meters, Wells performs a localised validation within their hand-held devices to ensure the reading is within expected high/low parameters. This is described further in the Wells audit report. Wells also provide information on meter condition, where it could affect meter accuracy or safety. This is discussed further in **section 6.6**.

Read import validation

All NHH read data undergoes validation. I viewed the exception reports generated by the validation process, and a sample of data which failed validation.

The read validation process includes:

- identification of reads with invalid dates and times, or a date that does not match the expected read order date, it will also identify obvious data corruption;
- checks that the data relates to an ICP, meter, and register held within the system;
- checks that the read matches the number of digits expected for the meter; and
- it is not possible to enter a read for a period which has already been billed, unless the previous invoice is reversed and rebilled.

Billing validation

The billing validation process identifies:

- any outstanding read orders, which are investigated to determine why a read was not received;
- high reads and reads lower than the previous read; and
- if a billing period will be less than ten days, and the invoice is not a final invoice.

Exceptions identified through the billing validation process are reviewed. Validation tools are used to assess whether consumption appears reasonable and include comparisons with historic consumption. Based on the review findings, reads are either validated or left unvalidated. Unvalidated reads are not used by the billing or reconciliation processes.

Zero consumption

Zero consumption is checked periodically, a report of all meters with zero consumption is run for one day and worked through until each has been investigated. Mercury's zero consumption process will identify any bridged meters. I confirmed that bridged consumption information is appropriately estimated and flows through to submission files.

Negative consumption

Negative consumption is reviewed. SAP records any negative reading as implausible, and the read will be locked and not used for billing or reconciliation. Where a switch in read is too high, the first read received by Mercury may be lower than the switch read. If the difference is over 250 kWh, Mercury will request a read renegotiation. If the difference is less than 250 kWh Mercury will estimate zero consumption while they wait for actual reads to catch up to and exceed the switch in read. Where they believe it will take an extended period for the actual reads to exceed the switch in reads, Mercury will provide a refund to the customer and change the switch read to match the actual read. No examples of this were found during the audit, but this process is recorded as non-compliant in **sections 4.4** and **4.11**. It is expected that actual reads should be applied where received, even if that causes negative consumption for an ICP. This ensures that the sum of total consumption reported by the gaining and losing retailer will be correct. If the negative consumption is zeroed out, total consumption reported by the gaining and losing retailer will be overstated. The only exception is situations where the total consumption for the AV080 aggregation line will be negative, which will prevent the report from being uploaded into the allocation portal.

Consumption while inactive

Consumption while inactive is identified by the data analysts. An ICP audit report of identifies all ICPs with an inactive status and consumption. Currently 189 ICPs are on this list. Staff check each ICP to determine whether they are connected and return them to active status and refer them to the Vacant and Disconnection teams if necessary. ICPs with inactive consumption for over three months and the highest inactive consumption are addressed as a priority.

Audit outcome

Compliant

9.6. Electronic meter readings and estimated readings (Clause 17 Schedule 15.2)

Code reference

Clause 17 Schedule 15.2

Code related audit information

Each validity check of electronically interrogated meter readings and estimate readings must be at a frequency that will allow a further interrogation of the data storage device before the data is overwritten within the data storage device and before this data can be used for any purpose under the Code.

Each validity check of a meter reading obtained by electronic interrogation or an estimated reading must include:

17(4)(a) - checks for missing data

17(4)(b) - checks for invalid dates and times

17(4)(c) - checks of unexpected zero values

17(4)(d) - comparison with expected or previous flow patterns

17(4)(e) - comparisons of meter readings with data on any data storage device registers that are available

17(4)(f) - a review of meter and data storage device event list. Any event that could have affected the integrity of metering data must be investigated.

Audit observation

I reviewed and observed the HHR, generation, and AMI data validation processes, including checking a sample of data validations and process documentation.

Audit commentary

Electronic data used to determine volume information is provided by MEPs, AMS and EDMI as agents, and by Mercury for generation information.

This function was examined as part of the MEP and agent audits. Because the agent audits were completed more than seven months ago, I confirmed that there were no issues with AMS and EDMI's HHR data collection processes since their May 2018 audits.

HHR

Interrogation occurs regularly so there is little risk that data will be overwritten.

The HHR validation process occurs within SAP, and any exceptions identified through this process are locked so the data will not be used for billing or reconciliation until it is approved. I saw evidence of this process in operation.

The HHR validation process includes:

- a master data check to ensure data is for the correct ICP;
- identification of invalid dates and times;
- identification of unexpected zero values (these settings are at ICP level and some are set to allow for a certain number of zeros depending on the customer type);
- comparison with expected or previous flow patterns;
- max kW for the relevant CT/VT ratio; and
- negative values.

Each exception is manually reviewed by the Energy Services team. If the data is found to be acceptable it will be manually unlocked, otherwise the data remains locked until investigation is complete. I reviewed

examples of exceptions and noted that they were investigated including checking consumption changes with the account manager and customer where necessary.

An automated sum check process compares the register reads to the sum of interval data. The pass/fail threshold is 0.1 kWh per interrogation cycle. There is also a rolling 3-month check between register reads and intervals with a threshold of 0.5 kWh. Mercury will only use data where the register read is on the midnight hour so the comparison can be made without the complexity associated with part intervals. The process ensures days without midnight reads are not missed by comparing data from the previous midnight read to the next midnight read where data is missing. Any failures appear on an exception report to be checked manually and are resolved by importing the exceptions file into SAP.

Missing data is identified through a report run on business day two each month. Any missing data is followed up with the agent, and estimated, if not received before the submission deadline.

HHR meter event information is managed by EDMI and AMS, who email Mercury if events have occurred that require their attention. I reviewed examples of meter change information provided by EDMI and AMS.

Generation

Reads are received via SFTP. They are imported into SAP automatically and validated using the same process as other HHR data.

No event logs are provided. A web-based system provides information on any outages or issues, and was viewed during the audit. Generation staff monitor metered consumption and notify the Energy Services team if they become aware of any issues.

Generation data is matched to check meter data, any differences over ± 2% are checked with a generation engineer. For Atiamuri, up to 4 MW may be fed into the local network and is not measured by the check meter system. This is considered when reviewing the differences between the primary and check meter data.

AMI

Mercury receives AMI data from Metrix (for Metrix and Counties Power meters) and AMS (for AMS, Smartco, and Arc meters). As discussed in **section 9.5**, all NHH reads are checked for missing data, invalid dates and times, unexpected zero values, and comparison against consumption history.

The Code requires *"…a review of meter and data storage device event log. Any event that could have affected the integrity of metering data must be investigated."*

Mercury receives emailed meter event information from all MEPs, including lists of non-communicating meters which need to be moved to manual meter reading routes. These metering events are reviewed and actioned, and I saw evidence of field services jobs raised as a result.

