ELECTRICITY INDUSTRY PARTICIPATION CODE
RECONCILIATION PARTICIPANT AUDIT REPORT

For

MERIDIAN ENERGY LIMITED
NZBN: 9429037696863

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EXECUTIVE SUMMARY

This Electricity Industry Participation Code Reconciliation Participant audit was performed at the request of **Meridian Energy Ltd (Meridian),** 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 7.1.

Meridian operates three trader codes:

- MERI for Meridian NHH and HHR ICPs managed using Velocity, and generation,
- MERX for Meridian NHH and HHR ICPs managed using Flux, and
- PSNZ for Powershop NZ NHH and HHR ICPs managed using Flux.

Unless otherwise specified, the processes and non-compliances described in the report apply to all codes.

Data collection for NHH ICPs is completed by Wells and MEPs, and data collection for HHR ICPs is completed by AMS, EMS and EDMI. HHR submission, DUML submission and provision of metering information to the grid owner is completed by EMS for MERI. All other activities are completed by Meridian.

Submission

There has been an overall increase in the number of non-compliances recorded, and several recommendations are made regarding improvements to the effectiveness of controls. The following main issues were identified:

- not all corrections from the last audit have been actioned,
- corrections have not been conducted for bridged corrections,
- consumption on inactive ICPs has not been submitted in all instances, and
- some non-compliant HE scenarios.
- PSNZ HHR estimations does not meet endeavours definition

It's recommended that the disconnection and reconnection processes are improved by ensuring disconnection occurs at the boundary rather than at the meter wherever possible, and that disconnection and reconnection readings are obtained and used to improve the accuracy of submissions.

Switching

Non-compliance still exists with some switching processes, specifically the accuracy and labelling of switch event meter readings and the accuracy of average daily consumption.

Registry

There has been a decline in compliance for the timeliness of registry updates. In particular, the new connections updates during the audit period were not as compliant as they were during the last audit. This is an area where strengthening controls should help to improve compliance.

All distributed unmetered load databases have been audited, and Meridian is continuing to actively engage with database owners to improve compliance and to assist with the introduction of profiles to allow CMS and dimming systems to be compliant.

Conclusion

This audit report identified 51 non-compliances, an increase from 40 recorded during the last audit. 13 recommendations are made and many of these are targeting improvements in controls. The future risk rating is 110, which is an increase on 87 from the last audit.

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

future risk rating score of 110 which results in an indicative audit frequency of three months. I have considered this result in conjunction with Meridian's responses and my recommendation for the next audit date is 12 months.

The matters raised are shown in the tables below:

AUDIT SUMMARY

NON-COMPLIANCES

Subject	Section	Clause	Non-Compliance	Controls	Audit Risk Rating	Breach Risk Rating	Remedial Action
Relevant information	2.1	11.2 & 15.2	**MERI** Some registry information is incorrect. Not all corrections actioned from the last audit. The inactive consumption has not been run for 93 inactive metered ICPs. ICP 0000045782CPC0D has an incorrect multiplier applied since 1 Oct 2018. Some incorrect submission information recorded in **section 12.7**. **MERX** Some registry information is incorrect. Not all corrections actioned from the last audit. Two ICPs with multiplier discrepancies not resolved correctly. Two ICPs with bridged meters did not have a correction applied. 12 ICPs identified had consumption during inactive periods. Estimated under submission of 11,174 kWh has occurred. Inactive consumption report not including ICPs with inactive consumption once switched away or where two actual reads on or after the inactive status date not received. Some incorrect submission information recorded in **section 12.7**. **PSNZ** Some registry information is incorrect.	Moderate	Medium	4	Identified

Subject	Section	Clause	Non-Compliance	Controls	Audit Risk Rating	Breach Risk Rating	Remedial Action
			HHR Submission data for ARCS CAT 2 ICP (0007106307RN6B8) and four ARCS Cat 1 ICPs that are not accurate due to inaccurate capture of raw meter data by data storage device. Three ICPs with bridged meters did not have a correction applied. 27 ICPs identified had consumption during inactive periods. Estimated under submission of 41,683 kWh has occurred. Inactive consumption report not including ICPs with inactive consumption once switched away or where two actual reads on or after the inactive status date not received. Some incorrect submission information recorded in **section 12.7**.				
Electrical Connection of Point of Connection	2.11	10.33A	**MERI** Two ICPs with no metering in place are not reconciled as unmetered load. Four new connection ICPs with certification later than five days after electrical connection. 28 ICPs were not certified within five days after reconnection. **MERX** One ICP with no metering in place is not reconciled as unmetered load. Late certification for two new connection ICPs. 254 ICPs were not certified within five days after reconnection. One ICP meter from a sample of five was not certified on un-bridging. **PSNZ**	Strong	Low	1	Identified

Subject	Section	Clause	Non-Compliance	Controls	Audit Risk Rating	Breach Risk Rating	Remedial Action
			Four of a sample of five new connection ICPs not certified within five business days. 137 reconnections were not certified within five business days. Three bridged meters were not recertified when the bridge was removed.				
Meter bridging	2.17	10.33C and 2A of Schedule 15.2	**MERI** Not all bridged meters are identified and notified to MEPs within one business day. **MERX** Two ICPs with bridged meters did not have a correction applied. **PSNZ** Four ICPs with bridged meters did not have a correction applied.	Weak	Low	3	Investigating
Changes to registry information	3.3	10 Schedule 11.1	**MERI** 71 late updates to "active" status for reconnections. 74 late updates to "inactive - new connection in progress" status. 133 late updates to "inactive" status for disconnections. 957 late trader updates. **MERX** 504 late updates to "active" status for reconnections. One late update to "inactive - new connection in progress" status. 301 late updates to "inactive" status for disconnections. 14,226 late trader updates. **PSNZ** 695 late updates to "active" status for reconnections.	Moderate	Low	2	Identified

Subject	Section	Clause	Non-Compliance	Controls	Audit Risk Rating	Breach Risk Rating	Remedial Action
			Five late updates to "inactive - new connection in progress" status. 222 late updates to "inactive" status for disconnections. 1,635 late trader updates.				
Provision of information to the registry manager	3.5	9 Schedule 11.1	**MERI** 402 late updates to "active" status for new connections. 74 late updates to "inactive - new connection in progress" status for new connections. Three of the sample of 52 ICPs had incorrect "active" dates recorded. **MERX** 738 late updates to "active" status for new connections. One late update to "inactive - new connection in progress" status for a new connection. Six of the sample of 36 ICPs had an incorrect "active" date recorded. **PSNZ** 356 late updates to "active" status for new connections. Five late updates to "inactive - new connection in progress" status for new connections. Two incorrect event dates.	Moderate	Low	2	Identified
ANZSIC codes	3.6	9 (1(k) of Schedule 11.1	**MERI** One ICP of a sample of 50 ICPs checked with an incorrect ANZSIC code. **MERX** All 13 ICPs with unknown ANZSIC codes were able to be determined. All 20 ICPs sampled out of 806 with a residential ANZSIC code and Category 2 were found to be incorrect	Weak	Low	3	Identified

Subject	Section	Clause	Non-Compliance	Controls	Audit Risk Rating	Breach Risk Rating	Remedial Action
			and have not been corrected. Nine ICPs with the residential ANZSIC code are incorrect. **PSNZ** Seven incorrect ANZSIC codes of residential on Category 2 ICPs. These have not been corrected. One incorrect ANZSIC code now corrected.				
Changes to unmetered load	3.7	9(1)(f) of Schedule 11.1	**MERI** Unmetered load incorrect for one ICP. ICP 0000050330WT582 is a back-up supply at Benmore and is unmetered, with a daily kWh figure of zero, which will mostly be correct, but if it runs the kWh will be unknown. This may require an exemption. **MERX** Unmetered load incorrectly recorded for three ICPs. **PSNZ** One ICP has unmetered load recorded correctly but from the incorrect date. One ICP had unmetered load incorrectly recorded. It's now correct but the description is still present.	Moderate	Low	2	Identified
Management of "active" status	3.8	17 Schedule 11.1	**MERI** Three of the sample of 52 ICPs had incorrect active dates recorded for new connections. **MERX** One of a sample of 20 ICPs had an incorrect active date recorded for reconnections. Six of the sample of 36 ICPs had incorrect active dates recorded for new connections.	Moderate	Medium	4	Identified

Subject	Section	Clause	Non-Compliance	Controls	Audit Risk Rating	Breach Risk Rating	Remedial Action
			12 ICPs with inactive consumption and therefore incorrect active status. **PSNZ** One of a sample of 20 ICPs had an incorrect active date recorded for reconnections Two of the sample of 33 ICPs had incorrect active dates recorded for new connections. ICP 0000047706WE3DF is still at "ready" but has been electrically connected. 27 ICPs with inactive consumption and therefore incorrect active status.				
Management of "inactive" status	3.9	19 Schedule 11.1	**MERI** Six ICPs electrically connected but recorded as "inactive - new connection in progress". Five have been updated and one is still being investigated. **MERX** Five ICPs electrically connected but recorded as "inactive - new connection in progress". These are all now resolved 12 ICPs with inactive consumption and therefore incorrect active status. **PSNZ** 27 ICPs with inactive consumption and therefore incorrect active status.	Moderate	Medium	4	Identified
Losing trader response to switch request and event dates - standard switch	4.2	3 and 4 Schedule 11.3	**MERI** Five of a sample of five AN codes incorrectly sent with AA instead of AD. Five of a sample of five AN codes incorrectly sent with AD instead of AA. One incorrect AN code of MU sent. **MERX**	Strong	Low	1	Identified

Subject	Section	Clause	Non-Compliance	Controls	Audit Risk Rating	Breach Risk Rating	Remedial Action
			Five of a sample of five AN codes incorrectly sent with AA instead of AD. One of a sample of five AN codes incorrectly sent with AD instead of AA. **PSNZ** Five of a sample of five AN codes incorrectly sent with AA instead of AD.				
Losing trader must provide final information - standard switch	4.3	5 Schedule 11.3	**MERI** Four CS breaches. Average daily consumption is not calculated in accordance with the registry functional specification in some instances. One of a sample of three ICPs with an incorrect reading and last read date. Incorrect last read date recorded for two of three ICPs with read dates the day before the switch date but where the switch read is an estimate. Incorrect reading recorded for one of three ICPs with read dates the day before the switch date but where the switch read is an estimate. Incorrect read types sent for four of five ICPs sampled where the reading was an actual and the last actual read date is more than one day prior to the event date. Last actual read date was after the period of supply for one of one ICPs sampled. **MERX** Average daily consumption is not calculated in accordance with the registry functional specification in some instances. Three of a sample of three ICPs had the final estimate sent in the CS as the switch	Moderate	Low	2	Investigating

Subject	Section	Clause	Non-Compliance	Controls	Audit Risk Rating	Breach Risk Rating	Remedial Action
			event meter reading when actual readings were available. One transfer switch ICP contained an incorrect last read date. **PSNZ** Average daily kWh in the CS is not calculated in accordance with the Registry Functional Specification.				
Retailers must use same reading - standard switch	4.4	6(1) and 6A Schedule 11.3	**MERX** 58 RR breaches for transfer switches. **PSNZ** 21 RR breaches for transfer switches.	Strong	Low	1	Identified
Non-half hour switch event meter reading - standard switch	4.5	6(2) and (3) Schedule 11.3	**MERX** RR file incorrectly rejected for ICP 0006814972RN6A5.	Moderate	Low	2	Identified
Losing trader provides information - switch move	4.8	10(1) Schedule 11.3	**MERI** Five of a sample of five AN files incorrectly had response codes of AA instead of AD. One of a sample of one AN file had AA recorded instead of PD. One of a sample of one AN file had OC recorded instead of AA. Two ET breaches. One E2 breach. One AN had a proposed event date prior to the date requested by the gaining trader. **MERX** Five of a sample of five AN files incorrectly had response codes of AA instead of AD. Three of a sample of five AN files incorrectly had	Moderate	Low	2	Identified

Subject	Section	Clause	Non-Compliance	Controls	Audit Risk Rating	Breach Risk Rating	Remedial Action
			response codes of AD instead of AA. One T2 breach. Two E2 breaches. 17 ET breaches. Six ANs had proposed event dates prior to the date requested by the gaining trader. 14 ANs had proposed event dates more than ten business days after the NT receipt date. **PSNZ** Five of a sample of five AN codes incorrectly sent with AA instead of AD. One of a sample of five AN codes incorrectly sent with AD instead of AA. Two T2 breaches. 23 ET breaches. 20 ANs with proposed event dates more than ten business days after the NT receipt date.				
Losing trader determines a different date - switch move	4.9	10(2) Schedule 11.3	**MERI** One AN had a proposed event date prior to the date requested by the gaining trader. **MERX** Six ANs had proposed event dates prior to the date requested by the gaining trader. 11 ANs had proposed event dates more than ten business days after the NT receipt date.	Strong	Low	1	Identified
Losing trader must provide final information - switch move	4.10	11 Schedule 11.3	**MERI** Average daily consumption is not calculated in accordance with the registry functional specification in some instances.	Moderate	Low	2	Identified

Subject	Section	Clause	Non-Compliance	Controls	Audit Risk Rating	Breach Risk Rating	Remedial Action
			Two of a sample of three ICPs with incorrect readings and last read dates where the date of the last read is the same as the switch date. All five ICPs sampled of a possible 3,945 ICPs with last actual read dates more than one day before the event date with an actual switch event reading had an incorrect read type of actual recorded. 28 ICPs had last actual read dates after the switch event date. One of three ICPs sampled had an incorrect read type of estimated. **MERX** Average daily consumption is not calculated in accordance with the registry functional specification in some instances. Two ICPs with incorrect last actual read dates and the dates were after the switch date. Three of a sample of three ICPs had the final estimate sent in the CS as the switch event meter reading when actual readings were available. ICP 0000510743CE6A7 had an incorrect switch event reading and an incorrect last actual reading resulting in vacant consumption becoming the responsibility of the gaining trader. ICP 0007144522RN871 had a reading from 6 April 2022 used as an actual read for a switch event date of 8 April 2022. ICP 0000482782CEDE5 had a switch event date of 17 May 2022 and a last actual read date of 27 April 2022 but there was a read on 16 May				

Subject	Section	Clause	Non-Compliance	Controls	Audit Risk Rating	Breach Risk Rating	Remedial Action
			2022, therefore the date of the last read is incorrect. **PSNZ** Two of a sample of five switch move CS contained an incorrect read type. Three of a sample of five switch move CS files contained incorrect readings. Average daily kWh in the CS is not calculated in accordance with the Registry Functional Specification.				
Gaining trader changes to switch meter reading - switch move	4.11	12 Schedule 11.3	**MERI** 17 RR breaches. **MERX** 54 RR breaches. **PSNZ** 48 RR breaches.	Moderate	Low	2	Identified
Gaining trader informs registry of switch request - gaining trader switch	4.12	14 Schedule 11.3	**MERI** Three late NT files. Six PT breaches.	Strong	Low	1	Identified
Losing trader provision of information - gaining trader switch	4.13	15 Schedule 11.3	**MERI** One AN file sent one day late.	Strong	Low	1	Identified
Withdrawal of switch requests	4.15	17 and 18 Schedule 11.3	**MERI** Three SR breaches. 17 NA breaches. One incorrect NW code. **MERX** 13 SR breaches. 156 NA breaches. One incorrect NW code. **PSNZ** 28 SR breaches. 119 NA breaches. Three incorrect NW codes used.	Moderate	Low	2	Identified

Subject	Section	Clause	Non-Compliance	Controls	Audit Risk Rating	Breach Risk Rating	Remedial Action
			One AW breach.				
Metering information	4.16	21 Schedule 11.3	**MERI** Four ICPs with incorrect switch readings**.** **MERX** Eight ICPs with incorrect switch readings, sometimes causing vacant consumption to be pushed to the gaining trader. **PSNZ** Three CS files had incorrect switch readings.	Weak	Low	3	Identified
Maintaining shared unmetered load	5.1	11.14	**MERX** Incorrect shared unmetered load for one ICP. **PSNZ** Incorrect shared unmetered load for one ICP.	Strong	Low	1	Identified
Unmetered threshold	5.2	10.14 (2)(b)	**MERI** Four ICPs with annual consumption exceeding 6,000 kWh per annum.	Strong	Low	1	Identified
Unmetered threshold exceeded	5.3	10.14 (5)	**MERI** Four standard unmetered ICPs with annual consumption over 6,000 kWh.	Strong	Low	1	Identified
Distributed unmetered load	5.4	11 Schedule 15.3, Clause 15.37B & 16A.26	**MERI** Inaccurate submission information for several databases. The monthly database extracts used to derive submission from are provided as a snapshot and do not track changes at a daily basis as required by the code in some instances.	Moderate	High	6	Identified
Electricity conveyed & notification by embedded generators	6.1	10.13, 10.24 and 15.13	**MERI** Two active ICPs have had their meters removed from the registry in 2017 and are not unmetered installations therefore there is no meter	Moderate	Low	2	Identified

Subject	Section	Clause	Non-Compliance	Controls	Audit Risk Rating	Breach Risk Rating	Remedial Action
			in place as required by this clause. Generation not quantified or gifted for one HHR ICP (0001230783TG57C) where the distributor indicates grid connected generation is connected. One incorrect profile, now corrected. **MERX** Five ICPs with the incorrect profile. Two are now resolved, but three require appropriate metering. While meters were bridged, energy was not metered and quantified according to the code for two ICPs. **PSNZ** While meters were bridged, energy was not metered and quantified according to the code for four ICPs. Generation not quantified or submitted for seven ICPs.				
Certification of control devices	6.3	Clause 33 Schedule 10.7 and 2(2) Schedule 15.3	**MERI** 13 ICPS had profiles requiring control device certification where CDC flag on the registry is set to 'N'. **MERX** 1015 ICPS had profiles requiring control device certification where CDC flag on the registry is set to 'N'. **PSNZ** 195 ICPS had profiles requiring control device certification where CDC flag on the registry is set to 'N'.	Moderate	Low	2	Identified
Collection of information by certified reconciliation participant	6.5	2 Schedule 15.2	**MERI** ICPs 0085976769LC230, 0001951350TGCC and 0316096796LCCB1 were not interrogated within its maximum interrogation cycle.	Strong	Low	1	Identified

Subject	Section	Clause	Non-Compliance	Controls	Audit Risk Rating	Breach Risk Rating	Remedial Action
			Event logs were not retrieved for ICP 1001152747CK458 for a manual download as part of a meter change in April 2022. **MERX** Raw meter data not reviewed where time error is greater than the maximum permitted error for seven ICPs where the meters had a time-based configuration (D/N, WD/WE, CN8).				
Derivation of meter readings	6.6	3(1), 3(2) and 5 Schedule 15.2	**MERI** Wells meter condition information not checked for account managed ICPs. **MERX** Wells meter condition information not checked for the entire audit period. **PSNZ** Wells meter condition information not checked for the entire audit period.	Moderate	Medium	4	Identified
NHH meter reading application.	6.7	6 Schedule 15.2	**MERI** For downgrades, all HHR volumes are reported up to the day of the meter change. All NHH volumes are reported, but due to system constraints the consumption is apportioned from two days after the meter change onwards instead of from the day after the meter is changed.	Moderate	Low	2	Identified
Interrogate meters once	6.8	7(1) and (2) Schedule 15.2	**MERI** Eight of ten ICPs sampled were not read during the period of supply and exceptional circumstances were not proven. **PSNZ** Three of ten ICPs sampled were not read during the period of supply and	Moderate	Low	2	Identified

Subject	Section	Clause	Non-Compliance	Controls	Audit Risk Rating	Breach Risk Rating	Remedial Action
			exceptional circumstances were not proven.				
NHH meters interrogated annually	6.9	8(1) and (2) Schedule 15.2	**MERI** Exceptional circumstances and best endeavours were not proven for all of a sample of ten ICPs checked. **PSNZ** Exceptional circumstances and best endeavours were not proven for one of a sample of ten ICPs checked. The Meter Read frequency report is including solely unmetered ICPs in its analysis.	Moderate	Low	2	Identified
NHH meters 90% read rate	6.10	9(1) and (2) Schedule 15.2	**MERI** Exceptional circumstances and best endeavours were not proven for 11 of 13 examples checked. **MERX** Exceptional circumstances and best endeavours were not proven for one of ten examples checked. The Meter Read frequency report is including inactive ICPs in its analysis. **PSNZ** Exceptional circumstances and best endeavours were not proven for one of ten examples checked.	Moderate	Low	2	Identified
HHR interrogation data requirement	6.13	11(2) Schedule 15.2	Event logs were not retrieved for ICP 1001152747CK458 for a manual download as part of a meter change in April 2022.	Strong	Low	1	Identified
Correction of HHR metering information	8.2	19(2) Schedule 15.2	**MERI** Correction of HHR data for ICP 8000000039SN915 following a time correction did not ensure the consumption pattern for the affected period was consistent with the history for the ICP.	Moderate	Low	2	Cleared

Subject	Section	Clause	Non-Compliance	Controls	Audit Risk Rating	Breach Risk Rating	Remedial Action
			PSNZ HHR data corrections do not reflect total measured consumption of the profile for ICPs 0006504558RNB2E & 0006886795RN35A.				
Identification of readings	9.1	3(3) Schedule 15.2	Some incorrectly labelled meter readings, as follows: **MERI** At least one ICP with actual reading labelled as estimate. At least ten ICPs with estimated readings labelled as actuals. **MERX** One ICP with actual labelled as estimate. One ICP with estimate labelled as actual. **PSNZ** Actual readings labelled as estimates for eight of a sample of 20 ICPs where read changes had occurred. Actual readings labelled as estimates for five of a sample of five move switch CS files.	Weak	Low	3	Identified
Meter data used to derive volume information	9.3	3(5) Schedule 15.2	**MERI, MERX** and **PSNZ** Raw meter data is truncated upon receipt and not when volume information is created for MTRX, IHUB and FCLM meters.	Moderate	Low	2	Identified
Half hour estimates	9.4	15 Schedule 15.2	**PSNZ** Best endeavours not met for PSNZ HHR estimations.	Moderate	Low	2	Identified
Electronic meter readings and estimated readings	9.6	17 Schedule 15.2	**MERI MERX** and **PSNZ** Not all AMI events checked. **PSNZ** HHR data not checked for missing data. No checks of unexpected HHR consumption patterns.	Moderate	Low	2	Investigating

Subject	Section	Clause	Non-Compliance	Controls	Audit Risk Rating	Breach Risk Rating	Remedial Action
Calculation of ICP days	11.2	15.6	**MERI** For six ICPs the count of days reported was one day less due to known meter downgrade/meter change issue where the new meter is installed a day later than actual. Benmore Power station back up supply unmetered ICP with zero kWh/day not included in ICP Days report. **MERX** Nine ICPs underreported by one day each due to incorrect start date applied for new connections in Flux. The registry status was incorrect for ICP 0495378942LCE09. **PSNZ** Three HHR ICPs across two NSPs had the incorrect submission type recorded in the registry due to meter change triggering an automated incorrect registry update.	Moderate	Low	2	Identified
HHR aggregates information provision to the reconciliation manager	11.4	15.8	**MERI** HHR aggregates file for Feb 2022 R0 does reflect the submission volumes recorded in the associated AV-090 HHRVOLS file.	Strong	Low	1	Cleared
Creation of submission information	12.2	15.4	**MERI** NHH ICPs 0005906555RNE30, 0006300324RNC8C and 0008801022TPEF8 have 1,5 "reconciled elsewhere" status but do not have their load reconciled under another ICP. ICP 0008801022TPEF8 has no load connected. HHR ICP 0007132883RN65A had	Moderate	Medium	4	Identified

Subject	Section	Clause	Non-Compliance	Controls	Audit Risk Rating	Breach Risk Rating	Remedial Action
			status 1,5 “reconciled elsewhere” status but the primary ICP was decommissioned. ICP 0007199748RN966 distributed generation volumes were incorrected submitted against PV1 profile code instead of EG1. **MERX** Eight ICPs had consumption during inactive periods, indicating that their status was incorrect. Estimated under submission of 51kWh has occurred. Daily unmetered kWh values incorrect for ICPs 0000113698HB171 & 0005189772RN99C. **PSNZ** 20 ICPs had consumption during inactive periods, indicating that their status was incorrect. Estimated under submission of 41,564 kWh has occurred. Daily unmetered kWh values incorrect for ICPs 0000216126HB4CE & 0000016372CP18F.				
Allocation of submission information	12.3	15.5	**MERI** Duplicate NHHVOL (AV-080) submissions provided between both MERI and EMS for DST profile for ISL0331 for the months Jan 2021, Feb 2021 and Aug 2021.	Strong	Low	1	Cleared
Accuracy of submission information	12.7	15.7	**MERI** Velocity records historic estimate as forward estimate where an ICP ends on an estimated closing reading**,** or permanent estimate readings have not been entered for ICPs not	Moderate	Medium	4	Identified

Subject	Section	Clause	Non-Compliance	Controls	Audit Risk Rating	Breach Risk Rating	Remedial Action
			read within the previous 14 months. ICPs 0005906555RNE30, 0006300324RNC8C and 0008801022TPEF8 have 1,5 "reconciled elsewhere" status but do not have their load reconciled under another ICP. ICP 0008801022TPEF8 has no load connected. Four ICPs had incorrect readings in the CS file meaning consumption was not correct between traders. For downgrades, all HHR volumes are reported up to the day of the meter change. All NHH volumes are reported, but due to system constraints the consumption is apportioned from two days after the meter change onwards instead of from the day after the meter is changed. **MERX** Historic estimate is recorded as forward estimate where shape files from the reconciliation manager are unavailable, or permanent estimate readings have not been entered for ICPs not read within the previous 14 months. 12 ICPs had consumption during inactive periods, indicating that their status was incorrect. Estimated under submission of 11,174 kWh has occurred. Eight ICPs had incorrect readings in the CS file meaning consumption was not correct between traders and for one ICP, vacant consumption was allocated to the gaining trader.				

Subject	Section	Clause	Non-Compliance	Controls	Audit Risk Rating	Breach Risk Rating	Remedial Action
			PSNZ Historic estimate is recorded as forward estimate where shape files from the reconciliation manager are unavailable, or permanent estimate readings have not been entered for ICPs not read within the previous 14 months. 27 ICPs had consumption during inactive periods, indicating that their status was incorrect. Estimated under submission of 41,683 kWh has occurred. Three ICPs had incorrect readings in the CS file meaning consumption was not correct between traders.				
Permanence of meter readings for reconciliation	12.8	4 of Schedule 15.2	**MERI** Some estimates not replaced by revision 14, and under certain circumstances historic estimate is labelled as forward estimate. **MERX** Some estimates not replaced by revision 14, and under certain circumstances historic estimate is labelled as forward estimate. **PSNZ** Some estimates not replaced by revision 14, and under certain circumstances historic estimate is labelled as forward estimate.	Moderate	Medium	4	Identified
Reconciliation participants to prepare information	12.9	2 Schedule 15.3	**MERI** 0331837361LCD62 has metering category 3 and RPS profile and NHH submission type. 13 ICPS had profiles requiring control device certification where CDC flag on the registry is set to 'N'.	Moderate	Low	2	Identified

Subject	Section	Clause	Non-Compliance	Controls	Audit Risk Rating	Breach Risk Rating	Remedial Action
			MERX 1015 ICPS had profiles requiring control device certification where CDC flag on the registry is set to 'N'. **PSNZ** 195 ICPS had profiles requiring control device certification where CDC flag on the registry is set to 'N'.				
Historical estimates and forward estimates	12.10	3 of schedule 15.3	**MERI** Historic estimate is labelled as forward estimate where an ICP switches out on an estimated reading, and where permanent estimate readings have not been entered. **MERX** Historic estimate is labelled as forward estimate where SASV are not loaded for the NSP and profile from the reconciliation manager files, and where permanent estimate readings have not been entered. **PSNZ** Historic estimate is labelled as forward estimate where SASV are not loaded for the NSP and profile from the reconciliation manager files, and where permanent estimate readings have not been entered.	Moderate	Low	2	Identified
Historical estimate process	12.11	4 Schedule 15.3	**MERI** Scenario B – Available reads after disconnection not loaded and validated to enable HE calculation to e applied. Scenario C & E - SASV values not used when calculating HE volumes up to switch loss estimate read. **MERX**	Moderate	Low	2	Investigating

Subject	Section	Clause	Non-Compliance	Controls	Audit Risk Rating	Breach Risk Rating	Remedial Action
			SASV files not loaded into FLUX system for a period of time. Scenario H – interim estimates used in HE calculation where these have been validated. **PSNZ** SASV files not loaded into FLUX system for a period of time. Scenario H – interim estimates used in HE calculation where these have been validated. Scenario I – consumption across a meter read roll over not being correctly calculated.				
Forward estimate process	12.12	6 Schedule 15.3	**MERI** The accuracy threshold was not met for all months and revisions. **MERX** The accuracy threshold was not met for all months and revisions.	Moderate	Low	2	Identified
Reading after profile change	12.13	7 Schedule 15.3	**PSNZ** One change of submission type and profile code change did not have a validated meter reading for the date of the change.	Strong	Low	1	Identified
Historical estimate reporting to RM	13.3	10 Schedule 15.3	**MERI** Historic estimate thresholds were not met for some revisions. **MERX** Historic estimate thresholds were not met for some revisions. **PSNZ** Historic estimate thresholds were not met for some revisions.	Moderate	Low	2	Identified
Future Risk Rating						110	

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

RECOMMENDATIONS

Subject	Section	Description	Status
Audit Trails	2.4	Review and improve Flux audit trail to ensure reasons for changes are recorded.	Identified
Meter bridging	2.17	Recommend that Meridian implements both an automated report to help identify bridge or bypassed meters and a register of all bridged meters to enable the revenue assurance team to monitor the status of the un-bridge meter process and any subsequent volume corrections.	Investigating
Changes to registry information	3.5	Populate the active date in the registry as soon as the load test is conducted with the data collector.	Cleared
Changes to unmetered load	3.7	Check six ICPs to confirm if they are still an unmetered BTS.	Investigating
Disconnection and reconnection readings	3.8	Ensure disconnection and reconnection readings are obtained and used	Investigating
Management of inactive status	3.9	• Strengthen the contract with contractors to require their disconnection processes to be audited. • 2) Request evidence from contractors that they are approved by all distributors to disconnect at the network fuse.	Identified
Monitoring of new and ready ICPs	3.10	I recommend running a registry list six monthly with: Status: 000 or 999 Proposed trader: PSNZ or MERX or MERI End date: the day the report is run and compare the results to the ICPs Meridian/PSNZ expects to be at “new” or “ready” status. Any ICPs which appear to have been assigned to Meridian/PSNZ in error can then be checked with the distributor.	Investigating
Losing trader must provide final information	4.10	Use actual reads on the date of the switch event to ensure active vacant consumption is reconciled and reduce the volume of RRs being received.	Investigating
Error and loss compensation requirements.	8.3	MERI to undertake a comparison of Pricing manager data files provided by EMS as MERI agent to the compensated bus level meter data for the same day/period to confirm that correct data is being provided to the Pricing Manager for Whitehill windfarm embedded generation.	Identified
Identification of readings	9.1	Ensure that HHR estimates in Flux can be viewed by users and ensure they are correctly labelled.	Investigating

Subject	Section	Description	Status
AMI metering events	9.6	Check all metering events, including tamper events and give a higher priority to ICPs where there is zero consumption and a tamper event.	Identified
Electricity supplied	11.3	I recommend that the AV-120 report format is updated to accurately reflect the billed volumes that have been recorded on the customer's invoice.	Not planned
Creation of submission information	12.2	To ensure accurate calculation of the daily kWh values for unmetered load I recommend that a review and update hours of operation for unmetered load where distributor annual operational hours are known.	Investigating
		MERI to implement a process to actively monitor the 1,5 status to ensure it is being applied correctly and the relevant ICPs or each scenario remain with a single retailer.	Identified
Preparation of submission information	12.9	Recommend that MERI either transitions this ICP to PSNZ to enable HHR submission using AMI data or works with the MEP to see if the ICP can be recertified at a lower category on the basis of historical AMI interval data. MERI believes the current conveyed will remain at all times below the upper limit of this lower metering category.	Identified

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

The Electricity Authority website was checked to confirm any exemptions currently in place for Meridian.

Audit commentary

Two exemptions are currently in place.

Exemption 245 ICP 0009805800AL991

Exemption 245 allows Meridian to use subtraction to determine submission information for ICP 0009805800AL991. The exemption is in place from 23 December 2016 until the earlier of:

- 30 June 2025,
- the date on which Meridian Energy Limited is no longer recorded in the registry as being the trader for ICP 0009805800AL991, and
- the date on which AccuCal Limited is no longer recorded in the registry as being the metering equipment provider for ICP 0009805800AL991, and
- when embedded generation is injected through any one of the four meters currently used in the calculation of submission information by subtraction.

None of the above events have occurred so the exemption remains in place.

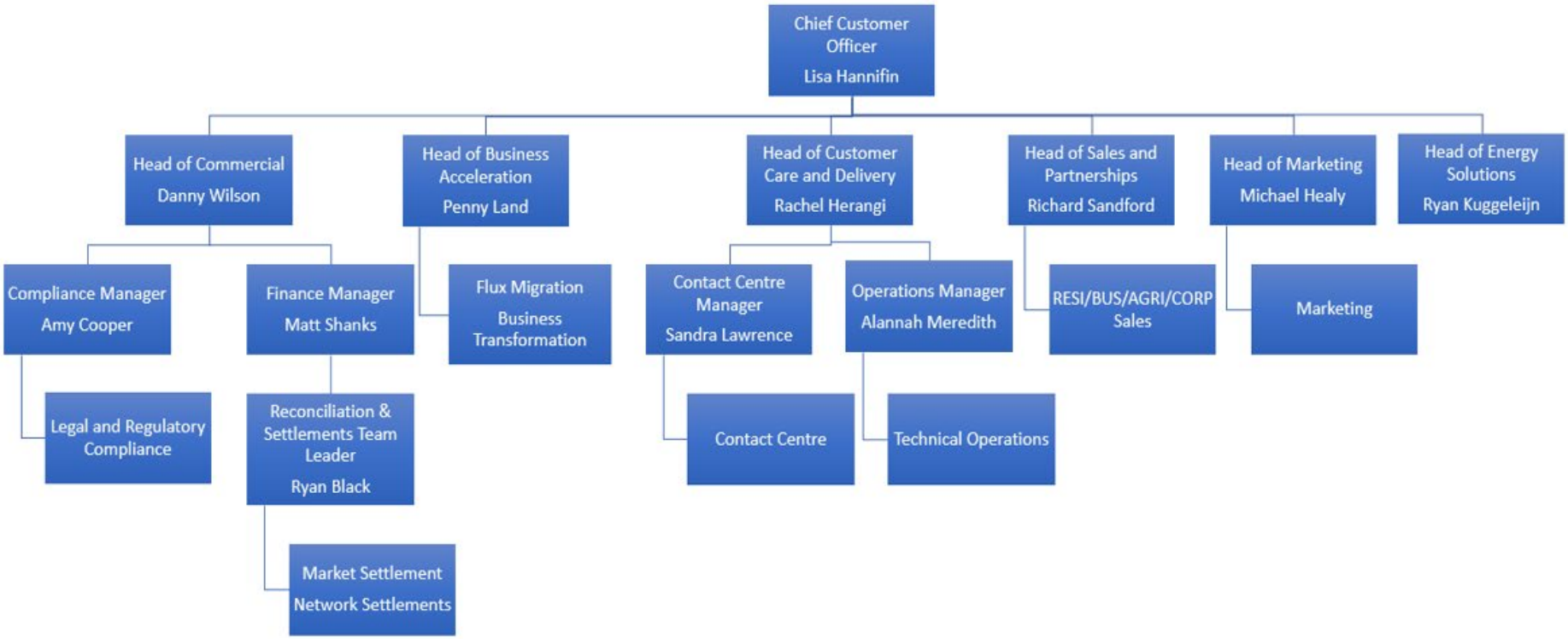
Exemption 287 ICP 0000840407WE388

Exemption 287 allows Meridian to use subtraction to determine submission information for ICP 0000840407WE388. The exemption is in place from 2 December 2020 until the earlier of:

- 30 June 2025,
- the date when Meridian is no longer in the registry as being the trader for ICP 0000840407WE388, and
- the date Vector Metering Limited ceases to be the MEP for ICP 0000011015WEC04 or ICP 0000011055WEEA1, and
- the date when Meridian no longer has an agreement with any retailer of ICP 0000015182WE1AD, ICP 0000025029WEF4E or ICP 0003146175WE243 to receive half hour metered data required in the subtraction calculation for ICP 0000840407WE388, and
- the date on which the metering or distribution configuration is changed so that submission information no longer needs to be calculated by a subtractive process.

None of the above events have occurred so the exemption remains in place.

1.2. Structure of Organisation



1.3. Persons involved in this audit

Auditors:

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

Personnel assisting in this audit were:

Name	Title
Amy Cooper	Compliance Manager
Helen Youngman	Energy Data Analyst
Daniel Lau	Energy Data Analyst
Alannah Meredith	Team Manager - Tech Support
Damien Rillstone	Team Manager - Tech Support
Wendy Jin	C&I Operations Specialist
Mary Yee	Technical Operations Support Specialist
Melanie Matthews	Quality and Compliance Advisor
Sou Sopo	Technical Operations Support Specialist
Amy Earle	Technical Operations Support Specialist
Sam Creed	Technical Operations Support Specialist

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

The use of agents was discussed with Meridian.

Audit commentary

Meridian understands that they remain responsible for meeting their code obligations where agents are used. The relevant agents are identified in **section 1.9**. The agents' compliance was assessed as part of this audit, and their agent audits.

1.5. Hardware and Software

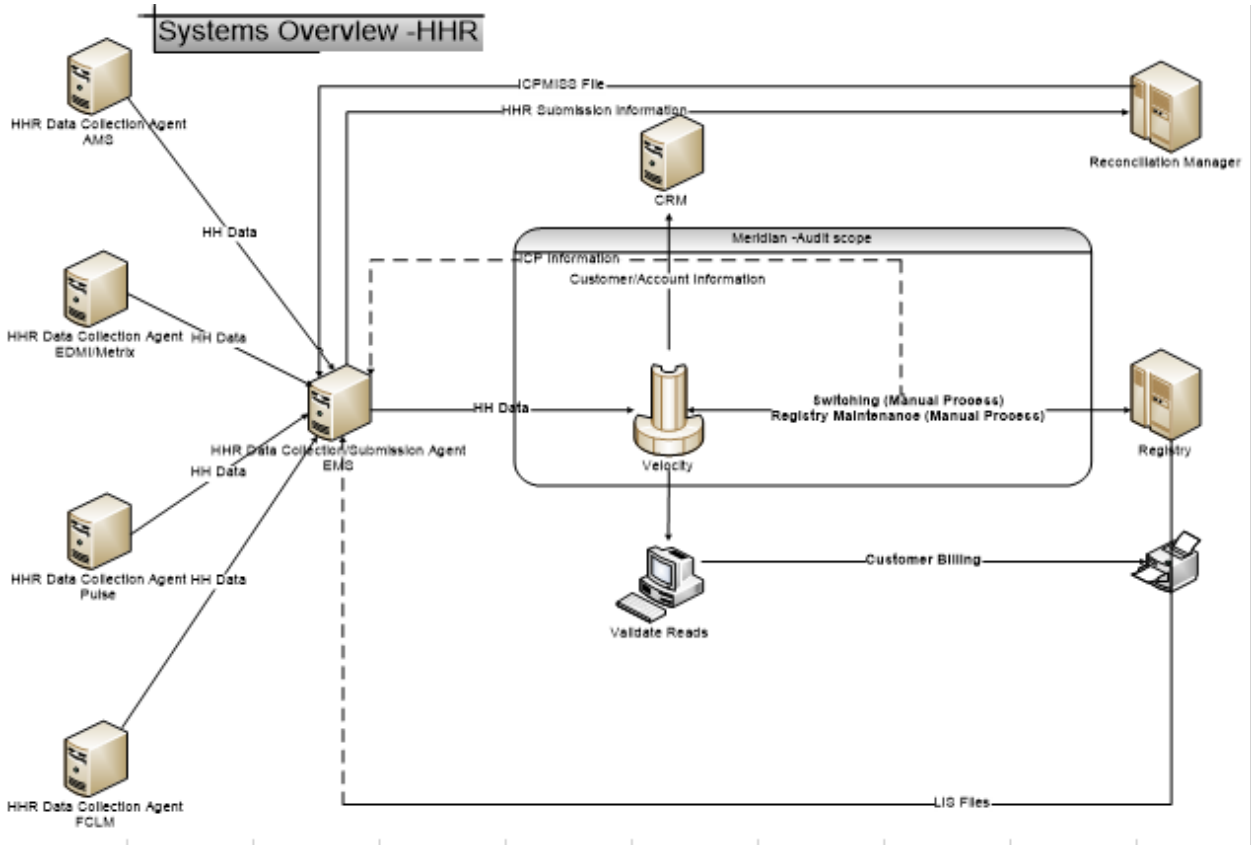
MERI

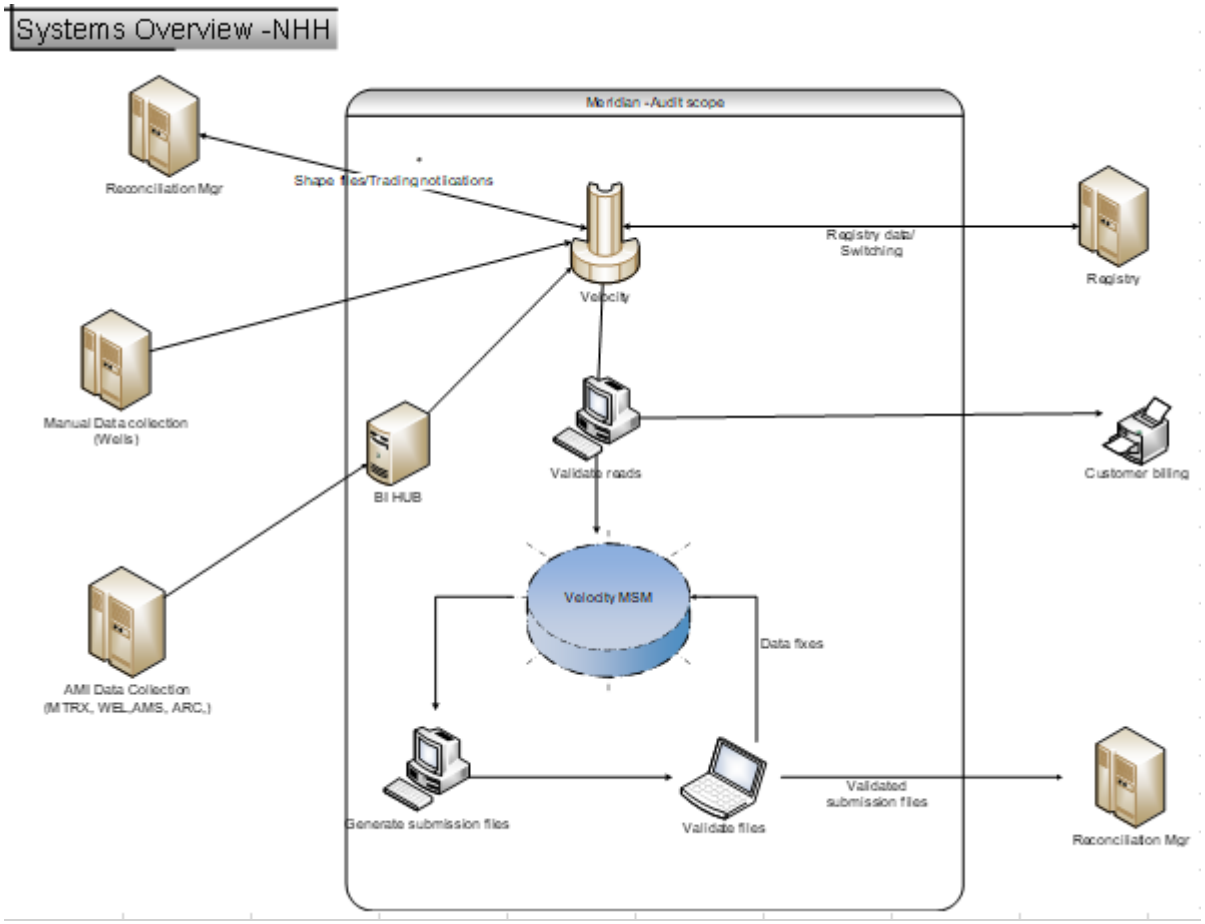
The following are the primary systems used for reconciliation participant activities.

- Velocity – used for NHH registry management, NHH meter read validation and storage, NHH switching and computation of NHH submission information. Only AMI midnight reads used for billing are imported into from the BI Hub into Velocity and is validated. Support for the system is provided by Gentrack and access is restricted using individual logins and passwords.
- STARK – used for data collection, validation, and storage of HH data for MERI Generation. Support is provided by Quasar Systems and access is restricted using individual logins and passwords.

Meridian conducts backups of both systems data to tape daily, weekly, monthly, and annually in accordance with good ICT practice.

System diagrams for MERI showing information flows are below.



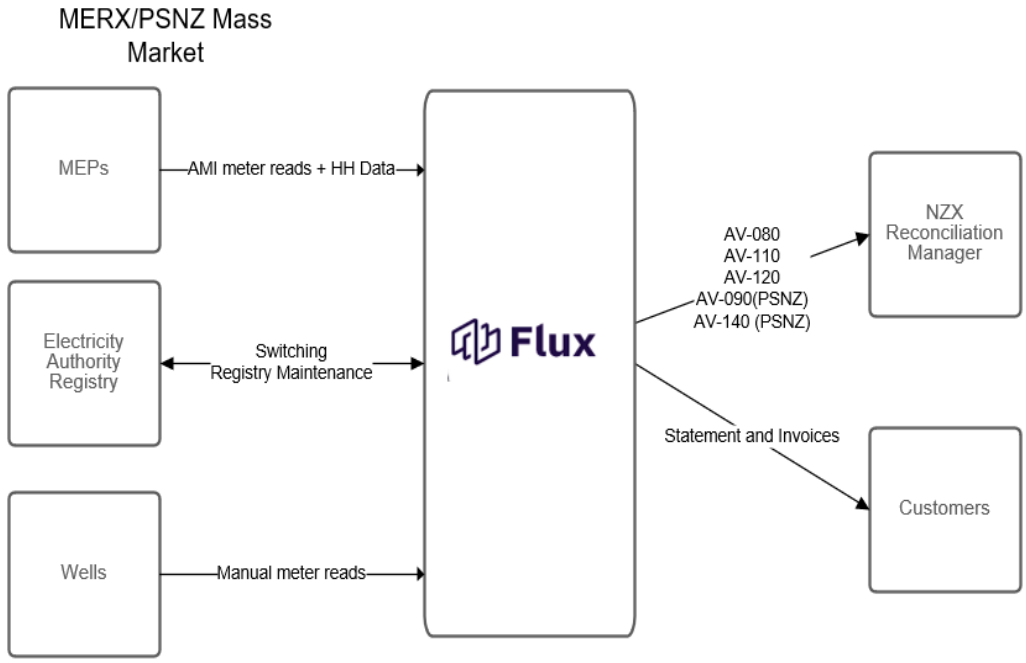


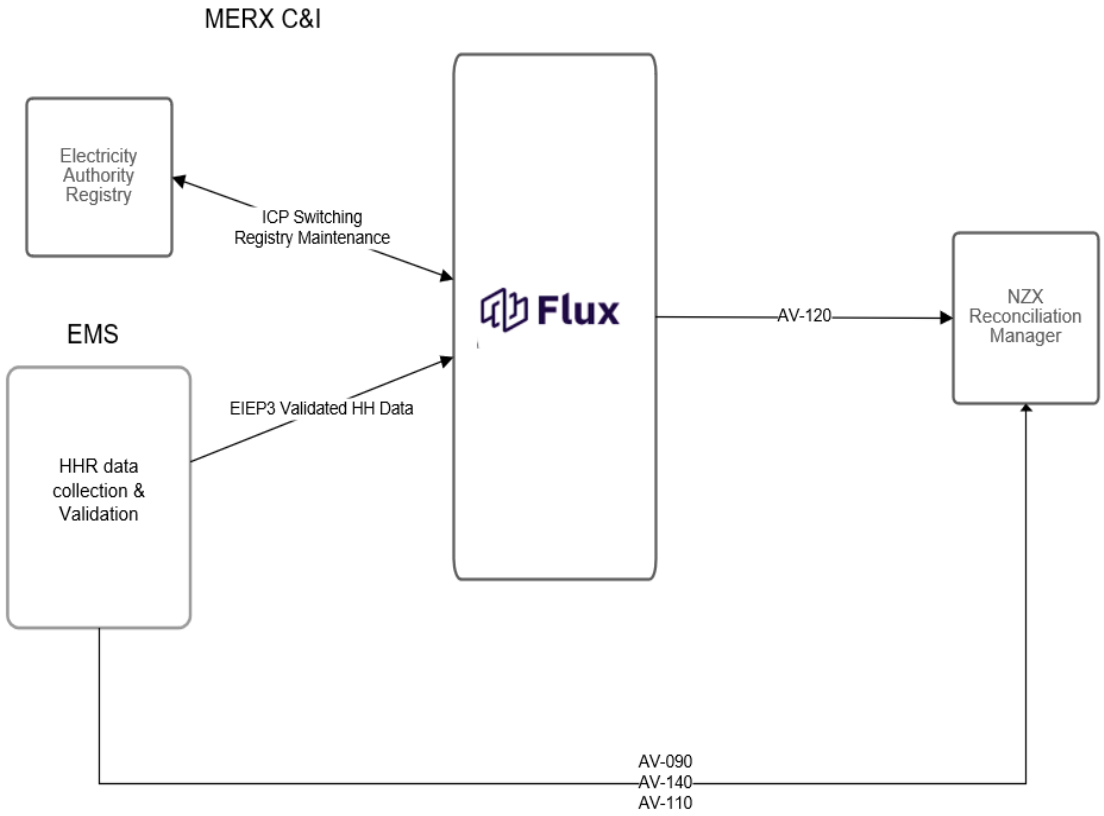
MERX and PSNZ

The Flux system is used for registry management, switching, and reconciliation and is provided and maintained by Flux Federation. Flux Federation operates an Information Security Management System (ISMS), supporting the design, development, provision, operation, and maintenance of the Flux system, that has been certified as compliant with the requirements of ISO/IEC 27001:2013.

Access to systems is restricted using individual logins, passwords, and security tokens.

Back-ups are taken daily and periodically tested to ensure that they can be restored and completed in accordance with ISO/IEC 27001:2013 standards.





Agents

Agent systems are discussed in their own audit reports.

1.6. Breaches or Breach Allegations

Meridian had three breach allegations recorded by the Electricity Authority, but none were relevant to this audit.

1.7. ICP Data

MERI

All active ICPs are summarised by metering category in the table below. ICPs which are active but have no metering details or unmetered load recorded on the registry are discussed in **section 2.9**.

Metering Category	ICPs 2022	ICPs 2021	ICPs 2020	ICPs 2019	ICPs 2018	ICPs 2017
1	16,062	33,282	133,098	198,405	215,064	208,967
2	3,063	5,114	9,670	8,942	8,234	7,893
3	1,431	1,284	1,081	927	751	692
4	644	600	481	391	313	273
5	75	78	69	70	54	57
9	997	1,183	1,124	1,014	993	891
Blank	2,942	2,855	2,767	2,641	2,387	1,929

Status	ICPs 2022	ICPs 2021	ICPs 2020	ICPs 2019	ICPs 2018	ICPs 2017
Active (2,0)	25,214	44,396	148,290	212,390	227,796	220,702
Inactive – new connection in progress (1,12)	404	204	525	288	377	378
Inactive – electrically disconnected vacant property (1,4)	90	3,857	4,812	4,917	4,986	5,111
Inactive – electrically disconnected remotely by AMI meter (1,7)	18	37	73	34	29	20
Inactive – electrically disconnected at pole fuse (1,8)	1	3	3	4	5	2
Inactive – electrically disconnected due to meter disconnected (1,9)	3	3	2	1	3	-
Inactive – electrically disconnected at meter box fuse (1,10)	-	1	1	-	-	-
Inactive – electrically disconnected at meter box switch (1,11)	-	1	-	-	1	-

Inactive – electrically disconnected ready for decommissioning (1,6)	31	65	70	94	127	168
Inactive – reconciled elsewhere (1,5)	7	7	6	6	4	6
Inactive – code not recognised (1,0)	-	-	-	-	1	1
Decommissioned (3)	40,204	31,172	38,012	36,862	35,405	33,779

MERX

All active ICPs are summarised by metering category in the table below. ICPs which are active but have no metering details or unmetered load recorded on the registry are discussed in **section 2.9**.

Metering Category	ICPs 2022	ICPs 2021	ICPs 2020	ICPs 2019
1	215,236	192,201	87,916	18,898
2	9,133	6,164	303	10
3	40	-	-	-
4	13	-	-	-
5	5	-	-	-
9	3	93	-	-
Blank	12	3	-	-

Status	ICPs 2022	ICPs 2021	ICPs 2020	ICPs 2019
Active (2,0)	224,442	198,461	88,219	18,908
Inactive – new connection in progress (1,12)	480	223	-	-
Inactive – electrically disconnected vacant property (1,4)	4,632	852	204	1
Inactive – electrically disconnected remotely by AMI meter (1,7)	33	13	5	-
Inactive – electrically disconnected at pole fuse (1,8)	4	1	-	-
Inactive – electrically disconnected due to meter disconnected (1,9)	-	-	1	-
Inactive – electrically disconnected at meter box fuse (1,10)	1	-	-	-
Inactive – electrically disconnected at meter box switch (1,11)	-	-	-	-
Inactive – electrically disconnected ready for decommissioning (1,6)	44	20	1	-
Inactive – reconciled elsewhere (1,5)	-	-	-	-
Inactive – code not recognised (1,0)	-	-	-	-

Decommissioned (3)	987	236	-	1

PSNZ

All active ICPs are summarised by metering category in the table below. ICPs which are active but have no metering details or unmetered load recorded on the registry are discussed in **section 2.9**.

Metering Category	ICPs 2022	ICPs 2021	ICPs 2020	ICPs 2019	ICPs 2018	ICPs 2017
1	115,931	105,589	75,820	72,184	65,041	59,062
2	1,846	1,737	1,290	1,285	1,133	978
3		-	-	-	-	-
4		-	-	-	-	-
5		-	-	-	-	-
9	7	15	8	12	5	8
Blank	2	1	-	2	3	8

Status	ICPs 2022	ICPs 2021	ICPs 2020	ICPs 2019	ICPs 2018	ICPs 2017
Active (2,0)	117,786	107,342	77,118	73,483	66,182	60,056
Inactive – new connection in progress (1,12)	219	128	62	117	42	47
Inactive – electrically disconnected vacant property (1,4)	1,501	1,439	1,041	1,095	880	549
Inactive – electrically disconnected remotely by AMI meter (1,7)	7	10	3	2	3	6
Inactive – electrically disconnected at pole fuse (1,8)	1	-	1	-	-	-
Inactive – electrically disconnected due to meter disconnected (1,9)	-	-	-	-	-	-
Inactive – electrically disconnected at meter box fuse (1,10)	-	-	-	1	-	-
Inactive – electrically disconnected at meter box switch (1,11)	-	-	-	-	-	1
Inactive – electrically disconnected ready for decommissioning (1,6)	28	7	2	7	3	24
Inactive – reconciled elsewhere (1,5)	-	-	-	7	-	-

Decommissioned (3)	2,996	2,724	2,230	2,135	1,975	1,692

1.8. Authorisation Received

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 Meridian, 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 7.1.

The audit was carried out at Meridian's premises between 23 and 25 August 2022.

The audit scope includes the MERI, MERX and PSNZ participant codes. Analysis was completed on:

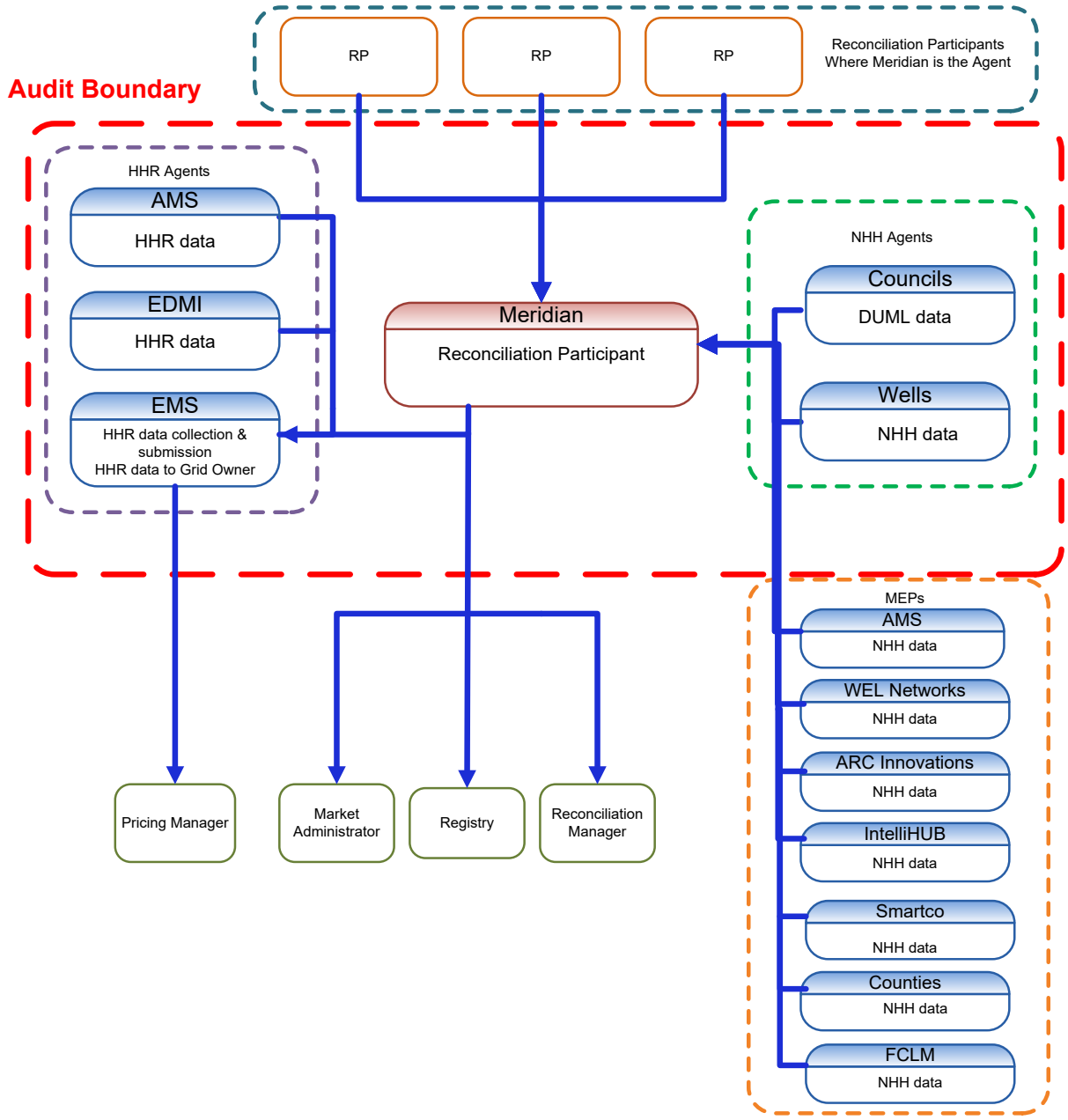
- registry list snapshot reports as of 8 June 2022, and
- registry lists, AC020 reports, and event detail reports for 1 July 2021 to 31 May 2022.

The table below shows the tasks under clause 15.38 of part 15 for which Meridian requires certification, and agents who assist with those tasks.

