ELECTRICITY INDUSTRY PARTICIPATION CODE
RECONCILIATION PARTICIPANT AUDIT REPORT

VERITEK

For

SWITCH UTILITIES LIMITED

NZBN: 9429032276213

switch utilities ltd

Prepared by: Tara Gannon

Date audit commenced: 15 August 2022

Date audit report completed: 31 August 2022

Audit report due date: 19 September 2022

TABLE OF CONTENTS

EXECUTIVE SUMMARY

This Electricity Industry Participation Code Reconciliation Participant audit was performed at the request of **Switch Utilities Energy Limited (Switch Utilities)**, to support their application for renewal of certification in accordance with clauses 5 and 7 of schedule 15.1. The audit was conducted in accordance with the Guideline for Reconciliation Participant Audits V7.2.

Switch Utilities supplies NHH ICPs and a small number of HHR ICPs.

Registry

The timeliness and accuracy of registry status and trader updates has improved during this audit period. Small numbers of late updates and inaccuracies were identified. New connections are not completed.

Switching

Most switching processes are operating as intended, and most data exchanges are complete, accurate and on time. Some issues were identified:

- ICPs with partly unmetered load had the AA (acknowledge and accept) response code applied instead of MU (unmetered load), and Switch Utilities intends to update their processes,
- the CS last actual read date selection methodology does not consistently choose the last actual read date during the period of supply; Switch Utilities is completing a material change to correct this which will be audited in September 2022 prior to being moved into production, and
- there continue to be a relatively large number of backdated "wrong premises" withdrawals, and I have recommended additional controls to ensure that the correct ICP is chosen as part of the application process to reduce these.

Reading and read validation

Validation processes have continued to improve, and almost all readings checked were recorded accurately and correctly classified. Read attainment is generally high and read attainment processes have improved during the audit period.

Inaccurate readings and potential meter defects appear to be consistently identified, and corrections are processed.

Reconciliation

Reconciliation validation processes are generally robust, but some issues have resulted in inaccurate submission, including:

- **Missing boundary reads for disconnections and/or reconnections.** Days with inactive status are excluded from historic estimate calculations. Where disconnection and/or reconnection boundary readings are not entered, or an ICP day has an incorrect status, some consumption may be allocated to inactive ICP days and omitted from submission. Eight ICPs missing disconnection and/or reconnection boundary reads were identified.
- **ICPs omitted from NHH submission for one day.** Where ICPs are supplied for only one day or only have an opening reading recorded, forward estimate is calculated but the process does not count the first day of supply. This results in one day of consumption and one ICP day being omitted from submissions. If supply continues, the issue will be resolved once an actual reading is received and historic estimate is calculated. A new NHH reconciliation system is to be implemented, and this issue will be resolved as part of this.
- **Incorrect shaping where consumption fluctuates.** Where there was fluctuation between zero and large volumes in NHH reconciliation calculations, DART would sometimes invalidate the shapes and apply zeros instead resulting in over submission for some months and under submission for others. This issue will be resolved with the implementation of the new NHH reconciliation system. Switch Utilities has agreed with the Authority that the differences will be settled out of market and is currently preparing settlement calculations.

- **Historic estimate calculation method differs from the Code.** DART's historic estimate calculation method differs from the method prescribed in clause 4 of schedule 15.3 of the Code. In most cases, DART and the Code prescribed calculation will produce the same result within ± 1 kWh and results will be identical if there are end of month readings covering the whole reconciliation period. Small differences can occur because DART profiles the read-to-read volume for each day individually by applying (the day's shape value)/(average shape value for the period) and applying the compensation factor to the sum of the daily values. Some rounding occurs in the calculation of each day's data because of the large number of decimal places produced by applying averages, which is then magnified if the compensation factor is more than one.
- **An incorrect agreed switch reading.**
- **One Pre-pay ICP omitted from submission.**

Switch Utilities has identified corrective actions to resolve these issues and prevent recurrence, including implementation of a new NHH reconciliation system, which is expected to go live on business day four in October 2022. A material change audit has been completed and is expected to accompany this audit.

The previous audit identified some incorrect submission information including bridged meter corrections and incorrect compensation factors which had not been processed during the 14-month revision period. Switch Utilities has agreed with the Authority that the differences will be settled out of market and is currently preparing settlement calculations.

Conclusion

23 non-compliances were found, and the breach risk rating total is 51. The recommended audit frequency is six months; however, I recommend the next audit is completed in a maximum of nine months as several of the non-compliances are already cleared and a material change to resolve the NHH reconciliation issues is scheduled to be implemented in October 2022. A material change to the process to select last actual read dates for CS files is underway.

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	15.2	Some inaccurate information is recorded on the registry and in submissions.	Moderate	High	6	Identified
Electrical Connection of Point of Connection	2.11	10.33A	38 late certifications for reconnected meters.	Strong	Low	1	Identified
Changes to registry information	3.3	10 Schedule 11.1	234 late status updates to active. 15 late status updates to inactive. 107 late trader updates.	Moderate	Low	2	Identified
ANZSIC codes	3.6	9 (1(k) of Schedule 11.1	One ICP had an incorrect ANZSIC code, which was corrected during the audit.	Strong	Low	1	Cleared
Management of "active" status	3.8	17 Schedule 11.1	0000336235WTAE5 had an incorrect reconnection date and was corrected during the audit.	Moderate	Low	2	Cleared
Management of "inactive" status	3.9	19 Schedule 11.1	Three ICPs had incorrect status event dates which were corrected during the audit.	Moderate	Low	2	Cleared
Losing trader response to switch request and event dates - standard switch	4.2	3 and 4 Schedule 11.3	One ICP with unmetered load had the AA (acknowledge and accept) response code applied instead of MU (unmetered supply). Two late AN files.	Moderate	Low	2	Investigating
Losing trader must provide final information - standard switch	4.3	5 Schedule 11.3	One E2 breach. 37 CS breaches. Seven transfer CS files had incorrect last actual read dates. One transfer CS had an incorrect read type. One transfer CS had an incorrect average daily kWh.	Moderate	Low	2	Identified
Retailers must use same reading - standard switch	4.4	6(1) and 6A Schedule 11.3	Three RR breaches. Two AC breaches.	Moderate	Low	2	Identified
Losing trader provides information - switch move	4.8	10(1) Schedule 11.3	29 T2 breaches for switch moves. Three AN breaches for switch moves. Six ICPs with unmetered load had the AA (acknowledge and	Moderate	Low	2	Identified

Subject	Section	Clause	Non-Compliance	Controls	Audit Risk Rating	Breach Risk Rating	Remedial Action
			accept) response code applied instead of MU (unmetered supply).				
Losing trader must provide final information - switch move	4.10	11 Schedule 11.3	17 switch move CS files had incorrect last actual read dates. Three switch move CS files had an incorrect average daily kWh.	Moderate	Low	2	Identified
Gaining trader changes to switch meter reading - switch move	4.11	12 Schedule 11.3	20 RR breaches. Two AC breaches.	Moderate	Low	2	Identified
Losing trader provision of information - gaining trader switch	4.13	15 Schedule 11.3	0140244034LC7F1 (AN-7299952 1 March 2022) had the AA response code applied but should have had AD.	Strong	Low	1	Identified
Withdrawal of switch requests	4.15	17 and 18 Schedule 11.3	0006101178RN4E5 NW-1043185 and 0000111978UND8B NW-1055376 had the DF (date failed) advisory code applied instead of CE (customer error). Eight SR breaches. 65 NA breaches. Two AW breaches.	Moderate	Low	2	Investigating
Electricity conveyed & notification by embedded generators	6.1	10.13, Clause 10.24 and 15.13	26 bridged meters were identified during the audit period. Energy was not quantified in accordance with the code during the bridged periods.	Strong	Low	1	Identified
Interrogate meters once	6.8	7(1) and (2) Schedule 15.2	The best endeavours requirements were not met for four ICPs unread during the period of supply where the period of supply was 30-40 days.	Strong	Low	1	Identified
Identification of readings	9.1	3(3) Schedule 15.2	One transfer CS had an incorrect read type.	Strong	Low	1	Identified
Electronic meter readings and estimated readings	9.6	17 Schedule 15.2	Not all events in the event log are reviewed.	Strong	Low	1	Investigating
Calculation of ICP days	11.2	15.6	Where default forward estimate is applied, an ICP day is not reported for the first day of supply.	Moderate	Low	2	Identified

Subject	Section	Clause	Non-Compliance	Controls	Audit Risk Rating	Breach Risk Rating	Remedial Action
			One ICP was excluded from ICP days submissions because it had the pre-pay meter flag set to Y and the NHH flag, HHR flag and AMI flag were all set to N.				
Creation of submission information	12.2	15.4	At least ten ICPs had one ICP and one day of volume omitted from ICP days and NHH volumes submissions because they were supplied for one day. ICP 1001147153CK638 was excluded from ICP days and NHH volumes submissions causing under submission of 168 kWh and 356 ICP days.	Moderate	Low	2	Identified
Accuracy of submission information	12.7	15.12	Some incorrect submission data was identified. Some incorrect submission data identified in the previous audit is still to be resolved through out of market settlement.	Moderate	High	6	Identified
Historical estimate process	12.11	4 and 5 Schedule 15.3	DART's historic estimate calculation does not follow the method prescribed in the code.	Weak	Medium	6	Identified
Historic estimate reporting to RM	13.3	10 Schedule 15.3	Historic estimate thresholds were not met for some revisions.	Moderate	Low	2	Identified
Future risk rating						51	

Future risk rating	0	1-3	4-14	16-40	41-55	55+
Indicative audit frequency	36 months	24 months	18 months	12 months	6 months	3 months

RECOMMENDATIONS

Subject	Section	Description	Recommendation
Changes to registry information	3.3	Use the format specified in the Electricity Authority's Guidelines on Unmetered Load Management	Trader unmetered load details should be recorded in the following format: Connected Watts; running hours per day; free form text as required e.g. 110;10.5;streetlight corner Rons Rd and Beatty St.
Trader responsibility for an ICP	3.4	Develop a MEP nomination rejection process	Develop a process to identify rejected MEP nominations so that they can be investigated and re-issued where necessary.

Subject	Section	Description	Recommendation
Management of "active" status	3.8	Confirm the reconnection date for 0007186355RN110	ICP 0007186355RN110 is believed to have been reconnected by Orion because only the network could access the box to reconnect. The ICP switched in on 2 February 2022 on an estimated reading of 255. Wells provided readings of 411 on 12 April 2022, and 676 on 13 June 2022. Wells completed a failed reconnection attempt on 9 February 2022 and because the 12 April 2022 read showed movement from the estimated switch in read, Switch Utilities assumed that the network reconnected the day after the Wells failure. The reconnection date should be confirmed and updated (if necessary) and a reconnection read should be entered.
Inform registry of switch request for ICPs - standard switch	4.1	ICP validation for new switch ins	To reduce the risk of users selecting the wrong ICP during the application process and the number of wrong premises withdrawals required, consider: • displaying the ICP number and asking the applicant to validate it against their current invoice where possible and/or the meter if the ICP is recorded on it, and • displaying the meter number(s) and asking the applicant to validate it against the physical meter(s).
Losing trader response to switch request and event dates - standard switch	4.2	Application of the MU (unmetered supply) AN response code	The MU (unmetered supply) AN response code should be applied in preference to AA (acknowledge and accept) where the ICP's load is partially or solely unmetered.
Electricity conveyed & notification by embedded generators	6.1	Identification of ICPs with distributed generation	Expand the query to identify ICPs with distributed generation which may require notifications of gifting to include ICPs with installation type L and generation metering.
Half hour estimates	9.4	Consider public holidays, weekdays and weekends when calculating estimates	Consider public holidays, weekdays and weekends when calculating estimates rather than using the same calendar day of the previous month to estimate consumption.
Accuracy of submission information	12.7	Validate the readings for ICP 0010366420EL645	It appears that the contractor readings or meter removal readings for Meter 214282526 registers 1 and 2 may be transposed. Confirm the meter registers that the reads should be recorded against prior to updating the Energy Database.
Accuracy of submission information	12.7	Consistently enter boundary readings for disconnections and reconnections	Develop processes to ensure that boundary readings are consistently entered, and missing boundary readings are detected.

