

ELECTRICITY INDUSTRY PARTICIPATION CODE
RECONCILIATION PARTICIPANT AUDIT REPORT



For

MERCURY NZ LIMITED

Prepared by: Steve Woods and Rebecca Elliot

Date audit commenced: 1 December 2019

Date audit report completed: 3 April 2020

Audit report due date: 28 March 2020

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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.

Mercury has made many improvements to their controls, particularly in the registry and switching areas, which has led to earlier identification and resolution of issues, resulting in a higher level of compliance.

The audit found 36 non-compliance issues and one recommendation is made and no issues are raised. Nine of the non-compliance issues relate to switching (three less than the 2019 audit), and seven relate to registry management and new connections (a reduction from eight in the 2019 audit). The overall score has reduced from 115 to 89.

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

1. **Automation project** – The automation project is expected to address multiple accuracy issues including registry accuracy (including correct ‘active’ dates), ongoing systemic switching accuracy issues and use of correct switch event meter reads. This project is not expected to be completed until May 2020. We recommend Mercury NZ Ltd focus on ensuring the automation project addresses all known issues with the way Mercury NZ Ltd is managing registry and switching information.
2. **Correction of errors** – The audit identified multiple sources of errors that are impacting the market. This includes correction of submission information (such as consumption on ‘inactive’ ICPs, correction of submission errors, correction of ‘active’ dates in the registry and processing of reconnection requests). We recommend Mercury NZ Ltd ensures that where errors are found they are corrected as soon as practicable and prior to the next audit.
3. **Management of compliance** – It appears Mercury NZ Ltd has been relying on the audit process to identify issues. As a result, issues are not detected between audits and actions to correct errors are not started until have the auditor has completed their work. This was a key theme from the previous audit of Mercury NZ Ltd. We note Mercury NZ Ltd have reassured the Authority that there is now more proactive management of compliance and we would recommend Mercury NZ Ltd sustain this momentum going into the next audit.

The audit found that improvements have been made in relation to all three points above. Controls have been strengthened and remedial actions have been progressed in a much more timely manner.

The main findings are as follows:

- SAP issues are still present resulting in some incorrect registry updates.
- ICP 0015723581ELA43 has a single-phase meter on a telecommunications amplifier with a multiplier of 101 to cater for an additional 100 unmetered load connections.
- A large number of telecommunications ICPs do not have databases to record the items of load. Progress has been made in relation to this issue, but it is not yet resolved.
- Improvements have been made in the revenue risk area with improved reporting in place to identify these earlier. This is still being bedded in and evidence of these improvements are expected to be seen in the next audit.
- Two examples of ICPs being reconciled to the incorrect NSP. This has occurred due to an issue with the HHM profile where NSP changes are not being picked up correctly in all instances.,

- Three examples of ICPs being reconciled to the incorrect network were identified. The NSP was correctly recorded in all instances. Mercury are investigating what has caused this issue, over what period and how many ICPs have been affected.
- Corrections are being processed in a timely manner.
- Examination of the HRR correction process identified that the interpolation process used extrapolated data. Interpolation should only use actual data from another time period. Mercury have a job logged with IT to fix this and have put a manual work around in place to ensure this doesn't occur going forward. In this instance it caused the estimated data to not meet the reasonable endeavours requirement. There are very few HHR estimations so the impact of this is expected to be low.

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 89, which results in an indicative audit frequency of three months.

I have considered this result in conjunction with Mercury's responses. My recommendation is for a next audit period of 12 months to reflect that improvements have been made since the last audit and further improvements are expected in the near future.

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. Between 9 and 91 ICPs with distributed generation not quantified or submitted. 31 ICPs submitted against the incorrect NSP or Network. 1 ICP missing from submission.	Moderate	Low	2	Identified
Electrical Connection of Point of Connection	2.11	10.33A	At least six ICPs not certified within five business days of electrical connection. 106 ICPs not certified within five business days of electrical reconnection.	Moderate	Low	2	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	618 with "Don't know" ANZSIC codes assigned. Some of these will be invalidly assigned. 12 of the 84 ICPs checked had incorrect ANZSIC codes assigned.	Moderate	Low	2	Identified

Subject	Section	Clause	Non-Compliance	Controls	Audit Risk Rating	Breach Risk Rating	Remedial Action
Changes to unmetered load	3.7	9(1)(f) of Schedule 11.1	ICP 0000500096HB752 has the unmetered flag as "N" but unmetered load is connected. Unmetered details incorrect for two ICPs. Both were corrected back to the start of the ICPs. ICP 0015723581ELA43 has a single-phase meter on a telecommunications amplifier with a multiplier of 101 to cater for an additional 100 unmetered load connections.	Moderate	Medium	4	Investigating
Management of "active" status	3.8	17 Schedule 11.1	6 reconnections updates were invalidly processed.	Moderate	Low	2	Identified
Management of "inactive" status	3.9	19 Schedule 11.1	18 ICPs with incorrect inactive status.	Moderate	Low	2	Identified
Losing trader response to switch request and event dates - standard switch	4.2	3 & 4 of schedule 11.3	Four AN files checked contained incorrect response codes of AD. 3,585 AN files contained incorrect response codes of AA. Two late AN files.	Moderate	Low	2	Identified
Losing trader must provide final information - standard switch	4.3	5 of schedule 11.3	Two files with incorrect average daily consumption. 13 late transfer CS files.	Strong	Low	1	Identified
Retailers must use same reading - standard switch	4.4	(1) and 6A Schedule 11.3	5 late RR files and two late AC files for transfer switches. RR not sent for ICP 0000570766NR645 and reading from CS file was not used.	Strong	Low	1	Identified

Subject	Section	Clause	Non-Compliance	Controls	Audit Risk Rating	Breach Risk Rating	Remedial Action
Losing trader provides information - switch move	4.8	10 of schedule 11.3	211 incorrect switch response codes of AA instead of AD. 26 ANs had non-compliant proposed event dates. 2 late switch move AN files.	Moderate	Low	2	Identified
Losing trader must provide final information - switch move	4.10	11 of schedule 11.3	Average daily consumption incorrect for 4 ICPs.	Strong	Low	1	Identified
Gaining trader changes to switch meter reading - switch move	4.11	12 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. Incorrect reading used when the Mercury RR was rejected. 5 late RR files and 2 late AC files for switch moves.	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	Strong	1	Identified
Gaining trader to advise the registry manager - gaining trader switch	4.14	16 of schedule 11.3	One HH CS files was sent with METERINSTALL, METERCOMP and METERCHANNEL rows.	Strong	Low	1	Identified
Withdrawal of switch requests	4.15	17 & 18 of schedule 11.3	136 late NW files and 4 late AC files.	Moderate	Low	2	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 seven databases. The specific findings are detailed in the DUML database audit reports.	Weak	High	9	Investigating
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 five ICPs. Some ICPs with distributed generation not quantified.	Moderate	Low	2	Identified
Responsibility for metering at GIP	6.2	10.26 (6), (7) and (8)	Seven meter certificate expiry dates not updated. Three meter certification expiry dates were updated late.	Weak	Low	3	Identified
Derivation of meter readings	6.6	5 of Schedule 15.2	Customer reads are not validated against two actual validated reads resulting in estimates being validated against estimates.	Weak	Low	3	Disputed
Interrogate meters once	6.8	7(1) and (2) Schedule 15.2	The best endeavours requirement was not met for 106 ICPs due to the short period of supply.	Strong	Low	1	Identified
Correction of HHR metering information	8.2	19(2) of Schedule 15.2	Interpolation using extrapolated data caused the pattern of consumption for one correction to be allocated incorrectly for one ICP.	Moderate	Low	2	Disputed
Meter data used to derive volume information	9.3	3(5) of schedule 15.2	Raw meter data is rounded upon receipt and not when volume information is created.	None	Low	5	Identified

Subject	Section	Clause	Non-Compliance	Controls	Audit Risk Rating	Breach Risk Rating	Remedial Action
Calculation of ICP days	11.2	15.6	Inaccurate ICP days were reported for a small number of ICPs. Corrected data will be washed up in the next available revision, and IT is fixing the bug.	Moderate	Low	2	Identified
HHR aggregates information provision to the reconciliation manager	11.4	15.8	HHR aggregates file does not contain electricity supplied information.	Strong	Low	1	Disputed
Allocation of submission information	12.3	15.5	Three ICPs recorded with the incorrect NSP. Two ICPs recorded against the incorrect network. One ICP not submitted due to be being recorded against another trader in SAP.	Moderate	Low	2	Identified
Grid connected generation	12.6	15.11	Alleged breach 1910MERC1 was recorded for late provision of the NSPVOLS files for May 2019.	Strong	Low	1	Cleared
Accuracy of submission information	12.7	15.12	Inaccurate submission as follows: <ul style="list-style-type: none"> • DG kWh for 8 ICPs • 2 ICPs submitted against the incorrect NSPs • 31 ICPs submitted against the incorrect network, and • ICP 0068548000WR39B missing from submission from 17/07/18-31/10/18 	Moderate	Low	2	Identified

Subject	Section	Clause	Non-Compliance	Controls	Audit Risk Rating	Breach Risk Rating	Remedial Action
Reconciliation participants to prepare information	12.9	2 Schedule 15.3	ICP 0068548000WR39B missing from submission from 17/07/18-31/10/18.	Moderate	Low	2	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
Compulsory meter read after profile change	12.13	Clause 7 Schedule 15.3	No read recorded at the time of the profile change.	Strong	Low	1	Cleared
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						89	

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	Recommendation
Interrogate meters once	6.8	Review reporting to include only ICPs that have not been read during the period of supply are included

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

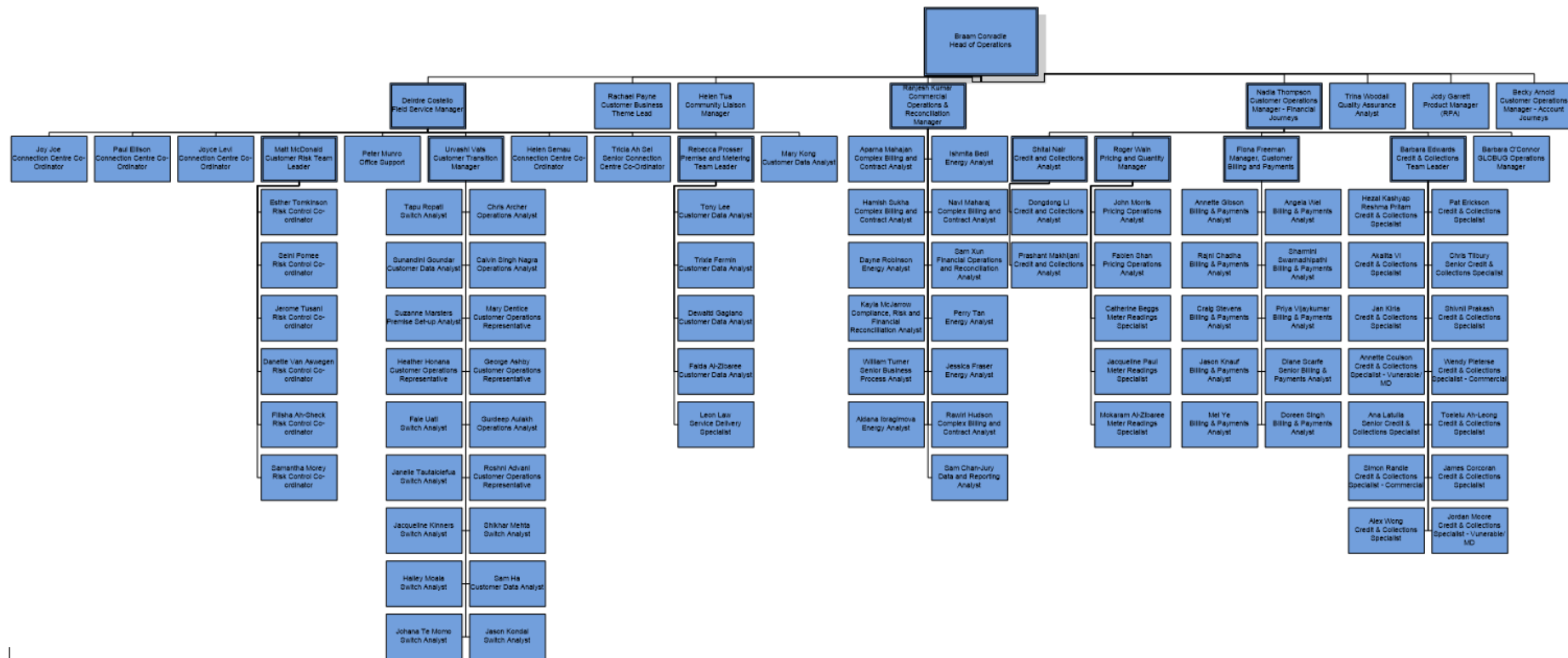
Current code exemptions were reviewed on the Electricity Authority website.

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
Rebecca Elliot	Veritek Limited	Supporting Auditor

Mercury personnel assisting in this audit were:

Name	Title
Kayla McJarrow	Compliance, Risk and Financial Reconciliation Analyst
Dannette van Aswegen	Risk Control Co-ordinator
Filisha Ah-Sheck	Risk Control Co-ordinator
Rebecca Prossier	Premise and Metering Team Leader
Mokram Al-Zibaree	Meter Reading Specialist
Perry Tan	Energy Analyst
Jacqueline Paul	Meter Reading Specialist
Deirdre Costello	Field Services Manager
Ishmita Beli	Energy Analyst
Dayne Robinson	Energy Analyst
Ranjesh Kumar	Commercial Operations and Reconciliation Manager
Roger Wain	Manager Price and Quantity
Urvashi Vats	Customer Transition Manager
Tapu Ropati	Switch Analyst
Rebecca Prosser	
Leon Law	Service Delivery Specialist

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 EDM I provide HHR data.
- EMS provides HHR data to the pricing manager.
- Councils provide HHR and NHH DUM L data.
- Wells provide NHH data.