Audit outcome

Compliant

10. PROVISION OF METERING INFORMATION TO THE PRICING MANAGER IN ACCORDANCE WITH SUBPART 4 OF PART 13 (CLAUSE 15.38(1)(F))

10.1. Generators to provide HHR metering information (Clause 13.136)

Code reference

Clause 13.136

Code related audit information

The generator (and/or embedded generator) must provide to the pricing manager and the grid owner connected to the local network in which the embedded generator is located, half hour metering information in accordance with clause 13.138 in relation to generating plant that is subject to a dispatch instruction:

- *that injects electricity directly into a local network; or*
- *if the meter configuration is such that the electricity flows into a local network without first passing through a grid injection point or grid exit point metering installation.*

Audit observation

The NSP table on the registry was reviewed.

Audit commentary

Mercury is not responsible for any generation stations where information is provided to the pricing manager in accordance with this clause.

Audit outcome

Not applicable

10.2. Unoffered & intermittent generation provision of metering information (Clause 13.137)

Code reference

Clause 13.137

Code related audit information

Each generator must provide the pricing manager and the relevant grid owner half-hour metering information for:

- *- any unoffered generation from a generating station with a point of connection to the grid 13.137(1)(a)*
- *- any electricity supplied from an intermittent generating station with a point of connection to the grid. 13.137(1)(b)*

The generator must provide the pricing manager and the relevant grid owner with the half-hour metering information required under this clause in accordance with the requirements of Part 15 for the collection of that generator's volume information. (clause 13.137(2))

If such half-hour metering information is not available, the generator must provide the pricing manager and the relevant grid owner a reasonable estimate of such data. (clause 13.137(3))

Audit observation

The NSP table on the registry was reviewed.

Audit commentary

Mercury is not responsible for any generation stations where information is provided to the pricing manager in accordance with this clause.

Audit outcome

Not applicable

10.3. Loss adjustment of HHR metering information (Clause 13.138)

Code reference

Clause 13.138

Code related audit information

The generator must provide the information required by clauses 13.136 and 13.137,

13.138(1)(a)- adjusted for losses (if any) relative to the grid injection point or, for embedded generators the grid exit point, at which it offered the electricity

13.138(1)(b)- in the manner and form that the pricing manager stipulates

13.138(1)(c)- by 0500 hours on a trading day for each trading period of the previous trading day.

The generator must provide the half-hour metering information required under this clause in accordance with the requirements of Part 15 for the collection of the generator's volume information.

Audit observation

The NSP table on the registry was reviewed.

Audit commentary

Mercury is not responsible for any generation stations where information is provided to the pricing manager in accordance with this clause.

Audit outcome

Not applicable

10.4. Notification of the provision of HHR metering information (Clause 13.140)

Code reference

Clause 13.140

Code related audit information

If the generator provides half-hourly metering information to the pricing manager or a grid owner under clauses 13.136 to 13.138, or 13.138A, it must also, by 0500 hours of that day, advise the relevant grid owner.

Audit observation

The NSP table on the registry was reviewed.

Audit commentary

Mercury is not responsible for any generation stations where information is provided to the pricing manager in accordance with this clause.

Audit outcome

Not applicable

11. PROVISION OF SUBMISSION INFORMATION FOR RECONCILIATION

11.1. Buying and selling notifications (Clause 15.3)

Code reference

Clause 15.3

Code related audit information

Unless an embedded generator has given a notification in respect of the point of connection under clause 15.3, a trader must give notice to the reconciliation manager if it is to commence or cease trading electricity at a point of connection using a profile with a profile code other than HHR, RPS, UML, EG1, or PV1 at least five business days before commencing or ceasing trader.

The notification must comply with any procedures or requirements specified by the reconciliation manager.

Audit observation

A registry list with history was reviewed for 01/04/18 to 13/02/19 to determine the profiles assigned by Mercury, and whether trading notifications were required.

Audit commentary

Mercury began or ceased using the PTM, HHM or DFP profile at 69 NSPs during the audit period.

Submissions are checked against open trading notifications prior to submission as part of the NZRM/ALLA file editor checks described in **section 12.3**.

Audit outcome

Compliant

11.2. Calculation of ICP days (Clause 15.6)

Code reference

Clause 15.6

Code related audit information

Each retailer and direct purchaser (excluding direct consumers) must deliver a report to the reconciliation manager detailing the number of ICP days for each NSP for each submission file of submission information in respect of:

> *15.6(1)(a) - submission information for the immediately preceding consumption period, by 1600 hours on the 4th business day of each reconciliation period*
>
> *15.6(1)(b) - revised submission information provided in accordance with clause 15.4(2), by 1600 hours on the 13th business day of each reconciliation period.*

The ICP days information must be calculated using the data contained in the retailer or direct purchaser's reconciliation system when it aggregates volume information for ICPs into submission information.

Audit observation

The process for the calculation of ICP days was examined by checking HHR ICP days for 20 NSPs and NHH ICPs for 20 NSPs to confirm the AV110 ICP days calculation for December 2018 was correct.

I reviewed variances for 16 months of GR100 reports and investigated any large discrepancies.

Audit commentary

The process for the calculation of ICP days was examined by checking HHR ICP days for 20 NSPs and NHH ICPs for 20 NSPs to confirm the AV110 ICP days calculation was correct. The ICP days reported were as expected. KCA0011 had a one-day discrepancy for December 2018, but the ICP days submitted matched the submission information which included one day where an ICP was deenergised.

The following table shows the ICP days difference between Mercury files and the RM return file (GR100) for all available revisions for 17 months. Negative percentage figures indicate that the Mercury ICP days figures are higher than those contained on the registry. The discrepancies are very small and consistent.

Month	Ri	R1	R3	R7	R14
Sep 2017	-0.05%	-0.06%	-0.04%	-0.02%	-0.03%
Oct 2017	-0.06%	-0.06%	-0.05%	-0.03%	-0.03%
Nov 2017	-0.04%	-0.05%	-0.04%	-0.02%	-0.03%
Dec 2017	-0.03%	-0.06%	-0.04%	-0.03%	-
Jan 2018	-0.04%	-0.05%	-0.03%	-0.03%	-
Feb 2018	-0.03%	-0.04%	-0.04%	-0.04%	-
Mar 2018	-0.02%	-0.03%	-0.03%	-0.03%	-
Apr 2018	-0.03%	-0.03%	-0.03%	-0.03%	-
May 2018	-0.04%	-0.04%	-0.04%	-0.03%	-
Jun 2018	-0.05%	-0.04%	-0.04%	-0.03%	-
Jul 2018	-0.04%	-0.05%	-0.05%	-	-
Aug 2018	-0.05%	-0.05%	-0.04%	-	-
Sep 2018	-0.03%	-0.05%	-0.03%	-	-
Oct 2018	-0.04%	-0.05%	-0.04%	-	-
Nov 2018	-0.05%	-0.05%	-	-	-
Dec 2018	-0.03%	-0.04%	-	-	-

I reviewed ten NSP level differences remaining at R7 and R14 to determine the causes. Seven issues related to backdated events where the GR100 is reporting incorrectly. Three related to DUML ICPs where submission is HHR but there is no MEP so the submission type cannot be changed to HHR.