ISSUES

Subject	Section	Description	Issue
		Nil	

1. ADMINISTRATIVE

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

Code reference

Section 11 of Electricity Industry Act 2010.

Code related audit information

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

Audit observation

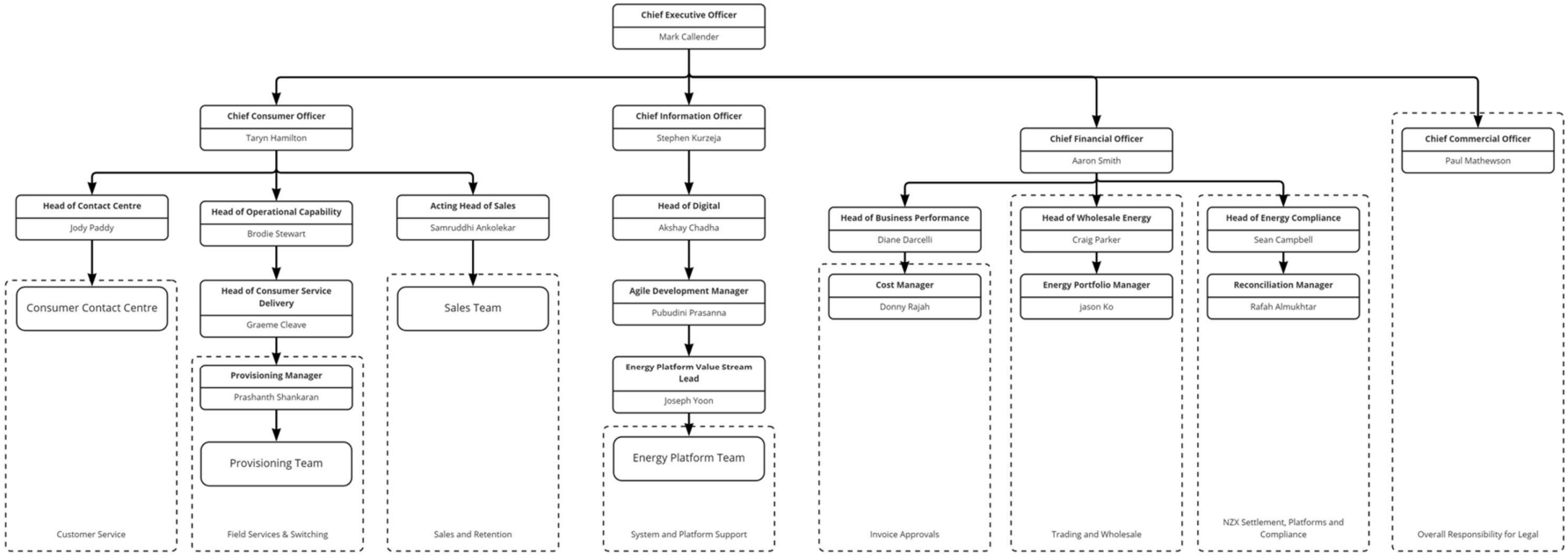
Current code exemptions were reviewed on the Electricity Authority website.

Audit commentary

There are no exemptions in place that are relevant to the scope of this audit.

1.2. Structure of Organisation

Switch Utilities provided a copy of their organisation structure.



1.3. Persons involved in this audit

Auditor:

Tara Gannon

Veritek Limited

Electricity Authority Approved Auditor

Switch Utilities personnel assisting with this audit:

Name	Title
Karl Hunter	Provisioning Specialist
Nick Shaw	Provisioning Specialist
Prashanth Shankaran	Provisioning Manager
Rafah Almukhtar	Energy Reconciliation Manager
Richard Mackie	Network Operations Co-ordinator
Sean Campbell	Head of Energy Compliance
Shaun Dennis	Provisioning Specialist

1.4. Use of Agents (Clause 15.34)

Code reference

Clause 15.34

Code related audit information

A reconciliation participant who uses an agent

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

Audit observation

Use of agents was discussed with Switch Utilities.

Audit commentary

Switch Utilities uses Wells to conduct NHH data collection, and AMS and EDMI to conduct HHR data collection.

AMS (for AMS and Smartco), Arc, BOPE, FCLM, Intellihub (for Intellihub and Metrix), and WASN provide AMI meter data as MEPs and are subject to a separate audit regime.

All other functions are conducted in-house.

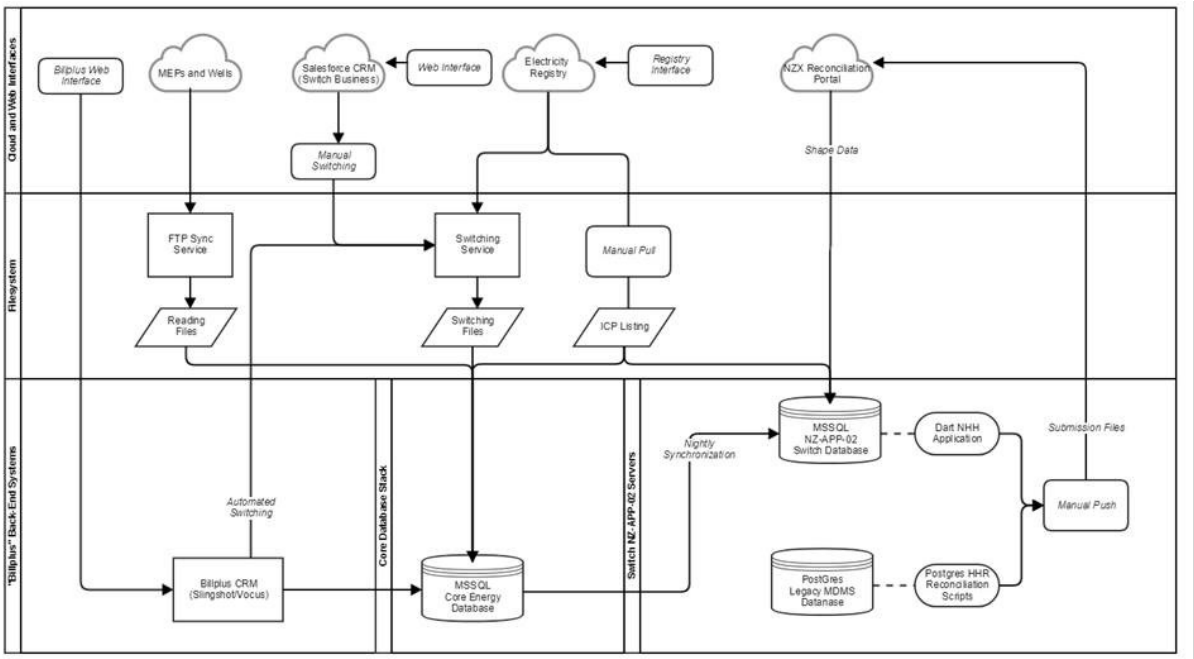
1.5. Hardware and Software

Switch Utilities uses the following systems:

- The **Energy Database** receives NHH reads files, and also sends and receives registry and switching files. The Electricity App is used as an interface to the database, which allows users to review and validate information.
  The Energy Database also produces the AV120 submissions. HHR billed charges are calculated in **Accredo** (HHR Vocus Communications customers) and then transferred to the Energy Database. NHH billed charges are calculated in the Energy Database and then transferred to **BillPlus (Vocal)** for the physical invoices to be produced.
- **Data management system (known as DRS or MDMS)** is used for HHR reconciliation and produces AV090 and AV140 submissions. DRS/MDMS receives EIEP3 files containing HHR volume information and registry lists. DRS/MDMS performs a calculation based on the current values provided and outputs submission files.
- **DART** is used for NHH reconciliation, and also produces AV080 and AV110 submissions. It receives readings used by the reconciliation process from the Energy Database, status and aggregation factor information from registry lists, and PR030 seasonal adjusted shape value files from the reconciliation manager. The read and registry information is not held within DART, it performs a calculation based on the current values provided and outputs files including submissions and supporting ICP level and batch (meter register) level information.
- **Zendesk** is used as a customer relationship and communications management system and does not interact with the registry.

Access to systems is restricted using logins and passwords, through each user's network login.

Switch Utilities performs a nightly backup of all production databases and systems including the Energy Database. The backups are stored on a file share, which is backed up and stored across multiple servers in at least four locations to ensure redundancy and protection. A system diagram is shown below.



1.6. Breaches or Breach Allegations

The Authority confirmed that no alleged breaches occurred during the audit period.

1.7. ICP Data

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

Metering Category	Jul 2022	Aug 2021	Aug 2020	Dec 2019	2019	2018
1	46,037	39,076	34,054	28,472	21,390	11,635
2	159	183	257	267	329	287
3	10	11	16	22	37	45
4	1	2	4	4	12	12
5	-	-	-	-	1	1
9	-	1	-	-	1	1
Blank	-	-	-	-	-	1

All ICPs on the list file are summarised in the table below.

Status	Jul 2022	Aug 2021	Aug 2020	Dec 2019	2019	2018
Active (2,0)	46,207	39,273	34,331	28,765	21,770	11,982
Inactive – new connection in progress (1,12)	18	1	-	6	7	6
Inactive – vacant (1,4)	266	431	195	168	135	3
Inactive – electrically disconnected remotely by AMI meter (1,7)	41	17	28	18	35	1
Inactive – electrically disconnected at pole fuse (1,8)	28	30	30	28	23	-
Inactive – electrically disconnected due to meter disconnected (1,9)	14	18	8	24	23	1
Inactive – electrically disconnected at meter box fuse (1,10)	5	4	5	5	8	-
Inactive – electrically disconnected at meter box switch (1,11)	13	9	10	5	11	-
Inactive – electrically disconnected ready for decommissioning (1,6)	5	7	7	5	3	-
Inactive – reconciled elsewhere (1,5)	-	-	-	-	-	-
Decommissioned (3)	477	367	274	234	187	162

1.8. Authorisation Received

Switch Utilities provided a letter of authorisation.

