

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 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 EDM. 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

During the audit period NHH ICPs have migrated from MERI (Velocity) to MERX (Flux). This has resulted in some fluctuations due to switch timing in NHH revision differences and billed versus submission information which are expected to settle once the transfers are complete.

There have been no changes to MERI's NHH processes because the ICPs are expected to migrate, which has resulted in further instances of non-compliances identified in previous audits relating to system processes such as downgrades, and identification of historic estimate. Overall controls over submission are strong, and apart from these system limitations only isolated exceptions with a low impact were identified for MERI.

For MERX and PSNZ, increases in ICPs have increased the impact of some non-compliances. For instance, there is an increase in the number of ICPs with unreported inactive consumption, and NSPs not meeting the historic estimate requirements.

Switching

The switching team utilise the new switch breach report to manage timeliness, and this has provided them with improved visibility of pending breaches. Examination of the AN, CS and RR files found some errors due to the manual processes in place for those managed in Flux. For example, readings are labelled incorrectly or the incorrect last read date is sent.

Registry

The reporting in Flux continues to be improved. Registry acknowledgement files are now monitored. Some discrepancies do not appear to be investigated and resolved in a timely manner. Specifically, active ICPs with no meter and no unmetered load recorded and ICPs with distributed generation indicated by the distributor where there is no injection metering.

Meridian continues to work with their customers to improve the distributed unmetered load database accuracy. Two of the 37 DUML audits due during the audit period have not been undertaken. In this audit I have indicated the potential submission variance for each database based on the last audit.

Conclusion

This audit report now includes the Powershop findings, and the audit found 40 (39 last time) non-compliances and makes six (three last time) recommendations. No issues are raised. The future risk rating

is 87, which is a minor increase from the 83 recorded in the last audit. This is a good result considering that the audit now covers three participant codes.

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 87 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	<p>MERI</p> <p>Some registry information is incorrect.</p> <p>Not all corrections actioned from the last audit.</p> <p>One ICP with active vacant consumption of 3,699 kWh not submitted as the ICP was at the incorrect status.</p> <p>Some incorrect submission information recorded in section 12.7.</p> <p>MERX</p> <p>Some registry information is incorrect.</p> <p>Not all corrections actioned from the last audit.</p> <p>Some incorrect submission information recorded in section 12.7.</p> <p>PSNZ</p> <p>Some registry information is incorrect.</p> <p>Not all corrections actioned from the last audit.</p> <p>Some incorrect submission information recorded in section 12.7.</p>	Moderate	Medium	4	Investigating
Electrical Connection of Point of Connection	2.11	10.33A	<p>MERI</p> <p>Two ICPs with no metering in place and are not reconciled as unmetered load.</p> <p>Six of the 20 ICPs (30%) sampled (of a total of 65</p>	Moderate	Low	2	Investigating

Subject	Section	Clause	Non-Compliance	Controls	Audit Risk Rating	Breach Risk Rating	Remedial Action
			<p>ICPs) where certification is more than five days after the electrical connection date were confirmed to have late certification.</p> <p>56 ICPs were certified more than 5 days after reconnection.</p> <p>MERX</p> <p>38 ICPs were not certified within 5 days after reconnection.</p> <p>Three ICP's meters were not certified on unbridging.</p> <p>PSNZ</p> <p>78 reconnections were not certified within five business days.</p> <p>Three bridged meters were not recertified when the bridge was removed.</p>				
Changes to registry information	3.3	10 Schedule 11.1	<p>MERI</p> <p>370 late updates to active status for reconnections.</p> <p>406 late updates to inactive status for disconnections.</p> <p>5,039 late trader updates.</p> <p>MERX</p> <p>300 late updates to active status for reconnections.</p> <p>127 late updates to inactive status for disconnections.</p> <p>1,802 late trader updates.</p> <p>PSNZ</p>	Moderate	Low	2	Investigating

Subject	Section	Clause	Non-Compliance	Controls	Audit Risk Rating	Breach Risk Rating	Remedial Action
			<p>593 late updates to active status for reconnections.</p> <p>14 late updates to inactive new connection in progress status.</p> <p>229 late updates to inactive status for disconnections.</p> <p>1,328 late trader updates.</p>				
Provision of information to the registry manager	3.5	9 Schedule 11.1	<p>MERI</p> <p>735 late updates to active status for new connections.</p> <p>Four of the sample of 61 ICPs had incorrect active dates recorded.</p> <p>Five corrections from 2020 audit not corrected.</p> <p>MERI</p> <p>32 late updates to active status for new connections.</p> <p>One of the sample of 11 ICPs had an incorrect active date recorded.</p> <p>PSNZ</p> <p>195 late new connection updates.</p> <p>Three incorrect event dates.</p>	Moderate	Low	2	Identified
ANZSIC codes	3.6	9 (1(k) of Schedule 11.1	<p>MERI</p> <p>One ICP of a sample of 50 ICPs checked with incorrect ANZSIC codes.</p> <p>MERX</p> <p>All 18 ICPs sampled of the 103 ICPs with unknown ANZSIC codes were able to be determined.</p>	Weak	Low	3	Investigating

Subject	Section	Clause	Non-Compliance	Controls	Audit Risk Rating	Breach Risk Rating	Remedial Action
			All ten ICPs sampled with a residential ANZSIC code were found to be incorrect and have been corrected.				
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. PSNZ Five ICPs incorrectly have unmetered load recorded.	Moderate	Low	2	Identified
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.	Moderate	Low	2	Identified
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	Moderate	Low	2	Investigating

Subject	Section	Clause	Non-Compliance	Controls	Audit Risk Rating	Breach Risk Rating	Remedial Action
			<p>submitted but the registry still shows 1,12 “inactive - new connection in progress” status.</p> <p>MERX</p> <p>Four ICPs electrically connected but recorded as “inactive - new connection in progress”</p> <p>28 ICPs had consumption during inactive periods, indicating that their status was incorrect. Estimated under submission of 29,873 kWh has occurred.</p> <p>PSNZ</p> <p>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.</p> <p>17 ICPs had consumption during inactive periods, indicating that their status was incorrect. Estimated under submission of 468 kWh has occurred.</p> <p>Three ICPs had incorrect statuses and status dates applied.</p> <p>Three ICPs with incorrect inactive statuses of 1,12 instead of 1,6.</p> <p>Three ICPs had inactive statuses of 1,12 when they should be active.</p>				
Losing trader response to switch	4.2	3 and 4 Schedule 11.3	MERI	Strong	Low	1	Identified

Subject	Section	Clause	Non-Compliance	Controls	Audit Risk Rating	Breach Risk Rating	Remedial Action
request and event dates - standard switch			<p>Two AN files were sent with a proposed event date more than ten days after receipt of the NT.</p> <p>MERX</p> <p>Incorrect AN code applied for three ICPs out of a sample of ten checked.</p>				
Losing trader must provide final information - standard switch	4.3	5 Schedule 11.3	<p>MERI</p> <p>Seven CS breaches.</p> <p>Average daily consumption is not calculated in accordance with the registry functional specification in some instances.</p> <p>Incorrect last read date recorded for all three ICPs sampled from a total of 12 switch and transfer switches.</p> <p>Incorrect read types sent for two ICPs.</p> <p>Last actual read date was after the period of supply for one of five ICPs sampled.</p> <p>MERX</p> <p>Average daily consumption is not calculated in accordance with the registry functional specification in some instances.</p> <p>All five transfer switch ICPs sampled of a possible 613 transfer and switch ICPs contained an incorrect last read date.</p> <p>PSNZ</p>	Moderate	Low	2	Investigating

Subject	Section	Clause	Non-Compliance	Controls	Audit Risk Rating	Breach Risk Rating	Remedial Action
			<p>Three late CS files.</p> <p>Four transfer CS files contained an incorrect read type.</p> <p>Three transfer CS files had the incorrect reading.</p> <p>Average daily kWh in the CS is not calculated in accordance with the Registry Functional Specification.</p>				
Retailers must use same reading - standard switch	4.4	Clause 6(1) and 6A Schedule 11.3	<p>MERI</p> <p>Six late RR files.</p> <p>MERX</p> <p>12 late RR files.</p> <p>PSNZ</p> <p>14 late RR files.</p>	Strong	Low	1	Identified
Non-half hour switch event meter reading - standard switch	4.5	Clause 6(2) and (3) Schedule 11.3	<p>MERX</p> <p>Four RRs incorrectly rejected.</p>	Moderate	Low	2	Identified
Gaining trader informs registry of switch request - switch move	4.7	9 Schedule 11.3	<p>MERI</p> <p>Two transfer switches requested as switch moves.</p> <p>One ICP with a category 3 meter switched using a switch move.</p> <p>MERX</p> <p>Three transfer switches requested as switch moves.</p>	Strong	Low	1	Identified
Losing trader provides information - switch move	4.8	10(1) Schedule 11.3	<p>MERI</p> <p>Four AN files were sent with a proposed event</p>	Moderate	Low	2	Investigating

Subject	Section	Clause	Non-Compliance	Controls	Audit Risk Rating	Breach Risk Rating	Remedial Action
			<p>date more than ten days after receipt of the NT.</p> <p>24 T2 breaches.</p> <p>Two ET breaches.</p> <p>One genuine E2 breach out of a sample of 20 checked.</p> <p>MERX</p> <p>Incorrect AN code applied for one ICP out of a sample of ten checked.</p> <p>Five T2 breaches.</p> <p>One genuine E2 breach.</p> <p>Eight of the ten ET breaches sampled were found to be genuine.</p> <p>PSNZ</p> <p>One E2 breach</p> <p>16 late CS files (T2 breaches).</p> <p>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.</p>				
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.	Strong	Low	1	Identified
Losing trader must provide final information - switch move	4.10	11 Schedule 11.3	<p>MERI</p> <p>Average daily consumption is not calculated in accordance with the registry functional specification in some instances.</p> <p>Incorrect last read date recorded for all three ICPs sampled from a total of 12 switch and transfer switches.</p>	Moderate	Low	2	Investigating

Subject	Section	Clause	Non-Compliance	Controls	Audit Risk Rating	Breach Risk Rating	Remedial Action
			<p>All five ICPs sampled of a possible 5,435 ICPs had an incorrect read type of actual recorded.</p> <p>Last actual read date was after the period of supply for two of five ICPs sampled.</p> <p>MERX</p> <p>Average daily consumption is not calculated in accordance with the registry functional specification in some instances.</p> <p>All five move switch ICPs sampled of a possible 613 transfer and switch ICPs contained an incorrect last read date.</p> <p>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 .</p> <p>PSNZ</p> <p>One switch move CS contained an incorrect read.</p> <p>Three switch move CS contained an incorrect read type.</p> <p>Average daily kWh in the CS is not calculated in accordance with the Registry Functional Specification.</p>				
Gaining trader changes to switch meter reading - switch move	4.11	12 Schedule 11.3	<p>MERI</p> <p>22 late RR files.</p> <p>One of the five RRs rejections sampled incorrectly rejected causing the gaining HHR</p>	Moderate	Low	2	Identified

Subject	Section	Clause	Non-Compliance	Controls	Audit Risk Rating	Breach Risk Rating	Remedial Action
			trader to gain on an inaccurate read. PSNZ 30 late RR files for switch moves.				
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 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.	Moderate	Low	2	Identified
Metering information	4.16	21 Schedule 11.3	MERI and MERX CS reads labelled incorrectly which can	Weak	Low	3	Investigating

Subject	Section	Clause	Non-Compliance	Controls	Audit Risk Rating	Breach Risk Rating	Remedial Action
			<p>cause vacant consumption to be pushed to the gaining trader.</p> <p>PSNZ</p> <p>Four CS files had an incorrect switch readings.</p>				
Unmetered threshold exceeded	5.3	10.14 (5)	<p>MERI</p> <p>Eight standard unmetered ICPs with annual consumption over 6,000 kWh.</p>	Moderate	Low	2	Identified
Distributed unmetered load	5.4	11 Schedule 15.3, Clause 15.37B & 16A.26	<p>MERI</p> <p>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.</p> <p>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.</p> <p>Inaccurate submission information for several databases.</p> <p>Two distributed unmetered database audits overdue.</p> <p>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.</p>	Moderate	High	6	Investigating

Subject	Section	Clause	Non-Compliance	Controls	Audit Risk Rating	Breach Risk Rating	Remedial Action
Electricity conveyed & notification by embedded generators	6.1	10.13, 10.24 and 15.13	<p>MERI</p> <p>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.</p> <p>ICP 0001050011WM9D7 is not quantified in accordance with the code.</p> <p>Generation not quantified or gifted for three of three HHR ICPs sampled where the Distributor indicates grid connected generation is connected.</p> <p>While meters were bridged, energy was not metered and quantified according to the code for three ICPs.</p> <p>MERX</p> <p>One ICP with an installation type of "B" without the PV1 profile.</p> <p>Ten of the 20 ICPs sampled of a possible 82 ICPs with an installation type of "B" without the PV1 or EG1 profile.</p> <p>While meters were bridged, energy was not metered and quantified according to the code for seven ICPs.</p> <p>PSNZ</p> <p>While meters were bridged, energy was not metered and quantified according to the code for eight ICPs.</p>	Moderate	Low	2	Investigating

Subject	Section	Clause	Non-Compliance	Controls	Audit Risk Rating	Breach Risk Rating	Remedial Action
			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.	Strong	Low	1	Identified
Collection of information by certified reconciliation participant	6.5	2 Schedule 15.2	MERI ICP 0085976769LC230 was not interrogated within its maximum interrogation cycle.	Strong	Low	1	Identified
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.	Moderate	Low	2	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	Moderate	Low	2	Identified

Subject	Section	Clause	Non-Compliance	Controls	Audit Risk Rating	Breach Risk Rating	Remedial Action
			system constraints the consumption is apportioned from two days after the meter change onwards instead of from the day after the meter is changed.				
Interrogate meters once	6.8	7(1) and (2) Schedule 15.2	<p>MERI</p> <p>Nine of ten ICPs were not read during the period of supply and exceptional circumstances were not proven.</p> <p>MERX</p> <p>Two of ten ICPs sampled were not read during the period of supply and exceptional circumstances were not proven.</p> <p>PSNZ</p> <p>Two of ten ICPs sampled were not read during the period of supply and exceptional circumstances were not proven.</p>	Moderate	Low	2	Identified
NHH meters interrogated annually	6.9	8(1) and (2) Schedule 15.2	<p>MERI</p> <p>Exceptional circumstances and best endeavours were not proven for one of ten examples checked.</p>	Moderate	Low	2	Identified
NHH meters 90% read rate	6.10	9(1) and (2) Schedule 15.2	<p>MERI</p> <p>Exceptional circumstances and best endeavours were not proven for 11 of 13 examples checked.</p> <p>PSNZ</p> <p>For at least two ICPs unread in the previous four months, the best endeavours requirements were not met, and exceptional</p>	Moderate	Low	2	Identified

Subject	Section	Clause	Non-Compliance	Controls	Audit Risk Rating	Breach Risk Rating	Remedial Action
			circumstances did not exist.				
Identification of readings	9.1	3(3) Schedule 15.2	<p>Some incorrectly labelled meter readings, as follows:</p> <p>MERI</p> <p>At least three ICPs with actual readings labelled as estimates.</p> <p>At least five ICPs with estimated readings labelled as actuals.</p> <p>MERX</p> <p>At least five ICPs with estimates labelled as actuals.</p> <p>PSNZ</p> <p>Actual readings labelled as estimates for four ICPs.</p> <p>Estimated readings labelled as actuals for three ICPs.</p>	Weak	Low	3	Investigating
Meter data used to derive volume information	9.3	3(5) Schedule 15.2	<p>MERI, MERX and PSNZ</p> <p>Raw meter data is truncated upon receipt and not when volume information is created for SMC0, IHUB and FCLM meters.</p>	Moderate	Low	2	Investigating
Electronic meter readings and estimated readings	9.6	17 Schedule 15.2	Not all AMI events checked.	Moderate	Low	2	Investigating
Calculation of ICP days	11.2	15.6	<p>MERI</p> <p>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.</p>	Moderate	Low	2	Identified

Subject	Section	Clause	Non-Compliance	Controls	Audit Risk Rating	Breach Risk Rating	Remedial Action
			<p>MERX</p> <p>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.</p> <p>PSNZ</p> <p>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.</p> <p>152 days were under reported at LINE-NPK0331 because the start date for ICP 0001112133WM1BA's NSP was incorrect.</p>				
HHR aggregates information provision to the reconciliation manager	11.4	15.8	<p>MERI</p> <p>HHR aggregates file does not contain electricity supplied information.</p> <p>PSNZ</p> <p>HHR aggregates file does not contain electricity supplied information.</p>	Strong	Low	1	Cleared
Creation of submission information	12.2	15.4	<p>MERI</p> <p>ICPs 0005906555RNE30, 0006300324RNC8C and 0008801022TPEF8 have 1,5 "reconciled</p>	Moderate	Medium	4	Investigating

Subject	Section	Clause	Non-Compliance	Controls	Audit Risk Rating	Breach Risk Rating	Remedial Action
			<p>elsewhere” status but do not have their load reconciled under another ICP. ICP 0008801022TPEF8 has no load connected.</p> <p>MERX</p> <p>28 ICPs had consumption during inactive periods, indicating that their status was incorrect. Estimated under submission of 29,873 kWh has occurred.</p> <p>PSNZ</p> <p>The NSP start date for ICP 0001112133WM1BA was incorrect, resulting in no data being submitted for some revisions between January and May 2020.</p> <p>17 ICPs had consumption during inactive periods, indicating that their status was incorrect. Estimated under submission of 468 kWh has occurred.</p>				
Accuracy of submission information	12.7	15.7	<p>MERI</p> <p>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.</p> <p>ICPs 0005906555RNE30, 0006300324RNC8C and 0008801022TPEF8 have 1,5 “reconciled</p>	Moderate	Medium	4	Investigating

Subject	Section	Clause	Non-Compliance	Controls	Audit Risk Rating	Breach Risk Rating	Remedial Action
			<p>elsewhere” status but do not have their load reconciled under another ICP. ICP 0008801022TPEF8 has no load connected.</p> <p>One RR file of five rejected RR files sampled incorrectly rejected resulting in 4,858 kWh being pushed to the gaining trader.</p> <p>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.</p> <p>MERX</p> <p>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.</p> <p>28 ICPs had consumption during inactive periods, indicating that their status was incorrect. Estimated under submission of 29,873 kWh has occurred.</p> <p>PSNZ</p>				

Subject	Section	Clause	Non-Compliance	Controls	Audit Risk Rating	Breach Risk Rating	Remedial Action
			<p>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.</p> <p>The NSP start date for ICP 0001112133WM1BA was incorrect, resulting in no data being submitted for some revisions between January and May 2020.</p> <p>17 ICPs had consumption during inactive periods, indicating that their status was incorrect. Estimated under submission of 468 kWh has occurred.</p>				
Permanence of meter readings for reconciliation	12.8	4 of Schedule 15.2	<p>MERI</p> <p>Some estimates not replaced by revision 14, and under certain circumstances historic estimate is labelled as forward estimate.</p> <p>MERX</p> <p>Some estimates not replaced by revision 14, and under certain circumstances historic estimate is labelled as forward estimate.</p> <p>PSNZ</p> <p>Some estimates not replaced by revision 14, and under certain circumstances historic estimate is labelled as forward estimate.</p>	Moderate	Low	2	Investigating

Subject	Section	Clause	Non-Compliance	Controls	Audit Risk Rating	Breach Risk Rating	Remedial Action
Reconciliation participants to prepare information	12.9	2 Schedule 15.3	MERI 0331837361LCD62 has metering category 3 and RPS profile and NHH submission type.	Strong	Low	1	Identified
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.	Moderate	Low	2	Investigating
Forward estimate process	12.12	6 Schedule 15.3	MERI The accuracy threshold was not met for all months and revisions.	Moderate	Low	2	Identified
Historical estimate reporting to RM	13.3	10 Schedule 15.3	MERI Historic estimate thresholds were not met for some revisions. MERX	Moderate	Low	2	Investigating

Subject	Section	Clause	Non-Compliance	Controls	Audit Risk Rating	Breach Risk Rating	Remedial Action
			<p>Historic estimate thresholds were not met for some revisions.</p> <p>PSNZ</p> <p>Historic estimate thresholds were not met for some revisions.</p>				
Future Risk Rating						87	

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
ANZSIC codes	3.6	Review the process in place to investigate and correct where required the ICPs with unknown ANZSIC codes allocated.	Identified
Unmetered load	3.7	Check ICPs where PSNZ has unmetered load recorded but the distributor does not.	Investigating
Monitoring of new and ready ICPs	3.10	<p>I recommend running a registry list six monthly with:</p> <p>Status: 000 or 999</p> <p>Proposed trader: PSNZ</p> <p>End date: the day the report is run</p> <p>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.</p>	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
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.	Identified
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.	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.	Investigating

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.

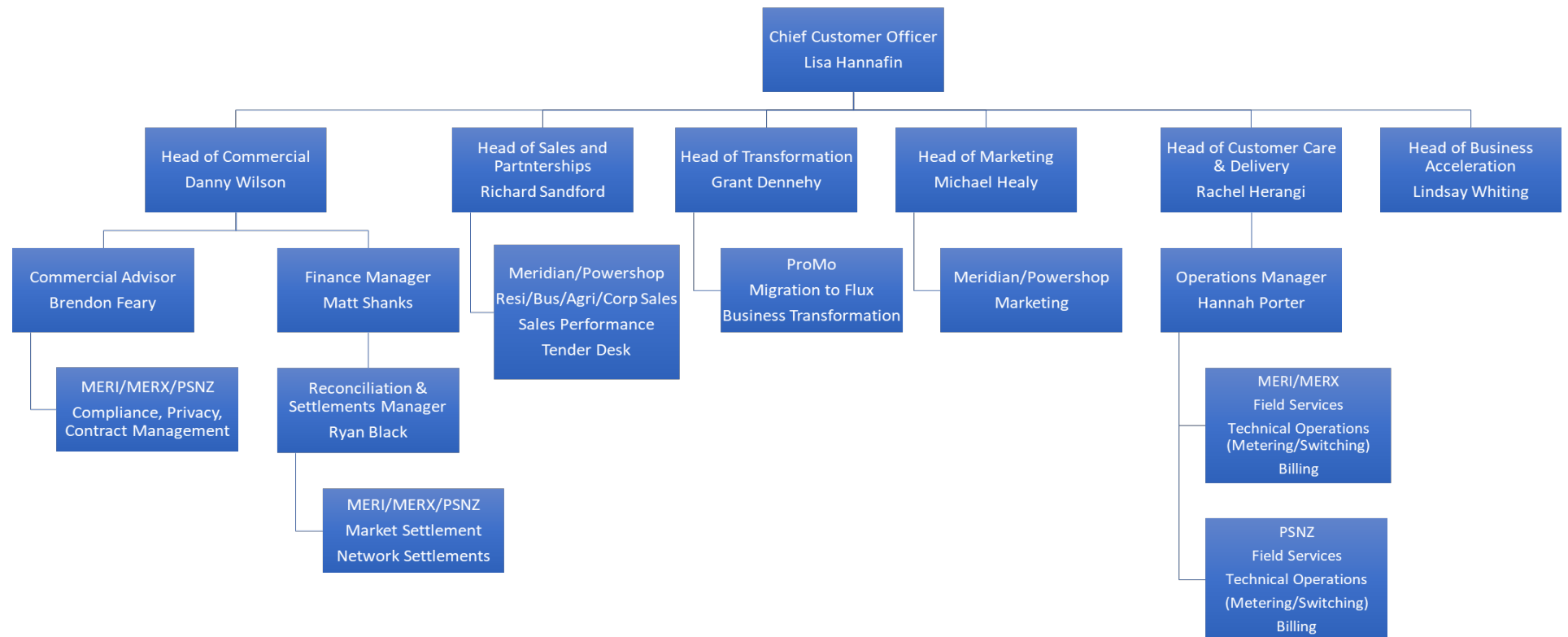
Exemption 287 ICP 0000840407WE388

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
Rebecca Elliot	Veritek Limited	Supporting Auditor
Tara Gannon	Veritek Limited	Supporting Auditor

Personnel assisting in this audit were:

Name	Title
Amy Cooper	Compliance Officer
Helen Youngman	Energy Data Analyst
Daniel Lau	Energy Data Analyst
Mark Mirasole	Customer Delivery Coach
Alannah Meredith	Team Manager - Tech Support
Damien Rillstone	Team Manager - Tech Support
Pat Baker	Metering Co-ordinator - TOU
Wendy Jin	Customer Consultant
Mary Yee	Technical operation specialist
Melanie Matthews	Quality and Compliance Advisor

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

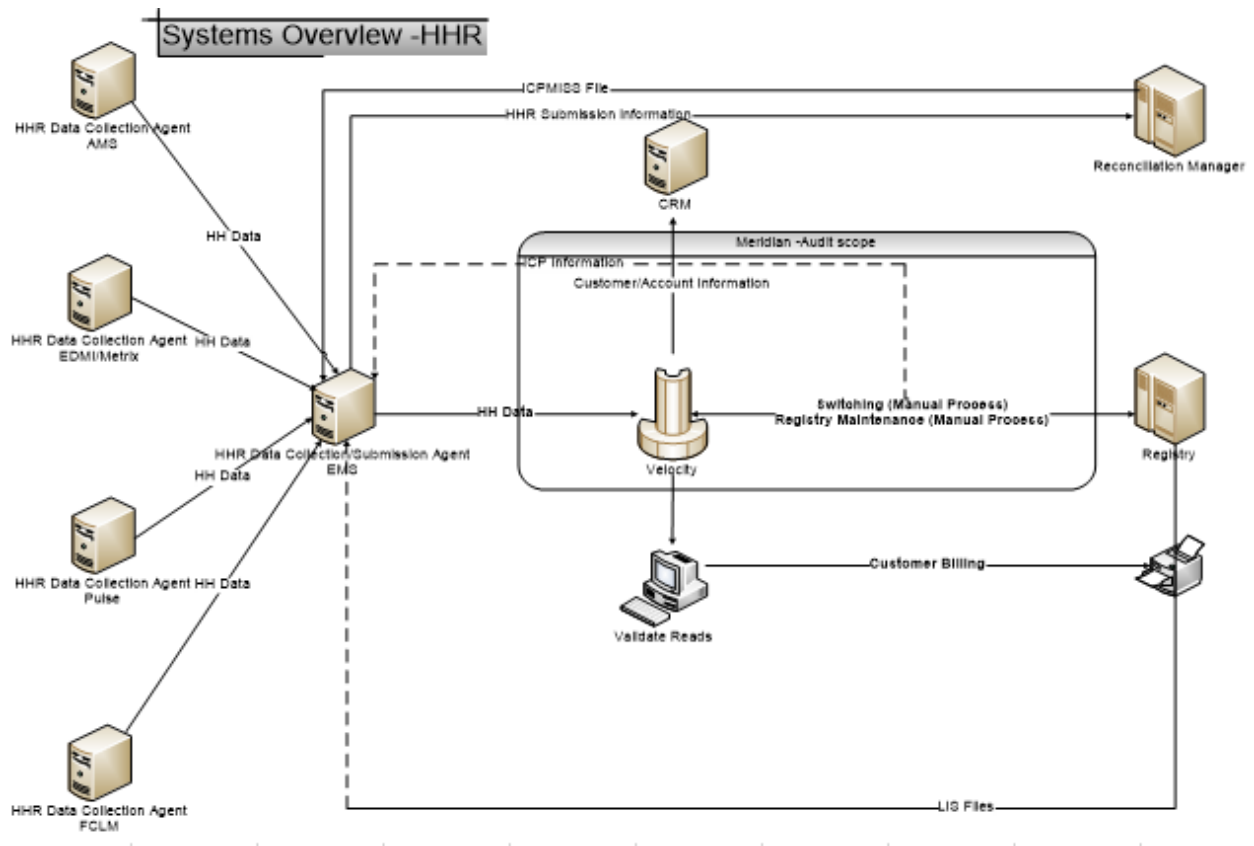
MERI

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

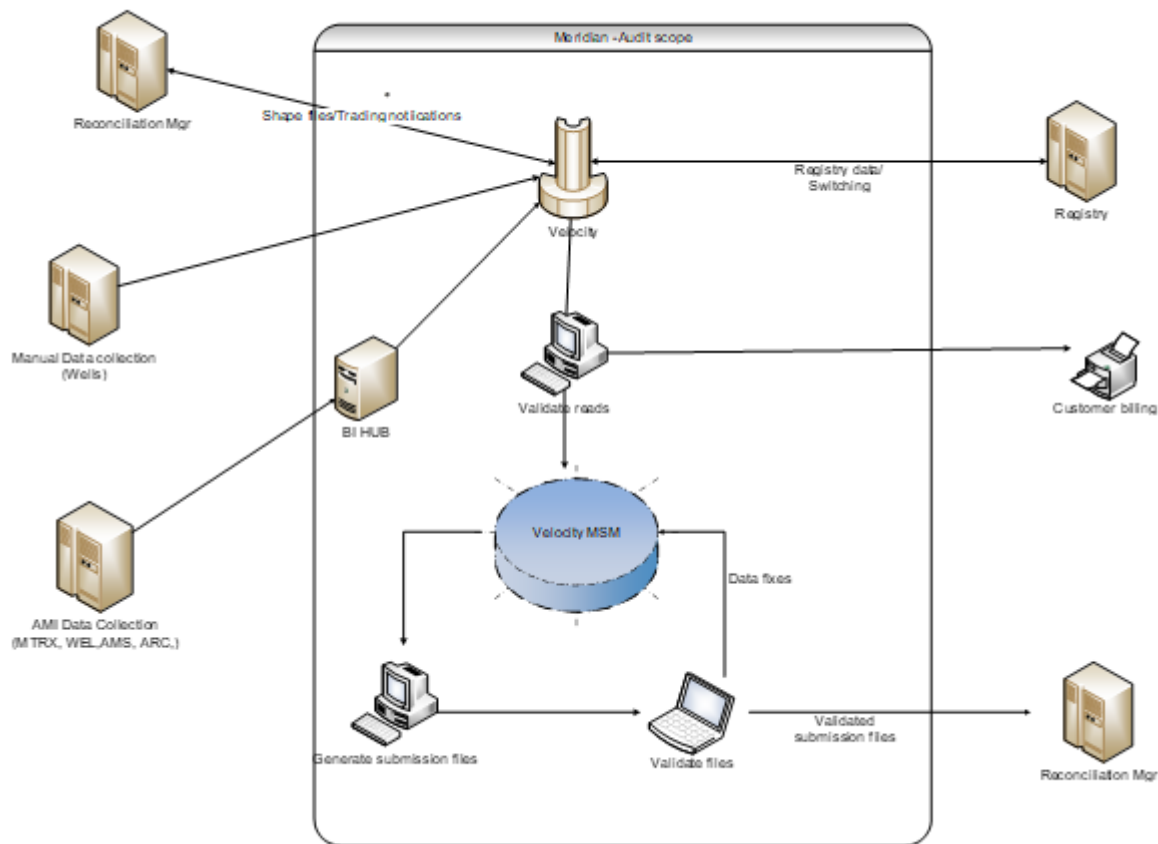
- Velocity – used for NHH registry management, NHH meter read validation and storage, NHH switching and computation of NHH submission information. Support for the system is provided by Gentrack and access is restricted using individual logins and passwords.
- STARK – used for data collection, validation, 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.