Audit outcome

Compliant

11.3. Electricity supplied information provision to the reconciliation manager (Clause 15.7)

Code reference

Clause 15.7

Code related audit information

A retailer must deliver to the reconciliation manager its total monthly quantity of electricity supplied for each NSP, aggregated by invoice month, for which it has provided submission information to the reconciliation manager, including revised submission information for that period as non- loss adjusted values in respect of:

> *15.7(a) - submission information for the immediately preceding consumption period, by 1600 hours on the 4th business day of each reconciliation period*
>
> *15.7(b) - revised submission information provided in accordance with clause 15.4(2), by 1600 hours on the 13th business day of each reconciliation period.*

Audit observation

The process for the calculation of as billed volumes was examined by checking five NSPs with a small number of ICPs to confirm the AV120 calculation was correct.

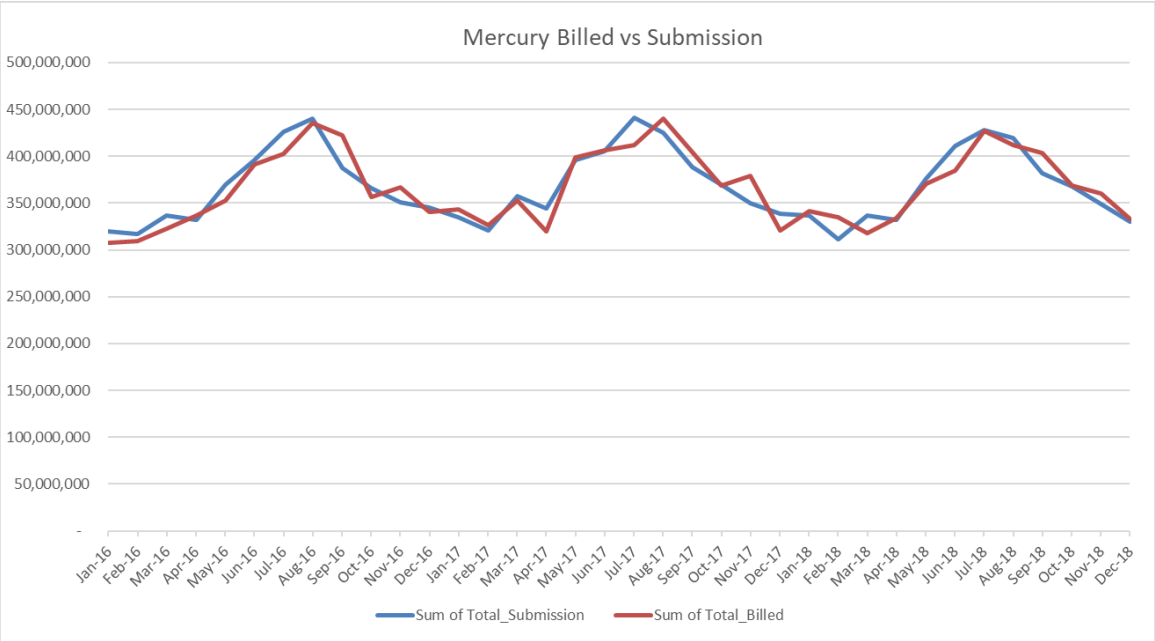
GR130 reports for January 2016 onwards were reviewed to confirm whether the relationship between billed and submitted data appears reasonable.

Audit commentary

The process for calculating and submitting electricity supplied information was examined by checking individual invoices for a typical sample of five NSPs to ensure the billed amount equalled the figure in the ICP level file which forms the basis of the aggregate file sent to the RM. One very minor issue was identified, where one ICP at KCA0011 had 52 kWh of vacant consumption (not invoiced to a customer) reported in the file, but a manual calculation found this figure was not correct. The correct figure is not completely clear, because an invoice was not produced. Mercury will investigate this issue to ensure it is a one-off, which it appears to be.

The chart below shows a comparison between submissions and electricity supplied information. At an aggregate level, billed data is 0.12% higher than submitted data for the year ended December 2018.

Comparison between Submitted Volumes and Electricity Supplied



Audit outcome

Non-compliant

Non-compliance	Description
Audit Ref: 11.3 With: 15.7 From: 01-Dec-18 To: 31-Dec-18	Incorrect electricity supplied figure for one vacant ICP. Potential impact: Low Actual impact: None Audit history: None Controls: Strong Breach risk rating: 1
Audit risk rating	**Rationale for audit risk rating**
Low	The controls are recorded as strong because they mitigate risk to an acceptable level. There is no impact on settlement or participants, therefore the audit risk rating is low.

Actions taken to resolve the issue	Completion date	Remedial action status
Response: Mercury has a very robust and strong control around this non-compliance. **Action:** Mercury will investigate and rectify the isolated issue further.	Proposed: Dec 2019	Investigating

Preventative actions taken to ensure no further issues will occur	Completion date	
As above	Proposed: Dec 2019	

11.4. HHR aggregates information provision to the reconciliation manager (Clause 15.8)

Code reference

Clause 15.8

Code related audit information

A retailer or direct purchaser (excluding direct consumers) must deliver to the reconciliation manager its total monthly quantity of electricity supplied for each half hourly metered ICP for which it has provided submission information to the reconciliation manager, including:

> *15.8(a) - submission information for the immediately preceding consumption period, by 1600 hours on the 4th business day of each reconciliation period*
>
> *15.8(b) - revised submission information provided in accordance with clause 15.4(2), by 1600 hours on the 13th business day of each reconciliation period.*

Audit observation

I confirmed that the process for the calculation and aggregation of HHR data is correct, by matching HHR aggregates information with the HHR volumes data for ten submissions and matching one month's volumes for ten ICPs to the source files.

The "ICP Missing" files were examined for all revisions for February 2018 to January 2019. An extreme case sample of the ten ICPs missing for the most months were reviewed.

Audit commentary

Mercury's HHR aggregates report contains submission information, not electricity supplied information as specified under clause 15.8. Although the reports Mercury produces are consistent with the Reconciliation Manager Functional Specification, this is recorded as non-compliance below.

I confirmed that the process for the calculation and aggregation of HHR data is correct, by matching HHR aggregates information with the HHR volumes data for 12 submissions. There were only small rounding differences between the volumes and aggregates, with differences less than ± 0.000% and ± 268 kWh across each submission). I checked the differences at NSP level for one submission and confirmed that they related to rounding; the aggregates file is rounded to zero decimal places at ICP level and the volumes are rounded to two decimal places at trading period level.

The HHR aggregates file was checked to ensure it matched the HHR volumes file and the raw meter data.

Mercury reviews the ICP missing files on business days five and ten, to identify any issues that require correction. Since January 2018 the review has included the last 14 months, previously only the most recent month was reviewed.

ICP Missing files were examined for all revisions for February 2018 to January 2019, and no issues with the HHR reporting processes were identified. An extreme case sample of the ten ICPs missing for the most months were reviewed, and found:

- seven ICPs were missing from some periods because of backdated switches or withdrawals;

- zero consumption was submitted for one inactive ICP (the ICP was recorded as missing from the registry and this should have been nulls not zeros); and
- two unmetered ICPs were missing on the registry because Mercury is unable to update the submission flag to HHR for some ICPs following the part 10 implementation (Mercury has tried to update the registry with Jade's assistance).