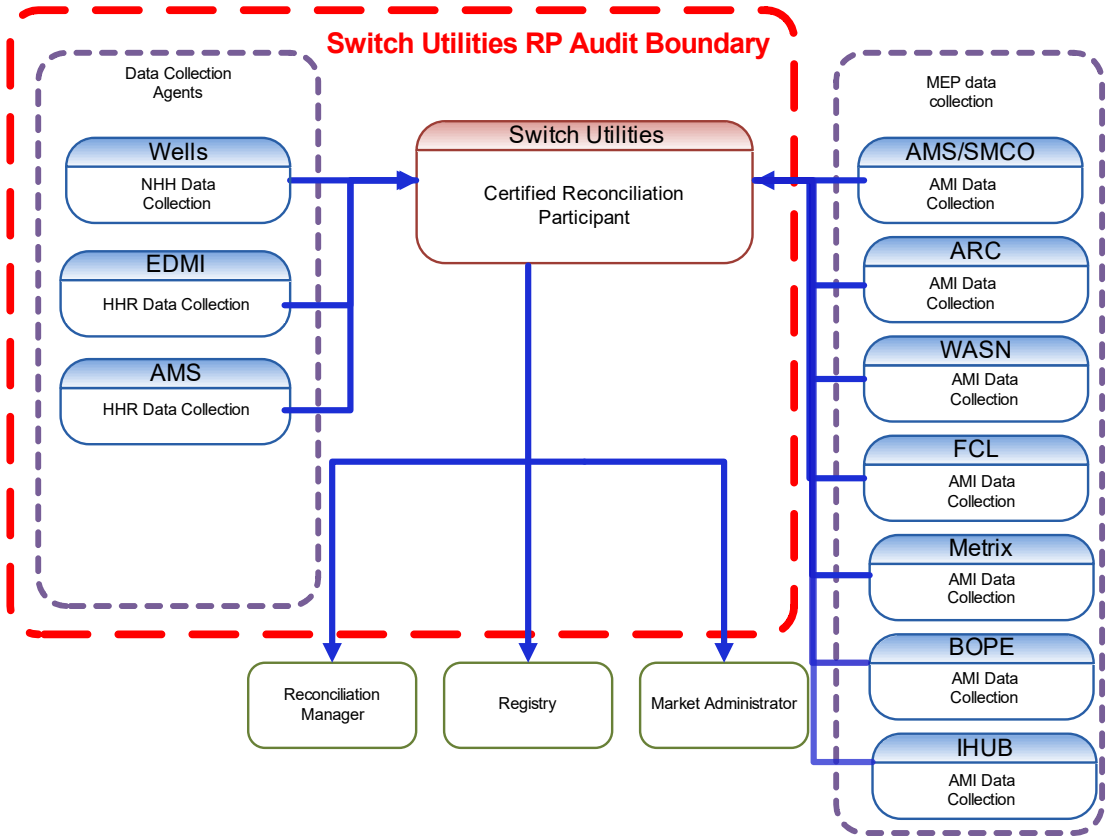
1.9. Scope of Audit

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

The audit was conducted in accordance with the Guideline for Reconciliation Participant Audits V7.2 remotely using Teams meetings between 15 and 19 August 2022.

Analysis was conducted on registry list, audit compliance and event detail reports for 1 August 2021 to 11 July 2022, and registry list snapshot and meter installation details reports as of 11 July 2022.

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



The table below shows the tasks under clause 15.38 of part 15 for which Switch Utilities requires certification. This table also lists any agents who assist with these 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 data collection EDMI – HHR data collection AMS – HHR data collection	AMS ARC BOPE FCLM IHUB MTRX SMCO WASN
(c)(iii) - Creation and management of volume information	Wells – NHH data collection EDMI – HHR data collection AMS – HHR data collection	AMS ARC BOPE FCLM IHUB MTRX SMCO WASN
(d)(i) – Calculation of ICP days		
(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		

Switch Utilities uses Wells to conduct NHH data collection, and AMS and EDMI to conduct HHR data collection. The agent audits are expected to be submitted with this audit.

AMS (for AMS and Smartco), IHUB (for IHUB and Metrix) Arc, FCLM, BOPE and WASN provide data as MEPs and are subject to a separate audit regime.

1.10. Summary of previous audit

Switch Utilities' previous audit was conducted in September 2021 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	15.2	Some inaccurate information is recorded on the registry and some submission information was incomplete or incorrect.	Still existing
Electrical Connection of Point of Connection	2.11	10.33A	14 late certifications for reconnected meters.	Still existing
Changes to registry information	3.3	10 Schedule 11.1	366 late status updates to active. 93 late status updates to inactive. 44 late trader updates	Still existing
ANZSIC codes	3.6	9 (1(k) of Schedule 11.1	Incorrect ANZSIC codes were assigned for at least 15 ICPs.	Still existing
Management of "inactive" status	3.9	19 Schedule 11.1	Five incorrect event dates. Two incorrect status reasons.	Still existing
Inform registry of switch request for ICPs - standard switch	4.1	2 Schedule 11.3	45 ICPs had incorrect switch types of TR.	Cleared
Losing trader response to switch request and event dates - standard switch	4.2	3 and 4 Schedule 11.3	Two ANs had proposed event dates more than ten business days after the NT receipt date.	Cleared for event dates, new non-compliance for use of the MU code
Losing trader must provide final information - standard switch	4.3	5 Schedule 11.3	One late transfer CS file. Incorrect average daily consumption for at least three transfer CS files. Incorrect last actual read dates for at least three transfer CS files.	Still existing
Retailers must use same reading - standard switch	4.4	6(1) and 6A Schedule 11.3	Four late RR files. One late AC file. The RR for ICP 0000048735TR71E was based on a customer reading.	Still existing
Losing trader provides information - switch move	4.8	10(1) Schedule 11.3	One switch event date for one day earlier than proposed. Eight late switch move AN files. 63 late switch move CS files.	Still existing
Losing trader must provide final information - switch move	4.10	11 Schedule 11.3	Incorrect average daily consumption for at least three switch move CS files. Incorrect last actual read date for at least one switch move CS file.	Still existing

Subject	Section	Clause	Non-compliance	Status
Gaining trader changes to switch meter reading - switch move	4.11	12 Schedule 11.3	Six late RR files. Two late AC files. The RRs for two ICPs were supported by unvalidated customer readings instead of validated actual readings.	Still existing
Withdrawal of switch requests	4.15	17 and 18 Schedule 11.3	80 late files related to switch withdrawals.	Still existing
Electricity conveyed & notification by embedded generators	6.1	10.13, Clause 10.24 and 15.13	11 bridged meters were identified during the audit period. Energy was not quantified in accordance with the code during the bridged periods.	Still existing
Interrogate meters once	6.8	7(1) and (2) Schedule 15.2	Five ICPs were not read during the period of supply. The best endeavours requirement was not met for any of these ICPs.	Still existing
NHH meters 90% read rate	6.10	9(1) and (2) Schedule 15.2	The best endeavours requirement was not met for at least four ICPs not read in the previous four months.	Cleared
Electronic meter readings and estimated readings	9.6	17 Schedule 15.2	Not all events in the event log are reviewed.	Still existing
Calculation of ICP days	11.2	15.6	Where default forward estimate is applied, an ICP day is not reported for the first day of supply. This is corrected through the revision process once a subsequent reading is received.	Still existing
HHR aggregates information provision to the reconciliation manager	11.4	15.8	Aggregates file contains submission information.	Cleared
Accuracy of submission information	12.7	15.12	Some incorrect submission data was provided, including: • unreported consumption of approx. 21,200 kWh during periods where meters were bridged for 14 ICPs, and • unreported consumption of approx. 240,000 kWh due to two incorrect compensation factors.	Still existing
Permanence of meter readings for reconciliation	12.8	4 Schedule 15.2	Some estimates were not replaced by revision 14.	Cleared
Historic estimate reporting to RM	13.3	10 Schedule 15.3	Historic estimate thresholds were not met for some revisions.	Still existing

Subject	Section	Description	Recommendation	Status
Changes to registry information	3.3	Disconnection method	Require disconnection contractors to disconnect at the pole fuse or pillar box fuse to minimise customer reconnection.	Adopted, discussed with contractors
NHH metering information data validation	9.5	Meter read validation	Complete training on the exception reporting for stopped and faulty meters, controlled load greater than uncontrolled load and inactive with consumption reported and ensure that exceptions are promptly reviewed.	Adopted
Accuracy of submission information	12.7	Compensation factors	Conduct monthly validation against the registry for compensation factors.	Adopted

2. OPERATIONAL INFRASTRUCTURE

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

Code reference

Clause 10.6, 11.2, 15.2

Code related audit information

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

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

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

Audit observation

The process to find and correct incorrect information was examined. The registry validation process was examined in detail in relation to the achievement of this requirement. The registry list files and AC020 reports were examined to determine compliance.

Audit commentary

Registry synchronisation

Status and trader updates are generated from the Energy Database. Users add and modify information including event dates using the retailer updates screen in the Electricity App, which is the user interface to the Energy Database. The Energy Database creates status and trader event files which are sent to the registry.

Registry acknowledgement files are imported into the Energy Database and directed to work queues within the Electricity App if action is required by a user. Acknowledgement errors are diverted to the IT team for resolution.

Notification files are imported into the Energy Database and attributes maintained by other parties are updated from the appropriate event date. The DART NHH reconciliation relies on the registry attributes when determining active days and aggregation factors.

Monthly checks are completed for:

- **Status, Network, NSP, installation type, price code, loss category, chargeable capacity and address details excluding GPS coordinates** - the Energy Database values are validated against the registry information and any differences are displayed as ICP mismatch exceptions within the Energy Database; differences are investigated and corrected as necessary, and unmetered load details were added during the audit,
- **compensation factors -** the Energy Database values are validated against the registry, and any differences are investigated and corrected as necessary,
- **meter mismatch -** the PR255 metering installation details report is compared to the Energy Database, and any differences are investigated including follow up with the MEP and corrected as necessary,
- **trader unmetered load -** a registry list of ICPs with the unmetered load flag set to Y is checked, to ensure that the registry and Energy Database unmetered load details are correct and consistent; DART uses the registry information to calculate submissions for unmetered load, and

- **distributor unmetered load without trader unmetered load -** a registry list is reviewed to identify any ICPs where the distributor has recorded unmetered load, but the unmetered load flag is set to N.

Weekly the Head of Energy Compliance reviews the registry AC020 trader compliance report, event detail report and switch breach history report. Any issues for resolution are passed to the appropriate teams, and compliance trends and statistics are monitored and reported to management monthly.

Registry and static data accuracy

The analysis of the list file and AC020 returned the following findings:

Item No.	Issue	Jul 2022	Jul 2021	Aug 2020	Dec 2019	2019	Comments
1	Status or status date mismatch between registry and Switch Utilities	4	5	12	11	140	Four ICPs had incorrect status event dates which were corrected during the audit. See **section 3.9**.
2	Active ICPs with blank MEP and no MEP nominated and UML = N	-	-	-	-	-	Compliant.
3	Incorrect submission flag	-	-	-	1	-	Compliant.
4	Active with blank ANZSIC codes	-	-	-	-	-	Compliant.
5	Active with ANZSIC "T999" not stated	-	-	-	-	-	Compliant.
6	Active with ANZSIC "T994" don't know	-	-	1	1	-	Compliant.
7	Incorrect ANZSIC code	1	15	13	16	19	The ANZSIC code was corrected during the audit. See **section 3.6**.
8	Active ICP with cat 9 and UML= N	-	-	-	-	1	Compliant.
9	ICPs with Distributor unmetered load populated but retail unmetered load is blank	2	-	-	-	-	See **section 3.7**.
10	ICPs with unmetered load flag Y but load is recorded as zero	-	-	1	-	5	Compliant.
11	ICPs with incorrect shared unmetered load	2	-	-	-	-	ICPs 0005700531RNF1C and 0005700558RNEBD had unmetered load recorded by the distributor but not the trader since 27 June 2022. Both ICPs had their unmetered load details corrected during the audit, and this field was added to the monthly ICP mismatch validation which detects differences between the Energy Database and the registry. See **section 3.7** and **5.1**.

Item No.	Issue	Jul 2022	Jul 2021	Aug 2020	Dec 2019	2019	Comments
12	ICPs with Distributed Generation indicated but no DG profile and no notification of gifting provided	-	-	4	4	2	Compliant.
13	ICP at status "new connection in progress" (1,12) or "ready" (0,0) with an initial energisation date populated by the Distributor	18	-	1	-	1	See **section 3.5**.
15	Active date variance with initial electrical connection date	-	-	-	5	10	Compliant.
16	Meter cat 3 or known commercial site with residential ANZSIC code	-	-	-	-	-	Compliant.