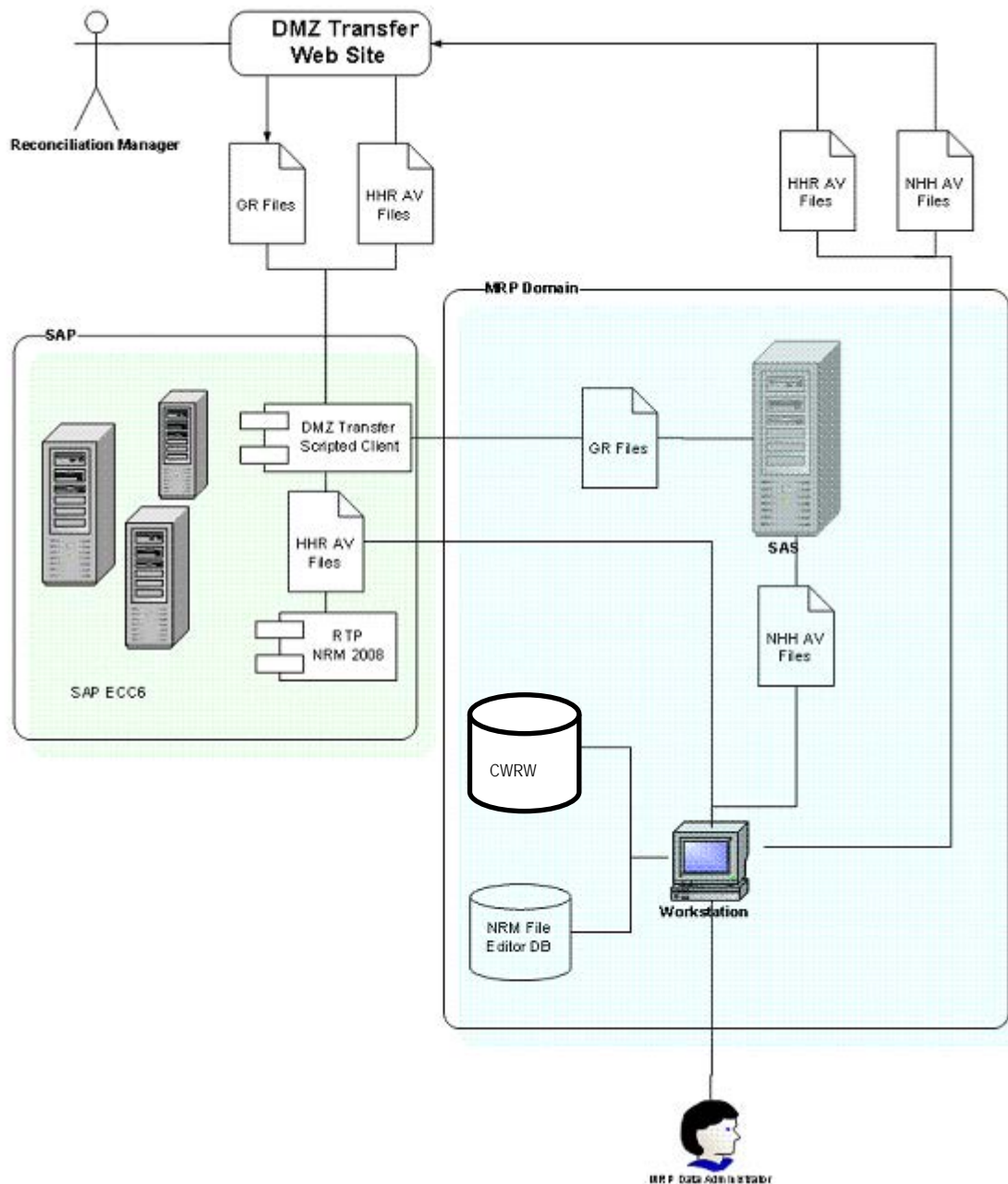
Where the agent audit report was more than seven months old on the audit due date, I confirmed with the agent that there had been no changes to systems or processes which could affect Mercury's compliance.

AMS, IntelliHUB, 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

The EA confirmed two alleged breaches occurred during the audit period:

Breach no	Breach of	Description	Outcome
1910MERC1	Part 15 clause 15.2	On the 10th Jun, the reconciliation manager reported discrepancies on NSPVOLS comparison, and identified that MRPL had not submitted NSP volumes for May 2019 consumption month for the codes NAPJ, MRPD and MRPL.	Early closure
1910MERC2	Part 11 clause 11.15AB (4)	Mercury contacted a customer during the switch save period.	Decline to pursue with warning

- Breach 1910MERC1 is discussed further in **section 12.5**, and
- Breach 1910MERC2 is discussed further in **section 4.17**.

1.7. ICP Data

All active ICPs are summarised by metering category in the table below.

Metering Category	2020	2019	2018	2017
1	326,699	348131	345,836	338,896
2	3,050	3,299	3,100	3,288
3	574	556	550	622
4	207	181	160	159
5	22	19	19	16
9	461	472	469	107
Blank	664	638	590	304

Status	Number of ICPs (2020)	Number of ICPs (2019)	Number of ICPs (2018)	Number of ICPs (2017)
Active (2,0)	331,677	350,724	343,392	326,093
Inactive – new connection in progress (1,12)	2	3	2	2
Inactive – electrically disconnected vacant property (1,4)	4,275	3,998	4,201	3,575
Inactive - reconciled elsewhere (1,5)	2	1	5	5
Inactive – electrically disconnected ready for decommissioning (1,6)	167	313	511	714
Inactive – electrically disconnected remotely by AMI meter (1,7)	19	24	13	5
Inactive – electrically disconnected at pole fuse (1,8)	15	14	10	1
Inactive – electrically disconnected due to meter disconnected (1,9)	1,662	1,373	226	25
Inactive – electrically disconnected at meter box fuse (1,10)	1	1	-	-
Inactive – electrically disconnected at meter box switch (1,11)	1	4	-	-
Decommissioned (3)	24,865	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

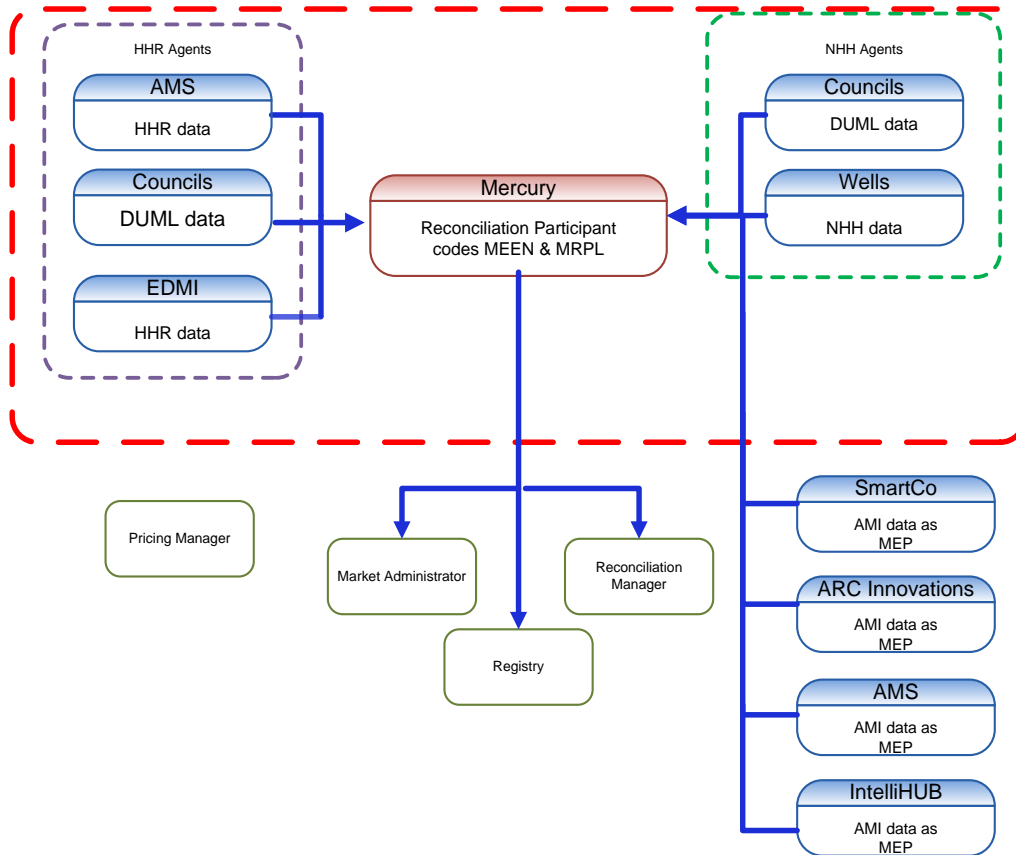
This Electricity Industry Participation Code Reconciliation Participant audit was performed at the request of Mercury, to support their application for renewal of certification in accordance with clauses 5 and 7 of schedule 15.1.

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 February 2020.

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.

Audit Boundary



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	

Tasks Requiring Certification Under Clause 15.38(1) of Part 15	Agents Involved in Performance of Tasks
(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 IntelliHUB conduct AMI data collection as MEPs and not as agents to reconciliation participants.

Mercury receives distributed unmetered load (DUML) data from 12 distributed unmetered load customers, who are considered agents under clause 15.34. Veritek has audited or has the next audit scheduled for these parties 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 there had been no changes to systems or processes which could affect Mercury's compliance.

1.10. Summary of previous audit

The previous audit report conducted in March 2019 by Steve Woods (lead auditor) of Veritek Limited was reviewed. 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.

Table of Non-compliance

Subject	Section	Clause	Non-compliance	Status
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	Still existing
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.	Still existing
MEP arrangements	2.13	10.36	Arrangement not in place with IntelliHub.	Cleared
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.	Still existing
Trader responsibility for an ICP	3.4	11.18	Some invalid MEP nominations were 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	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.	Still existing

Subject	Section	Clause	Non-compliance	Status
Changes to unmetered load	3.7	9(1)(f) of Schedule 11.1	Incorrect unmetered load is recorded for ICP 0015723581ELA43.	Still existing
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.	Still existing
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.	Still existing
Inform registry of switch request	4.1	2 Schedule 11.3	One switch move was incorrectly sent as a transfer switch.	Cleared
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.	Still existing
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	Still existing
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.	Still existing

Subject	Section	Clause	Non-compliance	Status
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.	Still existing
Losing trader determines a different date - switch move	4.9	10(2) Schedule 11.3	36 ANs had non-compliant proposed event dates.	Cleared
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.	Still existing
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.	Still existing
Losing trader provision of information - gaining trader switch	4.13	15 Schedule 11.3	Two late AN files for HH switches.	Still existing
Gaining trader to advise the registry manager - gaining trader switch	4.14	16 of schedule 11.3	12 late CS files for HH switches.	Still existing
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.	Still existing
Metering information	4.16	21 Schedule 11.3	Some incorrect CS file switch event readings.	Cleared
Unmetered threshold	5.2	10.14 (2)(b)	Nine standard unmetered ICPs with unmetered consumption over 6,000 kWh per annum.	Still existing
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.	Still existing

Subject	Section	Clause	Non-compliance	Status
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 21 ICPs. Between 14 and 73 ICPs with distributed generation not quantified.	Still existing
Responsibility for metering at GIP	6.2	10.26 (6), (7) and (8)	Six meter certification expiry dates were updated late.	Still existing
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.	Cleared
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.	Still existing
Electricity supplied	11.3	15.7	Incorrect electricity supplied figure for one vacant ICP.	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	Inaccurate submission as follows: <ul style="list-style-type: none"> • 10 ICPs with inactive consumption • DG kWh for 14 ICPs • 2 incorrect multipliers • 4 corrections not conducted since the last audit 	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

Table of Recommendations

Subject	Section	Clause	Recommendation	Status
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.	Cleared
Unmetered load	3.7	Unmetered load	Confirm the details of any unmetered load connected for the 12 ICPs with distributor unmetered load details and no trader unmetered load details recorded.	Still existing
Unmetered load	3.7	Unmetered load	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.	Still existing

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 07/01/20 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 and 2019 audits 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.

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.

Error case	Description
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	2020 Qty	2019 Qty	2018 Qty	2017 Qty	Comments
Active with blank ANZSIC	2	2	2	2	See section 3.6
Active with ANZSIC "T999" not stated	-	-	-	2	See section 3.6
Active with ANZSIC "T994" don't know	618	269	388	1,662	See section 3.6
UML load = zero	0	6	3	3	These are all SB ICPs and compliance is confirmed. See section 3.7 .
Incorrect UML load	2	TBC	6	2	See section 3.7
No MEP recorded or nominated and UML= "N"	55	105	2	2	See section 3.7
UML load removed and an MEP is nominated but is still UML in SAP	0	0	0	2	Compliant
Shared unmetered load incorrect	0	0	0	0	Compliant
ICPs with different UNM load to that recorded by the Distributor	11	35	40	2	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	15	23	13	45	These are being investigated with the network and customer to confirm if unmetered load is present or not. See section 3.7 .

Issue	2020 Qty	2019 Qty	2018 Qty	2017 Qty	Comments
blank and UML flag =N					
Incorrect profile	3,478	3,010	1	1	Refer to section 6.1 . PV1 profile incorrect.
Incorrect statuses or status event dates	24	26	-	-	6 reconnection updates were invalidly processed. See section 3.8 . 18 ICPs with incorrect inactive status dates or status reason codes. See section 3.9 .

There are now sound processes to ensure active dates for new connections are accurate.

The reporting of ICPs with an inactive status where consumption is present is actively managed and status changes occur back to the correct dates.

As recorded in **section 6.1**, 3,478 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 due to a limitation in SAP which can only record three characters for a profile.

129 of the 3,607 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 50 ICPs without injection/export metering were reviewed to determine whether distributed generation was present. The list of ICPs with generation being gifted was examined. The findings are listed below:

- 21 ICPs do not have generation installed and are not on the gifting register,
- 12 ICPs have since had generation metering installed, and generation consumption is being measured and reported in accordance with the code,
- eight ICPs have generation installed, but have no generation metering installed and are not being submitted for and are not on the gifting register,
- five ICPs are being gifted, these relate to Tesla batteries installed by Vector,
- three ICPs are in the process of having generation metering installed, and
- ICP 0004922952WE458 is a TOU site with no import export metering installed, Mercury are confirming with the customer whether the generation is exporting to the grid.

Other submission related issues are as follows:

- The interpolation process used for HHR estimation used extrapolated data to interpolate. Interpolation should only use actual data from another time period. Mercury have a job logged with IT to fix this and have put a manual work around in place to ensure this doesn't occur going forward. Very few HHR estimations take place so the impact of this is expected to be low.
- NSP changes were not identified in two instances resulting in the ICP being reconciled to the incorrect NSP. This has occurred due to an issue with the HHM profile where NSP changes are not being picked up correctly in all instances. A job has been raised with IT to correct this.
- Three ICPs reconciled against the incorrect balancing area resulting in volumes being reconciled to the incorrect Distributor in two cases and incorrect network in one case. The two NSPs affected are STK0331 and HEP0331. These NSPs are both across two networks. Mercury have investigated

and found that this occurred when the ICP was set up or moved to the HHM profile due to the incorrect grid selection. 31 ICPs were affected. 17 ICPs will be corrected through the revision process. 14 ICPs are outside of the 14-month revision process. Mercury will liaise with the Electricity Authority to determine the best way to correct this.

- Mercury was recorded in the registry as the trader for ICP 0068548000WR39B from 22/06/18 but SAP has this ICP as being with Genesis from 17/07/18 to 31/10/18. Therefore, no submission occurred for this ICP during this period. Mercury are investigating why this has occurred and how many other ICPs have this issue.