Audit outcome

Non-compliant

<table>
<tr><th>Non-compliance</th><th colspan="2">Description</th></tr>
<tr><td>Audit Ref: 11.4
With: Clause 15.8

From: April 2018
To: March 2019</td><td colspan="2">HHR aggregates file does not contain electricity supplied information.
Potential impact: Low
Actual impact: Low
Audit history: Twice
Controls: Strong
Breach risk rating: 1</td></tr>
<tr><th>Actions taken to resolve the issue</th><th colspan="2">Completion date</th></tr>
<tr><td>Low</td><td colspan="2">The issue relating to content of the aggregates file is an error in the code, Mercury is providing submission information as expected.</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">Response:
Non-compliance not accepted.
Comments:
Strong control and low impact because file meets the current RM file specification requirement.</td><td>n/a</td><td rowspan="3">Unknown</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">This is an industry known issue which EA is aware off. Mercury will continue to prepare the aggregates file as required by the Reconciliation Manager file Specification.
Mercury will support a code change.</td><td>n/a</td></tr>
</table>

12. SUBMISSION COMPUTATION

12.1. Daylight saving adjustment (Clause 15.36)

Code reference

Clause 15.36

Code related audit information

The reconciliation participant must provide submission information to the reconciliation manager that is adjusted for NZDT using one of the techniques set out in clause 15.36(3) specified by the Authority.

Audit observation

Daylight savings processes for MEPs and agents were reviewed as part of their audits.

Daylight savings processes for generation occur automatically.

A diverse characteristics sample of six daylight savings adjustments were reviewed, covering changes to and from daylight savings, each agent, and generation consumption.

Audit commentary

Daylight savings processes for MEPs and agents were reviewed as part of their audits. Because AMS and EDMI's audits were completed more than seven months ago, I confirmed that there were no issues with HHR processes since their May 2018 audits.

The "trading period run on" technique is used for daylight saving adjustment. This was confirmed by checking data recorded for the end of daylight savings in April 2018 and beginning of daylight savings in September 2018. The correct number of trading periods were recorded for the sample of daylight savings adjustments reviewed.

Audit outcome

Compliant

12.2. Creation of submission information (Clause 15.4)

Code reference

Clause 15.4

Code related audit information

By 1600 hours on the 4th business day of each reconciliation period, the reconciliation participant must deliver submission information to the reconciliation manager for all NSPs for which the reconciliation participant is recorded in the registry as having traded electricity during the consumption period immediately before that reconciliation period (in accordance with Schedule 15.3).

By 1600 hours on the 13th business day of each reconciliation period, the reconciliation participant must deliver submission information to the reconciliation manager for all points of connection for which the reconciliation participant is recorded in the registry as having traded electricity during any consumption period being reconciled in accordance with clauses 15.27 and 15.28, and in respect of which it has obtained revised submission information (in accordance with Schedule 15.3).

Audit observation

The process to create submissions was reviewed.

A sample of submission data was checked, and correction processes were checked in **sections 8.1** and **8.2**.

Alleged breaches during the audit period were reviewed to determine whether any reconciliation submissions were late.

Audit commentary

No breaches had been recorded for late provision of submission information. Data is reviewed prior to submission as discussed in **section 12.3**.

NHH

Mercury prepares reconciliation submissions using reconciliation consumption generated by SAP. A sample of NHH ICPs were checked to make sure they are handled correctly, including vacant ICPs with consumption, disconnected ICPs with consumption, and ICPs with standard or shared unmetered load:

- an extreme case sample of the 15 ICPs with the most vacant consumption were checked and found to be correctly reported;
- all disconnected ICPs with consumption over 20 kWh while disconnected were checked - consumption during the disconnected period was reported;
- a typical sample of 16 ICPs with distributed generation were checked and it was found that 14 were likely to have distributed generation installed and the generation kWh is not submitted;
- a sample of 10 ICPs with unmetered volumes were checked, including standard unmetered and shared unmetered - unmetered kWh for one ICP was not submitted due to an incorrect set-up and the revision process will correct this;
- the 2018 audit found three ICPs there were errors in the correction calculations; the estimated consumption was added to a read prior to the meter removal read resulting in under estimation of consumption during the defective period - I checked these ICPs again and the adjustments have not been made; and
- The state highway items of load were removed from the Thames Coromandel District Council DUML database, leading to annual under-submission of approx. 280,000 kWh.

Further information on calculation of historic estimate is recorded in **section 12.11**, the correction process is documented in **section 8.1**, and aggregation of the AV080 report was found to be compliant in **section 12.3**.

HHR

The AV090 and AV140 (half hour volumes and aggregates) submissions are discussed in **section 11.4** and **8.2**.

Generation

A sample of generation NSPs were checked to ensure that volumes were correctly recorded in the AV130 report in **section 12.6.**

Compliance is achieved with this clause. The incorrect submission information is recorded in **section 12.7**.

Audit outcome

Compliant

12.3. Allocation of submission information (Clause 15.5)

Code reference

Clause 15.5

Code related audit information

In preparing and submitting submission information, the reconciliation participant must allocate volume information for each ICP to the NSP indicated by the data held in the registry for the relevant consumption period at the time the reconciliation participant assembles the submission information. Volume information must be derived in accordance with Schedule 15.2.

However, if, in relation to a point of connection at which the reconciliation participant trades electricity, a notification given by an embedded generator under clause 15.13 for an embedded generating station is in force, the reconciliation participant is not required to comply with the above in relation to electricity generated by the embedded generating station.

Audit observation

Processes to ensure that information used to aggregate the reconciliation reports is consistent with the registry were reviewed in **section 2.1**.

The process to ensure that submissions are accurate were discussed and observed, including review of reports used in the process.

The process for aggregating the AV080 was examined by checking five NSPs with a small number of ICPs. The GR170 to AV080 files for nine months were compared, to confirm zeroing occurs.

Audit commentary

Prior to submission, data is checked using Mercury's submission checker and NZRM/ALLA file editor tools.

Mercury's ICP days, NHH volumes, HHR volumes, HHR aggregates and as billed data are imported into the submission checker. The submission checker is used to create graphs and tables to compare the data, including review of historic consumption patterns, differences between revisions, and consistency checks between the reports. The results are reviewed by the energy analysts and approved in writing by the Pricing Operations and Energy Services Manager. In some cases, volumes may be queried with other teams or customers prior to approval.

NZRM/ALLA file editor compares volume, ICP days, and billed submissions to the NZRM balancing area data, to ensure trading notifications are open. Corrections are processed by the NZRM/ALLA file editor, and I confirmed that a full audit trail is created as part of this process. The most common corrections are:

- there is no NHH or HHR data for an expected aggregation factor combination, and zero records are inserted; and
- removal of zero consumption data if there is no open contract for the aggregation factor combination.

GR170 and AV080 files for five revisions were compared, and found to contain the same NSPs, confirming that zeroing is occurring as required.

Generation data is separately checked prior to submission. Generation data is matched to check meter data, any differences over ± 2% are checked with a generation engineer. The Energy Services team intends to add the NSP volumes submission to the submission checker in the future.