Two ICPs (0005700531RNF1C and 0005700558RNEBD) had unmetered load recorded by the distributor but not the trader since 27 June 2022. I found that the notification file which contained the additions of unmetered load had not been added to the Energy Database. Both ICPs had their unmetered load details corrected during the audit, and this field was added to the monthly ICP mismatch validation which detects differences between the Energy Database and the registry. Non-compliance is recorded in this section because the updates were not completed as soon as practicable.

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	Low and zero consumption is monitored monthly using the "zero consumption bridge list" which includes any ICPs which have consumed less than 3 kWh for the month. Defective meters may also be identified through meter condition and event information reported by Wells, MEPs or customers and through the read validation process which identifies material changes between readings. When a stopped meter is detected, it is replaced. Consumption on the new meter is monitored for two weeks and then used to calculate an estimated closing reading which captures consumption during the stopped period. The estimate is entered into the Energy Database using the "bridged meter tool" and recorded as a permanent estimate. The corrected data is transferred to DART with the next extract; each extract contains all reads used by the reconciliation process for each ICP. I checked seven examples of stopped or faulty meters and confirmed that corrections were appropriately processed and flowed through to reconciliation.
Bridged meters	Bridged meters are identified using the "zero consumption bridge list", and on returned field services paperwork. They may also be identified through the read validation process. When a bridged meter is identified a field services job is raised for it to be unbridged and/or replaced if necessary. Once paperwork is received a correction is processed using the "bridged meter tool" to add a permanent estimate meter removal reading which includes consumption during the bridged period. If the meter has not been replaced, a pseudo meter replacement is

	completed, with the meter removed on an estimate and with the new instance starting from the read physically recorded on the meter when it was unbridged. I checked nine examples of bridged meters and found that the meters had been removed on permanent estimates which included consumption during the bridged period and saw examples where the meter was physically replaced on site and pseudo meter changes where the meter was not replaced. The previous audits found that some bridged meter corrections were not fully processed within the 14-month window resulting in under submission of 21,200 kWh. Corrections are now processed on a timely basis. Switch Utilities has agreed with the Authority that the differences will be settled out of market and is currently preparing settlement calculations.
Consumption while inactive	Days with inactive status are excluded from historic estimate calculations. Where disconnection and/or reconnection boundary readings are not entered, or an ICP day has an incorrect status, some consumption may be allocated to inactive ICP days and omitted from submission. Switch Utilities monitors inactive ICPs with potential consumption using the "disconnected ICPs with usage report" which is produced after business day 13 each month. Each ICP is checked to determine whether reconnection has occurred, and missing paperwork is followed up and processed. If self-reconnection or genuine consumption is detected during a period which is expected to be disconnected, the ICP's status will be corrected to "active" for the affected days. I checked 20 ICPs with suspected inactive consumption and found: • 14 ICPs had been corrected to "active" status for all days with volumes through Switch Utilities review process, • five ICPs did not have genuine consumption on inactive days and no correction was required, and • ICP 0000041710TEB32 appears to have a misread on one meter register and is believed to still be disconnected; investigation is underway to confirm that the ICP is still disconnected.
Incorrect multipliers	Multipliers are validated against the registry monthly, and no incorrect multipliers were identified during the audit period. Two incorrect multipliers were identified during the previous audit, both were backdated to 2018 and approx. 240,000 kWh is outside the 14-month revision window. Switch Utilities has agreed with the Authority that the differences will be settled out of market and is currently preparing settlement calculations.
Unmetered load corrections	Unmetered load data is not stored within the Energy Database; the daily unmetered kWh is retrieved directly from the registry and imported into DART, which calculates the unmetered load submission based on the daily unmetered kWh and number of days with "active" status recorded on the registry. Unmetered load is not billed by Switch Utilities, and solely unmetered ICPs are not supplied. No changes or corrections to unmetered load details were identified during the audit period.

Some submission accuracy issues were identified, and are discussed in more detail in **section 12.7** including:

- **Missing boundary reads for disconnections and/or reconnections.** Days with inactive status are excluded from historic estimate calculations. Where disconnection and/or reconnection boundary readings are not entered, or an ICP day has an incorrect status, some consumption may be allocated to inactive ICP days and omitted from submission. Eight ICPs missing disconnection and/or reconnection boundary reads were identified.
- **ICPs omitted from NHH submission for one day.** Where ICPs are supplied for only one day or only have an opening reading recorded, forward estimate is calculated but the process does not

count the first day of supply. This results in one day of consumption and one ICP day being omitted from submissions. If supply continues, the issue will be resolved once an actual reading is received and historic estimate is calculated. A new NHH reconciliation system is to be implemented, and this issue will be resolved as part of this.

- **Pre-pay ICP omitted from submission.** CKHK-CPK0331 ICP 1001147153CK638 was supplied from 29 February 2020 until 19 February 2021 and was excluded from ICP days and submission information, causing under submission of 168 kWh and 356 ICP days. It appears that the ICP was excluded from submissions because the pre-pay meter flag was set to Y and the NHH flag, HHR flag and AMI flag were all set to N. No other ICPs with this meter configuration have been supplied by Switch Utilities.
- **Incorrect agreed switch reading.** 0030362342PC792 had a reading of 30326 (E) applied in the Energy Database for 6 September 2021, instead of the agreed switch reading of 30285 (E).
- **Incorrect shaping where consumption fluctuates.** Where there was fluctuation between zero and large volumes in NHH reconciliation calculations, DART would sometimes invalidate the shapes and apply zeros instead resulting in over submission for some months and under submission for others. This issue will be resolved with the implementation of the new NHH reconciliation system. Switch Utilities has agreed with the Authority that the differences will be settled out of market and is currently preparing settlement calculations.
- **Historic estimate calculation method differs from the Code.** DART's historic estimate calculation method differs from the method prescribed in clause 4 of schedule 15.3 of the Code. In most cases, DART and the Code prescribed calculation will produce the same result within ± 1 kWh and results will be identical if there are end of month readings covering the whole reconciliation period. Small differences can occur because DART profiles the read-to-read volume for each day individually by applying (the day's shape value)/(average shape value for the period) and applying the compensation factor to the sum of the daily values. Some rounding occurs in the calculation of each day's data because of the large number of decimal places produced by applying averages, which is then magnified if the compensation factor is more than one.
- **Previous audit issues to be resolved.** The previous audit identified some incorrect submission information including bridged meter corrections and incorrect compensation factors which had not been processed during the 14-month revision period. Switch Utilities has agreed with the Authority that the differences will be settled out of market and is currently preparing settlement calculations.

Audit outcome

Non-compliant

Non-compliance	Description
Audit Ref: 2.1 With: Clause 10.6, 11.2, 15.2 From: 01-Aug-21 To: 19-Aug-22	Some inaccurate information is recorded on the registry and in submissions. Potential impact: Low Actual impact: Low Audit history: Multiple times Controls: Moderate Breach risk rating: 6

Audit risk rating	Rationale for audit risk rating
High	Controls are rated as moderate as they are sufficient to mitigate risk most of the time, but there is room for improvement particularly for corrections. The audit risk rating is high based on the kWh differences to be resolved. A plan is in place to resolve the issues, including processing out of market settlement for the largest differences.

Actions taken to resolve the issue	Completion date	Remedial action status
We have commented on each item in the relevant sections of this report.	Material Change Audit Supplied	Identified
Preventative actions taken to ensure no further issues will occur	**Completion date**	

2.2. Provision of information (Clause 15.35)

Code reference

Clause 15.35

Code related audit information

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

Audit observation

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

Audit commentary

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

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

HHR

All HHR data is collected by EDMI and AMS, and data transmission was reviewed as part of their agent audits. To confirm the data transmission process, I traced a sample of readings from the source files provided by the agents to DRS/MDMS and submission files.

NHH

Switch Utilities receives AMI data from AMS (for AMS and Smartco), Arc, BOPE, FCLM, Intellihub (for Intellihub and Metrix), and WASN as MEPs. All other NHH meters are read manually by Wells as an agent. All NHH and AMI reading data is provided via SFTP.

To confirm the data transmission process, I traced a sample of readings from the source files provided by the MEPs and agents to the Energy Database. A sample of readings were also traced to DART for NHH settled ICPs, and volumes were traced to DRS/MDMS and aggregates submissions for HHR settled AMI ICPs.

Audit commentary

HHR

HHR data transmission was reviewed as part of AMS and EDMI's agent audits and found to be compliant. I traced data for four category 3 and 4 ICPs from the source files to DRS/MDMS and submission information and confirmed it matched.

NHH

Upon receipt via SFTP, NHH readings are imported into a readings table in the Energy Database. Two days after the read date, the readings are extracted to the charged readings and NHH readings tables. If no reading is received for a day, the Energy Database will estimate a value for the charged readings table which will be revised if an actual reading is received later, and the reading has not been billed. Estimated readings are always replaced with actual data if it is received later in the NHH readings table, which is used to provide the reading data to DART prior to each reconciliation run. Readings received on contractor paperwork are manually loaded into the Energy Database's contractor read screen. DART does not retain a copy of the read data used for calculation; detailed reports are produced to accompany the submission information showing which readings were applied. I traced readings for a diverse sample of 18 ICPs from the source files to the Energy Database, and DART for NHH settled ICPs and found the readings were correctly recorded and classified.

AMI volumes are loaded directly into DRS/MDMS. I traced the raw volumes to DRS/MDMS and the HHR aggregates submissions for a diverse sample of six ICPs and found the data was consistent.

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

NHH

Compliance was confirmed during Wells' agent audit.

The Energy Database audit logs include the activity identifier, date and time and an operator identifier. Data is not modified within DART.

HHR

Compliance was confirmed during AMS and EDMI's agent audits, and DRS/MDMS contains compliant audit trails.

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 Switch Utilities' standard terms and conditions.

Audit commentary

Switch Utilities' standard 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 Switch Utilities' standard terms and conditions and discussed compliance with these clauses. I reviewed process documentation and correspondence with customers.

Audit commentary

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

Switch Utilities provided a process document outlining the process to obtain access to metering where it cannot be obtained because 1) access was refused, or 2) the customer is required to complete work before the job can be completed. Switch Utilities endeavours to work with the customer to arrange access or customer work completion, but if this is not successful Switch Utilities advises the customer that their ICP will be disconnected after 30 business days. If work is not completed or access is not granted within the 30 business days a final notice that the ICP will be disconnected within seven business days is issued.

There were no instances where access to metering could not be arranged on request by a MEP, ATH, auditor, or the Authority during the audit period.

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 Switch Utilities' standard terms and conditions, but the existing practices in the electrical industry achieve compliance.

Audit commentary

Switch Utilities supplies 11 ICPs with metering category 3 or above and is not responsible for any metering installations with loss compensation factors.

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 Switch Utilities' standard terms and conditions.

Audit commentary

Switch Utilities' 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 and the reconnection process when switching ICPs in were examined in detail.

Audit commentary

No new connections occurred during the audit period, and the AC020 report did not record any active ICPs without metering or the UNM flag set to yes.

Switch Utilities does not intend to complete any new connections, but if they do ICPs will be claimed at the "inactive - new connection in progress" status and the MEP will be nominated at the same time.

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

Audit observation

The new connection and the reconnection process when switching ICPs in were examined in detail.

Audit commentary

No new connections occurred during the audit period, and no temporary electrical connections were identified. Switch Utilities does not intend to complete any new connections, but if they do ICPs will be claimed at the "inactive - new connection in progress" status and the MEP will be nominated at the same time. This practice aids compliance with clause 10.33(1).

Audit outcome

Compliant

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

Code reference

Clause 10.33A(1)

Code related audit information

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

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

Audit observation

The new connection process was examined in detail to evaluate the strength of controls. The registry list file and AC020 report were examined to confirm process compliance.