Systems Overview -NHH



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 relevant to the scope of this audit recorded by the Electricity Authority during the audit period:

Ref	Breach Description	Clause	Outcome
2009MERI1	MERI was notified of the incorrect submission on the dedicated Y flag for LINE NSPs at HTI0331 for the washup periods of June 2019, January 2020, May 2020 for the HHRVOLS. MERI was notified by LINE to correct future submissions and revisions for this issue. MERI had submitted on 19/08/2020, before the submission deadline. The Reconciliation Manager checked the submission and advised MERI to correct submissions before the deadline. MERI did not correct their submission before 16:00 on 19/08/2020. MERI submitted a further revised and corrected submission past the submission deadline at 16:57 19/08/2020.	Part 15 clause 15.4 (2) Part 15 clause 15.12	Early closure
2010MERI1	Meridian called a customer on 12/10/2020 who was switching to Flick and tried to win back the customer.	Part 11 clause 11.15AA	Decline to pursue with compliance warning
2101MERI1	MERI was notified of an incorrect AV-080 NHHVOLS submission on the Y LINE NSP at OKN0111 for the March 2020 R7 revision. MERI had been previously notified that there should not be any volumes submitted under LINE NSPs under the Y dedicated flag. MERI was notified of this incorrect submission on October 20 at 11:18am. They were asked to revise the data, and resubmit, which they did at 11:31am on October 20.	Part 15 clause 15.12	Early closure

1.7. ICP Data

MERI

The active ICPs from the registry list are summarised by meter category in the table below. 3,970 of the 4,038 active ICPs with a metering category of nine or blank have unmetered load recorded. The 68 ICPs without metering or unmetered load recorded were checked and the following issues were identified:

- two were decommissioned after the report was run,
- 14 had metering details added after the report was run,
- 29 have an MEP nomination made and are awaiting the MEP response, and
- nine have accepted MEP nominations and are awaiting meter asset data.

The remaining 14 ICPs did not have MEP nominations made. These were examined and found:

- six 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 and there are no actions in progress to address these; this is discussed further in **section 3.4**,
- two have since had metering recorded on the registry by the MEP,
- ICP 0001050011WM9D7 had a dummy meter recorded and volumes are being estimated; this is an unmetered site and is in the process of being corrected,
- ICP 0272000105PNC50 has a meter recorded in Gentrack and the first read was gained from it 2 July 2021; it appears that the MEP has incorrectly removed this from the registry,
- ICP 0000840407WE388 has since had an exemption granted for allow subtraction to be used for submission; this is detailed in **section 1.1**, and
- one ICP has since switched away.

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

Status	Number of ICPs (2021)	Number of ICPs (2020)	Number of ICPs (2019)	Number of ICPs (2018)	Number of ICPs (2017)
Active (2,0)	44,396	148,290	212,390	227,796	220,702
Inactive – new connection in progress (1,12)	204	525	288	377	378
Inactive – electrically disconnected vacant property (1,4)	3,857	4,812	4,917	4,986	5,111
Inactive – electrically disconnected remotely by AMI meter (1,7)	37	73	34	29	20
Inactive – electrically disconnected at pole fuse (1,8)	3	3	4	5	2
Inactive – electrically disconnected due to meter disconnected (1,9)	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)	65	70	94	127	168
Inactive – reconciled elsewhere (1,5)	7	6	6	4	6
Inactive – code not recognised (1,0)	-	-	-	1	1
Decommissioned (3)	31,172	38,012	36,862	35,405	33,779

MERX

The active ICPs from the registry list are summarised by meter category in the table below. None of the active ICPs with a metering category of nine or blank have unmetered load recorded:

- five had metering details added after the report was run,
- six have accepted MEP nominations and are awaiting meter asset data,
- two have an MEP nomination made and are awaiting the MEP response, and
- one was moved to inactive status after the report was run.

The remaining 82 ICPs that did not have MEP nominations made were examined and found all have since had MEP nominations and are part of the ARC meter displacement, so were notified late from the MEP.

Metering Category	Number of ICPs (2021)	Number of ICPs (2020)	Number of ICPs (2019)
1	192,201	87,916	18,898
2	6164	303	10
3	-	-	-
4	-	-	-
5	-	-	-
9	93	-	-
Blank	3	-	-

Status	Number of ICPs (2021)	Number of ICPs (2020)	Number of ICPs (2019)
Active (2,0)	198,461	88,219	18,908
Inactive – new connection in progress (1,12)	223	-	-
Inactive – electrically disconnected vacant property (1,4)	852	204	1
Inactive – electrically disconnected remotely by AMI meter (1,7)	13	5	-
Inactive – electrically disconnected at pole fuse (1,8)	1	-	-
Inactive – electrically disconnected due to meter disconnected (1,9)	-	1	-
Inactive – electrically disconnected at meter box fuse (1,10)	-	-	-
Inactive – electrically disconnected at meter box switch (1,11)	-	-	-
Inactive – electrically disconnected ready for decommissioning (1,6)	20	1	-
Inactive – reconciled elsewhere (1,5)	-	-	-
Inactive – code not recognised (1,0)	-	-	-
Decommissioned (3)	236	-	1

PSNZ

The active ICPs from the registry list are summarised by meter category in the table below. Eight of the 16 active ICPs with a metering category of nine or blank have unmetered load recorded. The eight ICPs without metering or unmetered load recorded were checked:

- six have accepted MEP nominations and are awaiting meter asset data,
- one had metering details added after the report was run, and
- one was decommissioned after the report was run.

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

Status	Number of ICPs (2021)	Number of ICPs (2020)	Number of ICPs (2019)	Number of ICPs (2018)	Number of ICPs (2017)
Active (2,0)	107,342	77,118	73,483	66,182	60,056
Inactive – new connection in progress (1,12)	128	62	117	42	47
Inactive – electrically disconnected vacant property (1,4)	1,439	1,041	1,095	880	549
Inactive – electrically disconnected remotely by AMI meter (1,7)	10	3	2	3	6
Inactive – electrically disconnected at pole fuse (1,8)	-	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)	7	2	7	3	24
Inactive – reconciled elsewhere (1,5)	-	-	7	-	-
Decommissioned (3)	2,724	2,230	2,135	1,975	1,692

1.8. Authorisation Received

A letter of authorisation was received.

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 by video conference between 6 and 13 September 2021.

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

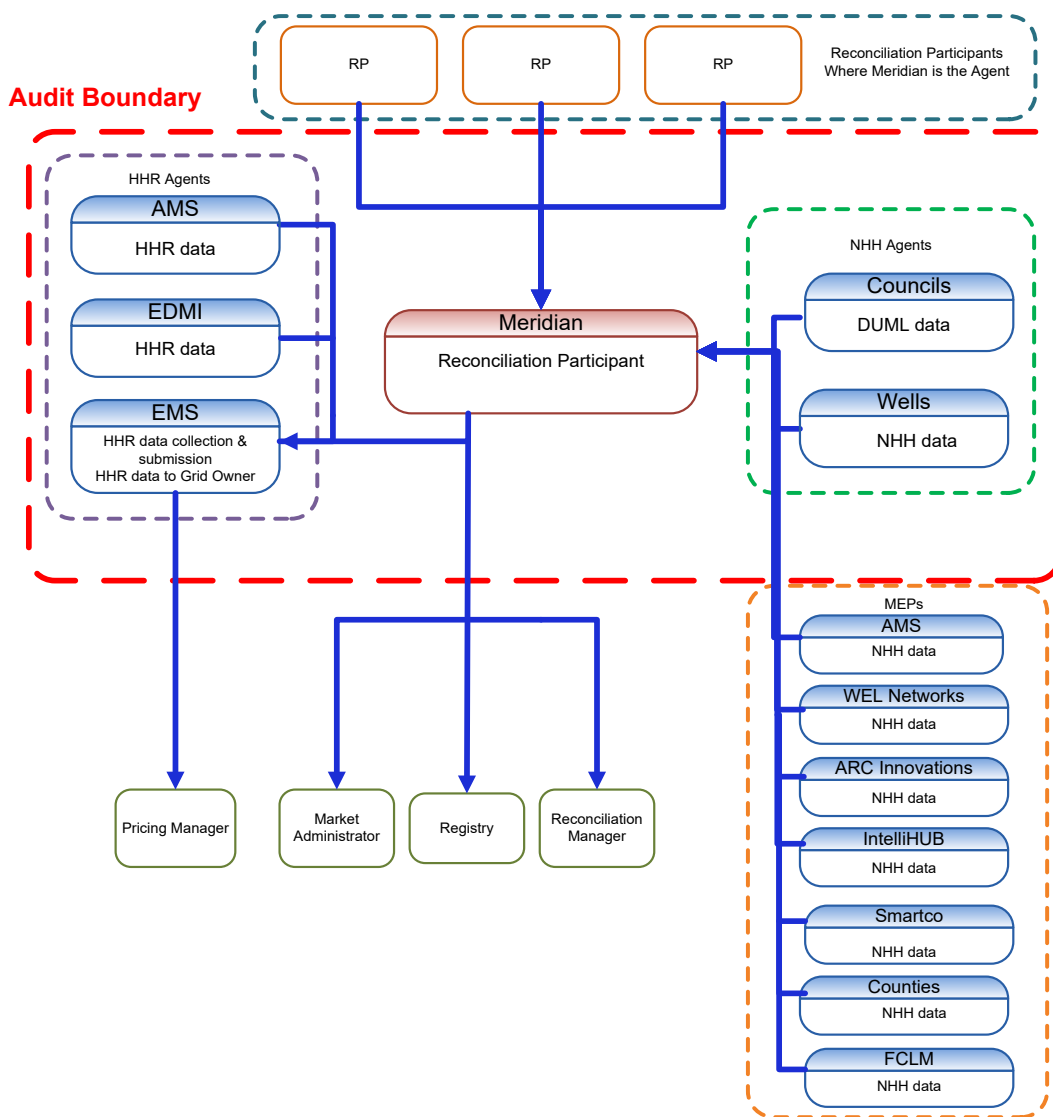
- registry list snapshot reports as of 7 July 2021 for MERI and MERX and 6 July 2021 for PSNZ, and
- registry lists, AC020 reports, and event detail reports for 1 July 2020 to 30 June 2021.

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 (DUMML data) EMS (HHR)	
(d) (i)– Calculation of ICP days		

Tasks Requiring Certification Under Clause 15.38(1) of Part 15	Agents Involved in Performance of Tasks	MEPs Providing Data
(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		
(e) – Provision of submission information for reconciliation		
(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

MERX and MERI

The previous audit was completed in October 2020 by Steve Woods (and Rebecca Elliot) 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	<p>MERI</p> <p>Some registry information is incorrect.</p> <p>DUML ICPs 0000545297NR91E, 0000500236NR1F1 and 0000500015NRA63 have the unmetered flag incorrectly set to "N" on the registry.</p> <p>Correction not apportioned to the correct months for one of the 12 ICPs sampled.</p> <p>Metering not yet replaced, therefore correction not made for ICP 0000931760NV71C where the metering is under recording by 18%.</p> <p>Corrections not applied for six of the 11 bridged meters sampled resulting in under submission of 1,783 kWh.</p> <p>Incorrect shape files being used for the WAIK and COUP NSPs resulting in an estimated over submission of 3,000 kWh.</p> <p>Two ICPs allocated to the incorrect NSP.</p> <p>Three downgraded ICPs where NHH volume recorded on 11/02/20 will be submitted for 12/02/20.</p> <p>MERX</p> <p>The correction is not for the correct period for ICP 0005758831RN460.</p>	Still existing
Electricity conveyed	2.6	10.7(2),(4),(5) and (6)	<p>MERI</p> <p>MERI has been unable to arrange meter access to 447 ICPs at the request of MEPS as of 26/08/20. Meridian has attempted to gain access to all the affected ICPs and continues to do so.</p> <p>MERX</p> <p>MERI has been unable to arrange meter access to 56 ICPs at the request of MEPS as of 26/08/20. Meridian has attempted to</p>	Cleared

Subject	Section	Clause	Non-compliance	Status
			gain access to all the affected ICPs and continues to do so.	
Electrical Connection of Point of Connection	2.11	10.33A	<p>MERI</p> <p>Seven ICPs were certified later than 5 days after electrical connection.</p> <p>60 ICPs which had expired and/or interim certification were reconnected.</p> <p>MERX</p> <p>Nine ICPs which had expired and/or interim certification were reconnected.</p>	Still existing
Changes to registry information	3.3	10 Schedule 11.1	<p>MERI</p> <p>348 late updates to active status for reconnections.</p> <p>271 late updates to inactive status for disconnections.</p> <p>6,015 late trader updates.</p> <p>MERX</p> <p>109 late updates to active status for reconnections.</p> <p>20 late updates to inactive status for disconnections.</p> <p>144 late trader updates.</p>	Still existing
Provision of information to the registry manager	3.5	9 Schedule 11.1	<p>MERI</p> <p>503 late updates to active status for new connections.</p> <p>Seven ICPs had incorrect active dates recorded.</p>	Still existing
ANZSIC codes	3.6	9 (1)(k) of Schedule 11.1	<p>MERI</p> <p>Three ICPs with incorrect ANZSIC codes.</p> <p>MERX</p> <p>Five ICPs with incorrect ANZSIC codes</p>	Still existing
Changes to unmetered load	3.7	9(1)(f) of Schedule 11.1	<p>MERI</p> <p>Unmetered load incorrect for eight ICPs.</p>	Still existing

Subject	Section	Clause	Non-compliance	Status
Management of "active" status	3.8	17 Schedule 11.1	MERI <ul style="list-style-type: none"> Five reconnections have incorrect active status dates recorded. 7 new connections had incorrect status dates recorded. Two ICPs with incorrect statuses. MERX Two ICPs with incorrect statuses.	Still existing
Losing trader must provide final information - standard switch	4.3	5 Schedule 11.3	MERI 13 late CS files. Average daily consumption is not calculated in accordance with the registry functional specification in some instances. MERX Nine late CS files. Average daily consumption is not calculated in accordance with the registry functional specification in some instances. At least three CS files had actual readings labelled as estimates. At least one incorrect CS read.	Still existing
Retailers must use same reading - standard switch	4.4	Clause 6(1) and 6A Schedule 11.3	MERI For one accepted RR the actual reading was recorded as an estimate. 28 late RR files. MERX Four late RR files. At least three RR files had estimates labelled as actuals.	Still existing
Non-half hour switch event meter reading - standard switch	4.5	Clause 6(2) and (3) Schedule 11.3	MERX An RR for ICP 0000222351UNBFD issued under clause 6(2) and (3) of Schedule 11.3 was invalidly rejected.	Still existing
Losing trader provides information - switch move	4.8	10(1) Schedule 11.3	MERI One late AN file.	Still existing

Subject	Section	Clause	Non-compliance	Status
			MERX Two late AN files. Two incorrect AN codes.	
Losing trader must provide final information - switch move	4.10	11 Schedule 11.3	MERI 171 late CS files. Average daily consumption is not calculated in accordance with the registry functional specification in some instances. Estimates labelled as actuals for at least one ICP. MERX 38 late CS files. Average daily consumption is not calculated in accordance with the registry functional specification in some instances. At least two CS files had actual readings labelled as estimates. At least four incorrect CS reads.	Still existing
Gaining trader changes to switch meter reading - switch move	4.11	12 Schedule 11.3	MERI The RR for ICP 0000137970TR94A was incorrectly rejected. 42 late RR files. MERX At least three RR files had estimates labelled as actuals. At least four RRs were incorrectly rejected.	Still existing
Gaining trader informs registry of switch request - gaining trader switch	4.12	14 Schedule 11.3	MERI Three late NT files.	Cleared
Gaining trader to advise the registry manager - gaining trader switch	4.14	16 Schedule 11.3	MERI Six late CS files.	Cleared
Withdrawal of switch requests	4.15	17 and 18 Schedule 11.3	MERI 71 NWs were issued late.	Still existing

Subject	Section	Clause	Non-compliance	Status
			MERX Three NWs rejected in error. 11 late NW files.	
Metering information	4.16	21 Schedule 11.3	MERX At least five incorrect CS reads.	Still existing
Unmetered threshold exceeded	5.3	10.14 (5)	Nine standard unmetered ICP with annual consumption over 6,000 kWh.	Still existing
Distributed unmetered load	5.4	11 Schedule 15.3, Clause 15.37B & 16A.26	MERI Inaccurate submission information for several databases. One distributed unmetered database not yet audited since the DUML audit regime came into effect. 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.	Still existing
Electricity conveyed & notification by embedded generators	6.1	10.13, 10.24 and 15.13	MERI Electricity not quantified from the time generation is installed for up to 50 ICPs. While meters were bridged, energy was not metered and quantified according to the code for 12 ICPs. ICP 0000840407WE388 is calculated by subtraction without an exemption being in place. MERX Up to 103 ICPs with an installation type of "B" without the PV1 or EG1 profile.	Still existing
Certification of control devices	6.3	Clause 33 Schedule 10.7 and 2(2) Schedule 15.3	MERI Seven ICPs had a profile requiring control device certification without a certified control device or an AMI meter installed.	Still existing
Collection of information by	6.5	2 Schedule 15.2	Data not collected within the maximum interrogation cycle for two ICPs.	Still existing

Subject	Section	Clause	Non-compliance	Status
certified reconciliation participant			Event log not downloaded for ICP 0000657986UN559.	
Derivation of meter readings	6.6	3(1), 3(2) and 5 Schedule 15.2	MERI Customer reads are treated as actual reads when they are not validated against a set of actual meter reads from another source in some instances.	Still existing
Interrogate meters once (Clause 7(1) and (2) Schedule 15.2)	6.8	7(1) and (2) Schedule 15.2	MERI One ICP was not read during the period of supply and exceptional circumstances were not proven. MERX Two of four ICPs sampled were not read during the period of supply and exceptional circumstances were not proven.	Still existing
NHH meters interrogated annually	6.9	8(1) and (2) Schedule 15.2	MERI Exceptional circumstances and best endeavours were not proven for eight 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 nine of ten examples checked.	Still existing
HHR interrogation data requirement	6.13	11(2) Schedule 15.2	Event log not downloaded during interrogation of ICP 0000657986UN559.	Cleared
Identification of readings	9.1	3(3) Schedule 15.2	Some incorrectly labelled meter readings, as follows: MERI At least four ICPs with actual readings labelled as estimates. MERX At least six ICPs with estimates labelled as actuals. At least five ICPs with actuals labelled as estimates.	Still existing

Subject	Section	Clause	Non-compliance	Status
Meter data used to derive volume information	9.3	3(5) Schedule 15.2	<p>MERI</p> <p>Raw meter data is truncated upon receipt and not when volume information is created for Arc and AMS (for Smartco meters) provided reads.</p> <p>MERX</p> <p>Raw meter data is truncated upon receipt and not when volume information is created for Arc and AMS (for Smartco meters), Intellihub and WEL network MEP provided reads.</p>	Still existing
NHH metering information data validation	9.5	16 Schedule 15.2	Zero consumption not monitored for all ICPs.	Still existing
Calculation of ICP days	11.2	15.6	<p>MERI</p> <p>Incorrect ICP days for ICP 1001257822LCC15 submitted against NSP TKV0011 in error.</p> <p>Incorrect ICP days for ICP 0006651984AL7C1 due to the incorrect submission flag on the registry.</p> <p>Where ICP statuses or status dates are recorded incorrectly, incorrect ICP days may be reported.</p>	Still existing
HHR aggregates information provision to the reconciliation manager	11.4	15.8	HHR aggregates file does not contain electricity supplied information.	Still existing
Allocation of submission information	12.3	15.5	One ICP allocated to the incorrect NSP.	Still existing
Accuracy of submission information	12.7	15.7	Some submission information was inaccurate.	Still existing
Permanence of meter readings for reconciliation	12.8	4 of Schedule 15.2	<p>MERI</p> <p>Some estimates not replaced at R14.</p>	Still existing

Subject	Section	Clause	Non-compliance	Status
Historical estimates and forward estimates	12.10	3 of schedule 15.3	Incorrect labelling of HE as FE.	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.	Still existing

Subject	Section	Recommendation	Status
Review of registry acknowledgement files	2.1	Consider reviewing the registry acknowledgement files, so that failed registry updates can be identified and resolved promptly.	Still existing
Electricity conveyed & notification by embedded generators	6.1	Check whether installations with solar generation and batteries installed should have the PV1 profile.	Still existing

PSNZ

The previous audit was completed in August 2020 by Steve Woods 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	10.6, 11.2, 15.2	A small number of registry discrepancies were identified. HHR ICPs do not have the HHR profile recorded. Four unmetered ICPs do not have registry details populated. Three ICPs with fuel type of “other” have the PV1 profile. HHR data from ARC meters is not compliant.	Still existing

Subject	Section	Clause	Non-compliance	Status
Electrical Connection of Point of Connection	2.11	10.33A	64 reconnections were not certified within five business days.	Still existing
Changes to registry information	3.3	10 Schedule 11.1	Registry not updated within five business days of the event for status and trader updates.	Still existing
Provision of information to the registry manager	3.5	9 Schedule 11.1	61 late updates to active status. ICP 1002055962LC7E7 had active status applied from 12/11/18 on the registry, instead of 20/02/19.	Still existing
Changes to unmetered load	3.7	9(1)(f) of Schedule 11.1	Four ICPs with unmetered load do not have the UNM flag set to Y, and trader unmetered load details and daily unmetered kWh populated on the registry. One ICP has the incorrect daily kWh.	Still existing
Management of "active" status	3.8	17 Schedule 11.1	Two ICPs have incorrect active dates applied in Flux and on the registry.	Still existing
Management of "inactive" status	3.9	19 Schedule 11.1	Four ICPs had incorrect inactive status dates applied.	Still existing
Inform registry of switch request for ICPs - standard switch	4.1	2 Schedule 11.3	Two NTs were issued as transfer switches, when a switch move should have been applied. One NT had the incorrect switch date.	Cleared
Losing trader must provide final information - standard switch	4.3	5 Schedule 11.3	One transfer CS contained an incorrect read type. One transfer CS had the incorrect reading, one day too early. 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	6(1) and 6A Schedule 11.	Two late RR files for transfer switches. Three RR files had estimates labelled as actuals.	Still existing

Subject	Section	Clause	Non-compliance	Status
Gaining trader informs registry of switch request - switch move	4.7	Clause 9 Schedule 11.3	One late NT file.	Cleared
Losing trader provides information - switch move	4.8	10(1) Schedule 11.3	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 must provide final information - switch move	4.10	11 Schedule 11.3	Five late switch move CS files. One switch move CS contained an incorrect read type. One switch move CS contained an incorrect read type, and an incorrect date of last reading. Average daily kWh in the CS is not calculated in accordance with the Registry Functional Specification.	Still existing
Gaining trader changes to switch meter reading - switch move	4.11	12 Schedule 11.3	17 late RR files for switch moves. Three RR files had estimates labelled as actuals. Four RR files from HHR only traders were incorrectly rejected.	Still existing
Withdrawal of switch requests	4.15	17 and 18 Schedule 11.3	49 NWs were issued more than two calendar months after the switch date. Two incorrect NW codes used.	Still existing
Metering information	4.16	21 Schedule 11.3	Two CS files had an incorrect switch readings.	Still existing
Maintaining shared unmetered load	5.1	11.14	Four ICPs with unmetered load do not have the UNM flag set to Y, and trader unmetered load details and daily unmetered kWh populated on the registry. One ICP with incorrect daily kWh.	Cleared
Electricity conveyed & notification by embedded generators	6.1	10.13	While meters were bridged, energy was not metered and quantified according to the code for 19 ICPs.	Still existing

Subject	Section	Clause	Non-compliance	Status
Derivation of meter readings	6.6	3(2) of Schedule 15.2	Customer readings supplied by Wells labelled as "Verified, Actual".	Still existing
Interrogate meters once	6.8	7(1) and (2) Schedule 15.2	For at least 12 ICPs unread during the period of supply, the best endeavours requirements were not met, and exceptional circumstances did not exist.	Still existing
NHH meters interrogated annually	6.9	8(1) and (2) Schedule 15.2	For at least six ICPs unread in the previous 12 months, the best endeavours requirements were not met, and exceptional circumstances did not exist. January 2020 meter read frequency report sent late.	Cleared
NHH meters 90% read rate	6.10	9(1) and (2) Schedule 15.2	For at least six 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	Actual readings labelled as estimates for three ICPs. Estimated readings labelled as actuals for Six ICPs.	Still existing
HHR aggregates information provision to the reconciliation manager	11.4	15.8	HHR aggregates file does not contain electricity supplied information.	Still existing
Allocation of submission information	12.3	15.5	ICP 0006886795RN35A had submission against the incorrect NSP for July and August 2019.	Cleared
Accuracy of submission information	12.7	15.12	Unmetered load incorrectly submitted for ICP 0007188620RN4C7.	Cleared for this ICP, other issues identified
Permanence of meter readings for reconciliation	12.8	4 Schedule 15.2	Some estimates are not replaced at R14. Some incorrect labelling of historic estimate as forward estimate.	Still existing

Subject	Section	Clause	Non-compliance	Status
Historical estimates and forward estimates	12.10	3 Schedule 15.3	Historic estimate is labelled as forward estimate where SASV are not provided for the NSP and profile by the reconciliation manager.	Still existing
Historical estimate reporting to RM	13.3	10 Schedule 15.3	Historic estimate thresholds were not met for some revisions.	Still existing

Subject	Section	Clause	Recommendation	Status
MEP arrangements	2.13	Arrangement with WEL networks	Obtain written confirmation from WEL Networks that there is a verbal arrangement in place including the requirements of clause 10.36.	Cleared
Trader responsibility for an ICP	3.4	MEP nominations	Monitor rejected MEP nominations, and take corrective action as required.	Cleared
ICPs at new or ready status for 24 months	3.10	Monitoring of new and ready ICPs	I recommend PSNZ run 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
Electricity conveyed & notification by embedded generators	6.1	Generation profiles	Compare the distributor’s generation fuel type to the profile applied, to ensure that only solar generation uses the PV1 profile, and other generation uses EG1.	Cleared
Half hour estimates	9.4	Calculation of HHR estimates	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.	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 Flux. 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	2021 Qty	2020 Qty	2019 Qty	2018 Qty	2017 Qty	Comments
ICP at status "new connection in progress" (1,12) or "ready" (0,0) with an initial energisation date populated by the Distributor	16	143	53	14	16	See section 3.9 . ICP 1002094149LC17B appeared on the GR090 ICP missing report as missing from the registry. It 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.
Active date variance with initial electrical connection date	1,851	1,069	356	94	81	See section 3.8 . This includes 1,091 ICPs where the IECD is blank.
Incorrect status or status date	11	1	9	15	-	Four of the sample of 61 ICPs had incorrect active dates recorded. Five errors from the 2020 audit have been corrected (see section 3.8). Two ICPs at the incorrect status (see section 3.9).
Distributed Generation profile not recorded on the registry	0	36	61	-	-	This is discussed further in section 6.1 .
Distributed Generation profile incorrectly recorded on the registry where installation type is not B or G	168	135	-	-	-	This is detailed in section 6.1 .
Active with blank ANZSIC codes	-	-	1	-	-	See section 3.6 .
Active with incorrect ANZSIC code applied	1	-	11	1	2	
Active with ANZSIC "T99"	3	-	-	-	-	
Active with ANZSIC "T999" not stated	-	-	-	1	12	
Active with ANZSIC "T994" don't know		5	4	6	29	

Issue	2021 Qty	2020 Qty	2019 Qty	2018 Qty	2017 Qty	Comments
Active with ANZSIC "T995" refused to answer	-	-	-	2	-	
Active with ANZSIC "T997" response unidentifiable	-	-	-	1	-	
Active with ANZSIC "T999" not stated	-	-	-	1	-	
Meter cat 3 or known commercial site with residential ANZSIC code	-	-	-	-	2	
Active ICPs with blank MEP and no MEP nominated and UML =N	-	-	-	-	-	See section 2.9 .
ICPs with Distributor unmetered load populated but Meridian has none	1	6	12	4	86	This was a timing difference and unmetered load details were updated prior to the audit.
ICPs with standard unmetered load flag Y but load is recorded as zero	355	113	106	93	2	<p>242 DUML ICPs validly have zero daily kWh recorded.</p> <p>56 residual load ICPs validly have zero daily kWh recorded.</p> <p>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.</p>
ICPs with incorrect unmetered load	3	4	-	-	-	See section 3.7 .
ICPs have UML flag N and no shared unmetered load but Distributor field shows shared unmetered load.	-	-	-	-	-	Compliant.
Over Category 2 without a HHR profile	1	1	-	-	-	ICP 0331837361LCD62 has metering category 3 and RPS profile and NHH submission type. See section 12.9 .

Issue	2021 Qty	2020 Qty	2019 Qty	2018 Qty	2017 Qty	Comments
Incorrect profile or submission type	8	2	2	-	2	<p>Three ICPs had HHR submission type with RPS profile. Two were corrected through MERI's validation process, and one was corrected during the audit but would have also been identified through MERI's validation process.</p> <p>One ICP had NHH submission type with HHR profile and was corrected after the report was run through MERI's validation process.</p> <p>Three ICPs had HHR and NHH submission type. All had metered and unmetered load, with the unmetered load submitted as NHH and the metered load submitted as HHR.</p> <p>ICP had the RPS PV1 profile instead of RPS EG1 (see section 6.1).</p>

I rechecked the registry discrepancies found in the last audit, and all have been corrected with the exception of five ICPs that had an incorrect active date and two with the incorrect ANZSIC code. The five ICPs with the incorrect active date have been corrected during this audit but some of these corrections now go beyond the 14-month revision cycle so corrections will not be made for these. The ICPs are detailed in **sections 3.5, 3.6 and 3.9**.

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.

In the last audit it was recorded that MERX was not reviewing acknowledgement files from the registry. This has been addressed and registry acknowledgement file are checked daily, and any rejections are investigated and resolved.

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	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	8	-	-	See section 3.9 .
Active date variance with initial electrical connection date	171	-	-	See section 3.8 . This includes 166 ICPs where the IECD is blank.
Incorrect status or status date	3+	2	1	One of the 11 sampled do not have the correct active status date & the two ICPs identified in the last audit were corrected. See section 3.8 . Four ICPs electrically connected but not active in the registry. See section 3.9 .
Distributed Generation profile not recorded on the registry	1	-	-	This is discussed further in section 6.1 .
Distributed Generation profile incorrectly recorded on the registry where installation type is not B or G	92	103	8	This is discussed further in section 6.1 .
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	67	2	-	
Active with ANZSIC “T995” refused to answer	3	-	-	
Active with ANZSIC “T997” response unidentifiable	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	-	-	-	
ICPs with standard unmetered load flag Y but load is recorded as zero	-	-	-	

Issue	2021 Qty	2020 Qty	2019 Qty	Comments
ICPs with incorrect shared unmetered load	-	-	-	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	5	-	-	All were timing differences and unmetered load details were added by MERX or removed by the distributor prior to the audit.
Active ICPs with retail unmetered load populated but distributor unmetered load is blank	19	-	-	See section 3.7 .
Over Category 2 without a HHR profile	-	-	-	Compliant.
Incorrect profile or submission type	4	-	-	<p>No ICPs have submission flags which are inconsistent with the profiles applied.</p> <p>Four ICPs with profiles requiring certification of control devices did not have a certified control device, AMI metering or HHR metering. See section 6.3.</p> <p>1 ICP with the incorrect distributed generation profile applied. See section 6.1.</p>

I rechecked the registry discrepancies found in the last audit, and all have been corrected with the exception of two ICPs that had an incorrect active date; these have been corrected during this audit but some of these corrections now go beyond the 14-month revision cycle so corrections will not be made for these. The ICPs are detailed in **section 3.8**.

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.

Flux's weekly discrepancy process matches ICP, network, and meter details to the registry and generates a suite of exception reports. The exceptions are reviewed by the pricing team, and if further investigation is required by other teams ICP tickets are raised. I viewed a sample of these reports and ICP tickets and noted that discrepancies were investigated.

The weekly discrepancy process enables PSNZ to identify discrepancies which have occurred where updates have failed.

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

Issue	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	3	-	-	See section 3.9 .
Active date variance with initial electrical connection date	134	-	-	See section 3.8 . This includes 131 ICPs where the IECD is blank.
Incorrect status or status date	13	3	20	Three incorrect active status dates. 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. 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.
Distributed Generation profile not recorded on the registry	5	-	-	See section 6.1. Five of ten ICPs with incorrect quantification and profile.
Distributed Generation not recorded by MERX for HHR ICPs where installation type is B or G	-	-	-	Compliant.
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 . Correct MEP nominations were made in all cases.
Active with UML load = zero	-	-	-	Compliant.