The aggregation of the submission files was checked, and found to be compliant:

- NHH volumes were examined by checking five NSPs with a small number of ICPs;
- HHR aggregates and HHR vols files for five months were compared and were the same;
- ICP days were examined by checking ten NSPs with a small number of ICPs; and

- electricity supplied information was examined by checking individual invoices for a typical sample of five NSPs to ensure the billed amount equalled the figure in the ICP level file which forms the basis of the aggregate file sent to the RM.

I checked the process for NHH to HHR upgrades, and HHR to NHH downgrades, to ensure all consumption information was accounted for. I walked through five downgrades and five upgrades to confirm the process.

- for upgrades, the process is to end the NHH meter the day before and consider the ICP HHR all day, with the trading periods prior to the meter change populated with zeros; and
- for downgrades the process is to end the HHR meter on the day of the change and begin the NHH meter from the installation read the following day.

This process ensures all consumption is accounted for.

Audit outcome

Compliant

12.4. Grid owner volumes information (Clause 15.9)

Code reference

Clause 15.9

Code related audit information

The participant (if a grid owner) must deliver to the reconciliation manager for each point of connection for all of its GXPs, the following:

- *submission information for the immediately preceding consumption period, by 1600 hours on the 4th business day of each reconciliation period (clause 15.9(a))*
- *revised submission information provided in accordance with clause 15.4(2), by 1600 hours on the 13th business day of each reconciliation period. (clause 15.9(b))*

Audit observation

The NSP table on the registry and registry list were reviewed.

Audit commentary

Mercury is not responsible for any GIPs; compliance was not assessed.

Audit outcome

Compliant

12.5. Provision of NSP submission information (Clause 15.10)

Code reference

Clause 15.10

Code related audit information

The participant (if a local or embedded network owner) must provide to the reconciliation manager for each NSP for which the participant has given a notification under clause 25(1) Schedule 11.1 (which relates to the creation, decommissioning, and transfer of NSPs) the following:

- *submission information for the immediately preceding consumption period, by 1600 hours on the 4th business day of each reconciliation period (clause 15.10(a))*

- *revised submission information provided in accordance with clause 15.4(2), by 1600 hours on the 13th business day of each reconciliation period (clause 15.10(b)).*

Audit observation

The registry list and NSP table were reviewed.

Audit commentary

Mercury is not a local or embedded network owner; compliance was not assessed.

Audit outcome

Not applicable

12.6. Grid connected generation (Clause 15.11)

Code reference

Clause 15.11

Code related audit information

The participant (if a grid connected generator) must deliver to the reconciliation manager for each of its points of connection, the following:

- *submission information for the immediately preceding consumption period, by 1600 hours on the 4th business day of each reconciliation period (clause 15.11(a))*
- *revised submission information provided in accordance with clause 15.4(2), by 1600 hours on the 13th business day of each reconciliation period (clause 15.11(b)).*

Audit observation

The process to create AV130 (NSP volume information) was reviewed.

Alleged breaches during the audit period were reviewed to determine whether any reconciliation submissions were late.

Audit commentary

Mercury creates AV130 submissions for grid connected generation. No breaches had been recorded for late provision of submission information.

Data for a sample of five NSPs was traced from the meter data received through to the AV130 submission files; all values matched.

Revision submissions are not provided unless data has changed. Mercury confirmed that there had been no changes since the data was originally submitted.

Audit outcome

Compliant

12.7. Accuracy of submission information (Clause 15.12)

Code reference

Clause 15.12

Code related audit information

If the reconciliation participant has submitted information and then subsequently obtained more accurate information, the participant must provide the most accurate information available to the

reconciliation manager or participant, as the case may be, at the next available opportunity for submission (in accordance with clauses 15.20A, 15.27, and 15.28).

Audit observation

Alleged breaches during the audit period were reviewed to determine whether any reconciliation submissions were late. Corrections were reviewed in **section 8.1** and **8.2**.

Audit commentary

Review of alleged breaches confirmed that no reconciliation submissions were made late.

There were some submission inaccuracies identified.

- Ten ICPs were identified with consumption where the status was inactive. All ten were corrected in the registry between 26/02/19 and 04/03/19, backdated to months between May 2018 and January 2019, which indicates these updates were not as soon as practicable.
- Generation kWh was not submitted for 14 ICPs with distributed generation.
- One unmetered load ICP did not have the unmetered kWh submitted due to an incorrect set-up.
- Two ICPs with incorrect multipliers were identified by Mercury during the audit period. In both cases, the errors were corrected, and consumption flowed through to revision files. For ICP 0007151984RN22C, the incorrect compensation factor of 1 was used instead of 100 since the meter was installed on 10/07/13. The revision process has only dealt with 14 months of this period. The total amount revised is 130,383 and the total amount not submitted is 278,982. The monthly reporting to identify compensation factor discrepancies was not identifying all issues and this example had not been found. Mercury has made the appropriate correction and will resolve this through the revision process in the most recent 14 month window.
- The 2018 audit found that for ICP 1001295041LC8D8 a calculation error caused an incorrect closing reading (967 instead of 1022), resulting in under reporting of 55 kWh. This ICP switched out on 04/10/18 and the correction had not been made by then. The correction was made soon after the audit on 29/04/19 for the correct period prior to the switch out.
- The 2018 audit found three ICPs where there were errors in the correction calculations; the estimated consumption was added to a read prior to the meter removal read resulting in under estimation of consumption during the defective period. I checked these ICPs again and the adjustments had not been made at the time of the audit but were made on 29/04/19 and the consumption will be revised within the most recent 14 month period when the next revision is run.

ICP	Correction Date	Correct estimated read	Applied read	Difference
0002215194WEF25	07/07/2017	4879	4869	10
1001270441LCE84	11/08/2017	53607	53103	504
0000250924UN01C	07/07/2017	34862	34858	4
			Total	**518**

Audit outcome

Non-compliant

Non-compliance	Description
Audit Ref: 12.7 With: Clause 15.12 From: 01-Mar-18 To: 20-Mar-19	Inaccurate submission as follows: • 10 ICPs with inactive consumption • DG kWh for 14 ICPs • 2 incorrect multipliers • 4 corrections not conducted since the last audit Potential impact: Low Actual impact: Low Audit history: Twice Controls: Moderate Breach risk rating: 6
Audit risk rating	**Rationale for audit risk rating**
High	Controls are rated as moderate because they are effective most of the time. The impact is assessed to be high because there is a major impact on settlement until corrections are made.

Actions taken to resolve the issue	Completion date	Remedial action status
Response: As stated in previous sections: Inaccurate submission as follows: • 10 ICPs with inactive consumption - Completed • DG kWh for 14 ICPs – Gifted ICP's • 2 incorrect multipliers - Completed • 4 corrections not conducted since the last audit - Completed	Dec 2019	Identified Post audit comment. This can be cleared if the gifting notifications confirm compliance.
Preventative actions taken to ensure no further issues will occur	**Completion date**	
As above response, however Mercury will monitor and action these in timely manner.	Dec 2019	

12.8. Permanence of meter readings for reconciliation (Clause 4 Schedule 15.2)

Code reference

Clause 4 Schedule 15.2

Code related audit information

Only volume information created using validated meter readings, or if such values are unavailable, permanent estimates, has permanence within the reconciliation processes (unless subsequently found to be in error).