Audit commentary

MEP information for active ICPs

All active metered ICPs have an MEP and metering details recorded.

Meter certification

Active ICPs are required to have full metering certification recorded within five business days of the date they become active. Review of the AC020 audit compliance report found:

- no new connections, and no late meter certifications relating to new connections, and
- 38 (3.15%) of the 1,206 reconnections did not have meter certification within five business days.

The Energy Database produces exceptions for sites being reconnected with expired meter certification, and sites owned with expired meter certification. The Head of Energy Compliance has approached the MEPs regarding certification of metering for ICPs with interim or expired certification and has been advised that the MEPs are working on certifying the affected ICPs. As they are unable to make progress with the MEPs, Switch Utilities checks the exceptions for ICPs which are being reconnected with expired certification daily and requests certification as part of the reconnection process where possible.

I checked five ICPs with interim certification and the five ICPs with the largest number of days since their certification expired and found that for seven ICPs the MEP had been approached to recertify the meter. The other three had expired interim certification and no action was taken.

I checked all 27 meters which were indicated to be bridged during the audit period. One was confirmed not to be bridged when the field service job to unbridge the meter was completed. 25 were unbridged and re-certified, and an appointment is booked for the other ICP to be unbridged and re-certified.

Audit outcome

Non-compliant

Non-compliance	Description
Audit Ref: 2.11 With: Clause 10.33A From: 16-Jun-21 To: 29-Jun-22	38 late certifications for reconnected meters. Potential impact: Medium Actual impact: Low Audit history: Multiple times Controls: Strong Breach risk rating: 1
Audit risk rating	**Rationale for audit risk rating**
Low	Controls are rated as strong, because meter certification is an MEP responsibility and Switch Utilities sometimes cannot achieve compliance. The impact is assessed to be low because a small number and proportion of meters were not certified within the timeframes. Uncertified metering installations are likely to be less accurate than certified metering installations, so there could be a minor impact on settlement.

Actions taken to resolve the issue	Completion date	Remedial action status
We have included a control interface for these sites to our energy platform which flags any site being gained which had expired certification; so that the provisioning team can identify if we have reconnected the site and send recertification requests for sites where required.	On-going	Identified

We will focus on ensuring that this report is being appropriately monitored and cleared to improve compliance moving forward.		
Preventative actions taken to ensure no further issues will occur	**Completion date**	

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.

Audit commentary

Switch Utilities has use of system agreements or arrangements in place with all the networks they trade on. There were no new networks added during the audit period.

As part of the online customer sign up process, the customer's ICP information is checked against the registry to confirm its attributes, and then cross checked against approved values. If an ICP does not meet the requirements to be supplied by Switch Utilities (including being connected to a network where an arrangement is in place) the application is put on hold and the customer receives a message that their ICP cannot currently be supplied. The application is directed to a user for review through the Electricity App.

Audit outcome

Compliant

2.13. Arrangements for metering equipment provision (Clause 10.36)

Code reference

Clause 10.36

Code related audit information

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

Audit observation

The process to ensure an arrangement is in place with the metering equipment provider before an ICP can be created or switched in was checked.

Audit commentary

Switch Utilities has arrangements in place with all relevant MEPs. No new MEPs were added during the audit period.

As part of the online customer sign up process, the customer's ICP information is checked against the registry to confirm its attributes, and then cross checked against approved values. If an ICP does not meet the requirements to be supplied by Switch Utilities (including having an MEP where an arrangement is in place) the application is put on hold and the customer receives a message that their ICP cannot currently be supplied. The application is directed to a user for review through the Electricity App.

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

Audit commentary

If an ICP was reconnected as part of the switching process and the switch was later withdrawn, Switch Utilities would restore the disconnection and reimburse the losing trader for any direct costs incurred if requested. I did not identify any examples during the audit period.

Audit outcome

Compliant

2.15. Electrical disconnection of ICPs (Clause 10.33B)

Code reference

Clause 10.33B

Code related audit information

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

Audit observation

The disconnection process was examined. Traders are only able to update ICP status for event dates where they are responsible for the ICP on the registry.

Audit commentary

Switch Utilities have a robust disconnection process that is described in **section 3.9** and will only disconnect ICPs where they are recorded as the trader.

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 time 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 events where seals may have been removed or broken were reviewed.

Audit commentary

All activities which could result in seals being removed or broken are completed by ATHs, the MEP, or subcontractors to the MEP.

Switch Utilities receives work completion paperwork from the ATHs, the MEP, or subcontractors to the MEP and uses this information to confirm the correct ICP attributes including status and profile; and updates their system and the registry. These parties are required to ensure that only qualified personnel perform work and manage and trace seals. The MEPs do not usually provide details of seals in their job completion paperwork.

If Switch Utilities becomes aware of a meter with missing or broken seals, they will advise the MEP and request that the meter is checked and re-sealed.

In many cases, work requiring breakage or removal of seals is completed by the MEP, and they will be aware of any seal changes. Where Wells completes a manual disconnection or reconnection, the MEP may not be advised where seals have been removed or broken except by receiving a status update through the registry.

Audit outcome

Compliant

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

Code reference

Clause 10.33C and 2A of Schedule 15.2

Code related audit information

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

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

If the trader bridges a meter, the trader must:

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

The trader must determine meter readings as follows:

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

Audit observation

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

Audit commentary

I checked all 27 meters which were indicated to be bridged during the audit period. One was confirmed not to be bridged when the field service job to unbridge the meter was completed. 25 were unbridged and recertified, and an appointment is booked for the other ICP to be unbridged.

Bridging occurred because the customer urgently required electricity and a remote reconnection was unable to be completed. In all cases the MEP was notified.

Once the meter is unbridged and paperwork is received, a correction is processed using the "bridged meter tool" to add a permanent estimate meter removal reading which includes consumption during the bridged period. If the meter has not been replaced, a pseudo meter replacement is completed, with the meter removed on an estimate a permanent estimate, and with the new instance of the meter starting from the read physically recorded on the meter when it was unbridged.

I checked nine examples of bridged meters and found that the meters had been removed on permanent estimates which included consumption during the bridged period. The sample included ICPs where the

meter was physically replaced on site and pseudo meter changes where the meter was not physically replaced.

The previous audits found that some bridged meter corrections were not fully processed within the 14-month window resulting in under submission of 21,200 kWh. Switch Utilities has agreed with the Authority that the differences will be settled out of market and is currently preparing settlement calculations.

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

Sample invoices were reviewed to confirm that the ICP number is present.

Audit commentary

The ICP number is present on invoice 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. A sample of invoices, letter templates, emails, chat app, and other correspondence were reviewed to determine whether clear and prominent information on Utilities Disputes is provided.

Audit commentary

Clear and prominent information on Utilities Disputes is provided:

- in the terms and conditions,

- on invoices,
- in correspondence,
- in communications via the chat app,
- on the websites, and
- as part of the interactive voice recording when customers make inbound calls regarding electricity.

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. A sample of invoices, letter templates and other correspondence were reviewed to determine whether clear and prominent information on Powerswitch is provided.

Audit commentary

Clear and prominent information on Powerswitch is provided:

- on invoices for brands supplying customers with residential ANZSIC codes,
- in correspondence, including price plan correspondence,
- in communications via the chat app, and
- on the websites under https://www.slingshot.co.nz/power and https://www.orcon.net.nz/power/.

The requirement to provide annual information on Powerswitch is met through its inclusion on invoices.

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 connection 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 Switch Utilities, and no new connections were initiated during the audit period.

Audit outcome

Compliant

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

Code reference

Clause 11.7(2)

Code related audit information

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

Audit observation

The new connection process was examined in detail. Findings on the timeliness of updates are listed in **section 3.5**. The registry list file and AC020 report were examined to confirm process compliance.

Audit commentary

The new connection process is detailed in **sections 2.9** and no new connections were completed during the audit period. The processes in place ensure that the trader required information is populated as required by this clause.

Audit outcome

Compliant

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

Code reference

Clause 10 Schedule 11.1

Code related audit information

If information provided by a trader to the registry manager about an ICP changes, the trader must provide written notice to the registry manager of the change no later than 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 trader updates, including MEP nominations was reviewed. The registry list and AC020 report were examined, and a sample of late updates were checked.

Audit commentary

Status updates

The status, status reason code and event date are entered into the Electricity App once confirmation of the disconnection or reconnection is received. This updates a staging table in the Energy Database and produces a registry notification. Once an acknowledgement file is received from the registry the Energy Database is updated to the new status. Acknowledgement failures are directed to the IT team for resolution, and the status recorded in the Energy Database is validated against the registry as described in **section 2.1**.

Service requests are managed using Zendesk and tracked by brand in a spreadsheet, which records the date the job was issued and who to, the date the job was completed, and when paperwork was received. The spreadsheet is reviewed daily and jobs which do not have receipt of paperwork recorded ten business days after the issue date are checked and followed up with the contractor if necessary.

<u>Reconnections</u>

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

Year	ICPs notified greater than 5 days	Percentage on time	Average Business Days between Status Event and Status Input Dates
2018	66	73.5%	8.5
2019	201	79%	10.4
Dec 2019	296	64.25%	19.81
Aug 2020	303	52.13%	9.93
Jul 2021	366	67.67%	13.5
Jul 2022	**234**	**80.19%**	**7.96**

163 of the late updates were more than 10 business days after the event date, and 83 were more than 30 business days after the event date. The latest update was 553 business days after the event date.

I checked a sample of the ten latest updates (84 or more business days after the event date), and five late updates between 10 and 20 business days after the event date. The late updates were caused by:

- Corrections for inactive consumption for Switch Utilities because either another retailer reconnected the ICP, or self-reconnection occurred. The previous audit also found some backdated status updates due to self-reconnection, particularly where Wells had disconnected at the meter switch or meter box fuse. A recommendation was made for Switch Utilities to require their contractors to disconnect at the pole fuse or pillar box. Switch Utilities discussed this issue with Wells who confirmed that they only disconnect at the meter as a last resort. I reviewed the disconnection status reason codes and found 10.7%[1] of disconnections appear to have been made at the meter. Most disconnections are processed remotely.
- Not being able to process the update on the registry until a backdated switch in or withdrawal was completed.
- Delays in receiving reconnection paperwork.
- Delays in processing paperwork once it was received. Staffing has increased, and there is increased coverage during holiday periods which should reduce the likelihood of processing delays in the future.

The late status updates were processed from the correct dates apart from 0000336235WTAE5 which was corrected from 4 August 2021 to 3 August 2021 during the audit, and 007186355RN110 which needs to have its reconnection date confirmed. A recommendation is recorded in **section 3.8**.

Disconnections

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

Year	ICPs notified greater than 5 days	Percentage on time	Average Business Days between Status Event and Status Input Dates
2018	43	4.4%	23.93
2019	42	96.5%	2.10

[1] 5.4% of disconnections were disconnected at the meter, 2.0% were disconnected at the meter box fuse and 3.3% were disconnected at the meter box switch

Year	ICPs notified greater than 5 days	Percentage on time	Average Business Days between Status Event and Status Input Dates
2018	43	4.4%	23.93
Dec 2019	138	91.20%	3.27
Aug 2020	44	96.07%	2.27
Jul 2021	93	96.25%	2.17
Jul 2022	**15**	**98.91%**	**0.85**

Seven of the late updates were more than 10 business days after the event date, and three were more than 30 business days after the event date. The latest update was 231 business days after the event date.

I checked the five latest (or all late) updates to each inactive status reason code. The late updates were caused by:

- delays in receiving disconnection paperwork or advice from a network that an ICP had been decommissioned,
- delays in processing paperwork once it was received; staffing has increased, and there is increased coverage during holiday periods which should reduce the likelihood of processing delays in the future, and
- in one case the update appeared late because an incorrect event date was applied, which was corrected during the audit.