Audit outcome

Non-compliant

Non-compliance	Description		
Audit Ref: 2.1 With: Clause 10.6,11.2 & 15.2 From: 01-Feb-19 To: 31-Dec-19	Some registry discrepancies. Between 9 and 91 ICPs with distributed generation not quantified or submitted. 31 ICPs submitted against the incorrect NSP or Network. 1 ICP missing from submission Potential impact: High Actual impact: High 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 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

<p>1. Some registry discrepancies. Mercury recognises several factors contributing to registry discrepancies including system issues. We will be investigating these system issues as well as looking at how we can reduce our registry discrepancies in general.</p> <p>2. Between 9 and 91 ICPs with distributed generation not quantified or submitted. We have reporting in place to identify discrepancies between our records and the distributor generation fields which was not being monitored as intended. We will look at correcting any current discrepancies and ensure energy is quantified through washups.</p> <p>31 ICPs submitted against the incorrect NSP or Network. These have all been identified and corrected. This issue was caused by incorrect grid setup in a section of SAP that contains GXP/Network information which is used in the compilation of HHRAGGR/VOLS files. This error did not cause any issues when the ICPs were reconciled as NHH as that process did not derive this information from that section of SAP. The error only manifested when the ICPs were upgraded to HHM which changed where the GXP/Network information was derived from.</p> <p>3. 1 ICP missing from submission 0068548000WR39B has since been corrected. This was caused by Human error and staff have been advised and retrained.</p>	Ongoing	Identified
	Apr 2020	
	Completed	
	Completed	
Preventative actions taken to ensure no further issues will occur	Completion date	
We have reporting in place to identify discrepancies between our records and the distributor generation fields. We will ensure this report is actively monitored and worked on to allow for timely updates/corrections.	Completed	
Wrong NSP/network issue – ICT have implemented a fix in the system to reduce these errors. We have also updated our discrepancy reporting to identify any ICPs with correct NSPs & incorrect networks so these can be corrected prior to submission.	Completed	
We will look at implementing some new reporting to identify incorrect changes to older retailer time slices. This will allow timely corrections for accurate submission.	Completed	
	Ongoing	

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 IntelliHUB (for IntelliHUB and Counties Power meters), AMS (for AMS, Smartco and Arc meters) and Wells.

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

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 IntelliHUB, a read request is provided two days ahead of the scheduled read date. IntelliHUB then provides reads for the requested reads via SFTP for IntelliHUB 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 IntelliHUB (including Counties Power), AMS, Smartco, Arc and Wells from the source files to SAP. All readings matched.

Mercury are investigating holding all AMI data in a central data repository. This will require a material change audit at least five days prior to going live.

HHR

HHR read data is transferred via SFTP for EDMl and AMS. I traced a sample of volume data for five ICPs for EDMl 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, event detail report and audit compliance report for 01/02/19 to 31/12/19 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 01/02/19 to 31/12/19 and event detail report for 01/02/19 to 31/12/19 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

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

NHH New Connections

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 0007191883RN252 and 1000583955PCC97 had certification dates earlier than the active dates, but I confirmed by reviewing records, that the active dates were correct.
- I checked an additional 30 ICPs where the active date was different to the certification date or the IECD and the active date was correct in all cases.

Half Hour New Connections

Review of the registry list and event detail report did not identify any HHR ICPs which had their meters certified prior to Mercury's earliest active date.

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 processes were examined in detail to evaluate the strength of controls.

The registry list, audit compliance report and event detail report for the period 01/02/19 to 31/12/19 were analysed to confirm process compliance and that controls are functioning as expected.

Audit commentary

Active ICPs without metering

I checked 55 active ICPs where the metering category was 9 or blank and found:

- 51 were timing issues, either late nomination or late MEP updates,
- ICPs 0001630510TG5E3, 0004482560CN77D and 0001630512TG566 had their metering removed and have now been updated to inactive, and
- ICP 0006194400RN64D had an incorrect MEP nomination and is now resolved.

New Connections

As discussed in **section 2.9**, Mercury's new connections process only uses 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.

Analysis of the list file and event detail report found 75 (1.8%) of the 4,111 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 18 late certifications were checked. Six of the ICPs were definitely late certifications, the other 12 were late updates or incorrect dates. The previous audit recommended that Mercury advise the MEP where meter certification dates appeared to be incorrect on the registry. Mercury did not adopt this recommendation because they believe the responsibility should sit with the MEP and they should be accountable for their own errors.

Reconnected ICPs

Metering installations at 106 ICPs were not certified within five business days of reconnection. Mercury now has strong controls in place to identify uncertified metering at reconnected sites and requests are sent to MEPs to certify.

Bridged meters

Mercury confirmed five ICPs were bridged to reconnect during the audit period and were later unbridged. All were certified when unbridged. I confirmed that the 14 unbridged meters recorded in the last audit were recertified at the time of unbridging and incorrect dates were provided in the first instance.

Audit outcome

Non-compliant

Non-compliance	Description	
Audit Ref: 2.11 With: 10.33A From: 03-Apr-18 To: 31-Jan-19	At least six ICPs not certified within five business days of electrical connection. 106 ICPs not certified within five business days of electrical reconnection. 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 reporting is now in place to identify reconnected ICPs without certification. Improvements are required to ensure all new connections are certified within 5 business days. The audit risk rating is low as this has no direct impact on reconciliation.	
Actions taken to resolve the issue		Completion date
We now have strong controls in place to identify uncertified metering at reconnected sites and requests are sent to MEPs to certify.		Completed
Preventative actions taken to ensure no further issues will occur		Completion date

Mercury will continue our process of notifying MEPs when a reconnection is processed for an uncertified meter.	Completed	
We will look into implementing a process for MEP notification where meter certification dates appear incorrect in the registry.	Ongoing	
We will also look at using the AC020Trader22 reporting to measure the efficiency of our process.		

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 all 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. The previous audit report noted that an arrangement was not in place with IntelliHUB. There is now an arrangement in place.

Audit outcome

Compliant

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 07/01/20 and event detail report for 01/02/19 to 31/12/19 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 audit compliance report for 01/02/19 to 31/12/19, 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 20 late updates over 30 business days (or all late updates over 30 business days) for each inactive status type, and
- 36 late trader updates, including MEP nominations 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 updates has improved since the 2019 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	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%
	2020	5,348	4,425	923	14.52	82.74%
Change to electrically disconnected	2019	4,353	3,765	588	11.34	86.49%
	2020	4,060	3,548	512	7.07	87.39
Trader updates						
Trader updates, including MEP nominations	2019	85,069	8,117	76,952	37	9.5%
	2020	58,126	18,897	39,229	13.47	32.51

Status updates - reconnections

The level of compliance for reconnections has improved slightly 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.

923 updates were completed more than five business days after the event date. 325 of those were more than 30 business days after the event date, 95 were more than 120 business days after the event date and 17 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:

- six updates were due to a system issue where SAP changes the status from inactive to active when a meter change occurs, then the status needs to be corrected back to inactive - the incorrect status change goes back to the previous event date, even if this was for a prior period of ownership,
- 13 updates were as a result of reporting to identify consumption on disconnected ICPs, and
- one update was late due to a backdated switch

Status updates – inactive

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 512 of the 4,060 ICPs updated were updated more than five business days after the event date. 172 were updated more than 30 business days after the event date, 56 were more than 120 business days after the event date and one was more than 1,000 business days after the event date.

A sample of 20 late updates over 30 business days were checked:

- five late updates occurred because the status was changed back to “new connection in progress” so the active status event date could be corrected,
- five late updates were status corrections following the correct status being confirmed, and
- 10 late updates were caused by a combination of late paperwork confirming the disconnection and/or a delay in processing the paperwork

Trader updates

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 trader updates continue to occur in error caused by SAP’s switch in loader and switch out loader processes. Incorrect updates are identified by validation and then corrected. The updated fields appear to be random and not related to the specific ICP. They can include MEP nominations, ANZSIC codes, unmetered load or other trader fields.

18,897 trader updates (32.51%) were made were within five business days of the event date. 2,836 late updates were more than 30 business days after the event date, 256 were more than 120 business days, and none were more than 1,000 business days.

A sample of 36 late trader updates over five business days were examined:

- 10 updates were due to the switch loader error where trader fields are changed by SAP without explanation,
- 2 updates occurred for periods where Mercury was not the trader, and
- 24 updates were due to various processing issues.

The update types for the 26 ICPs where the change was genuine, were for the following fields:

- four ANZSIC codes,
- three unmetered load changes,
- five profile changes,
- nine MEP nominations, and
- five submission type changes.

Audit outcome

Non-compliant

Non-compliance	Description		
<p>Audit Ref: 3.3</p> <p>With: Clause 10 of schedule 11.1</p> <p>From: 01-Feb-19</p> <p>To: 31-Dec-19</p>	<p>Registry not updated within 5 business days of the event for some status updates, MEP nominations and trader updates.</p> <p>Potential impact: Medium</p> <p>Actual impact: Low</p> <p>Audit history: Multiple</p> <p>Controls: Weak</p> <p>Breach risk rating: 6</p>		
Audit risk rating	Rationale for audit risk rating		
Medium	<p>The controls are rated as weak because automated processes are contributing to the volume of backdated and incorrect updates to active and MEP nominations.</p> <p>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.</p>		
Actions taken to resolve the issue		Completion date	Remedial action status
<p>We recognize there are several factors contributing to late registry updates including system issues. We will be investigating these system issues as well as looking at how we can increase the timeliness of our registry updates in general.</p> <p>We have processes in place to follow up on outstanding service request jobs where paperwork may be delayed. We also have processes to identify consumption on inactive sites to allow for more timely status updates.</p> <p>We have implemented a MEP rejection process which has increased our level of compliance in this area.</p>		Apr 2021	Identified
		Completed	
		Completed	
Preventative actions taken to ensure no further issues will occur		Completion date	
<p>We will be reviewing our processes to identify areas for improvement to increase our level of compliance in registry updates.</p> <p>Meter change incorrect status updates – We are currently investigating this system issue and are working towards a resolution.</p> <p>System causing incorrect trader updates – Our IT team are currently looking into this system issue as high priority as this issue affects a number of areas. We have attached supporting evidence of this work.</p>		Dec 2020	
		Apr 2021	

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)):*
 - o *arrange for a final interrogation to take place prior to or upon meter removal (clause 11.18(3)(a)); and*
 - o *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 07/01/20 was examined to confirm whether all active ICPs have an MEP recorded.

1,220 MEP nomination rejections were identified on the event detail report, and 34 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 34 rejected nominations and found:

- 31 rejected HHR nominations had been created in error by the switch in or switch out loader, and
- three nominations were rejected by the MEP because an incorrect nomination was made.

As recorded in **section 2.11**, I checked 55 active ICPs where the metering category was 9 or blank and found:

- 51 were timing issues, either late nomination or late MEP updates,
- ICPs 0001630510TG5E3, 0004482560CN77D and 0001630512TG566 had their metering removed and have now been updated to inactive, and
- ICP 0006194400RN64D had an incorrect MEP nomination and is now resolved.

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: 01-Feb-19 To: 31-Dec-19	Some invalid MEP nominations were sent. Potential impact: Low Actual impact: Low Audit history: Multiple times 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
Mercury is aware of the issue that causes the invalid MEP nominations and we have processes in place to identify and fix these.		Completed	Identified
Preventative actions taken to ensure no further issues will occur		Completion date	
Our IT team are currently looking into this system issue as high priority as this issue affects a number of areas. We have attached supporting evidence of this work.		April 2021	

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 07/01/20, meter installation details report, and event detail report for 01/02/19 to 31/12/19 were analysed to confirm process compliance and that controls are functioning as expected.

Audit commentary

The table below shows the timeliness of new connection updates for the last four years.

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	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%
	2020	4,111	3,623	488	4.71	88%

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.

488 of the 4,000 updates to active for new connections were made more than five business days after the event date. The 20 latest status updates were checked, and I found the following:

- six of the examples were C&I HHR over Category 2 and all were due to late notification from the MEP,
- 12 Category 1 updates were due to late notification from the MEP,
- one ICP had the details sent to the incorrect retailer by the MEP, and
- one ICP was set up in SAP but the details did not flow through to the registry.

It appears there are some delays in finding out about ICPs electrically connected without Mercury's knowledge. I recommend the audit compliance report is run at least weekly to identify ICPs where the distributor has updated the Initial Electrical Connection date, but where Mercury has not received notification. This will at least identify some of the ICPs without notification.

I checked 30 of 100 ICPs where the distributor had updated the IECD but the status was not active. 20 were timing issues as the status was active by the audit date. A further seven were updated by the time of the report. Two were confirmed as not electrically connected and one is an SB ICP on the MRPD network at Atiamuri and should be Active.

Audit outcome

Non-compliant

Non-compliance	Description		
Audit Ref: 3.5 With: Clause 9 of schedule 11.1 From: 01-Feb-19 To: 31-Dec-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.		
Actions taken to resolve the issue		Completion date	Remedial action status
We note that these cases are mainly due to late notification from third parties. Mercury has processes in place to follow up on outstanding service request jobs to allow for more timely registry updates.		Completed	Identified
Preventative actions taken to ensure no further issues will occur		Completion date	

Mercury will investigate what further reporting and processes we can implement to improve compliance in this area. We will also look into the use of AC020Trader05.	Dec 2020	
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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 ANZSIC codes was examined.

The registry list as at 07/01/20 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 DUMML ICPs.

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

Unknown ANZSIC codes

There were 618 ICPs with ANZSIC code T994 "Don't know". This is an increase on last year. A sample of ten ICPs were checked. Five had been updated by the time of the audit and five were vacant and genuinely unknown.

ICP	ANZSIC	ANZSIC description	Comments
0452442079LCB10	T994	Don't know	Vacant, ANZSIC genuinely unknown
0373751087LCBE8	T994	Don't know	Vacant, ANZSIC genuinely unknown
0169552225LC54D	T994	Don't know	Vacant, ANZSIC genuinely unknown
0970267762LCD66	T994	Don't know	Vacant, ANZSIC genuinely unknown
0443711542LCE2B	T994	Don't know	Vacant, ANZSIC genuinely unknown

Accuracy of ANZSIC codes

I checked a sample of 84 active ICPs against google streetview. It wasn't possible to tell if the code was correct or not for 17. 55 appeared correct. 12 codes appeared to be incorrect as shown below.

ICP	ANZSIC	ANZSIC description	Industry from streetview
000000009DE2B8	T994	Don't know	Residential
0000000125TEDB6	I530	Warehousing and Storage Services	Agriculture
0000000335TED1C	K641	Auxiliary Finance and Investment Services	Residential
0000000415NTB8D	R911	Sport and Physical Recreation Activities	Residential
0000000526DE536	L672	Real Estate Services	Residential
0000000527DE973	L672	Real Estate Services	Residential
0000000535TEB1A	S953	Other Personal Services	Agriculture
0000000574NT13C	A016	Dairy Cattle Farming	Residential
0000000783TE220	S955	Civic Professional and Other Interest Group Services	Cruising club
0000000884TE0E5	M696	Management and Other Consulting Services	Restaurant
0000000889DE7FF	L672	Real Estate Services	Residential
0000001026UH3A0	A016	Dairy Cattle Farming	Residential

Audit outcome

Non-compliant

Non-compliance	Description
<p>Audit Ref: 3.6</p> <p>With: 9 (1(k) of Schedule 11.1</p> <p>From: 01-Feb-19</p> <p>To: 31-Dec-19</p>	<p>618 with "Don't know" ANZSIC codes assigned. Some of these will be invalidly assigned.</p> <p>12 of the 84 ICPs checked had incorrect ANZSIC codes assigned.</p> <p>Potential impact: Low</p> <p>Actual impact: Low</p> <p>Audit history: Multiple</p> <p>Controls: Moderate</p> <p>Breach risk rating: 2</p>
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
Mercury will correct the ANZSIC codes for the 12 identified ICPs. We will review our processes to ensure ANZSIC codes are updated timely and accurately with the data we have available.		April 2020 Ongoing	Identified
Preventative actions taken to ensure no further issues will occur		Completion date	
Mercury will investigate the most efficient way to ensure ANZSIC codes are updated timely and accurately with the data we have available.		Ongoing	

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 07/01/20 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.