Tasks Requiring Certification Under Clause 15.38(1) of Part 15	Agents Involved in Performance of Tasks	MEPs Providing Data
(a) - Maintaining registry information and performing customer and embedded generator switching		
(b) – Gathering and storing raw meter data	Wells (NHH) AMS (HHR and manual HHR) EMS (HHR) EDMI (HHR)	AMS Arc Counties Power FCLM Intellihub Smartco WEL Networks
(c)(iii) - Creation and management of volume information	Councils (DUML data) EMS (HHR)	
(d) (i)– Calculation of ICP days	EMS (HHR)	
(d)(ii) - delivery of electricity supplied information under clause 15.7		
(d)(iii) - delivery of information from retailer and direct purchaser half hourly metered ICPs under clause 15.8	EMS (HHR)	

Tasks Requiring Certification Under Clause 15.38(1) of Part 15	Agents Involved in Performance of Tasks	MEPs Providing Data
(e) – Provision of submission information for reconciliation	EMS (HHR)	
(f) - Provision of metering information to the Grid Owner	EMS	

The scope of the audit is shown in the diagram below, with the Meridian audit boundary shown for clarity.



1.10. Summary of previous audit

The previous audit was completed in September 2021 by Steve Woods (lead auditor) of Veritek Limited. The summary tables below show the statuses of the non-compliances and recommendations raised in the previous audit. Further comment is made in the relevant sections of this report.

Subject	Section	Clause	Non-compliance	Status
Relevant information	2.1	11.2 & 15.2	**MERI** Some registry information is incorrect. Not all corrections actioned from the last audit. One ICP with active vacant consumption of 3,699 kWh not submitted as the ICP was at the incorrect status. Some incorrect submission information recorded in section 12.7. **MERX** Some registry information is incorrect. Not all corrections actioned from the last audit. Some incorrect submission information recorded in section 12.7. **PSNZ** Some registry information is incorrect. Not all corrections actioned from the last audit. Some incorrect submission information recorded in section 12.7.	Still existing
Electrical Connection of Point of Connection	2.11	10.33A	**MERI** Two ICPs with no metering in place and are not reconciled as unmetered load. Six of the 20 ICPs (30%) sampled (of a total of 65 ICPs) where certification is more than five days after the electrical connection date were confirmed to have late certification. 56 ICPs were certified more than 5 days after reconnection. **MERX** 38 ICPs were not certified within 5 days after reconnection. Three ICP's meters were not certified on unbridging. **PSNZ** 78 reconnections were not certified within five business days. Three bridged meters were not recertified when the bridge was removed.	Still existing

Subject	Section	Clause	Non-compliance	Status
Changes to registry information	3.3	10 Schedule 11.1	**MERI** 370 late updates to active status for reconnections. 406 late updates to inactive status for disconnections. 5,039 late trader updates. **MERX** 300 late updates to active status for reconnections. 127 late updates to inactive status for disconnections. 1,802 late trader updates. **PSNZ** 593 late updates to active status for reconnections. 14 late updates to inactive new connection in progress status. 229 late updates to inactive status for disconnections. 1,328 late trader updates.	Still existing
Provision of information to the registry manager	3.5	9 Schedule 11.1	**MERI** 735 late updates to active status for new connections. Four of the sample of 61 ICPs had incorrect active dates recorded. Five corrections from 2020 audit not corrected. **MERI** 32 late updates to active status for new connections. One of the sample of 11 ICPs had an incorrect active date recorded. **PSNZ** 195 late new connection updates. Three incorrect event dates.	Still existing
ANZSIC codes	3.6	9 (1(k) of Schedule 11.1	**MERI** One ICP of a sample of 50 ICPs checked with incorrect ANZSIC codes. **MERX** All 18 ICPs sampled of the 103 ICPs with unknown ANZSIC codes were able to be determined. All ten ICPs sampled with a residential ANZSIC code were found to be incorrect and have been corrected.	Still existing
Changes to unmetered load	3.7	9(1)(f) of Schedule 11.1	**MERI** Unmetered load incorrect for three ICPs. **MERX** Unmetered load incorrectly recorded for one ICP.	Still existing

Subject	Section	Clause	Non-compliance	Status
			PSNZ Five ICPs incorrectly have unmetered load recorded.	
Management of "active" status	3.8	17 Schedule 11.1	**MERI** Four of the sample of 61 ICPs had incorrect active dates recorded. Five corrections from 2020 audit not corrected. **MERX** One of the sample of 11 ICPs had incorrect active date recorded. Two corrections from 2020 audit not corrected. **PSNZ** Three ICPs had incorrect active dates applied in Flux and on the registry.	Still existing
Management of "inactive" status	3.9	19 Schedule 11.1	**MERI** Two ICPs electrically connected but recorded as "inactive - new connection in progress". ICP 1002094149LC17B has an incorrect status on the registry, due to missing paperwork from the MEP. The ICP is active with volumes submitted but the registry still shows 1,12 "inactive - new connection in progress" status. **MERX** Four ICPs electrically connected but recorded as "inactive - new connection in progress" 28 ICPs had consumption during inactive periods, indicating that their status was incorrect. Estimated under submission of 29,873 kWh has occurred. **PSNZ** A disconnection status event was entered one day too early on the registry for ICP 0000581321TUD48. A correction cannot be processed because the ICP is now decommissioned. 17 ICPs had consumption during inactive periods, indicating that their status was incorrect. Estimated under submission of 468 kWh has occurred. Three ICPs had incorrect statuses and status dates applied. Three ICPs with incorrect inactive statuses of 1,12 instead of 1,6. Three ICPs had inactive statuses of 1,12 when they should be active.	Still existing

Subject	Section	Clause	Non-compliance	Status
Losing trader response to switch request and event dates - standard switch	4.2	3 and 4 Schedule 11.3	**MERI** Two AN files were sent with a proposed event date more than ten days after receipt of the NT. **MERX** Incorrect AN code applied for three ICPs out of a sample of ten checked.	Still existing
Losing trader must provide final information - standard switch	4.3	5 Schedule 11.3	**MERI** Seven CS breaches. Average daily consumption is not calculated in accordance with the registry functional specification in some instances. Incorrect last read date recorded for all three ICPs sampled from a total of 12 switch and transfer switches. Incorrect read types sent for two ICPs. Last actual read date was after the period of supply for one of five ICPs sampled. **MERX** Average daily consumption is not calculated in accordance with the registry functional specification in some instances. All five transfer switch ICPs sampled of a possible 613 transfer and switch ICPs contained an incorrect last read date. **PSNZ** Three late CS files. Four transfer CS files contained an incorrect read type. Three transfer CS files had the incorrect reading. Average daily kWh in the CS is not calculated in accordance with the Registry Functional Specification.	Still existing
Retailers must use same reading - standard switch	4.4	Clause 6(1) and 6A Schedule 11.3	**MERI** Six late RR files. **MERX** 12 late RR files. **PSNZ** 14 late RR files.	Still existing
Non-half hour switch event meter reading - standard switch	4.5	Clause 6(2) and (3)	**MERX** Four RRs incorrectly rejected.	Still existing

Subject	Section	Clause	Non-compliance	Status
		Schedule 11.3		
Gaining trader informs registry of switch request - switch move	4.7	9 Schedule 11.3	**MERI** Two transfer switches requested as switch moves. One ICP with a category 3 meter switched using a switch move. **MERX** Three transfer switches requested as switch moves.	Cleared
Losing trader provides information - switch move	4.8	10(1) Schedule 11.3	**MERI** Four AN files were sent with a proposed event date more than ten days after receipt of the NT. 24 T2 breaches. Two ET breaches. One genuine E2 breach out of a sample of 20 checked. **MERX** Incorrect AN code applied for one ICP out of a sample of ten checked. Five T2 breaches. One genuine E2 breach. Eight of the ten ET breaches sampled were found to be genuine. **PSNZ** One E2 breach 16 late CS files (T2 breaches). Five ANs had proposed event dates more than ten business days after the NT receipt date and did not match the gaining trader's requested date.	Still existing
Losing trader determines a different date - switch move	4.9	10(2) Schedule 11.3	Proposed event date more than ten business days after the NT receipt date for one ICP.	Still existing
Losing trader must provide final information - switch move	4.10	11 Schedule 11.3	**MERI** Average daily consumption is not calculated in accordance with the registry functional specification in some instances. Incorrect last read date recorded for all three ICPs sampled from a total of 12 switch and transfer switches. All five ICPs sampled of a possible 5,435 ICPs had an incorrect read type of actual recorded.	Still existing

Subject	Section	Clause	Non-compliance	Status
			Last actual read date was after the period of supply for two of five ICPs sampled. **MERX** Average daily consumption is not calculated in accordance with the registry functional specification in some instances. All five move switch ICPs sampled of a possible 613 transfer and switch ICPs contained an incorrect last read date. All five ICPs sampled of a possible 151 ICPs had an incorrect read type of actual recorded where the read was more than one day before the event date . **PSNZ** One switch move CS contained an incorrect read. Three switch move CS contained an incorrect read type. Average daily kWh in the CS is not calculated in accordance with the Registry Functional Specification.	
Gaining trader changes to switch meter reading - switch move	4.11	12 Schedule 11.3	**MERI** 22 late RR files. One of the five RRs rejections sampled incorrectly rejected causing the gaining HHR trader to gain on an inaccurate read. **PSNZ** 30 late RR files for switch moves.	Still existing
Withdrawal of switch requests	4.15	17 and 18 Schedule 11.3	**MERI** Six of the 21 NW codes sampled applied incorrectly. One WR breach. One WC breach. Four SR breaches. 61 NA breaches. Two of the ten AW files sampled were rejected in error. **MERX** Five of the 21 NW codes sampled applied incorrectly. Two WR breaches. 11 SR breaches. One NW breach. 103 NA breaches. Two of the ten NW requests sampled were rejected in error. **PSNZ**	Still existing

Subject	Section	Clause	Non-compliance	Status
			64 NWs were issued more than two calendar months after the switch date. 13 SR breaches. 5 WR breaches. Seven incorrect NW codes used. One late AW file.	
Metering information	4.16	21 Schedule 11.3	**MERI** and **MERX** CS reads labelled incorrectly which can cause vacant consumption to be pushed to the gaining trader. **PSNZ** Four CS files had an incorrect switch readings.	Still existing
Unmetered threshold exceeded	5.3	10.14 (5)	**MERI** Eight standard unmetered ICPs with annual consumption over 6,000 kWh.	Still existing
Distributed unmetered load	5.4	11 Schedule 15.3, Clause 15.37B & 16A.26	**MERI** ICP 7012020000CH14D is a DUML ICP for Tararua DC but is reconciled using the daily unmetered kWh figure from the registry and not a database and no audit has been undertaken of this load. ICP 0089352023PCEAD is a DUML ICP for Stratford DC but is reconciled using the daily unmetered kWh figure from the registry and not a database and no audit has been undertaken of this load. Inaccurate submission information for several databases. Two distributed unmetered database audits overdue. The monthly database extracts used to derive submission from are provided as a snapshot and do not track changes at a daily basis as required by the code in some instances.	Still existing
Electricity conveyed & notification by embedded generators	6.1	10.13, 10.24 and 15.13	**MERI** 2 active ICPs have had their meters removed from the registry in 2017 and are not unmetered installations therefore there is no meter in place as required by this clause. ICP 0001050011WM9D7 is not quantified in accordance with the code. Generation not quantified or gifted for three of three HHR ICPs sampled where the Distributor indicates grid connected generation is connected. While meters were bridged, energy was not metered and quantified according to the code for three ICPs. **MERX**	Still existing

Subject	Section	Clause	Non-compliance	Status
			One ICP with an installation type of "B" without the PV1 profile. Ten of the 20 ICPs sampled of a possible 82 ICPs with an installation type of "B" without the PV1 or EG1 profile. While meters were bridged, energy was not metered and quantified according to the code for seven ICPs. **PSNZ** While meters were bridged, energy was not metered and quantified according to the code for eight ICPs. Generation not quantified or submitted for five ICPs.	
Certification of control devices	6.3	Clause 33 Schedule 10.7 and 2(2) Schedule 15.3	**MERX** ICPs 0000272750WT426, 0000656115WTB38, 0000264755WT448, and 0000252400WT6E0 had profiles requiring control device certification without a certified control device or an AMI meter installed.	Still existing
Collection of information by certified reconciliation participant	6.5	2 Schedule 15.2	**MERI** ICP 0085976769LC230 was not interrogated within its maximum interrogation cycle.	Still existing
Derivation of meter readings	6.6	3(1), 3(2) and 5 Schedule 15.2	**MERI** Customer reads can be treated as actual reads when they are not validated against a set of actual meter reads from another source in some instances. **MERX** Wells meter condition information not checked for the entire audit period. One ICP with a customer read incorrectly identified. **PSNZ** Wells meter condition information not checked for the entire audit period.	Still existing
NHH meter reading application.	6.7	6 Schedule 15.2	**MERI** For downgrades, all HHR volumes are reported up to the day of the meter change. All NHH volumes are reported, but due to system constraints the consumption is apportioned from two days after the meter change onwards instead of from the day after the meter is changed.	Still existing
Interrogate meters once	6.8	7(1) and (2) Schedule 15.2	**MERI** Nine of ten ICPs were not read during the period of supply and exceptional circumstances were not proven. **MERX**	Still existing

Subject	Section	Clause	Non-compliance	Status
			Two of ten ICPs sampled were not read during the period of supply and exceptional circumstances were not proven. **PSNZ** Two of ten ICPs sampled were not read during the period of supply and exceptional circumstances were not proven.	
NHH meters interrogated annually	6.9	8(1) and (2) Schedule 15.2	**MERI** Exceptional circumstances and best endeavours were not proven for one of ten examples checked.	Still existing
NHH meters 90% read rate	6.10	9(1) and (2) Schedule 15.2	**MERI** Exceptional circumstances and best endeavours were not proven for 11 of 13 examples checked. **PSNZ** For at least two ICPs unread in the previous four months, the best endeavours requirements were not met, and exceptional circumstances did not exist.	Still existing
Identification of readings	9.1	3(3) Schedule 15.2	Some incorrectly labelled meter readings, as follows: **MERI** At least three ICPs with actual readings labelled as estimates. At least five ICPs with estimated readings labelled as actuals. **MERX** At least five ICPs with estimates labelled as actuals. **PSNZ** Actual readings labelled as estimates for four ICPs. Estimated readings labelled as actuals for three ICPs.	Still existing
Meter data used to derive volume information	9.3	3(5) Schedule 15.2	**MERI, MERX** and **PSNZ** Raw meter data is truncated upon receipt and not when volume information is created for SMCO, IHUB and FCLM meters.	Still existing
Electronic meter readings and estimated readings	9.6	17 Schedule 15.2	Not all AMI events checked.	Still existing
Calculation of ICP days	11.2	15.6	**MERI** 16 days were under reported in July 2020 for ICP 0272000007PN5D1 (PPNZ-PCB0012 July 2020 r7) because reads were not entered into the correct screen as part of a meter change. **MERX**	Still existing

Subject	Section	Clause	Non-compliance	Status
			Four days were over reported at UNET-HEN0331 for February 2020 r14 because a switch for 0000154518UN2C2 which was manually processed on the registry, had not been processed from the correct date in Flux. **PSNZ** One day was over submitted for HAWK-OWH0111 for May 2020 r7 because a disconnection status event was entered one day too early on the registry for ICP 0000581321TUD48. A correction cannot be processed because the ICP is now decommissioned. 152 days were under reported at LINE-NPK0331 because the start date for ICP 0001112133WM1BA's NSP was incorrect.	
HHR aggregates information provision to the reconciliation manager	11.4	15.8	**MERI** HHR aggregates file does not contain electricity supplied information. **PSNZ** HHR aggregates file does not contain electricity supplied information.	Still existing
Creation of submission information	12.2	15.4	**MERI** ICPs 0005906555RNE30, 0006300324RNC8C and 0008801022TPEF8 have 1,5 "reconciled elsewhere" status but do not have their load reconciled under another ICP. ICP 0008801022TPEF8 has no load connected. **MERX** 28 ICPs had consumption during inactive periods, indicating that their status was incorrect. Estimated under submission of 29,873 kWh has occurred. **PSNZ** The NSP start date for ICP 0001112133WM1BA was incorrect, resulting in no data being submitted for some revisions between January and May 2020. 17 ICPs had consumption during inactive periods, indicating that their status was incorrect. Estimated under submission of 468 kWh has occurred.	Still existing
Accuracy of submission information	12.7	15.7	**MERI** Velocity records historic estimate as forward estimate where an ICP ends on an estimated closing reading**,** or permanent estimate readings have not been entered for ICPs not read within the previous 14 months. ICPs 0005906555RNE30, 0006300324RNC8C and 0008801022TPEF8 have 1,5 "reconciled elsewhere" status but do not have their load reconciled under	Still existing

Subject	Section	Clause	Non-compliance	Status
			another ICP. ICP 0008801022TPEF8 has no load connected. One RR file of five rejected RR files sampled incorrectly rejected resulting in 4,858 kWh being pushed to the gaining trader. For downgrades, all HHR volumes are reported up to the day of the meter change. All NHH volumes are reported, but due to system constraints the consumption is apportioned from two days after the meter change onwards instead of from the day after the meter is changed. **MERX** Historic estimate is recorded as forward estimate where shape files from the reconciliation manager are unavailable, or permanent estimate readings have not been entered for ICPs not read within the previous 14 months. 28 ICPs had consumption during inactive periods, indicating that their status was incorrect. Estimated under submission of 29,873 kWh has occurred. **PSNZ** Historic estimate is recorded as forward estimate where shape files from the reconciliation manager are unavailable, or permanent estimate readings have not been entered for ICPs not read within the previous 14 months. The NSP start date for ICP 0001112133WM1BA was incorrect, resulting in no data being submitted for some revisions between January and May 2020. 17 ICPs had consumption during inactive periods, indicating that their status was incorrect. Estimated under submission of 468 kWh has occurred.	
Permanence of meter readings for reconciliation	12.8	4 of Schedule 15.2	**MERI** Some estimates not replaced by revision 14, and under certain circumstances historic estimate is labelled as forward estimate. **MERX** Some estimates not replaced by revision 14, and under certain circumstances historic estimate is labelled as forward estimate. **PSNZ** Some estimates not replaced by revision 14, and under certain circumstances historic estimate is labelled as forward estimate.	Still existing

Subject	Section	Clause	Non-compliance	Status
Reconciliation participants to prepare information	12.9	2 Schedule 15.3	**MERI** 0331837361LCD62 has metering category 3 and RPS profile and NHH submission type.	Still existing
Historical estimates and forward estimates	12.10	3 of schedule 15.3	**MERI** Historic estimate is labelled as forward estimate where an ICP switches out on an estimated reading, and where permanent estimate readings have not been entered. **MERX** Historic estimate is labelled as forward estimate where SASV are not provided for the NSP and profile by the reconciliation manager, and where permanent estimate readings have not been entered. **PSNZ** Historic estimate is labelled as forward estimate where SASV are not provided for the NSP and profile by the reconciliation manager, and where permanent estimate readings have not been entered.	Still existing
Forward estimate process	12.12	6 Schedule 15.3	MERI The accuracy threshold was not met for all months and revisions.	Still existing
Historical estimate reporting to RM	13.3	10 Schedule 15.3	MERI Historic estimate thresholds were not met for some revisions. MERX Historic estimate thresholds were not met for some revisions. PSNZ Historic estimate thresholds were not met for some revisions.	Still existing

Subject	Section	Recommendation	Status
ANZSIC codes	3.6	Review the process in place to investigate and correct where required the ICPs with unknown ANZSIC codes allocated.	Cleared
Unmetered load	3.7	Check ICPs where PSNZ has unmetered load recorded but the distributor does not.	Cleared

Subject	Section	Recommendation	Status
Monitoring of new and ready ICPs	3.10	I recommend running a registry list six monthly with: Status: 000 or 999 Proposed trader: PSNZ End date: the day the report is run and compare the results to the ICPs PSNZ expects to be at "new" or "ready" status. Any ICPs which appear to have been assigned to PSNZ in error can then be checked with the distributor.	Still existing
Losing trader must provide final information	4.10	Use actual reads on the date of the switch event to ensure active vacant consumption is reconciled and reduce the volume of RRs being received.	Still existing
Distributed generation	6.1	Confirm if distributed generation is present for the 17 HHR ICPs where the Distributor indicates it is, but there is no injection metering installed.	Cleared
Calculation of HHR estimates	9.4	Develop a process to estimate missing trading periods and days based on the surrounding meter readings and profiles for a similar consumption period, to improve the accuracy of HHR temporary and permanent estimates.	Cleared
AMI metering events	9.6	Check all metering events, including tamper events and give a higher priority to ICPs where there is zero consumption and a tamper event.	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 processes to find and correct incorrect information was examined. The registry validation processes were examined in detail in relation to the achievement of this requirement.

The registry list and AC020 reports were examined to identify any registry discrepancies, and to confirm that all information was correct and not misleading.

Audit commentary

Registry information

MERI

No changes have been made to Velocity as the majority of Meridian's customers have been moved to the MERX code, using the Flux system. When information held on the registry is updated in Velocity, the change is automatically sent to the registry. Notification files and acknowledgements received from the registry are loaded into Velocity. If action is required for a notification or acknowledgement item, it is directed to a work queue. Work queue items are actioned and monitored daily.

Velocity data is validated against the registry three times each month.

- A snapshot of distributor and trader data is compared at the beginning of each month. Discrepancies which affect billing or reconciliation are investigated and resolved.
- Prior to initial and wash up submissions a registry list with history is compared to detailed submission data from Velocity. This validation identifies ICPs which are missing from Velocity or the registry during the period being reviewed, mismatched profiles, mismatched NSPs, mismatched networks, missing trader notifications, and generation flow with an inconsistent profile. High and low consumption is also identified and reviewed.

Some additional checks are completed for ANZSIC codes (discussed in **section 3.6**), unmetered load (discussed in **section 3.7**), and distributed generation (discussed in **section 6.1**).

MERI's controls are generally sound with regard to the identification and correction of information. Analysis of the list file and AC020 returned the following findings:

Issue	2022 Qty	2021 Qty	2020 Qty	2019 Qty	Comments
ICP at status "new connection in progress" (1,12) or "ready" (0,0) with an initial energisation date populated by the distributor	224	16	143	53	See **section 3.9**.
Active date variance with initial electrical connection date	478	1,851	1,069	356	See **section 3.8.**
Incorrect status or status date	9	11	1	9	Three of the sample of 52 ICPs had incorrect active dates recorded for new connections. See **section 3.8.** Six ICPs electrically connected but recorded as "inactive - new connection in progress". Five have been updated and one is still being investigated. See **section 3.9**.
Distributed Generation profile not recorded on the registry	-	0	36	61	See **section 6.1**.
Distributed Generation profile incorrectly recorded on the registry where installation type is not B or G	1	168	135	-	This is discussed further in **section 6.1**.
Active with blank ANZSIC codes	-	-	-	1	See **section 3.6.**
Active with incorrect ANZSIC code applied	1	1	-	11	
Active with ANZSIC "T99" not stated	-	-	-	-	
Active with ANZSIC "T994" don't know	-		5	4	
Active with ANZSIC "T995" refused to answer	-	-	-	-	
Active with ANZSIC "T997" response unidentifiable	-	-	-	-	
Active with ANZSIC "T999" not stated	-	-	-	-	
Meter cat 3 or known commercial site with residential ANZSIC code	-	-	-	-	
Active ICPs with blank MEP and no MEP nominated and UML =N	-	-	-	-	Compliant.
ICPs with standard unmetered load flag Y but load is recorded as zero	250	355	113	106	See **section 3.7.**

Issue	2022 Qty	2021 Qty	2020 Qty	2019 Qty	Comments
ICPs with incorrect shared unmetered load	-	3	4	-	Compliant.
ICPs have UML flag N and no shared unmetered load but Distributor field shows shared unmetered load.	-	-	-	-	Compliant.
Active ICPs with distributor unmetered load populated but retail unmetered load is blank and UML flag = N	1	1	6	12	See **section 3.7.**
Active ICPs with retail unmetered load populated but distributor unmetered load is blank	461	-	-	-	See **section 3.7.**
Over Category 2 without a HHR profile	-	-	-	-	Compliant.
Incorrect profile or submission type	14	8	2	2	No ICPs have submission flags which are inconsistent with the profiles applied. 13 ICPs with profiles requiring certification of control devices did not have a certified control device, AMI metering or HHR metering. See **section 6.3**. One ICP with the incorrect distributed generation profile applied. See **section 6.1**.

MERX

Flux's daily discrepancy process imports a registry list and compares it to the current values for the corresponding trader-maintained fields in Flux. Where a field MERX maintains is different, a status or trader update is automatically created with the appropriate event date and downloaded to a csv file, which is manually moved to the Registry SFTP directory.

Inactive - ready for decommissioning (1,6) status is not available in Flux, and this status is manually updated directly on the registry.

Where fields held in Flux maintained by another participant are different, including all GXP related information and distributor-maintained statuses, a notification file is generated by the registry. The file is imported into Flux but does not automatically update the affected fields. This is producing a lot of false positives in relation to unmetered load validation. The distributor will only populate the unmetered load details "if known" so all ICPs where Meridian has values recorded and the distributor has none are recorded on the registry discrepancy report. Users manually trigger updates to GXPs by running the "update GXP changes" process and can review changes in the notification files using Flux reports to determine any changes required.

In addition to the validations processes described above, MERX uses the AC020 reports regularly to identify and resolve discrepancies.

Profile validation is run regularly against the meter registers. Any discrepancies found are investigated and profiles are corrected as required.

Analysis of the list file and AC020 returned the following findings:

Issue	2022 Qty	2021 Qty	2020 Qty	2019 Qty	Comments
ICP at status "new connection in progress" (1,12) or "ready" (0,0) with an initial energisation date populated by the distributor	10	8	-	-	See **section 3.9**.
Active date variance with initial electrical connection date	1,021	171	-	-	See **section 3.8. (**This includes 764 ICPs where the IECD is blank)
Incorrect status or status date	13	3+	2	1	One of a sample of 20 ICPs had an incorrect active date recorded for reconnections. Six of the sample of 36 ICPs had incorrect active dates recorded for new connections. See **section 3.8.** Six ICPs electrically connected but recorded as "inactive - new connection in progress". Five have been updated and one is still being investigated. See **section 3.9**.
Distributed Generation profile not recorded on the registry	14	1	-	-	See **section 6.1**.
Distributed Generation profile incorrectly recorded on the registry where installation type is not B or G	5	92	103	8	See **section 6.1**. Five ICPs with the incorrect profile. Two are now resolved, but three require appropriate metering.
Active with blank ANZSIC codes	-	-	-	-	See **section 3.6.**
Active with incorrect ANZSIC code applied	-	10	-	-	
Active with ANZSIC "T99" not stated	-	11	-	-	
Active with ANZSIC "T994" don't know	12	67	2	-	
Active with ANZSIC "T995" refused to answer	-	3	-	-	
Active with ANZSIC "T997" response unidentifiable	-	1	-	-	

Issue	2022 Qty	2021 Qty	2020 Qty	2019 Qty	Comments
Active with "T998" response outside scope	1	-	-	-	
Active with ANZSIC "T999" not stated	-	23	-	-	
Meter cat 3 or known commercial site with residential ANZSIC code	-	-	4	-	See **section 2.9.**
Active ICPs with blank MEP and no MEP nominated and UML =N	-	-	-	-	See **section 2.9.**
ICPs with standard unmetered load flag Y but load is recorded as zero	-	-	-	-	Compliant.
ICPs with incorrect shared unmetered load	1	-	-	-	See **sections 3.7** and **5.1.**
ICPs have UML flag N and no shared unmetered load but Distributor field shows shared unmetered load.	1	-	-	-	See **sections 3.7** and **5.1.**
Active ICPs with distributor unmetered load populated but retail unmetered load is blank and UML flag = N	1	5	-	-	See **section 3.7**
Over Category 2 without a HHR profile	-	-	-	-	Compliant.
Incorrect profile or submission type	1,020	4	-	-	No ICPs have submission flags which are inconsistent with the profiles applied. 1,015 ICPs with profiles requiring certification of control devices did not have a certified control device, AMI metering or HHR metering. See **section 6.3**. Five ICPs with the incorrect distributed generation profile applied. See **section 6.1**.

PSNZ

PSNZ ensures that registry information is complete and accurate through its daily and weekly discrepancy processes.

Flux's daily discrepancy process imports a registry list and compares it to the current values for the corresponding fields in Flux. Where a field PSNZ maintains is different (such as a trader-maintained status, or trader details) a status or trader update is automatically created with the appropriate event date and sent to the registry. Where fields held in Flux maintained by another participant are different, including all NSP related information and distributor-maintained statuses, the change is imported into Flux with the appropriate event date.

A small number of users have access to update information directly in the registry, and this generally occurs where the registry needs to be updated immediately, or changes may require multiple updates.

Analysis of the list file and AC020 returned the following findings:

Issue	2022 Qty	2021 Qty	2020 Qty	2019 Qty	Comments
ICP at status "new connection in progress" (1,12) or "ready" (0,0) with an initial energisation date populated by the distributor	1	3	-	-	See **section 3.9**.
Active date variance with initial electrical connection date	210	134	-	-	See **section 3.8.**
Incorrect status or status date	4	13	3	20	**See section 3.8** One of a sample of 20 ICPs had an incorrect active date recorded for reconnections. Two of the sample of 33 ICPs had incorrect active dates recorded for new connections. ICP 0000047706WE3DF is still at "ready" but has been electrically connected.
Distributed Generation profile not recorded on the registry	10	5	-	-	See **section 6.1**.
Active ICPs with blank ANZSIC codes	-	-	-	-	Compliant.
Active ICPs with "T99" series unknown ANZSIC codes	-	-	1	1	Compliant.
Meter cat 3 or known commercial site with residential ANZSIC code	-	-	-	-	Compliant.
Active ICPs with blank MEP and no MEP nominated and UML =N	-	12	2	3	See **section 2.9.**
Active with UML load = zero	-	-	-	-	Compliant.
Active with Incorrect standard UML	TBC	-	-	-	Compliant.
Active with incorrect shared UML	TBC	-	5	4	Compliant.
Active ICPs with distributor unmetered load populated but retail unmetered load is blank and UML flag = N	-	5	4	5	Compliant.
Active ICPs with retail unmetered load populated but distributor unmetered load is blank	2	5	-	-	See **section 3.7.**

Issue	2022 Qty	2021 Qty	2020 Qty	2019 Qty	Comments
Over Category 2 without a HHR profile	-	-	-	-	Compliant.
Incorrect profile or submission type	195	3	46	1	No ICPs have submission flags which are inconsistent with the profiles applied. 195 ICPs with profiles requiring certification of control devices did not have a certified control device, AMI metering or HHR metering. See **section 6.3**. No incorrect profiles were identified. See **section 6.1**.

Read and volume data accuracy

Read and volume accuracy issues are identified in the validation processes described in detail in **sections 9.5** and **9.6**. I checked a sample of NHH corrections as described in the table below:

Defective meters	**MERI** Where a defective meter is identified a field services job is raised, and the meter is usually replaced. There are two main correction methods, and a combination of these two methods may be used for a single correction: • removal of the defective meter on an estimated closing read - once the read is validated, it will be used in the calculation of historic estimate and an account credit may be applied if the customer is not to be billed for the full correction, or • addition of a market settlement adjustment, where a volume is added for settlement, but is not billed to the customer; if the correction affects more than 14 months, consumption may be spread over the previous 12 months to ensure it is captured for reconciliation. The estimated closing read, or market settlement adjustment are calculated based on actual meter data if accurate data can be retrieved, or a best estimate of consumption for the affected period using historic data before the defect occurred, or data from the replacement meter. A template is available to assist staff to calculate accurate and consistent estimates using meter readings from accurate periods. Where load is seasonal, the customer is consulted when preparing the estimate. I reviewed two examples of defective meters during the audit period. For all ICPs consumption was appropriately estimated and settled. **MERX** MERX uses two correction methods for stopped and faulty meters: • removal of the defective meter on an estimated closing read, which is used to create historic estimate, and • addition of an unmetered load register to capture estimated consumption for the affected period. I reviewed ten examples of defective meters during the audit period and found that consumption during the faulty period was correctly reported using an unmetered load register for nine of the examples. For one ICP the technician advised the meter was not faulty, so no correction was required

	I also reviewed the process documentation for the volume correction methods. There is no instruction to ensure that any correction calculation is apportioned to the 14-month available wash up window only to ensure all volume is ultimately accounted for. **PSNZ** Like MERX, PSNZ uses two correction methods for stopped and faulty meters: • removal of the defective meter on an estimated closing read, which is used to create historic estimate, and • addition of an unmetered load register to capture estimated consumption for the affected period. I reviewed eight examples of defective meters during the audit period and found that consumption during the faulty period was correctly reported using an unmetered load register. For one ICP (0000011871WE2F3) the unmetered load register has not been end dated as the ICP has switched away. However, there is a risk that if this ICP was to return to PSNZ that this unmetered load register will resume applying volume into the settlement process. It was also observed that two of the eight PSNZ stopped meter examples were in fact previous bridged meters not identified via the current bridged/bypassed meter monitoring process.
Incorrect multipliers	**MERI** If an ICP with an incorrect multiplier is unbilled the multiplier will be replaced. If the ICP has been billed, then these invoices are reversed and rebilled with the correct multiplier. Weekly reporting is run and reviewed to check for such discrepancies. Three examples of incorrect multipliers were identified during the audit period, and corrections were accurately processed for two ICPs. ICP 0000045782CPC0D has a compensation factor of x3 on the registry indicating that the supply is three-phase where only one phase is being measured. MERI has applied incorrect multiplier of x1 since the ICP switched on 1 Oct 2018. **MERX** Multipliers are stored against the meter and applied to the readings to produce the aggregate volume. Where a multiplier correction is required, reads must be invalidated and re-entered after the correct multiplier is applied, so that the aggregate consumption can be recalculated. The customer can be rebilled as needed, but billing is independent of the aggregate consumption correction process. Six examples of incorrect multipliers were identified during the audit period, and corrections were accurately processed for four ICPs. ICP 0001132077MLEBF was only corrected moving forward (x60) and the historical period remains incorrect (x1). ICP 0000931353TU457 still has an incorrect multiplier of x60 instead of x1. **PSNZ** Multipliers are stored against the meter and applied to the readings to produce the aggregate volume. Where a multiplier correction is required, reads must be invalidated and re-entered after the correct multiplier is applied, so that the aggregate consumption can be recalculated. The customer can be rebilled as needed, but billing is independent of the aggregate consumption correction process. One example of an incorrect multiplier was identified during the audit period. I checked this ICP and confirmed that the multiplier and consumption had been corrected.
Bridged meters	**MERI** Meridian is transitioning all ICPs from MERI to MERX participant code and this project is expected to be completed by the end of 2022. Currently MERI only has 15 ICPs listed as being remotely disconnected AMI meters. No examples of meter bridging were identified during the audit period.

	MERX MERX uses two correction methods for bridged meters: • removal of the defective meter on an estimated closing read, which is used to create historic estimate, and • addition of an unmetered load register to capture estimated consumption for the affected period. Five examples of bridged meters were reviewed. Consumption was corrected by adding the estimated consumption to an unmetered register for two ICPs. One ICP reported as bridged has consumption reported on the meter register during the bridged period, so no correction was applied. Two ICPs (0000125370UN239, 0000967444TUA86) switched away before the meters were unbridged and no correction was applied. **PSNZ** Like MERX, PSNZ uses two correction methods for bridged meters: • removal of the defective meter on an estimated closing read, which is used to create historic estimate, and • addition of an unmetered load register to capture estimated consumption for the affected period. Nine examples of bridged meters were reviewed: • six ICPs were corrected by adding the estimated consumption to an unmetered load register, • ICP 0000033751DE46A did not have an unmetered load register correction applied as the user incorrectly determined that because the switch gain read was higher than the unbridged meter reading that no correction was required, and • two ICPs (1000543084PC029, 1000527143PC7D0) did not have a correction applied.
Consumption while inactive	**MERI** The inactive consumption report was not run consistently across 93 inactive metered ICPs **MERX** A report of inactive meters with consumption after the disconnection date was provided and contained eight ICPs with a volume of 51 kWh of inactive consumption. A further four ICPs with a volume of 11,123 kWh from the last audit were also checked to see if the inactive consumption had subsequently been included in the settlement process. For all 12 ICPs it was confirmed that no inactive consumption was being included in the settlement process. **PSNZ** A report of inactive meters with consumption after the disconnection date was provided and contained 20 ICPs with a volume of 41,564 kWh of inactive consumption. A further seven ICPs with a volume of 119 kWh from the last audit were also checked to see if the inactive consumption had subsequently been included in the settlement process. For all 27 ICPs it was confirmed that no inactive consumption was being included in the settlement process.
Unmetered load corrections	**MERI** Meridian's DUML audits identified some inaccurate databases being used for submission. I checked a sample of two changes to unmetered load and found they were correctly processed by updating the life cycle information in Velocity for the correct time slice. **MERX** I checked a sample of three changes to unmetered load and confirmed they were correctly processed by updating the unmetered load information in Flux for the correct date range.

	PSNZ I checked a sample of three changes to unmetered load and confirmed they were correctly processed by updating the unmetered load information in Flux for the correct date range.

Some submission accuracy issued were identified in **section 12.7**:

MERI	Velocity records historic estimate as forward estimate where an ICP ends on an estimated closing reading**,** or permanent estimate readings have not been entered for ICPs not read within the previous 14 months. ICPs 0005906555RNE30, 0006300324RNC8C and 0008801022TPEF8 have 1,5 "reconciled elsewhere" status but do not have their load reconciled under another ICP. ICP 0008801022TPEF8 has no load connected. For downgrades, all HHR volumes are reported up to the day of the meter change. All NHH volumes are reported, but due to system constraints the consumption is apportioned from two days after the meter change onwards instead of from the day after the meter is changed. ICP Days reporting is also impacted. Previous audit submission accuracy issues were checked and found to be resolved except for: • forward estimate remaining at revision 14 where ICPs had switched out on estimated readings, as discussed in **section 12.10**, and • NHH consumption starting two days after the meter change for downgrades due to a system limitation, as discussed in **section 6.7.**
MERX	Historic estimate is recorded as forward estimate where shape files from the reconciliation manager are unavailable, or permanent estimate readings have not been entered for ICPs not read within the previous 14 months. Eight ICPs had consumption during inactive periods, indicating that their status was incorrect. Estimated under submission of 51 kWh has occurred, as discussed in **section 3.9**. Data accuracy issues identified in the previous audit were re-checked and found to be resolved except for four ICPs that had consumption during inactive periods identified indicating that their status was incorrect; under submission of 11,123 kWh is estimated.
PSNZ	Historic estimate is recorded as forward estimate where shape files from the reconciliation manager are unavailable, or permanent estimate readings have not been entered for ICPs not read within the previous 14 months. 20 ICPs had consumption during inactive periods indicating that their status was incorrect; under submission of an estimated 41,564 kWh has occurred, as discussed in **section 3.9**. Data accuracy issues identified in the previous audit were re-checked and found to be resolved except for seven ICPs that had consumption during inactive periods identified, indicating that their status was incorrect; under submission of 468 kWh is estimated.

There is an issue with ARC Innovations meters when used for HHR settlement. The on-site setup is that a meter pulses into a data storage device, which counts the pulses and "stores" them every 200 pulses which equals 0.1 kWh. There is only one decimal place, so the smallest increment of consumption is 0.1. The issue is made worse for installations with a compensation factor, for example if the compensation factor is 100, the smallest increment per interval is 10 kWh, which means the accuracy per interval is very poor. This means the HHR data derived from ARC meters is not considered to be accurate

in accordance with Clause 15.2. There is one ARCS CAT 2 ICP (0007118982RN496 - PSNZ) and four ARCS Cat 1 ICPs that have been settled as HHR during the audit period.

An exemption (299) was granted to ARC Innovations to allow inaccurate metering installations to be compliant. An associated exemption (297) was granted to Advanced Metering Services to allow their ATH to certify ARC Innovations metering installations despite them being inaccurate. There is not an associated exemption for reconciliation participants to allow them to be compliant when using inaccurate data from ARC Innovations metering installations.

Audit outcome

Non-compliant

Non-compliance	Description
Audit Ref: 2.1 With: 11.2 & 15.2 From: 01-Jul-21 To: 31-May-22	**MERI** Some registry information is incorrect. Not all corrections actioned from the last audit. The inactive consumption was not run consistently across 93 inactive metered ICPs. ICP 0000045782CPC0D has an incorrect multiplier applied since 1 Oct 2018. Some incorrect submission information recorded in **section 12.7**. **MERX** Some registry information is incorrect. Not all corrections actioned from the last audit. Two ICPs with multiplier discrepancies not resolved correctly. Two ICPs with bridged meters did not have a correction applied. 12 ICPs identified had consumption during inactive periods. Estimated under submission of 11,174 kWh has occurred. Inactive consumption report not including ICPs with inactive consumption once switched away or where two actual reads on or after the inactive status date not received. Some incorrect submission information recorded in **section 12.7**. **PSNZ** Some registry information is incorrect. HHR Submission data for ARCS CAT 2 ICP (0007106307RN6B8) and four ARCS Cat 1 ICPs that are not accurate due to inaccurate capture of raw meter data by data storage device. Three ICPs with bridged meters did not have a correction applied. 27 ICPs identified had consumption during inactive periods. Estimated under submission of 41,683 kWh has occurred. Inactive consumption report not including ICPs with inactive consumption once switched away or where two actual reads on or after the inactive status date not received. Some incorrect submission information recorded in **section 12.7**. Potential impact: Medium

	Actual impact: Medium Audit history: Multiple Controls: Moderate Breach risk rating: 4		
Audit risk rating	**Rationale for audit risk rating**		
Medium	Controls are rated as moderate as they are sufficient to mitigate the risk of incorrect data most of the time, but there is room for improvement. The audit risk rating is assessed to medium because many of the issues identified have a moderate impact on settlement and the calculation of seasonal shapes.		
Actions taken to resolve the issue		**Completion date**	**Remedial action status**
Actions relating to Registry and submission information inaccuracies raised in this section are outlined in the relevant sections of this report. We note for some issues corrections cannot be processed due to impact on other traders or customers, or corrections are outside r14.			Identified
Preventative actions taken to ensure no further issues will occur		**Completion date**	
Proposed actions relating to prevention of Registry and submission information inaccuracies are outlined in the relevant sections of this report. Meridian has processes in place to identify where information is incorrect and to correct this. In several sections of this report, we have detailed proposed improvements to process controls.			

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 several 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

I reviewed the method to receive meter reading information.

HHR

All C&I HHR data is processed by EMS, and data transmission was reviewed as part of their agent audit.

AMI HHR data is provided by the AMI MEPs and is imported into the BI hub, data transmission was reviewed as part of the AMI NHH reads process.

NHH

Manual NHH data has been provided by Wells via SFTP. NHH AMI data has been provided by Arc, Intellihub (for Intellihub and Counties Power meters), and AMS (for AMS and Smartco meters) and WEL Networks via SFTP. All other AMI meters are read manually by Wells.

Upon receipt all AMI reads are imported into the BI hub which generates a REA (reading) file which contains readings for all ICPs scheduled to be read on the selected date for all MEPs. This file is imported into Velocity. All AMI reads are retained in the BI Hub.

I traced a diverse sample of reads for six NHH ICPs from the source files to Velocity. Readings for seven ICPs for Wells were checked, along with readings for one ICP for each of the following meter reading providers:

- AMS,
- Arc,
- Intellihub, and
- WEL Networks.

Generation

The Stark system retrieves meter information from the generation meters every half hour, and data is also received via SCADA. I reviewed processes to ensure that generation data is transmitted completely and accurately.

I traced a sample of data from the source, through aggregation process to the NSP volumes submissions for NSPs and HHR volumes for windfarms.

Audit commentary

HHR

C&I HHR data transmission for MERI and MERX was reviewed as part of the EMS agent audit and found to be compliant.

AMI HHR data for PSNZ was reviewed for ICP 0007103338RN9BE for May and June 2022. The data was transmitted completely and accurately for these two months and the interval data was appropriately multiplied using the compensation factor. I did observe that the interval data for 3 April 2022 (daylight saving transition date) was missing for intervals 49 and 50 however as this ICP was settled as NHH for April there was no impact of this missing interval data. AMI data verification checks are discussed further in **section 9.5**

NHH

NHH meter data is transmitted to Meridian using SFTP. I traced reads for a sample of seven ICPs from the source files to Velocity. All reads were recorded and labelled correctly.

Generation

The Stark system retrieves meter information from the generation meters every half hour, and data is also received via SCADA. Stark sends an automated email to the reconciliation team where data is missing, or the number of seconds recorded does not match the expected number for the half hour.

I traced a sample of data from source, through aggregation process to the NSP volumes submissions for NSPs and HHR volumes for windfarms and compliance is confirmed for each NSP and windfarm.

Generation metering and activity is monitored in real time by the generation team, who report any metering or data issues to the reconciliation team.

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 for the person who performed the activity (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

MERI

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

MERX and PSNZ

The Flux system contains a complete and compliant audit trail, however there were many examples recorded in **section 3.3**, where there was no supporting information detailing why a particular change to registry fields was made. I recommend these specific ICPs are reviewed to ensure appropriate information is available to identify what occurred and for what reason.

Recommendation	Description	Audited party comment	Remedial action
Regarding Clause 21 Schedule 15.2	Review and improve Flux audit trail to ensure reasons for changes are recorded.	We'll review the ICP examples to determine reasons for changes and whether these were system or person generated.	Identified

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 Meridian and PSNZ's current terms and conditions.

Audit commentary

Meridian and PSNZ'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 Meridian and PSNZ's current terms and conditions and stepped through the compliance process.

Audit commentary

Meridian and PSNZ's contracts with their customers include consent to access for authorised parties for the duration of the contract. Access is most commonly required by the MEP to meet their metering compliance obligations.

Where other parties (other than MEPs) require access to a Meridian ICP, a letter is generated to advise the customer. Where MEPs require access, Meridian provides contact details for the affected ICPs to the MEP in a password protected spreadsheet, and the MEP liaises directly with the customer to arrange access.

Where the customer refuses access, the MEP will advise Meridian and/or the field services paperwork will be returned as a "turn down". Meridian has engaged the MEPs to liaise with the customer directly to arrange access or an alternative solution, if necessary, on their behalf. Reporting is provided by the MEPs to keep Meridian updated on work in progress.

Whilst there are some installations where access has not been able to be arranged for MEPs to conduct re-certification of metering, Meridian has used best endeavours to obtain access.

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.

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

Audit commentary

MERI

Compensation arrangements are in place for some generation stations, including Whitehill, Manapouri, and Te Apiti. The loss factor is applied within the station metering, and not to the raw data after interrogation. There were no changes to the loss factors during the audit period.

MERX and PSNZ

All metered ICPs have metering category 1 or 2 and no error or loss compensation arrangements are required.

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 Meridian and PSNZ's current terms and conditions.

Audit commentary

Meridian and PSNZ'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 1 or more metering installations for the point of connection.*

Audit observation

The new connection processes were examined in detail to evaluate the strength of controls, and the registry list, audit compliance, and switch breach history reports were examined to confirm process compliance. Late updates to active for new connections are discussed in **section 3.5**.

Audit commentary

Meridian claims ICPs at 1,12 "inactive - new connection in progress" status, and the MEP is nominated at the same time. Review of the AC020 reports confirmed that all active metered ICPs had an MEP recorded.

MERI

NHH new connections are managed using Velocity's work queues, but most new connections are expected to be managed in Flux going forward. HHR new connections are managed manually, and closely monitored through a spreadsheet containing every new connection.

Review of the AC020 report and registry list identified 34 ICPs which had a metering category 9, null or zero and did not have unmetered load recorded. Three had accepted MEP nominations and were awaiting meter asset data, one is subject to exemption 287 discussed in **section 1.1**, one was decommissioned after the report was run, and one had metering details added after the report was run.

The remaining 28 ICPs did not have MEP nominations made and remain active. These were examined and found:

- two have since been decommissioned or are in the process of being decommissioned,
- two (ICPs 0083582900PC3A3 & 0000103539TRE1E) have had their meters removed from the registry in 2017 and are being estimated; there are no actions in progress to address these and this is discussed further in **section 6.1**,
- 23 have since had metering recorded on the registry by the MEP, which was AMCI in all cases, and
- ICP 0000570092HBCE1 has an amalgamation of metering in progress and is now at "inactive – ready for decommissioning".

MERX

New connections in Flux are managed via the meter change process. It is a more manual process than is in Velocity and requires the agent to change the ICP status in Flux when the new connection is completed. Exception reporting is in place to manage any discrepancies. This is monitored by the new connection team and is also overseen by the Hybrid team who monitor all field services work.

Review of the AC020 report and registry list identified 14 ICPs which had a metering category 9, null or zero and did not have unmetered load recorded. Eight had metering details added after the report was run, and three had accepted MEP nominations and were awaiting meter asset data. The remaining three ICPs did not have MEP nominations made and remain active. These were examined and I found the following:

- ICP 0110114045AP303 now has metering in the registry; AMCI is the MEP, and this metering should not have been removed from the registry,
- ICP 0005060702ALF2F is now decommissioned, and
- ICP 0006474403ALC7C is being investigated with SMCO.

PSNZ

New connections in Flux are managed via the meter change process. It is a more manual process than is in Velocity and requires the agent to change the ICP status in Flux when the new connection is completed. Exception reporting is in place to manage any discrepancies. This is monitored by the new connection team and is also overseen by the Hybrid team who monitor all field services work.

Review of the AC020 report and registry list identified two ICPs which had a metering category 9, null or zero and did not have unmetered load recorded. Both were timing differences and meters were installed after the report was run.

Audit outcome

Compliant

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

Code reference

Clause 10.33(1)

Code related audit information

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

- *for a point of connection to the grid – the grid owner has approved the connection*
- *for an NSP that is not a point of connection to the grid - the relevant distributor has approved the connection.*
- *for a point of connection that is an ICP, but is not as NSP:*
- *the reconciliation participant is recorded in the registry as the trader responsible for the ICP*
- *if the ICP has metered load, 1 or more certified metering installations are in place*
- *if the ICP has not previously been electrically connected, the relevant distributor has given written approval of the temporary electrical connection.*

Audit observation

The new connection process was examined in detail.

Audit commentary

Meridian claims ICPs at 1,12 "inactive new connection in progress" status which helps to ensure that the trader is recorded on the registry if an ICP is temporarily electrically connected. No temporary electrical connections were identified.

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:

- *for a point of connection to the grid – the grid owner has approved the connection*
- *for an NSP that is not a point of connection to the grid - the relevant distributor has approved the connection.*
- *for a point of connection that is an ICP, but is not as NSP:*
    - *the trader is recorded in the registry as the trader responsible for the ICP or has an arrangement with the customer and initiates a switch within 2 business days of electrical connection*
    - *if the ICP has metered load, 1 or more certified metering installations are in place*
    - *if the ICP has not previously been electrically connected, the relevant distributor has given written approval of the electrical connection.*

Audit observation

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

The AC020 reports were examined to confirm process compliance and that controls are functioning as expected.

Audit commentary

MERI

<u>Active ICPs without metering</u>

All active ICPs have an MEP recorded. Review of the AC020 report and registry list identified 34 ICPs which had a metering category 9, null or zero and did not have unmetered load recorded. Three had accepted MEP nominations and were awaiting meter asset data, one is subject to exemption 287

discussed in **section 1.1**, one was decommissioned after the report was run, and one had metering details added after the report was run.

The remaining 28 ICPs did not have MEP nominations made and remain active. These were examined and found:

- two have since been decommissioned or are in the process of being decommissioned,
- two (ICPs 0083582900PC3A3 & 0000103539TRE1E) have had their meters removed from the registry in 2017 and are being estimated; there are no actions in progress to address these and this is discussed further in **section 6.1**,
- 23 have since had metering recorded on the registry by the MEP, which was AMCI in all cases, and
- ICP 0000570092HBCE1 has an amalgamation of metering in progress and is now at "inactive - ready for decommissioning".

New connections

The new connection process ensures that an MEP is nominated, and MERI requires meter certification for metered sites as part of the new connection process.

The AC020 report recorded 372 ICPs which did not have full certification within five business days of initial electrical connection. All were examined and found:

- 365 ICPs were unmetered including unmetered builders' temporary supplies so are compliant,
- one ICP had an MEP nomination made and accepted and was awaiting meter asset data,
- three ICPs had late MEP registry updates, but the meter was certified within five business days of the active date, and
- four ICPs were not certified on time; AMCI was the MEP for three and NGCM for one.

Reconnections

Meridian used to run a report which identified meters that have been reconnected which were not certified. Any reconnections with uncertified meters were identified, and the MEP was notified. This report could not be demonstrated during this audit, which has an impact on the control rating.

The AC020 report recorded 28 metered ICPs did not have full certification within five business days of reconnection. I checked the ten ICPs with the longest period between the status update and certification and in all cases, they were genuinely not certified within five business days.

Bridged meters

MERI did not identify any meters that had been bridged during the audit period.

MERX

Active ICPs without metering

All active ICPs have an MEP recorded. Review of the AC020 report and registry list identified 14 ICPs which had a metering category 9, null or zero and did not have unmetered load recorded. Eight had metering details added after the report was run, and three had accepted MEP nominations and were awaiting meter asset data. The remaining three ICPs did not have MEP nominations made and remain active. These were examined and I found the following:

- ICP 0110114045AP303 now has metering in the registry; AMCI is the MEP, and this metering should not have been removed from the registry,
- ICP 0005060702ALF2F is now decommissioned, and
- ICP 0006474403ALC7C is being investigated with SMCO; billing and settlement is by estimates as readings are not being obtained.

New connections

The new connection process ensures that an MEP is nominated, and MERX requires meter certification for metered sites as part of the new connection process.

The AC020 report recorded four metered ICPs which did not have full certification within five business days of initial electrical connection. All were examined and found:

- one had a late MEP registry update, but the meter was certified within five business days of the active date,
- one had an incorrect active date, which has been corrected, and
- two ICPs were not certified on time; ICPs 1002143931UN076 and 0000702326MP7DE are both Category 2 and were both certified late.

Reconnections

MERX's policy is to request certification from the MEP where reconnection of an ICP with interim or expired certification is required. This process is initiated automatically via B2B.

The AC020 report recorded 254 metered ICPs did not have full certification within five business days of reconnection. I checked the ten ICPs with the longest period between the status update and certification and found they were all genuinely not recertified within five business days.

Bridged meters

MERX provided a list of five ICPs which had bridged meters at some time during the audit period. Four were appropriately re-certified by the MEP when they were unbridged, and one was not.

PSNZ

Active ICPs without metering

All active ICPs have an MEP recorded. Review of the AC020 report and registry list identified two ICPs which had a metering category 9, null or zero and did not have unmetered load recorded. Both were timing differences and meters were installed after the report was run.

New connections

The new connection process ensures that an MEP is nominated and PSNZ requires meter certification for metered sites as part of the new connection process.

The AC020 report recorded 11 ICPs which did not have full certification within five business days of initial electrical connection. All were examined and found:

- one had a late MEP registry update, but the meter was certified within five business days of the active date, and
- ten were genuinely late; I checked a sample of five and found four were late and one had an incorrect active date, which needs to be changed.

Reconnections

PSNZ's policy is to request certification from the MEP where reconnection of an ICP with interim or expired certification is required. This process is initiated automatically via B2B.

The AC020 report recorded 137 metered ICPs did not have full certification within five business days of reconnection. I checked the ten ICPs with the longest period between the status update and certification and found in all cases, the MEP was notified that certification was required.

Bridged meters

PSNZ provided a list of nine ICPs which had bridged meters at some time during the audit period. All were appropriately re-certified by the MEP when they were unbridged.

Audit outcome

Non-compliant

Non-compliance	Description
Audit Ref: 2.11 With: Clause 10.33A From: 01-Jul-21 To: 31-May-22	**MERI** Two ICPs with no metering in place are not reconciled as unmetered load. Four new connection ICPs with certification later than five days after electrical connection. 28 ICPs were not certified within five days after reconnection. **MERX** One ICP with no metering in place is not reconciled as unmetered load. Late certification for two new connection ICPs. 254 ICPs were not certified within five days after reconnection. One ICP meter from a sample of five was not certified on un-bridging. **PSNZ** Four of a sample of five new connection ICPs not certified within five business days. 137 reconnections were not certified within five business days. 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 strong because appropriate policies and communication processes are in place, but there is a heavy reliance on other parties to achieve compliance. The audit risk rating is low as a small proportion of ICPs were affected.

Actions taken to resolve the issue	Completion date	Remedial action status
<u>MERI</u> ICPs 0083582900PC3A3 & 0000103539TRE1E that have had their meters removed from the Registry will be investigated to confirm whether these should be decommissioned. <u>MERX</u> ICP 0006474403ALC7C is currently undergoing the decommission process	30/04/2023 30/04/2023	Identified
Preventative actions taken to ensure no further issues will occur	**Completion date**	

We have good controls and arrangements with service providers in place to ensure meters are certified at the time of initial electrical connection when possible – situations where load is too low or there are other reasons why certification to cannot take place are infrequent and processes are in place to monitor that certification is completed when it is possible. Refer to our comments in section 2.17 regarding bridged meter process improvements.	Ongoing	

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. Controls within Velocity and Flux were checked.

Audit commentary

All codes are both covered by Meridian's existing Use of System Agreements. Meridian confirmed the existence of either a Use of System Agreement or other trading arrangement for all networks it trades on.

ICPs can only be created or switched in if the network and NSP have been created in Velocity for MERI, or Flux for MERX and PSNZ.

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 before an MEP is assigned was examined. Controls within Velocity and Flux were checked.

Audit commentary

All codes are covered by Meridian's existing MEP agreements and arrangements. Meridian confirmed the existence of either an agreement or arrangement with the MEPs for their ICPs, including WEL Networks.

ICPs can only be created or switched in if the MEP has been created in Velocity for MERI, or Flux for MERX and PSNZ.

Audit outcome

Compliant

2.14. Connecting ICPs then withdrawing switch (Clause 10.33A(5))

Code reference

Clause 10.33B

Code related audit information

If a trader connects an ICP it is in the process of switching and the switch does not proceed or is withdrawn the trader must:

- *restore the disconnection, including removing any bypass and disconnecting using the same method the losing trader used*
- *reimburse the losing trader for any direct costs incurred*

Audit observation

The process for reconnecting ICPs in the process of switching in was examined.

Audit commentary

If an ICP was reconnected as part of the switching process and the switch was later withdrawn, Meridian would restore the disconnection and reimburse the losing trader for any direct costs incurred if requested.

Audit outcome

Compliant

2.15. Electrical disconnection of ICPs (Clause 10.33B)

Code reference

Clause 10.33B

Code related audit information

Unless the trader is recorded in the registry or is meeting its obligation under 10.33A(5) it must not disconnect or electrically disconnect the ICP or authorise the metering equipment provider to disconnect or electrically disconnect the ICP.

Audit observation

The disconnection process was examined.

Traders are only able to update ICP status for event dates where they are responsible for the ICP on the registry.

Audit commentary

Requests to disconnect are system driven and will only allow a disconnection request to be processed during the period of supply.

Audit outcome

Compliant

2.16. Removal or breakage of seals (Clause 48(1C), 48 (1D), 48 (1E), 48 (1F) of Schedule 10.7)

Code reference

Clause 48(1C), 48 (1D), 48 (1E), 48 (1F) of Schedule 10.7

Code related audit information

A trader can remove or break a seal without authorisation from the MEP to:

- *reset a load control switch, bridge or un-bridge a load control switch – if the load control switch does not control a tome block meter channel*
- *electrically connect load or generation, of the load or generation has been disconnected at the meter*
- *electrically disconnect load or generation, if the trader has exhausted all other appropriate methods of electrical disconnection*
- *bridge the meter*

A trader that removes or breaks a seal in this way must:

- *ensure personal are qualified to remove the seal and perform the permitted work and they replace the seal in accordance with the Code*
- *replace the seal with its own seal*
- *have a process for tracing the new seal to the personnel*
- *update the registry (if the profile code has changed)*
- *notify the metering equipment provider*

Audit observation

Policies and processes for removal and breakage of seals were reviewed.