Issue	2021 Qty	2020 Qty	2019 Qty	Comments
Active with Incorrect standard UML	-	-	-	Compliant.
Active with incorrect shared UML	-	5	4	Compliant.
Active ICPs with distributor unmetered load populated but retail unmetered load is blank and UML flag = N	5	4	5	All were timing differences and unmetered load details were added prior to the audit.
Active ICPs with retail unmetered load populated but distributor unmetered load is blank	5	-	-	See section 3.7.
Over Category 2 without a HHR profile	-	-	-	Compliant.
Incorrect profile or submission type	3	46	1	<p>Three ICPs have HHR submission type with RPS profile. The ICPs were connected to the Orion network and swapped to HHR submission during the winter as part of a trial. When they swapped back to RPS profile on 01/09/21 their submission type was not updated with their profile. The submission type was corrected during the audit, but the discrepancy would have been identified and resolved through the pre-submission checks before October 2021 data was submitted.</p> <p>No ICPs had the HHR and NHH submission flags set to Y.</p> <p>None of the profiles used by PSNZ require control device certification.</p>

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	<p>MERI</p> <p>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.</p> <ul style="list-style-type: none"> • 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. An account credit may be applied if the customer is not to be billed for the full correction. • 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.
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	<p>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.</p> <p>I reviewed eight examples of defective meters during the audit period. For all ICPs consumption was appropriately estimated and settled.</p> <p>I rechecked the two Category 2 ICPs with defective metering recorded in the last two audit reports:</p> <ul style="list-style-type: none"> • ICP 0000931760NV71C had a failed current transformer, the CTs have been replaced and re-certified, a correction has been processed, and the correct multipliers are recorded in Velocity, and • ICP 0005170923RN2E6 was reported as over recording by 32.39% from 02/03/16 until 12/03/19; the correction was processed for this ICP but did not process as expected, adding consumption rather than removing it, so I confirmed that manual corrections have been carried out correctly for each affected revision 14. <p>MERX</p> <p>MERX uses two correction methods for stopped and faulty meters:</p> <ul style="list-style-type: none"> • 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. <p>I reviewed three examples of defective meters during the audit period and found that consumption during the faulty period was correctly reported using an unmetered load register.</p> <p>I rechecked the correction for ICP 0005758831RN460 which was found to have a defective meter in the 2019 and 2020 audits, and the consumption was spread across the month of September 2019, but not across the period the ICP was defective which was from 22/08/19. This was not corrected before revision 14.</p> <p>PSNZ</p> <p>Like MERX, PSNZ uses two correction methods for stopped and faulty meters:</p> <ul style="list-style-type: none"> • 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. <p>I reviewed five examples of defective meters during the audit period and found that consumption during the faulty period was correctly reported using an unmetered load register.</p>
Incorrect multipliers	<p>MERI</p> <p>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.</p> <p>Five examples of incorrect multipliers were identified during the audit period, and corrections were accurately processed.</p> <p>MERX</p> <p>No ICPs with incorrect multipliers were identified during the audit period.</p>

	<p>PSNZ</p> <p>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.</p> <p>Four examples of incorrect multipliers were identified during the audit period. I checked all of these and confirmed that the consumption had been corrected in all nine instances.</p>
Bridged meters	<p>MERI</p> <p>Bridged meters are identified through notifications of load side voltage from MEPs, on return of reconnection paperwork, through consumption validation processes including checks of zero consumption, and when customer queries are received.</p> <p>Corrections for bridged meters are calculated and processed in the same way as corrections for defective meters; consumption is estimated based on the history available.</p> <p>Three examples of bridged meters were reviewed. For two, ICPs corrections were processed by entering an estimated closing read capturing consumption for the bridged period. For the other ICP no correction was required because only the controller was bridged, and all consumption was captured.</p> <p>MERX</p> <p>MERX uses two correction methods for bridged meters:</p> <ul style="list-style-type: none"> • 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. <p>Seven examples of bridged meters were reviewed. Consumption was corrected through estimated removal readings for three ICPs, and by adding the estimated consumption to an unmetered register for the other four ICPs.</p> <p>PSNZ</p> <p>Like MERX, PSNZ uses two correction methods for bridged meters:</p> <ul style="list-style-type: none"> • 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. <p>Eight examples of bridged meters were reviewed:</p> <ul style="list-style-type: none"> • ICP 1002075592LC231's meter remains bridged, and no correction has been processed, meter faults were recorded on 04/08/21 and 12/08/21 and PSNZ is awaiting field results, • four bridged meters did not require correction because investigation confirmed that power was not connected and there was no consumption during the bridged period, and • three ICPs were corrected by adding the estimated consumption to an unmetered load register. <p>Consumption was corrected through estimated removal readings for three ICPs, and by adding the estimated consumption to an unmetered register for the other four ICPs.</p>

Consumption while inactive	<p>MERI</p> <p>MERI 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. All 18 ICPs with inactive consumption were checked:</p> <ul style="list-style-type: none"> • ten ICPs are under investigation to determine whether the inactive consumption is genuine, and inactive volumes will be submitted once the status is updated to active; readings are recorded in Velocity, • seven ICPs have had their status corrected active so that consumption is submitted, or the consumption was not confirmed to be genuine, and • one ICP with confirmed consumption during an inactive period has had its status returned to active and is in the process of being re-disconnected. <p>MERX</p> <p>Inactive consumption is managed in the same way as the MERI ICPs, but processes are more manual due to the Flux reporting limitations, as discussed in section 9.5.</p> <p>A report of inactive meters with consumption after the disconnection date was provided and contained 56 ICPs. A sample of 30 were checked:</p> <ul style="list-style-type: none"> • one did not have inactive consumption during MERX's period of supply, • one had its disconnection status event reversed and all consumption was submitted, and • 28 appeared to have genuine consumption during an inactive period; consumption was not submitted, and the status was incorrect on the registry. <p>PSNZ</p> <p>These are managed in the same way as the MERI ICPs, but processes are more manual due to the Flux reporting limitations, as discussed in section 9.5.</p> <p>A report of inactive meters with consumption after the disconnection date was provided and contained 22 ICPs:</p> <ul style="list-style-type: none"> • five did not have inactive consumption during PSNZ's period of supply, and • 17 appeared to have genuine consumption during an inactive period, consumption was not submitted, and the status was incorrect on the registry.
Unmetered load corrections	<p>MERI</p> <p>Meridian's DUMML audits identified some inaccurate databases being used for submission.</p> <p>I checked a sample of three changes to unmetered load and found they were correctly processed by updating the life cycle information in Velocity for the correct time slice.</p> <p>MERX</p> <p>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.</p> <p>PSNZ</p> <p>I checked the only change to unmetered load and confirmed it was correctly processed by updating the unmetered load information in Flux for the correct date range.</p>

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

MERI	<p>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.</p> <p>ICPs 000590655RNE30, 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.</p> <p>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.</p> <p>One RR file was incorrectly rejected from the five rejected RR files sampled resulting in 4,858 kWh being pushed to the gaining trader.</p> <p>Previous audit submission accuracy issues were checked and found to be resolved except for:</p> <ul style="list-style-type: none"> • forward estimate remaining at revision 14 where ICPs had switched out on estimated readings, as discussed in section 12.10, • NHH consumption starting two days after the meter change for downgrades due to a system limitation, as discussed in section 6.7, and • one RR file for 0000137970TR94A (01/11/19) was incorrectly rejected, meaning MERI used the incorrect final read; I confirmed that the readings have not been updated and revision 14 has now passed for the affected periods, and 19 kWh was over submitted.
MERX	<p>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.</p> <p>28 ICPs had consumption during inactive periods, indicating that their status was incorrect. Estimated under submission of 29,873 kWh has occurred.</p> <p>Data accuracy issues identified in the previous audit were re-checked and found to be resolved except for five RR files which were incorrectly rejected meaning MERX used the incorrect final read. I confirmed that the readings have not been updated and revision 14 has now passed for the affected periods. The details are shown below:</p> <ul style="list-style-type: none"> • 0000035310HBB4B (14/02/20) 11 kWh over submitted, • 0000051622TRD3C (31/12/19) 4 kWh over submitted, • 0000222351UNBFD (15/04/20) 14 kWh under submitted, • 0000244090UN4CC (04/12/19) 2 kWh over submitted, and • 0006114997RNE4D (29/01/20) 5 kWh over submitted.
PSNZ	<p>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.</p> <p>The NSP start date for ICP 0001112133WM1BA was incorrect, resulting in no data being submitted for some revisions between January and May 2020.</p> <p>17 ICPs had consumption during inactive periods, indicating that their status was incorrect. Estimated under submission of 468 kWh has occurred.</p>

Actions taken to resolve the issue	Completion date	Remedial action status
<p>Actions in relation to Registry and submission information inaccuracies raised in this section are outlined in the relevant sections of this report.</p> <p>We note for some issues corrections cannot be processed due to impact on other traders or customers, or corrections are outside r14.</p>		Investigating
Preventative actions taken to ensure no further issues will occur	Completion date	
<p>Actions in relation to Registry and submission information inaccuracies raised in this section are outlined in the relevant sections of this report.</p> <p>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 monitoring for inaccuracies.</p>		

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

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 two 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

HHR data transmission was reviewed as part of EMS' agent audit and found to be compliant.

NHH

NHH meter data is transmitted to Meridian using SFTP. I traced reads for a sample of six 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.

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. 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.

Review of the AC020 report and registry list identified 68 ICPs which had a metering category 9, null or zero and did not have unmetered load recorded. Of those:

- two were decommissioned after the report was run,
- 14 had metering details added after the report was run,
- 29 have an MEP nomination made and are awaiting the MEP response, and
- nine have accepted MEP nominations and are awaiting meter asset data.

The remaining 14 ICPs did not have MEP nominations made. These were examined and found:

- six 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**,
- two have since had metering recorded on the registry by the MEP,
- ICP 0001050011WM9D7 had a dummy meter recorded and volumes are being estimated; this is an unmetered site and is in the process of being corrected,
- ICP 0272000105PNC50 has a meter recorded in Gentrack and the first read was gained from it 2 July 2021; it appears that the MEP has incorrectly removed this from the registry,
- ICP 0000840407WE388 has since had an exemption granted for allow subtraction to be used for submission, which is detailed in **section 1.1**, and
- one ICP has since switched away.

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 135 ICPs which had a metering category 9, null or zero and did not have unmetered load recorded. Of those:

- 44 had metering details added after the report was run,
- six have accepted MEP nominations and are awaiting meter asset data,
- two have an MEP nomination made and are awaiting the MEP response, and
- one was moved to an inactive status after the report was run.

The remaining 82 ICPs that did not have MEP nominations made were examined. These are all part of the ARC meter displacement. Meridian received late notification from the MEP, and all have since had MEP nominations.

PSNZ

Review of the AC020 report and registry list identified 12 ICPs which had a metering category 9, null or zero and did not have unmetered load recorded. Of those:

- six have accepted MEP nominations and are awaiting meter asset data,
- four had metering details added after the report was run,
- one was decommissioned after the report was run, and
- one has an MEP nomination made and is awaiting the MEP response.

All new connections had an MEP nomination accepted within 14 business days, and no MN breaches were recorded.

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:*
 - o *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*
 - o *if the ICP has metered load, 1 or more certified metering installations are in place*
 - o *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

Active ICPs without metering

The AC020 report confirmed that all active metered ICPs had an MEP recorded.

Review of the AC020 report and registry list identified 68 ICPs which had a metering category 9, null or zero and did not have unmetered load recorded. Of those:

- two were decommissioned after the report was run,
- 14 had certified metering details added after the report was run,
- 29 have an MEP nomination made and are awaiting the MEP response, and
- nine have accepted MEP nominations and are awaiting meter asset data to be loaded.

The remaining 14 ICPs did not have MEP nominations made. These were examined and found:

- six 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 recorded as non-compliance below and in **section 6.1**,
- two have since had certified metering recorded on the registry by the MEP,
- ICP 0001050011WM9D7 had a dummy meter recorded and volumes are being estimated; this is an unmetered site and is in the process of being corrected,
- ICP 0272000105PNC50 has a meter recorded in Gentrack and the first read was gained from it 2 July 2021; it appears that the MEP has incorrectly removed this from the registry,
- ICP 0000840407WE388 has since had an exemption granted for allow subtraction to be used for submission, which is detailed in **section 1.1**, and
- one ICP has since switched away.

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 590 ICPs which did not have full certification within five business days of initial electrical connection. All were examined and found:

- 511 ICPs were unmetered including unmetered builders' temporary supplies so are compliant,
- 15 ICPs have not had metering details recorded on the registry, and
- 65 had late certification recorded on the registry.

I checked a sample of the ten latest certifications, and ten ICPs which did not have metering details recorded on the registry and found:

- the meter details have since been loaded to the registry for the 12 ICPs, ten of these were certified within five business days but ICPs 1002075496UN02B and 1002075500UN747 were not certified within five business days of the initial electrical connection,
- four were unmetered connections initially and then metered later,
- two (ICPs 0000017699EADF0 and 0000014851EACE0) were part of the Electricity Ashburton ICP deconsolidation project and were not certified within five business days of the initial electrical connection,
- ICP 0000702285MPA05 has metering installed but the metering hasn't been loaded to the registry and hasn't been certified as yet, and
- ICP 1002041544LC950 is a TOU site and was not certified within five business days of the initial electrical connection.

Two HHR new connections (ICPs 0007196185RNEB4 and 0000162827CKF7D) were identified to have late metering certifications when checking the accuracy of the active date for the ICPs checked in **section 3.5**.

Reconnections

Meridian runs a report which identifies meters that have been reconnected which are not certified. Any reconnections with uncertified meters are identified, and the MEP is notified.

The AC020 report recorded 56 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:

- the MEP has been made aware that the meter certification has expired for eight ICPs,
- a new meter has been installed for ICP 0000202538TP75E, but this was not completed within five business days of the reconnection and is recorded as non-compliance below, and
- ICP 0000042149UN3C3 switched in and was reconnected but then switched away eight days later and the meter was not recertified during the period of supply with Meridian.

Bridged meters

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

MERX

Active ICPs without metering

The AC020 report confirmed that all active metered ICPs had an MEP recorded.

Review of the AC020 report and registry list identified 135 ICPs which had a metering category 9, null or zero and did not have unmetered load recorded. Of those:

- 44 had metering details added after the report was run,
- six have accepted MEP nominations and are awaiting meter asset data,
- two have an MEP nomination made, and are awaiting the MEP response, and
- one was moved to inactive status after the report was run.

The remaining 82 did not have MEP nominations made. These are all part of the ARC meter displacement. Meridian received late notification from the MEP, and all have since had metering loaded to the registry.

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 three ICPs which did not appear to have full certification within five business days of initial electrical connection. All were examined on the registry and found not to have metering details recorded on the registry. These were checked during the audit and found all have since had metering loaded. Two were certified on the same date as the initial electrical connection date. The meter certification for ICP 0000702072MPDDF is recorded as 14 June 2021 which is 14 business days after the electrical connection date of 24 May 2021. This was checked and found that the MEP did not load the first meter to the registry. Meridian provided a photo of the initial meter to confirm that the meter was certified within five business days of electrical connection. Compliance is confirmed.

Reconnections

Meridian runs a report which identifies meters that have been reconnected which are not certified. Any reconnections with uncertified meters are identified, and the MEP is notified.

The AC020 report recorded 38 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:

- the MEP has been made aware that the meter certification has expired for eight ICPs,
- the remaining two ICPs are on the Lines Company network; both switched in as inactive vacant ICPs, and both were subsequently confirmed to have been active so MERX backdated them to active from their gain date.

Bridged meters

MERX provided a list of seven 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 three were not.

PSNZ

Active ICPs without metering

The AC020 report confirmed that all active metered ICPs had an MEP recorded.

Review of the AC020 report and registry list identified 12 ICPs which had a metering category 9, null or zero and did not have unmetered load recorded. Of those:

- six have accepted MEP nominations and are awaiting meter asset data,
- four had metering details added after the report was run,
- one was decommissioned after the report was run, and
- one has an MEP nomination made and is awaiting the MEP response.

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 three ICPs which did not have full certification within five business days of initial electrical connection. All were examined and found to have incorrect active status dates. This is recorded as non-compliance in **section 2.1**.

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 78 metered ICPs that 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. In all cases, the MEP was notified that certification was required.

Bridged meters

PSNZ provided a list of eight ICPs which had bridged meters at some time during the audit period. Four were appropriately re-certified by the MEP when they were unbridged. ICPs 0000253397UN684, 0000380084TPBFE and 0000634744UN480 were not recertified when the bridge was removed. ICP 1002075592LC231 is still bridged and the MEP has been notified.

Audit outcome

Non-compliant

Non-compliance	Description		
Audit Ref: 2.11 With: Clause 10.33A From: 01-Jul-20 To: 09-Sep-21	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. 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 rated as moderate and will mitigate risk most of the time. 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
ICPs 0083582900PC3A3 & 0000103539TRE1E that have had their meters removed from the Registry will be investigated to confirm whether these should be decommissioned.		31 Dec 2021	Investigating
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. Reporting and process is in place to notify MEPs regarding reconnected ICPs where meter certification is required. We will review our processes and when notified of meters being unbridged to ensure this includes follow up with the MEP regarding re-certification of metering.		Ongoing Ongoing 31 Dec 2021	

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 both 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. Meridian did not begin using any new MEPs during the audit period.

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.

I matched reconnections to withdrawal acknowledgements, to identify ICPs which had been reconnected and undergone a withdrawal. A sample were checked to determine compliance.

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.

MERI

I checked 49 reconnected ICPs which had switch withdrawals processed and found that in all cases the status was updated before the withdrawal was initiated, or after the withdrawal process was complete. MERI was the trader at the time of reconnection.

MERX

I checked 35 reconnected ICPs which had switch withdrawals processed and found that in all cases the status was updated before the withdrawal was initiated, or after the withdrawal process was complete. MERX was the trader at the time of reconnection.

PSNZ

I checked 64 reconnected ICPs which had switch withdrawals processed and found that in all cases the status was updated before the withdrawal was initiated, or after the withdrawal process was complete. PSNZ was the trader at the time of reconnection.

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. The event detail reports were reviewed to identify all CPs which were disconnected during the audit period where an NT was received from another trader during the audit period. I checked a sample of these ICPs where the disconnection event date was after the NT receipt date and/or NT event date to determine compliance.

Audit commentary

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

MERI

I checked 17 ICPs which were disconnected and received an NT from another trader during the audit period. I found the disconnection event date was prior to the NT being received from the other trader, or after a withdrawal or switch in being completed. In all cases MERI was the trader on the disconnection date.

MERX

I checked 34 ICPs which were disconnected and received an NT from another trader during the audit period. I found the disconnection event date was prior to the NT being received from the other trader, or after a withdrawal or switch in being completed. In all cases MERX was the trader on the disconnection date.

PSNZ

I checked 36 ICPs which were disconnected and received an NT from another trader during the audit period. I found the disconnection event date was prior to the NT being received from the other trader, or after a withdrawal or switch in being completed. In all cases PSNZ was the trader on the disconnection date.

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 unbridge a load control switch – if the load control switch does not control a to me 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 personnel 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

MERI/MERX/PSNZ

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.

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 bridged meters was discussed and a sample of bridged meters were reviewed.

Audit commentary

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

MERI

MERI provided a list of three bridged meters, which were later unbridged. One meter was bridged because of a faulty controller, and the other two were bridged because it was not possible to reconnect without bridging. Corrections were processed as required by this clause to capture the consumption during the bridged period.

MERX

MERX provided a list of seven bridged meters, which were later unbridged. The ICPs were either gained with bridged meters, bridged due to meter faults, or bridged because it was not possible to reconnect without bridging. Corrections were processed as required by this clause to capture the consumption during the bridged period.

PSNZ

PSNZ provided a list of eight bridged meters. Seven were later unbridged. ICP 1002075592LC231's meter remains bridged, and no correction has been processed. Meter faults were recorded on 4 August 2021 and 12 August 2021 and PSNZ is awaiting field results.

The ICPs were either gained with bridged meters, bridged due to meter faults, or bridged because it was not possible to reconnect without bridging. Corrections were processed as required by this clause to capture the consumption during the bridged period.

Audit outcome

Compliant

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 websites,
- on invoices and on all outbound customer facing communications including email signatures, chat etc,
- will be in annual communications once the time comes.

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 ten HHR new connections and 50 NHH new connections. 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

MERI status updates

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 5 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

The percentage of reconnections updated within five days has decreased slightly from 86.65% to 84.65% and the average business days has improved from 9.09 to 5.97. There were 53 reconnected ICPs where the notification date was more than 30 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:

- seven were due to human error with the majority of these being due to the need to return ICPs to active to then decommission these,
- six were due to correction of status following vacant investigations,
- four ICPs switched in with the incorrect status and were subsequently corrected,
- two were delayed by late receipt of paperwork, and
- ICP status was updated by an earlier trader during their period of supply which reversed MERI's status event; this was identified via the BAU registry validation processes and had to be backdated to reapply MERI's active date.

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 status 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 is missed. During the previous audit I identified five ICPs where an "active" period was created but not reversed, which were corrected prior to the start of this audit.

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

Status	Year	ICPs notified greater than 5 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

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

The AC020 report recorded 24 late updates to 1,12 (“inactive new connection in progress”) status. All of the updates were made before initial electrical connection date so are not technically late.

The other 408 late status updates were reviewed. 25 were made more than 30 business days after the event date, and all of those were updates to 1,4 (“electrically disconnected vacant property”) status. I checked 25 late updates and found the following:

- 12 were due to vacant site investigations which confirmed these were electrically disconnected and they were backdated to correct prior to them being switched to MERX,
- 11 were due to late notification from the network of the ICP being decommissioned, and
- two appeared to be backdated but the status was already inactive, and the disconnected reason code was corrected.

MERI trader updates

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

Event	Year	ICPs notified greater than 5 days	Percentage on time	Average Business Days between Status Event and Status Input Dates
Change of trader fields	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

The late updates were reviewed. 2,840 (56.4%) were profile or submission type changes, 1,408 (27.9%) were MEP changes, 518 (10.3%) were ANZSIC changes, 164 (3.3%) were unmetered load changes and changed fields were not listed on the AC020 report for the remaining 109 changes.

1,173 late updates were made more than 30 business days after the event date, and 31 late updates were made more than 300 business days after the event date. I checked a sample of late updates recorded on the AC020 report for MERI as described in the table below:

ANZSIC updates - changes	<p>A sample of ten updates which were over 200 business days after the event date were checked and found:</p> <ul style="list-style-type: none"> • seven to be corrections, the updates were processed after receiving confirmation of the correct ANZSIC code, and • three were backdated MEP nominations where ANZIC code was incorrectly updated in two instances and the ANZSIC code was not changed in one instance, the two incorrect ANZSIC event updates were corrected with a subsequent trader event.
ANZSIC updates – new connections and switch ins	<p>There were 633 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:</p> <ul style="list-style-type: none"> • five were the backdated new connections associated with the Electricity Ashburton deconsolidation project, and • five ICPs were due to backdated switch ins.

Unmetered daily kWh and/or trader unmetered load details changes	<p>A sample of ten updates which were over 200 business days after the event date were checked and found:</p> <ul style="list-style-type: none"> • eight to be corrections, the updates were processed after receiving confirmation of the correct unmetered load details, and • two were due to the reversal of an MEP nomination where MNON had been sent.
Profile updates	<p>A sample of ten updates which were over 200 business days after the event date 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.</p>
Submission type updates	<p>A sample of ten updates which were over 200 business days after the event date were checked, found they were all due to a correction to the submission type due to changes from HHR to NHH.</p>
MEP nominations	<p>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.</p> <p>The timeliness of MEP nominations is managed by:</p> <ul style="list-style-type: none"> • 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. <p>I checked five late HHR MEP nominations and ten late NHH MEP nominations and found:</p> <ul style="list-style-type: none"> • two HHR events were not MEP nominations but a correction to the profile, • late notification from the MEP for the remaining three HHR ICPs, • four NHH MEP nominations were due to the incorrect MEP being nominated in the first instance, • four were due to late notification of metering details, and • two were corrections to the event date.

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 services 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 5 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

The percentage of reconnections updated within five days has improved from 79.96% to 88.22% and the average business days has improved from 4.58 to 3.61. There were 23 reconnected ICPs where the notification date was more than 30 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:

- seven were status changes to active not made when switching in,
- two were updated upon switch in and the switches were backdated,
- six were correction of status errors; Flux requires the agent to update the status for it to flow to the registry and this step was missed in these instances,
- two were corrections to the status as a result of a field investigation,
- two were due where the service request from Flux failed to deliver to field agent and the work was managed via emails and the status update was missed in these instances, and
- ICP 0033300714PC8C7 was disconnected due to a fire at the property; the ICP was reconnected at Meridian's request but it appears that this SR didn't get closed out correctly and the ICP was found to be reconnected due to meter reads being received so was backdated to the correct date.

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

Status	Year	ICPs notified greater than 5 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

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

The AC020 report recorded three late updates to 1,12 ("inactive new connection in progress") status. All of the updates were made before initial electrical connection date so are not technically late.

The other 127 late status updates were reviewed. 18 were made more than 30 business days after the event date, and all of those were updates to 1,4 ("electrically disconnected vacant property") or 1,6 ("electrically disconnected ready for decommissioning") status. I checked 21 late updates and found the following:

- late paperwork for nine ICPs,
- human error with incorrect dates (incorrect year in three instances) for eight ICPs, and
- late notification from the network in three instances.

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 5 days	Percentage on time	Average Business Days between Status Event and Status Input Dates
Change of trader fields	2019	5	86.11%	2.36
	2020	144	84.04%	2.7
	2021	1,802	89.92%	1.89

The late updates were reviewed. 1,238 (68.7%) were profile or submission type changes, 242 (13.4%) were MEP changes, 310 (17.2%) were ANZSIC changes, 8 (0.4%) were unmetered load changes and changed fields were not listed on the AC020 report for the remaining four changes.

78 late updates were made more than 30 business days after the event date, and the latest update was 230 business days after the event date. I checked a sample of late updates recorded on the AC020 report for MERX as described in the table below:

ANZSIC updates - changes	A sample of ten updates which were over 50 business days after the event date were checked and found eight to be corrections. The updates were processed after receiving confirmation of the correct ANZSIC code. The remaining two were due to being delayed vacant ICP sign ups.
ANZSIC updates – new connections and switch ins	There were 479 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: <ul style="list-style-type: none">• seven were due to ANZSIC corrections, the updates were processed after receiving confirmation of the correct ANZSIC code, and• three 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	All late updates were checked and found to be corrections to repopulate unmetered load details that were reversed off the registry. These were caused while the team were trying to understand how unmetered load is managed in Flux. This is now understood and is not expected to occur in the future.
Profile updates	A sample of ten updates which were over 300 business days after the event date were checked and found: <ul style="list-style-type: none">• five were due to changes to either remove or add distributed generation,• four were profile corrections identified via the profile validation process,• one was not a profile change but to change an MEP nomination date.
Submission type updates	All ICPs supplied by MERX have NHH submission type and no late updates to submission type were recorded on the AC020 report.

MEP nominations	I checked ten late MEP nominations and found six were due to human error and four were due late notification from the MEP.
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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 5 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

The percentage of reconnections updated within five days has improved from 84% to 85.14% and the average business days has improved from 4.8 to 4.68. There were 33 reconnected ICPs where the notification date was more than 30 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 due to backdated switches where the registry contained the incorrect status at the time of the switch,
- seven were due to the processing errors where a step was missed in the process to ensure the registry was updated,
- five ICPs were disconnected by PSNZ but meter readings showed consumption at the ICPs, and it is likely the customer or their agent reconnected the ICPs themselves,
- five were changed to active so a service request could be issued for decommissioning; service requests can now be issued at any status.

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

Status	Year	ICPs notified greater than 5 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

The percentage of disconnections updated within five days has remained similar to the previous audit.

The AC020 report recorded 83 late updates to 1,12 (“inactive - new connection in progress”) status. 69 of the updates were made before initial electrical connection date so are not technically late, and the other 14 late updates were checked, and the following was found:

- two ICPs had a late sign up by the customer,
- 12 ICPs were late due to the agent not performing the complete process to ensure the correct status was applied.

The 229 late status updates to other statuses were reviewed. 47 were made more than 30 business days after the event date, and all of those were updates to 1,4 (“electrically disconnected vacant property”) or 1,6 (“electrically disconnected ready for decommissioning”) status. I checked 20 late updates and found the following:

- the incorrect event date was used for four ICPs,
- six were due to the processing errors where a step was missed in the process to ensure the registry was updated,
- three were deenergised vacant ICPs changed to ready for decommissioning for the disconnection date, and
- seven were due to late or incorrect field notification.

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 5 days	Percentage on time	Average Business Days between Status Event and Status Input Dates
Change of trader fields	2020	768	61%	21.24
	2021	1,328	66.19%	31.39

The late updates were reviewed. 222 (16.7%) were profile or submission type changes, 767 (57.8%) were MEP changes, 308 (23.2%) were ANZSIC changes, 18 (1.4%) were unmetered load changes and changed fields were not listed on the AC020 report for the remaining 13 changes.

147 late updates were made more than 30 business days after the event date, and 76 late updates were more than 300 business days after the event date. I checked a sample of late updates recorded on the AC020 report for PSNZ as described in the table below:

ANZSIC updates - changes	A sample of ten updates which were over 70 business days after the event date were checked and found to be caused by an incorrect ANZSIC being entered at the time of sign up for five ICPs. Three ICPs were corrections of historic incorrect MEP nominations, despite the correct MEP being recorded in the registry. ICP 0005441080RN26F had five updates for historic periods including three for a previous period of ownership. ICP 0127284923LCB35 had an existing event re-sent to the registry.
ANZSIC updates – new connections and switch ins	There were 225 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 six were backdated switches in and four were corrections of incorrect ANZSIC codes entered at the time of sign up.
Unmetered daily kWh and/or trader unmetered load details changes	A sample of ten updates which were over 400 business days after the event date were checked. Five were updated to the registry for a previous period of ownership. Two were corrections of fields that were incorrectly changed in the registry. Three were corrections of errors. Six of the corrections were made on 9 December 2020.
Profile updates	A sample of ten updates which were over 20 business days after the event date were checked and found they were all due to correction of profiles incorrectly set up.
Submission type updates	A sample of ten updates which were over 20 business days after the event date were checked, found they were all due to a correction to the submission type either due to generation being added or changes from NHH to HHR or vice versa, based on meters communicating or not.
MEP nominations	I checked 15 late MEP nominations and found three were corrections of MEP nominations, one was actually an unmetered correction and 11 were changes to MEP nominations for historic periods. Eight of them were on 9 December 2020.

Audit outcome

Non-compliant

Non-compliance	Description		
<p>Audit Ref: 3.3</p> <p>With: 10 Schedule 11.1</p> <p>From: 01-Jul-20</p> <p>To: 08-Jul-21</p>	<p>MERI</p> <p>370 late updates to active status for reconnections.</p> <p>406 late updates to inactive status for disconnections.</p> <p>5,039 late trader updates.</p> <p>MERX</p> <p>300 late updates to active status for reconnections.</p> <p>127 late updates to inactive status for disconnections.</p> <p>1,802 late trader updates.</p> <p>PSNZ</p> <p>593 late updates to active status for reconnections.</p> <p>14 late updates to inactive new connection in progress status.</p> <p>229 late updates to inactive status for disconnections.</p> <p>1,328 late trader updates.</p> <p>Potential impact: Low</p> <p>Actual impact: Low</p> <p>Audit history: Multiple times</p> <p>Controls: Moderate</p> <p>Breach risk rating: 2</p>		
Audit risk rating	Rationale for audit risk rating		
Low	<p>Controls in this area are robust but late notification from other areas of the business or networks shows there is room for improvement.</p> <p>The audit risk rating is low as overall a high percentage of updates are on time.</p>		
Actions taken to resolve the issue		Completion date	Remedial action status
All status updates have been processed.			Investigating
Preventative actions taken to ensure no further issues will occur		Completion date	
<p>We will continue with our existing controls to ensure Registry information is updated within 5 business days where this is within our control.</p> <p>We will review our processes and controls around selection of ANZSIC Code on customer sign up so corrections required are less frequent.</p>		28 Feb 2022	

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 an MEP in the registry

Review of the AC020 report and registry list identified 68 ICPs which had a metering category 9, null or zero and did not have unmetered load recorded. Of those:

- two were decommissioned after the report was run,
- 14 had metering details added after the report was run,
- 29 have an MEP nomination made, and are awaiting the MEP response, and
- nine have accepted MEP nominations and are awaiting meter asset data.