Volume information created using estimated readings must be subsequently replaced at the earliest opportunity by the reconciliation participant by volume information that has been created using validated meter readings or permanent estimates by, at the latest, the month 14 revision cycle.

A permanent estimate may be used in place of a validated meter reading, but only if, despite having used reasonable endeavours; the reconciliation participant has been unable to obtain a validated meter reading.

Audit observation

Three AV080 14-month revisions were reviewed to identify any forward estimate still existing. All NSPs with forward estimate remaining on any of the revisions were checked to determine the reasons for the forward estimate.

Audit commentary

SAP has an automated permanent estimate process which runs each night. If a read is older than six months and has been billed, SAP will change its type to a permanent estimate. Once billed in SAP, reads are locked and cannot be modified unless the invoice is reversed.

Review of the 14-month revisions for August to October 2017 showed that all estimated readings had been replaced with permanent estimates.

Audit outcome

Compliant

12.9. Reconciliation participants to prepare information (Clause 2 Schedule 15.3)

Code reference

Clause 2 Schedule 15.3

Code related audit information

If a reconciliation participant prepares submission information for each NSP for the relevant consumption periods in accordance with the Code, such submission information must comprise the following:

- *half hour volume information for each ICP notified in accordance with clause 11.7(2) for which there is a category 3 or higher metering installation (clause 2(1)(a))*
- *for each ICP about which information is provided under clause 11.7(2) for which there is a category 1 or category 2 metering installation (clause 2(1)(b)):*
  - *a) half hour volume information for the ICP; or*
  - *b) non half hour volumes information calculated under clauses 4 to 6 (as applicable).*
  - *c) unmetered load quantities for each ICP that has unmetered load associated with it derived from the quantity recorded in the registry against the relevant ICP and the number of days in the period, the distributed unmetered load database, or other sources of relevant information (clause 2(1)(c))*
- *to create non half hour submission information a reconciliation participant must only use information that is dependent on a control device if (clause 2(2)):*
  - *a) the certification of the control device is recorded in the registry; or*
  - *b) the metering installation in which the control device is location has interim certification.*
- *to create submission information for a point of connection the reconciliation participant must apply to the raw meter data (clause 2(3):*
  - *a) for each ICP, the compensation factor that is recorded in the registry (clause 2(3)(a))*
  - *b) for each NSP the compensation factor that is recorded in the metering installations most recent certification report (clause 2(3)(b)).*

Audit observation

Aggregation and content of reconciliation submissions was reviewed, and the registry list as at 13/02/19 was reviewed.

Audit commentary

Compliance with this clause was assessed:

- all ICPs with meter category 3 or higher have submission type HHR;
- unmetered load submissions were checked in **section 12.2** and it was found that one ICP did not have unmetered load submitted - this is recorded as non-compliance in **section 12.7** and is now resolved;
- no profiles requiring a certified control device are used;
- no loss or compensation arrangements are required; and
- aggregation of the AV080, AV110, AV090 and AV140 submissions are covered in **sections 13.2, 11.2,** and **11.4** respectively.

Audit outcome

Compliant

12.10. Historical estimates and forward estimates (Clause 3 Schedule 15.3)

Code reference

Clause 3 Schedule 15.3

Code related audit information

For each ICP that has a non-half hour metering installation, volume information derived from validated meter readings, estimated readings, or permanent estimates must be allocated to consumption periods using the following techniques to create historical estimates and forward estimates. (clause 3(1))

Each estimate that is a forward estimate or a historical estimate must clearly be identified as such. (clause 3(2))

If validated meter readings are not available for the purpose of clauses 4 and 5, permanent estimates may be used in place of validated meter readings. (clause 3(3))

Audit observation

Review of nine AV080 submissions, to confirm that historic estimates are included and identified.

Permanence of meter readings is reviewed in **section 12.8**. The methodology to create forward estimates is reviewed in **section 12.12**.

Audit commentary

I reviewed nine AV080 submissions for a diverse sample of months and revisions and confirm that forward and historic estimates are included and identified.

Audit outcome

Compliant

12.11. Historical estimate process (Clause 4 and 5 Schedule 15.3)

Code reference

Clause 4 and 5 Schedule 15.3

Code related audit information

The methodology outlined in clause 4 of Schedule 15.3 must be used when preparing historic estimates of volume information for each ICP when the relevant seasonal adjustment shape is available.

If a seasonal adjustment shape is not available, the methodology for preparing an historical estimate of volume information for each ICP must be the same as in clause 4, except that the relevant quantities kWh_{Px} must be prorated as determined by the reconciliation participant using its own methodology or on a flat shape basis using the relevant number of days that are within the consumption period and within the period covered by kWh_{Px}.

Audit observation

Mercury provided examples of historic estimate calculations, which were reviewed. The check of calculations included confirming that readings and Seasonal Adjusted Shape Values (SASV) were applied correctly. The table below shows that all scenarios tested are compliant.

Audit commentary

Mercury provided examples of historic estimate calculations which were reviewed. I found that correct shape files had been applied.

The process for managing shape files was examined. There is an automated process where the RM web server is polled for new files, which are moved to the system production files. I viewed the data capture process and noted that files had been processed as expected, and the most recent files were available.

Consumption while inactive will only be reported if the ICP is active for at least part of the read to read period that consumption occurs within.

Test	Scenario	Test expectation	Result
a	ICP becomes Active part way through a month	Consumption is only calculated for the Active portion of the month.	Compliant
b	ICP becomes Inactive part way through a month.	Consumption is only calculated for the Active portion of the month.	Compliant
c	ICP become Inactive then Active again within a month.	Consumption is only calculated for the Active portion of the month.	Compliant
d	ICP switches in part way through a month on an estimated switch reading	Consumption is calculated to include the 1st day of responsibility.	Compliant
e	ICP switches out part way through a month on an estimated switch reading	Consumption is calculated to include the last day of responsibility.	Compliant
f	ICP switches out then back in within a month	Consumption is calculated for each day of responsibility.	Compliant
g	Continuous ICP with a read during the month	Consumption is calculated assuming the readings are valid until the end of the day.	Compliant
h	Continuous ICP without a read during the month	Consumption is calculated assuming the readings are valid until the end of the day.	Compliant

Test	Scenario	Test expectation	Result
i	Rollover Reads	Consumption is calculated correctly in the instance of meter rollovers.	Compliant
j	Unmetered load for a full month	Consumption is calculating based on daily unmetered kWh for full month.	Compliant
k	Unmetered load for a part month	Consumption is calculating based on daily unmetered kWh for active days of the month.	Compliant
l	Network/GXP/Connection (POC) alters partway through a month.	Consumption is separated and calculated for the separate portions of where it is to be reconciled to.	Compliant
m	ICP with a customer read during the month	Customer reads are not used to calculate historic estimate unless appropriately validated.	Compliant
n	ICP with a photo read during the month	Photo reads are not used to calculate historic estimate.	No example provided
o	ICP has a meter with a multiplier greater than 1	The multiplier is applied correctly.	Compliant

Audit outcome

Compliant

12.12. Forward estimate process (Clause 6 Schedule 15.3)

Code reference

Clause 6 Schedule 15.3

Code related audit information

Forward estimates may be used only in respect of any period for which an historical estimate cannot be calculated.