A sample of disconnections, reconnections, additions of export metering, and bridged meters were checked for compliance.

Audit commentary

Meridian has good processes in place to manage where there is a removal or breakage of seals. They do not undertake such work. A job is raised for any such incidents and issued to the MEP to return to site and reseal and recertify the meter.

Meridian receives work completion paperwork and uses this information to confirm the correct ICP attributes including status and profile.

A sample of disconnections, reconnections, and additions of distributed generation were checked. I found that the MEP had completed the work where the seals were removed or broken.

Audit outcome

Compliant

2.17. Meter bridging (Clause 10.33C and 2A of Schedule 15.2

Code reference

Clause 10.33C and 2A of Schedule 15.2

Code related audit information

A trader, or a distributor or MEP which has been authorised by the trader, may only electrically connect an ICP in a way that bypasses a meter that is in place ("bridging") if, despite best endeavours:

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

If the trader bridges a meter, the trader must:

- *determine the quantity of electricity conveyed through the ICP for the period of time the meter was bridged*
- *submit that estimated quantity of electricity to the reconciliation manager*
- *within 1 business day of being advised that the meter is bridged, notify the MEP that they are required to reinstate the meter so that all electricity flows through a certified metering installation.*

The trader must determine meter readings as follows:

- *by substituting data from an installed check meter or data storage device*
- *if a check meter or data storage device is not installed, by using half hour data from another period where the trader considers the pattern of consumption is materially similar to the period during which the meter was bridged*
- *if half hour data is not available, a non-half hour estimated reading that the trader considers is the best estimate during the bridging period must be used.*

Audit observation

The process for bridging meters was discussed and a sample of bridged meters were reviewed.

Audit commentary

Bridged meters are typically identified through the zero-consumption validation process, manually reviewing reconnection paperwork returned from the contractor, or stopped meter cases.

The existing process are insufficient to ensure that MEPs are advised within one business day that a meter has been bridged. Additionally, the number of bridged meters identified by Meridians current processes is materially lower than equivalent sized retailers indicating a reporting gap that needs attention. I recommend that Meridian implements both an automated report to help identify bridge or bypassed meters and a register of all bridged meters to enable the revenue assurance team to monitor the status of the un-bridge process and any subsequent volume corrections.

Description	Recommendation	Audited party comment	Remedial action
Implement automated bridge meter reporting and register of all bridge meters to better monitor this process	Recommend that Meridian implements both an automated report to help identify bridge or bypassed meters and a register of all bridged meters to enable the revenue assurance team to monitor the status of the un-bridge meter process and any subsequent volume corrections.	Meridian will investigate Flux Development and review the process for bridged/bypassed meters to see if better manual controls can be put into action.	Investigating

MERI

Meridian is transitioning all ICPs from MERI to MERX participant code and this project is expected to be completed by the end of 2022. Currently MERI only has 15 ICPs listed as being remotely disconnected AMI meters. No examples of meter bridging were identified during the audit period.

MERX

MERX provided a list of 29 bridged meters, which were later unbridged. A sample of five ICPs was checked to see that meters had been unbridged and if corrections were processed as required by this clause to capture the consumption during the bridged period. Two ICPs with bridged meters did not have a correction applied. In both cases the ICP had switched away before the meters were unbridged.

PSNZ

PSNZ provided a list of 15 bridged meters, which were later unbridged. A sample of eleven ICPs was checked to see that meters had been unbridged and if corrections were processed as required by this clause to capture the consumption during the bridged period. Four ICPs with bridged meters did not have a correction applied.

Audit outcome

Non-compliant

<table>
<tr><th>Non-compliance</th><th colspan="3">Description</th></tr>
<tr><td>Audit Ref: 2.17
With: Clause 10.33C and 2A of Schedule 15.2

From: 01-Sep-21
To: 30-Jun-22</td><td colspan="3">MERI
Not all bridged meters are identified and notified to MEPs within one business day.
MERX
Two ICPs with bridged meters did not have a correction applied.
PSNZ
Four ICPs with bridged meters did not have a correction applied.
Potential impact: Medium
Actual impact: Medium
Audit history: None
Controls: Weak
Breach risk rating: 3</td></tr>
<tr><th>Audit risk rating</th><th colspan="3">Rationale for audit risk rating</th></tr>
<tr><td>Low</td><td colspan="3">The controls are rated as weak as the current monitoring for bridged meters is insufficient to meet the code requirements.
The audit risk rating is low due to the small numbers confirmed.</td></tr>
<tr><th colspan="2">Actions taken to resolve the issue</th><th>Completion date</th><th>Remedial action status</th></tr>
<tr><td colspan="2">We will review the ICPs identified where corrections were not applied to determine whether corrections can be made.</td><td>15/12/2022</td><td rowspan="2">Investigating</td></tr>
<tr><th colspan="2">Preventative actions taken to ensure no further issues will occur</th><th>Completion date</th></tr>
</table>

We will review our processes for managing meters that are identified as being bridged on reconnection, so these are flagged in our system. Monitoring will be implemented to confirm meters are being unbridged and recertified and corrections are being processed .	01/03/2023 30/06/2023	

2.18. Use of ICP identifiers on invoices (Clause 11.30)

Code reference

Clause 11.30

Code related audit information

Each trader must ensure the relevant ICP identifier is printed on every invoice or document relating to the sale of electricity.

Audit observation

The process to ensure that the ICP identifier is printed on every invoice or document relating to the sale of electricity was reviewed.

Audit commentary

Review of sample invoices for each retail brand confirmed that the ICP number is included on invoices and documents relating to the sale of electricity.

Audit outcome

Compliant

2.19. Provision of information on dispute resolution scheme (Clause 11.30A)

Code reference

Clause 11.30A

Code related audit information

A retailer must provide clear and prominent information about Utilities Disputes:

- *on their website*
- *when responding to queries from consumers*
- *in directed outbound communications to consumers about electricity services and bills.*

If there are a series of related communications between the retailer and consumer, the retailer needs to provide this information in at least one communication in that series.

Audit observation

The process to ensure that information on Utilities Disputes is provided to customers was discussed. Meridian and PSNZ's websites and a sample of customer communications were reviewed.

Audit commentary

Information on Utilities Disputes is provided for both brands:

- on invoices and on all outbound customer facing communications including email signatures, chat etc.,
- as a recorded message for inbound calls,
- on their websites, and
- in their terms and conditions.

Audit outcome

Compliant

2.20. Provision of information on electricity plan comparison site (Clause 11.30B)

Code reference

Clause 11.30B

Code related audit information

A retailer that trades at an ICP recorded on the registry must provide clear and prominent information about Powerswitch:

- *on their website*
- *in outbound communications to residential consumers about price and service changes*
- *to residential consumers on an annual basis*
- *in directed outbound communications about the consumer's bill.*

If there are a series of related communications between the retailer and consumer, the retailer needs to provide this information in at least one communication in that series.

Audit observation

The process to ensure that information on Consumer Powerswitch is provided to customers was discussed. Meridian and PSNZ's websites and a sample of customer communications were reviewed.

Audit commentary

Information on Powerswitch is provided:

- on their website, and
- on invoices and on all outbound customer facing communications including email signatures, chat etc.

The annual notification requirement is met through issuing of invoices, which contain information on Powerswitch.

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 understood and managed by Meridian. The process is detailed in **section 2.9**. No connections to networks without ICPs were identified.

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 processes were examined in detail to evaluate the strength of controls, and the registry list and audit compliance reports were examined to confirm process compliance. Late updates to active for new connections are discussed in **section 3.5**.

Audit commentary

The new connection processes are detailed in **section 2.9** above. The process in place ensures that trader information is populated as required by this clause.

I walked through the registry update process for a sample of new connections to confirm the process. The accuracy and timeliness of registry updates is discussed in **section 3.5**.

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 5 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.

The AC020 reports for each code were reviewed. A sample of late status updates, trader updates and MEP nominations were checked as described in the audit commentary.

Audit commentary

The event detail report was examined to confirm the registry is notified within five business days when information referred to in clause 9 of schedule 11.1 changes.

MERI

<u>MERI status updates</u>

Status updates are only processed once Meridian has received confirmation of the correct status and date. Disconnection and reconnection service requests are managed using the queue management functionality in Velocity. The field services team monitors these queues to ensure that all service requests are resolved. Meridian's service level agreements require disconnection and reconnection paperwork to be returned to Meridian within two business days of work completion.

B2B workflow and automation processes send and receive new disconnection and reconnection data for Arc, AMS, Smartco and Intellihub. Full B2B automation is in place for AMS, Arc, and Smartco; Velocity is automatically updated when disconnection and reconnection information is received. Light B2B automation is in place for Intellihub; Velocity is automatically updated with the information that it can populate. If partial data is provided through the B2B process, a validation work queue item is created. A field services team member checks the data and completes any remaining updates.

Counties Power and FCLM data is sent and received using SFTP. Delta information received via SFTP is imported into Velocity and creates a validation queue item. A field services team member checks and updates the data as necessary, referring to Deltaview (Delta's information portal).

The timeliness of status updates to active (for reconnections) is set out on the table below.

Status	Year	ICPs notified greater than five days	Percentage on time	Average Business Days between Status Event and Status Input Dates
Active	2016	1,037	73%	12.0
	2017	623	80%	12.9
	2018	449	83.2%	9.8
	2019	584	84.89%	7.03
	2020	348	86.65%	9.09
	2021	370	84.65%	5.97
	2022	**71**	**86.68%**	**11.7**

20 of the late updates were made more than 30 business days after the event date, and 11 were more than 100 business days after the event date. The latest update was made 1,361 business days after the event date. The 20 latest updates were checked to determine the reason for the late update:

- two were due to human error,
- one was due to correction of status following vacant investigations,
- two ICPs switched in with the incorrect status and were subsequently corrected,
- nine were delayed by late receipt of paperwork,
- two ICPs were reconnected by an unknown party, without a request from MERI,
- two were corrected following investigation of validation exceptions, and
- two status updates occurred for an unknown reason for prior periods of ownership by MERI, where it had been with MERI, switched to another trader, then came back to MERI.

As reported in the last audit, decommissioning service orders can only be raised for ICPs with an "active" status. To allow a service order to be processed, the status is returned to "active" temporarily from the last status update date. Once the service order is created, the redundant "active" status record can be removed. In some cases, the step to remove the active record was missed, as recorded in previous audit reports. I did not identify any examples during this audit.

The timeliness of status updates to "inactive" is set out on the table below.

Status	Year	ICPs notified greater than five days	Percentage on time	Average Business Days between Status Event and Status Input Dates
Inactive	2016	450	81.22%	8.41
	2017	406	95.45%	4.07
	2018	533	90.29%	6.03
	2019	283	96.42%	6.53
	2020	271	95.50%	5.42
	2021	432	92.40%	9.34
	2022	**212**	**85.37%**	**18.61**

The percentage of disconnections updated within five days has decreased from the previous audit.

The AC020 report recorded 79 late updates to 1,12 "inactive new connection in progress" status. Five of the updates were made before initial electrical connection date, and 74 are genuinely late. I checked the five latest updates, which confirmed the update was made after the ICP was electrically connected.

The other 133 late status updates were reviewed. 73 were made more than 30 business days after the event date, and 46 were made more than 100 business days after the event date. The latest update was 2,598 business days after the event date. I checked the 15 latest updates:

- four were due to vacant site investigations which confirmed these were electrically disconnected and they were backdated,
- two were due to ICP reconfiguration,
- four were status corrections,
- four were due to late notification from the network of the ICP being decommissioned, and
- one was a correction because the ICP was not properly isolated and was reconnected, then disconnected again at a later date.

MERI trader updates

The timeliness of trader updates is set out on the table below.

Event	Year	ICPs notified greater than five days	Percentage on time	Average Business Days between Status Event and Status Input Dates
Trader	2018	5,691	71.95%	18.50
	2019	6,858	63.93%	6.94
	2020	6,015	87.60%	10.95
	2021	5,039	73.44%	9.38
	2022	**957**	**72.27%**	**11.40**

The late updates were reviewed. 241 were made more than 30 business days after the event date, and 86 were made more than 100 business days after the event date. The latest update was 1,267 business

days after the event date. 437 (45.6%) had a profile or submission type change, 272 (28.4%) had a proposed MEP change, 122 (12.7%) had an ANZSIC change, and 126 (13.3%) had unmetered load changes.

I checked a sample of late updates recorded on the AC020 report for MERI as described in the table below:

ANZSIC updates - changes	The ten latest ANZSIC updates were checked and found they were all corrections. The updates were processed after receiving confirmation of the correct ANZSIC code.
ANZSIC updates – new connections and switch ins	There were 215 ANZSIC code updates for new connections and switch ins which were made more than 20 business days after the event date. I checked the ten latest updates and found: • three caused by backdated new connections, and • seven were caused by backdated switch ins.
Unmetered daily kWh and/or trader unmetered load details changes	The ten latest unmetered load updates were checked and found: • nine to be corrections, the updates were processed after receiving confirmation of the correct unmetered load details, and • one was where the network had updated the registry to identify that unmetered load was removed and MERI did not identify this for 325 business days.
Profile updates	The ten latest profile updates were checked and found all were corrections to apply the correct profile from the correct date found as part of the BAU profile check process described in **section 2.1**.
Submission type updates	The ten latest submission type updates were checked, found they were all due to a correction to the submission type due to changes from HHR to NHH or NHH to HHR.
MEP nominations	The MEP nomination process for HHR ICPs is manual and managed directly on the registry. MEP nominations for NHH ICPs are automatically sent from Velocity as part of the new connection process. The timeliness of MEP nominations is managed by: • a daily report is reviewed to identify meter service requests raised the previous business day which may require an MEP change, such as meter replacements; the field services team raise MEP nominations as required based on the findings of their daily review, and • AMS also provides a weekly report showing any ICPs where they have installed metering for Meridian but have not received an MEP nomination which identifies ICPs changing from Arc to AMS, which Meridian would not otherwise be aware of, and ICPs where the MEP nomination trader record has been replaced with another trader update (e.g., to correct a profile) before the MEP has accepted the nomination. I checked all late HHR MEP nominations and the ten latest NHH MEP nominations and found: • all seven HHR events were not MEP nominations but a correction to the profile, • one NHH MEP nomination was due to the incorrect MEP being nominated in the first instance, and • nine were due to late notification of metering details.

MERX

MERX status updates

Status updates are only processed once Meridian has received confirmation of the correct status and date.

B2B workflow and light automation processes are used for AMS; returned paperwork is "stamped" onto the corresponding field services job in Flux. I observed this process in operation and viewed the job completion notes in the system. When paperwork is received, an item is added to a work queue, where a user will review the paperwork and update the relevant fields in Flux. For other field service providers paperwork is received via email and processed manually with notes added to Flux.

Inactive - ready for decommissioning (1,6) status is not available in Flux, and this status is manually updated directly on the registry.

Updated statuses are sent to the registry as part of the daily discrepancy process described in **section 2.1**.

The timeliness of status updates to "active" (for reconnections) is set out on the table below.

Status	Year	ICPs notified greater than five days	Percentage on time	Average Business Days between Status Event and Status Input Dates
Active	2019	3	82.35%	3.71
	2020	109	79.96%	4.58
	2021	300	88.22%	3.61
	2022	**504**	**85.49%**	**4.53**

62 of the late updates were made more than 30 business days after the event date, and 13 were more than 100 business days after the event date. The latest update was made 315 business days after the event date. A sample of 20 updates to active more than 30 business days after the event date were checked to determine the reason for the late update:

- three were status changes to active not made when switching in,
- six were correction of status errors,
- four were changes to active in order to process a decommission,
- three resulted from the identification of consumption on inactive ICPs, and
- four updates were for unknown reasons.

The timeliness of status updates to "inactive" is set out on the table below.

Status	Year	ICPs notified greater than five days	Percentage on time	Average Business Days between Status Event and Status Input Dates
Inactive	2019	2	0.00%	18.00
	2020	20	97.78%	1.03
	2021	130	96.86%	1.20
	2022	**303**	**95.34%**	**1.98**

The AC020 report recorded two late updates to 1,12 "inactive new connection in progress" status. One of the updates was made before initial electrical connection date, and the other was genuinely late due to the late processing of the returned paperwork.

The other 301 late status updates were reviewed. 85 were made more than 30 business days after the event date, and 26 were made more than 100 business days after the event date. The latest update was 330 business days after the event date. I checked the 13 latest updates and found the following:

- late paperwork for one ICP,

- backdated switch in with the incorrect status for one ICP,
- event date errors for three ICPs,
- processing issues for six ICPs resulting in errors, and
- for two ICPs it is unknown why a status update was sent to the registry.

MERX trader updates

Flux's daily discrepancy process imports a registry list and compares it to the current values for the corresponding fields in Flux. Where the trader details in Flux differ from the registry, a trader update is automatically created with the appropriate event date and downloaded to a csv file, which is manually moved to the Registry SFTP directory.

The timeliness of trader updates is set out on the table below.

Event	Year	ICPs notified greater than five days	Percentage on time	Average Business Days between Status Event and Status Input Dates
Trader	2019	5	86.11%	2.36
	2020	144	84.04%	2.7
	2021	1,802	89.92%	1.89
	2022	**16,841**	**67.53%**	**4.20**

The late updates were reviewed. 892 were made more than 30 business days after the event date, and 66 were made more than 100 business days after the event date. The latest update was 577 business days after the event date. 11,319 (67.2%) had a profile or submission type change, 3,904 (23.2%) had a proposed MEP change, 1,591 (9.5%) had an ANZSIC change, and 27 (0.2%) had unmetered load changes.

I checked a sample of late updates recorded on the AC020 report for MERX as described in the table below:

ANZSIC updates - changes	The ten latest updates were checked and found eight to be corrections. The updates were processed after receiving confirmation of the correct ANZSIC code. Flux does not allow ANZSIC code changes to be date stamped, they must be made back to the original sign-up date.
ANZSIC updates – new connections and switch ins	There were 1,226 ANZSIC code updates for new connections and switch ins which were made more than 20 business days after the event date. I checked the ten latest updates and found they were due to backdated switch ins and were updated as soon as the switch completed.
Unmetered daily kWh and/or trader unmetered load details changes	The five latest updates were checked and found: • one was a change of description by the network not identified for 488 business days, • one was a correction to shared unmetered load not identified for 23 business days, and • three were corrections to remove the unmetered description after the daily kWh was removed some time earlier.
Profile updates	The 20 latest updates were checked and found: • three were due to changes to either remove or add distributed generation, and • 17 were profile corrections identified via the profile validation process.

Submission type updates	One late update occurred, it was checked and found the update occurred in Flux, but it didn't update the registry.
MEP nominations	I checked 15 late MEP nominations and found: • five were due to late or missing notification by MEPs, • one was a backdated sign up, • eight were due to processing errors, either the incorrect date or incorrect MEP, and • one was a registry event blocking the trader event.

PSNZ

PSNZ status updates

The timeliness of status updates to "active" for reconnections is set out on the table below.

Status	Year	ICPs notified greater than five days	Percentage on time	Average Business Days between Status Event and Status Input Dates
Active	2017	78	82%	6.4
	2018	288	71%	11
	2019	374	82%	4.0
	2020	462	84%	4.8
	2021	593	85.14%	4.68
	2022	**695**	**79.80%**	**5.65**

58 of the late updates were made more than 30 business days after the event date, and 14 were more than 100 business days after the event date. The latest update was made 1,647 business days after the event date. A sample of 20 updates to active more than 30 business days after the event date were checked to determine the reason for the late update:

- four were updates to active after decommissioning had occurred
    - two were not needed because the ICPs were already active for that period, and
    - two were to correct inactive status updates sent after decommissioning; it could not be determined during the audit why these status updates were sent,
- one had an incorrect event date,
- one was an incorrect status correction,
- one was late processing,
- one was a status correction after a site visit,
- three switched in with incorrect statuses, and
- for nine ICPs it could not be determined why the status updates were made late.

The timeliness of status updates to "inactive" is set out on the table below.

Status	Year	ICPs notified greater than five days	Percentage on time	Average Business Days between Status Event and Status Input Dates
Inactive	2020	201	95.5%	2.2
	2021	229	95.04%	2.99

Status	Year	ICPs notified greater than five days	Percentage on time	Average Business Days between Status Event and Status Input Dates
	2022	**233**	**95.5%**	**2.36**

The AC020 report recorded 11 late updates to 1,12 "inactive - new connection in progress" status. Six of the updates were made before initial electrical connection date so are not technically late, and the other five late updates were checked, and it was found late processing was the cause in all cases.

The other 222 late status updates were reviewed. 52 were made more than 30 business days after the event date, and 166 were made more than 100 business days after the event date. The latest update was 1,762 business days after the event date. I checked the ten latest updates and found:

- five did not have sufficient audit trails to determine the reason for the status changes, and one has been reversed,
- three were changes to inactive event dates by one day for a period prior to the ICPs being decommissioned, and
- two were changes to inactive event dates by one day for periods one or two years ago.

PSNZ trader updates

Flux's daily discrepancy process imports a registry list and compares it to the current values for the corresponding fields in Flux. Where the trader details in Flux differ from the registry, a trader update is automatically created with the appropriate event date and downloaded to a csv file, which is manually moved to the Registry SFTP directory.

The timeliness of trader updates is set out on the table below.

Event	Year	ICPs notified greater than five days	Percentage on time	Average Business Days between Status Event and Status Input Dates
Trader	2020	768	61%	21.24
	2021	1,328	66.19%	31.39
	2022	**1,509**	**84.22%**	**30.97**

The late updates were reviewed. 467 were made more than 30 business days after the event date, and 276 were made more than 100 business days after the event date. The latest update was 2,756 business days after the event date. 733 (48.6%) had a profile or submission type change, 394 (26.1%) had a proposed MEP change, 348 (23.1%) had an ANZSIC change, and 34 (2.3%) had unmetered load changes.

I checked a sample of late updates recorded on the AC020 report for PSNZ as described in the table below:

ANZSIC updates - changes	The ten latest updates were checked and found to be caused by an incorrect ANZSIC code being entered at the time of sign up for nine ICPs. One ICP had had unmetered load added which had been incorrectly removed. Flux does not allow ANZSIC code changes to be date stamped, they must be made back to the original sign- up date.
ANZSIC updates – new connections and switch ins	There were 207 ANZSIC code updates for new connections and switch ins which were made more than 20 business days after the event date. I checked the ten latest updates and found five were backdated switches in and five were corrections of incorrect ANZSIC codes entered at the time of sign up.

Unmetered daily kWh and/or trader unmetered load details changes	The ten latest updates were checked, and they were all corrections to add missing descriptions to the registry. The daily kWh field was populated but not the description.
Profile updates	The ten latest updates were checked and found they were all due to correction of profiles incorrectly set up. Six were RPS to POD PON and four were the addition of PV1.
Submission type updates	The ten latest updates were checked, and the following was found: • the three latest updates were part of the approx. 40 ICPs that change to HHR submission from May to August each year and these three had NHH meter changes in this period meaning they couldn't be HHR settled and had to be changed back to NHH, and • the other seven were corrections to match the registry to Flux.
MEP nominations	I checked 15 late MEP nominations and found they were all correcting earlier incorrect MEP nominations.

Audit outcome

Non-compliant

Non-compliance	Description
Audit Ref: 3.3 With: 10 Schedule 11.1 From: 01-Jul-21 To: 31-May-22	**MERI** 71 late updates to "active" status for reconnections. 74 late updates to "inactive - new connection in progress" status. 133 late updates to "inactive" status for disconnections. 957 late trader updates. **MERX** 504 late updates to "active" status for reconnections. One late update to "inactive - new connection in progress" status. 301 late updates to "inactive" status for disconnections. 14,226 late trader updates. **PSNZ** 695 late updates to "active" status for reconnections. Five late updates to "inactive - new connection in progress" status. 222 late updates to "inactive" status for disconnections. 1,635 late trader updates. 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 in this area are robust but late notification from other areas of the business or networks shows there is room for improvement. The audit risk rating is low as overall a high percentage of updates are on time.

Actions taken to resolve the issue	Completion date	Remedial action status
All status and trader updates have been processed.	Complete	Identified
We have reviewed circumstances around the decrease in compliance for MERX for Trader updates and found the majority of these are attributable to bulk processes for updating profiles and MEP nominations associated with smart meter deployment.	Complete	
Preventative actions taken to ensure no further issues will occur	**Completion date**	
We will continue with our existing controls to ensure Registry information is updated within 5 business days where this is within our control.	Ongoing	
We will implement further monthly monitoring of timeliness of Registry updates.	28 Feb 2023	
We will review our processes and controls around selection of ANZSIC Code on customer sign up so back dated corrections required are less frequent.	30/04/2023	

3.4. Trader responsibility for an ICP (Clause 11.18)

Code reference

Clause 11.18

Code related audit information

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

A trader ceases to be responsible for an ICP if:

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

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

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

Audit observation

The new connection, MEP nomination and decommissioning processes were reviewed, and the registry list and audit compliance reports were examined to confirm process compliance.

A sample of MEP nomination rejections and decommissioned ICPs were examined.

Audit commentary

The new connection process is discussed in detail in **sections 2.9** and **3.5**. Meridian claims ICPs at 1,12 "inactive - new connection in progress" status, and the MEP is nominated at the same time. Review of the AC020 reports confirmed that all active metered ICPs had an MEP recorded.

MERI

Retailers Responsibility to Nominate and Record MEP in the Registry

All active ICPs have an MEP recorded. Review of the AC020 report and registry list identified 34 ICPs which had a metering category 9, null or zero and did not have unmetered load recorded. Three had accepted MEP nominations and were awaiting meter asset data, one is subject to exemption 287 discussed in **section 1.1**, one was decommissioned after the report was run, and one had metering details added after the report was run.

The remaining 28 ICPs did not have MEP nominations made and remain active. These were examined and found:

- two have since been decommissioned or are in the process of being decommissioned,
- two (ICPs 0083582900PC3A3 & 0000103539TRE1E) have had their meters removed from the registry in 2017 and are being estimated; there are no actions in progress to address these and this is discussed further in **section 6.1**,
- 23 have since had metering recorded on the registry by the MEP, which was AMCI in all cases, and
- ICP 0000570092HBCE1 has an amalgamation of metering in progress and is now at "inactive - ready for decommissioning".

Any MEP nominations that are rejected are monitored via the registry acknowledgement files, and the AC020 report is monitored to identify active ICPs without metering loaded. None of the 1,949 MEP nominations issued were rejected.

ICP decommissioning

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

The decommissioning process varies from network to network with some advising Meridian to move the ICP to "ready for decommissioning" status after the event, and Meridian moving the ICP to "ready for decommissioning" before the event for others. Where an Orion ICP requires decommissioning Orion updates the address on the registry to contain "decommissioned" in the property name, and Meridian runs a weekly registry report to identify the affected ICPs and update their statuses.

Decommissioning service orders are raised in Velocity, which are sent to both the distributor and MEP at the same time. Meridian makes an attempt 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 electrical disconnection.

A diverse sample of ten decommissioned ICPs connected to ten different networks were examined. In all cases Meridian had advised the MEP that the ICP was to be decommissioned, or the MEP had advised

Meridian where the ICP was demolished without Meridian's knowledge. Reads were obtained prior to decommissioning for nine of the ICPs, and the other ICP was unmetered load.

MERX

Retailers Responsibility to Nominate and Record MEP in the Registry

All active ICPs have an MEP recorded. MEP nominations are created in Flux by entering a proposed MEP and effective date and are sent to the registry as part of the registry update process described in **section 2.1**.

Review of the AC020 report and registry list identified 14 ICPs which had a metering category 9, null or zero and did not have unmetered load recorded. Eight had metering details added after the report was run, and three had accepted MEP nominations and were awaiting meter asset data. The remaining three ICPs did not have MEP nominations made and remain active. These were examined and I found:

- ICP 0110114045AP303 now has metering in the registry; AMCI is the MEP, and this metering should not have been removed from the registry,
- ICP 0005060702ALF2F is now decommissioned, and
- ICP 0006474403ALC7C is being investigated with SMCO.

Where a MEP nomination is rejected, Flux creates an exception for review and all exceptions are reviewed daily. 21 of the 20,174 MEP nominations issued were rejected, and the rejected files related to 15 ICPs. These were examined and found, 14 were sent in error and one was rejected in error by the MEP.

ICP decommissioning

ICPs that are vacant and active, or inactive are still maintained in Flux.

MERX makes an attempt 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. MERX also advises the MEP responsible that the site is to be decommissioned or has been decommissioned, dependant on the distributor's process.

A diverse sample of ten decommissioned ICPs connected to ten different networks were examined. The MEPs were notified, and a removal meter reading was obtained, or if the meter could not be located, the previous reading at the time of disconnection or finalisation of the customer was used.

PSNZ

Retailers Responsibility to Nominate and Record MEP in the Registry

All active ICPs have an MEP recorded. Review of the AC020 report and registry list identified two ICPs which had a metering category 9, null or zero and did not have unmetered load recorded. Both were late MEP updates.

MEP nomination rejections are monitored each month. Seven of the 4,888 MEP nominations issued were rejected, and the rejected files related to five ICPs. In four cases an MEP was incorrectly nominated, and the correct MEP was subsequently nominated when the rejection was identified. One was rejected in error and subsequently accepted.

ICP Decommissioning

ICPs that are vacant and active, or inactive are still maintained in Flux.

PSNZ makes an attempt 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. PSNZ also advises the MEP responsible that the site is to be decommissioned or has been decommissioned, dependant on the distributor's process.

A diverse sample of ten decommissioned ICPs connected to ten different networks were examined. The MEP was notified, and a removal meter reading was obtained, or if the meter could not be located, the previous reading at the time of disconnection or finalisation of the customer was used.

Audit outcome

Compliant

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 processes were examined in detail to evaluate the strength of controls, and the registry list and audit compliance reports were examined to confirm process compliance.

Audit commentary

MERI

The new connection process is described in detail in **section 2.9**. MEP nomination occurs when the ICP is at 1,12 "inactive - new connection in progress" status as part of the service request process.

The table below shows the level of compliance compared to earlier years for updates to active for new connections:

Code	Year	ICPs notified greater than five days	Percentage on time	Average Business Days between Status Event and Status Input Dates
MERI	2016	69	90%	3.6
	2017	259	82%	3.7
	2018	163	92%	2.7
	2019	448	85.68%	6.20
	2020	503	82.84%	5.11
	2021	735	82.75	11.87
	2022	**402**	**68.84%**	**8.64**

46 of the late updates were made more than 30 business days after the event date, and 181 were more than 100 business days after the event date. The latest update was made 461 business days after the event date. I checked the 25 latest NHH updates and ten latest HHR updates as described below.

The AC020 report recorded 79 late updates to 1,12 "inactive - new connection in progress" status. Five of the updates were made before initial electrical connection date, and 74 are genuinely late. I checked the five latest updates, which confirmed the update was made after the ICP was electrically connected.

NHH new connections

Velocity's work-flow processes are used to manage NHH new connection service requests.

B2B workflow and automation processes send and receive new connection data for Arc, AMS, Intellihub and Smartco.

B2B workflow and automation processes send and receive new disconnection and reconnection data for Arc, AMS, Smartco and Intellihub. Full B2B automation is in place for AMS, Arc, and Smartco; Velocity is automatically updated new connection information is received. Light B2B automation is in place for Intellihub; Velocity is automatically updated with the information that it can populate.

If partial data is provided through the B2B process, or a meter is category 2, a validation work queue item is created. A field services team member checks the data (including multipliers for category 2 meters) and completes any remaining updates. I stepped through this validation process and observed examples which had failed validation because of incomplete information, including missing reads and dates. In most cases the information required is present, but not recorded in a field or format where it can easily be extracted by the B2B processes.

Counties Power and FCLM data is sent and received using SFTP. Delta information received via SFTP is imported into Velocity and creates a validation queue item. A field services team member checks and updates the data as necessary, referring to Deltaview (Delta's information portal).

Unmetered service requests are sent via email to Orion. Emails received regarding unmetered load are processed manually.

All service requests appear in a work queue and remain open until the job has been completed. Job notes received from contractors are uploaded weekly against the ICPs. The field services team works through the work queue items and follows up as necessary, focussing on the oldest service requests first. Once a service request's progress has been reviewed, the user can reset the date when it will next appear in the

work queue for review. Once reset the queue item remains open but will not be visible in the queue until the next review date.

AMS and Intellihub send weekly reports on progress with service requests, and the reasons any jobs are overdue. This information is imported against the affected ICPs in Velocity. I walked through this process and noted that most requests were overdue because the customer's electrician or site was not ready. If a job is deferred three times AMS cancels the service request and requests the electrician contact Meridian when the site will be ready for energisation. The service level agreement in place requires that paperwork be returned to Meridian within two business days of completion.

The 25 latest status updates for new connections were checked and I found all were processed with the correct status and status date. The reasons for late updates were:

- 14 had incorrect active dates amended,
- two were HHR new connections and were processed late due to waiting for metering information,
- two were late due to processing issues, and
- seven were late due to late notification from the field.

HHR New Connections

The HHR new connection process was examined. This process is largely manual due to the complexity of such connections. The progress of HHR new connections is managed closely.

Meridian updates the ICP status to "active" once metering information is provided, which can often take a long time. I recommend active updates are made as soon at the new connection load test has been conducted with the data collector.

Recommendation	Description	Audited party comment	Remedial action
Regarding Clause 9 Schedule 11.1	Populate the active date in the registry as soon as the load test is conducted with the data collector.	This process change has been implemented	Cleared

The ten latest status updates to active status for HHR new connections were checked and, in all cases, the late update was due to late notification from the MEP. All the updates checked were processed with the correct status and date.

New connection information accuracy

Active dates for new connections were compared to the distributor's initial electrical connection date (IECD), and MEP's certification date (MCD) using the AC020 report. 257 ICPs were unmetered, and the active status date matched the initial electrical connection date and are not considered to be exceptions. The following exceptions were identified, and I checked all HHR exceptions and five NHH exceptions for each exception type:

Exception	Total ICPs	ICPs confirmed correct from sample, or all checked as indicated	Comment
IECD = active date and MCD ≠ active date	113	8/8	All active dates were correct.

Exception	Total ICPs	ICPs confirmed correct from sample, or all checked as indicated	Comment
IECD ≠ active date and MCD = active date	10	6/7	Both of the HHR ICPs were correct. One NHH ICP had the incorrect date, which was then changed to the correct date. It had low load certification, so the date of that certification has now been used.
IECD ≠ active date and MCD ≠ active date	2	2/2	All active dates were correct.
IECD ≠ active date and no MCD	3	3/3	All active dates were correct.
IECD = active date and no MCD	8	8/8	All active dates were correct.
IECD ≠ active date and unmetered	24	3/5	Two NHH ICPs had the incorrect active dates and have now been corrected.
No IECD and MCD = active date	231	10/10	All active dates were correct.
No IECD and MCD ≠ active date	3	3/3	All active dates were correct.
No IECD and no MCD	2	2/2	All active dates were correct.
No IECD and unmetered	82	5/5	All active dates were correct.
Total	**478**	**49/52**	

The audit compliance report identified 213 ICPs with the "inactive - new connection in progress "status which had an initial electrical connection date recorded. 209 of the ICPs had initial electrical connection dates in May 2022, and four had initial electrical connection dates between September 2019 and April 2022. I checked the ICPs and found:

- 112 of the ICPs were connected to the new TAG0011 embedded network and 69 of the ICPs were connected to the new TRN0011 embedded network (both networks had start dates of 1 May 2022); I checked a sample of 20 of the ICPs connected to each of the NSPs and confirmed that they were updated to "active" status after the report was run,
- 26 of the other 32 ICPs were updated to "active" status after the report was run, and
- findings for the other six are as follows:
    - ICP 0000168440CKF0B is now active, backdated to 24 September 2019,
    - ICP 0007204256RN405 is now active, backdated to 26 April 2022,
    - ICP 0000052317HB0B9 is being investigated and is still at new connection in progress (the IECD is 9 May 2022), and
    - ICPs 1002156245LC2FA, 1100000071WM5B5 and 1100000070WM9F0 have now been updated to "active"; these were missed due to human error.

The audit compliance report identified eight ICPs with "ready" status which had an initial electrical connection date recorded. All had initial electrical connection dates between April and June 2022. Three had been made active after the report was run, one is decommissioned, one is now active. ICPs 0010000629TE321, 1002157392UN0C2 and 0000051657HRD5C are still recorded as "ready" and are being investigated.

Two corrections required from the previous audit have been conducted.

MERX

The new connection process is described in detail in **section 2.9**. MEP nomination occurs when the ICP is at "inactive - new connection in progress" (1,12) status as part of the service request process.

The table below shows the level of compliance for updates to active for new connections.

Code	Year	ICPs notified greater than five days	Percentage on time	Average Business Days between Status Event and Status Input Dates
MERX	2021	32	93.1%	3.52
	2022	**738**	**73.12%**	**5.74**

33 of the late updates were made more than 30 business days after the event date, and four were more than 100 business days after the event date. The latest update was made 202 business days after the event date. I checked the 25 latest updates and found:

- 18 had processing issues, including 14 date corrections, and
- seven were late due to late notification from the field.

The AC020 report recorded two late updates to 1,12 "inactive new connection in progress" status. One of the updates was made before initial electrical connection date, and the other was genuinely late due to the late processing of the returned paperwork.

New connection information accuracy

Active dates for new connections were compared to the distributor's initial electrical connection date, and MEP's certification date using the AC020 report. The following exceptions were identified:

Exception	Total ICPs	ICPs confirmed correct from sample, or all checked as indicated	Comment
IECD = active date and MCD ≠ active date	193	5/5	All active dates were correct.
IECD ≠ active date and MCD = active date	31	5/5	All active dates were correct.
IECD ≠ active date and MCD ≠ active date	17	2/5	Incorrect processing caused three errors which are now corrected.
IECD = active date and no MCD	15	4/5	Incorrect processing caused one error which is now corrected.
IECD ≠ active date no MCD	1	1/1	All active dates were correct.
No IECD and MCD = active date	633	5/5	All active dates were correct.
No IECD and MCD ≠ active date	111	4/5	Incorrect processing caused one error which is now corrected.
No IECD and no MCD	20	4/5	Incorrect processing caused one error which is now corrected.
Total	**1,021**	**30/36**	

The audit compliance report identified ten ICPs with "inactive - new connection in progress "status which had an initial electrical connection date recorded. Eight had initial electrical connection dates

between April and June 2022 and the other two had initial electrical connection dates in July 2021. Five had been made active after the report was run. I checked the remaining five and found:

- one ICP is now decommissioned, and
- four ICPs are now active, three were late due to late notification and one was a processing issue.

The audit compliance report identified 104 ICPs with "ready" status which had an initial electrical connection date recorded. All had initial electrical connection dates between May and June 2022.

- 65 of the ICPs were connected to the new TBM0011 embedded network with a start date of 1 June 2022; 62 were updated to "active" status after the report was run, and three are now "decommissioned - set up in error",
- 18 of the ICPs were connected to the new TMG0011 embedded network with a start date of 28 April 2022; all were updated to active status after the report was run,
- 20 of the ICPs were connected to the new TRV0011 embedded network with a start date of 19 April 2022; all were updated to active status after the report was run, and
- ICP 0000452466WT9F8 is now active; it was updated late due to late paperwork.

PSNZ

When PSNZ agrees to be the trader for an ICP, they send a service request to the MEP for electrical connection and metering.

The audit compliance report was examined to confirm whether the registry is updated to active within five business days.

Code	Year	ICPs notified greater than five days	Percentage on time	Average Business Days between Status Event and Status Input Dates
PSNZ	2017	4	96%	2.4
	2018	13	85%	5
	2019	45	90%	4
	2020	61	88.27%	4
	2021	195	75.81%	4.86
	2022	**356**	**62.41%**	**7.22**

20 of the late updates were made more than 30 business days after the event date, and four were more than 100 business days after the event date. The latest update was made 243 business days after the event date. I checked all 20 updates made over 30 business days after the event date and found the following:

- ICP 0000701492MP984 was active, then it had an unexplained inactive update, which was reversed three months later when the active date was reinstated,
- ICP 0000050637WEDE7 was active, then it had an active event date correction, which was replaced by an unexplained inactive update, then an active update was sent for the original incorrect active date, and this was finally replaced by the correct active date,
- late field notification caused three late updates, and
- 15 ICPs had incorrect event dates which were corrected.

The AC020 report recorded 11 late updates to 1,12 “inactive - new connection in progress” status. Six of the updates were made before initial electrical connection date so are not technically late, and the other five late updates were checked, and it was found late processing was the cause in all cases.

New connection information accuracy

Active dates for new connections were compared to the distributor’s initial electrical connection date, and MEP’s certification date using the AC020 report. The following exceptions were identified, and I checked five or all exceptions of each type:

Exception	Total ICPs	ICPs confirmed correct from sample, or all checked as indicated	Comment
IECD = active date and MCD ≠ active date	4	4/4	All active dates were correct
IECD ≠ active date and MCD = active date	19	5/5	All active dates were correct
IECD ≠ active date and MCD ≠ active date	26	3/5	Two ICPs had the completion date used not the livening date.
IECD = active date and no MCD	4	4/4	All active dates were correct
IECD ≠ active date and no MCD	18	5/5	All active dates were correct
No IECD and MCD = active date	133	ICPs confirmed correct from sample, or all checked as indicated	All active dates were correct
No IECD and MCD ≠ active date	6	5/5	All active dates were correct
Total	**210**	**31/33**	

The audit compliance report identified two ICPs with “inactive - new connection in progress” status and one ICP at “ready” status which had an initial electrical connection date recorded. All of these ICPs were checked:

- one was updated to active from the initial electrical connection date after the report was run,
- one is now active in the registry, and
- ICP 0007206216RN5E0 is awaiting paperwork.

Audit outcome

Non-compliant

Non-compliance	Description
Audit Ref: 3.5 With: Clause 9 Schedule 11.1 From: 01-Jul-21 To: 31-May-22	**MERI** 402 late updates to "active" status for new connections. 74 late updates to "inactive - new connection in progress" status for new connections. Three of the sample of 52 ICPs had incorrect "active" dates recorded. **MERX** 738 late updates to "active" status for new connections. One late update to "inactive - new connection in progress" for a new connection. Six of the sample of 36 ICPs had an incorrect "active" date recorded. **PSNZ** 356 late updates to "active" status for new connections. Five late updates to "inactive - new connection in progress" status for new connections. Two incorrect event dates. Potential impact: Medium Actual impact: Low Audit history: Multiple times Controls: Moderate Breach risk rating: 2
Audit risk rating	**Rationale for audit risk rating**
Low	The controls are rated as moderate, in most cases the registry was updated on time. Where information was late, circumstances beyond Meridian's direct control had contributed to some of the late updates. The audit risk rating is low as the impact to the market of the ICPs not being updated within five business days is low.

Actions taken to resolve the issue	Completion date	Remedial action status
Incorrect inactive dates identified have been or will be corrected. We have reviewed circumstances around the decrease in compliance for all codes in relation to timeliness of Registry notifications for new connections and found this is attributable to a number of new embedded networks with a large volume of ICPs where there were delays in processing the new connections.	01/12/2022	Identified
Preventative actions taken to ensure no further issues will occur	**Completion date**	

Non-compliance	Description		
We will continue with our existing controls to ensure Registry information is updated within 5 business days where this is within our control. We will implement further monthly monitoring of timeliness of Registry updates. We will review processes for embedded network new connections to see if there are any improvements that would improve timeliness of processing.		Ongoing 28 Feb 2023 30/06/2023	

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

Code reference

Clause 9 (1(k) of Schedule 11.1

Code related audit information

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

Audit observation

The process to capture and manage ANZISC codes was examined. The registry list and AC020 reports were reviewed and ANZSIC codes were checked for a sample of ICPs to determine compliance.

Audit commentary

MERI

ANZSIC codes are captured at the time the customer switches in or is connected by Meridian. The AC020 report is run regularly to check and update any ICPs with T9 series codes.

The audit compliance report was reviewed to determine compliance:

- no ICPs had blank or unknown ANZSIC codes, and
- no ICPs with meter category 2 or higher had residential ANZSIC codes.

I checked a sample of 50 ANZSIC codes by comparing them to Google streetview and registry property name information and found one ICP with the incorrect code applied. This has now been corrected.

MERX

Flux requires ANZSIC codes to be consistent with the customer's account structure. Customers with a residential account structure are expected to have residential ANZSIC codes and customers with commercial account structure are expected to have commercial ANZSIC codes. This is not true in every case, and I found evidence below where ICPs are businesses but have been allocated a residential ANZISC code incorrectly. Meridian is working on the account structure in Flux post migration to correct this.

Typically, the ANZSIC code is retrieved from the registry for new switches in.

Any ICPs with an unknown ANZSIC code are identified via the registry discrepancy process. These are passed to the contact centre and the sales team and are expected to be investigated and updated as appropriate.

The audit compliance report was reviewed to determine compliance:

- one ICP has a T998 ANZSIC code; this has been corrected,

- 12 ICPs have T994 ANZSIC codes, these have been corrected,
- no ICPs with meter category 3 or higher had residential ANZSIC codes, and
- 806 ICPs with meter category 2 had residential ANZSIC codes; all 20 sampled were incorrectly allocated a residential ANZSIC code due to how the Flux system allocates these as detailed above, but no corrections have been made.

I checked a sample of 100 ANZSIC codes by comparing them to Google streetview and registry property name information and found all were correct with the exception of nine residential coded ICPs. These were all incorrect and have been allocated a residential code due to the account structure applied. These have not been corrected.

PSNZ

As part of the customer application process, business customers are asked to provide information on their industry. If an ICP is residential, the ANZSIC code is not required to be entered in Flux and the 000000 (residential) ANZSIC code is automatically applied for any trader updates. If an ICP is commercial, Flux notifies the user that an ANZSIC code is required, but population of the code is not mandatory in the system. Users cannot select T99 series codes in Flux, but ICPs can switch in with one of these codes.

The audit compliance report was reviewed to determine compliance:

- no ICPs had T9 series ANZSIC codes,
- no ICPs with meter category 3 or higher had residential ANZSIC codes, and
- 20 ICPs with meter category 2 had residential ANZSIC codes; 12 were confirmed as correct, one had the switch cancelled and seven were incorrect.

I checked a sample of 75 ANZSIC codes by comparing them to Google streetview and registry property name information. One error was identified which has been corrected.

Audit outcome

Non-compliant

Non-compliance	Description
Audit Ref: 3.6 With: 9 (1(k) Schedule 11.1 From: 01-Jul-21 To: 31-May-22	**MERI** One ICP of a sample of 50 ICPs checked with an incorrect ANZSIC code. **MERX** All 13 ICPs with unknown ANZSIC codes were able to be determined. All 20 ICPs sampled out of 806 with a residential ANZSIC code and Category 2 were found to be incorrect and have not been corrected. Nine ICPs with the residential ANZSIC code are incorrect. **PSNZ** Seven incorrect ANZSIC codes of residential on Category 2 ICPs. These have not been corrected. One incorrect ANZSIC code now corrected. Potential impact: Low Actual impact: Low Audit history: Multiple Controls: Weak Breach risk rating: 3
Audit risk rating	**Rationale for audit risk rating**
Low	Controls are rated as weak as the Flux business rules do not ensure that the correct ANZSIC code is allocated in all instances. The audit risk rating is low this has no direct impact on submission accuracy.

Actions taken to resolve the issue	Completion date	Remedial action status
Corrections to incorrect/unknown ANZSIC Codes identified have been completed where this is possible.	Complete	Identified
We will review the remaining ICPs assigned a residential ANZSIC Code with Cat 2 metering and correct this by correcting the account structure where required.	01/04/2023	
Preventative actions taken to ensure no further issues will occur	**Completion date**	
The process to determine correct ANZSIC codes on sign up will be reviewed to reduce instances where correction is required.	01/04/2023	

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 registry list and AC020 reports were examined to identify ICPs where:

- unmetered load is identified by the distributor, and none is recorded by Meridian,
- unmetered load is identified by Meridian, and none is recorded by the distributor,
- unmetered load is indicated but the unmetered daily kWh is zero or blank, and
- Meridian's unmetered load figure does not match with the distributor's figure (where it is possible to calculate this if the distributor is using the recommended format) and the variance is greater than 0.1 kWh per day (0.1 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 0.1 kWh per day).

Audit commentary

MERI

MERI supplies 3,957 ICPs with unmetered load recorded by the trader and/or distributor.

Meridian has processes in place to validate unmetered load.

- Any unmetered load that switches in is allocated to the reconciliation team's work queue for checking.
- The daily capacity report is reviewed monthly. This report compares the trader daily kWh recorded on the registry and the daily kWh recorded in the Velocity life cycle, which is used for billing purposes. The registry value is applied for settlement and differences are investigated and resolved by the reconciliation team monthly. It was recorded in the previous two audit reports that Meridian was working with Wellington Electricity to ensure that shared unmetered load was added for 0001409077UN5D7. This ICP is now decommissioned following an investigation.
- Where a distributor changes unmetered load information on the registry, a notification file is sent and automatically loaded into Velocity. Changes to unmetered load details are not directed to a workflow for review; these will be identified through the capacity report checks. Orion also normally emails Meridian if unmetered load details for any of their ICPs have changed.
- The AC020 report is checked monthly to identify discrepancies and to ensure that the trader and distributor details are consistent, and also consistent with the daily unmetered kWh which Meridian has calculated.

If any of the checks identify that unmetered load corrections are required, the corrections are backdated so that consumption will be correct for any revision submissions.

The AC020 report and registry list were reviewed to identify unmetered load discrepancies.

Exception	Total ICPs	ICPs with confirmed incorrect data	Comment
ICPs where the unmetered flag is yes, but where the daily kWh field is blank or zero.	250	1	133 DUML ICPs validly have zero daily kWh recorded. 59 residual load ICPs validly have zero daily kWh recorded. 57 Tsunami siren ICPs validly have zero daily kWh recorded because the load is 1W connected for 10 minutes per year, which rounds 0.00 kWh per day. The Benmore backup supply ICP 0000050330WT582 has recently had the unmetered flag changed to "Y" and it was confirmed this supply is seldom used but this point of connection will require metering or an exemption because it's not a predictable load.
ICPs where the distributor has unmetered load recorded but the trader does not, and the trader's unmetered flag is N.	1	-	ICP 0007203753RN82F had unmetered load recorded by the distributor, but it was confirmed this was incorrect and the distributor has now removed their record. The ICP is metered.
ICPs where the trader's daily kWh figure is different to the figure derived from the distributor's field by more than 0.1 kWh.	17	1	Five were DUML ICPs and are compliant as the registry is not used for submission. Ten were incorrectly calculated by the report because the distributor unmetered load details were not in the correct format and matched on recalculation. ICP 0002270002ML907 had the incorrect daily kWh figure and is now corrected. ICP 0000011092WE484 had an incorrect distributor field which is now corrected.

Exception	Total ICPs	ICPs with confirmed incorrect data	Comment
Active ICPs with no metering or unmetered load recorded by the trader.	34	-	Three had accepted MEP nominations and were awaiting meter asset data, one is subject to exemption 287 discussed in **section 1.1**, one was decommissioned after the report was run, and one had metering details added after the report was run. The remaining 28 ICPs did not have MEP nominations made and remain active. These were examined and found: • two have since been decommissioned or are in the process of being decommissioned, • two (ICPs 0083582900PC3A3 & 0000103539TRE1E) have had their meters removed from the registry in 2017 and are being estimated; there are no actions in progress to address these and this is discussed further in **section 6.1**, • 23 have since had metering recorded on the registry by the MEP, which was AMCI in all cases, and • ICP 0000570092HBCE1 has an amalgamation of metering in progress and is now at inactive, ready for decommissioning.
Unmetered load is recorded by the trader but not the distributor.	461	-	57 are residual load ICPs. I checked a sample of ten ICPs and MERI's figures were correct. These are historic ICPs where the distributor does not know the load and therefore it is not recorded in the registry.

255 active unmetered BTS ICPs were identified. I checked all 19 ICPs which were created more than two years ago and found six ICPs where it appears from google streetview that the permanent building may be complete. I recommend these are investigated to determine whether metering is installed or should be installed. The ICPs are recorded in the table below.

ICP	**Creation date**	**Streetview findings**
0007151629RNA67	23 May 2013	This installation appears to be complete
0007179895RN90D	20 March 2017	This installation was almost complete in February 2022
0007179969RN300	27 March 2017	This is a showhome and appears to be complete in 2019
0007183624RNA2D	20 November 2017	This is a permanent food caravan
0007186531RN9EC	18 July 2018	This installation appears to be complete in September 2019
0007192363RN906	1 October 2019	This installation appears to be complete in November 2021

Recommendation	Description	Audited party comment	Remedial action
Regarding Clause 9(1)(f) of Schedule 11.1	Check six ICPs to confirm if they are still an unmetered BTS.	These are currently under investigation and action will be taken where needed.	Investigating

The DUML ICPs identified in the last audit that were with other traders but should have been reconciled by Meridian have now switched in.

MERX

MERX supplies 471 ICPs with unmetered load recorded.

Registry notification files are not reviewed. The daily registry discrepancy process is used to identify any required corrections. The exceptions are reviewed regularly. The AC020 report is also used to identify discrepancies.

The AC020 report and registry list were reviewed to identify unmetered load discrepancies.

Exception	Total ICPs	ICPs with confirmed incorrect data	Comment
ICPs where the unmetered flag is yes, but where the daily kWh field is blank or zero.	-	-	No discrepancies.
ICPs where the Distributor has unmetered load recorded but the trader does not, and the trader's unmetered flag is N.	1	1	ICP 0006905013RN134 had shared unmetered load added by the distributor on 26 March 2022 but MERX didn't identify the required update until 18 August 2022.
ICPs where the Trader's daily kWh figure is different to the figure derived from the Distributor's field by more than 0.1 kWh.	-	-	No discrepancies.
Active ICPs with no metering or unmetered load recorded by the trader.	14	-	Eight had metering details added after the report was run, and three had accepted MEP nominations and were awaiting meter asset data. The remaining three ICPs did not have MEP nominations made and remain active. These were examined and found: • ICP 0110114045AP303 now has metering in the registry; AMCI is the MEP, and this metering should not have been removed from the registry, • ICP 0005060702ALF2F is now decommissioned, and • ICP 0006474403ALC7C is being investigated with SMCO.

Exception	Total ICPs	ICPs with confirmed incorrect data	Comment
Unmetered load is recorded by the trader but not the distributor.	19	2	The previous audit recorded that the unmetered load was removed from ICP 0000025557EA8EB, but MERX has yet to remove this. This is now resolved. ICP 0006788556RN4C8 had unmetered removed by the distributor in March 2022 but it wasn't identified by MERX until August 2022. ICP 0007203784RN8A7 had unmetered load removed by the distributor in April 2022 but it wasn't identified by MERX until June 2022. ICP 0007285050WAB7F didn't ever have unmetered recorded by the distributor. MERX determined this unmetered load was not present and it was removed.

No active unmetered BTS ICPs were identified.

PSNZ

PSNZ supplies 155 ICPs with unmetered load recorded by the trader and/or distributor. 86 have shared unmetered load and 69 have standard unmetered load.

Registry notification files are not reviewed. The daily registry discrepancy process is used to identify any required corrections. The exceptions are reviewed regularly. The AC020 report is also used to identify discrepancies.

ICPs with unmetered load will not be moved from NHH to HHR submission. If unmetered load is identified for a HHR ICP it will be changed back to NHH. All ICPs with unmetered load indicated have NHH profiles except 0006418406RNEB4, which was changed back to NHH on 27 July 2022 backdated to 1 May 2022.

The AC020 report and registry list were reviewed to identify unmetered load discrepancies.

Exception	Total ICPs	ICPs with confirmed incorrect data	Comment
ICPs where the unmetered flag is yes, but where the daily kWh field is blank or zero.	-	-	No discrepancies.
ICPs where the Distributor has unmetered load recorded but the trader does not, and the trader's unmetered flag is N.	-	-	No discrepancies.
ICPs where the Trader's daily kWh figure is different to the figure derived from the Distributor's field by more than 0.1 kWh.	2	1	ICP 0006066003RN43C was changed by the distributor on 24 March 2022 but PSNZ's daily kWh figure is only correct from 22 July 2022.
Active ICPs with no metering or unmetered load recorded by the trader.	2	-	No genuine discrepancies.

Exception	Total ICPs	ICPs with confirmed incorrect data	Comment
Unmetered load is recorded by the trader but not the distributor.	2	1	ICP 0000536661NRCDE had the unmetered load removed by the distributor in June 2021. The ICP switched to PSNZ in October 2021, but the unmetered load was not removed until July 2022. The description is still present, although the daily kWh figure is removed.

No active unmetered BTS ICPs were identified.

Audit outcome

Non-compliant

Non-compliance	Description
Audit Ref: 3.7 With: Clause 9(1)(f) of Schedule 11.1 From: 01-Jul-21 To: 31-May-22	**MERI** Unmetered load incorrect for one ICP. ICP 0000050330WT582 is a back-up supply at Benmore and is unmetered, with a daily kWh figure of zero, which will mostly be correct, but if it runs the kWh will be unknown. This may require an exemption. **MERX** Unmetered load incorrectly recorded for three ICPs. **PSNZ** One ICP has unmetered load recorded correctly but from the incorrect date. One ICP had unmetered load incorrectly recorded. It's now correct but the description is still present. Potential impact: Low Actual impact: Low Audit history: Twice previously Controls: Moderate Breach risk rating: 2
Audit risk rating	**Rationale for audit risk rating**
Low	The controls are recorded as moderate because they mitigate risk most of the time but there is room for improvement. It appears there are delays in the identification and correction of discrepancies. 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**

Instances of incorrect unmetered load identified have been corrected. We are gathering information to support an exemption application for ICP 0000050330WT582. This is an emergency back-up supply for the Benmore power station that has never been called on and is planned to be decommissioned by Dec 2023.	01/12/2022 01/06/2023	Identified
Preventative actions taken to ensure no further issues will occur	**Completion date**	
Existing controls to monitor unmetered load will continue.	Ongoing	

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

Code reference

Clause 17 Schedule 11.1

Code related audit information

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

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

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

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

Audit observation

The new connection processes were examined in detail as discussed in **sections 2.9** and **3.5**.

The reconnection process was examined using the AC020 and event detail reports.

- The timeliness and accuracy of data for new connections is assessed in **section 3.5**.
- The timeliness of data for reconnections is assessed in **section 3.3**, and a sample of 20 updates were checked for accuracy.

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.

Audit commentary

MERI

Velocity 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 unmetered kWh.

As described in **section 3.3** and **3.5**, the processing of reconnections and new connections is largely automated unless documentation is incomplete, or dates are inconsistent. Reads are entered as part of the new connection process. Previous audits recorded that a reading was not always entered as part of

the reconnection process, which had led to some submission accuracy issues. This issue is still present, where reconnection readings are not entered. A recommendation is made below.

Recommendation	Description	Audited party comment	Remedial action
Regarding Clause 17 Schedule 11.1	Ensure disconnection and reconnection readings are obtained and used	Meridian will investigate Flux Development and review the process for reconnections and disconnections to see if better manual controls can be put into action.	Investigating

ICPs that have been vacant for long periods, whether they are "active" or "inactive", continue to be investigated prior to being switched to MERX. Statuses are changed if necessary.

A review of discrepancies for new connections in **section 3.5** identified three of the sample checked with an incorrect active status date and therefore incorrect status for that period.

I re-checked active date discrepancies identified during the previous audit and found they had been resolved except:

- ICP 1002109214LCCA3 was made active one day late for the 21 October 2020 but the meter was certified on 20 October 2020; this ICP switched out 26 November 2020 without the status event date being corrected and is now outside the 14-month revision period.

As detailed in **section 2.1**, the inactive consumption report was not run consistently during the audit period for 93 inactive metered ICPs. This report was run for the audit and did not identify any inactive consumption requiring attention.

MERX

The status of an ICP is only changed to "active" once confirmation has been received by a contractor. Submission information is provided for all "active" ICPs, even if they are vacant. ICPs are updated to "active" status in Flux, and an event date is applied. This information is transferred to the registry the following morning using the process described in **section 2.1**.