The remaining 14 ICPs did not have MEP nominations made. These were examined and found

- six 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 recorded as non-compliance in **section 6.1**,
- two have since had metering recorded on the registry by the MEP,
- ICP 0001050011WM9D7 had a dummy meter recorded and volumes are being estimated; this is an unmetered site and is in the process of being corrected,
- ICP 1099577211CN4A0 is now decommissioned.
- ICP 0000840407WE388 has since had an exemption granted for allow subtraction to be used for submission, which is detailed in **section 1.1**, and
- one ICP has since switched away.

Any MEP nominations that are rejected are monitored via the registry acknowledgement files and are sent to a work queue in the switching team to review and resolve. 11 of the 870 MEP nominations issued were rejected. These were examined and were all due to human error with the incorrect MEP being nominated in the first instance.

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.

Meridian is completing a project to review long term vacant and disconnected sites to try to determine the property owner, and whether the site can be decommissioned. All affected sites are monitored each time a reading is received to determine whether they are consuming.

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 seven of the ICPs, and for the remaining three ICPs the meters were removed by persons unknown prior to decommissioning without Meridian’s knowledge.

MERX

Retailers responsibility to nominate and record an MEP in the registry

All 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 135 ICPs which had a metering category 9, null or zero and did not have unmetered load recorded. Of those:

- 44 had metering details added after the report was run,
- six have accepted MEP nominations and are awaiting meter asset data,
- two have an MEP nomination made, and are awaiting the MEP response, and
- one was moved to inactive status after the report was run.

The remaining 82 ICPs did not have MEP nominations made were examined and found all have since had MEP nominations and are part of the ARC meter displacement so were notified late from the MEP.

Where a MEP nomination is rejected, Flux creates an exception for review and all exceptions are reviewed daily. Three of the 10,730 MEP nominations issued were rejected. These were examined and found, two 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

Review of the AC020 report and registry list identified 12 ICPs which had a metering category 9, null or zero and did not have unmetered load recorded. Of those:

- six have accepted MEP nominations and are awaiting meter asset data,
- four had metering details added after the report was run,
- one was decommissioned after the report was run, and
- one has an MEP nomination made and is awaiting the MEP response.

All new connections had an MEP nomination accepted within 14 business days, and no MN breaches were recorded.

MEP nomination rejections are monitored each month. Two of the 752 MEP nominations issued were rejected. In both cases SMCO was incorrectly nominated and NGCM was subsequently nominated when the rejection was identified.

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 new connection in progress (1,12) status as part of the service request process.

The table below shows the level of compliance compared to earlier years.

Code	Year	ICPs notified greater than 5 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

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.

A sample of 20 updates to active status made over 275 business days after the event date were checked and found all were on the Electricity Ashburton network and were part of the ICP de-consolidation project. There was a delay to getting these ICPs made active while Meridian liaised with the Network and the MEP. This was resolved before they were switched to MERX

All the updates checked were processed with the correct status and status date.

I also checked a sample of five late updates to ANZSIC codes for new connections identified on the AC020 report. I found all the late updates were processed correctly and were part of the Electricity Ashburton backdated new connections. This is detailed in **section 3.3**.

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” as soon as they confirm that the ICP is active and the metering is recording load, rather than waiting for the metering details to be updated on the registry.

The nine latest status updates to active status for HHR new connections were checked (one included in the original sample of ten ICPs was found to be a reconnection) 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. 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	330	4/5	229 of these related to the establishment of an embedded network where the metering was already certified and the active dates for these ICPs are confirmed to be compliant. The sample of five ICPs (four NHH and one HHR) identified ICP 0000012230EA09F was not made active for the correct date. This site has been electrically connected for some time but, the active date was applied from the date of discovery rather than backdated 14 months to correct submission. This is recorded as non-compliance in section 3.8
IECD ≠ active date and MCD = active date	20	6/6	The sample of five NHH and one (all) HHR ICPs confirmed that the correct active date was applied in all instances.
IECD ≠ active date and MCD ≠ active date	14	6/7	The sample five NHH and two (all) HHR ICPs identified that ICP 1002109214LCCA3 was made active one day late for the 21/10/20 but the meter was certified on 20/10/20. This is recorded as non-compliance in section 3.8 .

Exception	Total ICPs	ICPs confirmed correct from sample, or all checked as indicated	Comment
IECD = active date and no MCD	32	5/5	The sample of five NHH ICPs confirmed that the correct active date was applied in all instances.
IECD ≠ active date and no MCD	5	5/5	All were HHR new connections. The metering details have since been populated on the registry. I confirmed that the correct active date was applied in all instances. ICP 0007196185RNEB4 was not certified within five business days. This is recorded as non-compliance in section 2.11 .
IECD = active date and unmetered	359	5/5	The sample checked confirmed the correct active date was applied in all instances.
No IECD and MCD = active date	871	10/10	The metering details have since been populated on the registry for all ICPs sampled (5 NHH and 5 HHR). The initial electrical connection date has since been populated for one of the NHH new connections and one of the HHR new connections. The active date was confirmed correct for all ten new connections.
No IECD and MCD ≠ active date	8	4/6	The sample of four NHH and two (all) HHR new connections identified two NHH new connection (ICPs 0000010018TE4F0 - now corrected and 0007196169RN710- still to be corrected) with the incorrect active dates.
No IECD and no MCD	25	7/7	The sample of six HHR and one NHH new connection confirmed the correct active date was recorded in all instances. ICP 0000162827CKF7D was not certified within five business days. This is recorded as non-compliance in section 2.11 .
No IECD and unmetered	186	5/5	The sample of five ICPs checked found the initial electrical connection date has since been populated by the network and the dates matched.
Total	1850	57/61	

I rechecked exceptions identified in the 2020 audit which were not resolved by the time that the audit report was finalised. The following ICPs were found to have incorrect active dates:

- 1002092931LC3FF – should be 24 June 2020,
- 1002080648LCC5D – should be 4 May 2020,
- 1002080641LC20C – should be 4 May 2020,
- 0110011677EL1FD – should be 5 December 2019, and
- 0110011599ELBDF – should be 17 October 2019.

These have been corrected during the audit.

The audit compliance report identified 17 ICPs with “new connection in progress” status and two ICPs with “ready” status which had an initial electrical connection date recorded. All of these ICPs were checked, and I found the following:

- 12 ICPs with “new connection in progress” status were updated to active status after the report was run,
- two are awaiting the metering paperwork to be returned before being updated to “active”,
- two are unmetered new connections that were at “ready” on the registry; Meridian had no service request for these, and they are investigating why these were not identified via the BAU discrepancy reporting (both ICPs have since been claimed and made active and this is recorded as non-compliance in **section 3.9**), and
- ICP 0000022397EAD62 is associated with the Electricity Ashburton ICP deconsolidation project; this is being investigated.

The number of ICPs identified is very small in comparison to the overall number of new connections managed.

MERX

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

The table below shows the level of compliance.

Code	Year	ICPs notified greater than 5 days	Percentage on time	Average Business Days between Status Event and Status Input Dates
MERX	2021	32	93.1%	3.52

Four updates were made more than 30 business days after the event date, and the latest update was 59 business days after the event. A sample of the ten latest updates were checked and found:

- five were incorrectly identified as new connections and are backdated switches,
- three were due to late paperwork,
- ICP 1002123917UNEF4 as due to an issue with Flux where the ICP held date was out of alignment with the meter certification and active date; Flux has been changed so that super users can correct this if needed so that the new connection updates do not get delayed, and
- the status update was missed on ICP 0000346045WTF06; this was identified via the BAU discrepancy reporting but was not updated within five business days.

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	1	1/1	Meridian's active date was confirmed to be correct.
IECD = active date and no MCD	4	4/4	All were confirmed to have the correct active date. ICP 0000702072MPDDF's meter was certified more than five days after electrical connection and is recorded as non-compliant in section 2.11 .
No IECD and MCD = active date	163	5/5	The five ICPs sampled were confirmed to be correct and matched the initial electrical connection dates which have since been populated on the registry.
No IECD and MCD ≠ active date	1	0/1	ICP 1002141600LCD90 was made active for the incorrect date. This was corrected during the audit.
No IECD and no MCD	0	0	None identified
Total	169	10/11	

The audit compliance report identified eight ICPs with "new connection in progress" status which had an initial electrical connection date recorded. All of these ICPs were checked, and I found the following:

- four ICPs were updated to active status after the report was run,
- the active status updates did not write to the registry for three ICPs and these were not picked up via the BAU discrepancy reporting; Meridian are investigating this (all were corrected during the audit), and
- the service request was not closed correctly for ICP 1000598982PCB1E hence the status update has not flowed to the registry; this was corrected during the audit.

Four of the eight ICPs were expected to be identified on the registry discrepancy reporting. Overall, this is a small number of ICPs in relation to the number of new connections and Meridian are investigating this. This is recorded as non-compliance in **section 3.9**.

PSNZ

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

Code	Year	ICPs notified greater than 5 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

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

Five updates were made more than 30 business days after the event date, and the latest update was 45 business days after the event. A sample of the 20 latest updates were checked and I found the following:

- there was confusion regarding who was the nominated retailer for two ICPs,
- late field notification caused ten late updates,
- two ICPs had incorrect event dates, and
- processing issues caused six late updates

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 to have incorrect updates	Comment
IECD ≠ active date and MCD = active date	2	0	Both were checked and confirmed as correct.
IECD ≠ active date and MCD ≠ active date	1	0	This example was correct
No IECD and MCD = active date	126	0	Five were checked and all were correct
No IECD and no MCD	5	3	All examples were checked and three were incorrect for ICPs 0000163687CK0C9, 1002113607UNA7A and 1099579859CN6DB.
Total	134	3	

The audit compliance report identified three ICPs with “new connection in progress” status which had an initial electrical connection date recorded. All of these ICPs were checked, and I found the following:

- one ICP had late paperwork and is now updated, and
- two ICPs had details in Flux but the process was not completed correctly, and the registry was not updated.

Audit outcome

Non-compliant

Non-compliance	Description	
<p>Audit Ref: 3.5</p> <p>With: Clause 9 Schedule 11.1</p> <p>From: 01-Jul-20</p> <p>To: 30-Jun-21</p>	<p>MERI</p> <p>735 late updates to active status for new connections.</p> <p>Four of the sample of 61 ICPs had incorrect active dates recorded.</p> <p>Five corrections from 2020 audit not corrected.</p> <p>MERI</p> <p>32 late updates to active status for new connections.</p> <p>One of the sample of 11 ICPs had an incorrect active date recorded.</p> <p>PSNZ</p> <p>195 late new connection updates.</p> <p>Three incorrect event dates.</p> <p>Potential impact: Medium</p> <p>Actual impact: Low</p> <p>Audit history: Multiple</p> <p>Controls: Moderate</p> <p>Breach risk rating: 2</p>	
Audit risk rating	Rationale for audit risk rating	
Low	<p>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 the late update.</p> <p>The audit risk rating is low as the impact to the market of the ICPs not being updated within five business days is low.</p>	
Actions taken to resolve the issue		Completion date
Incorrect inactive dates identified have been or will be corrected.		30 Nov 2021
Preventative actions taken to ensure no further issues will occur		Completion date
Active monitoring of the AC-020 report had lapsed during the audit period. This will be re-instated for all codes to monitor for issues impacting timely Registry update and identify inaccuracies with recording of active dates.		31 Dec 2021
		Identified

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

Code reference

Clause 9 (1(k) of Schedule 11.1

Code related audit information

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

Audit observation

The process to capture and manage ANZSIC codes was examined. The registry list 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. A report is run regularly to check and update any ICPs with T9 series codes.

The audit compliance report was reviewed to determine compliance:

- three ICPs had T99 series (unknown) ANZSIC codes; these are active vacant site and therefore the “unknown” code is valid,
- no ICPs with meter category 3 or higher had residential ANZSIC codes, and
- five ICPs with meter category 2 had residential ANZSIC codes; all were confirmed to be residential except for ICP 0006403727RNBA6 which is an active vacant earthquake damaged hotel and is expected to be decommissioned (the ICP has since switched to MERX with the residential ANZSIC code and is unable to be corrected in Flux due to automatic allocation of ANZSIC codes based on pricing which is discussed further below.

There are two unresolved incorrect ANZSIC codes identified during the 2020 audit. These were rechecked and have been corrected during this audit.

I checked a sample of 50 ANZSIC codes by comparing them to Google streetview and registry property name information and found three ICPs with the incorrect code applied. Two have since switched to MERX. One is a business but doesn't have business rates so this can't be corrected in Flux due to the issue described above. The other is expected to be fixed. The remaining ICP 1000554877PC072 is expected to be 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 ANZSIC code incorrectly. Meridian are 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:

- 11 ICPs had T99 series ANZSIC codes; a sample of five of these were checked and the ANZSIC codes updated,
- 67 ICPs had T994 series ANZSIC codes; a sample of five of these were checked and the ANZSIC codes updated,
- three ICPs had T995 series ANZSIC codes; all were able to be determined and were updated,
- one ICP had a T997 series ANZSIC code; this was able to be determined and has been updated,
- one ICP had a T998 series ANZSIC code; this was able to be determined and has been updated,
- 23 ICPs had a T999 series ANZSIC code; a sample of five of these were checked and the ANZSIC codes updated,
- no ICPs with meter category 3 or higher had residential ANZSIC codes, and
- 590 ICPs with meter category 2 had residential ANZSIC codes; all ten sampled were incorrectly allocated a residential ANZSIC code due to how the Flux system allocates these as detailed above and all have been corrected.

The unknown ANZSIC codes (103 in total) recorded in Flux do not appear to being investigated and corrected where necessary. I recommend this process is reviewed to ensure these are being managed and a backlog doesn't build up.

Description	Recommendation	Audited party comment	Remedial action
ANZSIC codes	Review the process in place to investigate and correct where required the ICPs with unknown ANZSIC codes allocated.	As per our comment below, we will implement an improved process to ensure ICPs assigned an unknown ANZSIC code on sign up are reviewed and updated.	Identified

Unresolved incorrect ANZSIC codes identified during the 2020 audit were rechecked. I found one ICP had switched out and the remaining five ICPs are affected by the same Flux issue as discussed above where the account has a residential account structure but is a business operating. These are recorded as non-compliant below.

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 the ten residential coded ICPs. These were all incorrect and have been allocated a residential code due to the account structure applied. These have now 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
- 21 ICPs with meter category 2 had residential ANZSIC codes; residential was correct for all examples.

I checked a sample of 75 ANZSIC codes by comparing them to Google streetview and registry property name information. All examples were correct.

Audit outcome

Non-compliant

Non-compliance	Description		
<p>Audit Ref: 3.6</p> <p>With: 9 (1(k) Schedule 11.1</p> <p>From: 01-Jul-20</p> <p>To: 30-Jun-21</p>	<p>MERI</p> <p>One ICP of a sample of 50 ICPs checked with incorrect ANZSIC codes.</p> <p>MERX</p> <p>All 20 ICPs sampled of the 103 ICPs with unknown ANZSIC codes were able to be determined.</p> <p>All ten ICPs sampled with a residential ANZSIC code were found to be incorrect and have been corrected.</p> <p>Potential impact: Low</p> <p>Actual impact: Low</p> <p>Audit history: Multiple</p> <p>Controls: Weak</p> <p>Breach risk rating: 3</p>		
Audit risk rating	Rationale for audit risk rating		
Low	<p>Controls are rated as weak as the Flux business rules do not ensure that the correct ANZSIC code is allocated in all instances and the “unknown” coded ICPs are not being investigated and corrected.</p> <p>The audit risk rating is low this has no direct impact on submission accuracy.</p>		
Actions taken to resolve the issue		Completion date	Remedial action status
<p>Corrections to incorrect ANZSIC Codes identified have been completed where this is possible.</p> <p>We will review the remaining ICPs assigned a residential ANZSIC Code with Cat 2 metering and correct this where required.</p> <p>Unknown ANZSIC codes identified for MERX will be reviewed and updated.</p>		<p>Sept 2021</p> <p>31 Dec 2021</p> <p>30 Nov 2021</p>	Investigating
Preventative actions taken to ensure no further issues will occur		Completion date	
<p>We will implement an improved process to ensure ICPs assigned an unknown ANZSIC code on sign up are reviewed and updated in a timely manner.</p> <p>We will review Flux constraints in relation to application of ANZSIC codes based on customer account structure to determine if changes are needed.</p>		<p>31 Dec 2021</p> <p>30 April 2022</p>	

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 4,126 ICPs with unmetered load recorded.

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 audit report that Meridian was working with Wellington Electricity to ensure that shared unmetered load was added for 0001409077UN5D7. This has not occurred, and in the meantime 0.71 kWh per day is recorded on the registry and for submission.
- 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 daily capacity report checks. Orion also normally emails Meridian if unmetered load details for any of their ICPs have changed.
- Periodically a report is generated to compare all distributor and trader unmetered load fields on the registry. The notes are compared 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.	355	-	242 DUMML ICPs validly have zero daily kWh recorded. 56 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.
ICPs where the Distributor has unmetered load recorded but the trader does not, and the trader's unmetered flag is N.	1	-	This was a timing difference and unmetered load details were updated prior to the audit.
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.	26	3	Ten were DUMML ICPs and are compliant as the registry is not used for submission. Eight were incorrectly calculated by the report because the distributor unmetered load details were not in the correct format and matched on recalculation. Three were found to have been calculated incorrectly and have been corrected. Five are under investigation with either the Account Manager or the relevant Network to confirm the load details.
Active ICPs with no metering or unmetered load recorded by the trader.	2	Unknown	Two (ICPs 0083582900PC3A3 & 0000103539TRE1E) have had their meters removed from the registry in 2017 and are being estimated. This is recorded as non-compliance in section 6.1 . Exemption 245 for ICP 0009805800AL991 and Exemption 287 for ICP 0000840407WE388 allow MERI to determine submission information by subtraction.
Unmetered load is recorded by the trader but not the distributor.	506	0	55 are residual load ICPs. I checked a sample of 20 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.

277 active unmetered BTS ICPs were identified. I checked all 21 ICPs which were created more than two years ago and found they had either since been decommissioned, a permanent supply installed or are correctly still a builder's temporary supply.

ICP 7012020000CH14D is reconciled as standard unmetered load but is recorded in the Tararua DC DUMML database which is with another trader. Meridian are working with the other trader to switch this ICP away so it can be reconciled as part of the larger DUMML database. This is recorded as non-compliance in **section 5.4**.

ICP 0089352023PCEAD is reconciled as standard unmetered load but is recorded in the Stratford DC DUML database which is with another trader. Meridian are investigating this with the council to determine the best way to resolve this. This is recorded as non-compliance in **section 5.4**.

MERX

MERX supplies 370 ICPs with unmetered load recorded.

Registry notification files are imported into Flux and reviewed. This process should identify any changes to distributor unmetered load details.

In addition to this there is a registry validation reporting that looks for any discrepancies between the traders unmetered details and the Distributor's details. 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.

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.	5	-	All were timing differences and unmetered load details were added by MERX or removed by the distributor prior to the audit.
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 genuine discrepancies.
Active ICPs with no metering or unmetered load recorded by the trader.	-	-	No genuine discrepancies.
Unmetered load is recorded by the trader but not the distributor.	19	1	The unmetered load was removed from ICP 0000025557EA8EB, but MERX has yet to remove this.

No active unmetered BTS ICPs were identified.

PSNZ

PSNZ supplies 142 ICPs with unmetered load recorded.

Monthly, PSNZ compares their trader unmetered load details and daily unmetered kWh to the distributor's values. Any discrepancies are investigated, and updates are made as required. This check does not identify examples where the PSNZ has unmetered load, and the distributor does not have unmetered load. I recommend this check is included.

Recommendation	Description	Audited party comment	Remedial action
Unmetered load	Check ICPs where PSNZ has unmetered load recorded but the distributor does not.	We will review controls and include a review of this information in monthly processes.	Investigating

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.

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.	5	-	All were timing differences and unmetered load details were added prior to the audit.
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 genuine discrepancies.
Active ICPs with no metering or unmetered load recorded by the trader.	12	0	No genuine discrepancies.
Unmetered load is recorded by the trader but not the distributor.	5	5	PSNZ's unmetered load is incorrect in all five cases.

Review of the AC020 report and registry list identified 12 ICPs which had a metering category 9, null or zero and did not have unmetered load recorded. Of those:

- six have accepted MEP nominations and are awaiting meter asset data,
- four had metering details added after the report was run,
- one was decommissioned after the report was run, and
- one has an MEP nomination made and is awaiting the MEP response.

Discrepancies identified during the previous audit were re-checked and confirmed to be resolved.

Audit outcome

Non-compliant

Non-compliance	Description		
Audit Ref: 3.7 With: Clause 9(1)(f) of Schedule 11.1 From: 01-Jul-20 To: 30-Jun-21	MERI Unmetered load incorrect for three ICPs. MERX Unmetered load incorrectly recorded for one ICP. PSNZ Five ICPs incorrectly have unmetered load recorded. Potential impact: Low Actual impact: Low Audit history: Once 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. 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
Corrections have been made where unmetered load was found to be incorrectly recorded.		Sept/Oct 2021	Identified
Preventative actions taken to ensure no further issues will occur		Completion date	
Monitoring of AC-020 report to identify where UML may have been removed will be implemented for PSNZ. Existing controls to monitor unmetered load will continue.		30 Nov 2021	

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

Code reference

Clause 17 Schedule 11.1

Code related audit information

The ICP status of “active” is managed by the relevant trader and indicates that:

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

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

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

Audit observation

The 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 unmetred, the daily unmetred 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. The previous audit recorded that a reading was not always entered as part of the reconnection process, which had led to some submission accuracy issues. I checked the records for ten reconnected ICPs and they all had readings entered.

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.

Review of the accuracy of data for a sample of reconnections in **section 3.3** and found all were recorded with the correct active date.

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

- ICP 0000012230EA09F was not made active for the correct date; this site has been electrically connected for some years (the meter was certified on 4 April 2006), but the ICP was never made active until it was found by Electricity Ashburton, the active date was applied from the date of discovery rather than backdated at least 14 months to correct submission and this is recorded as non-compliant,
- ICP 1002109214LCCA3 was made active one day late for the 21 October 2020 but the meter was certified on 20 October 2020, and
- ICPs 0000010018TE4F0 and 0007196169RN710 were found to have the incorrect active dates recorded, both had meter certifications earlier than the first active date and these were not certified using a load bank.

As detailed in **section 2.1**, I checked 18 ICPs with consumption where the status is inactive:

- ten ICPs are under investigation to determine whether the inactive consumption is genuine, and inactive volumes will be submitted once the status is updated to “active”; readings are recorded in Velocity,
- seven ICPs have had their status corrected “active” so that consumption is submitted, or the consumption was not confirmed to be genuine, and
- one ICP with confirmed consumption during an inactive period has had its status returned to “active” and is in the process of being re-disconnected.

I rechecked active status and status date discrepancies outstanding during the 2020 audit, and found they had been resolved except:

- 1002092931LC3FF – should be 24 June 2020,
- 1002080648LCC5D – should be 4 May 2020,
- 1002080641LC20C – should be 4 May 2020,
- 0110011677EL1FD – should be 5 December 2019, and
- 0110011599ELBDF – should be 17 October 2019.

These have been corrected during the audit.

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 reconnections in **section 3.3** confirmed the correct date had been applied.

A review of discrepancies for new connections in **section 3.5** identified ICP 1002141600LCD90 should have been made active from 2 June 2021 but the meter certification date was used in error. This was corrected during the audit.

As detailed in **section 2.1**, I checked 30 ICPs with consumption where the status is inactive:

- one did not have inactive consumption during MERX’s period of supply,
- one had its disconnection status event reversed and all consumption was submitted, and
- 28 appeared to have genuine consumption during an inactive period but consumption was not submitted, and the status was incorrect on the registry. This is recorded as non-compliance in Section 3.9.

I rechecked active status and status date discrepancies outstanding during the 2020 audit:

ICP	Disconnection date	Latest read date	Comments
0000053294NT510	3/03/2020	5/07/2020	Status not changed to active. 148.75 kWh submitted in July instead of May 2020. This has been corrected as part of this audit but is now outside of the revision period, so the volumes won’t be corrected.
0004018805TP667	9/06/2020	2/07/2020	Status not changed to active. 381 kWh not submitted. Still inactive from 10 June 2020. Still inactive 6 March 2020 to 18 May 2020.

Neither of these corrections were carried out post the last audit. These have now been corrected but these are now outside of the revision period, so the volumes won’t be corrected. As detailed in **section 9.5**, the reporting available in Flux is less sophisticated and therefore the process is more manual.

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 reconnections in **section 3.3** found all examples had correct event dates.

A review of discrepancies for new connections in **section 3.5** identified three ICPs with incorrect status dates. The details are in the table below.

ICP	Event date	Correct event date	Comments
0000163687CK0C9	12/08/20	25/08/20	Not yet corrected
1099579859CN6DB	17/07/20	03/09/20	Not yet corrected
1002113607UNA7A	25/12/20	25/01/21	Corrected

I rechecked active status and status date discrepancies outstanding during the 2020 audit and found they remain unresolved. This is not raised as non-compliance as they occurred in months which have already undergone revision 14.

Audit outcome

Non-compliant

Non-compliance	Description		
<p>Audit Ref: 3.8</p> <p>With: 17 Schedule 11.1</p> <p>From: 01-Jul-20</p> <p>To: 30-Jun-21</p>	<p>MERI</p> <p>Four of the sample of 61 ICPs had incorrect active dates recorded.</p> <p>MERX</p> <p>One of the sample of 11 ICPs had incorrect active date recorded.</p> <p>Two corrections from 2020 audit not corrected.</p> <p>PSNZ</p> <p>Three ICPs had incorrect active dates applied in Flux and on the registry.</p> <p>Potential impact: Low</p> <p>Actual impact: Low</p> <p>Audit history: Multiple times</p> <p>Controls: Moderate</p> <p>Breach risk rating: 2</p>		
Audit risk rating	Rationale for audit risk rating		
Low	<p>Controls are rated as moderate. 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.</p> <p>The audit risk rating is low, as a small number of differences for the sample checked were identified indicating that there are no systemic issues.</p>		
Actions taken to resolve the issue		Completion date	Remedial action status
Incorrect inactive dates identified have been or will be corrected.		30 Nov 2021	Identified
Preventative actions taken to ensure no further issues will occur		Completion date	
Active monitoring of the AC-020 report to had lapsed during the audit period. This will be re-instated for all codes to monitor for issues impacting timely Registry update and identify inaccuracies with recording of active dates.		31 Dec 2021	

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.
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 four ICPs which had been at “new connection in progress” status for more than 12 months and found all are in progress.

The audit compliance report identified 16 ICPs with “new connection in progress” status and two ICPs with “ready” status which had an initial electrical connection date recorded. All of these ICPs were checked, and I found the following:

- 12 ICPs with “new connection in progress” status were updated to active status after the report was run,
- two are awaiting the metering paperwork to be returned before they can be updated to “active”,
- two are unmetered new connections that were at “ready” on the registry; Meridian had no service request for these, and they are investigating why these were not identified via the BAU discrepancy reporting - both ICPs have since been claimed and made active and this is recorded as non-compliance, and
- ICP 0000022397EAD62 is associated with the Electricity Ashburton ICP deconsolidation project; this is being investigated.

The number of ICPs identified is very small in comparison to the overall number of new connections managed.

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 27 status updates to inactive did not identify any inaccurate data.

The AC020 report recorded two ICPs with status reason code 1,7 indicating a remote disconnection which did not have the AMI flag set to yes. Both had AMI metering at the time of disconnection.

ICP 1002094149LC17B appeared on the GR090 ICP missing report as missing from the registry. It 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.

Inactive with consumption

MERI 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**. All 18 ICPs with inactive consumption were checked:

- ten ICPs are under investigation to determine whether the inactive consumption is genuine, and inactive volumes will be submitted once the status is updated to "active"; readings are recorded in Velocity,
- seven ICPs have had their status corrected active so that consumption is submitted, or the consumption was not confirmed to be genuine, and
- one ICP with confirmed consumption during an inactive period has had its status returned to "active" and is in the process of being re-disconnected.

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 four ICPs which had been at "new connection in progress" status for more than 12 months and found one has since been made active and the remaining three are still in progress.

The audit compliance report identified eight ICPs with "new connection in progress" status which had an initial electrical connection date recorded. All of these ICPs were checked, and I found the following:

- four ICPs were updated to active status after the report was run,
- the active status updates did not write to the registry for three ICPs, and these were not picked up via the BAU discrepancy reporting; Meridian are investigating this (all were corrected during the audit), and
- the service request was not closed correctly for ICP 1000598982PCB1E hence the status update has not flowed to the registry; this was corrected during the audit.

Four of the eight ICPs were expected to be identified on the registry discrepancy reporting. Overall, this is a small number of ICPs in relation to the number of new connections and Meridian are investigating this. This is recorded as non-compliance.

Inactive Status (excluding new connection in progress)

Review of a diverse sample of 21 status updates to inactive did not identify any inaccurate data.

The AC020 report recorded no ICPs with status reason code 1,7 indicating a remote disconnection which did not have the AMI flag set to yes.

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**.

A report of inactive meters with consumption after the disconnection date was provided and contained 56 ICPs. A sample of 30 were checked:

- one did not have inactive consumption during MERX's period of supply,
- one had its disconnection status event reversed and all consumption was submitted, and
- 28 appeared to have genuine consumption during an inactive period, but consumption was not submitted, and the status was incorrect on the registry.

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 13 ICPs which had been at "new connection in progress" status for more than 12 months. Six have been resolved and are now active or decommissioned. Four are still required and remain at 1,12. ICPs 0000159559CK27F, 0000278465MPF93 and 0007195195RN6F9 have been cancelled and the registry needs to be updated to inactive ready for decommissioning.

The audit compliance report identified three ICPs with "new connection in progress" status which had an initial electrical connection date recorded. All of these ICPs were checked, and I found the following:

- ICP 1099581115CN6F5 has now been changed to active,
- ICP 0007202308RN352 has now been changed to active, and
- ICP 0000573171NR5C4 has now been changed to active.

Inactive Status (excluding new connection in progress)

Review of a diverse sample of 20 status updates to inactive identified incorrect statuses and status dates for ICPs 0099552868CN704, 0136928528LC772 and 0000463097WE98D. These are now all resolved.

The AC020 report recorded no ICPs with status reason code 1,7 indicating a remote disconnection which did not have the AMI flag set to yes.

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.

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 22 ICPs:

- five did not have inactive consumption during PSNZ's period of supply, and
- 17 appeared to have genuine consumption during an inactive period, but consumption was not submitted, and the status was incorrect on the registry.