The disconnections were processed from the correct event date with the correct status reason code applied apart from ICPs 1002034872LC7B6, 0000233341MP8BB and 0000663477UNBAF which all had their disconnection event dates corrected during the audit. The originally entered dates were within three days of the correct date. Non-compliance is recorded in **section 3.9**.

I rechecked the inaccurate disconnection status updates found in the previous audit. All exceptions had been corrected, or could not be easily corrected, as they had switched out or been decommissioned.

Trader updates

Trader updates (including MEP nominations) are processed in the Energy Database and transferred to the registry. The trader event attributes, and event date are entered into the Electricity App once the correct values are confirmed. MEP nominations are processed at the time a service order for meter installation is raised, except where the change is a result of a bulk meter rollout, and the MEP nomination is raised on advice from the MEP.

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

Year	ICPs notified greater than 5 days	Percentage on time	Average Business Days between Status Event and Status Input Dates
Dec 2019	17	79.27%	11.93
Aug 2020	20	88.76%	3.52
Jul 2021	44	85.57%	4.95
Jul 2022	**107**	**89.32%**	**1.64**

All of the late updates were checked:

- three were updates made as part of the decommissioning process,
- one was a late addition of unmetered load details, where a registry notification was not received by the Energy Database; this missing notification was not identified immediately because unmetered load is not part of the registry validation between the Energy Database and the registry (Switch Utilities added the unmetered load details to the ICP mismatches screen during the audit), and
- there were 103 late MEP nominations:
    - 30 were more than 10 business days after the event date,
    - five were more than 30 business days after the event date,
    - the latest update was 115 business days after the event date,
    - 73.7% of the late nominations were bulk changes from ARCS to NGCM.

I checked the ten latest MEP nominations and the five latest changes from ARCS to NCGM and found they were caused by late notice from the MEP, withdrawal processes removing MEP nominations which then needed to be reinstated, and corrections to MEP nomination dates.

The late updates contained the correct attributes and event dates. I recommend that trader unmetered load details are populated using the Authority's recommended format. This will enable efficient comparison between trader and distributor unmetered load details, including for the AC020 trader compliance report.

Recommendation	Description	Audited party comment	Remedial action
Use the format specified in the Electricity Authority's Guidelines on Unmetered Load Management	Trader unmetered load details should be recorded in the following format: Connected Watts; running hours per day; free form text as required e.g. 110;10.5;streetlight corner Rons Rd and Beatty St.	We agree with the auditors recommendation and will make this change moving forward.	Identified

The AC020 report identified two late updates to ANZSIC codes for ICPs which switched in, both were caused by backdated CS files received from the other trader. The trader update was processed automatically by the registry when the switch completed.

Audit outcome

Non-compliant

Non-compliance	Description
Audit Ref: 3.3 With: Clause 10 Schedule 11.1	234 late status updates to active. 15 late status updates to inactive. 107 late trader updates. Potential impact: Low Actual impact: Low Audit history: Multiple times

From: 05-Jul-21 To: 08-Jul-22	Controls: Moderate Breach risk rating: 2
Audit risk rating	**Rationale for audit risk rating**
Low	The controls are rated as moderate because they are adequate to ensure that the registry is updated on time most of the time, but there is room for improvement. The risk is low as most updates were completed on time or soon after they were due unless they were backdated corrections.

Actions taken to resolve the issue	Completion date	Remedial action status
We have worked through the past 12 months to improve our compliance in this area, which is reflected in the increased percentage on time including through the addition of additional staff in the provisioning team; particularly the 67% to 80% on reconnection which is the highest volume activity. We accept that further work is required in this space, and we will continue to develop processes and controls to continue to increase our compliance in this space.	On-going	Identified
Preventative actions taken to ensure no further issues will occur	**Completion date**	

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. MEP nominations and decommissioned ICPs were examined.

Audit commentary

Retailers Responsibility to Nominate and Record MEP in the Registry

Review of the AC020 report confirmed that all active metered ICPs have an MEP and metering recorded.

No new connections occurred during the audit period, and Switch Utilities do not intend to complete any new connections in the future.

MEP nominations are processed at the time a service order for meter installation is raised, except where the change is a result of a bulk meter rollout, and the MEP nomination is raised on advice from the MEP.

All 979 MEP nominations issued were accepted. There is no process to identify rejected MEP nominations except where the MEP also emails Switch Utilities, and I recommend a process is developed.

Recommendation	Description	Audited party comment	Remedial action
Develop a MEP nomination rejection process	Develop a process to identify rejected MEP nominations so that they can be investigated and re-issued where necessary.	We agree with the Auditor recommendation and a work item has been raised with our development team to meet this recommendation.	Investigating

ICP Decommissioning

Switch Utilities continue with their obligations under this clause. ICPs that are vacant and active, or inactive are still maintained in the Energy Database.

As part of the decommissioning process, a field services job is raised for the MEP to remove their meter which serves as notification of decommissioning. Switch Utilities attempts to obtain a meter removal or disconnection reading to ensure that all consumption up to the point of decommissioning is captured and reported.

102 ICPs were decommissioned and dismantled during the audit period. I checked a diverse sample of ten ICPs covering different networks and confirmed Switch Utilities met their obligation to arrange a meter interrogation prior to or upon meter removal.

When calculating historic estimate, Switch Utilities uses shape values to apportion consumption to each day in the read-to-read period and omits consumption for inactive days from submission. It is expected that Switch Utilities will capture all of the consumption up to decommissioning by applying an actual disconnection, removal, or a permanent estimate reading on the last day that the ICP is active. If this read is missing, some consumption may be apportioned to inactive days and not reported. Non-compliance is recorded in **sections 2.1** and **12.7** for five ICPs which did not have boundary readings which captured consumption up to the point of decommissioning applied for reconciliation.

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 5 business days of trading (clause 9(2)).

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

Audit observation

The new connection process was discussed, and the registry list and audit compliance reports were examined to determine compliance. No new connections were completed during the audit period, and no new connections are intended to be completed in the future.

Audit commentary

New connection information timeliness

No new connections were completed during the audit period. The historic timeliness of status updates to "active" (for new connections) is set out on the table below.

Year	ICPs notified greater than 5 days	Percentage on time	Average Business Days between Status Event and Status Input Dates
2018	5	72%	11.2
2019	1	75%	4.25
Dec 2019	7	0%	49.57
Aug 2020	-	-	-
Jul 2021	-	-	-
Jul 2022	-	-	-

New connection information accuracy

The AC020 report did not identify any discrepancies between active status dates, MEP meter certification dates, and initial electrical connection dates.

All 18 ICPs at 1,12 "inactive - new connection in progress" status had an initial electrical connection date populated indicating that they may be connected.

- ICP 0007206951RN981 had a new connection completed by the previous trader, who processed a backdated update to "active" status during its period of supply after the ICP switched to Switch Utilities.
- The other 17 ICPs are not true new connections. They are part of a customer network dis-establishment and will move to "active" status once the customer network is decommissioned in September 2022.

Audit outcome

Compliant

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 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

ANZSIC codes are checked on application, and exception reports are generated by the Energy Database and reviewed monthly including:

- ICPs with a commercial price plan or "Ltd" or "Limited" in the customer's name with residential ANZSIC codes,
- ICPs which do not have a commercial price plan or "Ltd" or "Limited" in the customer's name with a non-residential ANZSIC code, and
- ICPs with T99 series ANZSIC codes.

The validity of ANZSIC codes was checked using the AC020 report:

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

To confirm the validity of the ANZSIC codes applied, I checked a diverse sample of 60 active ICPs across the ten most frequently applied ANZSIC codes. One ICP had an incorrect ANZSIC code applied and was corrected during the audit. The ICP switched in during 2016, and the previous two traders had also applied the A01 code in error.

Audit outcome

Non-compliant

Non-compliance	Description
Audit Ref: 3.6 With: Clause 9 (1(k) of Schedule 11.1 From: 14-Dec-16 To: 19-Aug-22	One ICP had an incorrect ANZSIC code, which was corrected during the audit. Potential impact: Low Actual impact: Low Audit history: Multiple times Controls: Strong Breach risk rating: 1
Audit risk rating	**Rationale for audit risk rating**
Low	The controls are strong because robust validation processes are in place. The ICP with an incorrect ANZSIC code was a commercial ICP with a commercial code and had not switched in during the audit period. There is no impact on other participants or settlement, but there is a minor impact on the Authority because this information is used for reporting. The ANZSIC code has been corrected.

Actions taken to resolve the issue	Completion date	Remedial action status
We have developed additional controls since the last audit to assist with the improvement of our compliance for new customers; and will continue to monitor and review the codes for our existing base.	Monitoring	Cleared
Preventative actions taken to ensure no further issues will occur	**Completion date**	

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:

- any ICPs where unmetered load is recorded by the distributor but not the trader, and
- any ICPs where the trader's unmetered load is not within ±0.1 kWh of the distributor's figure (where it is possible to calculate this if the distributor is using the recommended format).

Audit commentary

Daily unmetered kWh data is retrieved directly from the registry and imported into DART, which calculates the unmetered load submissions based on the daily unmetered kWh and number of days with "active" status. Unmetered load is not billed by Switch Utilities, and solely unmetered ICPs are not supplied. Registry notification files indicating changes to distributor unmetered load are imported into the Energy database.

Unmetered load is monitored through the following processes:

- **trader unmetered load** - a registry list of ICPs with the unmetered load flag set to Y is checked monthly, to ensure that the registry and Energy Database unmetered load details are correct and consistent,
- **distributor unmetered load without trader unmetered load** - a registry list is reviewed monthly to identify any ICPs where the distributor has recorded unmetered load, but the unmetered load flag is set to N, and
- **AC020 trader compliance report** - the AC020 trader compliance report is monitored weekly by the Head of Energy Compliance and exceptions are passed to the relevant teams for review.

27 ICPs have unmetered load indicated by the distributor. Six have shared unmetered load and 21 have standard unmetered load. The accuracy of unmetered load was assessed:

- two ICPs (0005700531RNF1C and 0005700558RNEBD) had unmetered load recorded by the distributor but not the trader since 27 June 2022 and I found that the notification file which contained the additions of unmetered load had not been added to the Energy database; both ICPs had their unmetered load details corrected during the audit and would have been identified through the next AC020 report review, or check of distributor unmetered load without trader unmetered load (this unmetered load details field was added to the monthly ICP mismatch validation which detects differences between the Energy Database and the registry to ensure prompt identification of future changes),
- the trader and distributor unmetered load values matched within ±0.1 kWh for all ICPs where this was possible to calculate,
- no ICPs have the unmetered flag set to Y with zero or blank daily unmetered kWh,
- no ICPs have unmetered load recorded by Switch Utilities but not the distributor, and
- there are no active unmetered builder's temporary supply ICPs.

Audit outcome

Compliant

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

Code reference

Clause 17 Schedule 11.1

Code related audit information

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

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

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

- *the ICP has only one customer, embedded generator, or direct purchaser (clause 17(2)(a))*

- *the electricity consumed is quantified by a metering installation or a method of calculation approved by the Authority (clause 17(2)(b)).*

Audit observation

The new connection processes were examined in detail as discussed in **sections 2.9** and **3.5**. No new connections were completed during the audit period.

The reconnection process was examined using the AC020 and event detail reports. The timeliness of data for reconnections is assessed in **section 3.3**, and a sample of 15 updates were checked for accuracy.

Audit commentary

Customer assignment and quantification of load

Switch Utilities' Energy Database will not allow more than one active customer per ICP for the same date range. Effective dates and expiry dates are used to record the period that a customer has responsibility for an ICP.