Flux 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 unmetered kWh.

Review of the accuracy of data for a sample of 20 reconnections found one incorrect event date. ICP 0000030162TR363 had consumption from 3 March 2021 but was only made active from 27 April 2021.

A review of discrepancies for new connections in **section 3.5.**

As detailed in **section 2.1**, a report of inactive meters with consumption after the disconnection date was provided and contained eight ICPs with a volume of 51 kWh of inactive consumption. A further four ICPs with a volume of 11,123 kWh from the last audit were also checked to see if the inactive consumption had subsequently been included in the settlement process. For all 12 ICPs it was confirmed that no inactive consumption was being included in the settlement process.

PSNZ

The status of an ICP is only changed to "active" once confirmation has been received by a contractor. Submission information is provided for all "active" ICPs, even if they are vacant. ICPs are updated to "active" status in Flux, and an event date is applied. This information is transferred to the registry the following morning using the process described in **section 2.1**.

Flux 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 unmetered kWh.

Review of the accuracy of data for a sample of 20 reconnections found one incorrect event date.

A review of discrepancies for new connections in **section 3.5** identified two ICPs with incorrect status dates.

ICP 0000047706WE3DF appears to be electrically connected on 6 July 2020 as a result of a PSNZ service order, but the status is still "ready". PSNZ is conducting an investigation to confirm the details.

I re-checked active date discrepancies identified during the previous audit and found they had been resolved, as recorded below.

ICP	Event date	Correct event date	Comments
0000163687CK0C9	12 August 2020	25 August 2020	Now corrected
1099579859CN6DB	17 July 2020	3 September 2020	Now corrected

A report of inactive meters with consumption after the disconnection date was provided and contained 20 ICPs with a volume of 41,564 kWh of inactive consumption. A further seven ICPs with a volume of 119 kWh from the last audit were also checked to see if the inactive consumption had subsequently been included in the settlement process. For all 27 ICPs it was confirmed that no inactive consumption was being included in the settlement process.

Audit outcome

Non-compliant

Non-compliance	Description
Audit Ref: 3.8 With: 17 Schedule 11.1	**MERI** Three of the sample of 52 ICPs had incorrect active dates recorded for new connections. **MERX** One of a sample of 20 ICPs had an incorrect active date recorded for reconnections. Six of the sample of 36 ICPs had incorrect active dates recorded for new connections. 12 ICPs with inactive consumption and therefore incorrect active status. **PSNZ** One of a sample of 20 ICPs had an incorrect active date recorded for reconnections Two of the sample of 33 ICPs had incorrect active dates recorded for new connections. ICP 0000047706WE3DF is still at "ready" but has been electrically connected. 27 ICPs with inactive consumption and therefore incorrect active status. Potential impact: Low Actual impact: Low Audit history: Multiple times Controls: Moderate Breach risk rating: 4
From: 01-Jul-21 To: 31-May-22	
Audit risk rating	**Rationale for audit risk rating**

Medium	Controls are rated as moderate. The reporting in Flux is not as robust as was in Velocity. This requires more manual management of data and therefore more room for errors. The audit risk rating is medium, because of the impact on settlement for inactive ICPs with consumption.

Actions taken to resolve the issue	Completion date	Remedial action status
We will review all incorrect active dates identified and ensure these are corrected. ICP 0000047706WE3DF – has recently had a site visit confirming that it is active, and metering is installed. Has now been claimed by PSNZ in the registry.	22/09/2022	Identified
Preventative actions taken to ensure no further issues will occur	**Completion date**	
Refer to our comments in 3.9 regarding inactive ICPs with consumption recorded.		

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 examined using the AC020 and event detail reports. The timeliness of data for disconnections is assessed in **section 3.3**, and a sample of updates were checked for accuracy.

The registry list file was examined to identify any ICPs that had been at the "inactive - new connection in progress" for more than 24 months.

Audit commentary

MERI

As described in **section 3.3**, the processing of disconnections is largely automated unless documentation is incomplete, or dates are inconsistent.

MERI follows a vacant disconnection process, which is described in the table below.

Day	Process
3	A letter is sent to the occupier, encouraging them to open an account.
9	A reminder letter is sent to the occupier.

Day	Process
16	AMI ICPs with consumption under a set threshold (5 kWh for residential and 10 kWh per day for commercial) are disconnected. AMI ICPs with consumption over the set threshold are left connected. ICPs with non-AMI metering are also left connected as there is usually insufficient reading information to confirm they are unoccupied.
28	The ICP is referred to external investigators who attempt to contact the customer or landlord. Depending on the outcome of the investigation the ICP will be disconnected with the landlord or owner's consent or will remain connected.

Inactive - new connection in progress

Analysis of the list file found 11 ICPs which had been at "inactive - new connection in progress" status for more than 12 months and found three are now active, one is decommissioned, two are cancelled and five are in progress.

The audit compliance report identified 213 ICPs with "inactive - new connection in progress "status which had an initial electrical connection date recorded. 209 of the ICPs had initial electrical connection dates in May 2022, and four had initial electrical connection dates between September 2019 and April 2022. I checked the ICPs and found:

- 112 of the ICPs were connected to the new TAG0011 embedded network and 69 of the ICPs were connected to the new TRN0011 embedded network (both networks had start dates of 1 May 2022); I checked a sample of 20 of the ICPs connected to each of the NSPs and confirmed that they were updated to "active" status after the report was run,
- 26 of the other 32 ICPs were updated to active status after the report was run, and
- findings for the other six are as follows:
    - ICP 0000168440CKF0B is now active, backdated to 24 September 2019,
    - ICP 0007204256RN405 is now active, backdated to 26 April 2022,
    - ICP 0000052317HB0B9 is being investigated and is still at "inactive - new connection in progress" (the IECD is 9 May 2022), and
    - ICPs 1002156245LC2FA, 1100000071WM5B5 and 1100000070WM9F0 have now been updated to "active"; these were missed due to human error.

Inactive Status (excluding new connection in progress)

Inactive statuses are only applied once Meridian's approved contractor has confirmed that the ICP has been disconnected. Meridian records disconnections in Velocity as vacant or credit, and all disconnections are initially processed on the registry as vacant disconnections (1,4 status). Once an ICP has moved to 1,4 status Velocity will allow update to 1,6 if the ICP is to be decommissioned.

Review of a diverse sample of 20 status updates to inactive did not identify any inaccurate data.

The AC020 report recorded three ICPs with status reason code 1,7 indicating a remote disconnection which did not have the AMI flag set to yes. I confirmed that the AMI flag was set to yes at the time of disconnection in all cases.

I rechecked ICP 1002094149LC17B which was identified as a previous audit exception and found the status has been updated to "active".

Inactive with consumption

Disconnected ICPs with consumption are not identified through the billing validations, because ICPs with a disconnected status are not billed.

The revenue assurance team were generating a daily report of inactive ICPs with consumption however this report has not been run for some time.

When the report is run it shows the date the ICP became "inactive" and compares the first actual reading on or after the inactive date to the latest actual reading received. The revenue assurance team would then work through the report prioritising the ICPs with the highest consumption while inactive first. Checks would be completed to determine whether the consumption is genuine, or relates to meter reading issues, a meter fault, or a reconnection performed by a new gaining retailer. If an ICP switches away or a new customer moves in from an effective date that does not account for the inactive consumption, then the ICP no longer appears on the report and no further action is taken.

As discussed in **section 6.6** the inability to enter or process received disconnection or reconnection reads also impacts the accuracy of the inactive consumption reports for each participant code as the ICP candidates are determined by the registry status event. Without a suitable boundary reading being applied this report produces a subset of potential exceptions for the team to investigate as the report requires two actual reads to be present after the date of the status change to be able to detect inactive consumption. This then delays follow up actions as the report needs to wait for a second actual read to occur post disconnection before presenting the exception to a user to determine if further action is required.

If the consumption appears to be genuine, the ICP would be put through the vacant process and then disconnected. The status is not normally corrected, and the reads are not validated unless a customer signs up and the reads can be recorded against their account.

The reconciliation team would also review this report and validate readings where consumption is present, so that the reads will be used by the historic estimate calculations.

However, as this report has not been run, this process has not been performed.

MERX

The status of an ICP is only changed to "inactive" once confirmation has been received by a contractor. Submission information is not calculated for periods where an ICP is inactive.

ICPs are updated to "inactive" status in Flux, and an event date is applied. This information is transferred to the registry the following morning using the process described in **section 2.1**. Inactive - ready for decommissioning (1,6) status is not available in Flux, and this status is manually updated directly on the registry.

Inactive - new connection in progress

Analysis of the list file found three ICPs which had been at "inactive - new connection in progress" status for more than 12 months and found two have since been made active and the remaining one is still in progress.

The audit compliance report identified ten ICPs with "inactive - new connection in progress "status which had an initial electrical connection date recorded. Eight had initial electrical connection dates between April and June 2022 and the other two had initial electrical connection dates in July 2021. Five had been made active after the report was run. I checked the remaining five and found:

- one ICP is now decommissioned, and
- four ICPs are now active; three were late due to late notification and one was a processing issue.

Inactive Status (excluding new connection in progress)

Review of a diverse sample of 18 status updates to "inactive" did not identify any inaccurate data.

The AC020 report recorded seven ICPs with status reason code 1,7 indicating a remote disconnection which did not have the AMI flag set to yes. I confirmed that the AMI flag was set to yes at the time of disconnection in all cases.

Inactive with consumption

MERX has processes in place to identify ICPs with inactive consumption. These processes are discussed in **section 9.5**, and corrections are discussed in **section 2.1**.

As detailed in **section 2.1**, a report of inactive meters with consumption after the disconnection date was provided and contained eight ICPs with a volume of 51 kWh of inactive consumption. A further four ICPs with a volume of 11,123 kWh from the last audit were also checked to see if the inactive consumption had subsequently been included in the settlement process. For all 12 ICPs it was confirmed that no inactive consumption was being included in the settlement process.

As recorded in s**ection 9.5**, there is an operational report which shows the date the ICP became inactive and compares the first reading on or after the inactive date to the latest reading received. Only current inactive ICPs appear on this report and where inactive consumption has occurred previously then this does not appear in the report.

PSNZ

PSNZ normally only uses the "electrically disconnected vacant property", "electrically disconnected - ready for decommissioning" and "inactive - new connection in progress" statuses for inactive ICPs.

The status of an ICP is only changed to "inactive" once confirmation has been received by a contractor. Submission information is not calculated for periods where an ICP is inactive.

ICPs are updated to "inactive" status in Flux, and an event date is applied. This information is transferred to the registry the following morning using the process described in **section 2.1**. Inactive ready for decommissioning (1,6) status is not available in Flux, and this status is manually updated directly on the registry.

Inactive - new connection in progress

Analysis of the list file found 25 ICPs which had been at "inactive - new connection in progress" status for more than 12 months. Nine have been resolved and are now active or decommissioned. The remaining installations are still required.

The audit compliance report identified one ICP with "inactive - new connection in progress" status which had an initial electrical connection date recorded. It is being investigated to determine the active date.

Inactive Status (excluding new connection in progress)

Review of a diverse sample of 10 status updates to "inactive" found the following:

- five did not have sufficient audit trails to determine the reason for the status changes, and one has been reversed,
- three were changes to inactive event dates by one day for a period prior to the ICPs being decommissioned, and
- two were changes to inactive event dates by one day for periods one or two years ago.

None of the issues above are recorded as non-compliance, because there is insufficient evidence that the status updates were incorrect.

The AC020 report recorded one ICP with status reason code 1,7 indicating a remote disconnection which did not have the AMI flag set to yes. I confirmed that the AMI flag was set to yes at the time of disconnection.

Inactive with consumption

PSNZ has processes in place to identify ICPs with inactive consumption. These processes are discussed in **section 9.5**, and corrections are discussed in **section 2.1**.

A report of inactive meters with consumption after the disconnection date was provided and contained 20 ICPs with a volume of 41,564 kWh of inactive consumption. A further seven ICPs with a volume of 119 kWh from the last audit were also checked to see if the inactive consumption had subsequently been included in the settlement process. For all 27 ICPs it was confirmed that no inactive consumption was being included in the settlement process.

As recorded in **section 9.5**, there is an operational report which shows the date the ICP became inactive and compares the first reading on or after the inactive date to the latest reading received. Only current inactive ICPs appear on this report and where inactive consumption has occurred previously then this does not appear in the report.

One of the issues discussed was whether disconnection was being conducted at the meter or at the boundary. It seems that there are an increasing number of disconnections occurring at the meter rather than at the pole fuse or pillar box fuse. Disconnection at the meter makes it much easier for the customer or other party to reconnect without Meridian knowing. The standard wording in the service request asks for disconnection at the boundary if disconnection at the meter cannot be conducted. I recommend Meridian takes the following actions to assist with compliance:

- strengthen the contract with disconnection contractors to require their disconnection processes to be audited, and
- request evidence from disconnection contractors that they are approved by all distributors to disconnect at the network fuse.

Recommendation	Description	Audited party comment	Remedial action
Disconnection location	• Strengthen the contract with contractors to require their disconnection processes to be audited. • Request evidence from contractors that they are approved by all distributors to disconnect at the network fuse.	This will be discussed with service providers at our Operational meetings.	Identified

Audit outcome

Non-compliant

Non-compliance	Description
Audit Ref: 3.9 With: Clause 19 Schedule 11.1 From: 01-Jul-21 To: 31-May-22	**MERI** Six ICPs electrically connected but recorded as "inactive - new connection in progress". Five have been updated and one is still being investigated. **MERX** Five ICPs electrically connected but recorded as "inactive - new connection in progress". These are all now resolved. 12 ICPs with inactive consumption and therefore incorrect active status. **PSNZ** 27 ICPs with inactive consumption and therefore incorrect active status. Potential impact: Low Actual impact: Low Audit history: Multiple times Controls: Moderate Breach risk rating: 4
Audit risk rating	**Rationale for audit risk rating**
Medium	The controls are rated as moderate as they will mitigate risk most of the time but there is room for improvement. The reporting of inactive consumption requires improvement because it currently only shows current issues not historic. The impact is medium, because the impact on settlement and participants is moderate for inactive ICPs with consumption.

Actions taken to resolve the issue	Completion date	Remedial action status
Most incorrect ICP statuses have been updated where this is possible. ICP 0000052317HB0B9 is still under investigation.	01/02/2023	Identified
We will review the ICPs identified with Inactive consumption and update their status to active if confirmed as consuming.	01/12/2022	
Preventative actions taken to ensure no further issues will occur	**Completion date**	
Active monitoring of the AC-020 will be re-instated for all codes to monitor for issues impacting Registry active status updates.	01/02/2023	
Reporting and processes to monitor and manage Inactive ICPs with consumption recorded will be reviewed for MERX and PSNZ to ensure status updates occur where genuine consumption is identified.	30/06/2023	

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 registry lists of ICPs with "new" or "ready" status and Meridian as the proposed trader, and reviewed processes to monitor new connections.

Audit commentary

Meridian uses the status "inactive – new connection in progress", and usually changes the status once it is set to "ready".

Requests from distributors on ICPs which have been at "new" or "ready" for more than two years are investigated and responded to when they are received. It appears that these requests are not being received to a working inbox in all instances as detailed below. Many of the ICPs are no longer required. Where received, Meridian endeavours to respond as quickly as possible. I recommend that Meridian periodically runs a registry list to identify ICPs that have been assigned to them in error and advises the distributor. This recommendation was also made in the previous audit report.

Description	Recommendation	Audited party comment	Remedial action
Monitoring of new and ready ICPs	I recommend running a registry list six monthly with: Status: 000 or 999 Proposed trader: PSNZ or MERX or MERI End date: the day the report is run and compare the results to the ICPs Meridian/PSNZ expects to be at "new" or "ready" status. Any ICPs which appear to have been assigned to Meridian/PSNZ in error can then be checked with the distributor.	Meridian will consider implementing this reporting.	Investigating

MERI

HHR ICPs at "new" or "ready" status are manually monitored using spreadsheets and a physical book which contains a checklist for each new connection. HHR new connections are closely monitored, and new connection completion paperwork is processed daily.

NHH ICPs at "new" or "ready" status are monitored using Velocity's workflows.

Analysis of the registry list identified two ICP at “new” and 53 ICPs at “ready” status for more than 24 months. I checked all the ICPs at “new” and the ten oldest ICPs at “ready” and found that none are still required, and the networks are aware of this.

MERX

No ICPs have had “new” or “ready” status for more than 24 months.

PSNZ

ICP ticket workflows are used to manage and monitor new connections at “new”, “ready”, and “inactive - new connection in progress” statuses. Items in these workflows have review dates set and will appear in the assigned user’s work queue for review on the review date.

Analysis of the registry list identified no ICPs at “new” and 11 ICPs at “ready” status for more than 24 months. Three ICPs are being investigated. ICP 0000047706WE3DF appears to be electrically connected on 6 July 2020 as a result of a PSNZ service order, but the status is still “ready”. PSNZ is conducting an investigation to confirm the details. This is recorded as non-compliance in **section 3.8**. The other seven ICPs are on the Counties Network, and they exist because Counties has many ICPs with more than one physical connection to their network and they wish to create additional ICPs so there is one for each point of connection. PSNZ did not agree to be the trader for these additional ICPs and has notified Counties that these ICPs should be decommissioned.

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 Meridian deem all conditions to be met.

Transfer NTs on the event detail reports were matched to the registry list reports to confirm whether the correct switch type was selected for the metering category, and an extreme case sample of NTs were checked to confirm that they were notified to the registry within two business days and the correct switch type was selected.

Audit commentary

Meridian'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 (including a credit check) and the withdrawal process is used if the customer changes their mind.

Switch type is selected based on information provided by the customer on application. The customer is asked whether they have been billed at the property by another retailer as part of the application process.

MERI

I matched the transfer switch NTs on the event detail report to metering information on the PR255 and registry list reports. All 55 NTs checked had metering category 1, 2 or were unmetered.

I checked a sample of the five NTs and found they were sent within two business days of pre-conditions being cleared, and the correct switch type was selected.

MERX

I matched the transfer switch NTs on the event detail report to metering information on the PR255 and registry list reports. All 31,478 NTs checked had metering category 1 or 2.

Ten NTs were sent more than one day after the switch event date. I checked the backdated NTs and found they were sent within two business days of pre-conditions being cleared, and the correct switch type was selected.

PSNZ

I matched the transfer switch NTs on the event detail report to metering information on the PR255 and registry list reports. All 11,601 NTs checked had metering category 1 or 2.

11 NTs were sent more than one day after the switch event date. I checked a sample of the five most backdated NTs and found they were sent within two business days of pre-conditions being cleared, and the correct switch type was selected.

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 may disregard every event date established by the losing trader for an ICP for which when the losing trader received notice from the registry manager under clause 22(a) the losing trader had been responsible for less than two months.

Audit observation

The event detail reports were reviewed to:

- identify AN files issued by Meridian during the audit period,
- assess compliance with the requirement to meet the setting of event dates requirement, and
- a diverse sample ANs were checked for each trader code to determine whether the codes had been correctly applied.

The switch breach history report was examined for the audit period.

Audit commentary

MERI

AN response code and event date selection is managed by Meridian using business rules that are set within Velocity. I checked the accuracy of AN response codes applied for transfer switches by comparing them to the latest record on the registry list with history.

- I checked 4,595 ANs where the AA (acknowledge and accept) code was applied against the registry list and confirmed 4,416 (96.1%) had AA correctly applied. For 179 the latest record indicated AMI metering was present. I checked a sample of five ICPs and in all cases, the AD code should have been used. It appears the AMI communicating/not communicating flag is loaded from the

registry at the time of switch in, but for at least ICP 0000419715TP931, the flag wasn't updated in Velocity when the MEP updated it in the registry.

- I checked 17,358 ANs where the AD (advanced metering) code was applied against the registry list and confirmed 17,065 (98.3%) had AD correctly applied. For 292 ANs the latest record did not indicate AMI metering, and for one unmetered load was recorded. I checked a sample of five ICPs with the AD code and they all should have been AA. One ICP with AMI and unmetered was correctly recorded as AD. It's not possible to use two codes.
- All 24 ANs with the PD (premises electrically disconnected) code were correct.
- I checked 56 ANs where the MU (unmetered supply) code applied against the registry list and confirmed 54 (98.3%) had MU correctly applied. I checked two examples and found that ICP 0007200606RN68C did not have unmetered load on the date the AN was sent.
- I checked two ICPs with the OC code and they were both correct.

The event detail report was reviewed for all 22,536 transfer ANs to assess compliance with the setting of event dates requirements:

- 22,518 ANs (99.9%) had proposed event dates within five business days of the NT receipt date, and
- all ANs had proposed event dates no more than ten business days after the NT receipt date.

No AN breaches for transfer switches were recorded on the switch breach history report.

MERX

The automatic production of AN files in Flux had been turned off in June 2021 and all AN files were manually produced. Automation is now back on. The switch breach report is monitored to ensure that files are sent on time. The AN code is selected by the agent in some instances.

I checked the accuracy of AN response codes applied for transfer switches by comparing them to the latest record on the registry list with history.

- I checked 559 ANs where the AA (acknowledge and accept) code was applied against the registry list and confirmed 537 had AA correctly applied. For 22 ANs the latest record indicated AMI metering was present. I checked a sample of five and in all cases the response code should have been AD because the AMI communicating flag in the registry was yes. Three of these files required intervention and were sent manually. Two were automated, and it appears the meter reading frequency field is used to determine whether the code should be AA or AD. There is an AMI communicating flag in Flux, but it's not used for this purpose.
- I checked the 5,860 ANs with the AD (advanced metering) code was applied against the registry list and confirmed 5,805 had AD correctly applied. For 55 ANs the latest record did not indicate AMI metering was present. I checked a sample of five and one should have been AA because it was AMI not communicating. As mentioned above, the meter reading frequency field is used rather than the AMI communicating field.
- I checked all six ANs with the PD (premises electrically disconnected) code and confirmed they were correct.
- I checked all five ICPs where the OC code was used, and they were all correct.

Proposed event dates are populated by Flux. If the last billed date + one day does not match the requested date, the validation screen states: "you may select a date to use for the expected switch date and effective transfer date which is on or after <proposed date>" and allows the user to enter any date they choose.

The event detail report was reviewed for all 6,476 transfer ANs to assess compliance with the setting of event dates requirements. All ANs had proposed event dates within five business days of the NT receipt date.

No AN breaches were recorded on the switch breach history report.

PSNZ

AN files are generated by Flux, and the switch breach report is monitored to ensure that files are sent on time. Flux automatically applies the AN response code unless more than one option is applicable. In these cases, the AN is directed to a work queue where the user manually selects the code.

I checked the accuracy of AN response codes applied for transfer switches by comparing them to the latest record on the registry list with history.

- I checked 525 ANs where the AA (acknowledge and accept) code was applied against the registry list and confirmed 471 had AA correctly applied. For 54 ANs the latest record indicated AMI metering was present. I checked a sample of five and found they were all incorrect. The AN response code is based on the meter reading frequency, not the AMI flag.
- I checked the 6,558 ANs with the AD (advanced metering) code was applied against the registry list and confirmed 6,483 had AD correctly applied. For 75 ANs the latest record did not indicate AMI metering was present. I checked a sample of five, and in all cases, the registry was updated to "AMI not communicating" later than the date of the AN file, so compliance is confirmed because the response code matched the registry.
- I checked all six ANs where the MU (unmetered supply) code applied and confirmed they were correct.
- I checked all five ANs with the PD (premises electrically disconnected) code and confirmed they were correct.
- I checked both ICPs where the OC code was used, and they were both correct.

Proposed event dates are populated by Flux. If the last billed date + one day does not match the requested date, the AN is directed to a work queue for resolution by the switching team. The validation screen states: "you may select a date to use for the expected switch date and effective transfer date which is on or after <proposed date>" and allows the user to enter any date they choose.

The event detail report was reviewed for all 7,129 transfer ANs to assess compliance with the setting of event dates requirements. All ANs had proposed event dates within five business days of the NT receipt date.

No AN breaches were recorded on the switch breach history report.

Audit outcome

Non-compliant

Non-compliance	Description
Audit Ref: 4.2 With: Clause 3&4 Schedule 11.3 From: 01-Jul-21 To: 31-May-22	**MERI** Five of a sample of five AN codes incorrectly sent with AA instead of AD. Five of a sample of five AN codes incorrectly sent with AD instead of AA. One incorrect AN code of MU sent. **MERX** Five of a sample of five AN codes incorrectly sent with AA instead of AD. One of a sample of five AN codes incorrectly sent with AD instead of AA. **PSNZ** Five of a sample of five AN codes incorrectly sent with AA instead of AD. Potential impact: None Actual impact: None Audit history: Twice previously Controls: Strong Breach risk rating: 1
Audit risk rating	**Rationale for audit risk rating**
Low	The controls are recorded as strong because they mitigate risk to an acceptable level. The audit risk rating is assessed to be none but low is the only option available. Traders to not rely on these codes, they rely on the registry details instead.

Actions taken to resolve the issue	Completion date	Remedial action status
		Identified
Preventative actions taken to ensure no further issues will occur	**Completion date**	
We will continue with our existing controls which have been assessed as strong	Ongoing	

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

The event detail report was reviewed to identify CS files issued by Meridian during the audit period. The accuracy of the content of CS files was confirmed by checking a sample of records per trader code. 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 average daily kWh that was negative, zero, or over 200 kWh were identified. A sample 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 of the event date was examined, and the switch breach history report for the audit period was reviewed to identify late CS files.

Audit commentary

MERI

CS timeliness

Velocity's work queues manage the switching process, and most switches are processed automatically. The work queues are prioritised as follows, and the priority increases if issues are not resolved as the due date nears:

- **Priority 1** includes switch acknowledgement errors where there is a difference between the registry and Velocity data, AN files not sent, and CS files not sent,
- **Priority 2** includes files not sent because Velocity is waiting for information, but the switch is not close to the due date, and
- **Priority 3** includes sites gained with export meters (where Meridian needs to check and update profiles), and withdrawals requiring responses.

In addition, the switching team runs the switch breach report twice daily to identify any switches which have not been sent within two business days. A report to show failed switch acknowledgement codes relating to metering issues is run if there are delays in processing work queues, to ensure that issues are identified and resolved promptly.

The switch breach report recorded four CS breaches for transfer switches where the CS file was delivered more than five business days after the event date. Two were automated and two required manual intervention.

CS content

The registry functional specification requires estimated daily kWh to be based on the average daily consumption for the last read-to-read period for meters with flow direction X. Velocity's estimated daily kWh calculation has not changed during the audit period. In most cases, the calculation does match the daily average consumption between the last two actual readings, but the following issues are present:

- estimated readings are included in the calculation,
- where the last two readings occur on the same day, the divisor is zero and the calculation produces unexpected results,
- where a meter has flow direction I, the average consumption is calculated as a negative value, instead of being excluded from the calculation, and

- where a CS file fails to be generated, Velocity re-creates the file and when this occurs Velocity reapplies the switch event read and the difference between this and the previous read is zero.

Meridian does not intend to make any changes to the estimated daily consumption calculation until the Authority's switching review is complete.

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

Estimated daily kWh	Count of transfer CS files	Findings
Negative	-	
Zero	2,675	A sample of five ICPs were checked, and one was incorrect. ICP 0030064064PC13F should have had 1.17 as the average daily kWh. There were two identical readings on the same date causing zero to be calculated.
More than 200 kWh	1,799	An extreme case sample of the five CS files with the largest values were checked, and all were found to be correct.

I compared CS event dates, last actual read dates and event read types for consistency for the 22,123 transfer CS files issued:

- eight CS files with a last actual read date on the switch event date; I checked a sample of three and found two were correct because the readings occurred on the switch date while ICP 1001020448AL929 switched on 27 August 2021 and there was a midnight read from 26 August 2021, but this wasn't used - a reading from midnight on 27 August 2021 was used and the date of the last reading was also incorrect (the difference was 37 kWh),
- one CS file had a last actual read date after the switch event date; there were no reads in Velocity during the period the ICP was with MERI but there was a start read, which should have been used as the last actual read date,
- three CS files had a last actual read date the day before the event date, and an estimated read type; I checked all three and found two incorrect last read dates and an incorrect reading for one of four meters for one ICP,
- 333 CS files had a last actual read date more than one day before the event date with an actual read type; I checked a sample of five and found four incorrect read types - in all cases the customer had finalled on an actual and this reading was used as the switch event meter reading, which is compliant for a vacant ICP because zero kWh is an acceptable daily estimate, but the readings cannot be recorded as actuals, and
- three CS files only contained CSPREMISES rows and were compliant because they were for unmetered ICPs.

A further three CS files were checked for accuracy, and all were correct.

MERX

<u>CS timeliness</u>

I reviewed a process map for CS files in Flux and confirmed that CS files are automatically sent once all information required to complete the switch is available. If there is missing information, or a conflict in the information, a work queue item is generated.

The switching team runs the switch breach report daily to identify any switches which have not been sent within two business days of their due date.

The switch breach report did not record any CS related breaches for transfer switches.

CS content

The registry functional specification requires estimated daily kWh to be based on the average daily consumption for the last read-to-read period. Flux calculates the estimated daily kWh based on the last two reads with a "verified" status. For the purpose of this calculation validated reads include validated customer and estimate readings in Flux, as well as validated actual readings. Disconnected ICPs have an estimated daily consumption of zero applied.

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

Estimated daily kWh	Count of transfer CS files	Findings
Negative	-	
Zero	79	A sample of five ICPs were checked and two were found to be incorrect. ICP 0000723140TE12F should have 6 as the average daily and ICP 0005283175RN0A4 should have 18.4. This was due to two identical records in Flux for the same date.
More than 200 kWh	54	An extreme case sample of the five CS files with the largest values were checked and they were all correct.

Flux automatically generates CS files based on the information recorded against the ICP. I compared CS event dates, last actual read dates and event read types for consistency for the 6,355 transfer CS files issued:

- no CS files with a last actual read date on or after the switch event date,
- 330 CS files had a last actual read date the day before the event date, and an estimated read type; I checked a sample of three and in all cases the final estimate was used as the switch event meter reading even though an actual read was also available with the correct date (the difference between the estimates and actuals is small but the actual reads should have been used),
- one CS file had a last actual read date more than one day before the event date with an actual read type; the switch read was correct, but the date of the last read was incorrect, and
- all CS files contained the expected rows.

A further three CS files were checked for accuracy, and all were correct except that the average daily kWh figure was not calculated in line with the registry functional specification for all ICPs sampled.

PSNZ

CS timeliness

CS files are issued automatically by Flux, once all information required to complete the switch is available. The switch breach report is also monitored to ensure CS files are sent on time, with a focus on CS breaches.

The switch breach report recorded no CS breaches for transfer switches.

CS content

The registry functional specification requires estimated daily kWh to be based on the average daily consumption for the last read-to-read period. Flux calculates the estimated daily kWh based on the last two reads with a "verified" status. For the purpose of this calculation validated reads include validated customer and estimate readings in Flux, as well as validated actual readings. Disconnected ICPs have an estimated daily consumption of zero applied.

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

Estimated daily kWh	Count of transfer CS files	Findings
Negative	-	
Zero	80	A sample of five ICPs were checked. Four were correct but ICP 0099554392CN34C should have 23 not zero in the CS file for 4 March 2022. There were two identical reads in Flux, one with a time stamp of 23:59:53 and one for 23:59:57 and it appears Flux has calculated zero between these two records, which are effectively the same read with a different time stamp.
More than 200 kWh	42	An extreme case sample of the five CS files with the largest values were checked. They were all confirmed as correct.

Flux automatically generates CS files based on the information recorded against the ICP.

Where there is a difference between the last read billed to the customer and the read Flux has designated as the switch event read, a "read dispute" is created. These "read disputes" must be checked and resolved by confirming which read should be applied before the CS can be issued. Users confirm the reading to be applied using the "change final readings" box, but this only allows the user to change the read value not the read type. This means that if an estimate is replaced with an actual or vice versa, the read type will not be correctly recorded. Flux superusers can change the read type, but access to these logins is restricted to a very small number of users in the management team. This is discussed further in **section 9.1.**

I compared CS event dates, last actual read dates and event read types for consistency for five transfer CS files issued. All had an actual read type and a last actual read on PSNZ's last day of responsibility.

Audit outcome

Non-compliant

Non-compliance	Description
Audit Ref: 4.3 With: Clause 5 Schedule 11.3 From: 01-Jul-21 To: 31-May-22	**MERI** Four CS breaches. Average daily consumption is not calculated in accordance with the registry functional specification in some instances. One of a sample of three ICPs with an incorrect reading and last read date. Incorrect last read date recorded for two of three ICPs with read dates the day before the switch date but where the switch read is an estimate. Incorrect reading recorded for one of three ICPs with read dates the day before the switch date but where the switch read is an estimate. Incorrect read types sent for four of five ICPs sampled where the reading was an actual and the last actual read date is more than one day prior to the event date. Last actual read date was after the period of supply for one of one ICPs sampled. **MERX** Average daily consumption is not calculated in accordance with the registry functional specification in some instances. Three of a sample of three ICPs had the final estimate sent in the CS as the switch event meter reading when actual readings were available. One transfer switch ICP contained an incorrect last read date. **PSNZ** Average daily kWh in the CS is not calculated in accordance with the Registry Functional Specification. 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 controls will mitigate risk most of the time but the incorrect read type being sent for the event date requires attention. The audit risk rating is low because the kWh differences found are generally small.

Actions taken to resolve the issue	Completion date	Remedial action status
No action is able to be taken to correct the issues raised in this section without impacting other retailers and customers. Read changes have been completed where requested by the gaining trader.	22/09/2022	Investigating
Preventative actions taken to ensure no further issues will occur	**Completion date**	

MERI - Due to the migration of ICPs off Velocity, the average daily consumption logic has not been changed. The issues noted with regard negative average consumption when DG is present and calculation of 0 average consumption when a zero days bill is produced are not present in Flux. **MERX/PSNZ** – While differing in some instances from the functional specification we consider calculation of average daily kWh in our CS files is materially accurate. **Incorrect Read/Read Type** We are currently investigating whether there are any timing changes that could be made to some of the scheduled processes in Flux that may reduce occurrence of the timing anomaly that means an estimate is used for the CS file rather than an actual read. We will review current exception processes and system functionality for managing switching of ICPs post customer move out to identify improvements with read and read type selection	01/04/2023 01/04/2023	

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 registry manager giving the gaining trader written notice of having received information about the switch completion, 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 reports were analysed to identify all read change requests and acknowledgements during the audit period. A sample of RR and AC files issued for transfer switches were checked to confirm that the content was correct, and that Velocity and Flux reflected the outcome of the RR process.

I also checked for CS files with estimated readings provided by other traders where no RR was issued, to determine whether the correct readings were recorded in Velocity and Flux.

The switch breach history report for the audit period was reviewed.

Audit commentary

RR requests are generally initiated via email between the two parties and an RR file is usually sent once agreement is reached. All RR requests are evaluated and validated against the ICP information and in the AMI read database. Validated requests are accepted.

MERI

RR

A daily report is run from the BI Hub to find discrepancies between gain reads and the first reads received by Meridian, and these are investigated to determine whether a read renegotiation is required. ICPs which may require read renegotiation are also identified through the reading validation process and referred to the switching team for action.

MERI did not issue any RR files for transfer switches, and the switch breach history report did not record any RR breaches for transfer switches.

AC

MERI issued 280 AC files for transfer switches. 252 were accepted and 28 were rejected. I checked a sample of five acceptances and five rejections, and confirmed the file content was accurate, and the reads recorded in Velocity reflected the outcome of the RR process for those accepted.

All of the five rejections were validly rejected.

No AC breaches were recorded on the switch breach history report.

CS files with estimated readings where no RR is issued

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

MERX

RR

RRs are managed through tickets in Flux. A ticket is raised for the switching team where an ICP requiring a read change is identified, and the ICP is added to the replacement reads list. Readings are automatically replaced once the AC is returned.

MERX issued 419 RR files for transfer switches. 359 were accepted and 60 were rejected. A sample of five rejected files and five accepted files were checked. In all cases there was a genuine reason for MERX's RR, the file content was accurate and supported by two actual reads, and the reads recorded in Flux reflected the outcome of the RR process. One issue found was that ICP 1000518553PC930 should have had the reading recorded in Flux as actual, but it was recorded as a validated estimate. This is recorded as non-compliance in **section 9.1.**

The switch breach history report recorded 58 RR breaches. The ten latest files were checked and found all took more than four months to gain two actual reads.

AC

MERX issued 192 AC files for transfer switches. 156 were accepted and 36 were rejected. I checked a sample of five acceptances and five rejections, and confirmed the file content was accurate, and the reads recorded in Flux reflected the outcome of the RR process.

No AC breaches were recorded on the switch breach history report.

CS files with estimated readings where no RR is issued

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

PSNZ

RR

RRs are managed through tickets in Flux. A ticket is raised for the switching team where an ICP requiring a read change is identified, and the ICP is added to the replacement reads list. Readings are automatically replaced once the AC is returned.

PSNZ issued 214 RR files for transfer switches. 159 were accepted and 55 were rejected. A sample of five rejected files and five accepted files were checked. In all cases there was a genuine reason for PSNZ's RR, the file content was accurate and supported by two actual reads, and the reads recorded in Flux reflected the outcome of the RR process. The previous audit recorded that where there is a difference between the last read billed to the customer and the read Flux has designated as the switch event read, a "read dispute" is created. These "read disputes" must be checked and resolved by confirming which read should be applied before the CS can be issued. Users confirm the reading to be applied using the "change final readings" box, but this only allows the user to change the read value not the read type. This means that if an estimate is replaced with an actual or vice versa, the read type will not be correctly recorded. Flux superusers can change the read type, but access to these logins is restricted to a very small number of users in the management team. This issue is still present, and non-compliance is recorded in **section 9.1** for three ICPs.

The switch breach history report recorded 21 RR breaches. I checked the ten latest files and in all cases the identification of the need for an RR was dependent on getting actual reads and preparing the first invoice from actual reads.

AC

PSNZ issued 218 AC files for transfer switches. 201 were accepted and 17 were rejected. I checked a sample of five acceptances and five rejections, and confirmed the rejections were valid, file content was accurate, and the reads recorded in Flux reflected the outcome of the RR process.

No AC breaches were recorded on the switch breach history report.

CS files with estimated readings where no RR is issued

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

Audit outcome

Non-compliant

Non-compliance	Description
Audit Ref: 4.4 With: Clause 6(1) and 6A Schedule 11.3 From: 01-Jul-21 To: 31-May-22	**MERX** 58 RR breaches for transfer switches. **PSNZ** 21 RR breaches for transfer switches. 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 strong, as they will mitigate risk to an acceptable level. The impact is low because there is a minor impact on other participants due to a small number of files being sent late.

Actions taken to resolve the issue	Completion date	Remedial action status
No action is able to be taken to correct the issues raised in this section without impacting other retailers and customers.	22/09/2022	Identified
Preventative actions taken to ensure no further issues will occur	**Completion date**	
RR files are only issued outside 4 months where there are delays obtaining actual reads – generally for manually read meters. Due to the impact of Covid, Wells Meter Reading Services had staffing difficulties in which they struggled to complete many of the bi-monthly read routes. Many reads were not able to be obtained within the 4-month period which has resulted in a higher than usual number of later RR files.	22/09/2022	

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 process for the management of read requests was examined. The event detail report was analysed to identify read change requests issued and received under Clause 6(2) and (3) Schedule 11.3 and determine compliance.

Audit commentary

MERI

MERI did not issue any RR requests under clause 6(2) and (3) of Schedule 11.3.

The event detail report contained one RR file received from a HHR trader within five business days of switch completion, which was validly accepted.

MERX

MERX did not issue any RR requests under clause 6(2) and (3) of Schedule 11.3.

The event detail report contained 106 RR files received from HHR traders within five business days of switch completion. 12 files rejected. 11 were valid rejections because the CS file contained actual readings, or the RR readings were incorrect and a subsequent RR with different readings was accepted. An RR file was sent for ICP 0006814972RN6A5 which was incorrectly rejected. Although the difference was only 2 kWh, the Code requires this file to be accepted if sent within five business days, which it was.

PSNZ

PSNZ did not issue any RR requests under clause 6(2) and (3) of Schedule 11.3.

The event detail report contained 143 RR files received from HHR traders within five business days of switch completion. Three files were validly rejected because the CS file contained actual readings, or the RR readings were incorrect and a subsequent RR with different readings was accepted.

Audit outcome

Non-compliant

Non-compliance	Description
Audit Ref: 4.5 With: Clause 6(2) and (3) Schedule 11.3 From: 01-Jul-21 To: 31-May-22	**MERX** RR file incorrectly rejected for ICP 0006814972RN6A5. 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	The controls are rated as moderate as the controls will mitigate risk most of the time, but human errors will occur. The impact is rated as low because of the small volume of RR's affected.

Actions taken to resolve the issue	Completion date	Remedial action status
No action is able to be taken to correct the issues raised in this section without impacting other retailers and customers	22/09/2022	Identified

Preventative actions taken to ensure no further issues will occur	Completion date	
Meridian considers the controls to be strong. RR Rejections under this clause are monitored monthly and feedback provided to staff members where incorrect rejections are identified	22/09/2022	

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 Meridian whether any disputes have needed to be resolved in accordance with this clause.

Audit commentary

Meridian confirmed 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 Meridian deem all conditions to be met.

Switch move NTs on the event detail reports were matched to the registry list reports to confirm whether the correct switch type was selected for the metering category, and an extreme case sample of NTs were checked to confirm that they were notified to the registry within two business days and the correct switch type was selected.

Audit commentary

Meridian'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 (including a credit check) and the withdrawal process is used if the customer changes their mind.

Switch type is selected based on information provided by the customer on application. The customer is asked whether they have been billed at the property by another retailer as part of the application process.

MERI

As reported in the last audit, commercial and industrial contracted customers usually switch between retailers on the first day after their contract term ends to avoid paying contract termination fees for switching early, or standard pricing where they remain with a retailer after their contract ends. Contract customers such as district and city councils may switch large numbers of ICPs between retailers at one time.

In some cases where a certain switch event date is required, Meridian requests a switch move instead of a transfer switch with the agreement of the losing trader. While it is possible to request a standard switch with a proposed switch event date, the losing trader may elect to use a different date. For switch moves, the losing trader should comply with the requested date, increasing the likelihood that the ICPs will switch on the correct date.

I matched the switch move NTs on the event detail report to metering information on the PR255 and registry list reports. All 2,808 NTs checked had metering category 1, 2 or were unmetered, and 0001130018PSF65 had metering category 3 and was subsequently withdrawn and the correct switch type selected.

966 NTs were sent more than one day after the switch event date. I checked the ten most backdated NTs and found they were sent within two business days of pre-conditions being cleared, and the correct switch type was selected.

MERX

I matched the switch move NTs on the event detail report to metering information on the PR255 and registry list reports. All 20,107 NTs checked had metering category 1, 2 or were unmetered

6,529 NTs were sent more than one day after the switch event date. I checked the 15 most backdated NTs and found they were sent within two business days of pre-conditions being cleared. The correct switch type was selected for all ICPs.

PSNZ

I matched the switch move NTs on the event detail report to metering information on the PR255 and registry list reports. All 20,464 NTs checked had metering category 1, or 2.

6,592 NTs were sent more than one day after the switch event date. I checked a sample of the ten most backdated NTs and found they were sent within two business days of pre-conditions being cleared, and the correct switch type was selected.

Audit outcome

Compliant

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

Code reference

Clause 10(1) Schedule 11.3

Code related audit information

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

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

Audit observation

The event detail reports were reviewed to:

- identify AN files issued by Meridian during the audit period,
- assess compliance with the requirement to meet the setting of event dates requirement, and
- a diverse sample ANs were checked for each trader code to determine whether the codes had been correctly applied.

The process to manage the sending of the CS file within five business days was examined.

The switch breach history report was examined for the audit period.

Audit commentary

MERI

AN response code and event date selection is managed by Meridian using business rules that are set within Velocity. I checked the accuracy of AN response codes applied for switch moves by comparing them to the latest record on the registry list with history.

- I checked 302 ANs where the AA (acknowledge and accept) code was applied against the registry list and confirmed 260 had AA correctly applied. For 41 ANs the latest record indicated AMI metering was present, and one was disconnected. I checked a sample of five ICPs where the AA code was used but AMI was present and confirmed AD should have been sent. I checked one ICP where the AA code was used and the ICP was inactive and confirmed the PD code should have been used.
- I checked the 630 ANs with the AD (advanced metering) code was applied against the registry list and confirmed 613 had AD correctly applied. For 17 ANs the latest record did not indicate AMI metering was present. I checked a sample of five and they were recorded correctly.
- I checked 3,523 ANs with the PD (premises electrically disconnected) code applied against the registry list and confirmed 3,522 were correct and one had active status at the time the AN file was issued. I found the AN code was correct, but the status had not been updated in the registry at the time the AN was sent.
- Both ANs with the MU (unmetered supply) code were correct.

- I checked one OC code, and it should have been AA.

Event date selection is managed by Meridian using business rules that are set within Velocity. The event detail report was reviewed for all 6,466 switch move ANs to assess compliance with the setting of event dates requirements:

- one AN had a proposed event date prior to the date requested by the gaining trader; this was processed manually, and the incorrect date was entered, which has now been corrected, and
- no ANs had proposed event dates more than ten business days after the NT receipt date.

Velocity's work queues manage the switching process, and most switches are processed automatically. The work queues are prioritised as follows, and the priority increases if issues are not resolved as the due date nears:

- **Priority 1** includes switch acknowledgement errors where there is a difference between the registry and Velocity data, AN files not sent, and CS files not sent,
- **Priority 2** includes files not sent because Velocity is waiting for information, but the switch is not close to the due date, and
- **Priority 3** includes sites gained with export meters (where Meridian needs to check and update profiles), and withdrawals requiring responses.

In addition, the switching team runs the switch breach report twice daily to identify any switches which have not been sent within two business days. A report to show failed switch acknowledgement codes relating to metering issues is run if there are delays in processing work queues, to ensure that issues are identified and resolved promptly.

The switch breach history report recorded:

- two ET breaches for switch moves; MERI had applied the gaining trader's requested date for ICP 0000740115EN6DF, but this was more than ten business days in advance of the NT receipt date, the switch was subsequently withdrawn as date failed and the event date for ICP 0000080021TCAA1 was processed manually and an incorrect date was entered, and
- one E2 breach for a switch move; this was ICP 0000080021TCAA1, which is recorded above.

MERX

The automatic production of AN files in Flux had been turned and off in June 2021 and all AN files were manually produced. Automation is now back on. The switch breach report is monitored to ensure that files are sent on time. The AN code is selected by the agent in some instances.

I checked the accuracy of AN response codes applied for switch moves by comparing them to the latest record on the registry list with history.

- I checked 820 ANs where the AA (acknowledge and accept) code was applied against the registry list and confirmed 766 had AA correctly applied. For 49 ANs the latest record indicated AMI metering was present, and five were disconnected. I checked a sample of five where the registry indicated AMI was present and confirmed these should have AD and not AA. The AN response code is based on the meter reading frequency, not the AMI flag. A further five had an inactive status in the registry and I found they had all been reconnected by the time the AN was sent.
- I checked the 6,740 ANs with the AD (advanced metering) code was applied against the registry list and confirmed 6,605 had AD correctly applied. For 135 ANs the latest record did not indicate AMI metering was present. I checked a sample of five and in three cases, the code should have been AA.
- I checked 2,736 ANs with the PD (premises electrically disconnected) code was applied against the registry list and confirmed 2,294 were correct. For 442 ANs the latest status record indicated

the ICP was active. I checked a sample of five and in all cases, they were inactive, but the registry could not be updated because the switch had completed.
- All 16 ANs with the MU (unmetered supply) code were correct.
- I checked five ICPs with the OC code and they were all correct.

Proposed event dates are populated by Flux. If the last billed date + one day does not match the requested date, the validation screen states: "you may select a date to use for the expected switch date and effective transfer date which is on or after <proposed date>" and allows the user to enter any date they choose.

The event detail report was reviewed for all 19,539 switch move ANs to assess compliance with the setting of event dates requirements:

- six ANs had proposed event dates prior to the date requested by the gaining trader; all were automated and occurred in November 2021 when it's possible there was a system issue causing this, and
- 14 ANs had proposed event dates more than ten business days after the NT receipt date; these were due to either an invoice header being raised with a future billed date which was picked up by the AN or the account finalled date which was more than ten business days in the future and were released in error.

The switch breach history report recorded:

- one T2 breach for a switch move; the CS file was sent at six days rather than five,
- two E2 breaches for switch moves; both were due to processing issues, and
- 17 ET breaches for switch moves; I checked the latest ten files and found they were all processing issues.

PSNZ

AN files are generated by Flux, and the switch breach report is monitored to ensure that files are sent on time. Flux automatically applies the AN response code unless more than one option is applicable. In these cases, the AN is directed to a work queue where the user manually selects the code.

I checked the accuracy of AN response codes applied for transfer switches by comparing them to the latest record on the registry list with history.

- I checked 1,064 ANs where the AA (acknowledge and accept) code was applied against the registry list and confirmed 1,001 had AA correctly applied. For 63 ANs the latest record indicated AMI metering was present. I checked a sample of five and found they were all incorrect. The AN response code is based on the meter reading frequency, not the AMI flag.
- I checked the 7,885 ANs with the AD (advanced metering) code was applied against the registry list and confirmed 7,551 had AD correctly applied. For 134 ANs the latest record did not indicate AMI metering was present. I checked a sample of five ICPs and found that the AN file for ICP 0000764020WP6A6 contained the AD code, but the registry shows the ICP as AMI not communicating.
- I checked all 14 ANs where the MU (unmetered supply) code applied and confirmed they were correct.
- I checked 3,544 ANs with the PD (premises electrically disconnected) code was applied against the registry list and confirmed 2,940 were correct. For 604 ANs the latest status record indicated the ICP was active. I checked a sample of five and found that disconnection had occurred, but the registry had not been updated because five business days had not elapsed.
- I checked five ICPs with the OC code and they were all correct.

Proposed event dates are populated by Flux. If the last billed date + one day does not match the requested date, the AN is directed to a work queue for resolution by the switching team. The validation screen

states: "you may select a date to use for the expected switch date and effective transfer date which is on or after <proposed date>" and allows the user to enter any date they choose.

The event detail report was reviewed for all 19,439 switch move ANs to assess compliance with the setting of event dates requirements:

- no ANs had proposed event dates prior to the date requested by the gaining trader, and
- 20 ANs had proposed event dates more than ten business days after the NT receipt date; in all cases the date was set from a customer requested final date however in these cases, NW files should have been sent rather than AN files with future dated switch event dates.

The switch breach report recorded:

- two T2 breaches for switch moves; both files were late due to the time taken to confirm move in dates, and
- 23 ET breaches for switch moves; the ten latest were checked, and they were all due to the order of the sending of files - the AN was sent then a withdrawal was sent immediately afterwards (if the NW was sent without an, compliance would be achieved).

Audit outcome

Non-compliant

Non-compliance	Description
Audit Ref: 4.8 With: Clause 10(1) Schedule 11.3 From: 01-Jul-21 To: 31-May-22	**MERI** Five of a sample of five AN files incorrectly had response codes of AA instead of AD. One of a sample of one AN file had AA recorded instead of PD. One of a sample of one AN file had OC recorded instead of AA. Two ET breaches. One E2 breach. One AN had a proposed event date prior to the date requested by the gaining trader. **MERX** Five of a sample of five AN files incorrectly had response codes of AA instead of AD. Three of a sample of five AN files incorrectly had response codes of AD instead of AA. One T2 breach. Two E2 breaches. 17 ET breaches. Six ANs had proposed event dates prior to the date requested by the gaining trader. 14 ANs had proposed event dates more than ten business days after the NT receipt date. **PSNZ** Five of a sample of five AN codes incorrectly sent with AA instead of AD. One of a sample of five AN codes incorrectly sent with AD instead of AA. Two T2 breaches.

	23 ET breaches. 20 ANs with proposed event dates more than ten business days after the NT receipt date. 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 is assessed as low due to the number of ICPs affected in relation to the volume of ICPs switched. .

Actions taken to resolve the issue	**Completion date**	**Remedial action status**
AN response codes are assigned by our system according to how we attain the read data - from MEP's (daily) or Wells (bi-monthly). No action is able to be taken to correct the issues raised in this section without impacting other retailers and customers.	23/09/2022	Identified
Preventative actions taken to ensure no further issues will occur	**Completion date**	
We will continue to monitor our processes and controls in place to reduce instances of human error with AN date selection and switch breaches.	Ongoing	

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, then within 10 business days of receiving notice the losing trader must also complete the switch by providing to the registry manager as described in sub-clause (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

Event detail reports were reviewed to identify AN files issued by Meridian during the audit period, and assess compliance with the requirement to meet the setting of event dates requirement.

Audit commentary

MERI

25 switch move AN files contained a different date to the gaining trader's requested date. All of the proposed event dates were within ten business days of NT receipt. One AN had a proposed event date prior to the date requested by the gaining trader. This was processed manually, and an error was made with the date, which is now resolved.

All switches were completed as required by this clause.

MERX

2,390 switch move AN files contained a different date to the gaining trader's requested date. All of the proposed event dates were compliant, except for:

- 11 ANs had proposed event dates more than ten business days after the NT receipt date; these were all subsequently withdrawn and completed compliantly, and
- six ANs had proposed event dates prior to the date requested by the gaining trader; these were all subsequently withdrawn and completed compliantly.

All switches were completed as required by this clause.

PSNZ

2,624 switch move AN files contained a different date to the gaining trader's requested date. 20 ANs had proposed event dates more than ten business days after the NT receipt date, and no ANs had proposed event dates before the gaining trader's requested date. In all cases, the switches were withdrawn, and no CS files were sent, therefore compliance is achieved with the requirement to send CS files within 10 business days.

Switches were completed as required by this clause.

Audit outcome

Non-compliant

Non-compliance	Description
Audit Ref: 4.9 With: 10(2) Schedule 11.3 From: 13-Jul-21 To: 07-Jun-22	**MERI** One AN had a proposed event date prior to the date requested by the gaining trader. **MERX** Six ANs had proposed event dates prior to the date requested by the gaining trader. 11 ANs had proposed event dates more than ten business days after the NT receipt date. Potential impact: Low Actual impact: None Audit history: Once Controls: Strong Breach risk rating: 1
Audit risk rating	**Rationale for audit risk rating**

Low	The controls are recorded as strong because they mitigate risk to an acceptable level. There was no impact because the switch event date matched that proposed by the gaining trader.

Actions taken to resolve the issue	Completion date	Remedial action status
No action is able to be taken to correct the issues raised in this section without impacting other retailers and customers.		Identified
Preventative actions taken to ensure no further issues will occur	**Completion date**	
We will continue with our existing controls which have been assessed as strong.		

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

The event detail report was reviewed to identify CS files issued by Meridian during the audit period. The accuracy of the content of CS files was confirmed by checking a sample of records per trader code. 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 average daily kWh that was negative, zero, or over 200 kWh were identified. A sample of these CS files were checked to determine whether the average daily consumption was correct.

Audit commentary

MERI

As recorded in **section 4.3**, The registry functional specification requires estimated daily kWh to be based on the average daily consumption for the last read-to-read period for meters with flow direction X.

Velocity's estimated daily kWh calculation has not changed during the audit period. In most cases, the calculation does match the daily average consumption between the last two actual readings, but the following issues are present:

- estimated readings are included in the calculation,
- where the last two readings occur on the same day, the divisor is zero and the calculation produces unexpected results,
- where a meter has flow direction I, the average consumption is calculated as a negative value, instead of being excluded from the calculation, and
- where a CS file fails to be generated, Velocity re-creates the file, and when this occurs Velocity reapplies the switch event read and the difference between this and the previous read is zero.

Meridian does not intend to make any changes to the estimated daily consumption calculation until the Authority's switching review is complete.

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

Estimated daily kWh	Count of switch move CS files	Findings
Negative	-	
Zero	3,877	A sample of five ICPs were checked, and they were all correct.
More than 200 kWh	53	An extreme case sample of the five CS files with the largest values were checked, and all were found to be correct except for ICP 0007121963RNFE5 which has a multiplier. It seems there was a bill after the switch event date, and this may have influenced the average daily consumption.

I compared CS event dates, last actual read dates and event read types for consistency for the 6,761 switch move CS files issued:

- 26 CS files had last actual read dates on the event date; I checked three examples and found two ICPs had errors:
    - ICP 0007203452RN769 switched on 17 November 2021 and the read from midnight on 17 November 2021 was used instead of the read from midnight on 16 November 2021 (the last read date and the reading were incorrect),
    - ICP 1001152815CK3DA switched on 31 January 2022 and the read for midnight on 31 January 2022 was used instead of the read from midnight on 30 January 2022 (the last read date and the reading were incorrect),
- 28 CS files had last actual read dates after the event date; in all cases, the date of the last reading needs to be within the period the ICP was held,
- 11 CS files had a last actual read date the day before the event date with an estimated switch event reading; I checked a sample of three and found that ICP 0000083659TR9A4 should have had the read recorded as an actual not an estimate,
- 3,945 CS files had a last actual read date more than one day before the event date with an actual switch event reading; I checked a sample of five and in all cases the read from the final bill was used on the switch event date and called an actual (these should be called estimates because zero kWh has been estimated from the final date up until the switch date, due to the ICPs being vacant), and
- 338 CS files contained only CSPREMISES rows; I checked the 172 ICPs which appeared on the registry list with history and found they were unmetered or had a HHR submission type.

A further three CS files were checked for accuracy, and all were correct.

MERX

The registry functional specification requires estimated daily kWh to be based on the average daily consumption for the last read-to-read period. Flux calculates the estimated daily kWh based on the last two reads with a "verified" status. For the purpose of this calculation validated reads include validated customer and estimate readings in Flux, as well as validated actual readings. Disconnected ICPs have an estimated daily consumption of zero applied.

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

Estimated daily kWh	Count of switch move CS files	Findings
Negative	-	
Zero	1,512	A sample of five ICPs were checked and three were found to be incorrect.
More than 200 kWh	145	An extreme case sample of the five CS files with the largest values were checked. Four out of five ICPs were calculated incorrectly. In three instances, the ICPs were vacant with daily readings still being provided, therefore zero should have been used, even though the figure provided was an accurate reflection of average daily consumption. For one ICP the figure should have been 276 but was recorded as 2038.

Flux automatically generates CS files based on the information recorded against the ICP. I compared CS event dates, last actual read dates and event read types for consistency for the 19,200 switch move CS files issued:

- no CS files with a last actual read date on the switch event date,
- four CS files had a last actual read date after the switch event date; I checked a sample of three and found it is an issue with Flux causing these dates to be sent:
    - ICP 0000272585WTE2C was only with MERX for one day, but it switched in on an actual read so this date should have been used,
    - ICP 0007202965RN9F3 switched out on an AMI actual so the date prior to the switch date should have been used, and
    - ICP 0000166330UN9E9 was with MERX for two days; it switched in and out on an estimate and the previous trader's last read date was incorrect, so there was no read date available to use,
- 289 CS files had a last actual read date the day before the event date, and an estimated read type; I checked a sample of three and found that in all cases the final estimate was used as the switch event meter reading even though a correct actual read was also available (the difference between the estimates and actuals is small but the actual reads should have been used).

45 CS files had a last actual read date more than one day before the event date with an actual read type, I checked a sample of three files and found that for ICP 0000510743CE6A7 there was a final bill for 17 June 2021 with a reading of 5791 but the switch date was 2 August 2021 and the 5791 read was used as the switch event meter reading and it was called an actual. There was vacant consumption at this ICP, so the switch event meter reading should have accounted for this. ICP 0007144522RN871 had a reading from 6 April 2022 used as an actual read for a switch event date of 8 April 2022. ICP 0000482782CEDE5 had a switch event date of 17 May 2022 and a last actual read date of 27 April 2022 but there was a read on 16 May 2022, therefore the date of the last read is incorrect.

I've repeated the recommendation from the last audit that steps are taken to ensure vacant consumption is accounted for in the switch process.