Audit outcome

Non-compliant

Non-compliance	Description
<p>Audit Ref: 3.9</p> <p>With: Clause 19 Schedule 11.1</p>	<p>MERI</p> <p>Two ICPs electrically connected but recorded as “inactive-new connection in progress”.</p> <p>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.</p> <p>MERX</p> <p>Four ICPs electrically connected but recorded as “inactive-new connection in progress”</p> <p>28 ICPs had consumption during inactive periods, indicating that their status was incorrect. Estimated under submission of 29,873 kWh has occurred.</p> <p>PSNZ</p> <p>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.</p> <p>17 ICPs had consumption during inactive periods, indicating that their status was incorrect. Estimated under submission of 468 kWh has occurred.</p> <p>Three ICPs had incorrect statuses and status dates applied.</p> <p>Three ICPs with incorrect inactive statuses of 1,12 instead of 1,6.</p> <p>Three ICPs had inactive statuses of 1,12 when they should be active.</p> <p>Potential impact: Low</p> <p>Actual impact: Low</p> <p>Audit history: Multiple times</p> <p>Controls: Moderate</p> <p>Breach risk rating: 2</p>
<p>From: 18-May-20</p> <p>To: 12-Jul-21</p>	

Audit risk rating	Rationale for audit risk rating		
Low	<p>The controls are rated as moderate as they will mitigate risk most of the time but there is room for improvement.</p> <p>The impact is low, because the impact on settlement and participants is minor and the number of ICPs sampled with errors was a small percentage.</p>		
Actions taken to resolve the issue		Completion date	Remedial action status
Incorrect ICP statuses have been updated where this is possible.			Investigating
Preventative actions taken to ensure no further issues will occur		Completion date	
<p>We have identified the reason the 4 ICPs reported were not present on our discrepancy reports and provided process clarification to the team managing ICP commissioning to reduce recurrence of the issue that caused this (date entry error).</p> <p>Active monitoring of the AC-020 will be re-instated for all codes to monitor for issues impacting Registry active status updates</p> <p>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 being recorded.</p>		<p>Complete</p> <p>31 Dec 2021</p> <p>30 Apr 2022</p>	

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 monitor periodically runs a registry list to identify ICPs that have been assigned to them in error and advises the distributor.

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 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. Two unmetered supplies were electrically connected but were still at “ready” on the registry. Meridian had no service request for these, and they are investigating why these were not identified via the BAU discrepancy reporting. Both ICPs have since been claimed and made active, as discussed in **section 3.5**.

Analysis of the registry list identified three ICP at “new” and 36 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 but the networks are unaware of this.

MERX

No ICPs currently have “new” or “ready” status.

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 one ICP at “new” and seven ICPs at “ready” status for more than 24 months. The ICP at “new” has been decommissioned. 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 intends to notify Counties that these ICPs should be decommissioned.

It was previously recommended that PSNZ periodically runs a registry list to identify ICPs that have been assigned to them in error and advises the distributor. This has not been implemented because running of ad-hoc LIS files can cause problems within PSNZ due to automated scheduled processes within the Flux system that import and use these files.

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 2 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

Review of the event detail report found 5,045 transfer switch NTs for MERI. I matched the NTs to the meter category recorded on the registry list for 4,982 ICPs and found none had a metering category of three or above.

22 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.

MERX

Review of the event detail report found 118,262 transfer switch NTs for MERX. I matched the NTs to the meter category recorded on the registry list for 117,492 ICPs and found none had a metering category of three or above.

15 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.

PSNZ

Review of the event detail report found 7,787 transfer switch NTs for PSNZ. I matched the NTs to the meter category recorded on the registry list for 6,804 ICPs and found none had a metering category of three or above.

Nine 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

The check of the AN codes found all were correct. AN code selection is managed by Meridian using business rules that are set within Velocity.

The event detail report was reviewed for all 111,150 transfer ANs to assess compliance with the setting of event dates requirements:

- 110,831 ANs (99.7%) had proposed event dates within five business days of the NT receipt date, and
- three ANs had proposed event dates more than ten business days after the NT receipt date, and the proposed event date matched the proposed event date requested by the gaining trader but as they were more than ten days in advance these should have been withdrawn as date failed; this is recorded as non-compliance.

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

MERX

The automatic production of AN files in Flux has been turned and off and all AN files are manually produced. Automation was switched off in June 2021 while the Flux developers are reviewing this functionality. There is no known date of when this will be switched back on. The switch breach report is monitored to ensure that files are sent on time. The AN code is selected by the agent. A typical sample of ten AN files were checked and eight were correctly applied. The remaining two had the incorrect code applied due to human error. This is recorded as non-compliance.

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 6,648 transfer ANs to assess compliance with the setting of event dates requirements:

- 6,638 ANs (99.8%) had proposed event dates within five business days of the NT receipt date, and
- all ANs had proposed event dates within ten 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. All AN codes reviewed were correctly applied.

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 3,031 transfer ANs to assess compliance with the setting of event dates requirements:

- 3,030 ANs (99.97%) had proposed event dates within five business days of the NT receipt date, and
- all ANs had proposed event dates within ten 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-20 To: 30-Jun-21	MERI Three AN files were sent with a proposed event date more than ten days after receipt of the NT. MERX Incorrect AN code applied for two ICPs out of a sample of ten checked. Potential impact: None Actual impact: None Audit history: Once 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 as to not backdate these ICPs would have a direct impact on the customer.		
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. Automatic AN generation has been reinstated for MERX.		Ongoing 30 Sept 2021	

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 E2 breaches for transfer switches, which were not genuine, and
- seven CS breaches for transfer switches where the CS file was delivered more than five business days after the event date.

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	364	An extreme case sample of the five CS files with the largest negative values were checked and found to be incorrect. Four examples had generation present and the memo from the Authority on 18 June 2019 confirmed that negative kWh is not considered "consumption". The reason for negative consumption being recorded on ICP 0005936845RN0B9 was not able to be determined.
Zero	8,651	A sample of five ICPs were checked, and all were found to be correct.
More than 200 kWh	4,896	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 and identified the following discrepancies:

- 12 transfer and switch move 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 transfer switch and found the last actual read date was incorrect for all three ICPs, and
- two transfer CS files had a last actual read date more than one day before the event date with an actual read type, both had an incorrect switch read date of the day before the switch date, but the last actual read was some time before - this is discussed in more detail in **section 4.10**.

A further five 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, and
- the last actual read date was after the period of supply for ICP 0000154456TR020.

MERX

CS timeliness

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 recorded five E2 breaches for transfer switches, which were not genuine.

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	47	A sample of five ICPs were checked and found to be correct.
More than 200 kWh	34	An extreme case sample of the five CS files with the largest values were checked. Four out of five ICPs were calculated incorrectly. In these instances, the calculations appeared to match the value from the last billed to billed period rather than the two last validated reads.

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. 613 transfer and switch move CS files had a last actual read date the day before the event date, and an estimated read type. I checked a sample of five transfer switches and found that this was being 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. Meridian are investigating whether the file processing times can be altered so that the last actual read gained can be used. This will improve accuracy and reduce the number of RRs being received. This is recorded as non-compliance below and in **section 4.16**.

A further five 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 three 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	23	A sample of five ICPs were checked. Four were correct but ICP 0000340690WTCCD should have 4.3 not zero in the CS file for 6 February 2021.
More than 200 kWh	28	An extreme case sample of the five CS files with the largest values were checked. ICP 0000019132ENC9F should have 796 not 814 in the CS file for 28 October 2020. ICP 0000026089CE5E4 should have 875 not 908 for the CS file for 3 October 2020. ICP 0000019058EN8FA should have 1280 not 1475 for the CS file for 28 October 2020.

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.

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. 282 transfer and switch move CS files had a last actual read date the day before the event date, and an estimated read type. I checked a sample of five transfer switches and found the following issues.

ICP	Event date	Read correct?	Read type correct?	Comments
0000514490KEA81	01/04/21	Yes	Yes	
0000261776MPEBC	16/02/21	No	No	An estimate of 22546 was sent but an actual of 22545 was available to send.
0000225053UNC1B	23/10/20	No	No	An estimate of 40687 was sent but an actual of 40682 was available to send.
0000390180TE396	25/08/20	Yes	No	An estimate of 16462 was sent but an actual with the same reading was available to send.
0000142358TP989	19/02/21	No	No	An estimate of 3848 was sent but an actual of 3841 was available to send.

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

Audit outcome

Non-compliant

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.		Investigating
Preventative actions taken to ensure no further issues will occur	Completion date	
<p>Average Daily Consumption</p> <p><u>MERI</u> - 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.</p> <p><u>MERX/PSNZ</u> – While differing in some instances from the functional specification we consider calculation of average daily kWh in our CS files is materially accurate.</p> <p>Incorrect Read/Read Type</p> <p>We will investigate 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.</p> <p>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.</p>	<p>30 April 2022</p> <p>30 April 2022</p>	

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 issued 149 RR files for transfer switches. 116 were accepted and 33 were rejected. A sample of five rejected files and five accepted files were checked, and confirmed the rejections were valid,

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

AC

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 Meridian's system reflected the outcome of the RR process.

MERI issued 788 AC files for transfer switches. 725 were accepted and 63 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.

Four of the five rejections were validly rejected. The RR request for ICP 0000051256TR56A should have been accepted as two actual reads were provided. This will have resulted in 4,858 kWh being pushed to the gaining trader and reconciled for the incorrect period. This is recorded as non-compliance in **sections 2.1 and 12.7**.

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 893 RR files for transfer switches. 798 were accepted and 95 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 12 RR breaches. I checked the ten latest files. The ten latest files were checked and found all took more than four months to gain two actual reads.

AC

MERX issued 225 AC files for transfer switches. 182 were accepted and 43 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 161 RR files for transfer switches. 107 were accepted and 54 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 switch breach history report recorded 14 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 92 AC files for transfer switches. 86 accepted the other trader's RR, and six rejected the other trader's RR. 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-20 To: 30-Jun-21	MERI Six late RR files. MERX 12 late RR files. PSNZ 14 late RR files. Potential impact: Low Actual impact: Low Audit history: Three times Controls: Strong Breach risk rating: 1		
Audit risk rating	Rationale for audit risk rating		
Low	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.			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.			

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 27 RR files received from HHR traders within five business days of switch completion. Five of the RRs were validly rejected because the CS files contained actual readings, and the other 22 files were accepted.

MERX

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

The event detail report contained 88 RR files received from HHR traders within five business days of switch completion. 14 of the RRs were validly rejected because the CS files contained actual readings, and four files were invalidly rejected because the CS file contained estimated readings and MERX had applied a NHH profile. The remainder were accepted.

The four invalid rejections were checked and found were incorrectly rejected due to human error. These all occurred in late July and early August. There have been no incidents since then.

PSNZ

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

The event detail report contained 51 RR files received from HHR traders within five business days of switch completion; all were accepted.

Audit outcome

Non-compliant

Non-compliance	Description
Audit Ref: 4.5 With: Clause 6(2) and (3) Schedule 11.3 From: 15-Jul-20 To: 06-Aug-20	MERX Four RRs incorrectly rejected. 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 rated as moderate as the controls will mitigate risk most of the time, but human errors will occur. The impact is rated as low 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.		Identified
Preventative actions taken to ensure no further issues will occur	Completion date	
RR Rejections under this clause are monitored monthly and feedback provided to staff members where incorrect rejections are identified.	Ongoing	

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.

3,440 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. The correct switch type was selected for eight ICPs. The remaining two ICPs were transfers but are account managed and had been omitted when the contract started and had to be requested for the contract start date so were switched using a switch move. This is recorded as non-compliance.

Review of the event detail report found 13,228 switch move NTs for MERI. I matched the NTs to the meter category recorded on the registry list for 12,821 ICPs and found ICP 0308808045LCE80 had meter category 3, and all other ICPs had metering categories of 2 or below. ICP 0308808045LCE80 was requested as a switch move in error. This is recorded as non-compliance.

MERX

Review of the event detail report found 18,246 switch move NTs for MERX. I matched the NTs to the meter category recorded on the registry list for 17,724 ICPs and found none had a metering category of three or above at the time the NT was issued.

5,270 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. The correct switch type was selected for seven ICPs. The remaining three ICPs were transfers but are account managed and had been omitted when the contract started and had to be requested for the contract start date so were switched using a switch move. This is recorded as non-compliance.

PSNZ

Review of the event detail report found 11,377 switch move NTs for PSNZ. I matched the NTs to the meter category recorded on the registry list for 9,202 NTs and found none had a metering category of three or above.

2,827 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

Non-compliant

Non-compliance	Description		
Audit Ref: 4.7 With: Clause 9 Schedule 11.3 From: 01-Jul-20 To: 30-Jun-21	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. Potential impact: None Actual impact: None Audit history: Once 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 as to not backdate these ICPs would have a direct impact on the customer.		
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.			

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

Code reference

Clause 10(1) Schedule 11.3

Code related audit information

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

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

Audit observation

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

The check of the AN codes found all were correct. AN code selection is managed by Meridian using business rules that are set within Velocity.

Event date selection is managed by Meridian using business rules that are set within Velocity. The event detail report was reviewed for all 14,190 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
- three ANs had proposed event dates more than ten business days after the NT receipt date; two matched the proposed event date requested by the gaining trader, and ICP 0007127213RNC76 was sent out with the billed to date and the AN was sent with this date which was more than ten business days of the NT receipt date; these are recorded as non-compliance.

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:

- 24 T2 breaches for switch moves: the Meridian switching team were not aware that the switch breach reporting had been fixed and the T2 breaches were being excluded from the report as historically these were invalid, these were included upon discovery, are now reviewed daily and there have been no T2 breaches reported since September 2020,
- two ET breaches for switch moves: MERI had applied the gaining trader's requested date for ICP 1002080519LCB13, 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 0007127213RNC76 was set after the last billed date which was more than ten days in advance of the NT receipt date,
- 44 E2 breaches for switch moves: I checked the latest 20 files and found one was a genuine breach as the CS file was sent with an earlier than requested date for ICP 0002111815TGB09 due to bill reversals; this was later withdrawn, and
- one CS breach for a switch move: which was not genuine because an NW was provided on time.

MERX

The automatic production of AN files in Flux has been turned off and all AN files are manually produced. Automation was switched off in June 2021 while the Flux developers are reviewing this functionality. There is no known date of when this will be switched back on. The switch breach report is monitored to ensure that files are sent on time. The AN code is selected by the agent. A typical sample of ten AN files were checked and nine were correctly applied. ICP 0181745720LCFE5 had the incorrect code applied due to human error. This is recorded as non-compliance.

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 17,621 switch move ANs to assess compliance with the setting of event dates requirements:

- 13 ANs had proposed event dates prior to the date requested by the gaining trader; all were based on the last billed date and occurred over four days in October due to human error, and
- ten 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 finalised date which was more than ten business days in the future and were released in error.

The switch breach report recorded:

- five T2 breaches for switch moves: the Meridian switching team were not aware that the switch breach reporting had been fixed and the T2 breaches were being excluded from the report as historically these were invalid, these were included upon discovery, are now reviewed daily, and there have been no T2 breaches reported since September 2020,
- 28 E2 breaches for switch moves: I checked the latest 20 files and found four were genuine breaches and all were due to human error, and
- 22 ET breaches for switch moves: I checked the latest ten files and found eight were genuine breaches. These were checked and found to be due to either an invoice header being raised with a future billed date which was picked up by the AN or the account finalised date which was more than ten business days in the future and were released in error.

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. All AN codes reviewed were correctly applied.

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 8,343 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
- no ANs had proposed event dates more than ten business days after the NT receipt date.

The switch breach report recorded:

- 17 T2 breaches for switch moves: the ten files with the largest number of days overdue were checked and it was found they were all due to processing issues, one record was not genuine, the CS was sent on time,
- 54 E2 breaches for switch moves: I checked the latest 15 files and found one was a genuine breach and it was due to a processing issue, and
- five ET breaches for switch moves: 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 AN, compliance would be achieved.

Audit outcome

Non-compliant

Non-compliance	Description		
<p>Audit Ref: 4.8</p> <p>With: Clause 10(1) Schedule 11.3</p> <p>From: 01-Jul-20 To: 30-Jun-21</p>	<p>MERI</p> <p>Four AN files were sent with a proposed event date more than ten days after receipt of the NT.</p> <p>24 T2 breaches.</p> <p>Two ET breaches.</p> <p>One genuine E2 breach of a sample of 20.</p> <p>MERX</p> <p>Incorrect AN code applied for one ICP out of a sample of ten checked.</p> <p>Five T2 breaches.</p> <p>Four genuine E2 breaches out of 20 sampled</p> <p>Eight of the ten ET breaches sampled were found to be genuine.</p> <p>PSNZ</p> <p>One E2 breach.</p> <p>16 late CS files (T2 breaches).</p> <p>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.</p> <p>Potential impact: Low</p> <p>Actual impact: Low</p> <p>Audit history: Multiple times</p> <p>Controls: Moderate</p> <p>Breach risk rating: 2</p>		
Audit risk rating	Rationale for audit risk rating		
Low	<p>The controls are rated as moderate as automation has been switched off in Flux and therefore at more risk of human error and the bulk of switching is being carried out in Flux and will continue to be so going forward.</p> <p>The impact is assessed as low due to the number of ICPs affected in relation to the volume of ICPs switched. .</p>		
Actions taken to resolve the issue		Completion date	Remedial action status
			Investigating
Preventative actions taken to ensure no further issues will occur		Completion date	
<p>We will review existing processes and controls in place to reduce instances of human error with AN date selection.</p> <p>Automated AN processing has been reinstated for MERX</p>		<p>31 Dec 2021</p> <p>30 Sept 2021</p>	

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

252 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 ICP 0007127213RNC76 which had a proposed event date more than ten business days after the NT receipt date. The switch was completed effective from the gaining trader's requested date which was prior to the NT receipt date.

All switches were completed as required by this clause.

MERX

2,974 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:

- ten ICPs with proposed event dates more than ten business days after NT receipt; these were all subsequently withdrawn and completed with compliantly, and
- ten ICPs with proposed event dates before the gaining trader's requested date; these were all subsequently withdrawn and completed with compliantly.

All switches were completed as required by this clause.

PSNZ

1,375 switch move AN files contained a different date to the gaining trader's requested date. All of the proposed event dates were compliant, and 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: 01-Oct-20 To: 31-Oct-20	MERI Proposed event date more than ten business days after the NT receipt date for one ICP. Potential impact: Low Actual impact: None Audit history: None Controls: Strong Breach risk rating: 1		
Audit risk rating	Rationale for audit risk rating		
Low	The controls are recorded as strong because they mitigate risk to an acceptable level. There 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
			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	54	An extreme case sample of the five CS files with the largest negative values were checked and found to be incorrect. They were either due to consumption between an estimate and an actual or an incorrect reading and a correct reading.
Zero	2,864	A sample of five ICPs were checked, and one was found to be incorrect this is due to the known calculation methodology issues described above.
More than 200 kWh	206	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 0272000007PN5D1 which has a multiplier. It was unclear how the value sent was calculated.

I compared CS event dates, last actual read dates and event read types for consistency and identified the following discrepancies:

- 12 transfer and switch move 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 switch moves and found the last actual read date was incorrect for all three ICPs, and
- 5,435 switch move 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 all had an incorrect read type of actual but these should have been sent as estimates as they were not a read for the event date.

A further five 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 four of five ICPs sampled, and
- the last actual read date was after the period of supply for two ICPs.

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	852	A sample of five ICPs were checked and found to be correct.
More than 200 kWh	87	An extreme case sample of the five CS files with the largest values were checked. Four out of five ICPs were calculated incorrectly. In these instances, the calculations appeared to match the value from the last billed to billed period rather than the two last validated reads.

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, and found the following discrepancies:

- 613 transfer and switch move CS files had a last actual read date the day before the event date, and an estimated read type. I checked a sample of five move switches and found that in all instances this was being caused when a final invoice is produced using an estimated read and then a read comes in later in the day. In this instance, the CS is produced with the estimated read that has been billed but the final read date from the day before. Meridian are investigating whether the file processing times can be altered so that the last actual read gained can be used. This will improve accuracy and reduce the number of RRs being received. This is recorded as non-compliance below and in **sections 4.16**.
- 151 switch move 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 switch moves and found the last read date was the last customer’s final date and the read from that date is sent as an actual. This 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 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. I detailed one instance of this occurring in **sections 2.1** and **3.9**.

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.	See comments below	Investigating

A further five 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 four of five ICPs sampled.

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	271	A sample of five ICPs were checked, and one was found to be incorrect.
More than 200 kWh	35	An extreme case sample of the five CS files with the largest values were checked and they were all incorrect.

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.

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 and identified the following discrepancies.

ICP	Event date	Read correct?	Read type correct?	Comments
0000504016TPC5E	18/12/20	Yes	No	Reads should have been labelled as actuals
0000252905UN24C	09/06/21	Yes	Yes	
0000021427TR0CD	24/04/21	Yes	No	Reads should have been labelled as actuals
0000533336NRB39	11/09/20	Yes	No	Reads should have been labelled as actuals
0000159783CK7AB	19/09/20	No	Yes	The read should have been 5083 not 5086

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

There were no late CS files recorded.

Audit outcome

Non-compliant

Non-compliance	Description
<p>Audit Ref: 4.10</p> <p>With: Clause 11 Schedule 11.3</p> <p>From: 01-Jul-20 To: 30-Jun-21</p>	<p>MERI</p> <p>Average daily consumption is not calculated in accordance with the registry functional specification in some instances.</p> <p>Incorrect last read date recorded for all three ICPs sampled from a total of 12 switch and transfer switches.</p> <p>All five ICPs sampled of a possible 5,435 ICPs had an incorrect read type of actual recorded.</p> <p>Last actual read date was after the period of supply for two of five ICPs sampled.</p> <p>MERX</p> <p>Average daily consumption is not calculated in accordance with the registry functional specification in some instances.</p> <p>All five move switch ICPs sampled of a possible 613 transfer and switch ICPs contained an incorrect last read date.</p> <p>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 .</p> <p>PSNZ</p> <p>One switch move CS contained an incorrect read.</p> <p>Three switch move CS contained an incorrect read type.</p> <p>Average daily kWh in the CS is not calculated in accordance with the Registry Functional Specification.</p> <p>Potential impact: Low</p> <p>Actual impact: Low</p> <p>Audit history: Multiple</p> <p>Controls: Moderate</p> <p>Breach risk rating: 2</p>
Audit risk rating	Rationale for audit risk rating
<p>Low</p>	<p>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.</p> <p>The audit risk rating is low because the kWh differences found are generally small.</p>

Actions taken to resolve the issue	Completion date	Remedial action status
<p>No action is able to be taken to correct the issues raised in this section without impacting other retailers and customers.</p> <p>Read changes have been completed where requested by the gaining trader.</p>		Investigating
Preventative actions taken to ensure no further issues will occur	Completion date	
<p>Average Daily Consumption</p> <p><u>MERI</u> - 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.</p> <p><u>MERX/PSNZ</u> – While differing in some instances from the functional specification we consider calculation of average daily kWh in our CS files is materially accurate.</p> <p>Incorrect Read/Read Type</p> <p>We will investigate 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 causes this.</p> <p>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.</p>	<p>30 April 2022</p> <p>30 April 2022</p>	

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 337 RR files for switch moves. 244 were accepted and 93 were rejected. A sample of five rejected files and five accepted files were checked. 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 22 RR breaches and no late AC files. 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 910 AC files for switch moves. 772 were accepted and 138 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 but one of the rejections were valid. The RR request for ICP 0000158084UN0BE should have been accepted as this was sent by a HHR trader within five business days of the event date and Meridian sent an estimate in the CS file. The kWh value is negligible, but HHR traders require an accurate start read. This is recorded as non-compliance below.

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 1,022 RR files for switch moves. 655 were accepted and 367 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 16 RR breaches and late AC files. I checked the ten latest RR files and found all took more than four months to gain two actual reads.

AC

MERX issued 472 AC files for switch moves. 365 were accepted and 107 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 947 RR files for switch moves. 765 were accepted and 182 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 switch breach history report recorded 30 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 177 AC files for transfer switches. 149 accepted the other trader's RR, and 28 rejected the other trader's RR. 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		
<p>Audit Ref: 4.11</p> <p>With: Clause 12</p> <p>Schedule 11.3</p> <p>From: 01-Jul-20</p> <p>To: 30-Jun-21</p>	<p>MERI</p> <p>22 late RR files</p> <p>One of the five RRs rejections sampled incorrectly rejected causing the gaining HHR trader to gain on an inaccurate read.</p> <p>PSNZ</p> <p>30 late RR files for switch moves.</p> <p>Potential impact: Low</p> <p>Actual impact: Low</p> <p>Audit history: Twice</p> <p>Controls: Moderate</p> <p>Breach risk rating: 2</p>		
Audit risk rating	Rationale for audit risk rating		
Low	<p>The controls are recorded as moderate because they mitigate risk most of the time but there is room for improvement.</p> <p>The impact on settlement and participants is minor; therefore, the audit risk rating is low.</p>		
Actions taken to resolve the issue		Completion date	Remedial action status
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	
<p>RR files are only issued outside 4 months where there are delays obtaining actual reads and to resolve customer billing issues.</p> <p>RR Rejections under clause 12(2B) are monitored monthly and feedback provided to staff members where incorrect rejections are identified.</p>		Ongoing	

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 a non-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.

Review of the event detail report found 452 HH NTs for MERI. I matched the NTs to the meter category recorded on the registry list and found all had metering category 3 or higher.

ICP 0308808045LCE80 had metering category 3 but was requested as a MI switch in error and is recorded as non-compliance in **section 4.7**.

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

The switch breach history report recorded four PT breaches. None were genuine because the NT and AN proposed event dates matched, and none were backdated more than 90 days.

MERX

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.

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

Compliant

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

Code reference

Clause 15 Schedule 11.3

Code related audit information

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

15(a) - provide to the registry manager a valid switch response code as approved by the Authority; or

15(b) - provide a request for withdrawal of the switch in accordance with clause 17.

Audit observation

An event detail report was reviewed to identify AN files issued by Meridian during the audit period, and a sample of two (or all) ANs per response code were reviewed 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.

All 158 HH AN files had the AA (acknowledge and accept) response code correctly applied, and the switch breach history report did not record any late HH AN files.

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

Compliant

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 440 HH CS files identified on the event detail report was reviewed and found to be correct, except three 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)):*
 - o *the participant identifier of the trader making the withdrawal request (clause 18(c)(i));*
 - and*
 - o *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.

The content of 21 NW files was compared to Velocity details and found:

- 15 of the files had correct withdrawal reason codes applied,
- the three date failed NW codes were applied incorrectly; these should have been sent as “CE”; this was due to a misunderstanding and is not expected to occur in the future, and
- the incorrect code was applied incorrectly due to human error for the remaining three ICPs.

The switch breach history report recorded:

- one WR breach for 0000282413WA45B: the Meridian switching team were not aware that the switch breach reporting had been fixed and the WR breaches were not being included in their report, these were included upon discovery, are now reviewed daily, and there have been no WR breaches reported since September 2020,
- one WC breach for 0000044650HRF57: this was part of a double withdrawal which took longer than the allowable ten business days from the receipt of the initial NW,
- four SR breaches: these were all complicated withdrawals that took longer than the allowable ten business days from the receipt of the initial NW, and
- 61 NA breaches: I checked the latest ten files - eight were due to the time to discover that the wrong property had been gained and two were delayed due to late notification from the Account Manager.

AW

210 (9.6%) of the 2,194 AWs issued by MERI were rejections. I reviewed a sample of ten rejections by MERI and confirmed eight were rejected based the information available at the time the response was issued. Two were rejected due to human error.

MERX

NW

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

The content of 21 NW files was compared to Flux details and found:

- 16 of the files had correct withdrawal reason codes applied,
- the three date failed NW codes were applied incorrectly; these should have been sent as "CE", this was due to a misunderstanding and is not expected to occur in the future, and
- the incorrect code was applied incorrectly due to human error for the remaining two ICPs.

The switch breach history report recorded:

- two WR breaches: the Meridian switching team were not aware that the switch breach reporting had been fixed and the WR breaches were being not included in their report, these were included upon discovery, are now reviewed daily and there have been no WR breaches reported since September 2020,
- 11 SR breaches: I checked the latest ten files and found eight had valid reasons to not be resolved within the ten allowable business days, and three of these were issued in error,
- one NW breach for ICP 0000591023WE885: this was one day late due to the investigation required before the NW was issued, and
- 103 NA breaches: I checked the latest ten files and found five were due late discovery of the wrong property being gained, three were due to late discovery of other issues and two were sent in error.

AW

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

217 (5.4%) of the 3,986 AWs issued by MERX were rejections. I reviewed a sample of ten rejections by MERX, and confirmed they were rejected based the information available at the time the response was issued.

PSNZ

NW

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

The content of 19 NW files was compared to Flux details. Seven of the files had incorrect withdrawal reason codes applied. All were processing errors.

The switch breach history report recorded:

- five WR breaches: all were late whilst PSNZ was attempting to obtain further information regarding the switch arrangement,
- 13 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
- 64 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 which NWs have been received for. This is compared to the switch breach report to confirm due dates, to ensure that AWs are processed on time.

136 (10.6%) of the 1,289 AWs issued by PSNZ were rejections. I reviewed a sample of ten 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 for 0113673868LC375. This was a processing error.

Audit outcome

Non-compliant

Non-compliance	Description
<p>Audit Ref: 4.15</p> <p>With: Clauses 17 and 18 Schedule 11.3</p> <p>From: 01-Oct-19</p> <p>To: 07-Jul-20</p>	<p>MERI</p> <p>Six of the 21 NW codes sampled applied incorrectly.</p> <p>One WR breach.</p> <p>One WC breach.</p> <p>Four SR breaches.</p> <p>61 NA breaches.</p> <p>Two of the ten AW files sampled were rejected in error.</p> <p>MERX</p> <p>Five of the 21 NW codes sampled applied incorrectly.</p> <p>Two WR breaches.</p> <p>11 SR breaches.</p> <p>One NW breach.</p> <p>103 NA breaches.</p> <p>Two of the ten NW requests sampled were rejected in error.</p> <p>PSNZ</p> <p>64 NWs were issued more than two calendar months after the switch date.</p> <p>13 SR breaches.</p> <p>5 WR breaches.</p> <p>Seven incorrect NW codes used.</p> <p>One late AW file.</p> <p>Potential impact: Low</p> <p>Actual impact: Low</p> <p>Audit history: Three times</p> <p>Controls: Moderate</p> <p>Breach risk rating: 2</p>
Audit risk rating	Rationale for audit risk rating
<p>Low</p>	<p>Controls are rated as moderate, as they are sufficient to ensure that most NWs contain correct codes and are sent on time.</p> <p>The impact is low because the withdrawal reasons were correct even though there was a delay.</p>

Actions taken to resolve the issue	Completion date	Remedial action status
		Identified
Preventative actions taken to ensure no further issues will occur	Completion date	
<p>We consider that our process and controls related to switch withdrawals work well in most instances.</p> <p>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.</p> <p>Clarification regarding expected use of the “DF” reason code has been provided to the team.</p>	Sept 2021	

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 **section 4.3** and **4.10** from the samples checked indicated that reads are being labelled incorrectly.

MERX

As detailed in **section 4.3** and **4.10** from the samples checked indicated that 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 being 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 discussed in **section 4.3**, three transfer CS files had the incorrect reading. As discussed in **section 4.10**, one switch move CS contained an incorrect read.

Audit outcome

Non-compliant

Non-compliance	Description		
Audit Ref: 4.16 With: Clause 21 Schedule 11.3 From: 01-Jul-20 To: 30-Jun-21	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. Potential impact: Medium Actual impact: Low Audit history: Twice 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
			Investigating
Preventative actions taken to ensure no further issues will occur		Completion date	
Further information and actions regarding these issues are detailed in sections 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 contact 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.

A breach was alleged in relation to this clause. The investigation was closed with a decline to pursue with a compliance warning. Meridian have conducted further training of the team post this and are confident that the code requirement is well understood.

I listened to four calls where the incentive was discussed, 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 listened to three calls, 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

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.

Review of the AC020 reports did not identify any ICPs with incorrect shared unmetered load. I rechecked exceptions identified during the previous audit and found they have been corrected.

Audit outcome

Compliant

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

Code reference

Clause 10.14 (2)(b)

Code related audit information

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

Audit observation

The 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 ICPs with daily kWh between 3,000 and 6,000 kWh were checked. All had an approved load type or were DUMI ICPs.

MERX

There are no MERX ICPs with unmetered load over 3,000 kWh per annum.

PSNZ

Examination of the list file found no active ICPs with unmetered load greater than 6,000 kWh per annum. There are four ICPs with consumption between 3,000 and 6,000 kWh per annum and they are all approved lighting loads.

Audit outcome

Compliant

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

Code reference

Clause 10.14 (5)

Code related audit information

If the unmetered load limit is exceeded the retailer must:

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

The ICPs with annual unmetered load over 6,000 kWh were examined and the findings are shown in the table below.