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

As recorded in **section 2.11**, I checked 55 active ICPs where the metering category was 9 or blank and found:

- 51 were timing issues, either late nomination or late MEP updates,
- ICPs 0001630510TG5E3, 0004482560CN77D and 0001630512TG566 had their metering removed and have now been updated to inactive, and
- ICP 0006194400RN64D had an incorrect MEP nomination and is now resolved.

There were also 12 DUML ICPs with unmetered load recorded as “N”. Mercury confirmed that the registry could not be updated to “Y” for these because the settlement type is HHR.

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

15 active ICPs with unmetered load recorded by the distributor do not have unmetered load recorded by Mercury. 12 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. Two of the other three have been corrected but ICP 0000500096HB752 still has the unmetered flag as “N”.

Accuracy of trader unmetered daily kWh

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

11 ICPs have a difference between Mercury’s daily unmetered kWh field and the distributor’s details of more than 0.1 kWh. I checked all 11 and found that Mercury’s details were correct for nine and the distributor’s field was correct for two. Mercury has updated their fields now.

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		
<p>Audit Ref: 3.7</p> <p>With: Clause 9(1)(f) of Schedule 11.1</p> <p>From: 01-Feb-19</p> <p>To: 31-Dec-19</p>	<p>ICP 0000500096HB752 has the unmetered flag as “N” but unmetered load is connected.</p> <p>Unmetered details incorrect for two ICPs. Both were corrected back to the start of the ICPs.</p> <p>ICP 0015723581ELA43 has a single-phase meter on a telecommunications amplifier with a multiplier of 101 to cater for an additional 100 unmetered load connections.</p> <p>Potential impact: Medium</p> <p>Actual impact: Medium</p> <p>Audit history: Multiple</p> <p>Controls: Moderate</p> <p>Breach risk rating: 4</p>		
Audit risk rating	Rationale for audit risk rating		
Medium	<p>I have rated the controls as moderate as the registry discrepancy process will identify most errors.</p> <p>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.</p>		
Actions taken to resolve the issue		Completion date	Remedial action status
<p>0000500096HB752 – This has now been fixed in the registry.</p> <p>0015723581ELA43 – We have approached the distributor for assistance with this ICP but are yet to have received a response. We will continue trying to liaise with the distributor to resolve this. This is a Vodafone ICP which will be worked on alongside the establishment of their DUMML database.</p>		<p>Apr 2020</p> <p>Apr 2021</p>	Investigating
Preventative actions taken to ensure no further issues will occur		Completion date	
<p>We will review our current SAS reporting & processes to ensure all discrepancies are identified and corrected.</p> <p>0015723581ELA43 – We have approached the distributor for assistance with this ICP but are yet to have received a response. We will continue trying to liaise with the distributor to resolve this. This is a Vodafone ICP which will be worked on alongside the establishment of their DUMML database.</p>		<p>Sep 2020</p> <p>April 2021</p>	

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 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 01/02/19 to 31/12/19 was analysed. Findings on the timeliness of active status updates are recorded in **sections 3.3** and **3.5**.

The list file as at 07/01/20 was analysed to identify ICPs 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 new connections.

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

There were 2,957 ICPs where the active date was different to either the certification date or the IECD. For 2,825 the IECD was blank, leaving 132 ICPs. Of the 132, I excluded blank certification dates, which left 36 ICPs. I checked all 36 and found Mercury’s date was correct in all cases.

The 2018 audit stated Mercury were awaiting a system enhancement before they 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.

Reconnections

As discussed in **sections 2.1** and **3.3**, six active status updates were due to a system issue where SAP changes the status from inactive to active when a meter change occurs, then the status needs to be corrected back to inactive. The incorrect status change goes back to the previous event date, even if this was for a prior period of ownership

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: 01-Feb-19 To: 31-Dec-19	6 reconnections updates were invalidly processed. 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 impact on settlement and participants is minor; therefore, the audit risk rating is low.		
Actions taken to resolve the issue		Completion date	Remedial action status
The 6 incorrect status updates have been corrected. Mercury is aware of the system issue that causes the invalid status changes and we have processes in place to identify and fix these.		Completed.	Identified
Preventative actions taken to ensure no further issues will occur		Completion date	
We are currently investigating this system issue and are working towards a resolution.		Dec 2020	

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 01/02/19 to 31/12/19 was analysed to identify all disconnections during the period.

The accuracy of reason codes and status details was checked as part of the analysis for late updates.

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.

The checks for backdated status changes to active identified 13 ICPs recorded as inactive, where consumption was present, indicating an incorrect status.

Five ICPs were identified with the incorrect active status when disconnection jobs were raised, and it was found they were already disconnected.

Audit outcome

Non-compliant

Non-compliance	Description		
Audit Ref: 3.9 With: Clause 19 Schedule 11.1 From: 01-Feb-19 To: 31-Dec-19	18 ICPs with incorrect inactive status. 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
Our reporting frequency for monitoring inactive ICPs with usage has been increased to weekly to identify incorrect inactive status sooner.		Completed	Identified
Preventative actions taken to ensure no further issues will occur		Completion date	
Our reporting frequency for monitoring inactive ICPs with usage has been increased to weekly to identify incorrect inactive status sooner.		Completed	

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 325 ICPs at "ready" status for two years or more, and no ICPs at "new" status for two years or more. 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 all files checked.

Audit outcome

Compliant

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 01/02/19 to 31/12/19 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.

AN content

I reviewed the AN codes applied for 25 transfer AN files, and found incorrect codes were applied for 14 ICPs. Ten ICPs had the AA code and should have had the AD code. Four had the AD code and should have had the AA code. There were a further 3,585 AN files with the AA response code where AMI metering was present.

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 7,064 transfer ANs to assess compliance with the setting of event dates requirements.

- 3,770 (53%) had a proposed event date within five business days of the NT receipt date.
- 100% 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		
<p>Audit Ref: 4.2</p> <p>With: Clauses 3 & 4 of schedule 11.3</p> <p>From: 03-Aug-18</p> <p>To: 08-Jan-19</p>	<p>Four AN files checked contained incorrect response codes of AD.</p> <p>3,585 AN files contained incorrect response codes of AA.</p> <p>Two late AN files.</p> <p>Potential impact: None</p> <p>Actual impact: None</p> <p>Audit history: Three times</p> <p>Controls: Moderate</p> <p>Breach risk rating: 2</p>		
Audit risk rating	Rationale for audit risk rating		
Low	<p>I have rated the controls as moderate, because</p> <ul style="list-style-type: none"> • some AN codes assigned automatically by SAP were incorrect, and • users being unable to automatically clear validation issues are contributing to the late files. <p>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 late.</p>		
Actions taken to resolve the issue		Completion date	Remedial action status
Mercury put previous system changes on hold, awaiting the Authority's switching technical group review. Mercury will commit to making the necessary changes to become compliant with the current code.		Dec 2020	Identified
Preventative actions taken to ensure no further issues will occur		Completion date	
<p>Mercury commits to making the necessary logic change to ensure the correct AN codes are used. This will be raised with our IT team.</p> <p>We will investigate the issue where SAP is not enabling an AN file to be released.</p>		Dec 2020	

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 01/02/19 to 31/12/19 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 13 late transfer CS files.

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. The methodology was changed in January 2020 to the last read to read period. This is likely to be less accurate but will be compliant.

Analysis of estimated daily kWh on the event detail report identified:

Count of transfer CS files	Estimated daily kWh
Negative	-
Zero	45
More than 200 kWh	28

A sample of 20 of these ICPs were checked (six with zero and 14 with more than 200 kWh). I found that five of the zeros were correct, but one was incorrect. One of the 14 with consumption over 200 kWh was incorrect and related to a meter rollover.

I reviewed a sample of ten transfer switch CS files, all of which were created by SAP. All of the fields checked were correct compared to SAP.

I checked 15 ICPs (29 registers and a combination of TR and MI switches) where estimates were received by Mercury in CS files to confirm these estimates were used as start readings. One exception was found for ICP 0000570766NR645, where the CS file contained an estimate of 00130 but Mercury used 00049 which was obtained from a meter change record. 00049 appears to be correct but an RR was not sent. This is recorded as non-compliance in **section 4.4**.

The issue found last time, where readings from incorrect dates were used was not found during this audit.

Audit outcome

Non-compliant

Non-compliance	Description		
Audit Ref: 4.3 With: Clause 5 of schedule 11.3 From: 01-Feb-19 To: 31-Dec-19	Two files with incorrect average daily consumption. 13 late transfer CS files. Potential impact: Low Actual impact: Low Audit history: Three times Controls: Strong Breach risk rating: 1		
Audit risk rating	Rationale for audit risk rating		
Low	I have rated the controls as strong. Mercury strengthened controls regarding monitoring for file timeliness and they changed the methodology for calculating average daily consumption. Processes were changed to ensure the correct readings are applied in CS files. The audit risk rating is assessed to be low, based on the small number of exceptions.		
Actions taken to resolve the issue		Completion date	Remedial action status
Mercury implemented a logic change in late Jan 20 to comply with the EA requirements for average daily consumption. We will continue to monitor our switch breach report for timely transfers.		Jan 2020	Identified
Preventative actions taken to ensure no further issues will occur		Completion date	
Mercury expects to see greater compliance for average daily consumption following our recent logic change. We will continue to monitor our switch breach report for timely transfers. IT is also currently working on additional reporting to identify files that have failed to be sent or received by SAP. This will help the switch team in preventing late files.		Completed Dec 2020	

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 01/02/19 to 31/12/19 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 five late RRs for transfer switches. One was late because liaison with the other trader took some time. The other four were late because customers did not query their invoices for several months..

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 a metering investigation was underway.

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 it is 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.

Mercury issued 51 RR files for transfer switches. 36 were accepted and 15 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. No issues were identified.

Mercury issued eight AC files for transfer switches. Four were accepted and four were rejected. All examples were checked. All were rejected for valid reasons SAP reflected the correct outcome of the RR process.

As mentioned in **section 4.3**, one exception was found for ICP 0000570766NR645, where the CS file contained an estimate of 00130 but Mercury used 00049 which was obtained from a meter change record. 00049 appears to be correct but an RR was not sent.

Audit outcome

Non-compliant

Non-compliance	Description
<p>Audit Ref: 4.4</p> <p>With: Clauses 6(1) and 6A Schedule 11.3</p> <p>From: 22-Jun-18</p> <p>To: 18-Jan-19</p>	<p>5 late RR files and two late AC files for transfer switches.</p> <p>RR not sent for ICP 0000570766NR645 and reading from CS file was not used.</p> <p>Potential impact: Low</p> <p>Actual impact: Low</p> <p>Audit history: Three times</p> <p>Controls: Strong</p> <p>Breach risk rating: 1</p>
Audit risk rating	Rationale for audit risk rating
Low	<p>Controls are recorded as strong because they appear to minimise risk to an acceptable level.</p> <p>The audit risk rating is low because there were only a small number of late files and only one issue was identified with the process.</p>
Actions taken to resolve the issue	
Completion date	Remedial action status

<p>We will continue to monitor our switch breach report for timely transfers. Further clarification is required on how to be compliant in situations where a RR is required but is outside of the allowed timeframe.</p> <p>RR not sent for ICP 0000570766NR645 was due to human error and is not a common occurrence. Further staff training has been provided.</p>	Completed	Identified
Preventative actions taken to ensure no further issues will occur	Completion date	
<p>We will continue to monitor our switch breach report for timely transfers. Further clarification is required on how to be compliant in situations where a RR is required but is outside of the allowed timeframe.</p> <p>IT is also currently working on additional reporting to identify files that have failed to be sent or received by SAP. This will help the switch team in preventing late files.</p>	Dec 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 01/02/19 to 31/12/19 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.

All rejected RR files were rejected for genuine reasons, either because the Mercury read was confirmed as correct or because a withdrawal was imminent.

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 15 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 15 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:*
 - o *confirmation of the switch event date; and*
 - o *a valid switch response code; and*
 - o *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—*
 - o *is not earlier than the gaining trader's proposed event date, and*
 - o *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 01/02/19 to 31/12/19 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

The switch breach report recorded two late AN files for switch moves, due to the automation process not operating as expected and needing to be done manually.

AN file content

I reviewed the AN codes applied for ten switch move AN files, and found they were all correct.

Analysis of the event detail report identified that 211 ICPs with AMI metering had an AA response code instead of the AD response code.

The event detail report was reviewed for all 1,697 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

- 26 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-Feb-19 To: 31-Dec-19	211 incorrect switch response codes of AA instead of AD. 26 ANs had non-compliant proposed event dates. 2 late switch move AN files. 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	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. All of the switches with non-compliant proposed event dates were switched out on the event date requested by the gaining trader or were withdrawn before the switch was completed.		
Actions taken to resolve the issue		Completion date	Remedial action status
Mercury will make the necessary changes to the logic for the AN file creation to comply with the EA code. This will address the incorrect response codes as well as the non-compliant proposed event dates.		Dec 2020	Identified
Preventative actions taken to ensure no further issues will occur		Completion date	
Mercury will make the necessary changes to the logic for the AN file creation to comply with the EA code. This will address the incorrect response codes as well as the non-compliant proposed event dates.		Dec 2020	

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 01/02/19 to 31/12/19 was reviewed to identify AN files issued by Mercury during the audit period, and assess compliance with the requirement to provide the CS file within 10 business days.

Audit commentary

No CS files with different event dates than the dates proposed were sent later than 10 business days.

Audit outcome

Compliant

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 01/02/19 to 31/12/19 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

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 2,841 late switch move CS files. I checked the accuracy of this information by recalculating from the event detail report and did not identify any late CS files. I then manually checked a sample of 20 to confirm by findings.

CS content

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. The methodology was changed in January 2020 to the last read to read period. This is likely to be less accurate but will be compliant.

Analysis estimated daily kWh on the event detail report identified:

Count of switch move CS files	Estimated daily kWh
Negative	-
Zero	26
More than 200 kWh	8

A sample of ten of these ICPs were checked (five with zero and five with more than 200 kWh). I found that one of the zeros was incorrectly calculated, and three other ICPs differed from the consumption for the last read to read period.

I checked 15 ICPs (29 registers and a combination of TR and MI switches) where estimates were received by Mercury in CS files to confirm these estimates were used as start readings. In all cases the correct readings were used for MI switches.

The issue found last time, where readings from incorrect dates were used was not found during this audit.

I reviewed a sample of ten transfer switch CS files, all of which were created by SAP. All of the fields checked were correct compared to SAP.