Recommendation	Description	Audited party comment	Remedial action
Losing trader must provide final information	Use actual reads on the date of the switch event to ensure active vacant consumption is reconciled and reduce the volume of RRs being received.	We will review our processes around switching of vacant ICPs to ensure the last actual read is selected.	Investigating

A further three CS files were checked for accuracy, and all were correct.

PSNZ

The registry functional specification requires estimated daily kWh to be based on the average daily consumption for the last read-to-read period. Flux calculates the estimated daily kWh based on the last two reads with a "verified" status. For the purpose of this calculation validated reads include validated customer and estimate readings in Flux, as well as validated actual readings. Disconnected ICPs have an estimated daily consumption of zero applied.

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

Estimated daily kWh	Count of switch move CS files	Findings
Negative	-	
Zero	759	A sample of five ICPs were checked, and two were found to be incorrect. In both cases the account was closed prior to the switch date, and there was consumption after the customer finalled. The other issue is duplicated reading records where one record is time stamped at 23:59:53 and the other one is 23:59:57 and Flux calculates zero between these two readings.
More than 200 kWh	58	An extreme case sample of the five CS files with the largest values were checked and they were all incorrect.

The previous audit recorded that where there is a difference between the last read billed to the customer and the read Flux has designated as the switch event read, a "read dispute" is created. These "read disputes" must be checked and resolved by confirming which read should be applied before the CS can be issued. Users confirm the reading to be applied using the "change final readings" box, but this only allows the user to change the read value not the read type. This means that if an estimate is replaced with an actual or vice versa, the read type will not be correctly recorded. Flux superusers can change the read type, but access to these logins is restricted to a very small number of users in the management team. This issue is still present and is discussed in **section 4.11** and non-compliance is recorded in **section 9.1**.

Flux automatically generates CS files based on the information recorded against the ICP. I compared CS event dates, last actual read dates and event read types for consistency for the 9,920 switch move CS files and found the following:

- no CS files had last actual read dates on or after the event date,
- 40 CS files had a last actual read date is the day before the event date with an estimated switch event reading; I checked a sample of five and found:
    - two should be recorded as actual not estimated; this was due to there being two reading records, one for 23:59:53 and one for 23:59:57, one an actual and one an

estimate but with the same reading and the most recent record is recorded as a "validated estimate" so the CS file has these incorrectly labelled as estimates,
    - three ICPs had a final bill issued on an estimate, and this read was used in the CS despite actual readings being available for the switch event date, if actual reads are obtained after the final bill these are not used, but the date of the last actual is based on this read.
- no CS files had a last actual read date more than one day before the event date with an actual switch event reading, and
- all CS files contained the expected rows.

A further five CS files were checked for accuracy and found to be correct.

Audit outcome

Non-compliant

Non-compliance	Description
Audit Ref: 4.10 With: Clause 11 Schedule 11.3 From: 01-Jul-21 To: 31-May-22	**MERI** Average daily consumption is not calculated in accordance with the registry functional specification in some instances. Two of a sample of three ICPs with incorrect readings and last read dates where the date of the last read is the same as the switch date. All five ICPs sampled of a possible 3,945 ICPs with last actual read dates more than one day before the event date with an actual switch event reading had an incorrect read type of actual recorded. 28 ICPs had last actual read dates after the switch event date. One of three ICPs sampled had an incorrect read type of estimated. **MERX** Average daily consumption is not calculated in accordance with the registry functional specification in some instances. Two ICPs with incorrect last actual read dates and the dates were after the switch date. Three of a sample of three ICPs had the final estimate sent in the CS as the switch event meter reading when actual readings were available. ICP 0000510743CE6A7 had an incorrect switch event reading and an incorrect last actual reading resulting in vacant consumption becoming the responsibility of the gaining trader. ICP 0007144522RN871 had a reading from 6 April 2022 used as an actual read for a switch event date of 8 April 2022. ICP 0000482782CEDE5 had a switch event date of 17 May 2022 and a last actual read date of 27 April 2022 but there was a read on 16 May 2022, therefore the date of the last read is incorrect. **PSNZ** Two of a sample of five switch move CS contained an incorrect read type. Three of a sample of five switch move CS files contained incorrect readings. Average daily kWh in the CS is not calculated in accordance with the Registry Functional Specification. Potential impact: Low Actual impact: Low

	Audit history: Multiple Controls: Moderate Breach risk rating: 2		
Audit risk rating	**Rationale for audit risk rating**		
Low	Controls are rated as moderate as controls will mitigate risk most of the time but the incorrect read type being sent for the event date requires attention and I recommend that actual reads for the event date are used wherever possible. The audit risk rating is low because the kWh differences found are generally small.		
Actions taken to resolve the issue		**Completion date**	**Remedial action status**
Average Daily Consumption – please refer to comment on 4.3 We are currently reviewing the timing of when the MEP and Wells reads are loaded into Flux to avoid labelling of incorrect read types. We will review our processes around switching of vacant ICPs to ensure the last actual read is selected.		01/04/2023 01/04/2023	Identified
Preventative actions taken to ensure no further issues will occur		**Completion date**	
We will continue to monitor our processes and controls in place to reduce instances of human error within switch breaches.		Ongoing	

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 date the registry manager gives the gaining trader written notice of having received information about the switch completion, 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 dispute 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 reports were analysed to identify all read change requests and acknowledgements during the audit period. A sample of RR and AC files issued for switch moves were checked to confirm that the content was correct, and that Velocity and Flux reflected the outcome of the RR process.

I also checked for CS files with estimated readings provided by other traders where no RR was issued, to determine whether the correct readings were recorded in Velocity and Flux.

The switch breach history report for the audit period was reviewed.

Audit commentary

RR requests are generally initiated via email between the two parties and an RR file is usually sent once agreement is reached. All RR requests are evaluated and validated against the ICP information and in the AMI read database. Validated requests are accepted.

MERI

RR

A daily report is run from the BI Hub to find discrepancies between gain reads and the first reads received by Meridian, and these are investigated to determine whether a read renegotiation is required. ICPs which may require read renegotiation are also identified through the reading validation process and referred to the switching team for action.

MERI issued 174 RR files for switch moves. 35 were rejected and 139 were accepted. I checked five accepted and five rejected files. In all cases there was a genuine reason for Meridian's RR, the file content was accurate and supported by two actual reads obtained by Meridian (or was as requested by the other trader), and the reads recorded in Velocity reflected the outcome of the RR process.

The switch breach history report recorded 17 RR breaches. The ten latest files were checked and found all took more than four months to gain two actual reads.

AC

Where the difference between the agreed switch reading and Meridian's reading is within ± 1 kWh, a correction is not normally processed. Where the difference is more than ± 1 kWh, the switching team normally asks the reconciliation team to adjust the switch event reading in Velocity.

MERI issued 173 AC files for switch moves. 148 were accepted and 25 were rejected. I checked a sample of five acceptances and five rejections, and confirmed the rejections were valid, file content was accurate for the five RR's accepted and the reads recorded in Velocity reflected the outcome of the RR process. All of the rejections were valid.

No AC breaches were recorded on the switch breach history report.

CS files with estimated readings where no RR is issued

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

MERX

RR

RRs are managed through tickets in Flux. A ticket is raised for the switching team where an ICP requiring a read change is identified, and the ICP is added to the replacement reads list. Readings are automatically replaced once the AC is returned.

MERX issued 654 RR files for switch moves. 485 were accepted and 169 were rejected. A sample of five rejected files and five accepted files were checked. In all cases there was a genuine reason for MERX's RR, the file content was accurate and supported by two actual reads, and the reads recorded in Flux reflected the outcome of the RR process.

The switch breach history report recorded 54 RR breaches. I checked the ten latest RR files and found all took more than four months to gain two actual reads.

AC

MERX issued 475 AC files for switch moves. 359 were accepted and 116 were rejected. I checked a sample of five acceptances and five rejections, and confirmed the rejections were valid, file content was accurate, and the reads recorded in Flux reflected the outcome of the RR process.

No AC breaches were recorded on the switch breach history report.

CS files with estimated readings where no RR is issued

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

PSNZ

RR

RRs are managed through tickets in Flux. A ticket is raised for the switching team where an ICP requiring a read change is identified, and the ICP is added to the replacement reads list. Readings are automatically replaced once the AC is returned.

PSNZ issued 876 RR files for switch moves. 645 were accepted and 231 were rejected. A sample of five rejected files and five accepted files were checked. In all cases there was a genuine reason for PSNZ's RR, the file content was accurate and supported by two actual reads, and the reads recorded in Flux reflected the outcome of the RR process. As recorded in **section 4.10**, where there is a difference between the last read billed to the customer and the read Flux has designated as the switch event read, a "read dispute" is created. These "read disputes" must be checked and resolved by confirming which read should be applied before the CS can be issued. Users confirm the reading to be applied using the "change final readings" box, but this only allows the user to change the read value not the read type. This means that if an estimate is replaced with an actual or vice versa, the read type will not be correctly recorded. Flux superusers can change the read type, but access to these logins is restricted to a very small number of users in the management team. Five of a sample of 10 ICPs with changed readings had the readings recorded as estimates and they should have been recorded as actuals. This is recorded as non-compliance in **section 9.1**.

The switch breach history report recorded 48 RR breaches. I checked the ten latest files and in all cases the identification of the need for an RR was dependent on getting actual reads and preparing the first invoice from actual reads.

AC

PSNZ issued 302 AC files for switch moves. 261 were accepted and 41 were rejected. I checked a sample of five acceptances and five rejections, and confirmed the rejections were valid, file content was accurate, and the reads recorded in Flux reflected the outcome of the RR process.

No AC breaches were recorded on the switch breach history report.

CS files with estimated readings where no RR is issued

Review of five move switch CS files with estimated reads where no RR was issued confirmed that the correct readings were recorded in Flux.

Audit outcome

Non-compliant

Non-compliance	Description
Audit Ref: 4.11 With: Clause 12 Schedule 11.3 From: 01-Jul-21 To: 31-May-22	**MERI** 17 RR breaches. **MERX** 54 RR breaches. **PSNZ** 48 RR breaches. 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	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
No action is able to be taken to correct the issues raised in this section without impacting other retailers and customers.		Identified
Preventative actions taken to ensure no further issues will occur	**Completion date**	
RR files are only issued outside 4 months where there are delays obtaining actual reads – generally for manually read meters. Due to the impact of Covid, Wells Meter Reading Services had staffing difficulties in which they struggled to complete many of the bi-monthly read routes. Many reads were not able to be obtained within the 4-month period.		

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

Code reference

Clause 14 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 at an ICP at which the losing trader trades electricity with the customer or embedded generator, and one of the following applies at the ICP:

- *the gaining trader will trade electricity through a half hour metering installation that is a category 3 or higher metering installation; or*
- *the gaining trader will trade electricity through a non-AMI half hour metering installation and the losing trader trades electricity through a non-AMI non half hour metering installation; or*
- *the gaining trader will trade electricity through a non-AMI non half hour metering installation and the losing trader trades electricity through anon-AMI half hour metering installation*

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 switch gain process was examined to determine when Meridian deem all conditions to be met.

HH NTs on the event detail reports were matched to the registry list reports to confirm whether the correct switch type was selected for the metering category, and an extreme case sample of NTs were checked to confirm that they were notified to the registry within three business days.

Audit commentary

MERI

The HH switching process is manual. NTs are issued once the account manager provides a contract preparation form which contains all the necessary details to prepare the switch and set up the customer. All HH switches are tracked using a spreadsheet, which is checked daily.

I matched the HH NTs on the event detail report to metering information on the PR255 and registry list reports. All 371 NTs checked had metering category 3 or higher. ICP 0001130018PSF65 had metering category 3 but was requested as a MI switch in error and is recorded as non-compliance in **section 4.7**.

241 NTs were sent more than one day after the switch event date. I checked a sample of the ten most backdated NTs and found seven were sent within two business days of pre-conditions being cleared, and the correct switch type was selected. Three ICPs were not sent within three business days of the pre-conditions being cleared. The ICPs are 0000472282UN168, 0001416525EN19F and 1001123549LC8B4.

The switch breach history report recorded six PT breaches where the NT proposed transfer date was more than 90 days before the NT arrival date. In all cases the contract was provided late to the switching team.

ICP 0001130018PSF65 had metering category 3 but was requested as a MI switch in error and is recorded as non-compliance in **section 4.7**.

MERX

I matched the HH NTs on the event detail report to metering information on the PR255 and registry list reports. All 57 NTs checked had metering category 3 or higher.

The 57 NTs were sent more than one day after the switch event date. I checked a sample of the five most backdated NTs and found they were sent within two business days of pre-conditions being cleared, and the correct switch type was selected.

PSNZ

No HH switches were identified on the event detail report, and no TR or MI NTs were issued for ICPs with metering category 3 or higher.

Audit outcome

Non-compliant

Non-compliance	Description		
Audit Ref: 4.12 With: Clause 14 Schedule 11.3 From: 01-Oct-21 To: 31-Mar-22	**MERI** Three late NT files. Six PT breaches. Potential impact: Low Actual impact: Low Audit history: None Controls: Strong Breach risk rating: 1		
Audit risk rating	**Rationale for audit risk rating**		
Low	The controls are recorded as strong because they mitigate risk to an acceptable level. 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**

		Identified
Preventative actions taken to ensure no further issues will occur	**Completion date**	
We will continue with our existing controls which have been assessed as strong.		

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 event detail reports were reviewed to:

- identify AN files issued by Meridian during the audit period,
- assess compliance with the requirement to meet the setting of event dates requirement, and
- a diverse sample ANs were checked for each trader code to determine whether the codes had been correctly applied.

The switch breach history report was examined for the audit period.

Audit commentary

MERI

Once the NT file is received the process is managed manually, and the switching team liaises with the account manager to determine the correct AN response code. The switch breach report is run daily to identify ANs received, and Meridian endeavours to send ANs within two to three business days.

I checked the accuracy of AN response codes applied for HH switches by comparing them to the latest record on the registry list with history. All 207 files had the AA (Acknowledge and accept) code applied.

One AN breach was recorded due to a processing issue.

MERX

No HH ANs were identified on the event detail report, and the switch breach history report did not record any breaches in relation to HH switching.

PSNZ

No HH ANs were identified on the event detail report, and the switch breach history report did not record any breaches in relation to HH switching.

Audit outcome

Non-compliant

Non-compliance	Description
Audit Ref: 4.13 With: Clause 15 Schedule 11.3 From: 13-Jan-22 To: 14-Jan-22	**MERI** One AN file sent one day late. Potential impact: Low Actual impact: Low Audit history: None Controls: Strong Breach risk rating: 1
Audit risk rating	**Rationale for audit risk rating**
Low	The controls are recorded as strong because they mitigate risk to an acceptable level. 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
		Identified
Preventative actions taken to ensure no further issues will occur	**Completion date**	
We will continue with our existing controls which have been assessed as strong.		

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 HH switching process was examined. The switch breach history report for the audit period was reviewed to identify late CS files.

Audit commentary

MERI

The HH switching process is manual, and includes checks that metering is compliant. All HH switches are tracked using a spreadsheet, which is checked daily.

The content of all 354 HH CS files identified on the event detail report was reviewed and found to be correct, except five files which contained CSMETERINSTALL, CSMETERCOMP, and CSMETERCHANNEL rows. These lines were sent due to the metering configuration of the registry. This has no material impact.

The switch breach history report did not record any late CS files.

MERX

No HH CS files were identified on the event detail report, and the switch breach history report did not record any breaches in relation to HH switching.

PSNZ

No HH CS files were identified on the event detail report, and the switch breach history report did not record any breaches in relation to HH switching.

Audit outcome

Compliant

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 2 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

Event detail reports were reviewed to:

- identify all switch withdrawal requests issued by Meridian and check the content of a sample of at least three (or all) ICPs from the event detail report for each withdrawal code,
- identify all switch withdrawal acknowledgements issued by Meridian, and check a sample, and
- confirm timeliness of switch withdrawal 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

MERI

NW

Withdrawals are processed using Velocity. Withdrawals are triggered manually, and reason codes are selected manually, except for any transfer switch requests received on finalised accounts. For these Velocity automatically sends a withdrawal request for the switch type being incorrect.

765 NWs were issued by MERI. 57 (7.5%) were rejected and 708 (92.5%) were accepted. The content of 21 NW files was compared to Velocity details and found:

- 20 of the files had correct withdrawal reason codes applied, and
- one ICP should have had NWWP instead of NWCX.

The switch breach history report recorded:

- three SR breaches; these were all due to incorrect gains, and
- 17 NA breaches; I checked the latest ten files, and all were due to the time to discover the issues leading to the need for an NW.

AW

46 (7.1%) of the 645 AWs issued by MERI were rejections. I reviewed a sample of 12 rejections by MERI and confirmed 11 were rejected based the information available at the time the response was issued. One was rejected due to human error. The Code does not stipulate that withdrawals must be accepted therefore this is not recorded as non-compliance.

No AW breaches were recorded on the switch breach history report.

MERX

NW

MERX identifies ICPs requiring withdrawals through its conversations with customers, validations and work queues. Withdrawal reason codes are selected manually.

3,095 NWs were issued by MERX. 343 (11.1%) were rejected and 2,752 (88.9%) were accepted. The content of 21 NW files was compared to Flux details and found:

- 20 of the files had correct withdrawal reason codes applied, and
- the incorrect code was applied due to human error for one ICP.

The switch breach history report recorded:

- 13 SR breaches; I checked the latest ten files and found there were complex issues to resolve in all cases, and
- 156 NA breaches; I checked the latest ten files and found eight were ICPs migrated from MERI to MERX, where they were decommissioned or required corrections under the MERI code and the other two had complex issues needing investigation.

AW

Flux maintains a list of ICPs for which NWs have been received. This is compared to the switch breach report to confirm due dates, to ensure that AWs are processed on time.

302 (6.1%) of the 4,988 AWs issued by MERX were rejections. I reviewed a sample of 14 rejections by MERX and confirmed that 13 were rejected based the information available at the time the response was issued. ICP 0006510540RNDF6 was rejected in error and then resolved with a subsequent NW. The Code does not stipulate that withdrawals must be accepted therefore this is not recorded as non-compliance.

No AW breaches were recorded on the switch breach history report.

PSNZ

NW

PSNZ identifies ICPs requiring withdrawals through its conversations with customers, validations and work queues. Withdrawal reason codes are selected manually.

4,175 NWs were issued by PSNZ. 432 (10.3%) were rejected and 3,743 (89.7%) were accepted. The content of 21 NW files was compared to Flux details. Three of the files had incorrect withdrawal reason codes applied. All were processing errors.

The switch breach history report recorded:

- 28 SR breaches; I checked the latest ten files and found they were all late because of the duration of resolving the issues regarding the withdrawal, and
- 119 NA breaches; I checked the latest ten files and found many were due to "wrong property" and it took some time for this to come to PSNZ's attention.

AW

Flux maintains a list of ICPs for which NWs have been received. This is compared to the switch breach report to confirm due dates, to ensure that AWs are processed on time.

342 (10.6%) of the 3,221 AWs issued by PSNZ were rejections. I reviewed a sample of 14 rejections by PSNZ, and confirmed they were rejected based the information available at the time the response was issued.

The switch breach history report recorded one AW breach. This was due to the time it took to confirm details with the customer.

Audit outcome

Non-compliant

Non-compliance	Description
Audit Ref: 4.15 With: Clauses 17 and 18 Schedule 11.3 From: 01-Jul-21 To: 31-May-22	**MERI** Three SR breaches. 17 NA breaches. One incorrect NW code. **MERX** 13 SR breaches. 156 NA breaches. One incorrect NW code. **PSNZ** 28 SR breaches. 119 NA breaches. Three incorrect NW codes used. One AW breach. 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 that most NWs contain correct codes and are sent on time. The impact is low because the withdrawal reasons were correct even though there was a delay.

Actions taken to resolve the issue	Completion date	Remedial action status
		Identified
Preventative actions taken to ensure no further issues will occur	**Completion date**	
We consider that our process and controls related to switch withdrawals work well in most instances. On occasion the reasons leading to withdrawal of a switch can take some time to establish (e.g wrong ICP switched in error) resulting in requests being sent outside the 2-month timeframe. The withdrawal in these instances is required to ensure a customer is correctly billed by the retailer of their choosing		

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. The content of CS files was examined in **sections 4.3** and **4.10** and the content of RR files was examined in **sections 4.4** and **4.11.**

Audit commentary

Meridian's policy regarding the management of meter reading expenses is compliant. The meter readings used in the switching process are validated meter readings or permanent estimates.

MERI

As detailed in **sections 4.3** and **4.10** the samples checked indicated that some reads are incorrect. In total there were four incorrect reads.

MERX

As detailed in **section 4.3** and **4.10** the samples checked indicated that some reads are being labelled incorrectly or the CS file is being sent with an estimate and a final read date of the day before the event. This was caused when a final invoice is produced using an estimated read and then a read comes in later in the day. The CS is produced with the estimated read that has been billed but the final read date of the day before. Both scenarios can result in vacant consumption being pushed to the gaining trader or an RR to be sent from the gaining trader to correct the gain reads. I recommend in **section 4.10**, that an actual read from the date of the switch be used wherever possible to improve accuracy and ensure that vacant consumption is reconciled by Meridian.

PSNZ

As recorded in **section 4.10**, three CS files had incorrect switch event meter readings.

Audit outcome

Non-compliant

Non-compliance	Description
Audit Ref: 4.16 With: Clause 21 Schedule 11.3 From: 01-Jul-21 To: 31-May-22	**MERI** Four ICPs with incorrect switch readings. **MERX** Eight ICPs with incorrect switch readings, sometimes causing vacant consumption to be pushed to the gaining trader. **PSNZ** Three CS files had incorrect switch readings. Potential impact: Medium Actual impact: Low Audit history: Three times previously Controls: Weak Breach risk rating: 3
Audit risk rating	**Rationale for audit risk rating**
Low	Controls are rated as weak as the controls in place do not ensure that the information sent in the CS files is as accurate as possible. The audit risk rating is low as the RR process is used to correct volumes in most instances.

Actions taken to resolve the issue	Completion date	Remedial action status
Please refer to our response to 4.3 and 4.10		Identified
Preventative actions taken to ensure no further issues will occur	**Completion date**	
Please refer to our response to 4.3 and 4.10		

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

Code reference

Clause 11.15AA to 11.15AB

Code related audit information

A losing retailer (including any party acting on behalf of the retailer) must not initiate contact to save or win back any customer who is switching away or has switched away for 180 days from the date of the switch.

The losing retailer may contact the customer for certain administrative reasons and may make a counteroffer only if the customer initiated contacted with the losing retailer and invited the losing retailer to make a counteroffer.

The losing retailer must not use the customer contact details to enable any other retailer (other than the gaining retailer) to contact the customer.

Audit observation

Win-back processes were discussed. The event detail reports were analysed to identify all withdrawn switches with a CX code applied 180 days of switch completion, and a sample of ten per code were checked.

Audit commentary

MERI

MERI offers incentive credits upon sign up if a customer agrees to be supplied by Meridian for a fixed period of time. If the customer switches within before the term agreed has ended, the incentive must be repaid. MERI conducts outbound calling to alert switching customers that they will be invoiced for the incentive.

I identified 12 CX withdrawals where MERI was the losing trader, and the NW was issued less than 180 days after switch completion. One of these requests was rejected and accepted on reissue with a different NW advisory code. I checked a sample of ten NWs including the nine which were not accepted on reissue. I checked the correspondence for three ICPs, and I confirm that the decision to stay with MERI was initiated by the customer and no offers were made by the MERI agent.

MERX

The process for is the same as those recorded under the MERI participant code.

I identified 170 CX withdrawals where MERX was the losing trader, and the NW was issued less than 180 days after switch completion. 14 of these requests were rejected, and five of those were accepted on reissue with a different NW advisory code. I checked a sample of ten NWs including the nine which were not accepted on reissue. I checked correspondence for three ICPs, and I confirm that the decision to stay with MERX was initiated by the customer and no offers were made by the MERX agent.

PSNZ

The process for is the same as those recorded under the MERI participant code.

I identified 104 CX withdrawals where PSNZ was the losing trader, and the NW was issued less than 180 days after switch completion. All were accepted by the other trader. I checked the records for ten ICPs, including listening to two phone calls. The notes in Flux and the content of the two calls, indicated that there was no “save or winback” activity conducted within 180 days. In all cases, the decision to stay with PSNZ was initiated by the customer and no offers were made by the PSNZ agent.

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 processes to identify and monitor shared unmetered load were discussed. The registry lists and AC020 reports were reviewed to identify all ICPs with shared unmetered load and assess compliance.

Audit commentary

As discussed in **section 3.7**, validation processes are in place for shared unmetered load.

MERI

No incorrect shared unmetered load was identified.

MERX

ICP 0006905013RN134 had shared unmetered load added by Orion on 25 March 2022 but this wasn't identified until the audit, all others with shared unmetered load appear correct.

PSNZ

ICP 0006066003RN43C incorrectly had 0.309 daily kWh instead of 0.105 because a network change had not been identified, all others with shared unmetered load appear correct.

Audit outcome

Non-compliant

Non-compliance	Description
Audit Ref: 5.1 With: Clause 11.14 From: 11-Mar-22 To: 27-Jul-22	**MERX** Incorrect shared unmetered load for one ICP. **PSNZ** Incorrect shared unmetered load for one ICP. Potential impact: Low Actual impact: Low Audit history: None Controls: Strong Breach risk rating: 21
Audit risk rating	**Rationale for audit risk rating**
Low	The controls are recorded as strong because they mitigate risk to an acceptable level. 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
We have reviewed the 2 ICPs for MERX and PSNZ and confirm they have since been corrected	23/09/2022	Identified
Preventative actions taken to ensure no further issues will occur	**Completion date**	
We will continue to monitor the AC020 report to identify any discrepancies	Ongoing	
We will continue with our existing controls which we consider are robust.	Ongoing	

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 AC020 reports were examined to identify all unmetered load over 3,000 kWh per annum. Any ICPs with unmetered load greater than 3,000 kWh per annum were examined.

Audit commentary

MERI

All 68 ICPs with daily kWh between 3,000 and 6,000 kWh were checked and confirmed to have predictable loads, as follows:

- 55 were confirmed to have a predictable load type,
- six were DUML ICPs,
- six were traffic lights, and
- one is a camera.

All 21 ICPs that had unmetered loads over 6,000 kWh per annum were checked:

- 16 were DUML ICPs,
- one is now under 6,000 and is a telecommunications site,
- one is Greater Wellington Regional Council and is being investigated, and
- three are lighting loads, which are predictable, but the consumption exceeds 6,000 kWh per annum therefore non-compliance exists - Meridian made exemption requests for these three ICPs, but the requests were not approved.

MERX

There are four MERX ICPs with unmetered load between 3,000 and 6,000 kWh per annum and they all had approved load types. No ICPs had unmetered loads over 6,000 kWh per annum.

PSNZ

There are four ICPs with consumption between 3,000 and 6,000 kWh per annum and they are all approved lighting loads. No ICPs had unmetered loads over 6,000 kWh per annum.

Audit outcome

Non-compliant

Non-compliance	Description
Audit Ref: 5.2 With: Clause 10.14 (2)(b) From: 01-Jul-21 To: 31-May-22	**MERI** Four ICPs with annual consumption exceeding 6,000 kWh per annum. Potential impact: Low Actual impact: Low Audit history: None Controls: Strong Breach risk rating: 1
Audit risk rating	**Rationale for audit risk rating**
Low	The controls are recorded as strong because they mitigate risk to an acceptable level. The impact on settlement and participants is minor; therefore, the audit risk rating is low. The loads are predictable therefore they are likely to be reasonably accurate.

Actions taken to resolve the issue	Completion date	Remedial action status
See comments in section 5.3		Identified
Preventative actions taken to ensure no further issues will occur	**Completion date**	

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

Code reference

Clause 10.14 (5)

Code related audit information

If the unmetered load limit is exceeded the retailer must:

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

Audit observation

The process for the management of unmetered load thresholds is discussed in **section 5.2** above. The AC020 reports were examined to identify all unmetered load over 6,000 kWh per annum. Any ICPs with unmetered load greater than 6,000 kWh per annum were examined.

Audit commentary

MERI

All 21 ICPs that had unmetered loads over 6,000 kWh per annum were reviewed. 16 were DUML ICPs, and the other five ICPs were checked:

ICP	Load connected	Annual kWh	Supplied since	Previous audit findings	Current audit findings
0007175618RNE97	Pedestrian Underpass lighting	6,358	6 July 2016	This has been confirmed as a single point of connection. Included in draft exemption application.	The exemption was not approved, therefore further options are being considered including adding to the existing CCC – non DUML UML database

ICP	Load connected	Annual kWh	Supplied since	Previous audit findings	Current audit findings
0000100115UN46C	Retirement village lighting	6,023	22 September 2011	Included in draft exemption application that will be finalised and submitted before the end of 2021.	The exemption was not approved, therefore further options are being considered including creating a DUML database to record the 21 lights associated with this ICP.
0000025161EA29D	Hospital lighting	8,614	1 April 2019	This is a streetlight at Ashburton hospital. Included in draft exemption application that will be finalised and submitted before the end of 2021.	The exemption was not approved, therefore further options are being considered including creating a DUML database to record the 6 lights associated with this ICP.
0002270002ML907	Telemetry Station Taylor Pass Road	6,570	1 April 2020	Incorrectly recorded in the Marlborough DC database by the previous trader. Investigation in progress to determine whether metering of this connection is viable.	The load has been confirmed as less than 6,000 kWh per annum.
0000161690CK4EE	Wellington Regional Council	9,260	24 September 2019	GWRC believe these lights belong to NZTA. Further investigation is required to confirm correct ownership of lights under this ICP.	Investigation has identified the correct location of the lights associated with this ICP. Assets are recorded in the GWRC database and a DUML audit will be undertaken asap.

Previous audit exceptions that are not present in the current audit were re-checked:

ICP	Load connected	Annual kWh	Supplied since	Previous audit findings	Current audit findings
0089342001PCB9C	NZTA lighting	6,570	1 April 1999	I have confirmed this ICP should be decommissioned as part of ICP consolidation and database work in Taranaki region. The	Now decommissioned

				assets associated are recorded in the Lower North Island NZTA database under a new ICP.	
0007186942RNC7D	Non streetlight DUML	13,067	1 November 2018	Confirmed as DUML. Database source to be provided. Database source has been confirmed as Orion – audit is to be scheduled.	A DUML audit is now complete for this ICP.
0007186944RNDF2	Non streetlight DUML	6,780	1 January 2019	Confirmed as DUML. Database source to be provided. Database source has been confirmed as Orion – audit is to be scheduled.	A DUML audit is now complete for this ICP.

MERX

There are no MERX ICPs with unmetered load over 6,000 kWh per annum.

PSNZ

There are no PSNZ ICPs with unmetered load over 6,000 kWh per annum.

Audit outcome

Non-compliant

Non-compliance	Description
Audit Ref: 5.3 With: 10.14 (5) From: 01-Jul-21 To: 31-May-22	**MERI** Four standard unmetered ICPs with annual consumption over 6,000 kWh. Potential impact: Low Actual impact: Low Audit history: Multiple Controls: Strong Breach risk rating: 1
Audit risk rating	**Rationale for audit risk rating**
Low	Controls are rated as strong because Meridian has few options available other than installing metering at considerable expense for the underpass or creating DUML databases for the other ICPs. The audit risk rating is low as only four ICPs exceed the threshold and the load is likely to be correct.
Actions taken to resolve the issue	**Completion date** / **Remedial action status**

Non-compliance	Description	
Refer to comments in the table above.		Identified
Preventative actions taken to ensure no further issues will occur	**Completion date**	

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

Meridian is responsible for 42 distributed unmetered load databases. All DUML is supplied using the MERI participant code.

Audit commentary

The table below shows the findings from the last audits. Veritek has completed all audits due during the audit period. None are overdue.

The Electricity Authority issued a memo on 18th June 2019 confirming that the code requirement to calculate the correct monthly load must:

- take into account when each item of load was physically installed or removed, and
- wash up volumes must take into account where historical corrections have been made to the DUML load and volumes.

Meridian use a snapshot of a DUML database taken at the end of each month to derive submission in some instances. The use of a database snapshot to derive submission is recorded as non-compliance below.

The findings from the DUML audits are detailed in the table below:

			Compliance Achieved (Yes/No)									
Database	Date of last audit	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)	**Database indicative kWh** **+=over submission** **-=under submission** **Variance PA**
Whangarei DC	26/07/22	Yes	No	Yes	Yes	Yes	No	Yes	Yes	No	No	+ 55,200
NZTA Whangarei/Kaipara	25/05/22	No	No	Yes	Yes	No	No	Yes	Yes	No	No	+44,000
Scanpower - Community Lighting	01/06/21	Yes	No	Yes	Yes	Yes	Yes	No	Yes	No	No	minor
Palmerston North CC	30/05/22	No	No	No	Yes	Yes	No	Yes	Yes	No	No	-156,300
NZTA - Kaitoke	21/10/20	Yes	No	Yes	Yes	Yes	Yes	Yes	Yes	No	No	minor
Wellington City Council traffic lights	25/05/21	Yes	No	No	Yes	Yes	Yes	Yes	Yes	Yes	No	accurate
Hurunui DC	26/04/22	Yes	No	Yes	Yes	No	No	Yes	Yes	No	No	+1,400
Kaikoura DC	01/06/21	Yes	No	Yes	Yes	Yes	Yes	Yes	Yes	No	No	very minor
La Point Subdivision	27/05/22	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	minor
NZTA Christchurch	28/04/22	Yes	No	Yes	Yes	Yes	Yes	Yes	Yes	No	No	+14,400

Waterloo Park	21/04/22	Yes	No	Yes	Yes	Yes	No	Yes	Yes	No	No	-3,118
Jacks Point	10/02/22	Yes	No	Yes	Yes	Yes	Yes	Yes	Yes	No	No	+1,900
Gore DC	30/05/22	Yes	No	Yes	Yes	Yes	NO	Yes	Yes	No	No	-15,300
Buller DC-RAMM	28/09/21	Yes	No	Yes	Yes	No	Yes	Yes	Yes	No	No	+2,396
Waikato DC	20/12/21	Yes	No	Yes	Yes	Yes	No	Yes	Yes	No	No	-13,000
Hauraki DC	15/12/21	Yes	No	Yes	Yes	No	Yes	Yes	Yes	No	No	+5,000
Matamata Piako DC	17/06/22	Yes	No	Yes	Yes	Yes	Yes	Yes	Yes	No	No	accurate
South Waikato DC	30/05/21	Yes	No	Yes	Yes	Yes	Yes	Yes	Yes	No	No	accurate
Taupo DC	01/04/22	Yes	No	Yes	Yes	Yes	No	Yes	Yes	No	No	-12,100
Waitomo DC	21/12/21	Yes	No	Yes	Yes	Yes	No	Yes	Yes	No	No	+12,100
NZTA Gisborne and Wairoa	30/08/22	Yes	No	Yes	Yes	No	No	Yes	Yes	No	No	+13,100
Ashburton DC	01/09/21	Yes	No	Yes	Yes	Yes	No	Yes	Yes	No	No	accurate
CIAL	03/05/22	Yes	No	Yes	Yes	Yes	No	Yes	Yes	No	No	+1,110
Clutha DC	27/06/22	Yes	No	No	Yes	No	No	Yes	Yes	No	No	Very minor
Paremoremo Prison Village	01/06/21	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	accurate
Thames Coromandel DC	18/05/22	Yes	No	Yes	Yes	Yes	No	Yes	Yes	Yes	No	accurate
Greater Wellington Regional Council	08/07/22	No	No	Yes	No	Yes	Yes	Yes	Yes	No	No	-7,824
NZTA South Canterbury	24/05/22	Yes	No	Yes	Yes	Yes	Yes	Yes	Yes	Yes	No	+7,000

Burnham Military Camp	01/06/21	Yes	No	Yes	Yes	Yes	Yes	Yes	Yes	Yes	No	accurate
Buller DC - Electronet	16/08/21	Yes	No	Yes	Yes	Yes	Yes	Yes	Yes	Yes	No	accurate
Westland DC (Westcoast)	28/07/21	Yes	No	Yes	Yes	Yes	No	Yes	Yes	No	No	+11,000
Whakapapa Village -DOC	01/12/20	Yes	Yes	Yes	Yes	No	Yes	Yes	Yes	No	No	very minor
RNZAF Woodbourne Military Camp	27/10/21	Yes	No	Yes	Yes	Yes	Yes	No	No	No	No	very minor
Greenwood Retirement Village Gained 01/04/21	13/12/21	Yes	No	Yes	Yes	Yes	Yes	Yes	Yes	Yes	No	accurate
Ruapehu DC	02/12/21	Yes	No	Yes	Yes	No	No	Yes	Yes	No	No	accurate
Porirua CC	29/07/22	Yes	No	Yes	No	Yes	No	Yes	Yes	No	No	-92,800
Auckland Transport	08/04/22	Yes	No	No	Yes	No	No	Yes	Yes	No	No	-16,200
Kapiti Coast DC	24/05/21	Yes	No	Yes	Yes	No	Yes	Yes	Yes	No	No	+1,400
Nelson CC	10/04/22	Yes	No	Yes	Yes	No	No	Yes	Yes	No	No	+8,300
Mt Cook DOC	27/10/21	Yes	Yes	Yes	Yes	No	Yes	Yes	Yes	No	Yes	Accurate
CHCH NZTA	28/04/22	Yes	No	Yes	Yes	Yes	Yes	Yes	Yes	No	No	+14,400
CCC non streetlighting	21/07/22	No	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	accurate

Audit outcome

Non-compliant

Non-compliance	Description
Audit Ref: 5.4 With: Clause 11 Schedule 15.3, Clause 15.37B & 16A.26 From: 01-Jul-21 To: 31-May-22	**MERI** Inaccurate submission information for several databases. The monthly database extracts used to derive submission from are provided as a snapshot and do not track changes at a daily basis as required by the code in some instances. Potential impact: High Actual impact: High Audit history: Multiple Controls: Moderate Breach risk rating: 6
Audit risk rating	**Rationale for audit risk rating**
High	The effectiveness of the controls is recorded as moderate as Meridian are working to resolve the issues found. The impact on settlement is high because the incorrect submission figures are major for some databases.

Actions taken to resolve the issue	Completion date	Remedial action status
Audits of existing databases with known unresolved issues are monitored with customer engagement regularly. Actions being taken to address issues with DUML databases are detailed in individual DUML audit reports. We have assessed our processes and tools to account for historic lamp installations and changes to the database at a daily level. There are checks in place comparing month to month data to identify any changes. These are accounted for in monthly submission. Meridian will continue to work with the customer to request that monthly data extracts include the detail of changes.	Ongoing	Identified
Preventative actions taken to ensure no further issues will occur	**Completion date**	
Meridian will continue to follow up with customers regularly to complete the required corrections and to maintain the install updates and changes to the database.	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

Processes to ensure metering is installed and unmetered load is quantified were examined.

The AC020 trader compliance reports, meter event details reports, and registry list files were reviewed to determine compliance.

Audit commentary

MERI

Metering installations installed

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

Exemptions 245 and 287 allow Meridian to use subtraction to determine submission information for ICPs 0009805800AL991 and 0000840407WE388 respectively.

Subtraction is also used for settlement for ICP 0000100018WP6F5. It is a residual load ICP for Kiwirail and is settled by difference. OTI0111 is a local network that is reconciled by differencing. While rare, this is permitted under the Code, so an exemption is not required.

Review of the AC020 report and registry list identified 34 ICPs which had a metering category 9, null or zero and did not have unmetered load recorded. Three had accepted MEP nominations and were awaiting meter asset data, one is subject to exemption 287 discussed in **section 1.1**, one was decommissioned after the report was run, and one had metering details added after the report was run.

The remaining 28 ICPs did not have MEP nominations made and remain active. These were examined and found:

- two have since been decommissioned or are in the process of being decommissioned,

- two (ICPs 0083582900PC3A3 & 0000103539TRE1E) have had their meters removed from the registry in 2017 and are being estimated; there are no actions in progress to address these.
- 23 have since had metering recorded on the registry by the MEP, which was AMCI in all cases, and
- ICP 0000570092HBCE1 has an amalgamation of metering in progress and is now at "inactive - ready for decommissioning".

Distributed generation

Monthly, Meridian generates reports of all ICPs with installation type B with RPS profile. The revenue assurance team checks that the ICPs have approval to generate from the network, and then arranges for generation metering to be installed with the customer. Once compliant metering is installed, the profile is updated.

Notification to the gifting register occurs if compliant metering cannot be installed.

Review of the registry list identified 223 active ICPs with generation indicated by the distributor. The AC020, event detail, registry list and meter installation details reports were reviewed to determine compliance:

Generation recorded by the distributor and an I flow register with no generation compatible profile	Review of the AC020 report confirmed that there were no ICPs with generation recorded by the distributor and an I flow register where MERI did not record a generation compatible profile.
Generation recorded by the distributor with no I flow register or generation compatible profile	184 ICPs with generation indicated by the distributor had HHR profile. I checked the ICPs on the HHR aggregates file for February 2022 and found 151 of the 175 which appeared in the aggregates flag had I flows reported. For the remaining 24 ICPs, 19 are on the gifted generation register. Two were confirmed as not generating to the network. ICP 0001230783TG57C needs to have import/export metering installed. Two ICPs have recently had generation metering installed. Six ICPs with generation indicated by the distributor had NHH submission type without a generation profile, and no I flow metering. These were checked and found: • three are residual load ICPs, and • the Account Manager is investigating three ICPs to confirm if distributed generation is present.
Generation profile recorded but no generation details recorded by the distributor	Two ICPs had profiles indicating generation was present, but no generation was recorded by the distributor. These were checked and found: • one has confirmed distributed generation present, and • one does not have distributed generation capacity electrically connected.
Generation profiles inconsistent with the distributor fuel type	Where generation profiles were recorded, they were consistent with the generation fuel type apart from one ICP with PV1 profile where the distributor had recorded a generation fuel type of liquid fuel. This has now been changed to EG1.

Bridged meters

MERI does not initiate meter bypass instructions to any MEP or contractor. If MERI request a remote reconnection, the MEP is expected to either conduct this, or make necessary arrangements for reconnection without bypassing. Where it is necessary to bypass a meter for safety reasons after hours, Meridian's contracts with service providers specify that they must return the following day to un-bridge

the meter. MEPs are not always able to complete the un-bridge meter task the next day for a number of reasons and as a consequence the period of meter bridging cannot always be determined via the returned service order for the remote reconnection.

IHUB will not proceed until a works order has been generated by Meridian to return to site to complete the un-bridge task.

No examples of bridged meters were identified during the audit period.

MERX

Metering installations installed

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

No submission information is determined by subtraction.

Review of the AC020 report and registry list identified 14 ICPs which had a metering category 9, null or zero and did not have unmetered load recorded. Eight had metering details added after the report was run, and three had accepted MEP nominations and were awaiting meter asset data. The remaining three ICPs did not have MEP nominations made and remain active. These were examined and I found the following:

- ICP 0110114045AP303 now has metering in the registry; AMCI is the MEP, and this metering should not have been removed from the registry,
- ICP 0005060702ALF2F is now decommissioned, and
- ICP 0006474403ALC7C is being investigated with SMCO.

Distributed generation

MERX ICPs potentially having generation are investigated regularly using the same process as for MERI. As reported in the last audit, the reporting available in Flux is still being reviewed to improve its usability. Currently it provides a snapshot but doesn't allow a user to easily track progress unless it is at an account level.

Review of the registry list identified 435 active ICPs with generation indicated by the distributor. The AC020, event detail, registry list and meter installation details reports were reviewed to determine compliance:

Generation recorded by the distributor and an I flow register with no generation compatible profile	Review of the AC020 report found 14 ICPs with generation recorded by the distributor and an I flow register where MERX did not record a generation compatible profile. This appears to have missed being corrected in the registry discrepancy process and was fixed in the audit. Metering was correct therefore quantification was compliant.
Generation recorded by the distributor with no I flow register or generation compatible profile	Ten ICPs with generation indicated by the distributor had NHH submission type without a generation profile, and no I flow metering. I found one was updated to PV1 prior to the audit, two were updated during the audit, the distributor is incorrect for two ICPs, two ICPs require investigation and three were confirmed as having generation but not appropriate metering.
Generation profile recorded but no generation details recorded by the distributor	175 ICPs had profiles indicating generation was present, but no generation was recorded by the distributor. I checked a sample of 20 and all were confirmed to have distributed generation present.

Generation profiles inconsistent with the distributor fuel type	Where generation profiles were recorded, they were consistent with the generation fuel type apart from five ICPs with PV1 profile where the distributor had recorded a generation fuel type of other. All five were correctly recorded as they have solar power and batteries installed.

Bridged meters

MERX does not initiate meter bypass instructions to any MEP or contractor. If MERI request a remote reconnection, the MEP is expected to either conduct this, or make necessary arrangements for reconnection without bypassing. Where it is necessary to bypass a meter for safety reasons after hours, Meridian's contracts with service providers specify that they must return the following day to un-bridge the meter. MEPs are not always able to complete the un-bridge meter task the next day for a number of reasons and as a consequence the period of meter bridging cannot always be determined via the returned service order for the remote reconnection.

IHUB will not proceed until a works order has been generated by Meridian to return to site to complete the un-bridge task.

Five examples of bridged meters were examined. The corrections were reviewed in **section 2.1**, and I found consumption was appropriately estimated for three of the bridged periods and not for two ICPs.

PSNZ

Metering installations installed

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

No submission information is determined by subtraction.

Review of the AC020 report and registry list identified two ICPs which had a metering category 9, null or zero and did not have unmetered load recorded. Both were timing differences and meters were installed after the report was run.

Distributed generation

Flux has the capability to record a profile against each meter register. Where the meter register's profile is blank, RPS is applied by default. All ICPs switch in with a blank profile, and a weekly process identifies any ICPs with EG registers and updates the profile to PV1. A trader update with the new profile is sent to the registry the following day, according to the process described in **section 2.1**. Previously it was recommended PSNZ check the generation fuel type that the distributor has populated on the registry and compare it to their profile, to ensure that any ICPs with generation that is not solar are correctly recorded with EG1 rather than PV1 profile. This analysis is proving to be more difficult now that many solar installations have batteries, and some distributors record the fuel type as "other" and others record it as "solar". I checked 10 of 26 ICPs with a fuel type of "other" and in all cases, PSNZ confirmed the ICPs had solar generation.

Flux does not record the distributor's installation type, and treats all ICPs as if they have installation type L. A monthly query is run to identify all ICPs which do not have an installation type of L on the registry. ICPs with EG registers are excluded from the results to identify ICPs which may need EG registers installed. These ICPs are followed up with the customer and distributor to confirm whether generation is present, and the MEP to arrange for EG metering to be installed if generation is confirmed. AMI ICPs with possible generation, are also identified through review of the audit compliance report.

Review of the registry list identified 1,765 active ICPs with generation indicated by the distributor. The AC020, event detail, registry list and meter installation details reports were reviewed to determine compliance:

Generation recorded by the distributor and an I flow register with no generation compatible profile	Review of the AC020 report found ten ICPs with generation recorded by the distributor and an I flow register where PSNZ did not record a generation compatible profile. Seven were resolved by the time of the audit and were merely timing issues. ICP 1000593483PCDB3 is still at RPS, there have not been any reverse power events, there is no record in the high-risk database and the customer has not indicated the presence of solar. ICP 0000034107EA5A3 is being investigated. ICP 0000512055CE1C7 has generation but the profile is still RPS and the settlement indicator for the export register is "N".
Generation recorded by the distributor with no I flow register or generation compatible profile	54 ICPs with generation indicated by the distributor had NHH submission type without a generation profile, and no I flow metering. I checked a sample of 20 and found 10 have been updated, added to the gifting register or solar has been removed. Four are being investigated and the following ICPs have distributed generation where the generation is not quantified or submitted. 0000451902HB60E 0007191753RN01F 0190111178LC35E 0007176839RNB6C 0000458565HB498 0000814263HB8CE ICP 0005120373RN390 had HHR profile with no I flow metering and is being investigated.
Generation profile recorded but no generation details recorded by the distributor	27 ICPs had profiles indicating generation was present, but no generation was recorded by the distributor. I checked a sample of 15 and confirmed that solar generation was present.
Generation profiles inconsistent with the distributor fuel type	Where generation profiles were recorded, they were consistent with the generation fuel type apart from 44 ICPs with PV1 profile where the distributor had recorded a generation fuel type of other. I checked a sample of 20 and found they all had solar generation.

Bridged meters

MERI does not initiate meter bypass instructions to any MEP or contractor. If MERI request a remote reconnection, the MEP is expected to either conduct this, or make necessary arrangements for reconnection without bypassing. Where it is necessary to bypass a meter for safety reasons after hours, Meridian's contracts with service providers specify that they must return the following day to un-bridge the meter. MEPs are not always able to complete the un-bridge meter task the next day for a number of reasons and as a consequence the period of meter bridging cannot always be determined via the returned service order for the remote reconnection.

IHUB will not proceed until a works order has been generated by Meridian to return to site to complete the un-bridge task.

Eleven examples of bridged meters were examined. The corrections were reviewed in **section 2.1**, and I found consumption was appropriately estimated for the seven of the bridged periods and not for four of the ICPs.

Audit outcome

Non-compliant

Non-compliance	Description
Audit Ref: 6.1 With: Clause 10.13, 10.24 and 15.13 From: 01-Jul-21 To: 31-May-22	**MERI** Two active ICPs have had their meters removed from the registry in 2017 and are not unmetered installations therefore there is no meter in place as required by this clause. Generation not quantified or gifted for one HHR ICP (0001230783TG57C) where the distributor indicates grid connected generation is connected. One incorrect profile, now corrected. **MERX** Five ICPs with the incorrect profile. Two are now resolved, but three require appropriate metering. While meters were bridged, energy was not metered and quantified according to the code for two ICPs. **PSNZ** While meters were bridged, energy was not metered and quantified according to the code for four ICPs. Generation not quantified or submitted for seven ICPs. 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. More regular monitoring is required to identify discrepancies sooner. The impact on settlement and participants is minor; therefore, the audit risk rating is low.

Actions taken to resolve the issue	Completion date	Remedial action status

As reported meters are bridged only when necessary and this will continue to be the case Refer also to our comments in 2.17 regarding improvements to our processes to identify and monitor actions relating to bridged meters. ICPs identified with possible generation not quantified or submitted are being investigated and they will either have the metering installed or be added to the gifted generation register as part of our usual processes.	30/04/2023	Identified
Preventative actions taken to ensure no further issues will occur	**Completion date**	
We will continue to work at streamlining our process on identifying and resolving issues around bridged meters and generation metering. We will be monitoring the AC020 report more frequently	30/04/2023	

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 Meridian is responsible for, and the certification expiry date for those GIPs.

Audit commentary

Meridian is responsible for the GIPs shown in the table below.

Responsible party	Description	NSP	MEP	Certification expiry date (NSP table)
MERI	AVIEMORE	AVI2201MERIGG	MERG	23/07/2022
MERI	BENMORE	BEN2202MERIGG	MERG	17/07/2023
MERI	MANAPOURI	MAN2201MERIGG	MERG	13/08/2022
MERI	OHAU A	OHA2201MERIGG	MERG	13/04/2024
MERI	OHAU B	OHB2201MERIGG	MERG	17/05/2025
MERI	OHAU C	OHC2201MERIGG	MERG	10/05/2025
MERI	WOODVILLE	WDV1101MERIGG	MERG	13/08/2022
MERI	WAITAKI	WTK0111MERIGG	MERG	12/11/2022
MERI	WESTWIND	WWD1102MERIGG	MERG	11/08/2023
MERI	WESTWIND	WWD1103MERIGG	MERG	12/08/2023

All metering installations have current certification.

Certification details are updated as soon as they are available by the generation team. I was unable to determine from the Reconciliation manager audit trail provided whether any updates were applied late.

Audit outcome

Compliant

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

The registry list and AC020 trader compliance reports were reviewed to determine compliance.

Audit commentary

MERI

Meridian uses SAS to compare Velocity meter details, registry meter details, and trader notifications, before business day 13 submissions are produced each month. SAS reports are used to identify:

- ICPs where meter certification is due to expire - these are changed back to RPS on an actual reading date,

- ICPs with a smart meter profile, and no smart meter installed - these are changed to a valid profile on an actual reading date, or
- ICPs which are eligible to be moved to a profile - these are changed to a valid profile on an actual reading date.

Where profile changes are identified a file is output from SAS and imported into Velocity. The audit compliance report is also used to check for profile accuracy.

A separate file is used to update the registry. Staff ensure that the actual read date used for the change is recent. The following day a manual check is performed to confirm the registry and Velocity match and are up to date.

Meridian uses the following profiles which require control device certification if AMI or HHR metering is not installed:

Profile Code	Profile Description	Requires control device certification
E08	Night only	Yes
E11	Night with boost	Yes
E13	Night with boost	Yes
T07	Day/Night	Yes
T23	Day/Night	Yes
TOC	Day/Night	Yes
TON	Day/Night	Yes

However, this list is incorrect for profile codes relating to separately controlled night load (E08, E11, E13) as these do require a certified control device to be present and the CDC flag on the registry correctly populated.

The AC020 report recorded 13 ICPs with a profile requiring a certified control devices where control devices were not certified. All 13 ICPs had a communicating AMI meter installed and it is likely the CDC flag is incorrectly populated on the registry however MERI has not followed up with the MEP regarding the accuracy of this field. Non-compliance is recorded.

MERX

MERX uses the same process as MERI to confirm the correct profiles have been applied. MERX uses the following profiles which require control device certification if AMI or HHR metering is not installed:

Profile Code	Profile Description	Requires control device certification
E08	Night only	Yes
E11	Night with boost	Yes
E13	Night with boost	Yes
T07	Day/Night	Yes
T23	Day/Night	Yes

Profile Code	Profile Description	Requires control device certification
TOC	Day/Night	Yes
TON	Day/Night	Yes

However, this list is incorrect for profile codes relating to separately controlled night load (E08, E11, E13) as these do require a certified control device to be present and the CDC flag on the registry correctly populated.

The AC020 report recorded 1015 ICPs with a profile requiring a certified control devices where control devices were not certified. 1004 ICPs had a communicating AMI meter installed and it is likely the CDC flag is incorrectly populated on the registry however MERI has not followed up with the MEP regarding the accuracy of this field. Eleven ICPs did not have a communicating AMI meter present, and these have now been correct by MERX as part of the audit. Non-compliance is recorded.

PSNZ

PSNZ also uses the same process as MERX and MERI to confirm the correct profiles have been applied. PSNZ uses the following profiles which require control device certification if AMI or HHR metering is not installed:

Profile Code	Profile Description	Requires control device certification
E08	Night only	Yes
E11	Night with boost	Yes
E13	Night with boost	Yes
T07	Day/Night	Yes
T23	Day/Night	Yes
TOC	Day/Night	Yes
TON	Day/Night	Yes

However, this list is incorrect for profile codes relating to separately controlled night load (E08, E11, E13) as these do require a certified control device to be present and the CDC flag on the registry correctly populated.

The AC020 report recorded 195 ICPs with a profile requiring a certified control devices where control devices were not certified. 193 ICPs had a communicating AMI meter installed and it is likely the CDC flag is incorrectly populated on the registry however MERI has not followed up with the MEP regarding the accuracy of this field. Two ICPs did not have a communicating AMI meter present, and these have now been correct by PSNZ as part of the audit. Non-compliance is recorded.

PSNZ has also applied the POD/PON profile combination during the audit period.

The POD or PON profile may be applied to category C and E meters, where the load is measured by a multi register meter and is not required to be controlled by a certified control device.

Audit outcome

Non-compliant

Non-compliance	Description
Audit Ref: 6.3 With: Clause 33 Schedule 10.7 and clause 2(2) Schedule 15.3 From: 01-Sep-21 To: 30-Jun-22	**MERI** 13 ICPS had profiles requiring control device certification where CDC flag on the registry is set to 'N'. **MERX** 1015 ICPS had profiles requiring control device certification where CDC flag on the registry is set to 'N'. **PSNZ** 195 ICPS had profiles requiring control device certification where CDC flag on the registry is set to 'N'. Potential impact: Low Actual impact: Low Audit history: Once Controls: Moderate Breach risk rating: 2
Audit risk rating	**Rationale for audit risk rating**
Low	Controls are rated as moderate because the understanding around the need for a certified control device for night-controlled load was not well understood. The audit risk rating is low because there are robust controls in place and a very small number of ICPs were affected.

Actions taken to resolve the issue	Completion date	Remedial action status
We will confirm with the relevant MEPs that control device certification for the identified ICPs is included in the metering installation certification and request the Registry flag be updated.	31/03/2023	Identified
Preventative actions taken to ensure no further issues will occur	**Completion date**	
In the interim we have made a change to our profile selection tool so that E08, E11 and E13 are only selected as valid profiles where the CDC flag is Y on the Registry.	29/09/2022	

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 leads 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, the MEP, the field service agent in cases of meter bridging or the customer. Upon identifying a possible defective meter, a field services job is raised to investigate and resolve the defect.

MERI

A sample of two defective meters were checked. The MEP was advised, and corrections were processed as discussed in **section 2.1.**

MERX

A sample of nine defective meters and five bridged meters were checked. The MEP was advised, and corrections were processed as discussed in **section 2.1.**

PSNZ

A sample of eight defective meters and nine bridged meters were checked. The MEP was advised, and corrections were processed as discussed in **section 2.1.**

Audit outcome

Compliant

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

Code reference

Clause 2 Schedule 15.2

Code related audit information

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

> *2(2) - The reconciliation participant must collect raw meter data used to determine volume information from the services interface or the metering installation or from the MEP*
>
> *2(3) - The reconciliation participant must ensure the interrogation cycle is such that is does not exceed the maximum interrogation cycle in the registry*
>
> *2(4) - The reconciliation participant must interrogate the meter at least once every maximum interrogation cycle*
>
> *2(5) - When electronically interrogating the meter the participant must:*
>
> *a) ensure the system is to within +/- 5 seconds of NZST or NZDST*
> *b) compare the meter time to the system time*
> *c) determine the time error of the metering installation*
> *d) if the error is less than the maximum permitted error, correct the meter's clock*
> *e) if the time error is greater than the maximum permitted error then:*

i) correct the metering installation's clock
ii) compare the metering installation's time with the system time
iii) correct any affected raw meter data.

f) download the event log

2(6) – The interrogation systems must record:

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

Audit observation

The data collection process was examined.

- EMS collects HHR data as an agent,
- EDMI collects HHR data as an agent which is provided to EMS for submission,
- AMS collects HHR data as an agent which is provided to EMS for submission,
- Wells collects manual NHH data as an agent,
- MEPs provide HHR AMI data and readings, and
- Meridian collects generation station information.

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

Meridian's own data collection processes for generation data were reviewed. I walked through the clock synchronisations and viewed port settings to confirm how the clocks are synchronised.

Audit commentary

HHR

C&I HHR data transmission and clock synchronisation processes were reviewed as part of EMS, AMS and EDMI's agent audits. The processes were found to be compliant.

As part of the agent audits, a check was completed to determine whether all data was collected within the maximum interrogation cycle. The following exceptions were identified:

ICP	Agent	Last connection attempt	Last Collected Interval	Comment
0085976769LC230	AMS	27 April 2022 12:02:27 pm	1 December 2018 0:00	Accucal confirmed that the power is off, and work is being completed at the ICP. Site electrician confirmed that the meter has nothing connected to it and this connection is not needed. Meters have been removed and ICP status is now inactive – ready for decommisioning. Tried to raise decommission for numerous times and unfortunately Vector are unable to physically disconnect this supply as this location has a single Vector point of supply which feeds a private distribution/meter board for multiple electricity meters.

ICP	Agent	Last connection attempt	Last Collected Interval	Comment
0001951350TGCC2	AMS	28 April 2022 3:09:00 am	15 September 2021 1:30:00 am	Customer advised back in April that the building is pending sale and power potentially being switched back on in the coming months. Account manager to follow up with customer on building status and request a manual read.
0316096796LCCB1	AMS		13 December 2021 12:00:00 pm	18 May 2022, AMS has confirmed they have started reading both meters. EMS were informed late. EMS have sent through revised data for Dec 2021 and Jan 2022.