ICP	Load connected	Annual kWh	Supplied since	Findings	Meridian update
0000025161EA29D	Hospital lighting	8,614	01/04/19	This is a streetlight at Ashburton hospital	Included in draft exemption application that will be finalised and submitted before the end of 2021
0000100115UN46C	Retirement village lighting	6,023	22/09/11	Appears to be DUML. Under investigation. Present last year.	Included in draft exemption application that will be finalised and submitted before the end of 2021
0089342001PCB9C	NZTA lighting	6,570	01/04/99	I have confirmed this ICP should be decommissioned as part of ICP consolidation and database work in Taranaki region. The assets associated are recorded in the Lower North Island NZTA database under a new ICP.	This ICP is now Inactive-ready for decommissioning
0000161690CK4EE	Wellington Regional Council	9,260	24/09/19	GWRC believe these lights belong to NZTA.	Further investigation is required to confirm correct ownership of lights under this ICP
0007186942RNC7D	Non streetlight DUML	13,067	01/11/18	Confirmed as DUML. Database source to be provided.	Database source has been confirmed as Orion – audit is to be scheduled
0007186944RNDF2	Non streetlight DUML	6,780	01/01/19	Confirmed as DUML. Database source to be provided.	Database source has been confirmed as Orion – audit is to be scheduled
0007175618RNE97	Pedestrian Underpass lighting	6,358	06/07/16	This has been confirmed as a single point of connection.	Included in draft exemption application.

ICP	Load connected	Annual kWh	Supplied since	Findings	Meridian update
0002270002ML907	Telemetry Station Taylor Pass Road	6,570	01/04/20	Incorrectly recorded in the Marlborough DC database by the previous trader.	Investigation in progress to determine whether metering of this connection is viable

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-Nov-18 To: 30-Jun-21	MERI Eight standard unmetered ICPs with annual consumption over 6,000 kWh. 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 because these are known but, some ICPs in this category have been supplied for several years. The audit risk rating is low as only eight ICPs exceed the threshold.		
Actions taken to resolve the issue		Completion date	Remedial action status
Actions are detailed 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 37 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 with the exception of:

- Palmerston North City Council – no date has been set for the next audit and Meridian are wanting to resolve the dimming issue before the next audit is undertaken, and
- NZTA Whangarei/Kaipara - there has been a change of staff at NZTA, and Meridian are seeking to use the RAMM database rather than the Networks database before the next audit is undertaken.

The two late DUML audit reports are recorded as non-compliance.

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.

As discussed in **section 3.7**, ICP 7012020000CH14D is reconciled as standard unmetered load but is recorded in the Tararua DC DUML database which is with another trader. Meridian are working with the other trader to switch this ICP away so it can be reconciled as part of the larger DUML database. This is recorded as non-compliance.

ICP 0089352023PCEAD is reconciled as standard unmetered load but is recorded in the Stratford DC DUML database which is with another trader. Meridian are investigating this with the council to determine the best way to resolve this. This is recorded as non-compliance.

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 - = under Variance PA
NZTA Whangarei/Kaipara	30/04/21	No	No	Yes	Yes	No	No	Yes	Yes	No	No	+27,700
Scanpower - Community Lighting	01/06/21	Yes	No	Yes	Yes	Yes	Yes	No	Yes	No	No	minor
Palmerston North CC	26/05/20	Yes	No	Yes	Yes	No	Yes	Yes	Yes	No	No	-28,800
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	20/04/21	Yes	No	Yes	Yes	Yes	No	Yes	Yes	No	No	
Kaikoura DC	01/06/21	Yes	No	Yes	Yes	Yes	Yes	Yes	Yes	No	No	very minor
La Point Subdivision	01/12/20	Yes	No	Yes	Yes	Yes	No	Yes	Yes	No	No	minor
NZTA Christchurch	28/05/20	Yes	No	Yes	Yes	Yes	Yes	Yes	Yes	No	No	very minor
Waterloo Park	01/06/20	Yes	No	Yes	Yes	Yes	Yes	Yes	Yes	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 -=under Variance PA
Jacks Point	31/05/19	Yes	Yes	Yes	Yes	Yes	No	Yes	Yes	Yes	Yes	accurate
Gore DC	08/12/20	Yes	No	Yes	Yes	Yes	Yes	Yes	Yes	No	No	+8,000
Buller DC-RAMM	01/12/20	Yes	No	Yes	Yes	No	No	Yes	Yes	No	No	+5,813
Hamilton CC	01/02/21	Yes	No	No	Yes	Yes	No	Yes	Yes	No	No	-19,190
Waikato DC	01/06/21	Yes	No	Yes	Yes	Yes	No	Yes	Yes	No	No	+66,700
Waipa DC	30/11/20	Yes	No	Yes	Yes	No	No	Yes	Yes	No	No	minor
Hauraki DC	01/10/20	Yes	No	Yes	Yes	Yes	Yes	Yes	Yes	No	No	-11,200
Matamata Piako DC	20/12/20	Yes	No	Yes	Yes	Yes	Yes	Yes	Yes	No	No	-8,132
South Waikato DC	30/05/21	Yes	No	Yes	Yes	Yes	Yes	Yes	Yes	No	No	accurate
Taupo DC	01/04/21	Yes	No	Yes	Yes	Yes	No	Yes	Yes	No	No	+68,000
Waitomo DC	01/11/20	Yes	No	No	Yes	Yes	No	Yes	Yes	No	No	-11,700
NZTA Hawkes Bay	01/03/21	Yes	No	Yes	Yes	No	No	Yes	Yes	No	No	accurate
Ashburton DC	01/09/21	Yes	No	Yes	Yes	Yes	No	Yes	Yes	No	No	accurate
CIAL	11/05/20	Yes	No	Yes	Yes	Yes	Yes	Yes	Yes	No	No	+1,755
Clutha DC	11/08/21	Yes	No	Yes	Yes	No	No	Yes	Yes	No	No	+14,600

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 -=under Variance PA
Paremoremo Prison Village	01/06/21	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	accurate
Thames Coromandel DC	01/12/20	Yes	No	Yes	Yes	Yes	No	Yes	Yes	No	No	very minor
Greater Wellington Regional Council	01/06/19	No	No	No	No	No	No	No	Yes	No	No	-13,700
NZTA South Canterbury	01/06/20	Yes	No	Yes	Yes	Yes	Yes	Yes	Yes	Yes	No	accurate
Burnham Military Camp	01/06/21	Yes	No	Yes	Yes	Yes	Yes	Yes	Yes	Yes	No	accurate
Buller DC - Electronet	01/12/18	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	accurate
Westland DC (Westcoast)	01/06/20	Yes	No	Yes	Yes	Yes	No	Yes	Yes	No	No	minor
Whakapapa Village -DOC	01/12/20	Yes	Yes	Yes	Yes	No	Yes	Yes	Yes	No	No	very minor
RNZAF Woodbourne Military Camp	01/06/20	Yes	No	Yes	Yes	Yes	Yes	No	No	No	No	very minor
Greenwood Retirement Village Gained 01/04/21	12/06/20	Non-compliance caused by prev trader	No	Yes	Yes	Yes	No	Yes	Yes	No	No	very minor

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 -=under Variance PA
Ruapehu DC Gained 01/01/21	01/09/20	No	No	Yes	Yes	No	Yes	Yes	Yes	No	No	very minor
Porirua CC Gained 01/02/21	24/14/20	Non-compliance caused by prev trader	No	No	No	No	No	Yes	Yes	No	No	+88,800

Audit outcome

Non-compliant

Non-compliance	Description
<p>Audit Ref: 5.4</p> <p>With: Clause 11 Schedule 15.3, Clause 15.37B & 16A.26</p> <p>From: 01-Jul-20 To: 30-Jun-21</p>	<p>MERI</p> <p>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.</p> <p>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.</p> <p>Inaccurate submission information for several databases.</p> <p>Two distributed unmetered database audits overdue.</p> <p>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.</p> <p>Potential impact: High</p> <p>Actual impact: High</p> <p>Audit history: Multiple</p> <p>Controls: Moderate</p> <p>Breach risk rating: 6</p>
Audit risk rating	Rationale for audit risk rating
High	<p>The effectiveness of the controls is recorded as moderate as Meridian are working to resolve the issues found.</p> <p>The impact on settlement is major because the incorrect submission figures are major for some databases.</p>

Actions taken to resolve the issue	Completion date	Remedial action status
<p>ICP 7012020000CH14D and ICP 0089352023PCEAD - DUMML associated with these ICPs are maintained in the council databases. We have requested the current Trader for those councils switch these ICPs to avoid operational and compliance cost of undertaking a second audit on the same database.</p> <p>Palmerston North City Council – we have been working with a wider group of stakeholders including LGNZ who have established profiles for dimming streetlights. We will follow up with LGNZ regarding whether comms have been sent to their members and engage with the PNCC about actions required for use.</p> <p>NZTA Whangarei/Kaipara – We will continue to press NZTA regarding required action to progress improvements to their RAMM database.</p> <p>Audits of existing databases with known unresolved issues will be scheduled if engagement from these customers is unsatisfactory.</p>	<p>Unknown – dependent on other trader</p> <p>30 Dec 2021</p> <p>30 Dec 2021</p> <p>31 Mar 2022</p>	Investigating
Preventative actions taken to ensure no further issues will occur	Completion date	
Actions being taken to address issues with DUMML databases are detailed in individual DUMML audit reports.		

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 ICP 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 68 ICPs which had a metering category 9, null or zero and did not have unmetered load recorded. Of those:

- two were decommissioned after the report was run,
- 14 had metering details added after the report was run,
- 29 have an MEP nomination made, and are awaiting the MEP response, and
- nine have accepted MEP nominations and are awaiting meter asset data.

The remaining 14 ICPs did not have MEP nominations made. These were examined and found:

- six 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, no actions are in progress to address these, and this is recorded as non-compliance below,
- two have since had metering recorded on the registry by the MEP,
- ICP 0001050011WM9D7 had a dummy meter recorded and volumes are being estimated, this is an unmetered site and is in the process of being corrected and this is recorded as non-compliance below,
- ICP 0272000105PNC50 has a meter recorded in Gentrack and the first read was gained from it 2 July 2021; it appears that the MEP has incorrectly removed this from the registry,
- ICP 0000840407WE388 has since had an exemption granted for allow subtraction to be used for submission, this is detailed in **section 1.1**, and
- one ICP has since switched away.

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.

No generated energy is gifted. Meridian arranges for compliant metering to be installed unless all the generated electricity is to be used within the customer's installation.

Review of the registry list identified 450 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	<p>168 ICPs with generation indicated by the distributor had HHR profile. I checked the ICPs on the HHR aggregates file for February 2021 and found 134 of the 154 which appeared in the aggregates flag had I flows reported. For the remaining 20 ICPs, the account manager advised that these do not have enough generation to require import export metering. The three ICPs on the Powerco network were checked with the network who confirmed that these are diesel generators which are electrically connected to the network periodically to test. Import/export metering is required, or the energy be gifted for such connections. This is recorded as non-compliance below. I recommend below that the remaining connections are checked to confirm if they are grid connected or not.</p> <p>15 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:</p> <ul style="list-style-type: none"> • four have since had import export metering installed, and • the Account Manager is investigating for 11 ICPs to confirm if distributed generation is present.

Generation profile recorded but no generation details recorded by the distributor	18 ICPs had profiles indicating generation was present, but no generation was recorded by the distributor. These were checked and found: <ul style="list-style-type: none"> • 11 have confirmed distributed generation present, and • seven do not have distributed generation capacity electrically connected. This is recorded as non-compliance in section 2.1.
Generation profiles inconsistent with the distributor fuel type	Where generation profiles were recorded, they were consistent with the generation fuel type apart from nine ICPs with PV1 profile where the distributor had recorded a generation fuel type of fresh water or other. These were checked and confirmed that the correct profile was applied except for ICP 0000022022CE5AF and this was corrected during the audit. This is recorded as non-compliance in section 2.1 .

Recommendation	Description	Audited party comment	Remedial action
Regarding Clause 10.13, Clause 10.24 and 15.13.	Confirm if distributed generation is present for the 17 HHR ICPs where the Distributor indicates it is, but there is no injection metering installed.	All ICPs have been checked and confirmed generation capacity does not exceed supply. ICPs have been added to the gifted generation register.	Identified

The previous audit recommended Meridian confirm whether ICPs with solar and batteries should have EG1 or PV1 profile assigned. Meridian sought clarification from the Electricity Authority and were advised that the PV1 is appropriate for ICPs with solar and batteries installed. All ICPs where the Distributor had indicated other were confirmed to have the correct profile applied with the exception of ICP 0000022022CE5AF which is detailed above.

Bridged meters

MERI does not initiate meter bypass instructions to any MEP or contractor. If they 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 unbridge the meter.

Three examples of bridged meters were examined. The corrections were reviewed in **section 2.1**, and I found consumption was appropriately estimated for the bridged periods.

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 135 ICPs which had a metering category 9, null or zero and did not have unmetered load recorded. Of those:

- 44 had metering details added after the report was run,
- six have accepted MEP nominations and are awaiting meter asset data,
- two have an MEP nomination made and are awaiting the MEP response, and
- one was moved to an inactive status after the report was run.

The remaining 82 ICPs that did not have MEP nominations made were examined. These are all part of the ARC meter displacement. Meridian received late notification from the MEP, and all have since had MEP nominations.

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 4,430 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 one ICP (0006142761RNF6A) with generation recorded by the distributor and an I flow register where MERX did not record a generation compatible profile. This appears to have been 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	92 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 ten have either have since had the correct metering installed and the profile updated, or distributed generation has been confirmed as removed. The remaining ten ICPs have distributed generation indicated by the Distributor but the metering has still to be changed and the profile updated.
Generation profile recorded but no generation details recorded by the distributor	136 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 94 ICPs with PV1 profile where the distributor had recorded a generation fuel type of fresh water or other. I checked a sample of 20 and 19 were correctly recorded as they have solar power and batteries installed. ICP 0000576825WT0B0 has fresh water generation and was incorrectly recorded with a PV1 profile and this was corrected during the audit. This is recorded as non-compliance in section 2.1 .

The previous audit recorded that 0005786762RNB36 had a legacy meter which ran backwards when generation exceeded load, and this issue has been resolved by installing import export metering.

Bridged meters

MERX does not initiate meter bypass instructions to any MEP or contractor. If they 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 unbridge the meter.

Seven examples of bridged meters were examined. The corrections were reviewed in **section 2.1**, and I found consumption was appropriately estimated for the bridged periods.

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 12 ICPs which had a metering category 9, null or zero and did not have unmetered load recorded. Of those:

- six have accepted MEP nominations and are awaiting meter asset data,
- four had metering details added after the report was run,
- one was decommissioned after the report was run, and
- one has an MEP nomination made and is awaiting the MEP response.

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 1,338 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. Nine 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.
Generation recorded by the distributor with no I flow register or generation compatible profile	30 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 10 and found the following ICPs have distributed generation where the generation is not quantified or submitted. 0000451902HB60E 0001393529UN7CE 0006876510RN4C4 0458828432LCD12 0000158402UN87A
Generation profile recorded but no generation details recorded by the distributor	77 ICPs had profiles indicating generation was present, but no generation was recorded by the distributor. I checked a sample of 20 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 26 ICPs with PV1 profile where the distributor had recorded a generation fuel type of other. I checked a sample of 10 and found they all had solar generation.

Bridged meters

PSNZ does not initiate meter bypass instructions to any MEP or contractor. If they 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 unbridge the meter.

Eight examples of bridged meters were examined. The corrections were reviewed in **section 2.1**, and I found consumption was appropriately estimated for the bridged periods.

Audit outcome

Non-compliant

Actions taken to resolve the issue	Completion date	Remedial action status
ICPs 0083582900PC3A3 & 0000103539TRE1E that have had their meters removed from the Registry will be investigated to confirm whether these should be decommissioned.	31 Dec 2021	Investigating
ICP 0001050011WM9D7 – we are attempting to confirm installed capacity at this connection so volume can be quantified as unmetered load.	28 Feb 2022	
A number of ICPs with generation present (but not exporting or unlikely to export) have been added to the gifted generation register for MERI/MERX and PSNZ.	Sept 2021	
As reported meters are bridged only when necessary and this will continue to be the case.		
Preventative actions taken to ensure no further issues will occur	Completion date	
We have processes in place to monitor and review ICPs with DG indicated by the distributor but imp/exp metering not installed. Metering is arranged where it has been requested or where follow up with the customer confirms this is required.	Ongoing	
We understand where export metering is not installed or not required ICPs must be added to the gifted generation register to be exempt from the requirement to have exported electricity measured by a metering installation. We are reviewing our current process, so ICPs are added where investigation confirms this is required.	28 Feb 2022	

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	3/11/2021
MERI	MANAPOURI	MAN2201MERIGG	MERG	3/07/2022
MERI	OHAU A	OHA2201MERIGG	MERG	20/09/2021
MERI	OHAU B	OHB2201MERIGG	MERG	5/06/2022
MERI	OHAU C	OHC2201MERIGG	MERG	12/06/2022
MERI	WOODVILLE	WDV1101MERIGG	MERG	13/08/2022
MERI	WAITAKI	WTK0111MERIGG	MERG	13/11/2022
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. Four meters were re-certified during the audit period, and the changes were made on time. Two were initially processed with incorrect certification expiry dates and were corrected as soon as the errors were discovered through Meridian's normal processes.

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

The AC020 report recorded one ICP with a profile requiring a certified control devices where control devices were not certified, the AMI flag was set to N, and HHR metering was not installed. The ICP later switched to MERX and is one of the four MERX exceptions discussed below.

MERX

MERX uses the same process as Meridian 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
TOC	Day/Night	Yes
TON	Day/Night	Yes

The AC020 report recorded four ICPs with profiles requiring certified control devices where control devices were not certified, the AMI flag was set to N and HHR metering was not installed. MERX had believed that this was acceptable because the MEP did not offer a smart meter configuration.

ICP Identifier	Profile Code	Control Device Certification Flag	AMI Comm	AMI Non Comm	HHR metering
0000272750WT426	T07 T23	N	N	N	N
0000656115WTB38	T07 T23	N	N	N	N
0000264755WT448	RPS E08	N	N	N	N
0000252400WT6E0 (now switched out)	T07 T23	N	N	N	N

PSNZ

PSNZ has applied the RPS, PV1, POD, and PON profiles 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. RPS and PV1 profiles also do not require certification of control devices.

The AC020 report did not record any ICPs with profiles requiring certified control devices where control devices are not certified.

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: 21-Jan-21 To: 09-Sep-21	MERX ICPs 0000272750WT426, 0000656115WTB38, 0000264755WT448, and 0000252400WT6E0 had profiles requiring control device certification without a certified control device or an AMI meter installed. Potential impact: Low Actual impact: Low Audit history: None Controls: Strong Breach risk rating: 1		
Audit risk rating	Rationale for audit risk rating		
Low	Controls are rated as strong because there were a small number of isolated exceptions. 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
Profiles for the 4 ICPs identified will be corrected to RPS		31 Oct 2021	Identified
Preventative actions taken to ensure no further issues will occur		Completion date	
Existing controls to monitor control device certification for use of profiles will continue		Ongoing	

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

Code reference

Clause 10.43(2) and (3)

Code related audit information

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

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

Audit observation

Processes relating to defective metering were examined.

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

Audit commentary

Defective meters are typically identified through the meter reading validation process, or from information provided by the meter reader, the MEP, 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 eight defective meters and three bridged meters were checked. The MEP was advised, and corrections were processed as discussed in **section 2.1**.

MERX

A sample of three defective meters and seven bridged meters were checked. The MEP was advised, and corrections were processed as discussed in **section 2.1**.

PSNZ

A sample of five defective meters and eight 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 it does not exceed the maximum interrogation cycle in the registry

2(4) - The reconciliation participant must interrogate the meter at least once every maximum interrogation cycle

2(5) - When electronically interrogating the meter the participant must:

- a) ensure the system is to within +/- 5 seconds of NZST or NZDST*
- b) compare the meter time to the system time*
- c) determine the time error of the metering installation*
- d) if the error is less than the maximum permitted error, correct the meter's clock*
- e) if the time error is greater than the maximum permitted error then:*
 - i) correct the metering installation's clock*
 - ii) compare the metering installation's time with the system time*
 - iii) correct any affected raw meter data.*
- f) download the event log*

2(6) – The interrogation systems must record:

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

Audit observation

The data collection process was examined.

- EMS collects HHR data as an agent,
- EDM I 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

HHR data transmission and clock synchronisation processes were reviewed as part of EMS, AMS and EDM I'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	5/04/2021 10:10	1/12/2018 0:00	Accucal confirmed that the power is off, and work is being completed at the ICP.

The previous audit found ICP 0000657986UN559 was read manually and the event log was not downloaded. I confirmed that no manual downloads have occurred since September 2020 and event logs are provided.

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.

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 events for MERX and PSNZ are not loaded into Flux, but they are checked. No action was required for the sample of clock synchronisation events reviewed. If action is required, MEPs request service orders to field work can be conducted.

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-Dec-18 To: 09-Sep-21	MERI ICP 0085976769LC230 was not interrogated within its maximum interrogation cycle. Potential impact: Low Actual impact: Low 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. 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
0085976769LC230 – Works at this ICP preventing the meter from being interrogated due to power being off are ongoing but expected to be completed. Meter recertification is also pending but has been delayed by Alert level restrictions.		31 Dec 2021	Identified
Preventative actions taken to ensure no further issues will occur		Completion date	
We will continue will with our existing processes and controls.		Ongoing	

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 five 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 of the following types of meter condition events and noted that they had been appropriately actioned, including:

- dials discrepancies,
- signs of tampering,
- different meter registers, and
- electrically unsafe installations.

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 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 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.

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 five customer reads and they were all correctly recorded as customer or photo reads.

MERX

I traced reads for a sample of two manually read ICPs from the source files to Velocity. All were recorded and labelled correctly.

There are a small number of ICPs read manually by Wells. Validation is the same as described for MERI.

The meter condition notes from manual meter reading files are uploaded into Flux. There was a period of approximately one year where the meter condition notes were not loaded or reviewed. This matter is now resolved. I checked recent examples of the following condition events and confirmed they were appropriately dealt with, including:

- dials discrepancy,
- different meter register present, and
- electrically unsafe installations.

Disconnection reads are manually entered into Flux.

Customer and photo readings

Flux treats customer and photo reads as unverified unless a person manually validates them against another set of reads and applies a different status.

I checked a sample of five readings to confirm the correct identification. ICP 0001030610TG787 had a customer read on 1 June 2021 incorrectly recorded as “medium” when it should have been recorded as “unverified”.

PSNZ

I checked a sample of two readings provided by Wells for three ICPs and confirmed that they are loaded into PSNZ’s system as actual readings and are validated.

The meter condition information is imported into Flux, along with all other notes provided by Wells, and is reviewed as part of the meter reading validation process. There was a period of approximately one year where the meter condition notes were not loaded or reviewed. This matter is now resolved.

I checked recent examples of different meter registers condition events and confirmed they were appropriately dealt with.

Customer and photo readings

If Wells obtains a customer reading, a no read is recorded, and the customer reading is provided as a note in the reading file.

Readings and photo readings provided by customers are consistently entered as customer readings. Each reading is assigned a read status in Flux (invalidated, unverified, verified, or medium). This 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.

Customer and photo readings are assigned “unverified” status unless they can be validated against a set of readings from another source. I checked a sample of customer readings and confirmed they were correctly assigned the “verified customer” status because they had been validated against other validated readings.

Audit outcome

Non-compliant

Non-compliance	Description		
<p>Audit Ref: 6.6</p> <p>With: Clause 5 of Schedule 15.2</p> <p>From: 01-Jul-20</p> <p>To: 30-Jun-21</p>	<p>MERI</p> <p>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.</p> <p>MERX</p> <p>Wells meter condition information not checked for the entire audit period.</p> <p>One ICP with a customer read incorrectly identified.</p> <p>PSNZ</p> <p>Wells meter condition information not checked for the entire audit period.</p> <p>Potential impact: Low</p> <p>Actual impact: Low</p> <p>Audit history: Multiple times</p> <p>Controls: Moderate</p> <p>Breach risk rating: 2</p>		
Audit risk rating	Rationale for audit risk rating		
Low	<p>The controls are recorded as moderate because they mitigate risk most of the time but there is room for improvement.</p> <p>The audit risk impact is expected to be low as the volume of reads affected by this is low and lessening as customers are migrated to the Flux system.</p>		
Actions taken to resolve the issue		Completion date	Remedial action status
<p>Process and controls to review meter condition information for manually read meters has been implemented.</p> <p>Review of read history for ICP 0001030610TG787 found that a set of validated meter readings had been obtained prior to the customer read recorded on 1 June.</p>		30 Jun 2021	Identified
Preventative actions taken to ensure no further issues will occur		Completion date	
As above meter condition information is now being reviewed.			

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 every 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 as expected, 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 five upgrades and five downgrades were checked. The upgrades and downgrades were processed according to the procedure above.

I re-checked downgrades from the previous audit where there was a one-day gap between the new meter installation and NHH volumes being reported and found it was due to the system limitations described above, and the data has not been modified since the previous audit.

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 only supplies ICPs with NHH submission type and no upgrades or downgrades occurred 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 date before midnight.

No upgrades or downgrades occurred during the audit period.

Audit outcome

Non-compliant

Non-compliance	Description
<p>Audit Ref: 6.7</p> <p>With: Clause 6 Schedule 15.2</p> <p>From: 01-Jul-20</p> <p>To: 09-Sep-21</p>	<p>MERI</p> <p>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.</p> <p>Potential impact: Low</p> <p>Actual impact: Low</p> <p>Audit history: None</p> <p>Controls: Moderate</p> <p>Breach risk rating: 2</p>
Audit risk rating	Rationale for audit risk rating
Low	<p>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.</p> <p>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.</p>

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.	30 Jun 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.

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.

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 is reviewing this process because not all requests are actioned and recorded in Gentrack as expected.

If AMI reads cannot be obtained for an ICP for 60 days, it is intended that the ICP is 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 and Meridian are working with Gentrack to enable this to be imported into their systems and directed to work queues appropriately.

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 first.

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.

159 ICPs were not read during the period of supply, where the period of supply ended between March and June 2021. 110 of those were supplied for less than 90 days, and 86 were supplied for less than 60 days. I reviewed the ten ICPs with the longest periods of supply:

- six ICPs had AMI meters without comms, two were changed to manual read rounds but not for many months,
- two ICPs were account managed and no action was taken,
- exceptional circumstances were proven for ICP 0002301622END17, and
- one ICP was not correctly assigned to a read round due to a system issue.

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 managed ICPs will also be 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,
- 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
 - moving AMI metered ICPs to a manually read round.
- Escalations to management are built into the process depending on the quantity of no reads.

180 ICPs were not read during the period of supply, where the period of supply ended between March and July 2021. 171 of those were supplied for less than 90 days, and 149 were supplied for less than 60 days. I reviewed the ten ICPs with the longest periods of supply and found two ICPs did not have any outbound communication to the customer. In both cases this was due to the no-read process not being fully implemented at the time.

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
- 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.

41 ICPs were not read during the period of supply, where the period of supply ended between April and June 2021. 28 of those were supplied for less than 90 days, and 21 were supplied for less than 60 days. I reviewed the ten ICPs with the longest periods of supply. Two ICPs did not have any outbound communication.

Audit outcome

Non-compliant

Non-compliance	Description
<p>Audit Ref: 6.8</p> <p>With: Clause 7(1) and (2) Schedule 15.2</p> <p>From: 01-Jul-20</p> <p>To: 31-Jul-21</p>	<p>MERI</p> <p>Nine of ten ICPs were not read during the period of supply and exceptional circumstances were not proven.</p> <p>MERX</p> <p>Two of ten ICPs sampled were not read during the period of supply and exceptional circumstances were not proven.</p> <p>PSNZ</p> <p>Two of ten ICPs sampled were not read during the period of supply and exceptional circumstances were not proven.</p> <p>Potential impact: Low</p> <p>Actual impact: Low</p> <p>Audit history: Multiple times</p> <p>Controls: Moderate</p> <p>Breach risk rating:2</p>
Audit risk rating	Rationale for audit risk rating
Low	<p>The controls are recorded as moderate because they mitigate risk most of the time but there is room for improvement.</p> <p>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.</p>

Actions taken to resolve the issue	Completion date	Remedial action status
As these ICPs are no longer supplied by Meridian no action can be taken		Identified
Preventative actions taken to ensure no further issues will occur	Completion date	
<p>MERI</p> <p>Existing processes and controls will continue.</p> <p>MERX</p> <p>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.</p> <p>PSNZ</p> <p>The same process that has been implemented for MERX will be implemented for PSNZ over the next 6 months.</p>	<p>Feb 2021</p> <p>31 Mar 2022</p>	

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

Code reference

Clause 8(1) and (2) Schedule 15.2

Code related audit information

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

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

Audit observation

The meter reading process was examined. Monthly reports for February to June 2021 were provided for MERI and MERX, and reports for March to June 2021 were provided for PSNZ.

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
Feb 2021	379	157	1,037	98.95%
Mar 2021	372	154	1,010	98.86%
Apr 2021	360	143	866	98.43%
May 2021	331	136	733	98.18%
Jun 2021	303	131	688	97.74%

Read attainment is slightly lower than the last audit period. MERI provided a report of 159 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. For one of ten examples checked, exceptional circumstances and best endeavours were not proven. This was an account managed ICP. 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. The other nine ICPs all had exceptional circumstances demonstrated. They were a mixture of H&S issues, refused access for comms towers, mines or pump stations.

The reports reviewed for February to June 2021 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
Feb 2021	69	18	21	99.96%
Mar 2021	155	26	31	99.94%
Apr 2021	155	33	44	99.93%
May 2021	159	38	63	99.91%
Jun 2021	159	43	64	99.91%

MERX provided a report of 101 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 February to June 2021 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
Mar 2021	296	114	607	99.13%
Apr 2021	296	115	589	99.15%
May 2021	296	116	601	99.14%
Jun 2021	298	120	620	99.13%

PSNZ provided a report of 44 ICPs where a reading had not been obtained for the previous 12 months as of 12 July 2021. 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 all cases best endeavours were made to obtain readings.

The reports reviewed for March to June 2021 all met the reporting requirements and 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-Jul-20 To: 31-Jul-21	MERI Exceptional circumstances and best endeavours were not proven for one of ten examples checked. 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 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 Dec 2021	

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

Code reference

Clause 9(1) and (2) Schedule 15.2

Code related audit information

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

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

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

Audit observation

The meter reading process was examined. Monthly reports for February to June 2021 were provided for MERI and MERX, and reports for March to June 2021 were provided for PSNZ.

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
Feb 2021	379	26	2,758	97.20%
Mar 2021	372	24	2,528	97.16%
Apr 2021	360	26	1,852	96.64%
May 2021	331	25	1,461	96.37%
Jun 2021	303	26	1,327	95.64%

I reviewed 13 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 11 out of 13 examples checked, exceptional circumstances and best endeavours were not proven. Eight of these were account managed ICPs. For two ICPs it was expected that customer reads would be provided but these were not provided in time. One ICP was part of a project with a large customer to have AMI installed but the install hasn't gone ahead.

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
Feb 2021	184	2	483	99.56%
Mar 2021	273	1	543	99.53%
Apr 2021	302	-	582	99.51%
May 2021	315	1	613	99.49%
Jun 2021	327	1	696	99.44%

I reviewed all 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. There were only two ICPs and in both cases, outbound communication had occurred.

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
Mar 2021	313	23	1,576	98.23%
Apr 2021	319	26	1,800	98.00%
May 2021	318	21	1,642	98.19%
Jun 2021	321	19	1,679	98.18%

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 MERX 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. Two ICPs did not meet the best endeavours threshold. One ICP was set as AMI read instead of manually read and the other ICP has WASN as the MEP and arrangements are underway to obtain AMI data from them.