Audit outcome

Non-compliant

Non-compliance	Description		
Audit Ref: 4.10 With: Clause 11 of schedule 11.3 From: 01-Feb-20 To: 31-Dec-19	Average daily consumption incorrect for 4 ICPs. Potential impact: Low Actual impact: Low Audit history: Three times Controls: Strong Breach risk rating: 1		
Audit risk rating	Rationale for audit risk rating		
Low	I have rated the controls as strong because they have been recently improved to ensure correct average daily consumption is provided. The audit risk rating is assessed to be low based on the low number of exceptions.		
Actions taken to resolve the issue		Completion date	Remedial action status
Mercury implemented a logic change in late Jan 20 to comply with the EA requirements for average daily consumption.		Completed	Identified
Preventative actions taken to ensure no further issues will occur		Completion date	
Mercury expects to see full compliance for average daily consumption following our recent logic change.		Completed	

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 01/02/19 to 31/12/19 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 five late RRs for move switches. Two of these were for the same ICP, where the other trader would not accept the RR even though the difference was greater than 200 kWh. Mercury ended up using the reading from the CS file, even though it was incorrect, to ensure continuous billing for the customer. Another ICP had the original RR sent on time but it was rejected, the second RR was sent late, with different readings to the first RR, and it was accepted. The other two were late due to late identification of the error.

Two AC files were late due to manual processing needing to be employed.

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.

Mercury issued 343 RR files for switch moves. 257 were accepted and 86 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. Two issues were identified; the RR readings for ICP 0000001544CPD7F were identified as actuals but they were estimates, and the readings for ICP 0000159559UN602 were rejected by the other trader, so Mercury should have changed their readings back to those provided in the CS file but for register 2 they used 35,465 and not 36,201.

Mercury issued 10 AC files for switch moves. One was accepted and nine were rejected. All rejections were checked. Eight were rejected for valid reasons and SAP reflected the outcome of the RR process. For ICP 0327592044LC403 the RR was rejected three times when it should have been accepted because Mercury's read was from eight years prior and the other trader's reading was correct.

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
<p>Audit Ref: 4.11</p> <p>With: Clause 12</p> <p>Schedule 11.3</p> <p>From: 08-Jun-18</p> <p>To: 08-Feb-19</p>	<p>One RR was sent with a read type of actual when Mercury did not have an actual reading on the event date.</p> <p>Incorrect reading used when the Mercury RR was rejected.</p> <p>5 late RR files and 2 late AC files for switch moves.</p> <p>One incorrect RR rejection.</p> <p>Potential impact: Low</p> <p>Actual impact: Low</p> <p>Audit history: Three times</p> <p>Controls: Moderate</p> <p>Breach risk rating: 2</p>
Audit risk rating	Rationale for audit risk rating
Low	<p>The controls are recorded as moderate because they mitigate risk most of the time but there is room for improvement.</p> <p>The impact on settlement and participants is minor; therefore, the audit risk rating is low.</p>
Actions taken to resolve the issue	
Completion date	Remedial action status

<p>-One RR was sent with a read type of actual when Mercury did not have an actual reading on the event date.</p> <p>-Incorrect reading used when the Mercury RR was rejected.</p> <p>-One incorrect RR rejection</p> <p>These scenarios were due to human error. Further staff training has been provided.</p> <p>-5 late RR files and 2 late AC files for switch moves.</p> <p>We will continue to monitor our switch breach report for timely transfers. Further clarification is required on how to be compliant in situations where a RR is required but is outside of the allowed timeframe.</p>	Completed	Identified
	Ongoing	
Preventative actions taken to ensure no further issues will occur	Completion date	
<p>We will continue to monitor our switch breach report for timely transfers. Further clarification is required on how to be compliant in situations where a RR is required but is outside of the allowed timeframe.</p> <p>IT is also currently working on additional reporting to identify files that have failed to be sent or received by SAP. This will help the switch team in preventing late files.</p>	<p>Ongoing</p> <p>Dec 2020</p>	

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 12 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 12 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.

Analysis of the two late AN files showed they were both one day late. These were both due to processing issues.

Audit outcome

Non-compliant

Non-compliance	Description		
Audit Ref: 4.13 With: Clause 15 Schedule 11.3 From: 08-Jul-19 To: 28-Nov-19	Two late AN files for HH switches. Potential impact: Low Actual impact: Low Audit history: Once Controls: Strong Breach risk rating: 1		
Audit risk rating	Rationale for audit risk rating		
Low	I have rated the controls as strong because they are sufficient to mitigate risk to an acceptable level. 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
One late AN file due to customer indecision on preferred retailer causing delay. One AN file delayed due to internal process which we have identified and will focus on for future switches.		Completed	Identified
Preventative actions taken to ensure no further issues will occur		Completion date	
We will continue with our strong controls to ensure breaches are avoided. We will also increase our focus on ensuring the customer and sales team firm their decision before we engage in registry actions.		Ongoing	

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 did not contain any late CS files.

Audit commentary

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

CS content was as expected apart from one CS file which was sent with METERINSTALL, METERCOMP and METERCHANNEL rows. This was merely a processing error with no impact.

Audit outcome

Non-compliant

Non-compliance	Description		
Audit Ref: 4.14 With: Clause 16 of schedule 11.3 From: 07-Oct-19 To: 07-Oct-19	One HH CS files was sent with METERINSTALL, METERCOMP and METERCHANNEL rows. Potential impact: None Actual impact: None Audit history: Once Controls: Strong Breach risk rating: 1		
Audit risk rating	Rationale for audit risk rating		
Low	I have rated the controls as strong because they mitigate risk to an acceptable level. I have recorded the audit risk rating as low because the issue noted has no impact.		
Actions taken to resolve the issue		Completion date	Remedial action status
This happened as the gaining retailer requested site as NHHR. Therefore entered 0 to complete CS without breach.		Complete	Identified
Preventative actions taken to ensure no further issues will occur		Completion date	
In future, if an incorrect request is received, we will reject the NT and request the gaining retailer to re-request correctly.		Ongoing	

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 01/02/19 to 31/12/19 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 34 withdrawal requests rejected by other traders,
- identify all switch withdrawal acknowledgements issued by Mercury, a sample of 11 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 did not record any late NW files.

136 NWs were issued more than 62 business days after the event date. 65 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. Non-compliance is recorded for all 136 late files.

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 four late AW files. All were one day late and were due to SAP issues.

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 14 of 15 were correctly recorded. One reason was WR but should have been WP.

117 (5.2%) of the 2,260 AWs issued by Mercury were rejections. I reviewed a sample of 11 rejections by Mercury, and confirmed they were rejected based the information available at the time the response was issued. Two NWs were rejected once 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: 01-Feb-19 To: 31-Dec-19	136 late NW files and 4 late AW files. One incorrect NW code 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 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
Mercury has robust processes in place to handle withdrawals. In some instances, our files have failed to send, causing delay. There are also cases that involve lengthy investigations to resolve complex issues where late withdrawals are inevitable.		Ongoing	Identified
Preventative actions taken to ensure no further issues will occur		Completion date	
IT are currently working on additional reporting to identify files that have failed to be sent or received by SAP. This will help the switch team in preventing late files.		Dec 2020	

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.

I did not identify any incorrect switch event meter readings.

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

Audit outcome

Compliant

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 01/02/19 to 31/12/19 to 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 07/01/20 was reviewed to identify all shared unmetered load.

Audit commentary

Mercury supplies 84 ICPs with shared unmetered load. All have the unmetered flag set to Y and daily unmetered kWh recorded.

For all 84 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 07/01/20 was reviewed to identify all unmetered load over 3,000 kWh per annum.

Audit commentary

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

21 ICPs had a load greater than 6,000 kWh. 12 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: 15-Mar-20	Nine standard unmetered ICPs with unmetered consumption over 6,000 kWh per annum. Potential impact: Medium Actual impact: Medium Audit history: Once 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
All 9 ICPs relate to Vodafone. Mercury & Vodafone are currently in the process of gathering all required data to establish a DUMML database for these ICPs. We are also investigating which sites should become metered. Mercury commits to establishing the DUMML database with Vodafone and we are engaging Veritek to ensure the database will be accurate and compliant.		Apr 2021	Identified
Preventative actions taken to ensure no further issues will occur		Completion date	
Mercury will review our processes to ensure we have adequate steps in place to resolve these sites promptly when customers are acquired.		Ongoing	

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:*
 - o *the date the limit was calculated or estimated to have been exceeded*
 - o *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 07/01/20 was reviewed to identify all unmetered load over 3,000 kWh per annum.

Audit commentary

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

21 ICPs had a load greater than 6,000 kWh. 12 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 DUMML 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 more than two years 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: 15-Mar-20	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: Once 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
All 9 ICPs relate to Vodafone. Mercury & Vodafone are currently in the process of gathering all required data to establish a DUMML database for these ICPs. We are also investigating which sites should become metered. Mercury commits to establishing the DUMML database with Vodafone and we are engaging Veritek to ensure the database will be accurate and compliant.		Apr 2021	Identified
Preventative actions taken to ensure no further issues will occur		Completion date	
Mercury will review our processes to ensure we have adequate steps in place to resolve these sites promptly when customers are acquired.		Ongoing	

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 12 distributed unmetered load databases.

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-	17/1/20	No	Yes	Yes	No	No	Yes	Yes	No	No
Rotorua Lakes DC	21/02/20	No	Yes	No	Yes	No	Yes	Yes	Yes	No
Avondale Business Association	24/5/19	No	Yes	Yes	Yes	No	Yes	No	No	No
Ardmore Airport	23/5/19	No	Yes	No	Yes	No	Yes	No	No	No
NuLite	21/02/20	No	Yes	Yes	No	No	Yes	Yes	No	No
Acacia Cove	23/5/19	No	Yes	No	Yes	No	Yes	No	No	No
IntelliHUB Gatekeeper ICPs	15/5/18	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Masterton DC	12/2/20	No	Yes	Yes	No	Yes	Yes	Yes	No	No
Carterton DC	First audit for Mercury is due to be completed by 1/06/20									
South Wairarapa DC	First audit for Mercury is due to be completed by 1/06/20									
Selwyn DC	First audit for Mercury is due to be completed by 31/03/20									
Vodafone	A database does not exist for Vodafone, Mercury is working with the customer to create one.									

Audit outcome

Non-compliant

Non-compliance	Description		
<p>Audit Ref: 5.4</p> <p>With: Clauses 11(1) of schedule 15.3, 10.14 & 15.13</p> <p>From: 01-Feb-19</p> <p>To: 15-Mar-20</p>	<p>Errors found in seven databases. The specific findings are detailed in the DUMML database audit reports.</p> <p>Potential impact: High</p> <p>Actual impact: High</p> <p>Audit history: Multiple</p> <p>Controls: Weak</p> <p>Breach risk rating: 9</p>		
Audit risk rating	Rationale for audit risk rating		
High	<p>The controls are rated as weak due to the level of errors found.</p> <p>The impact is assessed to be high, based on the kWh differences found in the DUMML audits.</p>		
Actions taken to resolve the issue		Completion date	Remedial action status
<p>Mercury is continuing to work with customers to maintain accurate databases and resolve non compliances identified in individual DUMML audits.</p> <p>Unmetered load is an industry wide issue with which all traders struggle with and display reluctance to switch these sites.</p> <p>Mercury inherited inadequate DUMML database information for some customers from previous retailers. Customers regularly have limited/no knowledge of installations to allow for timely corrections.</p>		Ongoing	Investigating
Preventative actions taken to ensure no further issues will occur		Completion date	
<p>Mercury will review our processes to ensure we have adequate steps in place to resolve these sites promptly when customers are acquired.</p> <p>We will continue to work with existing customers to maintain accurate databases and resolve non compliances identified in individual DUMML audits.</p>		Ongoing	

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 list file was examined to confirm that all ICPs either had metering or were confirmed to be unmetered sites.

The registry list for 07/01/20 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.

Any ICPs which had their meters bridged during the audit period were identified.

Audit commentary

Metering installations installed

The list file was examined and identified 55 active ICPs with no MEP recorded, or with meter category 9 recorded and the UML flag set to “N”. These ICPs were examined in **section 3.7** and found 52 were due to timing differences. Three ICPs have since been updated to an “inactive” status.

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 3,607 active ICPs with distributed generation recorded by the Distributor. 3,513 had the RPS or HHM profiles.

3,478 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 due to a limitation in SAP which can only record three characters for a profile. The incorrect profiles on the registry are recorded as non-compliance in **section 2.1**.

129 of the 3,607 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 50 ICPs without injection/export metering were reviewed to determine whether distributed generation was present. The list of ICPs being with generation being gifted was examined. The findings are listed below:

- 21 ICPs do not have generation installed,
- 12 ICPs have since had generation metering installed, and generation consumption is being measured and reported in accordance with the code,
- eight ICPs have generation installed, but have no generation metering installed and are not being submitted for and are not on the gifting register,
- five ICPs are being gifted, four of these relate to Tesla batteries installed by Vector,
- three ICPs are in the process of having generation metering installed, and
- ICP 0004922952WE458 is a TOU site with no import export metering installed; Mercury are confirming with the customer whether the generation is exporting to the grid.

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.

The eight ICPs with generation installed but where the generation is not being quantified are recorded as non-compliance.

Bridged meters

Mercury confirmed five 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
<p>Audit Ref: 6.1</p> <p>With: Clause 10.13</p> <p>From: 01-Feb-19</p> <p>To: 31-Dec-19</p>	<p>While meters were bridged, energy was not metered and quantified according to the code for five ICPs.</p> <p>Some ICPs with distributed generation not quantified.</p> <p>Potential impact: Low</p> <p>Actual impact: Low</p> <p>Audit history: Multiple times</p> <p>Controls: Moderate</p> <p>Breach risk rating: 2</p>
Audit risk rating	Rationale for audit risk rating

Low	<p>Controls are rated as moderate as they are sufficient to reduce the risk most of the time.</p> <p>The audit risk rating is low:</p> <ul style="list-style-type: none"> 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
<p>Mercury will continue to bridge meters on an as need basis in the best interest of our customers. In some cases, bridging is unavoidable which in turn means compliance is unattainable. We have strong processes in place to ensure all consumption is quantified and reported in a timely manner.</p> <p>We have reporting in place to identify discrepancies between our records and the distributor generation fields which was not being monitored as intended. We will look at correcting any current discrepancies and ensure energy is quantified through washups.</p>		N/A	Identified
		Apr 2020	
Preventative actions taken to ensure no further issues will occur		Completion date	
<p>We have reporting in place to identify discrepancies between our records and the distributor generation fields. We will ensure this report is actively monitored and worked on to allow for timely updates/corrections.</p>		Ongoing	

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	12/01/2020	GG
MRPL	ATI0111	ATIAMURI	ATI0111LINENP	MRPL	7/02/2021	NP
MRPL	ATI0111	ATIAMURI	ATI0111MRPDNP	MRPL	7/02/2021	NP
MRPL	ATI0112	ATIAMURI	ATI0112HAWKNP	MRPL	26/07/2023	NP
MRPL	ATI0112	ATIAMURI	ATI0112MRPDNP	MRPL	26/07/2023	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	25/01/2021	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	29/01/2020	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 is expected to advise the Mercury Energy

Services team of any changes to the NSP table required via email. The Energy Services team then create an AV180 report detailing the NSP changes and submit it to the Reconciliation Manager.