Event logs are downloaded by the HHR data collector during automated interrogation and are reviewed as part of the validation process. EMS keep a record of any manual downloads, the reason for the manual download and whether events were received and reviewed. I confirmed that this log has been kept since July 2020, and that event logs were received for all manual downloads received after 11 November 2020, except for a single meter change (ICP 1001152747CK458) where a faulty meter was connected to a test bench post a meter change to attempt to retrieve the final data from this faulty meter – no event log was retrieved in this process. Non-compliance is recorded for the failure to retrieve the meter event log as part of this manual download.

NHH

Fulfilment of the interrogation systems requirements, and clock synchronisation was examined as part of the MEP and agent audits.

I traced a sample of reads for each MEP from the source files to Velocity for MERI and Flux for MERX and PSNZ. All were recorded and labelled correctly with the actual time of interrogation.

AMI event logs are received from AMI MEPs via email or retrieved from the AMI MEPs SFTP directories and this process is discussed further in **section 9.6**.

MEPs advise Meridian of clock synchronisation events by email. Clock synchronisation events are reviewed to determine whether any Meridian action is required, and a memo is added to the affected customer account in Velocity. Clock synchronisation event emails for MERX and PSNZ are not loaded into Flux, but they are reviewed to determine if action is required.

A recent copy of AMI MEPs time sync report for two MEPs were reviewed for MERX as part of this audit to see if there were any meters that might require action by Meridian in relation to clock accuracy.

This report identified 31 ICPs where the time correction exceeded 3600 seconds (30 minutes). Four ICPs had a time difference greater than one day, and the greatest time difference observed was 123 days.

Seven meters had a configuration (D/N, WD/WE, CN8) that would have likely been impacted by the clock drift. Meridian had not received any email notification for any of these affected meters indicating that either the email notification process is not functioning as expected or there is a misunderstanding between Meridian and the AMI MEPs in relation to what time sync issues will be notified.

Generation

Meridian collects generation information and is responsible for clock synchronisation.

The Stark system retrieves meter information from the generation meters every half hour, and data is also received via SCADA. I traced a sample of data from source, through aggregation process to the NSP volumes submissions for NSPs and HHR volumes for windfarms and compliance is confirmed for each NSP and windfarm.

Generation metering and activity is monitored in real time by the generation team, who report any metering or data issues to the reconciliation team. As metering issues are identified and acted upon quickly, this ensures that the metering information is obtained within the maximum interrogation cycle.

Meridian synchronises Stark against an internet time source continuously during the day. During interrogation, a comparison occurs between data logger and Stark. Clocks are corrected automatically for all differences below five seconds. If the clocks are different by more than five seconds, the clock is adjusted manually.

Stark sends an automated email to the reconciliation team where the number of seconds recorded does not match the expected number for the half hour. There have been no time clock errors occur during the audit period, but I confirmed the process is unchanged.

Audit outcome

Non-compliant

Non-compliance	Description
Audit Ref: 6.5 With: Clause 2 Schedule 15.2 From: 01-Sep-20 To: 30-Jun-22	**MERI** ICPs 0085976769LC230, 0001951350TGCC and 0316096796LCCB1 were not interrogated within its maximum interrogation cycle. Event logs were not retrieved for ICP 1001152747CK458 for a manual download as part of a meter change in April 2022. **MERX** Raw meter data not reviewed where time error is greater than the maximum permitted error for seven ICPs where the meters had a time-based configuration (D/N, WD/WE, CN8). Potential impact: Low Actual impact: Low Audit history: Twice Controls: Strong Breach risk rating: 1
Audit risk rating	**Rationale for audit risk rating**
Low	The controls are recorded as strong because they mitigate risk to an acceptable level. 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**

Refer comments in the table above regarding ICPs not interrogated within their maximum interrogation cycle. We will follow up the large time drift errors identified on MEP reports to confirm why these were not notified by MEPs as requiring action. Action will be taken where required.	31/12/2022	Identified
Preventative actions taken to ensure no further issues will occur	**Completion date**	
We will confirm with MEPs that time synch errors are being notified by e-mail where action is required. The failure to retrieve an event log as part of the manual download for ICP 1001152747CK458 was an exception - process controls to ensure this occurs are robust.	28/02/2023	

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

Code reference

Clauses 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

Processes to provide meter condition information were reviewed as part of Wells' agent audit. I traced reads for a sample of two manually read NHH ICPs from the source files to Velocity for MERI and Flux for MERX and PSNZ. Meridian's processes to manage meter condition information were reviewed.

Processes for customer and photo reads were reviewed.

Audit commentary

Compliance is recorded in Wells' agent audit. During each meter interrogation, Wells collects meter reading and meter condition data, which is provided to participants to enable compliance with clauses 3(1), 3(2) & 5 of schedule 15.2. All readings are sourced directly from the meter as manual readings.

MERI

I traced reads for a sample of seven manually read ICPs from the source files to Velocity. All were recorded and labelled correctly.

The daily meter condition information provided by Wells is imported into Velocity. Based on the condition code, it is automatically directed to a work queue and then assigned to a team member. Work queues are cleared by each team daily.

I viewed examples two types of meter condition events and noted that no action was undertaken. Both ICPs were account managed and the team responsible for monitoring meter condition information alert the relevant account manager, however there is no process to follow up these exceptions to see if they have been resolved:

Meter condition event	ICP	Date	Details
Meter Not Found	0000041881TR709	5 July 2022	no action taken - account managed
Blank Screen	0000947070TE11D	18 February 2022	no action taken - account managed

There were no phase failure events available to check, but phase failure is one of the issues checked by Wells during NHH meter reading.

Meter condition issues can also be identified through Meridian's meter read validation process, or by Customer Services Representatives (CSRs). CSRs raise field services jobs through Velocity. When the paperwork is returned, it is automatically linked to the customer account and directed to a work queue for action.

The disconnection and reconnection reads returned via the "CJR" system are not received in a format that can be automatically loaded into Velocity as a validated meter read. These are expected to be manually entered when an ICP switches out as part of the switch out process. For ICPs that remain with Meridian, the volume is calculated as forward estimate until a validated read is entered. Once reconnected, a scheduled AMI and meter reader read will be imported and validated, and those reads will be used to calculate historic estimate. Forward estimate continues to be calculated until validated reads are entered, and this contributes to the FE volumes remaining at 14 months reported in **section 12.8**.

Disconnected ICPs with consumption after their last validated reading are reviewed on a monthly report. Reads are manually validated for volumes greater than 200 kWh calculated from the final read, by the reconciliation team, which enables them to be used by the historic estimate calculation process. Any ICPs with volumes less than this remain as unvalidated reads and are therefore ignored by the historic estimate calculation process. The decision to not validate reads provided by the NHH meter reading agent where consumption is less than 200 kWh means this inactive consumption is not recorded, or settled, and the inactive consumption report will be incomplete. MERI currently only has 93 inactive metered ICPs and these are expected to transition to MERX by the end of the year. Inactive consumption monitoring is discussed further in **section 9.5.**

The inability to enter or process received disconnection or reconnection reads for MERI also impacts the accuracy of the inactive consumption reports for each participant code as the ICP candidates are determined by the registry status event. Without a suitable boundary reading being applied this report produces a subset of potential exceptions for the team to investigate as the report requires two actual reads to be present after the date of the status change to be able to detect inactive consumption. This then delays follow up actions as the report needs to wait for a second actual read to occur post disconnection before presenting the exception to a user to determine if further action is required.

Customer and photo readings

Wells provide customer readings in the notes field and record a no read. These readings are ignored and not used for billing or submission.

Customer readings provided directly by customers are recorded as customer reads in Velocity, and photo readings are recorded as photo reads. Customer and photo reads are only treated as actuals by the historic estimate process if they are validated. Velocity treats all previously validated reads the same regardless of their source. Therefore, a customer or photo read can be validated against another customer or photo read which was previously validated, and not a set of validated actual readings from another source as required by the code. No examples of this were found during the audit but I confirmed that the process remains unchanged since the last audit. I checked one customer read and it was correctly recorded as customer read.

MERX

I traced reads for a sample of seven manually read MERX ICPs by Wells from the source files to FLUX. All were recorded and labelled correctly. Validation is the same as described for MERI.

The meter condition notes from manual meter reading files are uploaded into Flux. I checked recent examples of the following condition events and identified the following:

Meter condition event	ICP	Date	Details
Incorrect dials	0007198591RN1D2	29 June 2022	no action taken - no exception identified from meter reading file - not worked as users not aware.
New Meter Found	0110012559ELED0	4 July 2022	no action taken - meter change was eventually processed.
Property Demolished	0007203239RN04B	30 June 2022	account was already closed - empty site. no exception identified from meter reading file - No action taken. ICP Active on registry.

Previous audits had identified that for a period of time the meter condition notes had not been loaded or reviewed within FLUX. This matter was noted as resolved in the last audit however it appears the issue has reappeared again and notified meter condition codes provided by Wells are not being actively reviewed or investigated.

The inability to enter or process received disconnection or reconnection reads for MERX non-AMI meters also impacts the accuracy of the inactive consumption reports for each participant code as the ICP candidates are determined by the registry status event. Without a suitable boundary reading being applied this report produces a subset of potential exceptions for the team to investigate as the report requires two actual reads to be present after the date of the status change to be able to detect inactive consumption. This then delays follow up actions as the report needs to wait for a second actual read to occur post disconnection before presenting the exception to a user to determine if further action is required.

Customer and photo readings

Each reading is assigned a read status in Flux (invalidated, unverified, verified, or medium).

Flux treats customer and photo reads as unverified unless a person manually validates them against another set of reads and applies a different status.

The read status determines how the readings are treated by the switching and historic estimate processes. Verified and medium readings are treated as validated actuals and permanent estimates respectively. Invalidated readings are ignored, and unverified readings are treated as estimates.

I checked a sample of nine readings to confirm the correct identification. All ICPs had the correct read status applied based on the validation steps performed by users.

PSNZ

I traced reads for a sample of seven manually read PSNZ ICPs by Wells from the source files to FLUX. All were recorded and labelled correctly. Validation is the same as described for MERI.

The meter condition notes from manual meter reading files are uploaded into Flux. I checked recent examples of the following condition events and identified the following:

Meter condition event	ICP	Date	Details
Incorrect dials	0044302399PC906	16 February 2022	No exception identified for Feb 22. Received MCC August 21 6 to 5 dials- exception found in flux user closed it with no action taken - no ticket raised.
Meter Not Found	0000501181NRC2A	16 February 2022	reader visited wrong site - OK
Meter Not Found	0000461499UN916	21 February 2022	vacant de energised no action taken
Property Demolished	0000007045UN56C	17 February 2022	no investigation or ticket raised
Blank Screen	0000522298WE20D	22 February 2022	actual read obtained July - resolved. no investigation or ticket raised

Previous audits had identified that for a period of time the meter condition notes had not been loaded or reviewed within FLUX. This matter was noted as resolved in the last audit however it appears the issue has reappeared now that the validation function has transitioned to Christchurch and notified meter condition codes provided by Wells are not being actively reviewed or investigated.

The inability to enter or process received disconnection or reconnection reads for PSNZ non-AMI meters also impacts the accuracy of the inactive consumption reports for each participant code as the ICP candidates are determined by the registry status event. Without a suitable boundary reading being applied this report produces a subset of potential exceptions for the team to investigate as the report requires two actual reads to be present after the date of the status change to be able to detect inactive consumption. This then delays follow up actions as the report needs to wait for a second actual read to occur post disconnection before presenting the exception to a user to determine if further action is required.

Customer and photo readings

Each reading is assigned a read status in Flux (invalidated, unverified, verified, or medium).

Flux treats customer and photo reads as unverified unless a person manually validates them against another set of reads and applies a different status.

The read status determines how the readings are treated by the switching and historic estimate processes. Verified and medium readings are treated as validated actuals and permanent estimates respectively. Invalidated readings are ignored, and unverified readings are treated as estimates

I checked a sample of five readings to confirm the correct identification. All ICPs had the correct read status applied based on the validation steps performed by users

Audit outcome

Non-compliant

Non-compliance	Description
Audit Ref: 6.6 With: Clause 5 of Schedule 15.2 From: 01-Sep-21 To: 30-Jun-22	**MERI** Wells meter condition information not checked for account managed ICPs. **MERX** Wells meter condition information not checked for the entire audit period. **PSNZ** Wells meter condition information not checked for the entire audit period. Potential impact: Low Actual impact: Low Audit history: Multiple times Controls: Moderate Breach risk rating: 4
Audit risk rating	**Rationale for audit risk rating**
Medium	The controls are recorded as moderate because they mitigate risk most of the time but there is a need for improvement around managing meter condition information. The audit risk impact is expected to be medium as meter integrity issues are not being reviewed or investigated once these are being reported by the meter reading agent.

Actions taken to resolve the issue	Completion date	Remedial action status
We are currently reviewing our processes for managing meter read condition files to ensure these are being checked in all cases.	01/12/2022	Identified
Preventative actions taken to ensure no further issues will occur	**Completion date**	
Once the reviewing of how the meter read condition files are managed and processed, there will be stronger controls in place.	01/04/2023	

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 timestamping.

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 files was examined in **sections 4.3** and **4.10**.

MERI

Meridian imports the midnight AMI midnight readings, which are applied as of 2400hrs. Manual readings taken by Wells are provided with a read time, which is recorded in Velocity.

- I traced a sample of AMI reads to Velocity for each AMI MEP. All were time-stamped at midnight, apart from Arc meters, which had timestamps throughout the day.
- I traced manual NHH reads to Velocity for a sample of five ICPs. All were recorded correctly with their read date and time.

The upgrade and downgrade processes were reviewed.

- Upgrades were processed with NHH submission up to the meter removal read on the last full day the ICP was NHH, HHR submission occurs from the day of the meter change and all consumption is captured.
- For downgrades, the day of the meter change is submitted as HHR. A NHH meter is created the day after the meter change, and the opening read is entered on the day of creation. Because Velocity treats all NHH reads as though they have occurred at the end of the day, opening readings are normally pulled back to the day before the start date. For meter downgrades, this is not possible because Velocity will not allow two meters with different submission types to be recorded on the same day. The downgrade process ensures all consumption from the opening read onwards is captured as part of NHH submission, but none of the consumption will be apportioned to the first day as NHH because of the system limitations. There was previously a manual work around to correct this, but this is no longer being applied.

A sample of four upgrades and nine downgrades were checked. The upgrades and downgrades were processed according to the procedure above.

MERX

I traced a sample of AMI readings from source files through to Flux. In all cases the raw data was correctly time stamped as 23.59.53 the date before midnight.

MERX now supplies ICPs as HHR or NHH submission type however no upgrades or downgrades were identified during the audit period.

PSNZ

I traced a sample of AMI readings from source files through to Flux. In all cases the raw data was correctly time stamped as 23.59.53 the day before midnight.

No metering upgrades or downgrades occurred during the audit period.

Audit outcome

Non-compliant

Non-compliance	Description
Audit Ref: 6.7 With: Clause 6 Schedule 15.2 From: 01-Sep-21 To: 30-Jun-22	**MERI** For downgrades, all HHR volumes are reported up to the day of the meter change. All NHH volumes are reported, but due to system constraints the consumption is apportioned from two days after the meter change onwards instead of from the day after the meter is changed. Potential impact: Low Actual impact: Low Audit history: Once Controls: Moderate Breach risk rating: 2
Audit risk rating	**Rationale for audit risk rating**
Low	The controls are recorded as moderate because all consumption is captured and reported, but a small amount will not be recorded against the correct date. The impact on settlement and participants is minor, as all consumption is captured and reported. One day expected to have consumption will not have any consumption allocated, and other days in the read-to-read period will have slightly more consumption allocated. There will be a small amount of ICP Days scaling applied to MERI as a consequence of this system limitation.

Actions taken to resolve the issue	Completion date	Remedial action status
The issue with apportionment of NHH consumption following a downgrade is expected to be resolved when this process is conducted in Flux rather than Velocity.	31/12/2022	Identified
Preventative actions taken to ensure no further issues will occur	**Completion date**	

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 the read attainment business rules and procedural documentation.

A sample of CPs not read during the period of supply were reviewed.

Audit commentary

A validated meter reading must be obtained in respect of every meter register for every NHH metered ICP for which the participant is responsible, at least once during the period of supply to the ICP by the reconciliation participant, unless exceptional circumstances prevent this from occurring. This may be a validated meter reading at the time the ICP is switched to, or from, the reconciliation participant.

The NHH meter reading frequency guidelines published by the Electricity Authority define "Exceptional circumstances" as meaning "circumstances in which access to the relevant meter is not achieved despite the reconciliation participant's best endeavours". "Best endeavours" is defined as:

"Where a reconciliation participant failed to interrogate an ICP as a result of access issues, the reconciliation participant had made a minimum of three attempts to contact the customer, by using at least two methods of communication".

MERI

For manually read meters, the reasons that reads cannot be obtained are recorded by Wells and provided along with the other meter readings. This information is imported into Velocity and directed to work queues for review by the billing team.

Most manual reads are scheduled every two months, and the missed read process begins after the first missed read. The process is customised depending on the no read code provided by Wells and whether the meter is AMI.

Unless the missed read occurred because the meter reader was unable to complete the reading due to extreme events such as a natural disaster or severe weather, action is taken after the first missed read:

- if no read is received for an AMI meter, it is sent to the data queue to check for reads on other dates and follow up with the MEP, if necessary,
- if the meter appears to have been changed or removed, it is sent to the metering and field services queue,
- if a problem with the meter or its location is preventing reading, it is sent to the billing queue,
- if the property or meter could not be found, the ICP is in the wrong reading round, the customer refused access, or stated they were supplied by another retailer, it is sent to the billing queue, and
- if health and safety issues are identified, it is directed to the Health and Safety team.

A letter to the customer is automatically generated where access is prevented due to an issue which can be resolved with the customer, such as overgrown vegetation, locked gates or doors, dogs, or a closed business. A letter is generated for the first two or three missed reads, depending on the issue, and then directed to the billing team queue for any subsequent missed reads for escalation which includes attempts to call and text the customer in order to try and resolve the access issue. Each communication attempt is recorded in Velocity as an account note.

There are documented procedures which explain action to be taken to resolve exceptions. If these procedures are followed these will ensure that the best endeavours requirements are met.

Unread account managed sites are managed in slightly different way. The Account Manager is notified of a no read site, and they are requested to follow up with the customer. This is then reliant on the Account Manager to action and log their actions into Gentrack. Meridian was to review this process because not all requests are actioned and recorded in Gentrack as expected. This review had not been completed at the time of this audit.

If AMI reads cannot be obtained for an ICP for 60 days, it is intended that the ICP should be moved to a manual meter reading route. As recorded below, it does not appear this process is followed in all cases. Meridian routinely contact customers first, to determine whether they have switched their electricity supply off. AMI meter reading providers also notify Meridian where reads cannot be obtained:

- AMS and Intellihub both send weekly emails containing non-communicating AMI meters, which ask Meridian to raise a field services request where necessary,
- information on non-communicating Smartco meters is passed to Meridian by AMS, and
- Arc sends details of non-communicating meters in batches, but not every week; if the communication issues cannot be resolved the Arc meter is replaced with an AMS meter.

Meridian receives no read reports from MEPs. These are reviewed and actioned appropriately. The MEPs are providing this information in a consistent format.

Billing management reports on no reads weekly. They continue to run campaigns to improve read attainment, focussing on obtaining reads for sites which have not had a reading for 12 months or longer.

Meridian's read attainment processes meet the requirements of the code, but where the period of supply is less than 90 days the no read process will not have been completed and therefore compliance cannot be met in these instances.

25 ICPs were not read during the period of supply, where the period of supply ended between February and May 2022. 23 of those were supplied for less than 90 days, and 18 were supplied for less than 60 days. I reviewed the ten ICPs with the longest periods of supply:

- five ICPs had AMI meters without comms, one was changed to manual read round prior to switching and one ICP (0402423038LCEAF) had reads obtained but as these were not used for billing, they were not validated or used,
- there was an ongoing meter investigation with the customer and electrician for 0030062024PC65A,
- one ICP was a backdated switch gain that then switched away before a read attempt was made,
- one was a new connection that then switched away, but as there was a meter install read present this should not have been on the report, and
- two were due to meter reader not being able to locate the meter prior to the ICP switching away.

MERX

The MERX no read process has been improved and is similar to that used for MERI and was fully implemented in February 2021. Account manged ICPs are now included in the improved process. The current process is:

- an email is sent to the customer requesting the customer contact Meridian to arrange a read when the first bill is issued as an estimate due to no read being gained,
- additional emails are sent to the customer after every failed read attempt,
- a "workflow" is raised by the system after a period of no reads (which is configured depending on the reason for the no read) and is assigned to the appropriate team to manage the next step,
- an operator then reviews and triggers the next action, which may include one or more of the following steps:
    - outbound communication with the customer,
    - a manual read request,

    - raising a meter fault, and
    - moving AMI metered ICPs to a manually read round, and
- escalations to management are built into the process depending on the quantity of no reads.

83 ICPs were not read during the period of supply, where the period of supply ended between February and May 2022. 41 of those were supplied for less than 90 days, and 33 were supplied for less than 60 days. I reviewed the ten ICPs with the longest periods of supply and found all ICPs did have outbound email communication to the customer and one ICP also had an escalated call to the customer.

PSNZ

The PSNZ process has an automated billing email when readings are not obtained. The next step is manual, where a spreadsheet is downloaded on the first of each month with ICPs categorised into:

- not read at 90 days,
- not read at 90 to 150 days,
- not read at 150 to 300 days,
- not read 300 to 356 days, and
- not read over 365 days.

Outbound communication occurs to resolve reading access issues.

If AMI readings cannot be obtained, and the MEP has advised that the communication issues will be difficult to resolve, PSNZ will move the ICP to a manual reading route.

68 ICPs were not read during the period of supply, where the period of supply ended between February and May 2022. 47 of those were supplied for less than 90 days, and 39 were supplied for less than 60 days. I reviewed the ten ICPs with the longest periods of supply. Three ICPs did not have any outbound communication.

Audit outcome

Non-compliant

Non-compliance	Description
Audit Ref: 6.8 With: Clause 7(1) and (2) Schedule 15.2 From: 01-Sep-21 To: 30-Jun-22	**MERI** Eight of ten ICPs sampled were not read during the period of supply and exceptional circumstances were not proven. **PSNZ** Three of ten ICPs sampled were not read during the period of supply and exceptional circumstances were not proven. 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 is assessed to be low as the volume of unread during the period of supply represent a very small number of the overall customer base.

Actions taken to resolve the issue	Completion date	Remedial action status
As these ICPs are no longer supplied by Meridian/Powershop no action can be taken to obtain a read.	27/09/2022	Identified
Preventative actions taken to ensure no further issues will occur	**Completion date**	
MERI – Existing processes and controls will continue	27/09/2022	
PSNZ – As for MERX, implementation of a more automated and targeted process that will apply across all ICPs to manage no reads is expected to improve read attainment compliance for all obligations. Implementation of this process for PSNZ was delayed due to ongoing resource constraints during the audit period.	30/04/2023	

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 January to April 2022 were provided.

A sample of 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

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

MERI

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
Jan-22	232	118	581	96.43%
Feb-22	231	123	601	96.32%
Mar-22	228	122	598	96.37%

Month	Total NSPs where ICPs were supplied > 12 months	NSPs <100% read	ICPs unread for 12 months	Overall percentage read
Apr-22	229	121	626	96.20%

Read attainment is slightly improved from the last audit period. MERI provided a report of 626 ICPs where a reading had not been obtained for the previous 12 months as of April 2022. I reviewed ten ICPs not read in the previous 12 months to determine whether exceptional circumstances exist, and if MERI had used their best endeavours to obtain readings. For all ten of the examples checked, exceptional circumstances and best endeavours were not proven. All ten were account managed ICPs where the responsibility for following up with the customer sits with the account manager. It is intended that account managed ICPs will be subject to the same process as other ICPs once migrated to Flux, which is likely to achieve compliance.

Additionally, some ICPs sit on an 'inhouse' MRU where for health and safety or customer related issues these ICPs are not included in standard meter reading schedules and are estimated each month. Special read requests are raised each year for the customer related issue sites to attempt to gain a read. Once the customer moves out of the ICP the move in process for the next customer then triggers an MRU assignment back to a scheduled MRU. Three of the ten ICPs in the sample are on the 'inhouse' MRU.

The reports reviewed for January to April 2022 all met the reporting requirements and were submitted on time.

MERX

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
Jan-22	319	69	163	99.85%
Feb-22	332	73	182	99.84%
Mar-22	347	97	296	99.76%
Apr-22	356	108	382	99.70%

Read attainment is improved from the last audit period as the old MERI ICPs with access issues transitioned to the MERX code are now being reflected in the MERX report. MERX provided a report of 64 ICPs where a reading had not been obtained for the previous 12 months as of June 2021.

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

The reports reviewed for January to April 2022 all met the reporting requirements and were submitted on time.

PSNZ

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
Jan-22	319	126	747	99.06%
Feb-22	317	125	744	99.07%
Mar-22	321	119	730	99.11%
Apr-22	323	121	754	99.09%

PSNZ provided a report of 754 ICPs where a reading had not been obtained for the previous 12 months as of April 2022. I reviewed ten ICPs not read in the previous 12 months to determine whether exceptional circumstances exist, and if PSNZ had used their best endeavours to obtain readings. In six cases best endeavours were made to obtain readings. Two unmetered ICPs are being included in the report in error. One ICP is in the process of being decommissioned and one ICP has a non-communicating AMI meter that is unresolved.

The reports reviewed for January to April 2022 did not meet the reporting requirements as it includes solely unmetered ICPs in its population. The reports were submitted on time.

Audit outcome

Non-compliant

Non-compliance	Description
Audit Ref: 6.9 With: Clause 8(1) and (2) Schedule 15.2 From: 01-Sep-21 To: 30-Jun-22	**MERI** Exceptional circumstances and best endeavours were not proven for all of a sample of ten ICPs checked. **PSNZ** Exceptional circumstances and best endeavours were not proven for one of a sample of ten ICPs checked. The Meter Read frequency report is including solely unmetered ICPs in its analysis. Potential impact: Low Actual impact: Low Audit history: Twice Controls: Moderate Breach risk rating: 2
Audit risk rating	**Rationale for audit risk rating**
Low	The controls are recorded as moderate because they mitigate risk most of the time but there is room for improvement. The audit risk rating is assessed as low as there is an overall high level of ICPs being read once within 12 months.
Actions taken to resolve the issue	**Completion date** / **Remedial action status**

		Identified
Preventative actions taken to ensure no further issues will occur	**Completion date**	
MERI - Existing processes and controls will continue. ICPs will be migrated to MERX where the implementation of a more automated and targeted process that will apply across all ICPs to manage no reads is expected to improve read attainment compliance for all obligations by ensuring best endeavours requirements are met.	31/12/2022	
PSNZ – We will be continuing with our existing controls until the automation process starts	30/04/2023	

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 January to April 2022.

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

Audit commentary

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

MERI

The monthly meter reading reports provided were reviewed.

Month	Total NSPs where ICPs were supplied > 4 months	NSPs <90% read	ICPs unread for 4 months	Overall percentage read
Jan-22	232	44	1,178	93.01%
Feb-22	231	45	1,186	93.00%

Month	Total NSPs where ICPs were supplied > 4 months	NSPs <90% read	ICPs unread for 4 months	Overall percentage read
Mar-22	228	39	1,272	92.54%
Apr-22	229	41	1,348	92.12%

I reviewed a sample of 11 ICPs not read in the previous four months connected to NSPs where less than 90% of ICPs were read to determine whether exceptional circumstances exist, and if MERI had used their best endeavours to obtain readings. For ten out of 11 examples checked, exceptional circumstances and best endeavours were not proven. Five of these were account managed ICPs. Two ICPs are assigned the 'inhouse' MRU so no scheduled reads are attempted due to health and safety / customer issues.

MERX

The monthly meter reading reports provided were reviewed.

Month	Total NSPs where ICPs were supplied > 4 months	NSPs <90% read	ICPs unread for 4 months	Overall percentage read
Jan-22	401	53	5,604	97.39%
Feb-22	403	54	5,631	97.39%
Mar-22	403	53	5,645	92.54%
Apr-22	409	55	5,771	92.12%

I reviewed a sample of ten ICPs not read in the previous four months connected to NSPs where less than 90% of ICPs were read to determine whether exceptional circumstances exist, and if MERX had used their best endeavours to obtain readings. For one out of ten examples checked, exceptional circumstances and best endeavours were not proven. One ICP from the sample has been inactive since 2004 and should not appear on this report as the ICP has not been active during the assessment period.

PSNZ

The monthly meter reading reports provided were reviewed.

Month	Total NSPs where ICPs were supplied > 4 months	NSPs <90% read	ICPs unread for 4 months	Overall percentage read
Jan-22	347	40	2,383	97.77%
Feb-22	346	35	2,304	97.86%
Mar-22	349	35	2,222	97.94%
Apr-22	349	35	3,322	97.94%

I reviewed ten ICPs not read in the previous four months connected to NSPs where less than 90% of ICPs were read to determine whether exceptional circumstances exist, and if PSNZ had used their best endeavours to obtain readings. Six ICPs had reads and shouldn't be on the report. PSNZ is reviewing the logic of the report. For one out of ten examples checked, exceptional circumstances and best endeavours were not proven.

Audit outcome

Non-compliant

Non-compliance	Description
Audit Ref: 6.10 With: Clause 9(1) and (2) Schedule 15.2 From: 01-Sep-21 To: 30-Jun-21	**MERI** Exceptional circumstances and best endeavours were not proven for 10 of 11 examples checked. **MERX** Exceptional circumstances and best endeavours were not proven for one of ten examples checked. The Meter Read frequency report is including inactive ICPs in its analysis. **PSNZ** Exceptional circumstances and best endeavours were not proven for one of ten examples checked. Potential impact: Low Actual impact: Low Audit history: Twice Controls: Moderate Breach risk rating: 2
Audit risk rating	**Rationale for audit risk rating**
Low	The controls are recorded as moderate because they mitigate risk most of the time but there is room for improvement. The audit risk rating is assessed as low as the number of NSPs not meeting the 90% read threshold within four months is low.

Actions taken to resolve the issue	Completion date	Remedial action status
		Identified
Preventative actions taken to ensure no further issues will occur	**Completion date**	

MERI - Existing processes and controls will continue. ICPs will be migrated to MERX where the implementation of a more automated and targeted process that will apply across all ICPs to manage no reads is expected to improve read attainment compliance for all obligations by ensuring best endeavours requirements are met.	31/12/2022	
MERX – The meter read frequency reports will be reviewed and will consider making the changes for improvement.	30/04/2023	
PSNZ - The automated process that has been implemented for MERX will be implemented for PSNZ over the next 6 months.	30/04/2023	

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:

- Wells for manually read meters, and
- MEPs for AMI meters.

The data interrogation log requirements were reviewed as part of their MEP and agent audits.

Audit commentary

Compliance with this clause has been demonstrated by Wells and MEPs as part of their own audits.

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 AMS, EDMI and EMS and data collection was reviewed as part of their agent audits. HHR AMI data is collected by MEPs and data collection was reviewed as part of their MEP audits.

Generation HHR data is collected by Meridian, using STARK. Generation data collection processes were reviewed.

Audit commentary

HHR

Compliance with this clause has been demonstrated by AMS, EDMI, EMS and MEPs as part of their audits.

Generation

Meridian interrogates generation station meters using STARK. System overview information was provided to confirm this.

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 AMS, EDMI and EMS and data collection was reviewed as part of their agent audits. HHR AMI data is collected by MEPs and data collection was reviewed as part of their MEP audits.

Generation HHR data is collected by Meridian, using STARK. Generation data collection processes were reviewed.

Audit commentary

HHR

Compliance with this clause has been demonstrated by AMS, EDMI, EMS and MEPs as part of their audits.

The audit found ICP 1001152747CK458 was read manually as part of a meter change and the event log was not downloaded for the removed meter. Non-compliance is recorded.

Generation

Generation data is collected every half hour by Meridian. The following information is collected during each interrogation of HHR metering:

- the unique identifier (device ID) of the meter or data logger,
- the connection time, disconnection time and recorder time,
- the half-hour metering information for each trading period,
- event log, and
- interrogation log.

The event information is collected separately by Quasar Systems Ltd, as an agent to Meridian. This is because the Stark system has difficulty downloading event information. As described in **section 6.5**, the event information is analysed, and appropriate action is taken in accordance with the code.

Audit outcome

Non-compliant

Non-compliance	Description
Audit Ref: 6.13 With: Clause 11(2) Schedule 15.2 From: 01-Apr-21 To: 28-Feb-22	Event logs were not retrieved for ICP 1001152747CK458 for a manual download as part of a meter change in April 2022. 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, and the impact as low, as the process to retrieve event logs during manual downloads is robust.

Actions taken to resolve the issue	Completion date	Remedial action status
The meter was changed so it could be read remotely.	March 2022	Identified
Preventative actions taken to ensure no further issues will occur	**Completion date**	
The failure to retrieve an event log as part of the manual download for ICP 1001152747CK458 was an exception - process controls to ensure event logs are retrieved on manual download are robust.		

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 AMS, EDMI and EMS and data collection was reviewed as part of their agent audits. HHR AMI data is collected by MEPs and data collection was reviewed as part of their MEP audits.

Generation HHR data is collected by Meridian, using STARK. Generation data collection processes were reviewed.

Audit commentary

HHR

Compliance with this clause has been demonstrated by AMS, EDMI, EMS and MEPs as part of their audits.

Generation

An interrogation log is generated by Stark to record details of all interrogations. Appropriate action is taken where problems are apparent. The interrogation log contains the following information:

- the unique identifier of the meter or data logger,
- the time of commencement of interrogation,
- the date of interrogation,
- the operator identifier (machine id),
- the clock errors outside the range specified in clause 12,
- the method of interrogation, and
- the identifier of the reading device used for interrogation (where applicable).

Audit outcome

Compliant

7. STORING RAW METER DATA

7.1. Trading period duration (Clause 13 Schedule 15.2)

Code reference

Clause 13 Schedule 15.2

Code related audit information

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

Audit observation

C&I HHR data is collected by AMS, EDMI and EMS and trading period duration was reviewed as part of their agent audits. HHR AMI data is collected by MEPs and trading period duration was reviewed as part of their MEP audits.

Generation HHR data is collected by Meridian, using STARK. Processes to check trading period duration were reviewed.

Audit commentary

HHR

Compliance with this clause has been demonstrated by AMS, EDMI, EMS and MEPs as part of their audits.

Generation

Stark sends an automated email to the reconciliation team if the number of seconds recorded does not match the expected number for the half hour. Clock synchronisation is discussed further in **section 6.5**.

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. Raw meter data from at least 48 months prior was reviewed to ensure that it is retained. Meridian's agents retain a copy of the raw meter data, and their compliance with the archiving and storage requirements were reviewed as part of their agent audits.

Meridian's own audit trails were reviewed in **section 2.4**.

Audit commentary

Compliance with this clause has been demonstrated by Meridian's agents as part of their audits.

Access to Meridian's systems is restricted and password protection is in place. Readings cannot be modified without an audit trail being created, and the original data is retained. I viewed these audit trails, and they are discussed in further detail in **section 2.4**.

MERI

I reviewed NHH meter read data in Velocity from 2008 during the audit. Data is archived for more than 48 months as required by the code.

MERX

All data has been retained and will continue to be retained.

PSNZ

All data has been retained and will continue to be retained.

Generation

I traced a sample of data from source, through aggregation process to the NSP volumes submissions for NSPs and HHR volumes for windfarms and compliance is confirmed for each NSP and windfarm.

I reviewed Stark meter data from 2018, confirming that data is archived for more than 48 months as required by the code.

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, and non-metering information was viewed to determine whether the archiving requirements were met.

Streetlight on and off times are collected and archived by EMS, associated processes were reviewed as part of their agent audit.

Audit commentary

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

Compliance with this clause has been demonstrated by EMS as part of their own audit.

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 a reconciliation participant detects errors while validating non-half hour meter readings, the reconciliation participant must:

> *19(1)(a) - confirm the original meter reading by carrying out another meter reading*
>
> *19(1)(b) - replace the original meter reading the second meter reading (even if the second meter reading is at a different date)*
>
> *19(1A) if a reconciliation participant detects errors while validating non half hour meter readings, but the reconciliation participant cannot confirm the original meter reading or replace it with a meter reading from another interrogation, the reconciliation participant must:*

- *substitute the original meter reading with an estimated reading that is marked as an estimate; and*
- *subsequently replace the estimated reading in accordance with clause 4(2)*

Audit observation

Processes for the correction of NHH meter readings were reviewed. Corrections to volumes where meter readings match the value recorded by the meter, such as where a multiplier is incorrect, a meter is defective or bridged, or inactive consumption is identified were reviewed in **section 2.1**.

Audit commentary

Where errors are detected during the validation process, Meridian may either review any photos taken by a meter reader as part of their validation process or request a check meter reading for manually read meters, or review AMI readings for surrounding dates. If an original meter reading cannot be confirmed by reviewing a photo obtained by the meter reader or another reading, the original read is invalidated so it will not be used for billing or reconciliation. An estimated reading is used for billing and forward estimate is created for reconciliation.

Transposed meters are corrected by removing and reinstalling the registers correctly or swapping the readings to the correct registers in Gentrack or Flux. I reviewed one example of a transposed meter for each code and confirmed that they were processed correctly.

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 a reconciliation participant detects errors while validating half hour meter readings, the reconciliation participant must correct the meter readings as follows:

19(2)(a) - if the relevant metering installation has a check meter or data storage device, substitute the original meter reading with data from the check meter or data storage device; or

19(2)(b) - if the relevant metering installation does not have a check meter or data storage device, substitute the original meter reading with data from another period provided:

(i) The total of all substituted intervals matches the total consumption recorded on a meter, if available; and

(ii) The reconciliation participant considers the pattern of consumption to be materially similar to the period in error

Audit observation

HHR corrections are processed by EMS, and compliance was assessed during their agent audit.

Generation corrections are processed by Meridian and compliance was assessed.

Audit commentary

MERI and MERX

HHR corrections are processed by EMS, and compliance was recorded in their agent audit. Ten examples of HHR corrections were provided, and nine were accurately processed. The other example (ICP 0000000039SN915 - MERI) was where the meter skipped three hours and the estimation completed was performed at the end of the affected period (24 Feb 2022) instead of the data for the affected period being shifted by three hours and the gap at the beginning of the affected period (13 Feb 2022) being estimated. This resulted in the consumption pattern for the affected period not aligning with the consumption history of the site. The data has now been adjusted and EMS are reviewing their processes where there is a step time change.

PSNZ

Two AMI meter changes were identified during the audit period and the data corrections across the meter change were reviewed.

ICP	Meter serial number	AMI MEP	HHRAGGS volume for month July 2021 (kWh)	NHH volume from reads (kWh)	Difference (kWh)	% diff
0006504558RNB2E	60B08C151429	ARCS	3325.69	3318.957	-6.733	-0.2%
0006504558RNB2E	250770659	NGCM				
0006886795RN35A	70C08C011578	ARCS	3546.57	3584.169	37.599	1%
0006886795RN35A	250870274	NGCM				

FLUX applies a default estimation value of 0.42 kWh for missing intervals for up to one full day of missing data. Any data missing for more than one full day is not estimated and it is expected that the Energy Data analysts will be actively monitoring HHR data completeness and where extended data gaps are identified that the ICP will be transitioned back to NHH submission. Since the transfer of the HHR submission function for PSNZ from Masterton to Christchurch, this monitoring function has not been undertaken.

Estimates are replaced with actual data if it becomes available at a later date, by loading a replacement data file. This process was confirmed during the audit where the AMI MEP proactively provides outstanding data, however as PSNZ does not actively monitor outstanding AMI HHR data initial HHR estimations using the default estimation values applied become permanent HHR corrections because no effort is made to identify and escalate HHR data gaps to the AMI MEPs.

Raw meter data is not overwritten as part of this process and is retained.

Generation

Meridian obtains Transpower's SCADA data, which is used as a comparison to their generation quantities and can be used as a basis for correction if necessary.

I checked the records for MAN.LS_T9 meter for 19 May 2022 where data was missing due to a failure. Replacement values were provided by the generation team. Volumes were confirmed to be correct and flowed through to submission information, and an appropriate audit trail was viewed.

Audit outcome

Non-compliant

Non-compliance	Description
Audit Ref: 8.2 With: Clause 19(2) Schedule 15.2 From: 01-Sep-21 To: 30-Jun-22	**MERI** Correction of HHR data for ICP 8000000039SN915 following a time correction did not ensure the consumption pattern for the affected period was consistent with the history for the ICP. **PSNZ** HHR data corrections do not reflect total measured consumption of the profile for ICPs 0006504558RNB2E & 0006886795RN35A, 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 overall as EMS process are robust however PSNZ has limited controls in place. The impact as low, as the process to complete C&I estimations is robust and the PSNZ AMI kWh impact is currently small.

Actions taken to resolve the issue	Completion date	Remedial action status
<u>MERI (EMS)</u> The data was reviewed and as appropriate adjusted.	Aug 2022	Cleared
Preventative actions taken to ensure no further issues will occur	**Completion date**	

MERI (EMS) This issue was discussed with staff and the process will be modified where there are step time changes. PSNZ We acknowledge that HHR estimation methodology in Flux is limited and controls to manage the small number of ICPs settled intermittently as HHR require improvement. We will conduct a full review of our processes and controls should we continue to use HHR settlement functionality for any ICPs in future.	Aug 2022 30/04/2023	

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

A reconciliation participant may use error compensation and loss compensation as part of the process of determining accurate data. Whichever methodology is used, the reconciliation participant must document the compensation process and comply with audit trail requirements set out in the Code.

Audit observation

Error and loss compensation arrangements were discussed. The change control process was reviewed.

Audit commentary

MERI

Compensation arrangements are in place for some generation stations, including Whitehill, Manapouri, and Te Apiti. The loss factor is applied within the station metering, and not to the raw data after interrogation.

The loss factors are provided by Powernet annually, and Meridian have a reminder set to check for these two months before the change is expected. Meridian raises a service request for their contractor to update the loss factor in the meter if a change is required. There were no changes to the loss factors during the audit period.

EMS also interrogate a number of MERI grid generation and embedded windfarm metering points and provide this data to the Pricing Manager of MERI's behalf each day. I observed the EMS process for data collection, validation and provision of data to the pricing manager for Whitehill windfarm embedded generation. The EMS process also includes a step to apply loss compensation to the collected meter data. Given the compensated channels from the meter already include a loss compensation calculation to include the distribution network loss factors there is a risk that both the meter and EMS has performed loss adjustment to the data provided to the pricing manager if EMS are using compensated logger channels as part of their process. I recommend that MERI undertakes a comparison of Pricing manager data files provided by EMS as MERI agent to the compensated bus level meter data for the same day/period to confirm that correct data is being provided to the Pricing Manager for Whitehill windfarm embedded generation.

Recommendation	Description	Audited party comment	Remedial action
Regarding Clause 19(3) Schedule 15.2	MERI to undertake a comparison of Pricing manager data files provided by EMS as MERI agent to the compensated bus level meter data for the same day/period to confirm that correct data is being provided to the Pricing Manager for Whitehill windfarm embedded generation.	MERI will conduct this comparison.	Identified

MERX and **PSNZ**

All metered ICPs have metering category 1 or 2 and no error or loss compensation arrangements are required.

Audit outcome

Compliant

8.4. Correction of HHR and NHH raw meter data (Clause 19(4) and (5) Schedule 15.2)

Code reference

Clause 19(4) and (5) 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:*

19(5)(a)- the date of the correction or alteration
19(5)(b)- the time of the correction or alteration
19(5)(c)- the operator identifier for the person within the reconciliation participant who made the correction or alteration
19(5)(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
19(5)(e)- the technique used to arrive at the corrected data
19(5)(f)- the reason for the correction or alteration.

Audit observation

Corrections are discussed in **sections 2.1, 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**.

Audit commentary

For all NHH and generation corrections reviewed in **sections 2.1, 8.1** and **8.2**, I confirmed that the raw meter data was not overwritten, and the journals created were compliant.

The EMS agent audit report recorded compliance for HHR corrections, and the corrections reviewed were compliant.

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 Meridian'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

MERI

HHR

Compliance for C&I HHR readings is recorded in the EMS agent audit report.

NHH

As discussed in **section 6.6**, some actual disconnection and reconnection reads are available but are not being validated resulting in the volumes being reconciled using forward estimates.

Photo and customer readings are not recorded as actual readings for submission purposes but as noted in **section 6.6**, they are used as validated reads for submission if they can be validated against another validated read. Velocity treats all previously validated reads the same regardless of their source. Therefore, a customer or photo read can be validated against another customer or photo read which was previously validated, instead of a set of validated actual readings from another source. No examples of this were found during the audit but I confirmed that the process remains unchanged since the last audit. I checked one customer read and it was correctly recorded as a customer read in the account notes – this reading was not considered a validated actual read in the settlement process.

The following switch event meter reading issues were identified in **sections 4.3** and **4.10:**

- at least one ICP with actual reading labelled as estimate, and
- at least ten ICPs with estimated readings labelled as actuals.

MERX

HHR

Compliance for C&I HHR readings is recorded in the EMS agent audit report.

NHH

Photo and customer readings are not recorded as actual readings for submission purposes but as noted in **section 6.6**, they are used as validated reads for submission if they can be validated against another validated read.

As recorded in **section 4.4**, ICP 1000518553PC930 should have had the reading recorded in Flux as an actual but it was recorded as a validated estimate.

As recorded in **section 4.10**, one ICP had an incorrect read type of actual recorded.

PSNZ

HHR

PSNZ HHR readings are sourced from AMI MEP data files – only actual data is provided by the MEPs involved in the PSNZ HHR submissions. Users are unable to view HHR estimates in Flux. I recommend system changes are made to ensure estimates can be viewed, so that it can be confirmed they are correctly identified.

Recommendation	Description	Audited party comment	Remedial action
Regarding Clause 3(3) Schedule 15.2	Ensure that HHR estimates in Flux can be viewed by users and ensure they are correctly labelled.	We will conduct a full review of our processes and controls should we continue to use HHR settlement functionality for any ICPs in future.	Investigating

NHH

Photo and customer readings are not recorded as actual readings for submission purposes but as noted in **section 6.6**, they are used as validated reads for submission if they can be validated against another validated read.

As recorded in **sections 4.10** and **4.11**, where there is a difference between the last read billed to the customer and the read Flux has designated as the switch event read, a "read dispute" is created. These "read disputes" must be checked and resolved by confirming which read should be applied before the CS can be issued. Users confirm the reading to be applied using the "change final readings" box, but this only allows the user to change the read value not the read type. This means that if an estimate is replaced with an actual or vice versa, the read type will not be correctly recorded. Flux superusers can change the read type, but access to these logins is restricted to a very small number of users in the management team. Three of a sample of ten transfer switches and five of a sample of ten ICPs with changed readings for move switches had the readings recorded as estimates and they should have been recorded as actuals.

Generation

Generation volumes are appropriately marked to show whether they are estimated or actual at trading period level.

Audit outcome

Non-compliant

Non-compliance	Description
Audit Ref: 9.1 With: Clause 3(3) Schedule 15.2 From: 01-Jul-21 To: 31-May-22	Some incorrectly labelled meter readings, as follows: **MERI** At least one ICP with actual reading labelled as estimate. At least ten ICPs with estimated readings labelled as actuals. **MERX** One ICP with actual labelled as estimate. One ICP with estimate labelled as actual. **PSNZ** Actual readings labelled as estimates for eight of a sample of 20 ICPs where read changes had occurred. Actual readings labelled as estimates for five of a sample of five move switch CS files. Potential impact: Low Actual impact: Low Audit history: Multiple times previously Controls: Weak Breach risk rating: 3
Audit risk rating	**Rationale for audit risk rating**
Low	Controls are rated as weak because they do not adequately mange the risk of incorrect identification of readings. The audit risk impact is low as the volume of reads affected by this is low.

Actions taken to resolve the issue	Completion date	Remedial action status
Please refer to our comments in sections 4.3 and 4.10		Identified
Preventative actions taken to ensure no further issues will occur	**Completion date**	
PSNZ – Actual reads labelled as estimates when sending an RR – This issue has been identified as a training issue and has now been resolved	27/09/2022	

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 **section 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.

The following parties collect volume information:

- EMS collects HHR data as an agent,
- EDMI collects HHR data as an agent which is provided to EMS for submission,
- AMS collects HHR data as an agent which is provided to EMS for submission,
- Wells collects manual NHH data as an agent,
- MEPs provide HHR AMI data and readings, and
- Meridian collects generation station information.

Audit commentary

HHR

C&I HHR submissions are prepared by EMS, using data collected by AMS, EDMI and EMS. Compliance is recorded for all agents. EDMI provides HHR data to Meridian's HHR agent, EMS, in HHF format, which is unrounded.

PSNZ sources AMI interval data for its HHR submissions and compliance is confirmed.

NHH

A sample of NHH and AMI reads and volumes were traced from the source files to Velocity and Flux as detailed in **section 2.3**.

Data imported into Flux and Velocity from MTRX, IHUB and FCLM is still being truncated to zero decimal places prior to the creation of volume information. This is recorded as non-compliance.

Flux allows the number of digits to be recorded for each meter register, for example "5" for a meter with five digits and no decimal places, or "5.3" for a meter with five digits and three decimal places. Digit information is normally taken from the registry, or meter installation paperwork. Reads are imported into

Flux based on this digit information, with any additional digits truncated. For example, if a reading is 12345.6789, a "5" digit meter will record 12345, and a "5.3" digit meter will record 12345.678.

The previous audit recorded an issue with inaccurate submission information for ARC Innovations meters when used for HHR settlement. No Arc innovations meters have HHR settlement for the MERX or MERI participant codes. PSNZ has five HHR ICPs with ARC as the MEP where interval data only has one decimal place and is therefore inaccurate. This is recorded as non-compliance in **section 2.1**.

Generation

I traced a sample of data from source, through aggregation process to the NSP volumes submissions for NSPs and HHR volumes for windfarms and compliance is confirmed for each NSP and windfarm.

Audit outcome

Non-compliant

Non-compliance	Description
Audit Ref: 9.3 With: Clause 3(5) Schedule 15.2 From: 01-Sep-21 To: 30-Jun-22	**MERI, MERX** and **PSNZ** Raw meter data is truncated upon receipt and not when volume information is created for MTRX, IHUB and FCLM meters. Potential impact: None Actual impact: None Audit history: Three 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 to settlement and switch read accuracy is minor.

Actions taken to resolve the issue	Completion date	Remedial action status
Flux development work scheduled to resolve this issue was delayed due to higher priority work. It remains on the development backlog but the timeframe for when this will be scheduled is currently unknown. We will continue to follow this up for resolution.	Ongoing	Identified
Preventative actions taken to ensure no further issues will occur	**Completion date**	
We have reviewed the reasons digits recorded for these providers meters do not include decimal places in the system to ensure meters for any future providers include them. We have raised a Flux improvement request and it is currently in the development backlog. The timeframe for this to be scheduled is unknown. We will continue to follow up for a resolution.	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

Where HHR data must be estimated, and check metering data is not available, then data from a period with a quantity and profile similar to that expected is used.

The HHR estimation process was examined, including review of a sample of estimates.

Audit commentary

MERI and MERX

EMS produces HHR submissions and prepares HHR estimates for MERI and MERX. Compliance was confirmed as part of their agent audit. I reviewed six HHR estimates and confirmed that the best endeavours requirements were met.

PSNZ

PSNZ only produces HHR submissions and estimates for a small number of category 1 and 2 AMI meters for less than 50 ICPs on a single network.

Where the AMI MEP does not provide data of all or part of a day for a meter, or the AMI interval data is not flagged as passed validation by the AMI MEP in the HHR data file provided for PSNZ, AMI interval data is not loaded into the BI Hub.

PSNZ does not have a mechanism to identify missing or failed validation interval data for HHR settled ICPs therefore no attempts are made to escalate these data issues to the AMI MEP for resolution or confirmation that data is unrecoverable before any estimation is performed.

Flux's current HHR estimation process estimates 0.42 kWh per trading period. No additional estimations appear to be performed for subsequent days where data is missing for more than the initial day.

The previous two audits recommended that PSNZ develop a process to estimate based on readings on each side of the missing period, and profiles for a similar period, to ensure that permanent and temporary estimates are the "best estimate of the quantity" as required by the code. It is possible for estimates to be manually calculated based on surrounding reads and imported into Flux as a file. This recommendation has not been implemented and I did not observe a process to identify missing interval data to enable PSNZ to transition the affected ICP back to NHH submission prior to the interval data gap therefore non-compliance is now recorded.

Generation

Meridian produces generation submission information and prepares HHR estimates.

Correction processes for generation are described in **section 8.2**. The same process is used in the event that an estimation is required. I checked the records for MAN.LS_T9 for 19 May 2022 where data was missing due to a failure. Replacement values were provided by the generation team. Volumes were

confirmed to be correct and flowed through to submission information, and an appropriate audit trail was viewed.

Audit outcome

Non-compliant

Non-compliance	Description
Audit Ref: 9.4 With: Clause 15 Schedule 15.2 From: 01-May-21 To: 31-Aug-21	**PSNZ** Best endeavours not met for PSNZ HHR estimations. Potential impact: Low Actual impact: Low Audit history: None Controls: Moderate Breach risk rating: 2
Audit risk rating	**Rationale for audit risk rating**
Low	The controls are recorded as moderate because the EMS controls for C&I estimations and MERI controls around Grid Generation estimations remains strong, whereas PSNZ has no effective controls in place The risk rating is low as only a single network is affected and while there is an impact to the calculation of seasonal shapes for that network impacting all NHH traders on that network, the incidence of incorrect estimations is small.

Actions taken to resolve the issue	Completion date	Remedial action status
		Identified
Preventative actions taken to ensure no further issues will occur	**Completion date**	
PSNZ We acknowledge that HHR estimation methodology in Flux is limited and controls to manage the very small number of ICPs settled intermittently as HHR require improvement. We will conduct a full review of our processes and controls, including where HH data received from an MEP is not complete, should we continue to use HHR settlement functionality for any ICPs in future.	30/04/2023	

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 zero values.

Audit observation

I reviewed and observed the NHH data validation process, including checking a sample of data validations and work queues.

Audit commentary

MERI

NHH data is validated by several processes.

Meter reader validation

For non-AMI reads collected by Wells, the handheld data input devices perform a localised validation to ensure that the reading is within expected high-low parameters. Readings outside these parameters must be re-entered and acknowledged by the data collector. A meter cannot be skipped without reading unless a reason is entered. Wells is required to identify issues which may affect metering information accuracy, such as stopped or damaged meters, and report this information to Meridian. This is discussed further in **section 6.6**.

Read import validation

Reads are imported into the BI Hub, and then transferred to Velocity. For AMI meters a monthly read is transferred to Velocity on the scheduled read date, which is allocated to a pre-set billing header for the ICP.

File manager validations are completed on read import, including checks for file format errors, file corruption, read dates outside of expected parameters, and invalid metering information. These errors are sent to a billing team exception queue and the file is normally returned to the meter reading contractor for resolution.

Billing validation

Once imported, billing validations are completed, and exceptions are reviewed by the billing team. Typically, one person completes the validations now that Velocity customer numbers have decreased. It is expected that validations will be completed by 12pm each day, before the afternoon billing run is completed. If data is validated later in the day, billing will occur in the next overnight billing run.

To confirm the process, I reviewed Meridian's Velocity work queues and validation summaries. Velocity's validations identify:

- meter reads inconsistent with metering information, including a different number of digits or decimals to what is expected,
- a no reading without a no read code provided,
- invalid or missing read type codes,
- negative consumption,
- unexpected consumption including daily average consumption exceeding expected limits for the customer price plan, consumption on removed registers, high or low charges, consumption on vacant ICPs, and meter readings provided on an unmetered sequence,

- unexpected read dates including reads before scheduled date, billing cycle too long or too short, and reads after contract expiry, and
- multiple readings on the same day.

Reads for ICPs with a non-billable (disconnected or vacant) status are loaded into the Velocity consumption history but are not billed to the customer. They are validated if the consumption is calculated to be more than 200 kWh as described in **section 6.6**.

Warnings are created where there is no consumption to bill, no reading, the customer is to be finalled, or an out of cycle read is booked. Out of cycle and final readings have billing headers created. Out of cycle readings will bill automatically if they pass the validations but a warning will be created if they fail (e.g., creating a short billing period). A warning will be produced for final bills so that the user can check that a reading for the correct final bill date is applied.

Zero consumption

Zero consumption is identified through a validation check which is triggered where the reading is the same as the previous reading.

Reports of ICPs with zero consumption are run and reviewed on an ad hoc basis as time allows. Staff contact the customer to confirm whether there is genuine zero usage and a fault is raised if necessary.

Individual ICPs can be flagged as having "zero consumption excepted" to stop this exception being generated where zeros are expected and valid. Processes are in place to identify irrigation customers and supress estimation where the ICP is not consuming and read cannot be obtained, to prevent over estimation.

Vacant ICPs with consumption

All vacant ICPs go through the vacant disconnection process, described in **section 3.9**. Letters are sent to the property, and vacant sites are not disconnected unless Meridian can confirm that electricity consumption is very low or zero.

There is a project underway to determine whether long term vacant sites can be decommissioned and arrange decommissioning where necessary.

MERI continues to attempt to read vacant ICPs, but they do not go through the full billing validation because there is no customer to bill.

Inactive ICPs with consumption

Disconnected ICPs with consumption are not identified through the billing validations, because ICPs with a disconnected status are not billed.

The revenue assurance team were generating a daily report of inactive ICPs with consumption however this report has not been run for some time.

When the report is run it shows the date the ICP became inactive and compares the first actual reading on or after the inactive date to the latest actual reading received. The revenue assurance team would then work through the report prioritising the ICPs with the highest consumption while inactive first. Checks would be completed to determine whether the consumption is genuine, or relates to meter reading issues, a meter fault, or a reconnection performed by a new gaining retailer. If an ICP switches away or a new customer moves in from an effective date that does not account for the inactive consumption, then the ICP no longer appears on the report and no further action is taken.

As discussed in **section 6.6** the inability to enter or process received disconnection or reconnection reads also impacts the accuracy of the inactive consumption reports for each participant code as the ICP candidates are determined by the registry status event. Without a suitable boundary reading being applied this report produces a subset of potential exceptions for the team to investigate as the report

requires two actual reads to be present after the date of the status change to be able to detect inactive consumption. This then delays follow up actions as the report needs to wait for a second actual read to occur post disconnection before presenting the exception to a user to determine if further action is required.

If the consumption appears to be genuine, the ICP would be put through the vacant process and then disconnected. The status is not normally corrected, and the reads are not validated unless a customer signs up and the reads can be recorded against their account.

The reconciliation team would also review this report and validate readings where consumption is present, so that the reads will be used by the historic estimate calculations.

However, as this report has not been run, this process has not been performed.

Bridged meters

MERI does not initiate meter bypass instructions to any MEP or contractor. If MERI request a remote reconnection, the MEP is expected to either conduct this, or make necessary arrangements for reconnection without bypassing. Where it is necessary to bypass a meter for safety reasons after hours, Meridian's contracts with service providers specify that they must return the following day to un-bridge the meter. MEPs are not always able to complete the un-bridge meter task the next day for a number of reasons and as a consequence the period of meter bridging cannot always be determined via the returned service order for the remote reconnection.

IHUB will not proceed until a works order has been generated by Meridian to return to site to complete the un-bridge task

Reconciliation submissions

Processes to review reconciliation submission information are discussed in **section 12.3.**

MERX

There are several steps to validation of NHH data.

Meter reader validation

For non-AMI reads collected by Wells, the handheld data input devices perform a localised validation to ensure that the reading is within expected high-low parameters. Readings outside these parameters must be re-entered and acknowledged by the data collector. A meter cannot be skipped without reading unless a reason is entered. Wells is required to identify issues which may affect metering information accuracy, such as stopped or damaged meters, and report this information to Meridian. This is discussed further in **section 6.6**.