The methodology used for calculating a forward estimate may be determined by the reconciliation participant, only if it ensures that the accuracy is within the percentage of error specified by the Authority.

Audit observation

The process to create forward estimates was reviewed.

Forward estimates were checked for accuracy by analysing the GR170 file for variances between revisions over the audit period.

Audit commentary

Mercury's forward estimates are based on either:

- historic readings; or
- historic daily average consumption based on price plan and billing group.

Mercury's forward estimate process also includes a "factoring" process, which involves the use of the average of the previous two-year's profile shape. This ensures that submission information is not understated or overstated during "shoulder" months.

The accuracy of the initial submission, in comparison to each subsequent revision is required to be within 15% and within 100,000kWh. The table below shows the target was not met for all revisions. Non-compliance is recorded below.

Quantity of balancing areas with differences over 15% and 100,000 kWh

Month	Revision 1	Revision 3	Revision 7	Revision 14	Total
Jun 2017	1	0	0	0	260
Jul 2017	0	0	0	0	267
Aug 2017	0	1	3	3	269
Sep 2017	0	2	2	-	272
Oct 2017	1	3	4	-	274
Jan 2018	3	2	2	-	277
Feb 2018	4	4	4	-	282
Mar 2018	1	1	1	-	282
April 2018	0	0	0	-	284
May 2018	1	1	-	-	285
June 2018	1	0	-	-	292
July 2018	1	1	-	-	288
Aug 2018	1	1	-	-	292
Sep 2018	1	1	-	-	293

The total variation between revisions at an aggregate level is shown below.

Month	Revision 1	Revision 3	Revision 7	Revision 14
Jun 2017	3.19%	1.45%	1.46%	1.50%
Jul 2017	0.74%	-0.58%	-0.55%	-0.51%
Aug 2017	4.15%	2.80%	3.02%	3.05%

Month	Revision 1	Revision 3	Revision 7	Revision 14
Sep 2017	3.22%	1.95%	2.03%	-
Oct 2017	4.93%	3.34%	3.34%	-
Jan 2018	2.29%	1.49%	1.41%	-
Feb 2018	1.37%	0.32%	0.27%	-
Mar 2018	0.85%	-0.48%	-0.68%	-
April 2018	-2.11%	-3.71%	-3.78%	-
May 2018	-2.33%	-2.96%	-	-
June 2018	-4.10%	-5.02%	-	-
July 2018	-0.52%	-1.64%	-	-
Aug 2018	-0.75%	-1.26%	-	-
Sep 2018	-0.55%	-2.53%	-	-

I checked sample of ten differences over the threshold. The differences related to:

- commercial sites switching in and forward estimates being higher or lower than the actual reads received;
- commercial sites where forward estimate had been too high or low, because insufficient read history was available for estimation;
- profile shapes provided by the NZRM being different to the profiles used to calculate forward estimate for the initial allocation; and
- profile shapes changing due to balancing area changes for one network.

Audit outcome

Non-compliant

Non-compliance	Description
Audit Ref: 12.12 With: Clause 6 Schedule 15.3 From: 01-Sep-17 To: 30-Sep-18	The accuracy threshold was not met for all months and revisions. Potential impact: Low Actual impact: Low Audit history: Multiple times Controls: Moderate Breach risk rating: 2

Audit risk rating	Rationale for audit risk rating		
Low	Controls are rated as moderate, as they are sufficient to ensure data is within the accuracy threshold most of the time. Initial data is replaced with revised data and washed up.		
Actions taken to resolve the issue		**Completion date**	**Remedial action status**
Response: Non compliance accepted and remedial action on-going however we believe that we have strong controls in place which is backed up by the table above as attainment percentage are very high. **Action:** Mercury have made lot of changes since the last audit and will review this further to comply with the code.		Proposed: May 2020	Identified
Preventative actions taken to ensure no further issues will occur		**Completion date**	
Mercury have made lot of changes since the last audit and will review this further to comply with the code.		Proposed: May 2020	

12.13. Compulsory meter reading after profile change (Clause 7 Schedule 15.3)

Code reference

Clause 7 Schedule 15.3

Code related audit information

If the reconciliation participant changes the profile associated with a meter, it must, when determining the volume information for that meter and its respective ICP, use a validated meter reading or permanent estimate on the day on which the profile change is to take effect.

The reconciliation participant must use the volume information from that validated meter reading or permanent estimate in calculating the relevant historical estimates of each profile for that meter.

Audit observation

The event detail report for 01/04/18 to 08/02/19 was reviewed and identified 2,362 ICPs which had a change of profile, including reversal and replacement of previous profiles.

A diverse sample of ten ICPs with profile changes, including five upgrades to HHR and five downgrades to NHH were reviewed to confirm that there was an actual reading on the day of the profile change.

Audit commentary

All profile changes are conducted using an actual meter reading or a permanent estimate at 11.59pm on the last day with the old profile. Mercury provided an email from the Authority which confirmed that this was compliant, as long as the new profile came into effect at 0.00am the following day.

I reviewed a sample of nine profile changes and confirmed eight had an actual reading the day before the profile change and the new profile came into effect at 0.00am the following day. One profile change was in error; it was corrected from HHM to RPS by the new retailer upon switching, but the switch was later withdrawn and the ICP returned to Mercury with RPS profile and no actual read on the day before

the profile change. The profile was corrected during the audit, and the period with an incorrect profile is recorded as non-compliance in **section 2.1**.

Audit outcome

Compliant

13. SUBMISSION FORMAT AND TIMING

13.1. Provision of submission information to the RM (Clause 8 Schedule 15.3)

Code reference

Clause 8 Schedule 15.3

Code related audit information

Submission information provided to the reconciliation manager must be aggregated to the following level:

- *NSP code (clause 8(a))*
- *reconciliation type (clause 8(b))*
- *profile (clause 8(c))*
- *loss category code (clause 8(d))*
- *flow direction (clause 8(e))*
- *dedicated NSP (clause 8(f))*
- *trading period for half hour metered ICPs and consumption period or day for all other ICPs (clause 8(g)).*

Audit observation

The process to ensure that AV080 submissions are accurate was discussed in **section 12.2**.

Processes to ensure that information used to aggregate the reconciliation reports is consistent with the registry were reviewed in **section 2.1**.

Zeroing in the AV080 submission is discussed in **section 12.3** and was found to be compliant.

Audit commentary

Submission information is provided to the reconciliation manager in the appropriate format and is aggregated to the following level:

- NSP code;
- reconciliation type;
- profile;
- loss category code;
- flow direction;
- dedicated NSP; and
- consumption period.

Audit outcome

Compliant

13.2. Reporting resolution (Clause 9 Schedule 15.3)

Code reference

Clause 9 Schedule 15.3

Code related audit information

When reporting submission information, the number of decimal places must be rounded to not more than two decimal places.

If the unrounded digit to the right of the second decimal place is greater than or equal to five, the second digit is rounded up, and If the digit to the right of the second decimal place is less than five, the second digit is unchanged.