Seven NSPs are recorded with expired certification:

NSP	Certification expiry date recorded	Correct Certification expiry date
ARI1102MRPLGG	12/01/2020	16/12/2022
WKM2201TUARGN	29/01/2020	15/05/2022
ARA2201MRPLGG	25/08/2019	12/10/2021
ARI1101MRPLGG	13/01/2020	16/12/2022
KAW1101KRGLGG	27/08/2019	16/12/2022
MTI2201MRPLGG	3/10/2019	16/12/2022
SWN2201MRPLGG	1/02/2020	1/02/2020

The meter certificates for all seven NSPs with expired certifications at the time of the audit analysis have been sent to the Reconciliation Manager on 11/03/20. This is recorded as non-compliance below.

Three updates were processed more than 10 business days after re-certification. Mercury are reviewing this process to ensure timely updates.

NSP	Certification date	Certification expiry date	Date updated	Days between cert and update
ATI0112HAWKNP	26/07/2018	26/07/2023	8/05/2019	195
ATI0112MRPDNP	26/07/2018	26/07/2023	8/05/2019	195
KPO1101MRPLGG	25/01/2018	25/01/2021	7/05/2019	319

The three late updates are recorded as non-compliance below.

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: 23-May-19 To: 11-Mar-20	Seven meter certificate expiry dates not updated. Three meter certification expiry dates were updated late. Potential impact: Low Actual impact: None Audit history: Three times Controls: Weak Breach risk rating: 3		
Audit risk rating	Rationale for audit risk rating		
Low	The controls are assessed as weak as no updates occurred within the required timeframe. The risk is low because the meters were appropriately certified at all times.		
Actions taken to resolve the issue		Completion date	Remedial action status
Mercury has now updated all expiry dates on the RM portal. The delay was caused by personnel and responsibility changes.		Completed	Identified
Preventative actions taken to ensure no further issues will occur		Completion date	
Mercury will review our internal processes to ensure timely updates.		July 20	

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 01/02/19 to 31/12/19 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 ten examples of potential defective meters, and five bridged meters. In all cases a field services job was raised, and the MEP advised.

Because AMS and EDM's audits were completed more than seven months ago, I checked defective meters identified since their June and May 2019 respective 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 it 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 EDM'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 June and May 2019 respective audits.

Clock synchronisation event information is emailed to Mercury by its agents and MEPs. I reviewed some recent examples of clock synchronisation events sent by AMS and IntelliHUB for AMI meters and noted that no action by Mercury had been required except for one AMS meter. Mercury took the appropriate actions to resolve.

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 May 2019 and found to be compliant. I confirmed with Wells that there were no changes to their processes or systems since their May 2019 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. No phase failure issues have been reported by Wells during the audit period.

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

I checked a sample of five 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 validated readings. Estimated reads become permanent estimates, which are labelled as validated reads, therefore subsequent estimated reads are being validated against earlier estimates. I reviewed six examples of customer readings and found that all had been appropriately validated against actual readings from other sources with the exception of ICP 0000826380WPB15 where a customer read was validated against two readings identified as validated reads but one of these was an earlier estimation. This is recorded as non-compliance because validation must occur against validated readings, not estimates.

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

Non-compliant

Non-compliance	Description		
Audit Ref: 6.6 With: Clause 5 of Schedule 15.2 From: 01-Feb-19 To: 31-Dec-19	Customer reads are not validated against two actual validated reads resulting in estimates being validated against estimates. Potential impact: Low Actual impact: Low Audit history: None Controls: Weak Breach risk rating: 3		
Audit risk rating	Rationale for audit risk rating		
Low	Controls are rated as weak as the validation process is validating reads against earlier validated estimates. The audit risk rating is rated as low as the volume of customer reads is low as a percentage of reads .		
Actions taken to resolve the issue		Completion date	Remedial action status
Mercury disagrees with auditor's findings and the control rating as we have a robust and strong controls in place. The example picked up by the auditor was validated against a permanent estimate which is a validated meter reading as it has gone through and passed Mercury's validation process thus meeting the code requirement. Mercury's process has not changed, and we are puzzled to only find out now that we are non-compliant as per the report. As the reading goes through Mercury's validation system with a pass, it locks the record as permanent estimate after customers are billed.		N/A	Disputed
Preventative actions taken to ensure no further issues will occur		Completion date	
As above.		N/A	

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** and confirmed that all reads were correctly applied.

Audit outcome

Compliant

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 no reads process is managed by our Readings Management team. A weekly no-reads report is produced by our IT department (ICT) and deposited in a directory for consumption by the Price and Quantity team. These Reports have been refined and automated during the audit period to an extent to better identify issues and get those requiring action to the appropriate team without the need of the Risk Control team manually screening reports.

A customer engagement list is derived from the filtering process and customer communications in the form of emails, texts and letters are sent out in weekly tranches. This has been in place for over a year. Customer responses spawn further engagement actions to resolve access and device issues. For those requiring further investigation the process is unchanged and comments are added 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 Readings Management 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's current process 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 and an estimated read is calculated and used for reconciliation, billing and read attainment reporting, unbillable reads are not. This practice affects Mercury's read attainment results, submission accuracy and historic estimate proportions. Mercury will only reverse and rebill if the read will result in a material difference to the customer's invoice. This process is being reviewed and it is intended that if a read is available on a nearby date, that this read will be used and the customer will be billed, and this read will be used for reconciliation. This will improve Mercury's read attainment, submission accuracy and historic estimate proportions.

As recorded in the last audit, 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. Mercury are still working on the partial automation of the read attainment process which was discussed in the last two audits. 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.

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 261 ICPs unread during the period of supply, where the period of supply ended between 1 February to 31 December 2019. I checked an extreme example of 20 of these ICPs and found that eight reads had been captured during the period of supply and therefore were read during the period of supply. I recommend that the reporting is reviewed to ensure only those ICPs not read during the period of supply are included.

Description	Recommendation	Audited party comment	Remedial action
Interrogate meters once	Review reporting to include only ICPs that have not been read during the period of supply are included	Mercury will review our reporting to ensure this is accurate.	Identified

Exceptional circumstances were proven for the 12 examples checked. Due to the time needed to complete, exceptional circumstances cannot be proven for the 106 ICPs with a supply period of less than 30 days. This is recorded as non-compliance below.

Audit outcome

Non-compliant

Non-compliance	Description		
<p>Audit Ref: 6.8</p> <p>With: Clause 7(1) and (2) Schedule 15.2</p> <p>From: 01-Feb-19</p> <p>To: 31-Dec-19</p>	<p>The best endeavours requirement was not met for 106 ICPs due to the short period of supply.</p> <p>Potential impact: Low</p> <p>Actual impact: Low</p> <p>Audit history: Multiple times</p> <p>Controls: Strong</p> <p>Breach risk rating: 1</p>		
Audit risk rating	Rationale for audit risk rating		
Low	<p>The controls are recorded as strong as the controls in place are robust.</p> <p>The risk is rated as low, as number of customers not read during the period of supply is small relative to the customer base and these are being over reported due to the report including ICPs that have been read during the period of supply.</p>		
Actions taken to resolve the issue		Completion date	Remedial action status
<p>Mercury will continue with our strong controls and note that in some instances of short supply, read attainment is very difficult. We also note that we are currently over reporting and will review this to ensure our reporting is accurate.</p>		Completed	Identified
Preventative actions taken to ensure no further issues will occur		Completion date	
<p>Mercury will be reviewing our current no reads reporting to ensure this is accurate.</p> <p>We are looking at further automation of the no-reads process where emails/letters will be triggered daily at the 90-day mark. This will remove the manual communications process completely. It will spread the customer engagement load and help us achieve our goal to eliminate long term no-reads (> 6 months)</p> <p>For smart meters on manual meter reading rounds, a SAS query was developed by the readings management department to help identify the existence of smart meter reads on days other than the target read date (TRD). This has only been used intermittently and was an interim measure pending the implementation of the daily reads project.</p> <p>The daily reads project has built-in logic to hunt for actual reads in a priority order for up to 2 days either side of the TRD. This will not only improve Mercury's read attainment, submission accuracy and historic estimate proportions but because Mercury will be receiving reads for every meter, every day, reads will be readily available to fulfil switch transactions, meter change events and billing orders more efficiently.</p>		<p>Sep 2020</p> <p>Jan 2021</p> <p>Jun 2020</p>	

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 February to October 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
Feb-19	307	127	815	99.49%
Mar-19	308	139	924	99.42%
Apr-19	309	140	933	99.42%
May-19	309	140	937	99.35%
Jun-19	311	142	947	99.36%
Jul-19	314	138	928	99.37%
Aug-19	316	137	928	99.36%
Sep-19	322	139	909	99.38%
Oct-19	326	138	910	99.40%

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.

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

I reviewed meter reading reports for February to October 2019 and confirmed that they met the meter reading frequency report requirements and that the 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 February to October 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
Feb-19	331	16	3116	98.48%
Mar-19	335	17	3231	98.40%
Apr-19	336	22	3137	98.46%
May-19	330	17	2889	98.48%
Jun-19	338	14	2384	98.49%
Jul-19	336	16	2684	98.55%
Aug-19	339	9	2632	98.54%
Sep-19	342	10	2659	98.53%

Month	Total NSPs where ICPs were supplied > 4 months	NSPs <90% read	Total ICPs unread for 4 months	Overall percentage read
Oct-19	344	11	2445	98.64%

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 13 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 2019 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 EDM I 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 EDM I as part of their agent audits. Because AMS and EDM I's audits were completed more than seven months ago, I confirmed that there were no issues with HHR data collection processes since their June and May 2019 respective 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 EDMl 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 EDMl as part of their agent audits. Because AMS and EDMl's audits were completed more than seven months ago, I confirmed that there were no issues with HHR data collection processes since their June and May 2019 respective 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 EDMl 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 EDMl as part of their agent audits. Because AMS and EDMl's audits were completed more than seven months ago, I confirmed that there were no issues with HHR data collection processes since their June and May 2019 respective 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 $\pm 0.1\%$ (± 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 EDM's audits were completed more than seven months ago, I confirmed that there were no changes to HHR processes since their June and May 2019 respective 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 January 2016, and HHR and generation meter data from January 2016 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 ten 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 and confirmed that the corrections have been made.

Incorrect multipliers

Five ICPs with incorrect multipliers were identified by Mercury during the audit period. In all cases, the errors were corrected, and consumption flowed through to revision files.

The last audit noted that ICP 0007151984RN22C, had the incorrect compensation factor of 1 used instead of 100 since the meter was installed on 10/07/13. The revision processed only dealt with 14 months of this period. The total amount revised is 130,383 kWh and the total amount not submitted was 278,982. I confirmed that this volume has since been submitted.

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 five examples of bridged meters and noted that consumption during the bridged period had been estimated and submitted correctly.

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 108 ICPs where consumption had been recorded after the ICP became inactive. For 85 (79%) 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 the ten ICPs with the most consumption (29kWh to 2 kWh) had been detected during a disconnected period and found:

- five ICPs had an incorrect disconnection read recorded, these have since been corrected,
- two ICPs were gained on an incorrect read and RR requests are in progress for both ICPs 0006104819RN979 & 0006104916RNFA3,
- for two ICPs the volume (2kWh) was attributed to meter creep as the two units had occurred over a long period of time and therefore it was not valid inactive consumption, and
- the correction for ICP 0007315055WA598 will be processed once the disconnection reads have been received from IntelliHUB.

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.

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

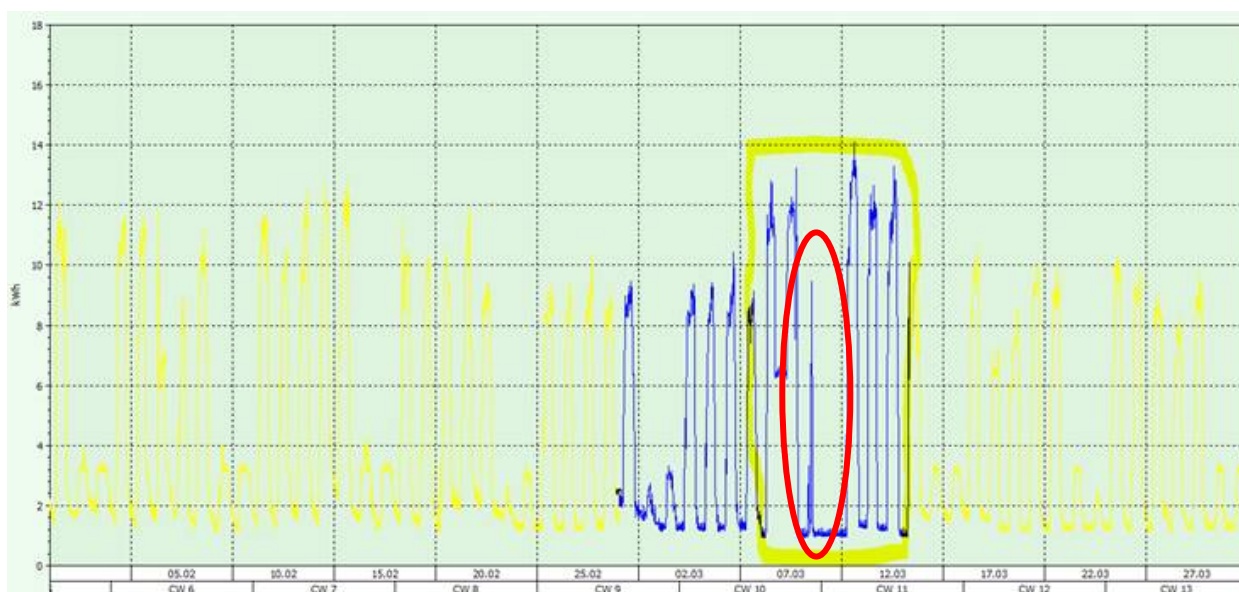
Where errors are detected during validation of HHR metering information, and check metering data is not available, then data from a period with a quantity and profile similar to that expected is used. SAP has a dropdown list for the user to select the correction technique. The common techniques are as 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 provided five examples of HHR data corrections during the audit period where they have typed in the missing intervals. These are estimated by calculating manually using the previous two half hour periods. Three of the five were appropriately corrected. Two of the examples were calculated incorrectly due to human error but were still within the allowable percentage. I recommend that peer reviews of such corrections are implemented to identify such errors.

Five examples of other half hour corrections were checked and all corrections appeared sound and consumption was accounted for with the exception of ICP 0585556589LC3CF where the values for the period from 9-10/03/19 were flat with a spike at midday on 10/3/19 as indicated in the red circled area:



This was checked and found to be caused by the interpolation process using a past version of extrapolated (estimated) data to base the interpolation on. Extrapolated data should not be used in the interpolation process because it means estimates are based on estimates and the pattern of consumption cannot be guaranteed to be materially similar as required by the Code. Mercury have a job logged with IT to correct this and they have put in place a manual work around while this is being completed.