Read import validation

The second level of validation occurs when the data reaches MERX. The Flux validation checks the following:

- meter and register number match,
- missing readings,
- invalid dates and times,
- consumption more than 150% of that expected,
- consumption less than 50% of the previous month,
- readings lower than the previous reading, and
- transposed reads.

Billing validation

Once imported, billing validations are completed, and exceptions are reviewed by the billing team. These identify:

- long billing period (over 60 days),
- short billing period (less than 14 days),
- high consumption validation – works as a two step check
    - Step one – current bill consumption must exceed last bill high consumption tolerance by parameter (currently 50%)
    - Step two - current bill consumption must exceed large consumption volume parameter amount (residential = 1350 kWh business = 3000 kWh) by more than high consumption percentage threshold (currently 150%).
- Low amount – check to identify if any bill value less than set threshold ($-5.00),
- Negative bill amount threshold – identify where any bill value is less than set threshold ($-50.00).

Exceptions are initially investigated via automated exception decision trees that enable many false positive exceptions to be auto closed to reduce the volume of exceptions for the billing team to manually investigate. This reduces delays in the validation process therefore more validated reads available for submission plus enables the billing team to spend more time checking genuine exceptions.

All exceptions are reviewed either via automated or manual checks and approved, or the reading is invalidated

Zero consumption

Zero consumption is monitored through the low consumption exceptions, and cross checked against meter event information provided by MEPs and meter reading, condition and no read information provided by Wells. Instances of zero consumption are investigated, and outbound calls, check readings and site visits are organised as necessary

Consumption while inactive

Disconnected vacant sites are checked weekly using the disconnected vacancies report. The report provides a full list of disconnected ICPs and highlights any consumption that has occurred since disconnection.

This is an operational report which shows the date the ICP became inactive and compares the first reading on or after the inactive date to the latest reading received. Only current inactive ICPs appear on this report and where inactive consumption has occurred previously then this does not appear in the report.

The revenue assurance team works through the report prioritising the ICPs with the highest consumption while inactive first. Checks are completed to determine whether the consumption is genuine, or relates to meter reading issues, a meter fault, or a reconnection performed by a new gaining retailer. If another retailer has requested a reconnection without sending an NT, MERX follows up with the other retailer.

Where the consumption appears to be genuine, the ICP is put through the vacant process and then disconnected. The registry status is not normally updated to active resulting in this consumption volume not being included in the settlement process and is recorded as non compliance in **sections 12.2 and 12.7**. If unauthorised reconnection occurs again, a site investigation will be carried out.

In most cases a disconnection read is not entered into FLUX from the disconnection works order. For non-AMI meters this mean the report cannot detect inactive consumption until after two actual reads are recorded for a meter register. This reporting limitation understates the number of ICPs requiring investigation and the volume of inactive consumption that is not being included in the settlement process

For AMI meters that have undergone a remote disconnection – as the daily, end of day reads, provided by AMI MEPs are processed into FLUX thereby reducing the inaccuracy risk of the inactive consumption report.

Bridged meters

MERI does not initiate meter bypass instructions to any MEP or contractor. If MERI request a remote reconnection, the MEP is expected to either conduct this, or make necessary arrangements for reconnection without bypassing. Where it is necessary to bypass a meter for safety reasons after hours, Meridian's contracts with service providers specify that they must return the following day to un-bridge the meter. MEPs are not always able to complete the un-bridge meter task the next day for a number of reasons and as a consequence the period of meter bridging cannot always be determined via the returned service order for the remote reconnection.

IHUB will not proceed until a works order has been generated by Meridian to return to site to complete the un-bridge task

Vacant and Disconnected ICPs with consumption

The processes for management of vacant ICPs and inactive ICPs with consumption are the same as for MERI but the reporting available in Flux is less sophisticated and therefore the process is more manual.

Reconciliation submissions

Processes to review reconciliation submission information are discussed in **section 12.3.**

PSNZ

Data validation for NHH metering information occurs at multiple levels.

Meter reader validation

For non-AMI reads collected by Wells, the handheld data input devices perform a localised validation to ensure that the reading is within expected high-low parameters. Readings outside these parameters must be re-entered and acknowledged by the data collector. A meter cannot be skipped without reading unless a reason is entered. Wells is required to identify issues which may affect metering information accuracy, such as stopped or damaged meters, and report this information to Meridian. This is discussed further in **section 6.6**.

Read import validation

Read import validation occurs when the reads are imported into Flux, and includes:

- meter and register number match,
- missing readings,
- invalid dates and times,
- consumption more than 500% of that expected, and
- readings lower than the previous reading.

Transposed reads are identified through the checks for high and negative consumption.

Any exceptions are reviewed and approved, or the reading is invalidated.

Billing validation

Billing validation occurs during the invoicing process and includes:

- long billing period (over 60 days),
- short billing period (less than 14 days),
- high consumption validation – works as a two step check
    - Step one – current bill consumption must exceed last bill high consumption tolerance by parameter (currently 50%)
    - Step two - current bill consumption must exceed large consumption volume parameter amount (residential = 1350 kWh business = 3000 kWh) by more than high consumption percentage threshold (currently 150%).

- Low amount – check to identify if any bill value less than set threshold ($-5.00),
- Negative bill amount threshold – identify where any bill value is less than set threshold ($-50.00).

Exceptions are initially investigated via automated exception decision trees that enable many false positive exceptions to be auto closed to reduce the volume of exceptions for the billing team to manually investigate. This reduces delays in the validation process therefore more validated reads available for submission plus enables the billing team to spend more time checking genuine exceptions.

All exceptions are reviewed either via automated or manual checks and approved, or the reading is invalidated.

Zero consumption

Zero consumption is monitored through the low consumption exceptions, and cross checked against meter event information provided by MEPs and meter reading, condition and no read information provided by Wells. Instances of zero consumption are investigated, and outbound calls, check readings and site visits are organised as necessary.

Consumption while inactive

The same process as for MERX is used for PSNZ.

Disconnected vacant sites are checked weekly using the disconnected vacancies report. The report provides a full list of disconnected ICPs and highlights any consumption that has occurred since disconnection.

This is an operational report which shows the date the ICP became inactive and compares the first reading on or after the inactive date to the latest reading received. Only current inactive ICPs appear on this report and where inactive consumption has occurred previously then this does not appear in the report.

The revenue assurance team works through the report prioritising the ICPs with the highest consumption while inactive first. Checks are completed to determine whether the consumption is genuine, or relates to meter reading issues, a meter fault, or a reconnection performed by a new gaining retailer. If another retailer has requested a reconnection without sending an NT, MERX follows up with the other retailer.

Where the consumption appears to be genuine, the ICP is put through the vacant process and then disconnected. The registry status is not normally updated to active resulting in this consumption volume not being included in the settlement process. If unauthorised reconnection occurs again, a site investigation will be carried out.

In most cases a disconnection read is not entered into FLUX from the disconnection works order. For non-AMI meters this mean the report cannot detect inactive consumption until after two actual reads are recorded for a meter register. This reporting limitation understates the number of ICPs requiring investigation and the volume of inactive consumption that is not being included in the settlement process

For AMI meters that have undergone a remote disconnection – as the daily, end of day reads, provided by AMI MEPs are processed into FLUX thereby reducing the inaccuracy risk of the inactive consumption report.

Bridged meters

MERI does not initiate meter bypass instructions to any MEP or contractor. If MERI request a remote reconnection, the MEP is expected to either conduct this, or make necessary arrangements for reconnection without bypassing. Where it is necessary to bypass a meter for safety reasons after hours, Meridian's contracts with service providers specify that they must return the following day to un-bridge the meter. MEPs are not always able to complete the un-bridge meter task the next day for a number of reasons and as a consequence the period of meter bridging cannot always be determined via the returned service order for the remote reconnection.

IHUB will not proceed until a works order has been generated by Meridian to return to site to complete the un-bridge task

Vacant and Disconnected ICPs with consumption

The processes for management of vacant ICPs and inactive ICPs with consumption are the same as for MERI but the reporting available in Flux is less sophisticated and therefore the process is more manual.

Reconciliation submissions

Processes to review reconciliation submission information are discussed in **section 12.3.**

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 0 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 the meter and data storage device event log for any event that could have affected the integrity of metering data
17(4)(g) – a review of the relevant metering data where there is an event that could have affected the integrity of the metering data.

If there is an event that could affect the integrity of the metering data (including events reported by MEPs but excluding where the MEP is responsible for investigating and remediating the event) the reconciliation must investigate and remediate any events.

If the event may affect the integrity or operation of the metering installation the reconciliation participant must notify the metering equipment provider.

Audit observation

I reviewed the generation, HHR, and AMI data validation processes, including meter event logs and validation checks.

Audit commentary

MERI

HHR

Compliance is recorded in the EMS agent audit report. EMS validates HHR meter readings and refers any issues to Meridian, so that the Meridian account managers can check the consumption with their

customers and confirm whether it appears correct. Billing validations may identify changes in volumes that are outside excepted limit, which are then referred to EMS.

AMI Meters

MERI demonstrated their validation processes for AMI installations. These ICPs are billed and reconciled as NHH sites so validation is based on end of day read received for the billing date and not the half hour interval data. Validation checks are the same as for non-AMI meters, and include:

- missing data,
- invalid dates and times,
- zero data, and
- comparison with previous or expected flow patterns.

Further consumption pattern validation occurs during the billing process and includes:

- long billing period
- short billing period,
- Invoice amount comparison (150% of expected amount), and
- Invoice amount value over expected amount (Low User - $100, Std Residential - $200, SME - $1,000).
- First bill limit ((Low User - $1,000, Std Residential - $2,000, SME -$5,000).

NHH AMI data is provided by MEPs via SFTP. Meter event information is provided and reviewed as follows:

MEP	Provided by	Meter event information provided and reviewed
ARC	ARC	Full event information is provided via SFTP. Any events that require action by Meridian are advised via email.
AMS	AMS	Full event information is provided via SFTP. Any events that require action by Meridian are advised via email.
Smartco		
Intellihub (IHUB)	Intellihub	Full event information is provided via SFTP. Any events that require action by Meridian are advised via email.
Intellihub (MTRX)		
Counties Power		
FCLM	FCLM	Full event information is provided via SFTP. Any events that require action by Meridian are advised via email.
WEL Networks	WEL Networks	Full event information via SFTP, which is reviewed by Meridian. Any events that require action by Meridian are advised via email.

I reviewed an example of meter event information provided via email by an MEP. The event notification was checked and found that they had been actioned appropriately.

The Code now requires that:

If there is an event that could affect the integrity of the metering data (including events reported by MEPs but excluding where the MEP is responsible for investigating and remediating the event) the reconciliation participant must investigate and remediate any events.

The event management process largely relies on MEPs notifying when there is a scenario present that requires action, for example a failed meter, reverse power, phase failure etc. The Code now requires all events to be checked, and the main event not checked is tamper. MEPs don't check tamper events and Meridian does not check tamper events. Many tamper events are false alarms however when analysing all data (events and consumption data) from an AMI meter then such a check can be as effective as a meter reader site visit in identifying potential meter bridging whether this was authorised or not.

The previous audit recommended that Meridian implement a process to check the zero-consumption report in conjunction with the tamper event so that if an ICP appears on the zero-consumption report and has a tamper event, it has a higher priority than if it's just a tamper or just a zero consumption. I repeat this recommendation.

Recommendation	Description	Audited party comment	Remedial action
AMI metering events	Check all metering events, including tamper events and give a higher priority to ICPs where there is zero consumption and a tamper event.	Refer to our comments below	Identified

MERX

HHR

Compliance is recorded in the EMS agent audit report. EMS validates HHR meter readings and refers any issues to Meridian, so that the Meridian account managers can check the consumption with their customers and confirm whether it appears correct. Billing validations may identify changes in volumes that are outside excepted limit, which are then referred to EMS.

AMI Meters

MERX demonstrated their validation processes for AMI installations. These ICPs are billed and reconciled as NHH sites so validation is based on end of day read received for each day and not the half hour interval data. AMI read Validation checks are described in **section 9.5** as read import validations as all end of day reads are loaded into the FLUX system:

- missing data,
- invalid dates and times,
- zero data, and
- comparison with previous or expected flow patterns.

MERX meter event reporting is provided via the same mechanisms as described for MERI above. I reviewed an example of meter event information provided via email by an MEP. The event notification was checked and found that they had been actioned appropriately.

There is additional validation performed as part of the billing process and this is described in **section 9.5.**

Non-AMI Meters

Non-AMI meters undergo an initial set of reading import validations:

- missing data,
- invalid dates and times,
- zero data, and

- comparison with previous or expected flow patterns.

Further consumption pattern validation occurs during the billing process and is described in **section 9.5.**

PSNZ

HHR meters

All HHR readings undergo the NHH validation described in **section 9.5**, and meter event information is reviewed using the same process as for AMI meters namely where the MEP escalates an event that requires action. PSNZ only uploads AMI HHR data that has been flagged by the AMI MP as having passed the AMI MEP checksum validation. Any data that has either not been validated due to insufficient end of day reads being available or where the checksum validation has failed is not loaded by PSNZ. Where FLUX captures an exception in the NHH validation of end of day reads the reading is flagged as an exception for a user to investigate further, however the HHR data is not flagged as an exception and is available for use in downstream processes.

PSNZ does not perform any additional HHR data validations outside file format and invalid date/time checks.

AMI Meters

PSNZ demonstrated their validation processes for AMI installations. The majority of the ICPs are billed and reconciled as NHH sites so validation is based on end of day read received for each day and not the half hour interval data. AMI read Validation checks are described in **section 9.5** as read import validations as all end of day reads are loaded into the FLUX system:

- missing data,
- invalid dates and times,
- zero data, and
- comparison with previous or expected flow patterns.

There is additional validation performed as part of the billing process and this is described in **section 9.5.**

PSNZ meter event reporting is provided via the same mechanisms as described for MERI and MERX above. I reviewed an example of meter event information provided via email by an MEP. The event notification was checked and found that they had been actioned appropriately.

Non-AMI Meters

PSNZ

Non-AMI meters undergo an initial set of reading import validations:

- missing data,
- invalid dates and times,
- zero data, and
- comparison with previous or expected flow patterns.

Further consumption pattern validation occurs during the billing process and is described in **section 9.5**:

Any exceptions are reviewed and approved, or the reading is invalidated

As recorded above for all three participant codes (MERI, MERX and PSNZ), reliance is placed on the ICP specific emails from MEPs to identify relevant events. The supplied event log files from AMI MEPS are not independently reviewed or evaluated by Meridian.

Generation

Stark interrogation occurs every half hour, so there is little risk that data will be overwritten.

Meridian validates data against Transpower SCADA data, and aggregation meters are compared to the sum of the individual meters. The SCADA data is not derived from the revenue metering, so it provides a sound basis for validation.

I reviewed evidence of validity checks for generation metering data, including:

- checks for missing data - the sum of the Stark data is compared to the Transpower SCADA data to ensure data is not missing and there is also a separate check for missing data each business day,
- checks for invalid dates and times - Stark will only collect data if the date and time of the logger matches that to the system to within five seconds,
- checks of unexpected zero values - sometimes zeros are present and are correct and the comparison with SCADA data ensures unexpected zeros are identified,
- comparison with expected flow patterns - generation data does not have an expected flow pattern, so consumption is checked against SCADA data to identify anomalies including unexpected zeros, and differences which are more than the expected daily maximum and daily minimum difference for the meter provided by the generation team, and
- a review of meter and data logger event list - any event that could have affected the integrity of metering is investigated.

Audit outcome

Non-compliant

Non-compliance	Description
Audit Ref: 9.6 With: Clause 17 Schedule 15.2 From: 01-Sep-21 To: 30-Jun-22	**MERI MERX** and **PSNZ** Not all AMI events checked. **PSNZ** HHR data not checked for missing data. No checks of unexpected HHR consumption patterns. Potential impact: Low Actual impact: Low Audit history: Once 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
Meter Event Reporting Development of internal reporting to identify potential tamper events will be investigated.	30/04/2023	Investigating

Preventative actions taken to ensure no further issues will occur	Completion date	
PSNZ HHR Read Validation We acknowledge that HHR estimation methodology in Flux is limited and controls to manage the very small number of ICPs settled intermittently as HHR require improvement. We will conduct a full review of our processes and controls, including where HH data received from an MEP is not complete, should we continue to use HHR settlement functionality for any ICPs in future.	30/04/2023	

10. PROVISION OF METERING INFORMATION TO THE GRID OWNER 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 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

Meridian confirmed that no information is required to be provided in accordance with this clause because there are no embedded generators subject to dispatch instructions.

Audit commentary

Meridian confirmed that no information is required to be provided in accordance with this clause because there are no embedded generators subject to dispatch instructions.

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 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 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

EMS provides unoffered and intermittent generation metering information as Meridian's agent, and compliance was assessed as part of their audit.

Audit commentary

The EMS agent report confirmed compliance.

Audit outcome

Compliant

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

This is conducted by EMS as Meridian's agent. The EMS report confirms compliance.

Audit commentary

This is conducted by EMS as Meridian's agent. The EMS report confirms compliance.

Audit outcome

Compliant

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 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

This is conducted by EMS as Meridian's agent. The EMS report confirms compliance.

Audit commentary

This is conducted by EMS as Meridian's agent. The EMS report confirms compliance.

Audit outcome

Compliant

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

Processes to create buying and selling notifications were reviewed. I checked whether any breach allegations had been made.

Audit commentary

There have not been any breach allegations in relation to this clause during the audit period.

Checks that valid trading notifications are in place are part of the reconciliation report validation checks, discussed 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 NSPs with a small number of ICPs to confirm the AV110 ICP days calculation was correct. I reviewed variances for 16 months of GR100 reports.

Alleged breaches were reviewed.

Audit commentary

MERI

HHR ICP days submissions are produced by EMS, and NHH ICP days submissions are produced by MERI. The process for the calculation of ICP days was examined by checking 100 NSPs with HHR ICPs and 100 NSPs with NHH ICPs against the expected ICP days on the April 2022 submission. I reviewed ICP days differences for a sample of NSPs for April 2022 for four NSPs and found they were timing differences due to switching, meter changes and new connections late paperwork.

Breach information provided by the Electricity Authority did not identify any late ICP days submissions.

The following table shows the HHR ICP days difference between MERI files and the RM return file (GR100) for all available revisions for 16 months, and small differences were found. Negative percentage figures indicate that the MERI ICP days figures are higher than those contained on the registry.

Month	R0	R1	R3	R7	R14
Feb 2021	-0.05%	0.05%	-0.03%	-0.03%	0.00%
Mar 2021	-0.04%	-0.03%	0.01%	0.02%	0.00%
Apr 2021	0.23%	-0.02%	-0.01%	0.03%	-
May 2021	0.21%	0.03%	0.02%	0.01%	-
Jun 2021	0.01%	0.08%	0.10%	0.00%	-
Jul 2021	0.13%	0.11%	0.09%	0.02%	-
Aug 2021	0.16%	0.22%	0.08%	0.02%	-
Sep 2021	0.26%	0.16%	0.03%	0.00%	-
Oct 2021	0.14%	0.16%	0.04%	0.00%	-
Nov 2021	0.02%	0.15%	-0.08%	-	-
Dec 2021	0.51%	0.05%	0.03%	-	-
Jan 2022	0.32%	0.12%	-0.03%	-	-
Feb 2022	0.30%	0.14%	0.04%	-	-
Mar 2022	0.75%	0.41%	-	-	-

Month	R0	R1	R3	R7	R14
Apr 2022	0.41%	0.31%	-	-	-
May 2022	0.03%	-	-	-	-

The following table shows the NHH ICP days difference between MERI files and the RM return file (GR100) for all available revisions for 16 months, and small differences were found. Negative percentage figures indicate that the MERI ICP days figures are higher than those contained on the registry.

Month	R0	R1	R3	R7	R14
Feb 2021	0.01%	0.00%	0.00%	0.00%	0.01%
Mar 2021	0.01%	0.02%	0.00%	0.00%	0.00%
Apr 2021	0.01%	0.02%	0.00%	0.01%	-
May 2021	-0.03%	-0.02%	0.00%	0.01%	-
Jun 2021	-0.03%	0.01%	0.01%	0.01%	-
Jul 2021	0.01%	0.08%	0.02%	0.01%	-
Aug 2021	-0.22%	0.02%	0.03%	0.02%	-
Sep 2021	-0.03%	0.07%	0.03%	0.02%	-
Oct 2021	0.01%	0.03%	0.01%	0.01%	-
Nov 2021	0.02%	0.04%	0.01%	-	-
Dec 2021	0.12%	-0.05%	-0.01%	-	-
Jan 2022	0.06%	-0.08%	0.01%	-	-
Feb 2022	0.40%	0.00%	0.01%	-	-
Mar 2022	0.01%	0.04%	-	-	-
Apr 2022	0.01%	0.02%	-	-	-

Month	R0	R1	R3	R7	R14
May 2022	0.01%	-	-	-	-

I reviewed ICP days differences remaining at revision 7 or later for nine NSPs and found they were timing differences due to switching for three NSPs and for the other six NSPs the known meter downgrade/meter change issue where the new meter is installed a day later than actual – this issue is discussed further and recorded as a non-compliance in **section 6.7**.

Also, ICP 0000050330WT582 relates to the Benmore Power station back up supply which is unmetered ICP with zero kWh/day. Because the daily kWh value is set to zero it is not being included in ICP Days report for MERI.

MERX

HHR ICP days submissions are produced by EMS and NHH ICP days submissions are produced by MERX. The process for the calculation of ICP days was examined by checking 100 NSPs with HHR ICPs and 100 NSPs with NHH ICPs against the expected ICP days on the April 2022 submission. I reviewed ICP days differences for a sample of NSPs for April 2022 for one NSP and found they were timing differences due to incorrect processing of nine switch gains for the same customer where the set ups were applied one day after the actual switch date.

Breach information provided by the Electricity Authority did not identify any late ICP days submissions.

The following table shows the HHR ICP days difference between MERX files and the RM return file (GR100) for all available revisions for nine months since MERX started submitting HHR volumes. and No differences were found.

Month	R0	R1	R3	R7	R14
Sep 2021	0.00%	0.00%	0.00%	0.00%	-
Oct 2021	0.00%	0.00%	0.00%	0.00%	-
Nov 2021	0.00%	0.00%	0.00%	-	-
Dec 2021	0.00%	0.00%	0.00%	-	-
Jan 2022	0.00%	0.00%	0.00%	-	-
Feb 2022	0.00%	0.00%	0.00%	-	-
Mar 2022	0.00%	0.00%	-	-	-
Apr 2022	0.00%	0.00%	-	-	-
May 2022	0.00%	-	-	-	-

The following table shows the ICP days difference between MERX files and the RM return file (GR100) for all available revisions for 16 months, and small differences were found. Negative percentage figures indicate that the MERX ICP days figures are higher than those contained on the registry.

Month	R0	R1	R3	R7	R14
Feb 2021	0.01%	0.00%	0.00%	0.00%	0.00%
Mar 2021	0.01%	0.00%	0.02%	0.00%	0.00%
Apr 2021	0.02%	0.01%	0.00%	0.00%	-
May 2021	0.02%	0.02%	0.01%	0.00%	-
Jun 2021	0.01%	0.00%	0.00%	0.00%	-
Jul 2021	0.01%	0.00%	0.00%	0.00%	-
Aug 2021	0.02%	0.00%	0.00%	0.00%	-
Sep 2021	0.00%	0.00%	0.00%	0.00%	-
Oct 2021	0.00%	0.00%	0.00%	0.00%	-
Nov 2021	0.00%	0.00%	0.00%	-	-
Dec 2021	0.00%	0.00%	0.00%	-	-
Jan 2022	0.00%	0.00%	0.00%	-	-
Feb 2022	0.02%	0.00%	0.00%	-	-
Mar 2022	0.04%	0.00%	-	-	-
Apr 2022	0.03%	0.00%	-	-	-
May 2022	0.04%	-	-	-	-

I reviewed ICP days differences remaining at revision 7 or later for five NSPs. Four were timing differences due to switching which were resolved in later revisions. One related to an incorrect status update performed on the registry for ICP 0495378942LCE09 when the ICP was still connected resulting in a 31-day mismatch.

PSNZ

HHR and NHH ICP days submissions are produced from Flux as a single AV110 file. The process for the calculation of ICP days was examined by checking all three NSPs with HHR ICPs and 100 NSPs with NHH ICPs against the expected ICP days for the April 2022 submission. I reviewed ICP days differences for a sample of NSPs for April 2022 for two NSPs and found they were timing differences due to switching activities.

Breach information provided by the Electricity Authority did not identify any late ICP days submissions.

The following table shows the HHR ICP days difference between PSNZ files and the RM return file (GR100) for all available revisions for 16 months, and small differences were found. Negative percentage figures indicate that the PSNZ ICP days figures are higher than those contained on the registry.

Month	R0	R1	R3	R7	R14
Feb 2021	-	-	-	-	-
Mar 2021	-	-	-	-	-
Apr 2021	-	-	-	-	-
May 2021	0.00%	0.00%	0.00%	0.00%	-
Jun 2021	0.00%	0.00%	0.00%	0.00%	-
Jul 2021	0.00%	0.00%	-1.91%	-1.91%	-
Aug 2021	0.00%	0.00%	-	-4.17%	-
Sep 2021	-	-	-	-	-
Oct 2021	-	-	-	-	-
Nov 2021	-	-	-	-	-
Dec 2021	-	-	-	-	-
Jan 2022	-	-	-	-	-
Feb 2022	-	-	-	-	-
Mar 2022	-	-	-	-	-
Apr 2022	-	-	-	-	-

Month	R0	R1	R3	R7	R14
May 2022	0.00%	-	-	-	-

The following table shows the NHH ICP days difference between PSNZ files and the RM return file (GR100) for all available revisions for 16 months, and small differences were found. Negative percentage figures indicate that the PSNZ ICP days figures are higher than those contained on the registry.

Month	R0	R1	R3	R7	R14
Feb 2021	0.01%	0.00%	0.00%	0.00%	0.00%
Mar 2021	0.00%	0.00%	0.00%	0.00%	0.00%
Apr 2021	0.02%	0.00%	0.00%	0.00%	-
May 2021	0.01%	0.01%	0.00%	0.00%	-
Jun 2021	0.01%	0.00%	0.00%	0.00%	-
Jul 2021	0.02%	0.00%	0.00%	0.00%	-
Aug 2021	0.00%	0.00%	-	0.00%	-
Sep 2021	0.01%	0.00%	0.00%	0.00%	-
Oct 2021	0.00%	0.01%	0.00%	0.00%	-
Nov 2021	0.01%	0.00%	0.01%	-	-
Dec 2021	0.01%	0.00%	0.00%	-	-
Jan 2022	0.01%	0.00%	0.01%	-	-
Feb 2022	0.00%	-0.01%	0.00%	-	-
Mar 2022	0.00%	0.00%	-	-	-
Apr 2022	0.02%	-0.01%	-	-	-
May 2022	-0.02%	-	-	-	-

I reviewed ICP days differences remaining at revision 7 or later for nine NSPs and submission types:

- two HHR NSP differences were due to ICPs where an AMI meter change resulted in an incorrect automated registry update of the submission type from HHR to NHH for three ICPs,
- two NHH NSP differences were due to ICPs where an AMI meter change resulted in an incorrect automated registry update of the submission type from HHR to NHH for three ICPs, and
- five NSPs were found to be timing differences due to switching and status update activities.

Audit outcome

Non-compliant

Non-compliance	Description
Audit Ref: 11.2 With: Clause 15.6 of part 15 From: 01-Sep-21 To: 30-Jun-22	**MERI** For six ICPs the count of days reported was one day less due to known meter downgrade/meter change issue where the new meter is installed a day later than actual. Benmore Power station back up supply unmetered ICP with zero kWh/day not included in ICP Days report. **MERX** Nine ICPs associated with NSP TPD0011 EN TENC underreported by one day each due to incorrect start date applied for new connections in Flux. The registry status was incorrect for ICP 0495378942LCE09. **PSNZ** Three HHR ICPs across 2 NSPs had the incorrect submission type recorded in the registry due to meter change triggering an automated incorrect registry update. Potential impact: Low Actual impact: None 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 is rated as low because overall the number of ICP days affected is low.
Actions taken to resolve the issue	**Completion date** / **Remedial action status**

MERI Refer to our comments in sections 6.7 & 3.7 MERX We will review and correct the 9 ICPs that had the incorrect commissioning date applied in Flux and correct these if possible. Registry status for ICP 0495378942LCE09 has been corrected. PSNZ We have made multiple attempts to correct the submission type on the Registry for the 3 ICPs identified however the sequence of metering events has prevented this being correctly reflected as HH.	30/11/2023 N/A	Identified
Preventative actions taken to ensure no further issues will occur	**Completion date**	
We consider our process and controls around calculation of AV-110 generally work well. Errors identified with AV-110 submissions are generally related to data entry errors and are not systemic (with the exception of the issue with downgrades in the Velocity system which will soon be resolved).	31/12/2023	

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 April 2019 to March 2022 were reviewed to confirm whether the relationship between billed and submitted data appears reasonable.

Audit commentary

Monthly, Meridian reviews the GR130 results for the previous 18 months to check for reasonableness and identify any anomalies for each code. I saw evidence of these reviews.

Differences between billed and submission data are monitored as part of the pre submission checks described in **section 12.3**.

MERI

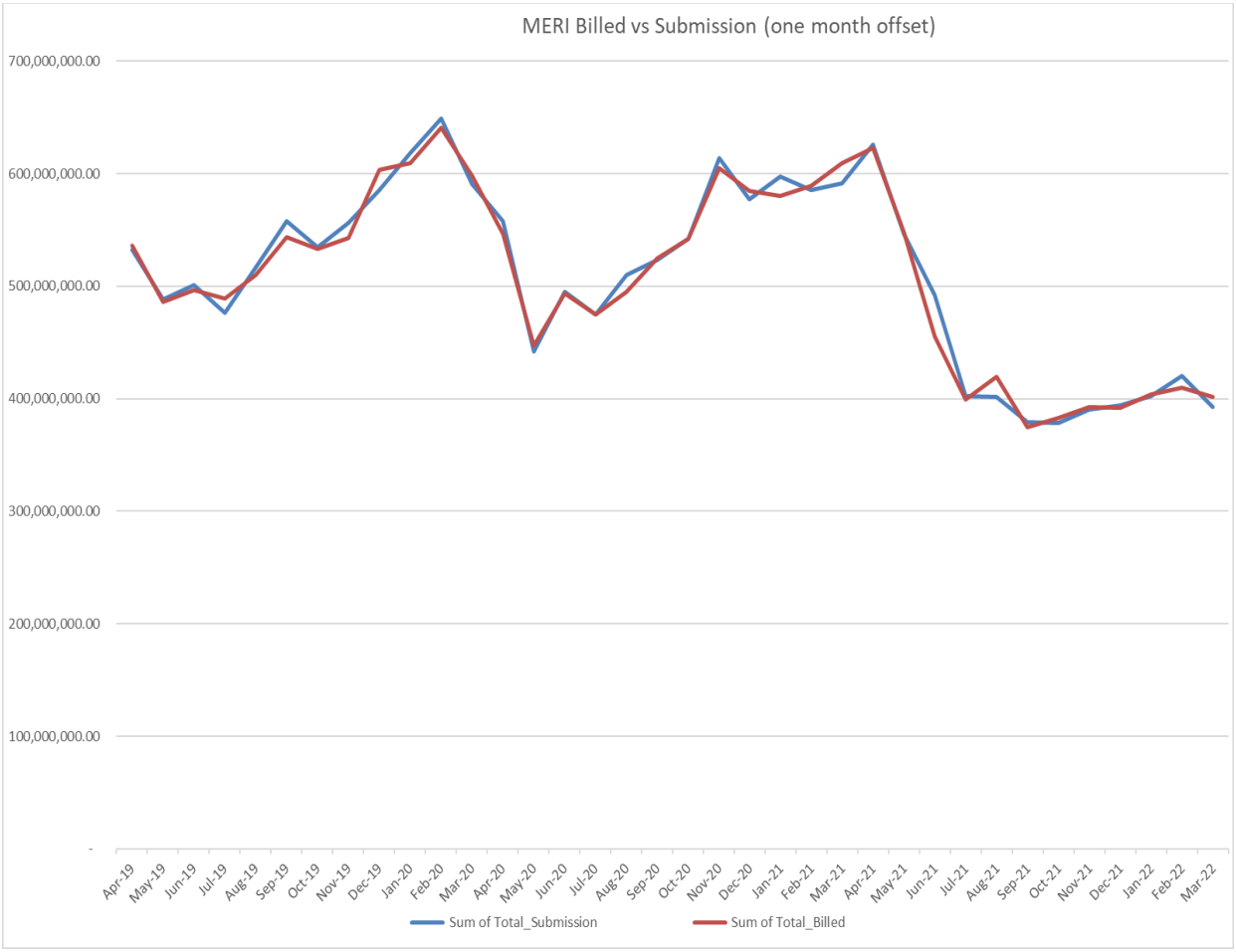
The AV120 report is based on the billed volumes for the meters for metered load both HHR and NHH, and daily average values for unmetered load. The process for the calculation of as billed volumes was examined by checking five NSPs with a small number of ICPs against invoice information. The AV120 consumption matched the metered volumes invoiced during the report month. It was observed that C&I bills records the consumption volumes to two decimal places however the precision of the AV-120 'BILLED' report is set at zero decimal places. I recommend that the AV-120 report format is updated to accurately reflect the billed volumes that has been recorded on the customer's invoice.

Description	Recommendation	Audited party comment	Remedial action
Align level of precision between customers invoices and AV-120 'BILLED' report	I recommend that the AV-120 report format is updated to accurately reflect the billed volumes that have been recorded on the customer's invoice.	We will not be implementing this recommendation as it would require a change to our Velocity system.	Not planned

For unmetered volumes the AV120 consumption matched the volume calculated for the report month (i.e., days in the month x daily unmetered kWh) rather than the unmetered volume billed during the month.

I checked the difference between submission and electricity supplied information from April 2019 to March 2022, and the results are shown below. The difference between billed and submitted data for the year ended March 2022 is 0.1% (billed lower than submitted) and the two years ended March 2022 is 0.4% (billed lower than submitted).


MERI Billed vs Submission
700,000,000.00
600,000,000.00
500,000,000.00
400,000,000.00
300,000,000.00
200,000,000.00
100,000,000.00
-
Apr-19
May-19
Jun-19
Jul-19
Aug-19
Sep-19
Oct-19
Nov-19
Dec-19
Jan-20
Feb-20
Mar-20
Apr-20
May-20
Jun-20
Jul-20
Aug-20
Sep-20
Oct-20
Nov-20
Dec-20
Jan-21
Feb-21
Mar-21
Apr-21
May-21
Jun-21
Jul-21
Aug-21
Sep-21
Oct-21
Nov-21
Dec-21
Jan-22
Feb-22
Mar-22
Sum of Total_Submission
Sum of Total_Billed

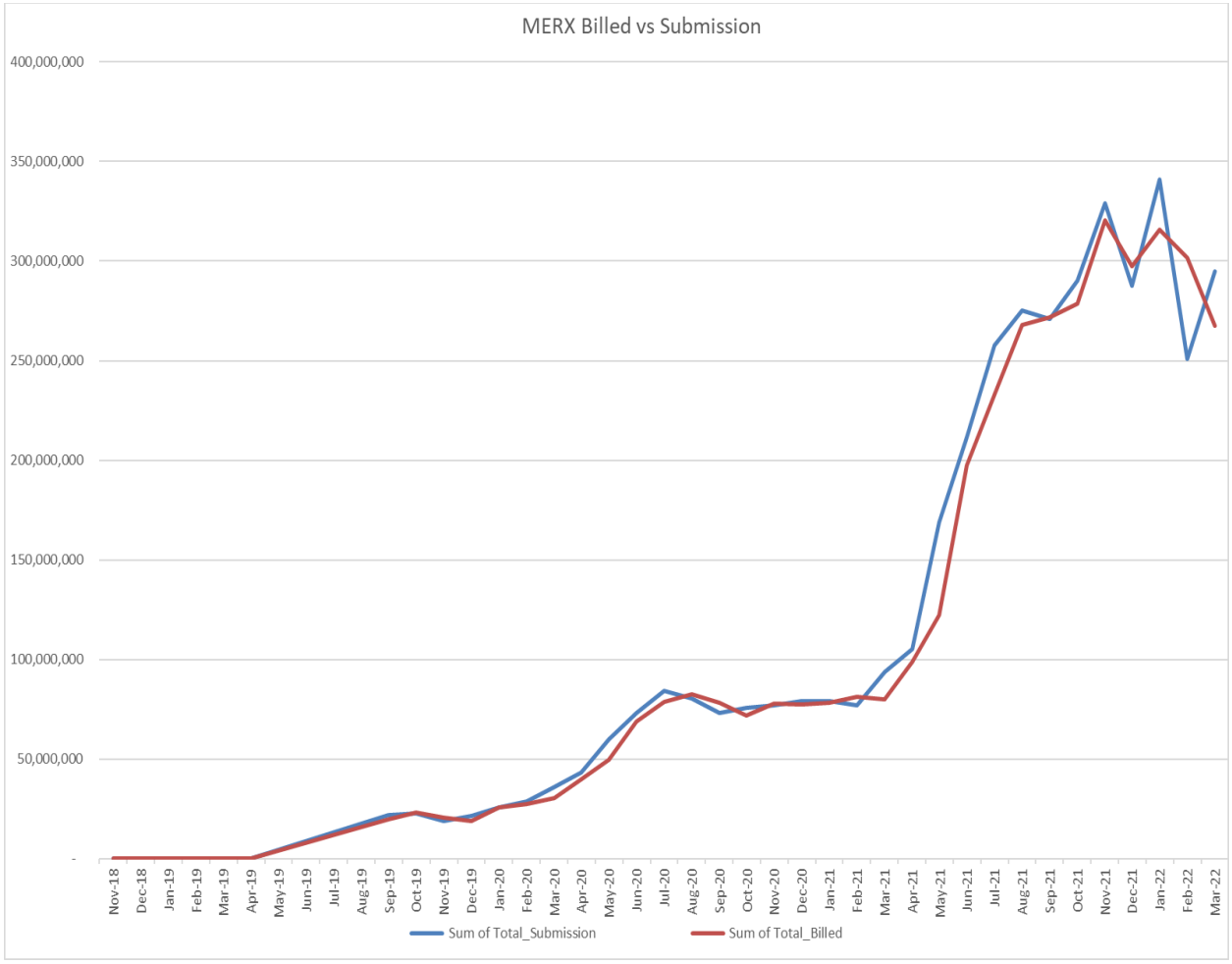


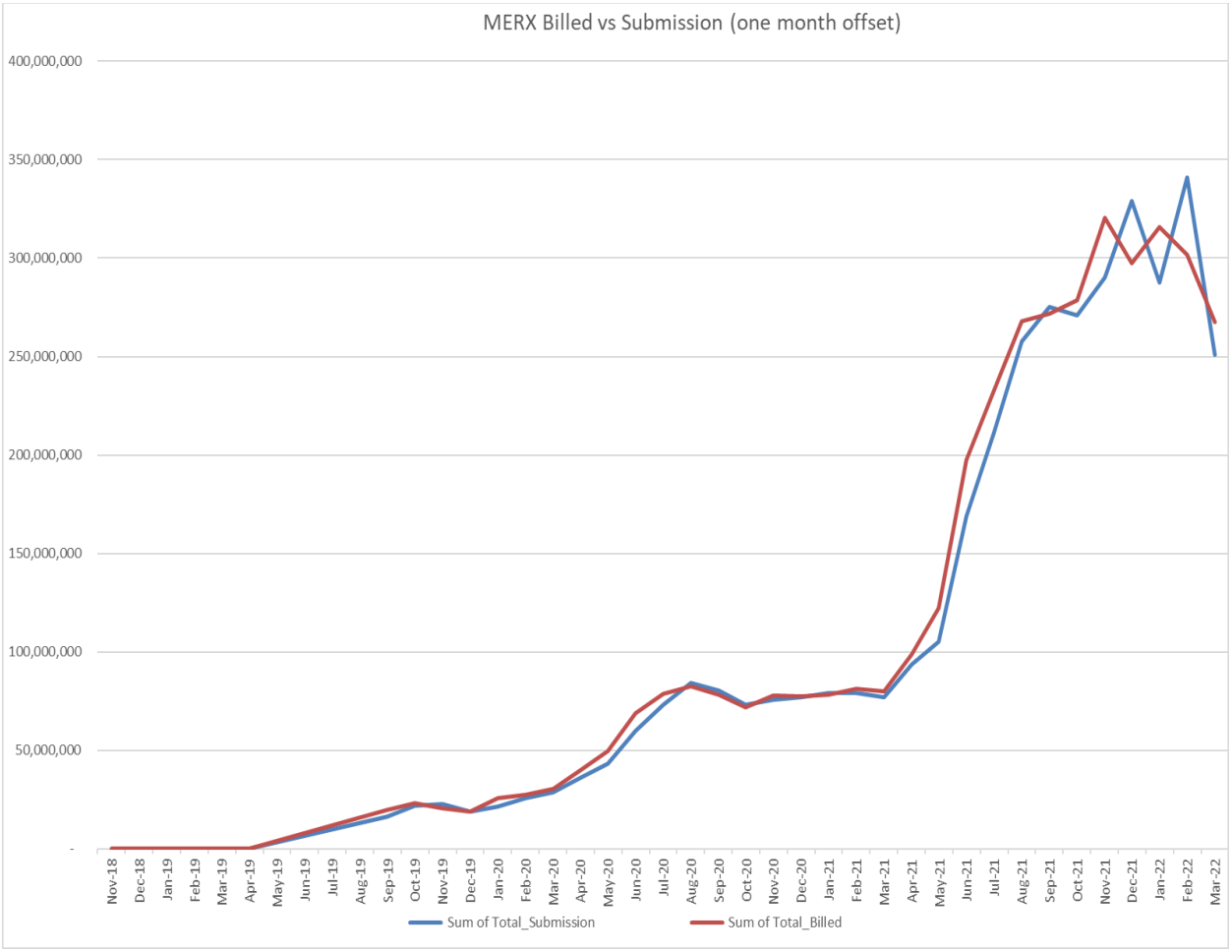
MERX

The process for the calculation of as billed volumes was examined by checking five NSPs with a small number of ICPs against invoice information. The AV120 billed consumption calculation was confirmed to be correct for the NSPs checked.

I checked the difference between submission and electricity supplied information from April 2019 to March 2022, and the results are shown below. The difference between billed and submitted data for the year ended March 2022 is 3.1% (billed higher than submitted) and the two years ended March 2022 is 3.1% (billed lower than submitted).

The differences between billed and submitted data largely appear to be caused by the ongoing migration of ICPs from Velocity (MERI) to Flux (MERX), and timing differences. The differences are expected to decrease over time once migration is complete.

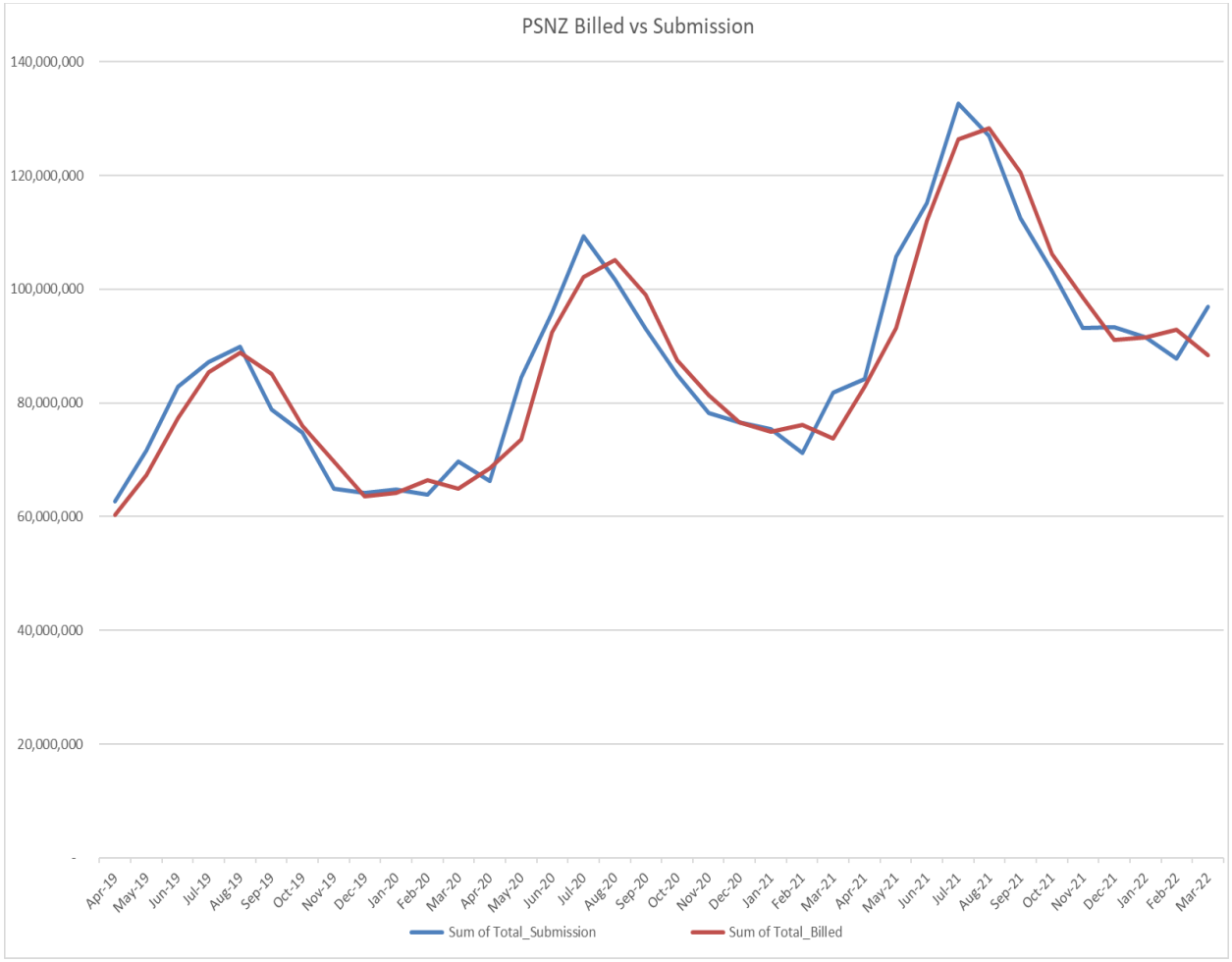

MERX Billed vs Submission
400,000,000
350,000,000
300,000,000
250,000,000
200,000,000
150,000,000
100,000,000
50,000,000
-
Nov-18
Dec-18
Jan-19
Feb-19
Mar-19
Apr-19
May-19
Jun-19
Jul-19
Aug-19
Sep-19
Oct-19
Nov-19
Dec-19
Jan-20
Feb-20
Mar-20
Apr-20
May-20
Jun-20
Jul-20
Aug-20
Sep-20
Oct-20
Nov-20
Dec-20
Jan-21
Feb-21
Mar-21
Apr-21
May-21
Jun-21
Jul-21
Aug-21
Sep-21
Oct-21
Nov-21
Dec-21
Jan-22
Feb-22
Mar-22
Sum of Total_Submission
Sum of Total_Billed



PSNZ

The process for the calculation of as billed volumes was examined by checking five NSPs with a small number of ICPs against invoice information. The AV120 billed consumption calculation was confirmed to be correct for the NSPs checked.

I checked the difference between submission and electricity supplied information from April 2019 to March 2022, and the results are shown below. The difference between billed and submitted data for the year ended March 2022 is 0.3% (billed higher than submitted) and the two years ended March 2022 is 0.4% (billed higher than submitted).


PSNZ Billed vs Submission
140,000,000
120,000,000
100,000,000
80,000,000
60,000,000
40,000,000
20,000,000
-
Apr-19
May-19
Jun-19
Jul-19
Aug-19
Sep-19
Oct-19
Nov-19
Dec-19
Jan-20
Feb-20
Mar-20
Apr-20
May-20
Jun-20
Jul-20
Aug-20
Sep-20
Oct-20
Nov-20
Dec-20
Jan-21
Feb-21
Mar-21
Apr-21
May-21
Jun-21
Jul-21
Aug-21
Sep-21
Oct-21
Nov-21
Dec-21
Jan-22
Feb-22
Mar-22
Sum of Total_Submission
Sum of Total_Billed

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

HHR volumes and aggregates submissions are created by EMS for MERI & MERX, and PSNZ for PSNZ HHR AMI ICPs.

I confirmed whether the process for the calculation and aggregation of HHR data was correct, by matching HHR aggregates information with the HHR volumes data and tracing a sample of volumes from source files to submission information.

The GR090 ICP Missing files were examined for all revisions for February 2021 to May 2022, and an extreme case sample of the ICPs which were missing from the most submissions were checked.

Audit commentary

MERI and MERX

The previous issue and technical non compliance around HHR aggregates file not containing electricity supplied information has now been resolved for the industry from Feb 2021 when a code amendment was implemented to reflect that HHR aggregates information contains volume information sourced from the AV-090 HHRVOLS file.

The EMS processes for provision of HHR aggregates information were assessed during their agent audit. It was observed that the level of precision for the AV-140 HHRAGGS file is zero decimal places whereas the AV-090 HHRVOLS file is two decimal places. This difference in the level of rounding results in small differences in overall volumes recorded. A recommendation was made in the EMS agent report to align the rounding methodologies between these two files as the source data is the same. EMS are in the process of implementing this change.

I matched HHR volumes and aggregates information for six months and revisions. Only small rounding differences were present (less than ±20 kWh and 0.0000%) for five of the six months reviewed. February 2022 initial submission AV-140 HHRAGGS was 65,185 kWh greater than the AV-090 NHHVOLS file. The cause of this variance between files was due to Meridian identifying a late HHR switch loss and requested EMS rerun the AV-090 file generation process to reflect one less ICP, however the AV-140 file was not also regenerated which caused this variance. Non-compliance is recorded as the initial submission of the AV-140 HHRAGGS file for Feb 2022 did not reflect the HHR submission volumes recorded in the associated AV-090 HHRVOLS file.

The GR090 ICP Missing files were examined for all revisions for February 2021 to May 2022. I checked an extreme case sample of six MERI ICPs missing for four or more revisions and found they related to:

- two ICPs with backdated HHR switches,
- two ICPs (0348879040LC2FA, 1001147381LCF91) with HHR to NHH downgrades where the registry update was late,
- one decommissioned ICP (0006843514RN3C2) where the registry update to “inactive - ready for decommissioning” was not performed in a timely manner, and
- one HHR new connection (1002094149LC17B) where the ICP was not claimed on the registry for five months.

For four of the six ICPs reviewed, the late registry updates resulted in ICP days scaling being applied to MERI HHR submission volumes.

Late switching files and updates to the registry are discussed in **sections 3** and **4**.

PSNZ

I matched HHR volumes and aggregates information for four months and revisions. The data matched to within +/- 2 kWh.

The GR090 ICP Missing files were examined for all revisions for July 2021 and August 2021. I checked all missing ICPs and found:

- three ICPs were reported as being missing from the AV-140 HHRAGS report however were present in the provided report, and
- for three ICPs there was an AMI meter change where the registry updates by PSNZ resulted in an incorrect update of submission type and profile code; these incorrect updates have now been corrected.

Late updates to the registry are discussed in **sections 3.**

Audit outcome

Non-compliant

Non-compliance	Description
Audit Ref: 11.4 With: Clause 15.8 From: 01-Sep-21 To: 30-Jun-22	**MERI** HHR aggregates file for Feb 2022 R0 does reflect the submission volumes recorded in the associated AV-090 HHRVOLS file. Potential impact: None Actual impact: None Audit history: Multiple times Controls: Strong Breach risk rating: 1
Audit risk rating	**Rationale for audit risk rating**
Low	Controls are rated as strong as the EMS process is robust and MERI also undertakes a sense check where time permits prior to submission. The audit risk rating is low because there is no impact to reconciliation

Actions taken to resolve the issue	Completion date	Remedial action status
HHR aggregates volumes for Feb 2022 were corrected at R1	Complete	Cleared
Preventative actions taken to ensure no further issues will occur	**Completion date**	
Controls around HHR aggregates submissions are robust		

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.

A sample of changes to and from daylight savings were checked to confirm the correct number of trading periods were recorded.

Audit commentary

MERI and MERX

Daylight savings adjustments were reviewed as part of the EMS agent audit and found to be compliant. EMS uses the trading period run on technique.

PSNZ

Daylight savings adjustment is conducted by MEPs. PSNZ does not currently submit HHR data during a daylight savings period.

Generation

Stark automatically adjusts for daylight savings, using the trading period run on technique. I checked a sample of adjustments covering the start and end of daylight savings to ensure daylight savings adjustments were correct. I also reviewed the table within STARK confirming the correct daylight savings transitions are applied.

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

Processes to ensure that HHR, NHH and generation submissions are accurate were reviewed. A list of breaches was obtained from the Electricity Authority.

Audit commentary

MERI

Submission of HHR information was reviewed as part of the EMS agent audit and found to be compliant. Three HHR ICPs have 1,5 "inactive reconciled elsewhere" status and two of these ICPs are compliantly reconciled under another ICP. However, for ICP 0007132883RN65A the registry status was incorrect as the primary ICP was decommissioned by the network in March 2021. MERI have now updated the registry the correct status.

Meridian prepares NHH submissions using reconciliation consumption generated in Velocity. I reviewed submissions for a sample of:

- five ICPs with injection/export registers and confirmed that generation consumption is correctly submitted, however ICP 0007199748RN966 distributed generation volumes were incorrectly submitted against PV1 profile code instead of EG1; this has now been corrected in Meridian's system,
- five ICPs with vacant consumption and confirmed that vacant consumption was reported for all,
- eight ICPs with unmetered volumes including standard and shared unmetered; I confirmed that the correct consumption was reported, however, it was observed that hours of operation recorded by MERI for the same types of load in some network areas is inconsistent and can result in the incorrect daily average kWh value being calculated so I recommend that Meridian complete a review of the hours of operation for each network where the annual operational hours for streetlights is known,

Recommendation	Description	Audited party comment	Remedial action
Review and update hours of operation for unmetered load where distributor annual operational hours are known	To ensure accurate calculation of the daily kWh values for unmetered load I recommend that a review and update hours of operation for unmetered load where distributor annual operational hours are known.	Meridian will consider this recommendation.	Investigating

- all four NHH ICPs which have 1,5 "inactive - reconciled elsewhere" status; three of the ICPs do not have load reconciled:

ICP	Expected to be reconciled under	Comment
0005906555RNE30	0005267315RNEAE by ELKI	The unmetered load associated with 0005906555RNE30 was removed from ICP 0005267315RNEAE when the ICP switched away from MERI. MERI has made no progress following up with the other traders since the ICP switched away from MERI (5 March 2019). Under submission is estimated to be 0.64 kWh per day or 233.6 kWh per annum.

0006300324RNC8C	0005635225RN9D9 by GENE	The unmetered load associated with 0006300324RNC8C was removed from ICP 0005635225RN9D9 by the current trader. MERI did follow up with the other trader and received a commitment from the current trader to include this unmetered load in the settlement of ICP 0005635225RN9D9. Registry information indicates this is not the case. MERI also plans to engage with the distributor to see if this light can be considered shared UML. Under submission is estimated to be 0.702 kWh per day or 256.23 kWh per annum.
0008801022TPEF8	0008801024TPF77 by GENE	ICP 0008801022TPEF8 is for Southland DC distributed unmetered streetlights fed from NSP INV0331. There are currently no lights connected to this NSP. When the Southland DC DUML switched to GENE, they did not take ICP 0008801022TPEF8 because no load was connected and have advised that they will switch it in if load is connected in the future. The network has declined to decommission the ICP in case distributed unmetered load transfers back to this NSP at a future date. MERI is continuing to work with the other trader and network in an effort to resolve this. There is no under submission because no load is connected to 0008801022TPEF8.

The lack of monitoring of the 1,5 "reconciled elsewhere" status has resulted in four (3 x NHH and 1 x HHR) exceptions being identified during this audit. I recommend that MERI implements a process to actively monitor the 1,5 status to ensure is being applied correctly and the relevant ICPs or each scenario remain with a single retailer.

Recommendation	Description	Audited party comment	Remedial action
Implement regular monitoring of Registry 1,5 'Reconciled elsewhere' status	MERI to implement a process to actively monitor the 1,5 status to ensure it is being applied correctly and the relevant ICPs or each scenario remain with a single retailer.	Meridian does intermittently review ICPs with 1,5 status. We have limited control over associated ICPs switching away or other Traders taking responsibility for these ICPs or loads associated with them.	Identified

NHH metered and unmetered volumes are reviewed prior to submission. Validation and zeroing where aggregation rows appear in previous submissions but not the current revision is discussed in **section 12.3**.

No breaches had been recorded for late provision of submission information.

MERX

MERX NHH submission files are created in Flux. I checked submissions for:

- five ICPs with injection/export registers and confirmed that generation consumption is correctly submitted,
- five ICPs with vacant consumption and confirmed that vacant consumption was reported for all, and
- ten ICPs with unmetered volumes, including standard and shared unmetered; I identified that two ICPs had an incorrect calculation of the daily kWh value applied by more than 0.01 kWh/day therefore not all consumption was reported.

Review of a sample of ICPs with inactive consumption in **section 2.1** found eight ICPs had consumption during inactive periods. Estimated under submission of 51kWh has occurred.

NHH metered and unmetered volumes are reviewed prior to submission. Validation and zeroing where aggregation rows appear in previous submissions but not the current revision is discussed in **section 12.3**.

No breaches had been recorded for late provision of submission information.

PSNZ

PSNZ submission files are created in Flux. No breaches had been recorded for late provision of submission information.

HHR submissions were reviewed in **section 11.4**. HHR validation occurs in the same way as NHH validation, where submission volumes, ICP Days and electricity supplied file validation occurs and there is the ability to drill down to NSP and ICP level for further analysis.

I checked NHH submissions for:

- five ICPs with injection/export registers and confirmed that generation consumption is correctly submitted,
- five ICPs with vacant consumption and confirmed that vacant consumption was reported for all, and
- ten ICPs with unmetered volumes, including standard and shared unmetered; I identified that two ICPs had an incorrect calculation of the daily kWh value applied by more than 0.01 kWh/day therefore not all consumption was reported.

Review of a sample of ICPs with inactive consumption in **section 2.1** found 20 ICPs had consumption during inactive periods, indicating that their status was incorrect. Estimated under submission of 41,564 kWh has occurred.

NHH metered and unmetered volumes are reviewed prior to submission. Validation and zeroing where aggregation rows appear in previous submissions but not the current revision is discussed in **section 12.3**.

Generation

I traced a sample of data from source, through aggregation process to the NSP volumes submissions for NSPs and compliance is confirmed for each NSP. I walked through the process to review submissions and validate generation data in **section 9.6**.

No breaches had been recorded for late provision of submission information.

Audit outcome

Non-compliant

Non-compliance	Description
Audit Ref: 12.2 With: Clause 15.4 From: 01-Sep-21 To: 30-Jun-22	**MERI** NHH ICPs 0005906555RNE30, 0006300324RNC8C and 0008801022TPEF8 have 1,5 "reconciled elsewhere" status but do not have their load reconciled under another ICP. ICP 0008801022TPEF8 has no load connected. HHR ICP 0007132883RN65A had status 1,5 "reconciled elsewhere" status but the primary ICP was decommissioned. ICP 0007199748RN966 distributed generation volumes were incorrected submitted against PV1 profile code instead of EG1. **MERX** Eight ICPs had consumption during inactive periods, indicating that their status was incorrect. Estimated under submission of 51kWh has occurred. Daily unmetered kWh values incorrect for ICPs 0000113698HB171 & 0005189772RN99C. **PSNZ** 20 ICPs had consumption during inactive periods, indicating that their status was incorrect. Estimated under submission of 41,564 kWh has occurred. Daily unmetered kWh values incorrect for ICPs 0000216126HB4CE & 0000016372CP18F. Potential impact: Low Actual impact: Low Audit history: Once Controls: Moderate Breach risk rating: 4
Audit risk rating	**Rationale for audit risk rating**
Medium	Validation controls exist to ensure all consumption is submitted, but improvement is required for identification and resolution of inactive consumption for MERX and PSNZ ICPs. The other exceptions were isolated, and Meridian is in the process of resolving them. The impact is medium based on the kWh differences.