Audit outcome

Non-compliant

Non-compliance	Description		
<p>Audit Ref: 6.10</p> <p>With: Clause 9(1) and (2) Schedule 15.2</p> <p>From: 01-Oct-19</p> <p>To: 07-Jul-20</p>	<p>MERI</p> <p>Exceptional circumstances and best endeavours were not proven for 11 of 13 examples checked.</p> <p>PSNZ</p> <p>For at least two ICPs unread in the previous four months, the best endeavours requirements were not met, and exceptional circumstances did not exist.</p> <p>Potential impact: Low</p> <p>Actual impact: Low</p> <p>Audit history: Once</p> <p>Controls: Moderate</p> <p>Breach risk rating: 2</p>		
Audit risk rating	Rationale for audit risk rating		
Low	<p>The controls are recorded as moderate because they mitigate risk most of the time but there is room for improvement.</p> <p>The audit risk rating is assessed as low as the number of NSPs not meeting the 90% read threshold within four months is low.</p>		
Actions taken to resolve the issue		Completion date	Remedial action status
			Identified
Preventative actions taken to ensure no further issues will occur		Completion date	
<p>MERI</p> <p>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.</p> <p>PSNZ</p> <p>The same process that has been implemented for MERX will be implemented for PSNZ over the next 6 months.</p>		<p>31 Dec 2021</p> <p>31 Mar 2022</p>	

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, EDMl, 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, EDMl 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, EDMl, EMS and MEPs as part of their audits.

The previous audit found ICP 0000657986UN559 was read manually and the event log was not downloaded. I confirmed that no manual downloads have occurred since September 2020 and event logs are provided.

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

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, EDM I 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, EDM I, 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 $\pm 0.1\%$ (± 2 seconds).

Audit observation

HHR data is collected by AMS, EDM I 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, EDM I, 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 January 2017, 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 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 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

HHR corrections are processed by EMS, and compliance was recorded in their agent audit. Four examples of HHR corrections were provided, and all were accurately processed.

MERX

MERX does not provide HHR submissions.

PSNZ

No HHR corrections for metering issues or data errors were completed during the audit period. Corrections will be based on the best information available, and if PSNZ is unsure of the total consumption for the affected period the ICP will be changed to NHH submission.

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.

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 WWD Generator 03 for 5 March 2021 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

Compliant

8.3. Error and loss compensation arrangements (Clause 19(3) Schedule 15.2)

Code reference

Clause 19(3) Schedule 15.2

Code related audit information

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.

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.

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 HHR readings is recorded in EMS' agent audit report.

NHH

As discussed in **section 6.6**, actual 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 five customer reads and they were all correctly recorded as customer or photo reads.

The following switch event meter reading issues were identified in **sections 4.3** and **4.10**:

- 12 transfer and switch move 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 switch moves and found the last actual read date was incorrect for all three ICPs, and
- 5,435 switch move 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 all had an incorrect read type of actual but these should have been sent as estimates as they were not a read for the event date.

MERX

As recorded in **section 4.10**, all five ICPs sampled of a possible 151 ICPs had an incorrect read type of actual recorded.

PSNZ

As recorded in **section 4.3**, four transfer CS files contained an incorrect read type of estimate rather than actual.

As recorded in **section 4.10**, three transfer CS files contained an incorrect read type of estimate rather than actual.

A process walkthrough confirmed that HHR readings are identified at trading period level, not at a daily level.

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-20 To: 30-Jun-21	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. 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 manage 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
		Investigating
Preventative actions taken to ensure no further issues will occur	Completion date	
Comments and proposed actions in relation to these issues are recorded in sections 4.3 and 4.10.		

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,
- EDM I 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 collect manual NHH data as an agent,
- MEPs provide HHR AMI data and readings, and
- Meridian collects generation station information.

Audit commentary

HHR

HHR submissions are prepared by EMS, using data collected by AMS, EDM I and EMS. Compliance is recorded for all agents. EDM I provides data to Meridian in HHF format, which is unrounded.

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 SMCO, IHUB and FCLM is 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-Jul-20 To: 30-Jun-21	MERI, MERX and PSNZ Raw meter data is truncated upon receipt and not when volume information is created for SMCO, IHUB and FCLM meters. Potential impact: None Actual impact: None 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 is very little impact because no metered consumption information is “missing”, and the unmetered differences are very small, therefore the audit risk rating is low.		
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	Investigating
Preventative actions taken to ensure no further issues will occur		Completion date	
We'll review 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.		30 June 2022	

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

EMS produces HHR submissions and prepares HHR estimates for MERI. Compliance was confirmed as part of their agent audit. I reviewed six HHR estimates and confirmed that the best endeavours requirements were met.

MERX

MERX does not provide HHR submissions.

PSNZ

PSNZ produces HHR submissions and prepares HHR estimates for category 1 and 2 AMI meters. Flux's current HHR estimation process estimates 0.42 kWh per trading period, and where data is missing for more than one day the ICP will be moved to NHH submission. Estimates are replaced with actual data if it becomes available at a later date, by loading a replacement data file. There were no examples of HHR estimates during the audit period.

The previous audit 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 change has not been implemented and I have repeated the recommendation to maintain visibility.

Description	Recommendation	Audited party comment	Remedial action
Calculation of HHR estimates	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.	We will review the HH estimation process before scaling the use of HH settlement which is currently limited to a small group of ICPs for a short number of months.	Investigating

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 estimation is required. I checked the records for WWD Generator 03 for 5 March 2021 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

Compliant

9.5. NHH metering information data validation (Clause 16 Schedule 15.2)

Code reference

Clause 16 Schedule 15.2

Code related audit information

Each validity check of non-half hour meter readings and estimated readings must include the following:

16(2)(a) - confirmation that the meter reading or estimated reading relates to the correct ICP, meter, and register

16(2)(b) - checks for invalid dates and times

16(2)(c) - confirmation that the meter reading or estimated reading lies within an acceptable range compared with the expected pattern, previous pattern, or trend

16(2)(d) - confirmation that there is no obvious corruption of the data, including unexpected 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 they are 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 finalised, 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 suppress 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 generates a daily report of inactive ICPs with consumption. The report shows the date the ICP became inactive and compares the first reading on or after the inactive date to the latest reading received. The revenue assurance team work 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 the consumption appears to be genuine, the ICP is 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 also review this report and validate readings where consumption is present, so that the reads will be used by the historic estimate calculations.

Bridged meters

Meridian does not initiate meter bypass instructions to any MEP or contractor. If they request a remote reconnection, the MEP is expected to either conduct this, or will make necessary arrangements for reconnection without bypassing. Where it is necessary to bypass a meter for safety reasons, Meridian's contracts with service providers specify that they must return within one to two business days to unbridge the meter. Corrections for bridged consumption are discussed in **section 2.1**.

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

At source, the handheld data input devices perform a localised validation to ensure that the reading is within expected high-low parameters. Readings outside these parameters have to be re-entered and acknowledged by the data collector. A meter cannot be skipped without reading unless a reason is entered.

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,
- short billing period,
- high consumption, and
- low consumption.

Reporting is in place for zero consumption as it occurs.

Vacant and Disconnected ICPs with consumption and Bridged Meters

The processes for management of vacant ICPs and inactive ICPs with consumption and bridged meters 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 manually read meters, Wells performs a localised validation within their hand-held devices to ensure the reading is within expected high/low parameters. This is described in the Wells audit report. Wells also provide information on meter condition, where it could affect meter accuracy or safety. This is discussed further in **section 6.6**.

Read import validation

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 ten days),
- high consumption (over 3000 kWh or 300% of expected volume), and
- low consumption (-\$50 or 25% of expected volume).

Any exceptions are reviewed 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.

PSNZ investigates the discrepancies, including determining whether an NT has been received, or asking the MEP whether another retailer has requested reconnection. If another retailer has requested a reconnection without sending an NTMI, PSNZ follows up with the other retailer.

If it does not appear to be a reconnection associated with a switch, PSNZ will arrange for the ICP to be disconnected again. If unauthorised reconnection occurs again, a site investigation will be carried out.

PSNZ also updates the ICP status to active once they have confirmed that the ICP is connected.

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 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

Meridian demonstrated their validation processes for AMI installations. These ICPs are billed and reconciled as NHH sites so validation is based on end of day reads 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.

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	Arc review their meter events and provide load side voltage events and meter communication issues to Meridian.
AMS	AMS	Full event information is provided via SFTP.
Smartco		Any events that require action by Meridian are advised via email.
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. The data is reviewed by Meridian and field services jobs are raised to investigate and resolve issues as required.
WEL Networks	WEL Networks	Full event information via SFTP, which is reviewed by Meridian. The data is reviewed by Meridian and field services jobs are raised to investigate and resolve issues as required.

I reviewed examples of meter event information provided by MEPs. A sample of events were 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, but I recommend checking 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.

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	Investigating

MERX

The checks described in **section 9.5** achieve compliance with points “a” to “d” above. MEPs conduct “sum-check” validation to achieve compliance with point “e”. MERX meter event reporting is provided via the same mechanisms as described for MERI above. I reviewed examples of meter event information provided by MEPs. A sample of events were checked and found that they had been actioned appropriately.

PSNZ

AMI meters

All AMI readings undergo the NHH validation described in **section 9.5**. Event information is received from MEPs, and it is in a usable format.

As recorded above for MERI and MERX, reliance is placed on the ICP specific emails from MEPs to identify relevant events. Not every event is evaluated.

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.

The commercial team uses SQL queries to identify missing trading period data and will move the ICPs to NHH submission type if more than one day needs to be estimated. This has not occurred to date.

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-Jul-20 To: 30-Jun-21	Not all AMI events checked. 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 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
We will review internal reporting available to confirm whether tamper events that require follow up can be identified successfully from those that are "false".		30 April 2022	Investigating
Preventative actions taken to ensure no further issues will occur		Completion date	
If this is successful, we will implement a regular reporting and follow up process.		31 July 2022	

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

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 for May 2021 based on the registry list with history. No discrepancies were identified.

Breach information provided by the Electricity Authority did not identify any late ICP days submissions.

The following table shows the 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 2020	0.09%	0.05%	0.00%	0.00%	0.01%
Mar 2020	0.01%	0.00%	0.01%	0.00%	0.01%
Apr 2020	0.00%	0.01%	0.01%	0.00%	0.00%
May 2020	0.04%	0.02%	0.01%	0.01%	-
Jun 2020	0.04%	0.05%	0.01%	0.01%	-
Jul 2020	0.03%	0.02%	0.01%	0.01%	-
Aug 2020	0.03%	0.02%	0.01%	0.00%	-
Sep 2020	0.02%	0.03%	0.02%	0.01%	-
Oct 2020	0.05%	0.01%	0.01%	0.01%	-
Nov 2020	-	0.05%	0.00%	0.00%	-
Dec 2020	0.05%	0.01%	0.00%	-	-
Jan 2021	0.16%	0.04%	0.01%	-	-
Feb 2021	0.01%	0.01%	0.00%	-	-
Mar 2021	0.01%	0.01%	0.00%	-	-
Apr 2021	0.02%	0.02%	-	-	-
May 2021	-0.02%	-0.02%	-	-	-

I reviewed ICP days differences remaining at revision 7 or later for five NSPs and found they were timing differences due to switching, meter changes and status changes. For one NSP a 16-day difference was caused by a tariff change for 0272000007PN5D1, where the readings were not entered into the consumption screen. The ICP switched out shortly afterwards and the meter was closed. The issue was detected through MERI's pre-submission checks but could not be resolved because the meter was closed by the time it was found.

MERX

NHH ICP days submissions are produced by MERX. The process for the calculation of ICP days was examined by checking 100 NSPs with NHH ICPs against the expected ICP days for May 2021 based on the registry list with history. No discrepancies were identified.

Breach information provided by the Electricity Authority did not identify any late ICP days submissions.

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 2020	0.01%	0.00%	0.00%	0.00%	0.00%
Mar 2020	0.01%	0.00%	0.00%	0.00%	0.00%
Apr 2020	0.01%	0.00%	0.00%	0.00%	0.00%
May 2020	0.00%	0.00%	0.00%	0.00%	-
Jun 2020	0.00%	0.00%	0.00%	0.00%	-
Jul 2020	0.00%	0.00%	0.00%	0.00%	-
Aug 2020	0.00%	0.00%	0.01%	0.00%	-
Sep 2020	0.00%	0.00%	0.00%	0.00%	-
Oct 2020	0.00%	0.01%	0.00%	0.00%	-
Nov 2020	-	0.00%	0.00%	0.01%	-
Dec 2020	0.00%	0.01%	0.00%	-	-
Jan 2021	0.00%	0.01%	0.00%	-	-
Feb 2021	0.01%	0.00%	0.00%	-	-
Mar 2021	0.01%	0.00%	0.02%	-	-

Month	R0	R1	R3	R7	R14
Apr 2021	0.02%	0.01%	-	-	-
May 2021	0.02%	0.02%	-	-	-

I reviewed ICP days differences remaining at revision 7 or later for five NSPs. Four were timing differences which were resolved in later revisions. 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

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 May 2021 based on the registry list with history. No discrepancies were identified.

Breach information provided by the Electricity Authority did not identify any late ICP days submissions.

The following table shows the 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	R8	R14
Feb 2020	0.04%	0.00%	0.00%	0.00%	-	0.00%
Mar 2020	0.01%	-	0.00%	0.00%	-	0.00%
Apr 2020	0.00%	0.00%	0.00%	0.00%	-	0.00%
May 2020	0.03%	0.00%	0.00%	0.00%	-	-
Jun 2020	0.01%	0.00%	0.00%	0.00%	-	-
Jul 2020	0.01%	0.00%	0.00%	0.00%	-	-
Aug 2020	0.01%	0.00%	0.00%	0.00%	-	-
Sep 2020	0.01%	0.01%	0.00%	0.00%	-	-
Oct 2020	0.02%	0.01%	-	0.00%	0.00%	-
Nov 2020	-	0.00%	0.00%	0.00%	-	-
Dec 2020	0.01%	0.00%	0.00%	-	-	-

Month	R0	R1	R3	R7	R8	R14
Jan 2021	0.02%	0.00%	0.00%	-	-	-
Feb 2021	0.01%	0.00%	0.00%	-	-	-
Mar 2021	0.00%	0.00%	0.00%	-	-	-
Apr 2021	0.02%	0.00%	-	-	-	-
May 2021	0.01%	0.01%	-	-	-	-

I reviewed ICP days differences remaining at revision 7 or later for five NSPs.

- Three were timing differences which were resolved in previous revisions.
- 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. This is recorded as non-compliance in **sections 2.1** and **3.9**.
- For LINE-NPK0331 the start date for ICP 0001112133WM1BA's NSP was incorrect, which resulted in no data being submitted for the following revisions. This is recorded as non-compliance in **sections 12.2** and **12.7**.

Month	Revision(s) affected	Estimated ICP days under submission	Estimated volume under submission (based on latest month with volumes)
Jan-2020	7 and 14	31	79.064 kWh
Feb-2020	7 and 14	29	199.928 kWh
Mar-2020	7 and 14	31	239.000 kWh
Apr-2020	7 and 14	30	187.155 kWh
May-2020	3, 7 and 14	31	458.451 kWh
Total		152	1,163.598 kWh

Audit outcome

Non-compliant

Non-compliance	Description		
<p>Audit Ref: 11.2</p> <p>With: Clause 15.6 of part 15</p> <p>From: 01-Feb-20</p> <p>To: 09-Sep-21</p>	<p>MERI</p> <p>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.</p> <p>MERX</p> <p>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.</p> <p>PSNZ</p> <p>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.</p> <p>152 days were under reported at LINE-NPK0331 because the start date for ICP 0001112133WM1BA's NSP was incorrect.</p> <p>Potential impact: Low</p> <p>Actual impact: None</p> <p>Audit history: Multiple times</p> <p>Controls: Moderate</p> <p>Breach risk rating: 2</p>		
Audit risk rating	Rationale for audit risk rating		
Low	<p>The controls are recorded as moderate because they mitigate risk most of the time but there is room for improvement.</p> <p>The impact is rated as low because overall the number of ICP days affected is low.</p>		
Actions taken to resolve the issue		Completion date	Remedial action status
Corrections for the errors identified are not able to be processed due to the reasons identified.			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.			

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 October 2018 to April 2021 were reviewed to confirm whether the relationship between billed and submitted data appears reasonable.

Audit commentary

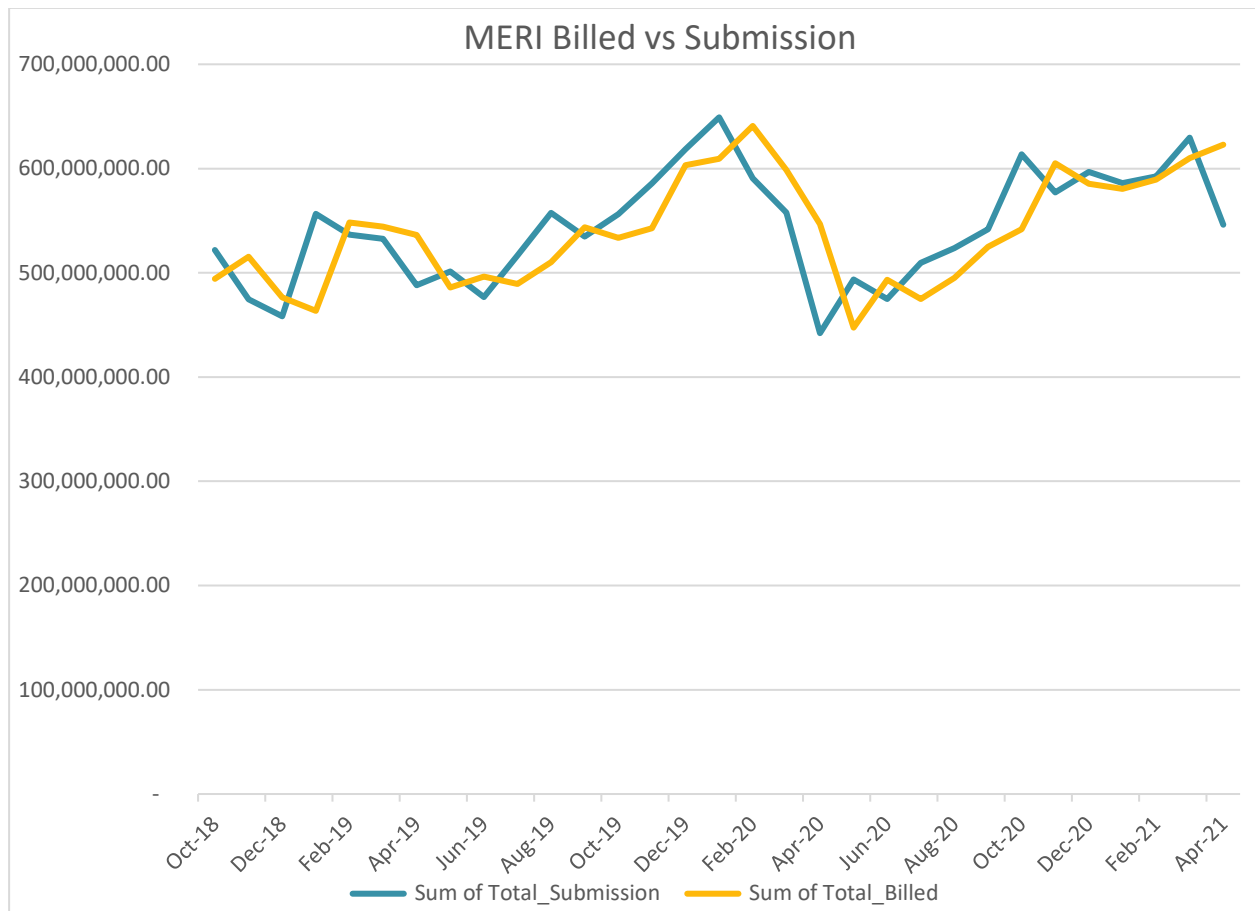
Monthly, Meridian reviews the GR130 results for the previous 18 months to check for reasonableness and identify any anomalies for each code. I saw evidence of these reviews.

Differences between billed and submission data are monitored as part of the pre submission checks described in **section 12.3**.

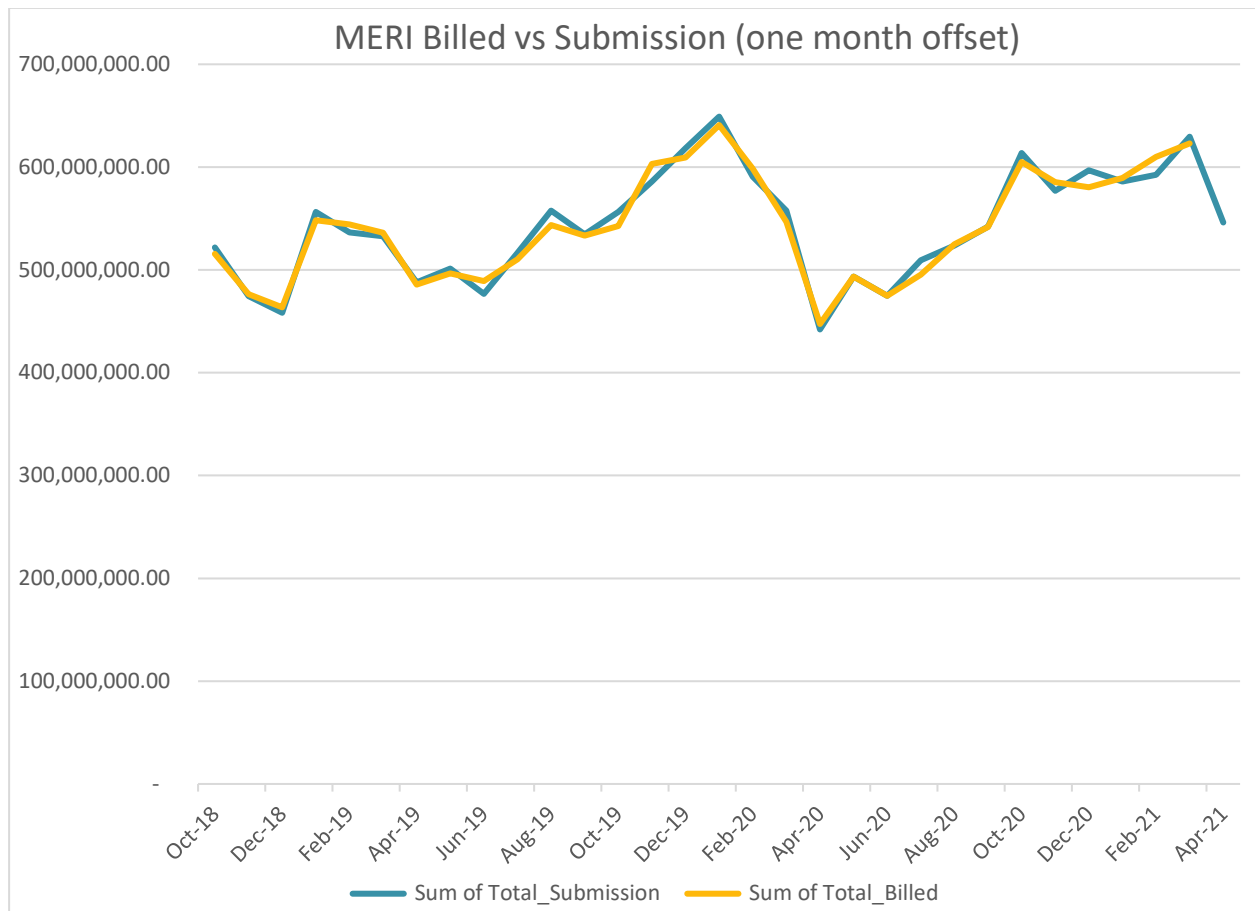
MERI

The AV120 report is based on the billed volumes for the meters for metered load, 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. 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 October 2018 to April 2021, and the results are shown below. The difference between billed and submitted data for the year ended April 2021 is 1.7% (billed lower than submitted) and the two years ended April 2021 is 0.8% (billed lower than submitted).



The differences between billed and submitted data largely appear to be caused by migration of ICPs from Velocity (MERI) to Flux (MERX), and timing differences. The differences are expected to decrease over time once migration is complete. Once the billing and submission periods are aligned, the close relationship between billed and submitted data is closer, and the drop as ICPs migrate is clear.

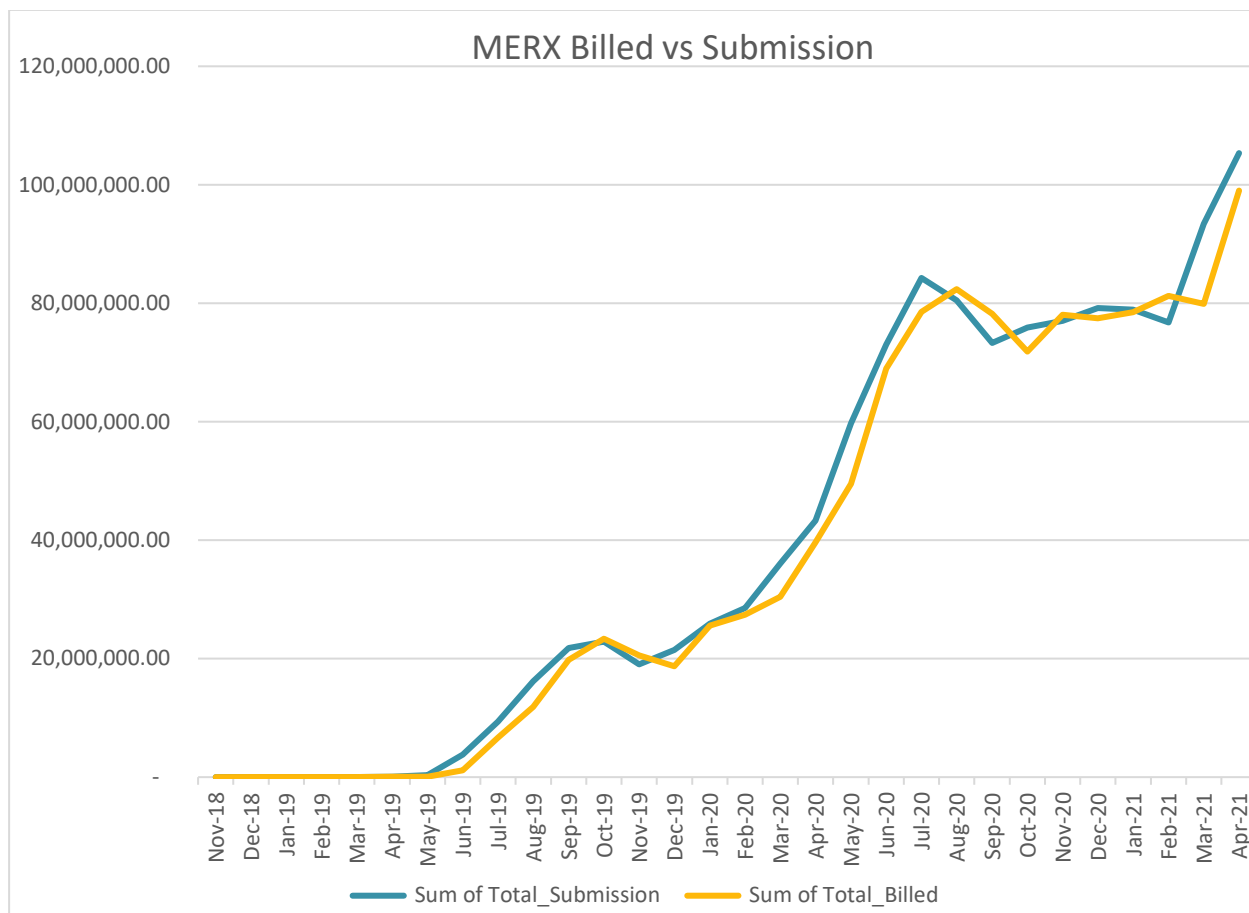


MERX

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 October 2018 to April 2021, and the results are shown below. The difference between billed and submitted data for the year ended April 2021 is 3.6% (billed lower than submitted) and the two years ended April 2021 is 5.0% (billed lower than submitted).

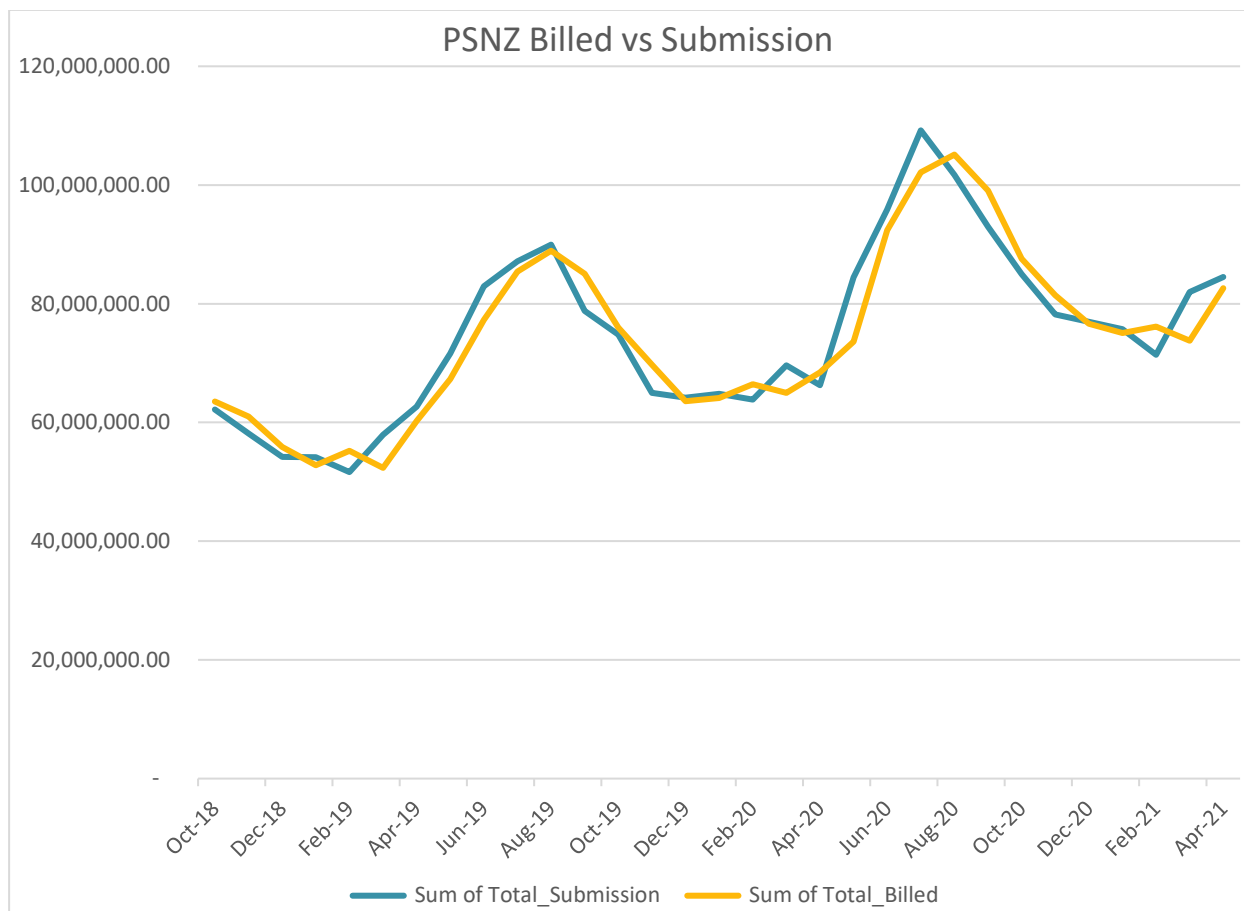
The differences between billed and submitted data largely appear to be caused by migration of ICPs from Velocity (MERI) to Flux (MERX), and timing differences. The differences are expected to decrease over time once migration is complete.



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 October 2018 to April 2021, and the results are shown below. The difference between billed and submitted data for the year ended April 2021 is 1.2% (billed higher than submitted) and the two years ended April 2021 is 0.7% (billed higher than submitted). The differences appear largely due to timing as PSNZ acquires new customers.