Audit outcome

Non-compliant

Non-compliance	Description		
Audit Ref: 8.2 With: Clause 19(2) of Schedule 15.2 From: 01-Feb-19 To: 31-Dec-19	Interpolation using extrapolated data caused the pattern of consumption for one correction to be allocated incorrectly for one ICP. Potential impact: Low Actual impact: Low Audit history: None 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 as the volume of HHR corrections is minimal in relation to the overall customer base.		
Actions taken to resolve the issue		Completion date	Remedial action status
Mercury always uses the best and reasonable endeavours to ensure estimates are as accurate as possible. Regardless of interpolation/extrapolation, at the time of the estimate, the system used last year's actual data, to estimate. The Code specifies that the pattern needs to be materially similar and the period used to estimate was similar and based on the actual usage.		N/A	Disputed
Preventative actions taken to ensure no further issues will occur		Completion date	
As above.		N/A	

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.

AMS, Arc, Smartco, IntelliHUB, Counties and FCLM readings are rounded to zero decimal places on import. This has previously been recorded as compliant because the MEP has the unrounded raw meter data, however a recent review of the wording of this clause has led to a revised interpretation, which is that rounding should not occur until volume information is created. Rounding occurs prior to the creation of volume information, therefore non-compliance exists.

Audit outcome

Non-compliant

Non-compliance	Description
Audit Ref: 9.3 With: Clause 3(5) of schedule 15.2 From: 01-Feb-19 To: 31-Dec-19	Raw meter data is rounded upon receipt and not when volume information is created. Potential impact: Low Actual impact: Low Audit history: None Controls: None Breach risk rating: 5
Audit risk rating	Rationale for audit risk rating
Low	There are no controls to prevent rounding of raw meter data, the system is designed to round as soon as the data arrives. There is very little impact because no metered consumption information is "missing", therefore the audit risk rating is low.
Actions taken to resolve the issue	
Completion date	Remedial action status

<p>The breach risk rating & controls seems extreme considering there is virtually no impact on the market and up until now we have been deemed compliant in this area. We have explored our options and due to system limitations, note this is not a quick and easy fix.</p> <p>We will investigate how we can become compliant in this area though it may not be feasible.</p>	Ongoing	Investigating
Preventative actions taken to ensure no further issues will occur	Completion date	
We will investigate how we can become compliant in this area though it may not be feasible.	Ongoing	

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. There were no recent examples.

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%.

Consumption is estimated using standard techniques as detailed in **section 8.2**. The non-compliance mentioned in Section 8.2 could cause non-compliance with this clause if the same technique was used. As mentioned above, there were no recent examples of estimation because the delivery of HHR data is reliable.

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

The zero consumption process has been revised and a new report has been developed that will identify ICPs with zero consumption. This is run on a regular basis and all ICPs are investigated. The 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.

Consumption while inactive

Consumption while inactive is identified by the data analysts. A report is run that identifies all ICPs with an inactive status and consumption. Currently there are 100 ICPs on this list. The number on this list has continued to decline over the last two audits. 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 EDM I 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 EDM I's HHR data collection processes since their June and May 2019 respective 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 EDM I and AMS, who email Mercury if events have occurred that require their attention. I reviewed examples of meter change information provided by EDM I 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 $\pm 2\%$ 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 IntelliHUB (for IntelliHUB 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 01/02/19 to 31/12/19 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.

The following table shows the ICP days difference between Mercury files and the RM return file (GR100) for all available revisions for 12 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
Aug 2018	-0.05%	-0.05%	-0.04%	-0.04%	-0.04%
Sep 2018	-0.03%	-0.05%	-0.03%	-0.03%	-0.04%
Oct 2018	-0.04%	-0.05%	-0.04%	-0.03%	-0.04%
Jan 2019	-0.02%	-0.03%	-0.03%	-0.03%	-
Feb 2019	-0.02%	-0.04%	-0.03%	-0.03%	-
Mar 2019	0.00%	-0.02%	-0.04%	-0.04%	-
Apr 2019	-0.02%	-0.03%	-0.04%	-0.04%	-
May 2019	-0.03%	-0.04%	-0.02%	-0.04%	-
Jun 2019	-0.03%	-0.04%	-0.03%	-	-
Jul 2019	-0.05%	-0.05%	-0.05%	-	-
Aug 2019	-0.03%	-0.04%	-0.05%	-	-
Sep 2019	-0.03%	-0.05%	-0.05%	-	-

I reviewed ten NSP level differences remaining at R3 or later to determine the causes.

- Five issues related to ICPs being submitted for while they are inactive to ensure that volumes are reconciled.
- Two issues related to NSP changes not being identified. This has occurred due to an issue with the HHM profile where NSP changes are not being picked up correctly in all instances. A job has been raised with IT to correct this.
- Three issues related to backdated events where the GR100 is reporting incorrectly.
- Mercury was recorded in the registry as the trader for ICP 0068548000WR39B from 22/06/18 but SAP has this ICP as being with Genesis from 17/07/18 to 31/10/18. Therefore, no submission occurred for this ICP during this period. Mercury are investigating why this has occurred and how many other ICPs have this issue. Corrections will be processed. This is recorded as non-compliance in **sections 2.1, 12.7 & 12.9** and below.

Audit outcome

Non-compliant

Non-compliance	Description		
Audit Ref: 11.2 With: Clause 15.6 From: 01-Sept-18 To: 31-Dec-19	Inaccurate ICP days were reported for a small number of ICPs. Corrected data will be washed up in the next available revision, and IT is fixing the bug. Potential impact: Low Actual impact: Low Audit history: None Controls: Moderate Breach risk rating: 2		
Audit risk rating	Rationale for audit risk rating		
Low	Controls are currently rated as moderate as they will mitigate risk most of the time. The impact is assessed to be low, as updated data will be provided through the revision process prior by revision 14.		
Actions taken to resolve the issue		Completion date	Remedial action status
Correction made to status on registry for ICPs which were listed as inactive but had consumption recorded.		Completed	Identified
ICPs with incorrect NSPs were identified and their NSPs corrected.		Completed	
0068548000WR39B has since been corrected. This was caused by Human error and staff have been advised and retrained.		Completed	
Preventative actions taken to ensure no further issues will occur		Completion date	
Inactive ICPs being submitted – Our reporting frequency for monitoring inactive ICPs with usage has been increased to weekly to identify incorrect inactive status sooner.		Apr 2020	
Wrong NSP – Bug raised and has since been fixed by IT.		Completed	

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.

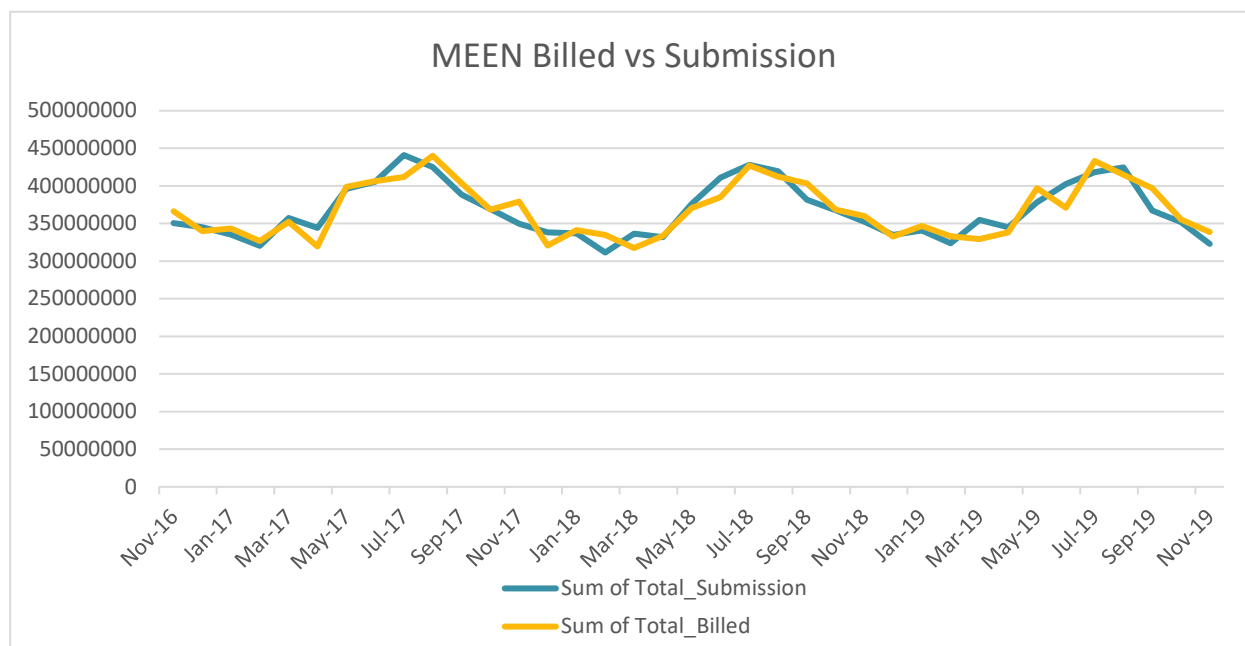
GR130 reports for January 2016 onwards were reviewed to confirm whether the relationship between billed and submitted data appears reasonable.

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. The file is correct for the sample checked. The issue identified last year in relation to one ICP at KCA0011 was found to be a one off and no further instances have been identified.

The chart below shows a comparison between submissions and electricity supplied information. At an aggregate level, billed data is 0.5% higher than submitted data for the year ended November 2019.

Comparison between Submitted Volumes and Electricity Supplied



Audit outcome

Compliant

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. 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.

ICP Missing files were examined for all revisions for April 2018 to October 2019, and no issues with the HHR reporting processes were identified. An extreme case sample of the 18 ICPs missing for 18 revisions or more were reviewed, and found:

- Eight ICPs were missing from some periods because of backdated changes, switches or withdrawals.
- Four 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. They are working to resolve this.
- Three ICPs were recorded against the incorrect network. All had the correct NSP recorded but the NSPs are connected to two networks in both instances. ICPs 0000184853CTB54 & 0000185402CT2B5 are recorded in the registry against STK0331 NELS but SAP has these recorded against TASM. ICP 0000184853CTB54 was set up incorrectly in SAP from October 2018 and was corrected in May 2019. ICP 0000185402CT2B5 switched in and was incorrect from when it switched July 2019 until it was corrected in October 2019. ICP 0000134371UN73D is connected to HEP0331. The SAP master data for this ICP incorrectly recorded this as being on the VECT

network but in the registry, it is connected to the UNET network. Mercury have investigated and found that this occurred when the ICP was set up or moved to the HHM profile due to the incorrect grid selection. 31 ICPs were affected. 17 ICPs will be corrected through the revision process. 14 ICPs are outside of the 14-month revision process. Mercury will liaise with the Electricity Authority to determine the best way to correct this.

- ICP 0100822002LCF9B had the incorrect RPS profile recorded on the registry but was being submitted using the HHM profile.
- Two ICPs were due to the GR090 incorrectly recording the ICPs as having been submitted when not expected but a check of the AV090 confirmed that the ICP was not included in the revisions.

The issues of incorrect information is recorded as non-compliance in **sections 2.1** and **12.7**.

Audit outcome

Non-compliant

Non-compliance	Description		
Audit Ref: 11.4 With: Clause 15.8 From: 01-Feb-19 To: 31-Dec-19	HHR aggregates file does not contain electricity supplied information. Potential impact: Low Actual impact: Low Audit history: Three times Controls: Strong Breach risk rating: 1		
Actions taken to resolve the issue	Completion date		
Low	The issue relating to content of the aggregates file is an error in the code, Mercury is providing submission information as expected.		
Actions taken to resolve the issue		Completion date	Remedial action status
Non-compliance disputed. Mercury is handling and presenting data as required by the Reconciliation Manager file specification.		N/A	Disputed
Preventative actions taken to ensure no further issues will occur		Completion date	
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.		N/A	

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 EDM's audits were completed more than seven months ago, I confirmed that there were no issues with HHR processes since their June and May 2019 respective 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 2019 and beginning of daylight savings in September 2019. 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 50 ICPs with distributed generation were checked and found:
 - 21 ICPs do not have generation installed,
 - 12 ICPs have since had generation metering installed, and generation consumption is being measured and reported in accordance with the code,
 - eight ICPs have generation installed, but have no generation metering installed and are not being submitted for and are not on the gifting register,
 - five ICPs are being gifted, these relate to Tesla batteries installed by Vector,
 - three ICPs are in the process of having generation metering installed, and
 - ICP 0004922952WE458 is a TOU site with no import export metering installed. Mercury are confirming with the customer whether the generation is exporting to the grid;
- a sample of 10 ICPs with unmetered volumes were checked, including standard unmetered and shared unmetered,
- the 2019 audit identified one unmetered ICP was not submitted due to an incorrect set-up, I confirmed that this has been corrected and volumes have been submitted, and
- 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 confirm that the adjustments have been made and volumes have been submitted.

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**.

As described in **section 1.6**, an alleged breach was recorded for late submission of the NSPVOLS volumes for May 2019. The alleged breach was closed early. Mercury have reviewed the processes and have put in a peer review step to confirm the all submission of all files. There have been no further instances of this occurring. This is recorded as non-compliance in **section 12.6**.

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 $\pm 2\%$ 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 confirmed 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 found two instances where the volume was being allocated to the incorrect NSP. This has occurred due to an issue with the HHM profile where NSP changes are not being picked up correctly in all instances. A job has been raised with IT to correct this. This is recorded as non-compliance in **sections 2.1, 11.2** and below.

I found three instances where the volumes were being allocated to the incorrect network. The correct NSP is recorded but allocated to the incorrect network. This is recorded as non-compliance in **sections 2.1, 11.4** and below.

Mercury was recorded in the registry as the trader for ICP 0068548000WR39B from 22/06/18 but SAP has this ICP as being with Genesis from 17/07/18 to 31/10/18. Therefore, no submission occurred for this ICP during this period. Mercury are investigating why this has occurred and how many other ICPs have this issue. This is recorded as non-compliance in **sections 2.1, 11.2 & 12.7** and below.

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

Non-compliant

Non-compliance	Description
<p>Audit Ref: 12.3</p> <p>With: Clause 15.5</p> <p>From: 01-Feb-19</p> <p>To: 31-Dec-19</p>	<p>Three ICPs recorded with the incorrect NSP.</p> <p>Two ICPs recorded against the incorrect network.</p> <p>One ICP not submitted due to be being recorded against another trader in SAP.</p> <p>Potential impact: Low</p> <p>Actual impact: Low</p> <p>Audit history: None</p> <p>Controls: Moderate</p> <p>Breach risk rating: 2</p>
Audit risk rating	Rationale for audit risk rating

Low	<p>Controls are rated as moderate, as the controls did not effectively identify correct allocation of volumes to the correct network.</p> <p>The audit risk rating is low, as this affected only a small number of ICPs, and this will be corrected in the next revision.</p>		
Actions taken to resolve the issue		Completion date	Remedial action status
<p>1. Three ICPs recorded with the incorrect NSP.</p> <p>Two ICPs recorded against the incorrect network.</p> <p>These have all been identified and corrected. This issue was caused by incorrect grid setup in a section of SAP that contains GXP/Network information which is used in the compilation of HHRAGGR/VOLS files. This error did not cause any issues when the ICPs were reconciled as NHH as that process did not derive this information from that section of SAP. The error only manifested when the ICPs were upgraded to HHM which changed where the GXP/Network information was derived from.</p> <p>2. One ICP not submitted due to be being recorded against another trader in SAP.</p> <p>0068548000WR39B has since been corrected. This was caused by Human error and staff have been advised and retrained.</p>		Complete	Identified
		Completed	
Preventative actions taken to ensure no further issues will occur		Completion date	
<p>1. Wrong NSP/network issue – ICT have implemented a fix in the system to reduce these errors. We have also updated our discrepancy reporting to identify any ICPs with correct NSPs & incorrect networks so these can be corrected prior to submission.</p> <p>2. We will look into implementing some new reporting to identify incorrect changes to older retailer timeslices. This allow timely corrections for accurate submission.</p>		Completed	
		Sep 2020	

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.