AC020 report did not record any active ICPs without metering. Unmetered load is quantified using the daily unmetered kWh recorded on the registry.

New connection information accuracy

The AC020 report did not identify any new connections or discrepancies between the active date, distributor's initial electrical connection date, and the MEP's certification date where these fields were populated.

All 18 ICPs at 1,12 "inactive - new connection in progress" status had an initial electrical connection date populated indicating that they may be connected. As discussed in **section 3.5**, one was a backdated new connection completed by the previous trader, and the other 17 are part of a customer network dis-establishment and will move to "active" status once the customer network is decommissioned in September 2022.

Reconnection information accuracy

The status, status reason code and event date are entered into the Electricity App once confirmation of the reconnection is received. This updates a staging table in the Energy Database and produces a registry notification. Once an acknowledgement file is received from the registry the Energy Database is updated to the new status. Acknowledgement failures are directed to the IT team for resolution, and the status recorded in the Energy Database is validated against the registry as described in **section 2.1**.

Reconnection service requests are managed using Zendesk and tracked by brand in a spreadsheet, which records the date the job was issued and who to, the date the job was completed, and when paperwork was received. The spreadsheet is reviewed daily and jobs which do not have receipt of paperwork recorded ten business days after the issue date are checked and followed up with the contractor if necessary.

A sample of 15 reconnections were checked to confirm that the correct status and date had been applied. The status updates were processed from the correct dates apart from ICP 0000336235WTAE5 which was corrected from 4 August 2021 to 3 August 2021 during the audit, and ICP 007186355RN110 which needs to have its reconnection date confirmed.

Recommendation	Description	Audited party comment	Remedial action
Confirm the reconnection date for 0007186355RN110	ICP 0007186355RN110 is believed to have been reconnected by Orion because only the network could access the box to reconnect. The ICP switched in on 2 February 2022 on an estimated reading of 255. Wells provided readings of 411 on 12 April 2022, and 676 on 13 June 2022. Wells completed a failed reconnection attempt on 9 February 2022 and because the 12 April 2022 read showed movement from the estimated switch in read, Switch Utilities assumed that the network reconnected the day after the Wells failure. The reconnection date should be confirmed and updated (if necessary) and a reconnection read should be entered.	We are continuing to investigate this discrepancy with the relevant contractors. We have contacted the prior retailer and confirmed it was disconnected by the prior supplier. We will continue to investigate; for the time being we believe that our estimated date is the most accurate available date based on the information we have available; but at this stage it remains unclear how this was reconnected and by whom.	Investigating

When calculating historic estimate, Switch Utilities uses shape values to apportion consumption to each day in the read-to-read period and omits consumption for inactive days from submission. If actual or permanent estimate reads are not entered as boundary readings for disconnection and reconnection, or if there is movement between disconnection and reconnection reads, some consumption may be apportioned to inactive days and not reported. For ICPs 0007186355RN110 reconnected 10 February 2022 and 0000105502UN82A reconnected 26 March 2022 reconnection readings were not recorded, and non-compliance is recorded in **sections 2.1** and **12.7**.

Audit outcome

Non-compliant

Non-compliance	Description
Audit Ref: 3.8 With: Clause 17 Schedule 11.1 From: 03-Aug-21 To: 04-Aug-21	0000336235WTAE5 had an incorrect reconnection date and was corrected during the audit. 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 rated as moderate because they are adequate to ensure that the registry is updated correctly almost all the time. The impact is low because there is one day difference, and no under submission.

Actions taken to resolve the issue	Completion date	Remedial action status
We have noted the auditors advice relating to the presence of boundary readings which can impact settlement. To assist in resolving this issue: 1. The new Reconciliation platform is designed in a way that volumes will be allocated to active days; whether or not there is boundary readings, in the scenarios where this is possible (we hold the ICP on either side of a disconnection period); 2. Increased diligence on the inactive with consumption reports we have developed; A new proposed development on the Registry Update interface to require a user to enter an actual reading; or a permanent estimate; along with a reason message if an actual reading cannot be supplied.	Completed	Cleared
Preventative actions taken to ensure no further issues will occur	**Completion date**	

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.

The timeliness of updates to inactive statuses is detailed in **section 3.3**.

Audit commentary

Inactive - new connection in progress status

No new connections were completed during the audit period, and Switch Utilities does not intend to complete any new connections.

All 18 ICPs at 1,12 “inactive - new connection in progress" status had an initial electrical connection date populated indicating that they may be connected. As discussed in **section 3.5**, one was a backdated new connection completed by the previous trader, and the other 17 are part of a customer network dis-establishment and will move to “active” status once the customer network is decommissioned in September 2022.

Other inactive statuses

Inactive status is only applied once a Switch Utilities approved contractor has confirmed that the ICP has been disconnected for situations where Switch Utilities requests the disconnection.

The status, status reason code and event date are entered into the Electricity App once confirmation of the disconnection is received. This updates a staging table in the Energy Database and produces a registry notification. Once an acknowledgement file is received from the registry the Energy Database is updated to the new status. Acknowledgement failures are directed to the IT team for resolution, and the status recorded in the Energy Database is validated against the registry as described in **section 2.1**.

Disconnection service requests are managed using Zendesk and tracked by brand in a spreadsheet, which records the date the job was issued and who to, the date the job was completed, and when paperwork was received. The spreadsheet is reviewed daily and jobs which do not have receipt of paperwork recorded ten business days after the issue date are checked and followed up with the contractor if necessary.

When calculating historic estimate, Switch Utilities uses shape values to apportion consumption to each day in the read-to-read period and omits consumption for inactive days from submission. If actual or permanent estimate reads are not entered as boundary readings for disconnection and reconnection, or if there is movement between disconnection and reconnection reads, some consumption may be apportioned to inactive days and not reported. Disconnection readings were not recorded for six out of 45 disconnected ICPs checked (including ten decommissioned ICPs) and non-compliance is recorded in **sections 2.1** and **12.7**.

I checked a sample of 35 disconnection updates including at least five to each status reason code to determine whether they were processed accurately. The disconnections were processed from the correct event date with the correct status reason code applied apart from ICPs 1002034872LC7B6, 0000233341MP8BB and 0000663477UNBAF which all had their disconnection event dates corrected during the audit. In all cases the originally entered date was within three days of the correct date.

Seven ICPs had “electrically disconnected remotely by AMI meter” where AMI metering is not recorded in the registry. All were confirmed to have had the AMI flag set to Y at the time of disconnection.

I rechecked the inaccurate disconnection status updates found in the previous audit and found they had been corrected, or could not be easily corrected, as they had switched out or been decommissioned.

Some late status updates to “inactive” status are recorded as non-compliance in **section 3.3**.

Inactive periods with consumption

Switch Utilities monitors inactive ICPs with potential consumption using the “disconnected ICPs with usage report” which is produced after business day 13 each month. Each ICP is checked to determine whether reconnection has occurred, and missing paperwork is followed up and processed. If self-reconnection or genuine consumption is detected during a period which is expected to be disconnected, the ICP’s status will be corrected to “active” for the affected days.

I checked 20 ICPs with suspected inactive consumption and found:

- 14 ICPs had been corrected to "active" status for all days with volumes through Switch Utilities review process,
- five ICPs did not have genuine consumption on inactive days and no correction was required, and
- ICP 0000041710TEB32 appears to have a misread on one meter register and is believed to still be disconnected; investigation is underway to confirm that the ICP is still disconnected.

Audit outcome

Non-compliant

Non-compliance	Description
Audit Ref: 3.9 With: Clause 19 Schedule 11.1 From: 22-Jan-22 To: 23-Feb-22	Three ICPs had incorrect status event dates which were corrected during the audit. Potential impact: Low Actual impact: Low Audit history: Three times Controls: Moderate Breach risk rating: 2
Audit risk rating	**Rationale for audit risk rating**
Low	The controls are recorded as moderate because they are sufficient to ensure that correct dates are applied most of the time. The audit risk rating is low because the originally entered dates were within three days of the correct date, and the errors were corrected. Revised submission information will be provided.

Actions taken to resolve the issue	Completion date	Remedial action status
We will continue to further improve the methods used by the Inactive with Consumption report to improve the reliability of this report with respect to "false positives" We have noted the auditors feedback regarding boundary readings and our new reconciliation platform has improved handling for this scenario as noted in 3.8 to reduce the dependence on boundary readings in most circumstances.	Completed – ref Material Change Audit	Cleared
Preventative actions taken to ensure no further issues will occur	**Completion date**	

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 what process is in place to manage and respond to such requests.

I analysed the registry list of ICPs with "new" or "ready" status.

Audit commentary

Switch Utilities has not completed any new connections during the audit period. When an application is made to a distributor for a new ICP, they contact Switch Utilities to accept responsibility if they are the chosen retailer. At this stage, Switch Utilities declines the application because they do not accept new connections.

Two ICPs have been at "ready" status since 13 December 2021. In both cases Switch Utilities rejected responsibility and the distributor advised that they would instruct the customer to choose a different retailer.

One ICP has been at "new" status since 1 October 2019 and Switch Utilities rejected responsibility and advised the distributor that they do not complete new connections.

Switch Utilities has also provided a general notification to their distributors advising that they do not complete new connections.

Following discussion during the audit, the Billing Analyst will add running a registry list with SWCH as the proposed trader and status 999 and 000 to the month end procedures. This will identify any new ICPs which have SWCH as the proposed trader, so that the network can be advised that Switch Utilities will not accept the ICP.

Audit outcome

Compliant

4. PERFORMING CUSTOMER AND EMBEDDED GENERATOR SWITCHING

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

Code reference

Clause 2 Schedule 11.3

Code related audit information

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

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

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

Audit observation

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

Audit commentary

Switch Utilities' processes are compliant with the requirements of Section 36M of the Fair Trading Act 1986. NT files are sent as soon as all pre-conditions are met, and a five day cool off period has passed. The withdrawal process is used if the customer changes their mind.

An online sign-up form is completed by the customer, or by one of Switch Utilities' customer service agents using information provided by the customer. The address is keyed in, and the user selects the correct address from a drop-down list of address matches from the registry which have non-pre-pay metering installed. Switch Utilities have found that customers may sometimes select the wrong address from the drop-down list (e.g., correct street address with the wrong region, or an incorrect unit number), which can lead to the incorrect ICP being requested and withdrawals being required.

The form retrieves the current registry data for the selected ICP using API and validates the network, MEP, and network price plan against a list of acceptable values to determine whether the ICP can be supplied. If there is no match to acceptable values an error will be displayed on the sign-up screen and the application will be referred to the pricing team for review. ANZSIC code, GXP, metering and unmetered load information are also retrieved and used for Switch Utilities' validation. I recommend that Switch Utilities consider displaying more registry information for the customer such as the ICP number and meter number, so that the customer can use it to confirm they have selected the correct ICP address.

Description	Recommendation	Audited party comment	Remedial action
ICP validation for new switch ins	To reduce the risk of users selecting the wrong ICP during the application process and the number of wrong premises withdrawals required, consider:	We have noted the auditors feedback, and are considering improvements that could be made to our website sign-up process to improve the	Investigating

Description	Recommendation	Audited party comment	Remedial action
	• displaying the ICP number and asking the applicant to validate it against their current invoice where possible and/or the meter if the ICP is recorded on it, and • displaying the meter number(s) and asking the applicant to validate it against the physical meter(s).	accuracy of customer ICP selection	

The application form asks whether the customer is transferring between retailers at their existing address or moving into a new address. This information determines the correct switch type, with transfer switch applied where a customer is transferring between retailers at an address. If a customer is adding electricity as a service to an address where they already receive other services, the process automatically recognises that the switch is a transfer.