Actions taken to resolve the issue	Completion date	Remedial action status
Refer to our comments in sections 3.7 and 3.9		Identified
Preventative actions taken to ensure no further issues will occur	**Completion date**	
Refer to our comments in sections 3.7 and 3.9		

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 AV080 submissions are accurate was discussed. The process for aggregating the AV080 was examined by checking five NSPs with a small number of ICPs.

The GR170 to AV080 files for a sample of months were compared, to confirm zeroing occurs.

Audit commentary

MERI

HHR

Submission of MERX HHR information was reviewed as part of the EMS agent audit and found to be compliant.

Meridian validates the submissions produced by EMS prior to their submission on business day four and 13. Lavastorm is used to generate reports comparing registry data, aggregates files, volumes files, ICP days files and EIEP3 files (which are outside the scope of this audit). The data is compared, and any anomalies are reported.

I reviewed a sample of these validations and noted that Meridian staff had reviewed anomalies and added comments. Where issues or concerns are identified, these are communicated to EMS for action. If EMS updates any data, it is sent back to Meridian for rechecking using Lavastorm.

NHH

The process for the calculation of NHH volumes was examined by checking five NSPs with a small number of ICPs. NHH volume calculation was confirmed to be correct.

NHH data is validated prior to submission. Fields used for reconciliation submission aggregation are reconciled to the registry prior to the initial and wash up submissions being created. Any ICPs with consumption that is negative or over 100,000 kWh are checked.

AV080 data is compared to AV110 ICP days and AV120 electricity supplied data to identify any anomalies, which are reviewed to determine whether corrections are required.

Zeroing occurs automatically as part of the comparison to the trader notification table in Velocity. If an open trading notification is present but no submission data has been generated, Velocity automatically inserts a zero line. GR170 and AV080 files for eight months were compared, and no issues were identified.

EMS produces and submits NHH Submission volumes for the DST profile code relating to DUML streetlights in a separate AV-080 NHHVOLS files each month on behalf of MERI. When reviewing a sample of AV-080 NHHVOLS files from both EMS and MERI for the months of Jan 2021, Feb 2021 and August 2021 I observed that both EMS and MERI provided NHH submission volumes for this in their respective AV-080 files for ISL0331. The MERI DST submission information was not the correct consumption volumes, and it was fortunate that the EMS submission files were uploaded into the RM portal later than the MERI files ensuring no incorrect submission volumes were included in the reconciliation process. However, the failure to identify this erroneous submission volumes across multiple consumption months and revisions up to the 7-month revision highlights that the validations in place to ensure the overall NHH submission are complete and accurate between both MERI and its agents are not fully effective. I have recorded the duplicate submission of DST volumes as a non-compliance.

MERX

HHR

Submission of MERX HHR information was reviewed as part of the EMS agent audit and found to be compliant.

Meridian validates the submissions produced by EMS prior to their submission on business day four and 13. Lavastorm is used to generate reports comparing registry data, aggregates files, volumes files, ICP days files and EIEP3 files (which are outside the scope of this audit). The data is compared, and any anomalies are reported.

I reviewed a sample of these validations and noted that Meridian staff had reviewed anomalies and added comments. Where issues or concerns are identified, these are communicated to EMS for action. If EMS updates any data, it is sent back to Meridian for rechecking using Lavastorm.

NHH

The process for the calculation of NHH volumes was examined by checking five NSPs with a small number of ICPs. NHH volume calculation was confirmed to be correct.

The pre-submission checks include a comparison between revisions and a check against the previous month. Any ICPs with consumption that is negative or over 100,000 kWh are checked. AV080 data is compared to AV110 ICP days and AV120 electricity supplied data to identify any anomalies, which are reviewed to determine whether corrections are required.

Registry discrepancies are identified through the validation process described in **section 2.1**.

Zeroing is completed automatically by Flux. GR170 and AV080 files for eight months were compared, and no issues were identified.

PSNZ

HHR

HHR submissions were reviewed in **section 11.4**. HHR submission files are reviewed monthly. There is validation between ICP days, submission and electricity supplied files at a high level, and there is the ability to drill down to ICP level if required.

NHH

The process for the calculation of NHH volumes was examined by checking five NSPs with a small number of ICPs. NHH volume calculation was confirmed to be correct.

The pre-submission checks include a comparison between revisions and a check against the previous month. Any ICPs with consumption that is negative or over 100,000 kWh are checked. AV080 data is compared to AV110 ICP days and AV120 electricity supplied data to identify any anomalies, which are reviewed to determine whether corrections are required.

Registry discrepancies are identified through the validation process described in **section 2.1**.

Zeroing is completed automatically by Flux. GR170 and AV080 files for seven months were compared, and no issues were identified.

Audit outcome

Non-compliant

Non-compliance	Description
Audit Ref: 12.3 With: Clause 15.5 From: 01-Sep-21 To: 30-Jun-22	**MERI** Duplicate NHHVOL (AV-080) submissions provided between both MERI and EMS for DST profile for ISL0331 for the months Jan 2021, Feb 2021 and Aug 2021. Potential impact: Low Actual impact: Low Audit history: None Controls: Strong Breach risk rating: 1
Audit risk rating	**Rationale for audit risk rating**
Low	Validation controls exist to ensure all consumption is submitted, but improvement is required to identify potential duplicate submissions between MERI and its agent. The impact is low as correct volumes were used in the reconciliation process.

Actions taken to resolve the issue	Completion date	Remedial action status
The correct submission volumes were used in the reconciliation process.		Cleared
Preventative actions taken to ensure no further issues will occur	**Completion date**	
The DST entry in MERI AV-080 files was due to the profile/billing configuration for 1 ICP which was not standard. This ICP's profile has been changed to UML so it will be submitted by MERI rather than EMS and the manual process step to remove from the AV-080 file is not required.	01/08/2022	

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

Review of the NSP table confirmed that Meridian is not a grid owner.

Audit commentary

Review of the NSP table confirmed that Meridian is not a grid owner.

Audit outcome

Not applicable

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

A registry list was reviewed to confirm Meridian does not own any local or embedded networks.

Audit commentary

Meridian is not required to provide NSP submission information.

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.

I traced a sample of data from the source, through aggregation process to the NSP volumes submissions for NSPs.

Audit commentary

Meridian creates AV130 submissions for grid connected generation.

I traced a sample of data from source, through aggregation process to the NSP volumes submissions for NSPs and compliance is confirmed for each NSP.

No breaches had been recorded for late provision of submission information.

Audit outcome

Compliant

12.7. Accuracy of submission information (Clause 15.12)

Code reference

Clause 15.12

Code related audit information

If the reconciliation participant has submitted information and then subsequently obtained more accurate information, the participant must provide the most accurate information available to the reconciliation manager or participant, as the case may be, at the next available opportunity for submission (in accordance with clauses 15.20A, 15.27, and 15.28).

Audit observation

Alleged breaches during the audit period were reviewed to determine whether any reconciliation submissions were late.

Corrections were reviewed in **sections 2.1, 8.1** and **8.2**.

Audit commentary

The previous audit recorded an issue with rounding of submission information for ARC Innovations meters when used for HHR settlement. PSNZ has one CAT 2 HHR ICP (0007106307RN6B8) and four Cat 1 ICPs with an Arc innovations meter installed where submission information is inaccurate. This clause requires correction of inaccurate submission information, but correction cannot occur because it is the raw meter data that is inaccurate, therefore non-compliance is recorded in **section 2.1.**

MERI

Alleged breaches

No alleged breaches were recorded for inaccurate or late submission data.

Data accuracy issues

Velocity records historic estimate as forward estimate where an ICP ends on an estimated closing reading.

All four NHH ICPs which have the 1,5 “inactive - reconciled elsewhere” status were checked as discussed in **section 12.2**. Two of the ICPs had under submission because load was not reconciled under the other ICP.

ICP	Expected to be reconciled under	Comment
0005906555RNE30	0005267315RNEAE by ELKI	The unmetered load associated with 0005906555RNE30 was removed from ICP 0005267315RNEAE when the ICP switched away from MERI. MERI has not made any progress in following up with the other trader. Under submission is estimated to be 0.64 kWh per day or 233.6 kWh per annum.
0006300324RNC8C	0005635225RN9D9 by GENE	The unmetered load associated with 0006300324RNC8C was removed from ICP 0005635225RN9D9 by the current trader. MERI has not made any progress in following up with the other trader. Under submission is estimated to be 0.702 kWh per day or 256.23 kWh per annum.

As discussed in **sections 4.3 and 4.10**, four ICPs had incorrect readings in the CS file meaning consumption was not correct between traders.

Previous audit data accuracy issues

Data accuracy issues identified in the previous audit were re-checked and found to be resolved except:

Issue	Description	Section
Forward estimate at revision 14	Forward estimate remained right up until R14 because ICPs had switched out on estimated readings, and these readings were not treated as permanent estimates by the historic estimate calculation.	12.8, 12.10
Downgrades	Nine examples where the ICP was downgraded from HHR to NHH. The new meters were installed in Velocity with an install date that was two days later the physical meter change creating a one-day gap in Velocity where no meter is recorded as being installed. The consequence is the NHH volume is squeezed into one day less than actual and the ICP days count within Velocity is one day less that required for the affected ICPs.	6.7

MERX

Alleged breaches

No alleged breaches were recorded for inaccurate or late submission data.

Data accuracy issues

Issue	Description	Section
Inactive consumption	Eight ICPs appeared to have genuine consumption during an inactive period. Consumption was not submitted, and the status was incorrect on the registry.	2.1 3.9

Previous audit data accuracy issues

Data accuracy issues identified in the previous audit were re-checked and found to be resolved except:

Issue	Description	Section
Historic estimate is labelled as forward estimate	• if SASV are not provided for the NSP and profile by the reconciliation manager, the historic estimate calculated is labelled as forward estimate by Flux; this typically occurs for NSPs with PV1 profile (the only exception to this is where reads are recorded on the last day of the month before the reconciliation period and the last day of the reconciliation period, which results in the consumption being classified as "actual" and reported as historic estimate), and • a permanent estimate reading is not entered by revision 14 if an actual reading is unable to be obtained.	12.8, 12.10
Inactive consumption	Four ICPs appeared to have genuine consumption during an inactive period. Consumption was not submitted, and the status was incorrect on the registry.	2.1 3.9

As discussed in **sections 4.3 and 4.10**, eight ICPs had incorrect readings in the CS file meaning consumption was not correct between traders and for one ICP, vacant consumption was allocated to the gaining trader.

PSNZ

Alleged breaches

No alleged breaches were recorded for inaccurate or late submission data.

Data accuracy issues

Issue	Description	Section
Historic estimate is labelled as forward estimate	• If SASV are not provided for the NSP and profile by the reconciliation manager, the historic estimate calculated is labelled as forward estimate by Flux; this typically occurs for NSPs with PV1 profile (the only exception to this is where reads are recorded on the last day of the month before the reconciliation period and the last day of the reconciliation period, which results in the consumption being classified as "actual" and reported as historic estimate), and • a permanent estimate reading is not entered by revision 14 if an actual reading is unable to be obtained.	12.8, 12.10
Inactive consumption	20 ICPs appeared to have genuine consumption during an inactive period. Consumption was not submitted, and the status was incorrect on the registry.	2.1 3.9

Previous audit data accuracy issues

Data accuracy issues identified in the previous audit were re-checked and found to be resolved except:

Issue	Description	Section
Historic estimate is labelled as forward estimate	• If SASV are not provided for the NSP and profile by the reconciliation manager, the historic estimate calculated is labelled as forward estimate by Flux; this typically occurs for NSPs with PV1 profile (the only exception to this is where reads are recorded on the last day of the month before the reconciliation period and the last day of the reconciliation period, which results in the consumption being classified as "actual" and reported as historic estimate), and • a permanent estimate reading is not entered by revision 14 if an actual reading is unable to be obtained.	12.8, 12.10

Issue	Description	Section
Inactive consumption	Seven ICPs appeared to have genuine consumption during an inactive period. Consumption was not submitted, and the status was incorrect on the registry.	2.1 3.9

As discussed in **sections 4.3 and 4.10**, three ICPs had incorrect readings in the CS file meaning consumption was not correct between traders.

Audit outcome

Non-compliant

Non-compliance	Description
Audit Ref: 12.7 With: Clause 15.12	**MERI** Velocity records historic estimate as forward estimate where an ICP ends on an estimated closing reading**,** or permanent estimate readings have not been entered for ICPs not read within the previous 14 months. ICPs 0005906555RNE30, 0006300324RNC8C and 0008801022TPEF8 have 1,5 "reconciled elsewhere" status but do not have their load reconciled under another ICP. ICP 0008801022TPEF8 has no load connected. Four ICPs had incorrect readings in the CS file meaning consumption was not correct between traders. For downgrades, all HHR volumes are reported up to the day of the meter change. All NHH volumes are reported, but due to system constraints the consumption is apportioned from two days after the meter change onwards instead of from the day after the meter is changed. **MERX** Historic estimate is recorded as forward estimate where shape files from the reconciliation manager are unavailable, or permanent estimate readings have not been entered for ICPs not read within the previous 14 months. 12 ICPs had consumption during inactive periods, indicating that their status was incorrect. Estimated under submission of 11,174 kWh has occurred. Eight ICPs had incorrect readings in the CS file meaning consumption was not correct between traders and for one ICP, vacant consumption was allocated to the gaining trader. **PSNZ** Historic estimate is recorded as forward estimate where shape files from the reconciliation manager are unavailable, or permanent estimate readings have not been entered for ICPs not read within the previous 14 months. 27 ICPs had consumption during inactive periods, indicating that their status was incorrect. Estimated under submission of 41,683 kWh has occurred. Three ICPs had incorrect readings in the CS file meaning consumption was not correct between traders. Potential impact: Medium

From: 01-Sep-21 To: 30-Jun-22	Actual impact: Medium Audit history: Multiple times Controls: Moderate Breach risk rating: 4
Audit risk rating	**Rationale for audit risk rating**
Medium	The controls over accuracy of submission information are moderate, as there are controls in place to validate submission information and identify and correct errors. The audit risk rating is assessed to be medium based on the volumes associated with the exceptions identified, particularly for inactive consumption.

Actions taken to resolve the issue	**Completion date**	**Remedial action status**
We have commented on specific issues raised in the relevant sections of this report.		Identified
Preventative actions taken to ensure no further issues will occur	**Completion date**	

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).

The relevant reconciliation participant must, at the earliest opportunity, and no later than the month 14 revision cycle, replace volume information created using estimated readings with volume information created using validated meter readings.

If, despite having used reasonable endeavours for at least 12 months, a reconciliation participant has been unable to obtain a validated meter reading, the reconciliation participant must replace volume information created using an estimated reading with volume information created using a permanent estimate in place of a validated meter reading.

Audit observation

NHH volumes 14-month revisions were reviewed for February to April 2021 to identify any forward estimate still existing. A sample of AV080 aggregation rows with forward estimate remaining at the 14-month revision were checked.

Audit commentary

MERI

Review of the 14-month revisions showed that not all estimated meter readings had been replaced with validated meter readings as required by the Electricity Authority. This is recorded as non-compliance below.

Month	Forward estimate
Jan-21	1,491,340
Feb-21	2,191,291
Mar-21	3,344,691

I examined ten AV080 aggregation rows where forward estimate remained in the March 2021 revision 14 submission. All ten rows had forward estimate remaining because an ICP or ICPs had switched out on estimated readings, and these readings were not treated as permanent estimates by the historic estimate calculation. Two of the ICPs were also unread during its period of supply.

MERX

It is possible to create permanent estimate readings in Flux by selecting a read status of “medium" when the estimated read is validated. There is not currently a process to routinely enter permanent estimates where validated readings cannot be obtained by revision 14.

Review of the 14-month revisions showed that not all estimated meter readings had been replaced with validated meter readings as required by the Electricity Authority. This is recorded as non-compliance below.

Month	Forward estimate
Jan-21	319,407
Feb-21	328,153
Mar-21	268,550

I examined ten AV080 aggregation rows where forward estimate remained in the March 2021 revision 14 submission. Five the affected rows had EG1 or PV1 profiles and five EN ICPs had RPS profile and no recent actual reads had been obtained and no permanent estimate read applied. Where seasonal adjusted shape files (SASV) are not loaded for the NSP and profile by the reconciliation manager, the historic estimate calculated uses a flat profile shape and is labelled as forward estimate.

PSNZ

It is possible to create permanent estimate readings in Flux by selecting a read status of “medium" when the estimated read is validated. There is not currently a process to routinely enter permanent estimates where validated readings cannot be obtained by revision 14.

Review of the 14-month revisions showed that not all estimated meter readings had been replaced with validated meter readings as required by the Electricity Authority. This is recorded as non-compliance below.

Month	Forward estimate
Jan-21	223,133
Feb-21	188,858
Mar-21	133,515

I examined ten AV080 aggregation rows where forward estimate remained in the March 2021 revision 14 submission. All ten rows had no recent actual reads had been obtained and no permanent estimate read applied.

Audit outcome

Non-compliant

Non-compliance	Description
Audit Ref: 12.8 With: Clause 4 of Schedule 15.2 From: 01-Sep-21 To: 30-Jun-22	**MERI** Some estimates not replaced by revision 14, and under certain circumstances historic estimate is labelled as forward estimate. **MERX** Some estimates not replaced by revision 14, and under certain circumstances historic estimate is labelled as forward estimate. **PSNZ** Some estimates not replaced by revision 14, and under certain circumstances historic estimate is labelled as forward estimate. Potential impact: Low Actual impact: Low Audit history: Multiple times Controls: Moderate Breach risk rating: 4
Audit risk rating	**Rationale for audit risk rating**
Medium	Controls are rated as moderate because in most cases readings are permanent by revision 14, the main issue is that historic estimate is sometimes labelled as forward estimate. Total forward estimate for the 3-month period reviewed is 8,488,938 kWh. The impact is assessed to be medium, because based on the sample checked, forward estimate remains primarily from the lack of actual reads of permanent estimate reads being available in the respective systems

Actions taken to resolve the issue	Completion date	Remedial action status

We will investigate reporting and a manual process to enter permanent (validated) estimates where an actual read has not been obtained before r14	31/05/2023	Identified
Preventative actions taken to ensure no further issues will occur	**Completion date**	
System functionality to support application of permanent estimates where an actual read has not been obtained before R14 is on the Flux development backlog for prioritisation.	31/12/2023	
We understand the labelling of calculated volumes as FE rather than HE has no impact on submitted volumes or the market. The issue is also on the Flux development backlog for prioritisation.	31/12/2023	

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 for each ICP must comprise the following:

- *half hour volume information for the total metered quantity of electricity 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) any half hour volume information for the ICP; or*
  - *b) any 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

Processes to ensure that information used to aggregate the reconciliation reports is consistent with the registry were reviewed in **section 2.1**.

Aggregation and content of reconciliation submissions was reviewed, and the registry lists were reviewed.

Audit commentary

MERI

Compliance with this clause was assessed:

- HHR submission preparation was reviewed as part of the EMS agent audit and found to be compliant,
- HHR volume is reported for all ICPs with a meter category 3 or higher, except ICP 0331837361LCD62 which has metering category 3 and RPS profile and NHH submission type:
    - the meter is a communicating AMI meter and MERI is receiving interval data however MERI has not requested EMS to include this ICP in its HHR data collection and submission process,
    - MERI attempted to downgrade the ICP by fitting smaller CTs, but this was unsuccessful,
    - MERI has also not investigated with the MEP whether the ICP could be recertified at a lower category with the inclusion of load monitoring to ensure the load remains below 500 amps/342 kVA),
- unmetered load submissions for eight ICPs were checked in **section 12.2** and were found to be correct,
- certification of control devices was reviewed in **section 6.3**; The AC020 report recorded 13 ICPs with a profile requiring a certified control devices where control devices were not certified. Controls were moderate, and non-compliance was recorded,
- loss and compensation arrangements were reviewed in **section 8.3** and found to be compliant, however a recommendation has been made to check the accuracy of the Pricing Manager files produced by EMS as MERI's agent to ensure loss compensation has been appropriately applied, and
- aggregation of the AV080 and AV110 submissions are covered in **sections 13.2** and **11.2** respectively.

Recommendation	Description	Audited party comment	Remedial action
CAT 3 ICP with NHH submission type and profile	Recommend that MERI either transitions this ICP to PSNZ to enable HHR submission using AMI data or works with the MEP to see if the ICP can be recertified at a lower category on the basis of historical AMI interval data. MERI believes the current conveyed will remain at all times below the upper limit of this lower metering category.	We continue to work on a resolution for this ICP. Resolution will be required in order for its migration to Flux. The customer is contracted to Meridian. Transitioning to Powershop would require the customer to change retailer and contract terms and is not a viable option.	Identified

MERX

Compliance with this clause was assessed:

- HHR submission preparation was reviewed as part of the EMS agent audit and found to be compliant,
- HHR volume is reported for all ICPs with a meter category 3 or higher,
- unmetered load submissions were checked in **section 12.2** and two ICPs were found to have an incorrect calculation of daily kWh by more than 0.1 kWh per day,
- certification of control devices was reviewed in **section 6.3**; The AC020 report recorded 1015 ICPs with a profile requiring a certified control devices where control devices were not certified. Controls were moderate, and non-compliance was recorded,
- no ICPs have loss or compensation factors applied, and
- aggregation of the AV08 and AV110 submissions are covered in **sections 12.3** and **11.2** respectively.

PSNZ

Compliance with this clause was assessed:

- there are no ICPs with meter category 3 or higher,
- unmetered load submissions were checked in **section 12.2** and two ICPs were found to have an incorrect calculation of daily kWh by more than 0.1 kWh per day,
- certification of control devices was reviewed in **section 6.3**; The AC020 report recorded 195 ICPs with a profile requiring a certified control devices where control devices were not certified. Controls were moderate, and non-compliance was recorded,
- no ICPs have loss or compensation factors applied, and
- aggregation of the AV080, AV110, AV090 and AV140 submissions are covered in **sections 12.3**, **11.2** and **11.4** respectively.

Audit outcome

Non-compliant

Non-compliance	Description
Audit Ref: 12.9 With: Clause 2 Schedule 15.3 From: 01-Sep-21 To: 30-Jun-22	**MERI** 0331837361LCD62 has metering category 3 and RPS profile and NHH submission type. 13 ICPS had profiles requiring control device certification where CDC flag on the registry is set to 'N'. **MERX** 1015 ICPS had profiles requiring control device certification where CDC flag on the registry is set to 'N'. **PSNZ** 195 ICPS had profiles requiring control device certification where CDC flag on the registry is set to 'N'. Potential impact: Low Actual impact: Low Audit history: Once Controls: Moderate Breach risk rating: 2
Audit risk rating	**Rationale for audit risk rating**

Low	Controls are rated as moderate because • the understanding around the need for a certified control device for night-controlled load was not well understood. • not all options to resolve ICP 0331837361LCD62 had been pursued. The audit risk rating is low because there are robust controls in place and a very small number of ICPs were affected.

Actions taken to resolve the issue	Completion date	Remedial action status
0331837361LCD62 - We continue to work on a resolution for this ICP. Resolution will be required in order for its migration to Flux. ICPS had profiles requiring control device certification where CDC flag on the registry is set to 'N' - please refer to our comments in section 6.3	31/12/2022	Identified
Preventative actions taken to ensure no further issues will occur	**Completion date**	

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

A sample of AV080 submissions were reviewed 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

MERI

I reviewed eight AV080 submissions for a diverse sample of months and revisions and confirm that forward and historic estimates are included and identified as such.

Historic estimate is labelled as forward estimate under the following circumstances:

- historic estimate is labelled as forward estimate if an ICP switches out on an estimated read, or
- a permanent estimate reading is not entered by revision 14 if an actual reading is unable to be obtained.

MERX and PSNZ

I reviewed eight AV080 submissions for MERX and nine AV080 submissions for PSNZ for a diverse sample of months and revisions and confirm that forward and historic estimates are included and identified as such.

Historic estimate is labelled as forward estimate under the following circumstances:

- if SASV are not loaded for the NSP and profile from the reconciliation manager provided files, the historic estimate calculated is labelled as forward estimate by Flux; this typically occurs for NSPs with PV1 profile (the only exception to this is where reads are recorded on the last day of the month before the reconciliation period and the last day of the reconciliation period, which results in the consumption being classified as "actual" and reported as historic estimate), and
- a permanent estimate reading is not entered by revision 14 if an actual reading is unable to be obtained.

During the audit period there was an issue with the automated process to retrieve shapes files from the RM. The issue occurred during the RM DR testing exercise where the RM SFTP is switched over to the secondary site. FLUX was successfully repointed to this secondary site at the start of the DR testing. However, Flux was not repointed back to the primary SFTP site at the conclusion of the DR testing. No shape files were loaded during this period until the issue was identified. The issue was identified in time to ensure that all final 14-month wash ups were unaffected. This resulted in an above average amount of HE volume being incorrectly labelled as FE during this affected period. A manual check to ensure shape files have been successfully downloaded and processed into FLUX is now in place. This has been recorded as a non-compliance in **section 12.11**

Audit outcome

Non-compliant

Non-compliance	Description
Audit Ref: 12.10 With: Clause 3 of schedule 15.3 From: 01-Sep-21 To: 30-Jun-22	**MERI** Historic estimate is labelled as forward estimate where an ICP switches out on an estimated reading, and where permanent estimate readings have not been entered. **MERX** Historic estimate is labelled as forward estimate where SASV are not loaded for the NSP and profile from the reconciliation manager files, and where permanent estimate readings have not been entered. **PSNZ** Historic estimate is labelled as forward estimate where SASV are not loaded for the NSP and profile from the reconciliation manager files, and where permanent estimate readings have not been entered. Potential impact:Low Actual impact: Low Audit history: Twice Controls: Moderate Breach risk rating: 2
Audit risk rating	**Rationale for audit risk rating**
Low	The controls are recorded as moderate because they mitigate risk most of the time but there is room for improvement. There was minor impact on settlement where shape files were not loaded into FLUX for a number of months, the audit risk rating was assessed as low.

Actions taken to resolve the issue	Completion date	Remedial action status
Refer to our comments in section 12.8		Identified
Preventative actions taken to ensure no further issues will occur	**Completion date**	
Refer to our comments in section 12.8		

12.11. Historical estimate process (Clauses 4 and 5 Schedule 15.3)

Code reference

Clauses 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

To assist with determining compliance of the Historical Estimate (HE) processes, Meridian was supplied with a list of scenarios, and for some individual ICPs a manual HE calculation was conducted and compared to the result from Velocity for MERI and Flux for MERX and PSNZ.

Audit commentary

MERI

MERI provided examples of historic estimate calculations, which were reviewed. The table below shows that most scenarios are calculating as expected and correct SASV (seasonal adjusted shape values) are applied.

For scenario B, the disconnection read was not loaded and all subsequent reads have not been validated resulting in forward estimated volumes being applied since the last validated reading was applied. The lack of processing actual reads into Velocity since the disconnection also means inactive consumption monitoring is also not being performed for this ICP.

For scenario C, where an ICP is inactive for part of a month, disconnection and reconnection reads are not entered. SASV were not applied in this scenario and a flat profile shape was used for the read period to exclude the days during the read period where the ICP was inactive. While the exclusion of the inactive days from the numerator ensures that all consumption is reported against active dates the failure to use available SASV data is non compliant.

For scenario E, as a flat profile was applied meaning SASV values were not used for to allocate the consumption between the last actual read and estimated switch out reading into the relevant consumption periods. This consumption was also incorrectly labelled as forward estimate

The process for managing shape files was examined. SASV are downloaded from the reconciliation manager portal along with the other reconciliation reports. Following download, they are imported manually into Velocity using the interface file manager.

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.	Non-Compliant as available reads not processed and validated.
c	ICP become Inactive then Active again within a month.	Consumption is only calculated for the Active portion of the month.	Non-Compliant as flat profile applied. SASV values not used.
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

Test	Scenario	Test expectation	Result
e	ICP switches out part way through a month on an estimated switch reading	Consumption is calculated to include the last day of responsibility.	Non-Compliant as flat profile applied. SASV values not used for consumption between the last actual read and estimated switch out reading. This is labelled as forward estimate. This is also recorded as non-compliance in **section 12.10**.
f	ICP switches out then back in within a month	Consumption is calculated for each day of responsibility.	Compliant
g	Continuous ICP with a read during the month	Consumption is calculated assuming the readings are valid until the end of the day	Compliant
h	Continuous ICP without a read during the month	Consumption is calculated assuming the readings are valid until the end of the day	Compliant
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 they have been validated against a set of validated readings from another source	Compliant Customer read is appropriately validated and treated as a validated read.
n	ICP with a photo read during the month	Photo reads are not used to calculate historic estimate, unless they have been validated against a set of validated readings from another source	Compliant Photo read is appropriately validated and treated as a validated read.

Test	Scenario	Test expectation	Result
o	ICP has a meter with a multiplier greater than 1	The multiplier is applied correctly	Compliant

The HE calculations were not correct in all scenarios checked. The treatment of estimated switch reads means not seasonal shape adjustment occurs and a flat profile is applied; this issue has also been recorded as non-compliance in **sections 12.7** and **12.10.**

MERX

MERX provided examples of historic estimate calculations, which were reviewed. The table below shows that most scenarios where examples were available are calculating as expected and correct SASV (seasonal adjusted shape values) are applied.

SASV are retrieved from the RM portal and loaded into Flux using an automated process. Flux monitors these automated upload processes and notifies MERX if they fail to connect with the SFTP.

During the audit period there was an issue with the automated process to retrieve shapes files from the RM. The issue occurred during the RM DR testing exercise where the RM SFTP is switched over to the secondary site. FLUX was successfully repointed to this secondary site at the start of the DR testing. However, Flux was not repointed back to the primary SFTP sile at the conclusion of the DR testing. No shape files were loaded during this period or exceptions generated by the FLUX system until the issue was identified. The issue was identified in time to ensure that all final 14-month wash ups were unaffected. This resulted in an above average amount of HE volume being incorrectly labelled as FE during this affected period. A manual check to ensure shape files have been successfully downloaded and processed into FLUX is now in place.

For scenario H, it was identified that where an interim estimated read has been validated (Status – Medium) then this estimate read will be considered in the calculation of historical estimates. These validated estimate reads are not identified within Flux to inform users that these estimates now need to be treated as permanent estimate reads therefore non compliance is recorded.

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	Non Compliant – Interim estimated reads with medium validation status used in HE calculation
i	Rollover Reads	Consumption is calculated correctly in the instance of meter rollovers.	Scenario not found
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 they have been validated against a set of validated readings from another source	Compliant Customer read is appropriately validated and treated as a validated read
n	ICP with a photo read during the month	Photo reads are not used to calculate historic estimate, unless they have been validated against a set of validated readings from another source	Compliant Customer / Photo read was not validated and was ignored by the historic estimate process
o	ICP has a meter with a multiplier greater than 1	The multiplier is applied correctly	Compliant

PSNZ

PSNZ provided examples of historic estimate calculations, which were reviewed. The table below shows that most scenarios where examples were available are calculating as expected and correct SASV (seasonal adjusted shape values) are applied.

SASV are retrieved from the RM portal and loaded into Flux using an automated process. Flux monitors these automated upload processes and notifies PSNZ if they fail to run.

During the audit period there was an issue with the automated process to retrieve shapes files from the RM. The issue occurred during the RM DR testing exercise where the RM SFTP is switched over to the

secondary site. FLUX was successfully repointed to this secondary site at the start of the DR testing. However, Flux was not repointed back to the primary SFTP sile at the conclusion of the DR testing. No shape files were loaded during this period or exceptions generated by the FLUX system until the issue was identified. The issue was identified in time to ensure that all final 14-month wash ups were unaffected. This resulted in an above average amount of HE volume being incorrectly labelled as FE during this affected period. A manual check to ensure shape files have been successfully downloaded and processed into FLUX is now in place.

For scenario H, it was identified that where an interim estimated read has been validated (Status – Medium) then this estimate read will be considered in the calculation of historical estimates. These validated estimate reads are not identified within Flux to inform users that these estimates now need to be treated as permanent estimate reads therefore non compliance is recorded.

For scenario I, the consumption calculated across a meter rollover did not match a manual calculation of volume between the meter reads.

Test	Scenario	Test expectation	Compliance
a	ICP becomes Active part way through a month	Consumption is only calculated for the Active portion of the month.	Compliant
b	ICP becomes Inactive part way through a month.	Consumption is only calculated for the Active portion of the month.	Compliant
c	ICP become Inactive then Active again within a month.	Consumption is only calculated for the Active portion of the month.	Compliant
d	ICP switches in part way through a month on an estimated switch reading	Consumption is calculated to include the 1st day of responsibility.	Compliant
e	ICP switches out part way through a month on an estimated switch reading	Consumption is calculated to include the last day of responsibility.	Compliant
f	ICP switches out then back in within a month	Consumption is calculated for each day of responsibility.	Compliant
g	Continuous ICP with a read during the month	Consumption is calculated assuming the readings are valid until the end of the day	Compliant
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	Non Compliant – Interim estimated reads with medium validation status used in HE calculation
i	Rollover Reads	Consumption is calculated correctly in the instance of meter rollovers.	Non-Compliant – Rollover volume not correctly calculated

Test	Scenario	Test expectation	Compliance
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 they have been validated against a set of validated readings from another source	Compliant The customer read was not validated and was ignored by the historic estimate process.
n	ICP with a photo read during the month	Photo reads are not used to calculate historic estimate, unless they have been validated against a set of validated readings from another source	Has not occurred
o	ICP has a meter with a multiplier greater than 1	The multiplier is applied correctly	Compliant

Audit outcome

Non-compliant

Non-compliance	Description
Audit Ref: 12.11 With: Clause 4 Schedule 15.3 From: 01-Sep-21 To: 30-Jun-22	**MERI** Scenario B – Available reads after disconnection not loaded and validated to enable the HE calculation to be applied. Scenario C & E - SASV values not used when calculating HE volumes up to switch loss estimate read. **MERX** SASV files not loaded into FLUX system for a period of time. Scenario H – interim estimates used in HE calculation where these have been validated. **PSNZ** SASV files not loaded into FLUX system for a period of time. Scenario H – interim estimates used in HE calculation where these have been validated. Scenario I – consumption across a meter read roll over not being correctly calculated. Potential impact: Low Actual impact: Low Audit history: Once 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 is recorded as low overall because: • scenario C and E the incidence is low, and the impact is the incorrect apportionment of volume between consumption periods, • scenario H the treatment of validated interim estimated reads as permanent estimated reads results in the distortion of apportionment of volume by the inclusion of these estimated reads when actual reads are available either side of the interim estimate read is medium when applied across a large number of ICPs, anbd • scenario I the incidence is low and the impact to volume is small.

Actions taken to resolve the issue	Completion date	Remedial action status
SASV files have now been loaded into Flux	Complete	Investigating
Preventative actions taken to ensure no further issues will occur	**Completion date**	

Loading for SASV files is being monitored. We will further investigate issues raised in this section to determine if any process or system changes are required.	Ongoing 30/06/2023	

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

MERI

Meridian's forward estimate methodology is sound and is based on historic consumption where it is available. If historic consumption is not available, forward estimate of zero is entered. Meridian staff can override the zero estimate by entering a default value if necessary.

MERI also compares its aggregated submission volumes for some selected NSP with large amounts of irrigation load to overall GXP SCADA volumes and where they believe additional adjustment at an aggregated level is required an additional amount of volume is added to the AV-080 submission file.

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 number of balancing areas where this target was not met.

Month	Revision 1	Revision 3	Revision 7	Revision 14	Total Balancing Areas
Nov-2020	5	7	8	8	333
Dec-2020	1	2	3	3	337
Jan-2021	3	5	5	5	340

Month	Revision 1	Revision 3	Revision 7	Revision 14	Total Balancing Areas
Feb-2021	3	6	6	6	340
Mar-2021	1	0	0	0	340
Apr-2021	2	0	0		346
May-2021	3	3	3		341
Jun-2021	0	0	1		345
Jul-2021	2	2	1		348
Aug-2021	0		0		351
Sep-2021	0		1		352
Oct-2021	0	1			349
Nov-2021	3	3			348
Dec-2021	0	2			348
Jan-2022	2	4			348
Feb-2022	3	3			349

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

Month	Revision 1	Revision 3	Revision 7	Revision 14
Nov-2020	-9.76%	-11.52%	-11.58%	-11.54%
Dec-2020	-0.96%	-0.39%	-0.57%	-0.58%
Jan-2021	0.93%	-4.01%	-3.87%	-3.89%
Feb-2021	2.47%	5.33%	5.65%	5.71%
Mar-2021	1.18%	-0.96%	-0.51%	-0.49%

Month	Revision 1	Revision 3	Revision 7	Revision 14
Apr-2021	-0.03%	-2.83%	-2.24%	
May-2021	-5.84%	-6.53%	-6.17%	
Jun-2021	-1.88%	-1.91%	-1.58%	
Jul-2021	-2.80%	-3.08%	-3.05%	
Aug-2021	-0.75%		-1.08%	
Sep-2021	1.00%		-0.15%	
Oct-2021	0.81%	0.03%		
Nov-2021	-2.62%	-3.89%		
Dec-2021	-1.84%	-2.63%		
Jan-2022	-5.68%	-7.62%		
Feb-2022	-4.79%	-3.41%		

I reviewed 22 balancing area differences where the variation between revisions was more than ± 15% and ± 100,000 kWh. The differences were due to:

- difficulty in predicting accurate forward estimate volumes for irrigation loads, and the intermittent use of an aggregated FE adjustment value applied where MERI believes their ICP estimates are too low,
- timing differences for migration of customers from Velocity (MERI) to Flux (MERX), and
- gaining large ICPs where there was insufficient history to generate accurate forward estimate.

The forward estimate differences relating to irrigation loads and new customers with insufficient history are recorded as non-compliance below.

MERX

Flux's forward estimate process is based on a "straight line" forward standard estimate methodology, and where no historical information is available a "forward default' estimate of 25 units per day is used.

The forward standard methodology is based on the following:

- daily consumption from the "admin" field (based on previous validated meter readings),
- daily consumption from the switch in CS file, or
- daily consumption from the customer at the time of registration.

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 number of balancing areas where this target was not met.

Month	Revision 1	Revision 3	Revision 7	Revision 14	Total Balancing Areas
Nov-2020	0	0	0	0	337
Dec-2020	0	0	0	0	337
Jan-2021	0	0	0	0	337
Feb-2021	0	0	0		337
Mar-2021	0	0	0		337
Apr-2021	0	0	0		341
May-2021	1	2	3		341
Jun-2021	0	0	2		344
Jul-2021	0	0	0		348
Aug-2021	0		0		352
Sep-2021	0		0		354
Oct-2021	1	2	2		355
Nov-2021	0	0			355
Dec-2021	0	0			355
Jan-2022	0	0			356
Feb-2022	0	1			359

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

Month	Revision 1	Revision 3	Revision 7	Revision 14
Nov-2020	0.38%	0.89%	0.99%	0.87%
Dec-2020	0.39%	0.90%	0.87%	0.79%

Month	Revision 1	Revision 3	Revision 7	Revision 14
Jan-2021	0.21%	0.74%	0.64%	0.72%
Feb-2021	0.15%	0.18%	0.15%	0.07%
Mar-2021	-0.07%	0.05%	-0.10%	-0.01%
Apr-2021	-0.04%	0.13%	-0.02%	
May-2021	0.85%	1.46%	1.60%	
Jun-2021	-0.27%	0.57%	1.25%	
Jul-2021	0.00%	0.48%	0.53%	
Aug-2021	0.06%		0.72%	
Sep-2021	-0.17%		0.67%	
Oct-2021	0.59%	0.85%	1.38%	
Nov-2021	0.45%	0.97%		
Dec-2021	0.29%	0.63%		
Jan-2022	0.05%	0.41%		
Feb-2022	0.61%	1.65%		

The balancing areas with a difference greater than 15% and 100,000 kWh for May & June 2021 were caused by timing differences for migration of customers from Velocity (MERI) to Flux (MERX). This is recorded as compliant because it was a timing difference, rather than an error in forward estimate. There now has been further balancing area differences identified for Oct 2021 that are not related to migration of ICPs and these are recorded as non-compliant.

PSNZ

PSNZ's forward estimate process is based on a "straight line" forward standard estimate methodology, and where no historical information is available a "forward default' estimate of 25 units per day is used.

The forward standard methodology is based on the following:

- daily consumption from the "admin" field (based on previous validated meter readings),
- daily consumption from the switch in CS file, or
- daily consumption from the customer at the time of registration.

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 number of balancing areas where this target was not met.

Month	Revision 1	Revision 3	Revision 7	Revision 14	Total Balancing Areas
Nov-2020	0	0	0	0	253
Dec-2020	0	0	0	1	255
Jan-2021	0	0	0	0	256
Feb-2021	0	0	0	0	258
Mar-2021	0	0	0	0	261
Apr-2021	0	0	0		264
May-2021	0	0	0		269
Jun-2021	0	0	0		274
Jul-2021	0	0	0		278
Aug-2021	0		0		282
Sep-2021	0		0		285
Oct-2021	0	0	0		288
Nov-2021	0	0			291
Dec-2021	0	0			291
Jan-2022	0	1			292
Feb-2022	0	0			293

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

Month	Revision 1	Revision 3	Revision 7	Revision 14
Nov-2020	0.17%	0.71%	1.10%	1.27%
Dec-2020	0.59%	1.16%	1.39%	1.54%
Jan-2021	-0.01%	0.88%	1.12%	1.22%
Feb-2021	0.15%	0.47%	0.54%	0.67%
Mar-2021	0.12%	0.40%	0.60%	0.65%
Apr-2021	-0.09%	0.07%	0.27%	
May-2021	-0.32%	-0.45%	-0.54%	
Jun-2021	-0.32%	-0.44%	-0.20%	
Jul-2021	-0.08%	-0.08%	-0.01%	
Aug-2021	0.18%		0.53%	
Sep-2021	0.39%		0.68%	
Oct-2021	0.65%	1.65%	1.95%	
Nov-2021	0.42%	1.34%		
Dec-2021	0.37%	1.23%		
Jan-2022	0.56%	1.22%		
Feb-2022	0.24%	0.79%		

One balancing area had a difference greater than 15% and 100,000 kWh and was caused by correction of a misread for one ICP (Dec 2020). This is recorded as compliant as forward estimate was correct, the difference was caused by a change to historic estimate. The Jan 2022 difference was caused by a misread being entered into FLUX (correct reading was entered with a prefix of 1) which again was caused by a change in HE.

Audit outcome

Non-compliant

Non-compliance	Description
Audit Ref: 12.12 With: Clause 6 of Schedule 15.3 From: 01-Dec-02 To: 01-Feb-22	**MERI** The accuracy threshold was not met for all months and revisions. **MERX** The accuracy threshold was not met for all months and revisions. Potential impact: Low Actual impact: Low Audit history: Multiple times previously 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, with exceptions occurring for irrigation load estimation at both ICP and aggregation level, and new ICPs with significant loads. Initial data is replaced with revised data and washed up. The risk rating has been assessed as low as while the overall volume of the Nov 2020 FE inaccuracy was 27 GWh (11.54%), this volume has now been correctly revised via the wash up process with the reconciliation manager.

Actions taken to resolve the issue	Completion date	Remedial action status
		Identified
Preventative actions taken to ensure no further issues will occur	**Completion date**	
We will continue with our current controls in this area. The FE inaccuracy reported for Nov 2020 was due to an error in the manual adjustment process for one NSP – as irrigation volumes are transitioned to Flux these adjustments for shoulder seasons have become redundant due to the daily reads available in Flux which reduces the increases the accuracy of initial submissions.		

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 reports were examined to identify all ICPs which had a profile change during the audit period.

A typical sample of four ICPs with profile changes for MERI, three ICPs for MERX and 14 ICP for PSNZ were reviewed to confirm that there was an actual or permanent estimate reading on the day of the profile change.

Audit commentary

In the event of a profile change, Meridian uses a validated meter reading on the day that the change is effective. Profile changes often have an associated meter change, and these readings are used.

MERI

A sample of 15 profile changes were checked and found an actual read was gained for each profile change. One profile change was originally made with an incorrect event date (one day too late) and was corrected as part of the audit.

MERX

A sample of five profile changes were checked and found an actual read was gained for each profile change.

PSNZ

PSNZ ensures that there is a reliable source of daily reading and HHR data prior to moving an ICP from NHH to HHR profile. If a HHR ICP later has a fault which prevents regular readings and HHR data from being obtained, it will be returned to a NHH profile from the effective date of the last reading received.

PSNZ applies two methods to performing profile changes:

- user enters information into FLUX on an ICP-by-ICP basis and this triggers a registry update overnight; this process relies on the user to check that an actual read is present for the date of the profile change, and
- bulk update tool process checks to see if the meter attributes match the proposed profile (e.g., certified LCD present for night-controlled profile) and also that an actual read is present for the profile change date.

A sample of 14 changes (ten to submission type and profile and four to profile) were checked and found that an actual read was gained for each profile change for nine of the ten NHH to HHR submission type and profile updates and all four of the profile only changes where the bulk update tool was used.

The manual profile code change process using the FLUX GUI allows for users to future date profile code changes and this was the case for the one example identified where no reading was present for the submission type and profile code change as the user had entered the change in advance and I also observe a number of future dated submission type and profile code changes in FLUX.

Audit outcome

Non-compliant

Non-compliance	Description
Audit Ref: 12.13 With: Clause 7 Schedule 15.3 From: 01-Sep-21 To: 30-Jun-22	**PSNZ** One change of submission type and profile code change did not have a validated meter reading for the date of the 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 most profile changes use the bulk update process which has checks in place to ensure a validated read is present. 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
		Identified
Preventative actions taken to ensure no further issues will occur	**Completion date**	
We will continue with our current controls to ensure profile changes occur on a validated read. The process to manually update profiles from NHH to HHR when updating submission method for PSNZ will be reviewed if we continue with this.		

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

For each category 3 of higher metering installation, a reconciliation participant must provide half hour submission information to the reconciliation manager.

For each category 1 or category 2 metering installation, a reconciliation participant must provide to the reconciliation manager:

- *Half hour submission information; or*
- *Non half hour submission information; or*
- *A combination of half hour submission information and non-half hour submission information*

However, a reconciliation participant may instead use a profile if:

- *The reconciliation participant is using a profile approved in accordance with clause Schedule 15.5; and*
- *The approved profile allows the reconciliation participant to provide half hour submission information from a non-half hour metering installation; and*
- *The reconciliation participant provides submission information that complies with the requirements set out in the approved profile.*

Half hour submission information provided to the reconciliation manager must be aggregated to the following levels:

- *NSP code*
- *reconciliation type*
- *profile*
- *loss category code*
- *flow direction*
- *dedicated NSP*
- *trading period*

The non-half hour submission information that a reconciliation participant submits must be aggregated to the following levels:

- *NSP code*
- *reconciliation type*
- *profile*
- *loss category code*
- *flow direction*
- *dedicated NSP*
- *consumption period or day*

Audit observation

Processes to ensure that information used to aggregate the reconciliation reports is consistent with the registry were reviewed in **section 2.1**.

Aggregation of NHH volumes is discussed in **section 12.3**, aggregation of HHR volumes is discussed in **section 11.4** and NSP volumes are discussed in **section 12.6**.

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.

The submitted data was also compared to billed data in **section 11.3** and appeared reasonable.

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 AV090, AV140 and AV080 reports as part of the aggregation checks. AV130 submissions were reviewed in **section 12.6**.

Audit commentary

Submission information is appropriately rounded to no more than 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 a sample of AV080 reports for each participant code to confirm 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 in all instances.

The overall percentages of historic estimate are high.

MERI

The quantity of NSPs where revision targets were met is set out in the table below.

Month	Revision 3 80% Met	Revision 7 90% Met	Revision 14 100% Met	Total
Jan-21	-	-	305	434
Feb-21	-	-	268	434
Mar-21	-	-	229	434
Aug-21	-	370	-	445
Sep-21	-	402	-	446
Oct-21	-	384	-	412
Dec-21	425	-	-	442
Jan-22	429	-	-	442
Feb-22	403			418

The table below shows that the percentage HE at a summary level for all NSPs is well above the required targets for the 3 and 7-month revisions but did not meet the target for the 14-month revisions.

Month	Revision 3 80% Target	Revision 7 90% Target	Revision 14 100% Target
Jan-21	-	-	99.39%
Feb-21	-	-	99.12%
Mar-21	-	-	98.60%
Aug-21	-	92.31%	-
Sep-21	-	94.00%	-
Oct-21	-	94.42%	-
Dec-21	92.75%	-	-
Jan-22	93.08%	-	-
Feb-22	92.40%		

As detailed in **section 12.10** historic estimate is labelled as forward estimate under the following circumstances, which sometimes prevents the historic estimate proportion requirements from being met:

- historic estimate is labelled as forward estimate if an ICP switches out on an estimated read, or
- a permanent estimate reading is not entered by revision 14 if an actual reading is unable to be obtained.

MERX

The quantity of NSPs where revision targets were met is set out in the table below.

Month	Revision 3 80% Met	Revision 7 90% Met	Revision 14 100% Met	Total
Jan-21	-	-	365	427
Feb-21	-	-	360	427
Mar-21	-	-	378	427
Aug-21	-	393		440

Month	Revision 3 80% Met	Revision 7 90% Met	Revision 14 100% Met	Total
Sep-21	-	380	-	441
Oct-21	-	414	-	443
Dec-21	262	-	-	442
Jan-22	271	-	-	445
Feb-22	419			446

The table below shows that the percentage HE at a summary level for all NSPs is well above the required targets for the 3 and 7-month revisions but did not meet the target for the 14-month revisions.

Month	Revision 3 80% Target	Revision 7 90% Target	Revision 14 100% Target
Jan-21	-	-	99.60%
Feb-21	-	-	99.58%
Mar-21	-	-	99.72%
Aug-21	-	97.48%	-
Sep-21	-	96.67%	-
Oct-21	-	99.01%	-
Dec-21	81.74%	-	-
Jan-22	84.41%	-	-
Feb-22	98.34%		

As detailed in **section 12.10** historic estimate is labelled as forward estimate under the following circumstances, which sometimes prevents the historic estimate proportion requirements from being met:

- if SASV are not provided for the NSP and profile by the reconciliation manager, the historic estimate calculated is labelled as forward estimate by Flux; this typically occurs for NSPs with PV1 profile (the only exception to this is where reads are recorded on the last day of the month before the

reconciliation period and the last day of the reconciliation period, which results in the consumption being classified as “actual” and reported as historic estimate), and

- a permanent estimate reading is not entered by revision 14 if an actual reading is unable to be obtained.

PSNZ

The quantity of NSPs where revision targets were met is set out in the table below.

Month	Revision 3 80% Met	Revision 7 90% Met	Revision 14 100% Met	Total
Jan-21			329	349
Feb-21			329	351
Mar-21			338	354
Aug-21		360		375
Sep-21		360		378
Oct-21		370		381
Dec-21	263			384
Jan-22	265	-	-	385
Feb-22	378			386

The table below shows that the percentage HE at a summary level for all NSPs is well above the required targets for the 3 and 7-month revisions and meets the target for the 14-month revisions.

Month	Revision 3 80% Target	Revision 7 90% Target	Revision 14 100% Target
Jan-21	-	-	99.70%
Feb-21	-	-	99.74%
Mar-21	-	-	99.84%
Aug-21	-	99.28%	-
Sep-21	-	98.84%	-

Month	Revision 3 80% Target	Revision 7 90% Target	Revision 14 100% Target
Oct-21	-	99.66%	-
Dec-21	83.60%	-	-
Jan-22	83.93%	-	-
Feb-22	99.39%		

As detailed in **section 12.10** historic estimate is labelled as forward estimate under the following circumstances, which sometimes prevents the historic estimate proportion requirements from being met:

- if SASV are not provided for the NSP and profile by the reconciliation manager, the historic estimate calculated is labelled as forward estimate by Flux; this typically occurs for NSPs with PV1 profile (the only exception to this is where reads are recorded on the last day of the month before the reconciliation period and the last day of the reconciliation period, which results in the consumption being classified as "actual" and reported as historic estimate), and
- a permanent estimate reading is not entered by revision 14 if an actual reading is unable to be obtained.

Audit outcome

Non-compliant

Non-compliance	Description
Audit Ref: 13.3 With: Clause 10 of Schedule 15.3 From: 01-Sep-21 To: 30-Jun-22	**MERI** Historic estimate thresholds were not met for some revisions. MERX Historic estimate thresholds were not met for some revisions. **PSNZ** Historic estimate thresholds were not met for some 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 mitigate the risk of not meeting the threshold most of the time, but there is room for improvement. The audit risk rating is low, as Meridian were reasonably close to the target in all cases.

Actions taken to resolve the issue	**Completion date**	**Remedial action status**
Please Refer to comments in 12.8 and 12.10		Identified
Preventative actions taken to ensure no further issues will occur	**Completion date**	

14. GLOSSARY OF TERMS

AW breach	AW arrival date is more than five business days after receipt of the NW.
CS breach for switch move	AN is received AND; Proposed transfer date in NT and expected transfer date in AN do not match AND; CS is delivered more than 10 business days after NT arrival AND; No NW notice has been provided
CS breach for transfer switch	CS arrival date is more than 5 business days after the CS Actual Transfer Date AND; no NW has been provided
E2 breach for switch move	NT Proposed Transfer Date and CS Actual Transfer date do not match; AND CS Actual Transfer Date is a) earlier than the NT Proposed Transfer Date; OR b) more than 10 business days after receipt of the NT.
E2 breach for transfer switch	CS Actual Transfer Date is more than 10 business days after receipt of the NT.
ET breach applicable to switch move only	AN Expected Transfer Date is earlier than the NT Proposed Transfer Date; OR AN Expected Transfer Date is more than 10 business days after NT arrival date.
MN breach	An MN acceptance arrival date is more than 10 business days after the Input Date of the Trader event that first proposed the MEP. The arrival of an MN decline or a nomination of a new MEP by the submission of a new Proposed MEP attribute on the Trader event or the reversal of the Trader event that commenced this MEP switch means that there will be no MN acceptance arriving therefore the potential switch breach record is deleted (even if overdue).
NA breach	NW arrival date is more than two calendar months after the CS Actual Transfer Date.
NW breach for switch moves	NW arrival date is more than five business days after receipt of the NT where the NW arrives immediately after the NT
NW breach for transfer and HH switches	NW arrival date is more than three business days after receipt of the NT where the NW arrives immediately after the NT
PT breach applicable to HH switches only	NT Proposed Transfer Date is more than 90 days before the NT arrival date; OR If the NT Proposed Transfer Date is: a) Before the arrival date of the NT; AND b) In a different month from the arrival month of the NT; AND c) Is different from the AN Expected Transfer Date.
RR breach	RR arrival date is more than four calendar months from the CS Actual Transfer Date.
SR breach	NW arrival date is more than 10 business days after the initial NW for the same trader requesting the withdrawal. The trader sending the corresponding AW (either accepting or rejecting

	the withdrawal) only receives a breach on the AW if it is sent more than five days after the latest NW as in the original rule.
T2 breach for switch move	CS arrival date is more than five business days after receipt of the NT AND, before delivery of the CS. No NW notice has been provided, AND (no AN notice has been provided OR an AN notice is provided, and the NT Proposed Transfer Date matches the AN expected Transfer Date).
T2 breach for transfer switch	CS arrival date is more than three business days after receipt of the NT where the CS arrives immediately after the NT.
WR breach	An AN or CS arrival date (whichever is applicable, may be one or both) are delivered by the losing Trader more than two business days of the arrival date of the AW rejecting the withdrawal; AND a subsequent NW is not provided before delivery of the AN or CS.

CONCLUSION

Meridian operates three trader codes:

- MERI for Meridian NHH and HHR ICPs managed using Velocity, and generation,
- MERX for Meridian NHH and HHR ICPs managed using Flux, and
- PSNZ for Powershop NZ NHH and HHR ICPs managed using Flux.

Unless otherwise specified, the processes and non-compliances described in the report apply to all codes.

Data collection for NHH ICPs is completed by Wells and MEPs, and data collection for HHR ICPs is completed by AMS, EMS and EDMI. HHR submission, DUML submission and provision of metering information to the grid owner is completed by EMS for MERI. All other activities are completed by Meridian.

Submission

There has been an overall increase in the number of non-compliances recorded, and several recommendations are made regarding improvements to the effectiveness of controls. The following main issues were identified:

- not all corrections from the last audit have been actioned,
- corrections have not been conducted for bridged corrections,
- consumption on inactive ICPs has not been submitted in all instances, and
- some non-compliant HE scenarios.
- PSNZ HHR estimations does not meet endeavours definition.

It's recommended that the disconnection and reconnection processes are improved by ensuring disconnection occurs at the boundary rather than at the meter wherever possible, and that disconnection and reconnection readings are obtained and used to improve the accuracy of submissions.

Switching

Non-compliance still exists with some switching processes, specifically the accuracy and labelling of switch event meter readings and the accuracy of average daily consumption.

Registry

There has been a decline in compliance for the timeliness of registry updates. In particular, the new connections updates during the audit period were not as compliant as they were during the last audit. This is an area where strengthening controls should help to improve compliance.

All distributed unmetered load databases have been audited, and Meridian is continuing to actively engage with database owners to improve compliance and to assist with the introduction of profiles to allow CMS and dimming systems to be compliant.

Conclusion

This audit report identified 51 non-compliances, an increase from 40 recorded during the last audit. 13 recommendations are made and many of these are targeting improvements in controls. The future risk rating is 110, which is an increase on 87 from the last audit.

The date of the next audit is determined by the Electricity Authority and is dependent on the level of compliance during this audit. The table below provides some guidance on this matter and contains a future risk rating score of 110 which results in an indicative audit frequency of three months. I have considered this result in conjunction with Meridian's responses and my recommendation for the next audit date is 12 months.

PARTICIPANT RESPONSE

We thank Veritek and our teams for the time and effort preparing the information required for this audit. which was able to be conducted onsite for the first time since 2019.

We acknowledge that this audit has reported an increased number of non-compliances.

During the audit period Meridian, like many other businesses, was impacted by the Omnicron COVID outbreak as well as the increase in the prevalence of other illnesses which impacted our Operations and Contact Centre Teams heavily over first half of 2022. These same issues impacted many of our service providers.

The resulting resource constraints have contributed to the decline in compliance in areas such as timeliness of Registry updates and sending of RR and NW files. It has also contributed to increased instances of human error (e.g manually input active dates) with teams under additional pressure due to less staff to complete "business as usual" activities.

In addition, many of the planned process reviews and improvements identified following the last audit have been unable to be implemented.

We have referred to these again in this audit and they include;

- Process for identification and management of bridged meters so required actions can be monitored including unbridging, re-certification and corrections
- Process for identification of consumption on Inactive ICPs including update to ICP status so submission occurs
- Implementation of the automated no read process for PSNZ
- Resolution of incorrectly assigned Residential ANZSIC codes due to account structure mismatch

We have made progress on reviewing the timing of read information into Flux and running of switching processes to identify whether changes will help reduce instances of estimates being used in CS files. This work will continue.

The limited controls related to the HHR submission process used intermittently for a small number of PSNZ ICPs has been raised in several sections in this report. As outlined in our comments for these sections, we'll be conducting a full review of this process and associated Flux functionality before using this submission method in future.

Migration of ICPs to Flux

We have continued the migration of ICPs from Velocity to the Flux platform including commencing migration of C&I and Solely unmetered ICPs.

Migration of the remaining ICPs (approx. 25k) is currently expected to be complete by 31 December 2022.