As described in **section 1.6**, an alleged breach was recorded for late submission of the NSPVOLS volumes for May 2019. The alleged breach was closed early. Mercury have reviewed the processes and have put in a peer review step to confirm the all submission of all files. There have been no further instances of this occurring. This is recorded as non-compliance

Audit outcome

Non-compliant

Non-compliance	Description		
Audit Ref: 12.6 With: Clause 15.11 From: 07-Jun-19 To: 10-Jun-19	Alleged breach 1910MERC1 was recorded for late provision of the NSPVOLS files for May 2019. Potential impact: Low Actual impact: Low Audit history: None Controls: Strong Breach risk rating: 1		
Audit risk rating	Rationale for audit risk rating		
Low	Controls are rated as strong, because processes have been strengthened and there have been no further instances. The audit risk rating is low there have been no late submissions since.		
Actions taken to resolve the issue		Completion date	Remedial action status
Mercury submitted the files the day after file submission was due immediately once notified by the RM.		Completed	Cleared
Preventative actions taken to ensure no further issues will occur		Completion date	
An additional step in our peer review process has been added following this breach.		Completed	

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. One alleged breach occurred for the submission of late NSPVOLS was made for May 2019 and is recorded as non-compliance in **section 12.6**.

There were some submission inaccuracies identified.

- Generation kWh was not submitted for eight ICPs with distributed generation.
- NSP changes were not identified in two instances resulting in the ICP being reconciled to the incorrect NSP. This has occurred due to an issue with the HHM profile where NSP changes are not being picked up correctly in all instances. A job has been raised with IT to correct this.
- The interpolation process used for HHR estimation used extrapolated data to interpolate. Interpolation should only use actual data from another time period. Mercury have a job logged with IT to fix this and have put a manual work around in place to ensure this doesn't occur going forward. Very few HHR estimations take place so the impact of this is expected to be low.
- Three ICPs reconciled against the incorrect network resulting in volumes being reconciled to the incorrect Distributor in two cases and incorrect network in one case. T Mercury have investigated and found that this occurred when the ICP was set up or moved to the HHM profile due to the incorrect grid selection. 31 ICPs were affected. 17 ICPs will be corrected through the revision process. 14 ICPs are outside of the 14-month revision process. Mercury will liaise with the Electricity Authority to determine the best way to correct this.
- Mercury was recorded in the registry as the trader for ICP 0068548000WR39B from 22/06/18 but SAP has this ICP as being with Genesis from 17/07/18 to 31/10/18. Therefore, no submission occurred for this ICP during this period. Mercury are investigating why this has occurred and how many other ICPs have this issue.

Audit outcome

Non-compliant

Non-compliance	Description		
Audit Ref: 12.7 With: Clause 15.12 From: 01-Feb-19 To: 31-Dec-19	Inaccurate submission as follows: <ul style="list-style-type: none">DG kWh for 8 ICPs,2 ICPs submitted against the incorrect NSPs,31 ICPs submitted against the incorrect network, andICP 0068548000WR39B missing from submission from 17/07/18-31/10/18. 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 because they are effective most of the time. The impact is assessed to be low as there number of errors is low.		
Actions taken to resolve the issue		Completion date	Remedial action status
1. DG kWh for 8 ICPs We have reporting in place to identify discrepancies between our records and the distributor generation fields which was not being monitored as intended. We will look at correcting any current discrepancies and ensure energy is quantified through washups.		Apr 2020	Identified
2. 2 ICPs submitted against the incorrect NSPs 31 ICPs submitted against the incorrect network These have all been identified and corrected. This issue was caused by incorrect grid setup in a section of SAP that contains GXP/Network information which is used in the compilation of HHRAGGR/VOLS files. This error did not cause any issues when the ICPs were reconciled as NHH as that process did not derive this information from that section of SAP. The error only manifested when the ICPs were upgraded to HHM which changed where the GXP/Network information was derived from.		Completed	
4. 0068548000WR39B has since been corrected. This was caused by Human error and staff have been advised and retrained.		Completed	
Preventative actions taken to ensure no further issues will occur		Completion date	

1. We have reporting in place to identify discrepancies between our records and the distributor generation fields. We will ensure this report is actively monitored and worked on to allow for timely updates/corrections.	Apr 2020	
2. Wrong NSP/network issue – ICT have implemented a fix in the system to reduce these errors. We have also updated our discrepancy reporting to identify any ICPs with correct NSPs & incorrect networks so these can be corrected prior to submission.	Completed	
3. We will look into implementing some new reporting to identify incorrect changes to older retailer timeslices. This allow timely corrections for accurate submission.	Sep 2020	

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 June to August 2018 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 7/01/20 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 compliance was confirmed,
- no profiles requiring a certified control device are used,
- no loss or compensation arrangements are required,
- aggregation of the AV080, AV110, AV090 and AV140 submissions are covered in **sections 13.2, 11.2, and 11.4** respectively, and
- one ICP where Mercury is recorded as responsible in the registry but due to an incorrect time slice in SAP was excluded from submission from 17/07/18 to 31/10/18; Mercury are investigating why this has occurred and how many other ICPs have this issue and this is detailed in recorded as non-compliance in **sections 2.1, 12.7** and below.

Audit outcome

Non-compliant

Non-compliance	Description		
Audit Ref: 12.9 With: Clause 2 of schedule 15. 3 From: 17-Jul-18 To: 31-Oct-18	ICP 0068548000WR39B missing from submission from 17/07/18-31/10/18. Potential impact: Medium Actual impact: Low Audit history: None Controls: Moderate Breach risk rating: 2		
Audit risk rating	Rationale for audit risk rating		
Low	Controls are rated as moderate because they are effective most of the time. The impact is assessed to be low as there number of errors is low.		
Actions taken to resolve the issue		Completion date	Remedial action status
0068548000WR39B has since been corrected. This was caused by Human error and staff have been advised and retrained.		Completed	Cleared
Preventative actions taken to ensure no further issues will occur		Completion date	
We will look into implementing some new reporting to identify incorrect changes to older retailer timeslices. This allow timely corrections for accurate submission.		Sep 2020	

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

Test	Scenario	Test expectation	Result
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
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
July 2018	1	1	1	1	238
Aug 2018	1	1	1	1	238
Sep 2018	1	1	1	1	236
Oct 2018	0	0	0	-	239
Nov 2018	2	2	2	-	246
Dec 2018	4	4	5	-	252
Jan 2019	0	1	1	-	251
Feb 2019	0	0	0	-	252
Mar 2019	1	2	2	-	253
Apr 2019	1	1	1	-	253
May 2019	1	0	-	-	249
June 2019	3	2	-	-	253
July 2019	1	1	-	-	256
Aug 2019	1	1	-	-	253
Sept 2019	1	1	-	-	255

The total variation between revisions at an aggregate level is shown below.

Month	Revision 1	Revision 3	Revision 7	Revision 14
July 2018	-0.52%	-1.64%	-1.87%	-1.79%
Aug 2018	-0.75%	-1.26%	-1.40%	-1.21%
Sep 2018	-0.55%	-2.53%	-2.57%	-2.61%
Oct 2018	0.97%	-1.13%	-0.94%	0.97%
Nov 2018	3.77%	1.75%	1.66%	-
Dec 2018	6.07%	3.65%	3.47%	-
Jan 2019	2.19%	0.82%	0.78%	-
Feb 2019	2.25%	0.46%	-	-
Mar 2019	2.03%	0.56%	-	-
Apr 2019	-0.70%	-2.33%	-	-
May 2019	1.19%	-0.50%	-	-
June 2019	-3.56%	-5.62%	-	-
July 2019	0.06%	-1.29%	-	-
Aug 2019	-2.81%	-3.92%	-	-
Sept 2019	-3.78%	-5.19%	-	-

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-Jul-18 To: 30-Sep-19	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. The audit risk rating is low as forward estimates are washed up through the revision process.		
Actions taken to resolve the issue		Completion date	Remedial action status
We believe that we have strong controls in place as shown by high attainment percentages across the board. Processes remain in place to correct data as actual data is obtained and submissions are corrected via the washup process. Elements of the non-compliance such as irregular balancing area shapes are outside the control of Mercury and as such should not be contributing towards our rating.		N/A	Identified
Preventative actions taken to ensure no further issues will occur		Completion date	
Mercury continues to review this issue to improve compliance with the code.		Ongoing	

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 01/02/19 to 31/12/19 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 seven profile changes and confirmed six had an actual reading the day before the profile change and the new profile came into effect at 0.00am the following day. One upgrade read was deleted in error, therefore the profile change from RPS to HHM occurred with no read being recorded. This is recorded as non-compliance.

Audit outcome

Non-compliant

Non-compliance	Description		
Audit Ref: 12.13 With: Clause 7 Schedule 15.3 From: 01-Feb-19 To: 01-Feb-19	No read recorded at the time of the profile change. Potential impact: Low Actual impact: Low Audit history: None Controls: Strong Breach risk rating: 1		
Audit risk rating	Rationale for audit risk rating		
Low	Controls are rated as strong as the process is automated and this error was caused by a one-off human error. The audit risk rating is recorded as low as this was a one-off incident.		
Actions taken to resolve the issue		Completion date	Remedial action status
This was a one-off occurrence due to human error. Further staff training has been provided.		Completed	Cleared
Preventative actions taken to ensure no further issues will occur		Completion date	
We have strong controls in place to prevent breaches.		Completed	

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 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
Jul 2018	-	-	327	327
Aug 2018	-	-	329	329
Sep 2018	-	-	327	328
Mar 2019	-	339	-	339
Apr 2019	-	339	-	339
May 2019	-	340	-	340
July 2019	331	-	-	342
Aug 2019	332	-	-	343
Sept 2019	322			346

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
Jul 2018	-	-	100.00%
Aug 2018	-	-	100.00%
Sep 2018	-	-	100.00%
Mar 2019	-	100.00%	-
Apr 2019	-	100.00%	-
May 2019	-	100.00%	-

Month	Revision 3 80% Target	Revision 7 90% Target	Revision 14 100% Target
July 2019	98.61%	-	-
Aug 2019	98.63%	-	-
Sept 2019	98.43%	-	-

Audit outcome

Non-compliant

Non-compliance	Description		
Audit Ref: 13.3 With: Clause 10 of Schedule 15.3 From: 01-Jul-18 To: 30-Sep-19	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
Mercury will continue with our strong controls and further work will be done on identifying opportunities to improve 3 month revision attainment to meet the code requirement.		May 2021	Identified
Preventative actions taken to ensure no further issues will occur		Completion date	
Mercury will continue with our strong controls and further work will be done on identifying opportunities to improve 3 month revision attainment to meet the code requirement.		May 2021	

CONCLUSION

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 36 non-compliance issues and one recommendation is made and no issues are raised. Nine of the non-compliance issues relate to switching (three less than the 2019 audit), and seven relate to registry management and new connections (a reduction from eight in the 2019 audit). The overall score has reduced from 115 to 89.

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

4. **Automation project** – The automation project is expected to address multiple accuracy issues including registry accuracy (including correct ‘active’ dates), ongoing systemic switching accuracy issues and use of correct switch event meter reads. This project is not expected to be completed until May 2020. We recommend Mercury NZ Ltd focus on ensuring the automation project addresses all known issues with the way Mercury NZ Ltd is managing registry and switching information.
5. **Correction of errors** – The audit identified multiple sources of errors that are impacting the market. This includes correction of submission information (such as consumption on ‘inactive’ ICPs, correction of submission errors, correction of ‘active’ dates in the registry and processing of reconnection requests). We recommend Mercury NZ Ltd ensures that where errors are found they are corrected as soon as practicable and prior to the next audit.
6. **Management of compliance** – It appears Mercury NZ Ltd has been relying on the audit process to identify issues. As a result, issues are not detected between audits and actions to correct errors are not started until have the auditor has completed their work. This was a key theme from the previous audit of Mercury NZ Ltd. We note Mercury NZ Ltd have reassured the Authority that there is now more proactive management of compliance and we would recommend Mercury NZ Ltd sustain this momentum going into the next audit.

The audit found that improvements have been made in relation to all three points above. Controls have been strengthened and remedial actions have been progressed in a much more timely manner.

The main findings are as follows:

- SAP issues are still present resulting in some incorrect registry updates.
- ICP 0015723581ELA43 has a single-phase meter on a telecommunications amplifier with a multiplier of 101 to cater for an additional 100 unmetered load connections.
- A large number of telecommunications ICPs do not have databases to record the items of load. Progress has been made in relation to this issue, but it is not yet resolved.
- Improvements have been made in the revenue risk area with improved reporting in place to identify these earlier. This is still being bedded in and evidence of these improvements are expected to be seen in the next audit.
- Two examples of ICPs being reconciled to the incorrect NSP. This has occurred due to an issue with the HHM profile where NSP changes are not being picked up correctly in all instances.,
- Three examples of ICPs being reconciled to the incorrect network were identified. The NSP was correctly recorded in all instances. Mercury are investigating what has caused this issue, over what period and how many ICPs have been affected.
- Corrections are being processed in a timely manner.
- Examination of the HRR correction process identified that the interpolation process used extrapolated data. Interpolation should only use actual data from another time period. Mercury have a job logged with IT to fix this and have put a manual work around in place to ensure this doesn’t occur going forward. In this instance it caused the estimated data to not meet the

reasonable endeavours requirement. There are very few HHR estimations so the impact of this is expected to be low.

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 89, which results in an indicative audit frequency of three months.

PARTICIPANT RESPONSE

In the past 12 months Mercury has made significant improvements particularly in the switching and registry areas. We expect to see a greater level of compliance following some of our more recent system improvements which were not fully reflected in this audit.

Mercury will continue to work on improvements within our systems, processes and reporting, to allow for a higher level of compliance. Our focus and commitment will be in areas with high breach risk ratings and areas of long outstanding non-compliance.

We have made recent progress with the Unmetered Vodafone sites and have been engaging with Vodafone, Distributors and Veritek to ensure the new DUMML base is accurate and compliant.

There are some long standing SAP system issues affecting multiple areas which we are going to investigate and resolve. This should reduce the number of incorrect/late updates and improve accuracy.

Mercury will be utilising the new Audit Compliance reports as a guide for identifying where we may have gaps in current processing and areas for improvement.