Audit observation

I reviewed the rounding of data on the AV080, AV090 and AV140 and reports as part of the aggregation checks.

Audit commentary

Review of nine AV080 non half hour volumes reports confirmed that submission data is rounded to zero decimal places.

Review of 12 AV090 and AV140 reports confirmed that submission data is rounded to zero decimal places.

Review of 12 AV140 half hour aggregates reports confirmed that submission data is rounded to two decimal places.

Audit outcome

Compliant

13.3. Historical estimate reporting to RM (Clause 10 Schedule 15.3)

Code reference

Clause 10 Schedule 15.3

Code related audit information

By 1600 hours on the 13th business day of each reconciliation period the reconciliation participant must report to the reconciliation manager the proportion of historical estimates per NSP contained within its non half hour submission information.

The proportion of submission information per NSP that is comprised of historical estimates must (unless exceptional circumstances exist) be:

- *at least 80% for revised data provided at the month 3 revision (clause 10(3)(a))*
- *at least 90% for revised data provided at the month 7 revision (clause 10(3)(b))*
- *100% for revised data provided at the month 14 revision (clause 10(3)(c)).*

Audit observation

The timeliness of submissions of historic estimate was reviewed in **section 12.2**.

I reviewed nine months of AV080 reports to determine whether historic estimate requirements were met.

Audit commentary

The quantity of historical estimates is contained in the submission file and is not a separate report. The proportion of HE in the revision files was checked for nine separate months. The table below shows that compliance has not been achieved for all three and seven month revisions due to read attainment issues.

The overall percentages of historic estimate are high.

Quantity of NSPs where revision targets were met.

Month	Revision 3 80% Met	Revision 7 90% Met	Revision 14 100% Met	Total
Aug 2017	-	-	367	367
Sep 2017	-	-	368	368
Oct 2017	-	-	369	369
Mar 2018	-	377	-	377
Apr 2018	-	381	-	382
May 2018	-	383	-	383
Aug 2018	368	-	-	385
Sep 2018	369	-	-	383
Oct 2018	364			386

The table below shows that the percentage HE at a summary level is above the required targets.

Month	Revision 3 80% Target	Revision 7 90% Target	Revision 14 100% Target
Aug 2017	-	-	100.00%
Sep 2017	-	-	100.00%
Oct 2017	-	-	100.00%
Mar 2018	-	99.99%	-
Apr 2018	-	99.99%	-
May 2018	-	100.00%	-
Aug 2018	98.28%	-	-
Sep 2018	97.99%	-	-
Oct 2018	97.62%	-	-

Audit outcome

Non-compliant

Non-compliance	Description
Audit Ref: 13.3 With: Clause 10 of Schedule 15.3 From: Apr 2018 (r7), Aug-Oct 2018 (r3)	Historic estimate thresholds were not met for some revisions. Potential impact: Low Actual impact: Low Audit history: Multiple times Controls: Strong Breach risk rating: 1
Audit risk rating	**Rationale for audit risk rating**
Low	The controls are rated as moderate because in most cases the thresholds were met, and processes are in place to make estimated readings permanent. The audit risk rating is low, because Mercury were reasonably close to the target in all cases.

Actions taken to resolve the issue	Completion date	Remedial action status
Response: Mercury has a strong control in place. The cases are created due to exceptional circumstances. **Action:** Mercury will investigate the root causes further to implement more robust process to meet the code obligation.	May 2020	Identified
Preventative actions taken to ensure no further issues will occur	**Completion date**	
Mercury will investigate the root causes further to implement more robust process to meet the code obligation.	May 2020	

CONCLUSION

The audit found Mercury has resolved a small number of issues identified in the previous audit, but in general the overall level of compliance has not improved.

The audit found 34 non-compliance issues, three recommendations are made, and no issues are raised. 12 of the non-compliance issues relate to switching (two more than the 2018 audit), and eight relate to registry management and new connections (a reduction from nine in the 2018 audit). The number of non-compliances has remained the same, but the overall future risk rating has increased from 104 to 115, which is a continuing upward trend.

The Authority made recommendations to Mercury that they focus on the following areas prior to this audit:

5. **Management of compliance** – it appears that Mercury is relying on the audit process to identify issues. As a result, issues are not detected between audits, and action to correct errors is not started until after the auditor has completed their work. We would recommend that Mercury take a proactive approach to understanding and complying with its Code obligations.
6. **System issues affecting switching** – it appears that the information Mercury is providing in switching files is not always correct. This has been identified in previous audits. We would recommend that Mercury ensures that the system is corrected prior to the next audit.
7. **Quantification of electricity conveyed including for DUML** – Mercury NZ Ltd is switching in DUML ICPs without ensuring a DUML database or other mechanism for quantifying the electricity conveyed is in place. Where electricity is quantified using a DUML database, there are errors that are affecting the accuracy of Mercury NZ Ltd's submission information.
8. **Electrical connection of ICPs** – it appears that Mercury was not aware of its obligation to ensure that when an ICP is electrically connected the metering installation is certified within five business days of electrical connection. We would recommend that Mercury develop processes and arrangements with its metering agents to ensure that this work is done.

The audit found that the points above were still present and in some cases, the issues have a higher breach risk rating than during the previous audit.

The main findings are as follows:

- the new connections process requires improvement to ensure the timeliness and accuracy of registry updates and to ensure certification occurs within five business days;
- the switching process continues to have system and process issues leading to non-compliance, some of which have an impact on other traders and on submission accuracy;
- not all consumption related corrections occurred as soon as practicable;
- an incorrect compensation factor was not identified, leading to under submission (outside the 14-month window) of approx. 279,000 kWh. Mercury has made the appropriate correction and will resolve this through the revision process in the most recent 14 month window; and
- a large number of telecommunications ICPs do not have databases to record the items of load.

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 contains a future risk rating score of 113, which results in an indicative audit frequency of three months. This is an increase from the previous audit's score of 104.

I have considered this result in conjunction with Mercury's responses. The next audit date recommendation needs to balance the current level of compliance with the timeframe to resolve the issues with enduring solutions. I have a high level of confidence that Mercury's approach to compliance will result in significant improvements, but some remedial actions will not be fully automated until the completion of the process automation project. There is some merit in delaying the next audit until the completion of the system changes. My recommendation for the next audit date is 12 to 15 months.

PARTICIPANT RESPONSE

Overall we have accepted most of the breaches however at the same time we have clearly demonstrated that a lot of improvements has been made.

We also have a Process Automation project approved recently which will further rectify some of the non-compliance issues. The target date for completion of the project will be in a year's time however dates are yet to be finalised.

DUML and Unmetered will be the focus, especially Vodafone sites. Mercury account manager has already been in touch with Vodafone to have an action plan in place to rectify all the non-compliance raised. We are more than happy to share the plan with EA to ensure we are progressing in the right direction. Mercury is aiming to have the VF audit completed also via Veritek within the next 12 months period.

As a significant number of breaches have been cleared, and with Process Automation project approved, and special priority given to DUML, we would request a 18-24 month audit period. This will ensure it gives Mercury enough time to Plan, test and implement a permanent solution.