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 commentary

HHR volumes and aggregates submissions are created by EMS for MERI, 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 2020 to May 2021, and an extreme case sample of the ICPs which were missing from the most submissions were checked.

Audit commentary

MERI

EMS' processes for provision of HHR aggregates information were assessed during their agent audit. Non-compliance was found because the HHR aggregates report contains submission information, not electricity supplied information as specified under clause 15.8. Although the reports EMS' produces are consistent with the Reconciliation Manager Functional Specification, this is recorded as technical non-compliance below.

I matched HHR volumes and aggregates information for 19 months and revisions. Only small rounding differences were present (less than ± 20 kWh and 0.0000%). Source information was traced through to the aggregates files as part of EMS' agent audit.

The GR090 ICP Missing files were examined for all revisions for February 2020 to May 2021. I checked an extreme case sample of 21 ICPs missing for four or more revisions and found they related to:

- backdated switches, status updates, NSP changes, and profile changes,
- one inactive ICP was included in the aggregates with zero volumes, and
- ICP 1002094149LC17B having 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, the incorrect status is recorded as non-compliance in **sections 2.1** and **3.9**.

Late switching files and updates to the registry are discussed in **sections 3** and **4**.

MERX

MERX do not supply HHR settled ICPs. The GR090 ICP Missing files were examined for all revisions for February 2020 to May 2021 and contained no ICPs.

PSNZ

PSNZ's HHR aggregates report contains submission information, not electricity supplied information as specified under clause 15.8. Although the reports PSNZ produces are consistent with the Reconciliation Manager Functional Specification, this is recorded as non-compliance below.

I matched HHR volumes and aggregates information for two months and revisions. The data matched exactly.

The GR090 ICP Missing files were examined for all revisions for February 2020 to May 2021. I checked all missing ICPs and found they had registry submission types which were inconsistent with the profile (RPS). All were corrected prior to the audit and were not missing from later revisions.

Audit outcome

Non-compliant

Non-compliance	Description		
Audit Ref: 11.4 With: Clause 15.8 From: 01-Jun-20 To: 31-Jul-20	MERI HHR aggregates file does not contain electricity supplied information. PSNZ HHR aggregates file does not contain electricity supplied information. 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	The issue relating to content of the aggregates file is an error in the code, Meridian is providing submission information as expected.		
Actions taken to resolve the issue		Completion date	Remedial action status
Meridian will not be taking any action in relation to this technical non-compliance.			Cleared
Preventative actions taken to ensure no further issues will occur		Completion date	

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

Daylight savings adjustments were reviewed as part of EMS' agent audit and found to be compliant. EMS uses the trading period run on technique.

PSNZ

Daylight savings adjustment is conducted by MEPs.

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.

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 EMS' agent audit and found to be compliant. Three ICPs have 1,5 "inactive reconciled elsewhere" status and are compliantly reconciled under another ICP.

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,
- five ICPs with vacant consumption and confirmed that vacant consumption was reported for all,
- ten ICPs with unmetered volumes were reviewed, including standard and shared unmetered; I confirmed that the correct consumption was reported.
- all four 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	<p>The unmetered load associated with 0005906555RNE30 was removed from ICP 0005267315RNEAE when the ICP switched away from MERI. MERI will follow up with the other trader.</p> <p>Under submission is estimated to be 0.64 kWh per day or 233.6 kWh per annum.</p>
0006300324RNC8C	0005635225RN9D9 by GENE	<p>The unmetered load associated with 0006300324RNC8C was removed from ICP 0005635225RN9D9 by the current trader. MERI will follow up with the other trader.</p> <p>Under submission is estimated to be 0.702 kWh per day or 256.23 kWh per annum.</p>
0008801022TPEF8	0008801024TPF77 by GENE	<p>ICP 0008801022TPEF8 is for Southland DC distributed unmetered streetlights fed from NSP INV0331. There are currently no lights connected to this NSP.</p> <p>When the Southland DC DUMI 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.</p> <p>There is no under submission because no load is connected to 0008801022TPEF8.</p>

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 were reviewed, including standard and shared unmetered; I confirmed that the correct consumption was reported.

Review of a sample of ICPs with inactive consumption in **section 2.1** found 28 ICPs had consumption during inactive periods. Estimated under submission of 29,873 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**.

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 were reviewed, including standard and shared unmetered; I confirmed that the correct consumption was reported.

Review of a sample of ICPs with inactive consumption in **section 2.1** found 17 ICPs had consumption during inactive periods, indicating that their status was incorrect. Estimated under submission of 468 kWh has occurred.

For LINE-NPK0331 the start date for ICP 0001112133WM1BA's NSP was incorrect, which resulted in no data being submitted for the following revisions. The incorrect start date was identified and corrected prior to the audit, but this was after revision 14 was completed for some of the affected periods.

Month	Revision(s) affected	Estimated ICP days under submission	Estimated volume under submission (based on latest month with volumes)
Jan-2020	7 and 14	31	79.064 kWh
Feb-2020	7 and 14	29	199.928 kWh
Mar-2020	7 and 14	31	239.000 kWh
Apr-2020	7 and 14	30	187.155 kWh
May-2020	3, 7 and 14	31	458.451 kWh
Total		152	1,163.598 kWh

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 HHR volumes for windfarms and compliance is confirmed for each NSP and windfarm. 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

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 HHR information was reviewed as part of 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.

MERX

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

Compliant

12.4. Grid owner volumes information (Clause 15.9)

Code reference

Clause 15.9

Code related audit information

The participant (if a grid owner) must deliver to the reconciliation manager for each point of connection for all of its GXPs, the following:

- *submission information for the immediately preceding consumption period, by 1600 hours on the 4th business day of each reconciliation period (clause 15.9(a))*
- *revised submission information provided in accordance with clause 15.4(2), by 1600 hours on the 13th business day of each reconciliation period (clause 15.9(b)).*

Audit observation

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 and HHR volumes for windfarms.

Alleged breaches during the audit period were reviewed to determine whether any reconciliation submissions were late.

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 HHR volumes for windfarms and compliance is confirmed for each NSP and windfarm.

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 five HHR ICPs with Arc innovations meters 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

Two alleged breaches were recorded for inaccurate submission data, and no alleged breaches were recorded for late submission information.

Ref	Breach Description	Clause	Outcome
2009MERI1	MERI was notified of the incorrect submission on the dedicated Y flag for LINE NSPs at HTI0331 for the washup periods of June 2019, January 2020, May 2020 for the HHRVOLS. MERI was notified by LINE to correct future submissions and revisions for this issue. MERI had submitted on 19/08/2020, before the submission deadline. The Reconciliation Manager checked the submission and advised MERI to correct submissions before the deadline. MERI did not correct their submission before 16:00 on 19/08/2020. MERI submitted a further revised and corrected submission past the submission deadline at 16:57 19/08/2020. Meridian's processes have been updated to check for this error prior to submission.	Part 15 clause 15.4 (2) and Part 15 clause 15.12	Early closure
2101MERI1	MERI was notified of an incorrect AV-080 NHHVOLS submission on the Y LINE NSP at OKN0111 for the March 2020 R7 revision. MERI had been previously notified that there should not be any volumes submitted under LINE NSPs under the Y dedicated flag. MERI was notified via email of this on the 20th of October, at 11:18am of this incorrect submission. They were asked to revise the data, and resubmit, which they did at 11:31am on the 20th of October. Meridian's processes have been updated to check for this error prior to submission, and the dedicated NSP flags have been corrected.	Part 15 clause 15.12	Early closure

Data accuracy issues

Velocity records historic estimate as forward estimate where an ICP ends on an estimated closing reading.

All four ICPs which have 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 will follow 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 will follow 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 **section 4.3**, one RR file was incorrectly rejected from the five RR rejected files sampled, meaning MERI used the incorrect final read. The details are shown below.

ICP	Event date	Correct read	MERI read	Difference (kWh)
0000051256TR56A	11/09/2020	75,963	71,105	4,858

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	Three examples where the ICP was downgraded from HHR to NHH on 12/02/20. The new meters were installed on 11/02/20 but were not installed in Gentrack until 12/02/20 therefore the NHH volume recorded on 11/02/20 will be submitted for 12/02/20. These downgrades were processed according to MERI's usual downgrade process, and the dates have not been corrected for these ICPs.	6.7
Incorrect switch event read	One RR file for 0000137970TR94A (01/11/19) was incorrectly rejected, meaning MERI used the incorrect final read. I confirmed that the readings have not been updated and revision 14 has now passed for the affected periods, and 19 kWh was over submitted.	12.7

MERX

Alleged breaches

No alleged breaches were recorded for inaccurate or late submission data.

Data accuracy issues

Historic estimate is labelled as forward estimate under the following circumstances:

- 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.

28 ICPs appeared to have genuine consumption during an inactive period. Consumption was not submitted, and the status was incorrect on the registry.

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
Incorrect switch event read	<p>Five RR files were incorrectly rejected meaning MERX used the incorrect final read. I confirmed that the readings have not been updated and revision 14 has now passed for the affected periods. The details are shown below:</p> <ul style="list-style-type: none">• 0000035310HBB4B (14/02/20) 11 kWh over submitted• 0000051622TRD3C (31/12/19) 4 kWh over submitted• 0000222351UNBFD (15/04/20) 14 kWh under submitted• 0000244090UN4CC (04/12/19) 2 kWh over submitted, and• 0006114997RNE4D (29/01/20) 5 kWh over submitted.	12.7

PSNZ

Alleged breaches

No alleged breaches were recorded for inaccurate or late submission data.

Data accuracy issues

Historic estimate is labelled as forward estimate under the following circumstances:

- 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.

17 ICPs appeared to have genuine consumption during an inactive period. Consumption was not submitted, and the status was incorrect on the registry.

For LINE-NPK0331 the start date for ICP 0001112133WM1BA's NSP was incorrect, which resulted in no data being submitted for the following revisions. The incorrect start date was identified and corrected prior to the audit, but this was after revision 14 was completed for the affected periods.

Month	Revision(s) affected	Estimated ICP days under submission	Estimated volume under submission (based on latest month with volumes)
Jan-2020	7 and 14	31	79.064 kWh
Feb-2020	7 and 14	29	199.928 kWh
Mar-2020	7 and 14	31	239.000 kWh
Apr-2020	7 and 14	30	187.155 kWh
May-2020	3, 7 and 14	31	458.451 kWh
Total		152	1,163.598 kWh

Previous audit issues

Data accuracy issues identified in the previous audit were re-checked and found to be resolved.

Audit outcome

Non-compliant

Non-compliance	Description
<p>Audit Ref: 12.7</p> <p>With: Clause 15.12</p>	<p>MERI</p> <p>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.</p> <p>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.</p> <p>One RR file of the five rejected RR files sampled incorrectly rejected resulting in 4,858 kWh being pushed to the gaining trader.</p> <p>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.</p> <p>MERX</p> <p>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.</p> <p>28 ICPs had consumption during inactive periods, indicating that their status was incorrect. Estimated under submission of 29,873 kWh has occurred.</p> <p>PSNZ</p> <p>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.</p> <p>The NSP start date for ICP 0001112133WM1BA was incorrect, resulting in no data being submitted for some revisions between January and May 2020.</p> <p>17 ICPs had consumption during inactive periods, indicating that their status was incorrect. Estimated under submission of 468 kWh has occurred.</p> <p>Potential impact: Medium</p> <p>Actual impact: Medium</p> <p>Audit history: Three times</p> <p>From: 01-Jul-20</p> <p>To: 09-Sep-21</p> <p>Controls: Moderate</p> <p>Breach risk rating: 4</p>

Audit risk rating	Rationale for audit risk rating		
Medium	<p>The controls over accuracy of submission information are moderate, as there are controls in place to validate submission information and identify and correct errors.</p> <p>The audit risk rating is assessed to be medium based on the volumes associated with the exceptions identified, particularly for inactive consumption.</p>		
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.			Investigating
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 2020 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
Feb-20	685,855
Mar-20	1,049,079
Apr-20	766,165

I examined ten AV080 aggregation rows where forward estimate remained in the April 2020 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. One of the ICPs was 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
Feb-20	88,567.81
Mar-20	75,480.65
Apr-20	62,019.64

I examined ten AV080 aggregation rows where forward estimate remained in the April 2020 revision 14 submission. All the affected rows had EG1 or PV1 profiles. Where seasonal adjusted shape files (SASV) are not provided for the NSP and profile by the reconciliation manager, the historic estimate calculated 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
Feb-20	164,767.34
Mar-20	168,645.22
Apr-20	132,242.66

I examined ten AV080 aggregation rows where forward estimate remained in the April 2020 revision 14 submission.

- Nine of the affected rows had EG1 or PV1 profiles. Where seasonal adjusted shape files (SASV) are not provided for the NSP and profile by the reconciliation manager, the historic estimate calculated is labelled as forward estimate.
- THP0011 had a small amount of forward estimate remaining because its daily AMI reads were incorrectly labelled as forward estimate in Flux. PSNZ has investigated a system fix to resolve this issue and found it would cost more than the benefit, because historic estimate is calculated correctly.

Audit outcome

Non-compliant

Non-compliance	Description		
<p>Audit Ref: 12.8</p> <p>With: Clause 4 of Schedule 15.2</p> <p>From: Feb-20 to Apr-20 r14</p>	<p>MERI</p> <p>Some estimates not replaced by revision 14, and under certain circumstances historic estimate is labelled as forward estimate.</p> <p>MERX</p> <p>Some estimates not replaced by revision 14, and under certain circumstances historic estimate is labelled as forward estimate.</p> <p>PSNZ</p> <p>Some estimates not replaced by revision 14, and under certain circumstances historic estimate is labelled as forward estimate.</p> <p>Potential impact: Low</p> <p>Actual impact: Low</p> <p>Audit history: Multiple times</p> <p>Controls: Moderate</p> <p>Breach risk rating: 2</p>		
Audit risk rating	Rationale for audit risk rating		
Low	<p>Controls are rated as moderate because in most cases readings are permanent by revision 14, the main issue is that historic estimate is sometimes labelled as forward estimate.</p> <p>Total forward estimate for the 3-month period reviewed is 3,192,822 kWh. The impact is assessed to be low, because based on the sample checked, forward estimate remains due to incorrect labelling rather than being genuine forward estimate.</p>		
Actions taken to resolve the issue		Completion date	Remedial action status
			Investigating
Preventative actions taken to ensure no further issues will occur		Completion date	
<p>We will review reporting and process to enter permanent estimates where an actual read has not been obtained before r14.</p> <p>We understand the labelling of calculated volumes as FE rather than HE has no impact on submitted volumes or the market. The issue is identified and will be prioritised for investigation and a solution in due course.</p>		<p>31 July 2022</p> <p>Unknown</p>	

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 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 to be downgraded but this is unable to be completed due to the location of the meter and switchboard, which do not allow sufficient working room to replace the CTs, the last action was on 20 August 2021 where MERI is to investigate whether a switchboard manufacturer could provide assistance,
- unmetered load submissions were checked in **section 12.2** and found to be correct,
- certification of control devices was reviewed in **section 6.3** and found to be compliant,

- loss and compensation arrangements were reviewed in **section 8.3** and found to be compliant, and
- aggregation of the AV080 and AV110 submissions are covered in **sections 13.2** and **11.2** respectively.

MERX

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 found to be correct,
- certification of control devices was reviewed in **section 6.3**; controls were strong, but a small number of non-compliances were identified,
- 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 found to be correct,
- no profiles requiring certification of control devices were applied,
- 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-Jul-20 To: 09-Sep-21	MERI 0331837361LCD62 has metering category 3 and RPS profile and NHH submission type. 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 rated as strong, this is an isolated exception for a meter which should be downgraded and have a NHH submission type and profile, but there have been delays in completing the downgrade. There is no impact on settlement, therefore the audit risk rating is low.		
Actions taken to resolve the issue		Completion date	Remedial action status
We are continuing to work through the downgrade of this ICP with the MEP and the customer.		31 Mar 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 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		
<p>Audit Ref: 12.10</p> <p>With: Clause 3 of schedule 15.3</p> <p>From: 01-Oct-19</p> <p>To: 09-Sep-21</p>	<p>MERI</p> <p>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.</p> <p>MERX</p> <p>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.</p> <p>PSNZ</p> <p>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.</p> <p>Potential impact: Low</p> <p>Actual impact: Low</p> <p>Audit history: Once</p> <p>Controls: Moderate</p> <p>Breach risk rating: 2</p>		
Audit risk rating	Rationale for audit risk rating		
Low	<p>The controls are recorded as moderate because they mitigate risk most of the time but there is room for improvement.</p> <p>There is no impact on settlement, therefore the audit risk rating is low.</p>		
Actions taken to resolve the issue		Completion date	Remedial action status
The issue regarding switch estimates not being treated as permanent will be resolved when transition of all NHH ICPs to Flux is complete.		30 Mar 2022	Investigating
Preventative actions taken to ensure no further issues will occur		Completion date	
<p>We will review reporting and process to enter permanent estimates ICPs where an actual read has not been obtained before r14.</p> <p>We understand the labelling of calculated volumes as FE rather than HE has no impact on submitted volumes or the market. The issue is identified and will be prioritised for investigation and a solution in due course.</p>		<p>31 July 2022</p> <p>Unknown</p>	

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 were 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 all scenarios are calculating as expected and correct SASV (seasonal adjusted shape values) are applied.

For scenarios B and C, where an ICP is inactive for part of a month, disconnection and reconnection reads are not entered. The SASV applied for the read period exclude the days during the read period where the ICP was inactive. The exclusion of the SASV for the inactive days ensures that all consumption is reported against active dates.

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.	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 Historic estimate is calculated correctly

Test	Scenario	Test expectation	Result
			but consumption between the last actual read and estimated switch out reading is labelled as forward estimate. This is 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.
o	ICP has a meter with a multiplier greater than 1	The multiplier is applied correctly	Compliant

The HE calculations were correct in all scenarios checked. The treatment of estimated switch reads when calculating historic estimate is 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 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 run

Test	Scenario	Test expectation	Result
a	ICP becomes Active part way through a month	Consumption is only calculated for the Active portion of the month.	Compliant
b	ICP becomes Inactive part way through a month.	Consumption is only calculated for the Active portion of the month.	Compliant
c	ICP become Inactive then Active again within a month.	Consumption is only calculated for the Active portion of the month.	Compliant
d	ICP switches in part way through a month on an estimated switch reading	Consumption is calculated to include the 1st day of responsibility.	Compliant
e	ICP switches out part way through a month on an estimated switch reading	Consumption is calculated to include the last day of responsibility.	Compliant
f	ICP switches out then back in within a month	Consumption is calculated for each day of responsibility.	Compliant
g	Continuous ICP with a read during the month	Consumption is calculated assuming the readings are valid until the end of the day	Compliant
h	Continuous ICP without a read during the month	Consumption is calculated assuming the readings are valid until the end of the day	Compliant
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	Compliant

Test	Scenario	Test expectation	Result
		validated against a set of validated readings from another source	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

PSNZ

PSNZ provided examples of historic estimate calculations, which were reviewed. Compliance is recorded in this section because where the scenarios had occurred, I found that historic estimate calculations were correct, and the correct SASV (seasonal adjusted shape values) were 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.

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.	Has not occurred
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

Test	Scenario	Test expectation	Compliance
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 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

Compliant

12.12. Forward estimate process (Clause 6 Schedule 15.3)

Code reference

Clause 6 Schedule 15.3

Code related audit information

Forward estimates may be used only in respect of any period for which an historical estimate cannot be calculated.

The methodology used for calculating a forward estimate may be determined by the reconciliation participant, only if it ensures that the accuracy is within the percentage of error specified by the Authority.

Audit observation

The process to create forward estimates was reviewed.

Forward estimates were checked for accuracy by analysing the GR170 file for variances between revisions over the audit period.

Audit commentary

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.

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
Feb-2020	1	3	3	3	327
Mar-2020	1	3	3	3	327
Apr-2020	5	10	9	10	328
May-2020	1	1	1		330
Jun-2020	0	1	2		333
Jul-2020	0	1	1		334
Aug-2020	0	0	0		334
Sep-2020	0	1	1		334

Month	Revision 1	Revision 3	Revision 7	Revision 14	Total Balancing Areas
Oct-2020	0	3	2		336
Nov-2020	5	8	8		337
Dec-2020	1	2			337
Jan-2021	3	5			340
Feb-2021	3	6			340
Mar-2021	1	1			340
Apr-2021	2				341
May-2021	3				341

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

Month	Revision 1	Revision 3	Revision 7	Revision 14
Feb-2020	-0.65%	2.62%	2.85%	2.76%
Mar-2020	-0.65%	2.62%	2.85%	2.76%
Apr-2020	-0.42%	0.06%	0.51%	0.27%
May-2020	-0.10%	-1.08%	-0.71%	
Jun-2020	-3.55%	-4.47%	-4.72%	
Jul-2020	-3.57%	-6.90%	-7.36%	
Aug-2020	0.15%	-1.52%	-1.81%	
Sep-2020	-3.57%	-6.90%	-7.36%	
Oct-2020	3.01%	0.32%	0.19%	
Nov-2020	-9.76%	-11.52%	-11.58%	

Month	Revision 1	Revision 3	Revision 7	Revision 14
Dec-2020	-0.96%	-0.39%		
Jan-2021	0.93%	-4.01%		
Feb-2021	2.47%	5.33%		
Mar-2021	1.18%	-0.96%		
Apr-2021	-0.03%			
May-2021	-5.84%			

I reviewed ten balancing area differences where the variation between revisions was more than $\pm 15\%$ and $\pm 100,000$ kWh. The differences were due to:

- difficulty in predicting accurate forward estimate volumes for irrigation loads,
- 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
Feb-2020	0	0	0	0	79
Mar-2020	0	0	0	0	82
Apr-2020	0	0	0	0	82
May-2020	0	0	0		82

Month	Revision 1	Revision 3	Revision 7	Revision 14	Total Balancing Areas
Jun-2020	0	0	0		84
Jul-2020	0	0	0		83
Aug-2020	0	0	0		83
Sep-2020	0	0	0		83
Oct-2020	1	1	1		336
Nov-2020	0	0	0		337
Dec-2020	0	0			337
Jan-2021	0	0			337
Feb-2021	0	0			337
Mar-2021	0	0			337
Apr-2021	0				341
May-2021	1				341

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

Month	Revision 1	Revision 3	Revision 7	Revision 14
Feb-2020	-0.02%	-0.12%	-0.21%	-0.20%
Mar-2020	-0.27%	-0.29%	-0.26%	-0.25%
Apr-2020	-0.27%	-0.29%	-0.26%	-0.25%
May-2020	-0.19%	-0.47%	-0.50%	
Jun-2020	-0.34%	-0.56%	-0.58%	
Jul-2020	-0.12%	-0.20%	-0.19%	

Month	Revision 1	Revision 3	Revision 7	Revision 14
Aug-2020	0.31%	0.59%	0.62%	
Sep-2020	0.19%	0.55%	0.56%	
Oct-2020	0.49%	1.11%	1.15%	
Nov-2020	0.38%	0.89%	0.99%	
Dec-2020	0.39%	0.90%		
Jan-2021	0.21%	0.74%		
Feb-2021	0.15%	0.18%		
Mar-2021	-0.07%	0.05%		
Apr-2021	-0.04%			
May-2021	0.85%			

Two balancing areas had a difference greater than 15% and 100,000 kWh and 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.

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
Feb-2020	0	0	0	0	244
Mar-2020	1	1	1	1	244
Apr-2020	0	0	0	0	246
May-2020	0	0	0		247
Jun-2020	0	0	0		250
Jul-2020	0	0	0		250
Aug-2020	0	0	0		250
Sep-2020	0	0	0		250
Oct-2020	0	0	0		251
Nov-2020	0	0	0		253
Dec-2020	0	0			255
Jan-2021	0	0			256
Feb-2021	0	0			258
Mar-2021	0	0			262
Apr-2021	0				264
May-2021	0				269

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

Month	Revision 1	Revision 3	Revision 7	Revision 14
Feb-2020	0.58%	1.04%	1.20%	1.25%
Mar-2020	1.01%	2.24%	2.45%	2.50%
Apr-2020	0.82%	2.45%	2.78%	2.81%
May-2020	-0.06%	0.23%	0.28%	
Jun-2020	-0.55%	-0.44%	-0.48%	
Jul-2020	-0.55%	-0.44%	-0.48%	
Aug-2020	0.29%	0.55%	0.62%	
Sep-2020	1.10%	1.69%	1.61%	
Oct-2020	1.56%	2.34%	2.55%	
Nov-2020	0.17%	0.71%	1.10%	
Dec-2020	0.59%	1.16%		
Jan-2021	-0.01%	0.88%		
Feb-2021	0.15%	0.47%		
Mar-2021	0.12%	0.40%		
Apr-2021	-0.09%			
May-2021	-0.32%			

One balancing area had a difference greater than 15% and 100,000 kWh and was caused by correction of a misread for one ICP. This is recorded as compliant as forward estimate was correct, the difference was caused by a change to historic estimate.

Audit outcome

Non-compliant

Non-compliance	Description		
Audit Ref: 12.12 With: Clause 6 of Schedule 15.3 From: Apr-21 r1 and May-21 r1	MERI 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 irrigators, and new ICPs with significant loads. Initial data is replaced with revised data and washed up.		
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			

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 15 ICPs with profile changes for MERI, five ICPs for MERX and five 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 during 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.

A sample of five profile changes were checked and found an actual read was gained for each profile change.

Audit outcome

Compliant

13. SUBMISSION FORMAT AND TIMING

13.1. Provision of submission information to the RM (Clause 8 Schedule 15.3)

Code reference

Clause 8 Schedule 15.3

Code related audit information

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 5, the second digit is rounded up, and

If the digit to the right of the second decimal place is less than 5, 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, and the tables below shows that compliance has not been achieved in all instances. This proportion of historic estimate at an aggregate level, as shown in the “proportion of HE at an aggregate level” table is 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
Feb 2020	-	-	373	416
Mar 2020	-	-	340	416
Apr 2020	-	-	353	415
Oct 2020	-	411	-	424
Nov 2020	-	406	-	424
Jan 2021	-	388	-	427
Feb 2021	398	-	-	427
Mar 2021	396	-	-	427

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
Feb 2020	-	-	99.76%
Mar 2020	-	-	99.58%
Apr 2020	-	-	99.58%
Oct 2020	-	98.64%	-
Nov 2020	-	98.72%	-
Jan 2021	-	97.52%	-
Feb 2021	97.69%	-	-
Mar 2021	97.38%	-	-

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
Feb 2020	-	-	65	170
Mar 2020	-	-	71	170
Apr 2020	-	-	77	169
Oct 2020	-	424	65	424
Nov 2020	-	424	-	424
Jan 2021	-	418	-	424

Month	Revision 3 80% Met	Revision 7 90% Met	Revision 14 100% Met	Total
Feb 2021	413	-	-	427
Mar 2021	355	-	-	427

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
Feb 2020	-	-	99.69%
Mar 2020	-	-	99.79%
Apr 2020	-	-	99.86%
Oct 2020	-	99.70%	-
Nov 2020	-	99.61%	-
Jan 2021	-	99.24%	-
Feb 2021	98.73%	-	-
Mar 2021	93.49%	-	-

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
Feb 2020			310	331
Mar 2020			318	330
Apr 2020			327	334
Oct 2020		337		339
Nov 2020		332		345
Jan 2021		332		345
Feb 2021	336			344
Mar 2021	303	-	-	346

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
Feb 2020	-	-	99.74%
Mar 2020	-	-	99.76%
Apr 2020	-	-	99.80%
Oct 2020	-	99.60%	-
Nov 2020	-	99.41%	-
Jan 2021	-	99.03%	-
Feb 2021	98.66%	-	-
Mar 2021	92.65%	-	-

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		
<p>Audit Ref: 13.3</p> <p>With: Clause 10 of Schedule 15.3</p> <p>From: 01-Feb-20</p> <p>To: 31-Mar-21</p>	<p>MERI</p> <p>Historic estimate thresholds were not met for some revisions.</p> <p>MERX</p> <p>Historic estimate thresholds were not met for some revisions.</p> <p>PSNZ</p> <p>Historic estimate thresholds were not met for some revisions.</p> <p>Potential impact: Low</p> <p>Actual impact: Low</p> <p>Audit history: Multiple times</p> <p>Controls: Moderate</p> <p>Breach risk rating: 2</p>		
Audit risk rating	Rationale for audit risk rating		
Low	<p>Controls are rated as moderate, as they are sufficient to mitigate the risk of not meeting the threshold most of the time, but there is room for improvement.</p> <p>The audit risk rating is low, as Meridian were reasonably close to the target in all cases.</p>		
Actions taken to resolve the issue		Completion date	Remedial action status
Refer to comments in 12.8 and 12.10			Investigating
Preventative actions taken to ensure no further issues will occur		Completion date	
Refer to comments in 12.8 and 12.10			

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 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 EDML. HHR submission, DUMML submission and provision of metering information to the grid owner is completed by EMS for MERI. All other activities are completed by Meridian.

Submission

During the audit period NHH ICPs have migrated from MERI (Velocity) to MERX (Flux). This has resulted in some fluctuations due to switch timing in NHH revision differences and billed versus submission information which are expected to settle once the transfers are complete.

There have been no changes to MERI's NHH processes because the ICPs are expected to migrate, which has resulted in further instances of non-compliances identified in previous audits relating to system processes such as downgrades, and identification of historic estimate. Overall controls over submission are strong, and apart from these system limitations only isolated exceptions with a low impact were identified for MERI.

For MERX and PSNZ, increases in ICPs have increased the impact of some non-compliances. For instance, there is an increase in the number of ICPs with unreported inactive consumption, and NSPs not meeting the historic estimate requirements.

Switching

The switching team utilise the new switch breach report to manage timeliness, and this has provided them with improved visibility of pending breaches. Examination of the AN, CS and RR files found some errors due to the manual processes in place for those managed in Flux. For example, readings are labelled incorrectly or the incorrect last read date is sent.

Registry

The reporting in Flux continues to be improved. Registry acknowledgement files are now monitored. Some discrepancies do not appear to be investigated and resolved in a timely manner. Specifically, active ICPs with no meter and no unmetered load recorded and ICPs with distributed generation indicated by the distributor where there is no injection metering.

Meridian continues to work with their customers to improve the distributed unmetered load database accuracy. Two of the 37 DUMML audits due during the audit period have not been undertaken. In this audit I have indicated the potential submission variance for each database based on the last audit.

Conclusion

This audit report now includes the Powershop findings, and the audit found 40 (39 last time) non-compliances and makes six (three last time) recommendations. No issues are raised. The future risk rating is 87, which is a minor increase from the 83 recorded in the last audit. This is a good result considering that the audit now covers three participant codes.

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 87 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 the Veritek and our teams for their flexible approach to this audit that was again conducted remotely due to COVID-19 travel restrictions.

During this audit period;

- Powershop NZ Ltd became amalgamated with Meridian Energy Ltd however Powershop remains a retail brand. Powershop NZ Ltd is no longer a registered participant therefore systems and processes used to manage PSNZ ICPs are included in this audit. We have been working to align processes and controls related to reconciliation participant activities across both brands and this work will continue.
- We have continued the migration of NHH ICPs from Velocity to the Flux platform and as at the beginning of October had completed migration of circa 230,000 ICPs. We expect migration of remaining NHH ICPs to be complete by the end of March 2022.
- We have commenced migration of C&I HHR ICPs in September (5 ICPs). A material change audit reviewing Flux functionality to support these ICPs and those supplying solely unmetered load is in progress and as agreed with the Authority being submitted in iterations. Where reference is made to ICPs with unmetered load in Flux for MERX in this audit report this is limited to ICPs supplying both metered and unmetered load. We expect all ICPs to be migrated to Flux by 30 June 2022.

Improvements throughout this audit period include implementation of an automated “no read” process and workflow and a system improvement to allow operators to correctly select the read type for RR requests.

While the level of compliance found in this audit is similar to last year we agree with the auditors that this is a good result particularly given the change activity taking place during the audit period and the ongoing requirement for staff to operate across 2 platforms and sets of processes as well as the inclusion of PSNZ systems and processes in this audit.