NTs are issued through the Energy Database once the application has been approved and credit checks are complete.

Review of the event detail report found 9,191 transfer switch NTs were issued which were also present on the registry list with history. None had a metering category of three or above.

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

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 3 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 2 months.

Audit observation

The event detail reports were reviewed to:

- identify AN files issued by Switch Utilities 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 reports were examined for the audit period.

Audit commentary

AN content

AN files are generated by the Energy Database, and a hierarchy is used to determine the correct AN response code. The codes applied are based on customer and ICP information recorded in the Energy Database. I checked the accuracy of AN response codes for ICPs which also appeared on the registry list with history and found:

- 415 ANs had the AA (acknowledge and accept) response code which was correct for 414 ICPs but one ICP had unmetered load and should have had the MU (unmetered supply) code applied (Switch Utilities had believed that MU should only be applied for ICPs which are solely unmetered, and clarification was provided during the audit),
- 4,975 ANs had the AD (advanced metering) response code with 4,933 confirmed to have the correct code applied, but for 42 ANs the latest registry list record available indicated that an AMI meter was not present; I checked a sample of five of these and found that backdated metering updates had occurred and at the time the AN was generated AMI metering was present, and
- five ANs had the PD (premises electrically disconnected) response code and were disconnected at the time the AN was issued.

Description	Recommendation	Audited party comment	Remedial action
Application of the MU (unmetered supply) AN response code	The MU (unmetered supply) AN response code should be applied in preference to AA (acknowledge and accept) where the ICP's load is partially or solely unmetered.	We have noted the Authority/Auditor feedback relating to the use of the MU code, and will update our system to use the MU code for partially-unmetered ICPs. A work item has been raised with our development team to make this change.	Investigating

Event dates set by losing trader must be no more than 10 business days after receipt of an NT file. Over a 12-month period 50% of event dates must be within five business days. Transfer switch proposed event dates are selected by the Energy Database as the date the NT is received in the Energy Database – two days. The event detail report was reviewed for all 5,449 transfer ANs to assess compliance with the setting of event dates requirements:

- 5,448 ANs (99.98%) 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.

AN timeliness

ANs are generated automatically on receipt of the NT by the Energy Database. If an error or data inconsistency prevents the file from being generated, the Energy Database creates an exception, and the file will be checked and released by the IT Team. Since late 2021, the switch breach history report has

been automatically downloaded and imported into the Energy Database and used to create exceptions which are checked daily. Prior to this the switch breach history report was manually run and reviewed daily.

The switch breach history report recorded two late transfer AN files which were both one business day late. Exceptions had prevented the files from being generated automatically, and the files were manually released by the IT team one business day late.

Audit outcome

Non-compliant

Non-compliance	Description
Audit Ref: 4.2 With: Clauses 3 and 4 Schedule 11.3 From: 10-Sep-21 To: 10-Jun-22	One ICP with unmetered load had the AA (acknowledge and accept) response code applied instead of MU (unmetered supply). Two late AN files. Potential impact: Low Actual impact: Low Audit history: Twice previously Controls: Moderate Breach risk rating: 2
Audit risk rating	**Rationale for audit risk rating**
Low	The controls are rated as moderate and will improve to strong once the AN code selection logic is updated to apply MU instead of AA for partially unmetered ICPs. Almost all AN files are issued on time. The audit risk rating is low because only two AN files were sent one business day late, and unmetered load information was available to the other retailer on the registry for the two ICPs issued with AA instead of MU.

Actions taken to resolve the issue	Completion date	Remedial action status
We have noted the Authority/Auditor feedback relating to the use of the MU code, and will update our system to use the MU code for partially-unmetered ICPs. A work item has been raised with our development team to make this change.	Q4 2022	Investigating
Preventative actions taken to ensure no further issues will occur	**Completion date**	

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 5 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 reports were reviewed to identify CS files issued by Switch Utilities 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.

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 reports for the audit period were reviewed to identify late CS files.

Audit commentary

CS timeliness

CS files are automatically generated within five business days of the event date, unless an exception is identified and directed to a user via the Electricity App for resolution. Exceptions vary and include waiting for readings to be received or estimates to be generated, and metering data discrepancies. CS generation exceptions must be resolved by the IT team.

CS timeliness is managed using the Energy Database and its interface the Electricity App. Since late 2021, the switch breach history report has been automatically downloaded and imported into the Energy Database and used to create exceptions which are checked daily. Prior to this the switch breach history report was manually run and reviewed daily.

The switch breach report was reviewed and found:

- one E2 breach for a transfer switch which occurred because E2 breaches were not being monitored on the switch breach history report at the time the issue occurred (monitoring of E2 breaches now occurs daily), and
- 37 CS breaches for transfer switches, which were between one and 60 days overdue; I checked the ten latest files (18-60 days overdue) and found they occurred while the switch breach history report was being monitored manually before it started being imported into the Energy Database and creating exceptions in late 2021, and two of the exceptions also had meter data mismatches, which needed to be resolved before the CS files could be generated.

CS content

CS files are generated by the Energy Database, using its stored meter, reading, and consumption information. There is currently a defect in the process to select last actual read dates, which is separate to the process to retrieve other CS file data. In some cases, it is selecting the last read ever received for

the ICP, even if this is outside of the period of supply and in some cases, it is selecting earlier reads than the last actual reading. Switch Utilities is working on a system change which will ensure that last actual read dates are correctly recorded, and a material change audit will be completed before the change becomes live.

The Registry Functional Specification v22.21 states that average daily consumption within the CS file should be the average kWh per day for the last read period. The Energy Database calculates average daily consumption between the last two actual readings. Where no actual reads have been obtained the average daily kWh from the incoming CS file applies unless it is less than 8 kWh or more than 70 kWh, in these cases the closest value in the range 8-70 kWh is applied.

Analysis of estimated daily kWh provided in CS files on the event detail report identified:

- 11 transfer CS files with daily average kWh over 200 of which the five largest were checked; four were correct but ICP 0000213749UNFC9's average daily kWh was recorded as 2238 kWh because a misread which was not invalidated was included in the calculation - it should have been 2 kWh, but there was no impact on the CS event reading or reconciliation because the agreed switch reading was correct,
- 36 transfer CS files with daily average kWh of zero. Five were checked and confirmed to be correct, and
- no transfer CS files with negative average daily kWh.

I checked for consistency between the last actual read date, switch event date, and switch event read type for all 5,156 transfer CS files:

- 3,146 CS files had last actual read dates on the CS event date; I checked two and found the last actual read date was recorded as the last day which Switch Utilities held readings for, instead of the last day within the period of supply which Switch Utilities held readings for, and ICP 0007192721RN727 also had an incorrect switch event read type,
- 1,386 CS files had CS event dates more than one day after the last actual read date with actual reads; I checked five and found the last actual read dates were incorrectly recorded but all other information was correct,
- no CS files had last actual read dates the day before the event date with estimated reads,
- no CS files had CS event dates before the last actual read date, and
- no CS files had CSPREMISES lines only.

I checked the accuracy of a further three CS files selected at random and found that two had incorrect last actual read dates. All other CS content was correct.

All CS content exceptions identified are listed in the table below.

Exception type	Description
Incorrect last actual read date	0000140619UN3E5 (5 January 2022) 5 January 2022 should be 4 January 2022. 0007192721RN727 (18 August 2021) 18 August 2021 should be 17 August 2021. 1002079555LC394 (31 March 2022) 29 January 2021 should be 30 March 2022. 0150636024LCF91 (8 April 2022) 16 January 2019 should be 7 April 2021. 0411914103LC429 (22 April 2022) 17 April 2022 should be 21 April 2022. 0476352088LCD55 (17 June 2022) 30 April 2021 should be 16 June 2022. 0119975394LC06C (7 July 2022) 06 June 2019 should be 6 July 2022.
Incorrect read type	0007192721RN727 (18 August 2021) E should be A.

Exception type	Description
Incorrect average daily kWh	0000213749UNFC9 (5 April 2022) 2238 kWh should be 2 kWh.

Audit outcome

Non-compliant

Non-compliance	Description
Audit Ref: 4.3 With: Clause 5 of Schedule 11.3 From: 18-Aug-21 To: 07-Jul-22	One E2 breach. 37 CS breaches. Seven transfer CS files had incorrect last actual read dates. One transfer CS had an incorrect read type. One transfer CS had an incorrect average daily kWh. Potential impact: Medium Actual impact: Low Audit history: Multiple times Controls: Moderate Breach risk rating: 2
Audit risk rating	**Rationale for audit risk rating**
Low	The controls are recorded as moderate because most CS content was correct, including all critical fields used for customer billing and settlement. • The last actual read date field is used for determining how accurate estimates may be, by allowing the gaining trader to determine the period since a reading was last received. • The average daily kWh is used to give an indication of average daily consumption, and may be used as an input into calculating forward estimate by the gaining trader where readings are not received post switch in. • All switch event readings are treated as permanent by the reconciliation process, regardless of whether they are classified as actual or estimated. • Most CS files were issued on time, and monitoring and timeliness of files have improved since the breaches occurred. The audit risk rating is low, based on the fields affected and the potential impact that they have on customers, participants, and settlement.

Actions taken to resolve the issue	Completion date	Remedial action status
We have identified the code responsible for the faulty outcomes with respect to the last actual reading date and this defect fix is included within our material change audit; along with the reconciliation system replacement.	Material change audit underway with Auditor	Identified

Preventative actions taken to ensure no further issues will occur	Completion date	
We noted the auditor's commentary through the audit relating to other late files, which predominantly related to delays when an escalation to Technology team did not have a timely resolution. As we already monitor the breach report, we believe improvement in compliance can be achieved by escalating errors earlier. We have also added an additional resource into the Energy Platform Team (Technology) to assist with managing any escalations for switching related errors. We are further considering what other system related developments could be added, to improve the automated handling of unusual edge/case scenarios or other control reporting.		

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 4 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 2 validated meter readings.

- *the losing trader can choose not to accept the reading, however, must advise the gaining trader no later than 5 business days after receiving the switch event meter reading from the gaining trader (clause 6A(a)); or*
- *if the losing trader notifies its acceptance or does not provide any response, the losing trader must use the switch event meter reading supplied by the gaining trader (clause 6A(b)).*

Audit observation

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

The event detail report was 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 Switch Utilities' systems 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 Switch Utilities' systems.

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

Audit commentary

When a high or low read is identified through the read validation process for a new switch in, the ICP is investigated to determine whether a read change is required. Switch Utilities will issue an RR file once they have obtained readings which confirm that the difference between the event reading and expected reading on the event date is more than ±200 kWh. Users enter the proposed replacement reading and read type into the "create replacement read" screen in the Energy App, to produce an RR file. When an AC file is returned, the Energy Database will automatically update the switch event readings if the RR is accepted.

RR files received from other traders are displayed in the Electricity App work queue. The user selects accept or reject in the "replacement read requests" screen of the Electricity App to produce an AC file. If the RR is accepted the process will also automatically update the readings to match the request.

Timeliness is also monitored using the switch breach history report. Since late 2021, the switch breach history report has been automatically downloaded and imported into the Energy Database and used to create exceptions which are checked daily. Prior to this the switch breach history report was manually run and reviewed daily.

RR

Switch Utilities issued 98 RR files for transfer switches. 26 were rejected and 72 were accepted. A sample of ten RRs were checked, including five rejected files. In all cases there was a genuine reason for Switch Utilities' RR, the file content was accurate, the files were supported by two validated actual reads, and the reads recorded in Switch Utilities' systems reflected the outcome of the RR process.

Three RR breaches were listed on the switch breach history report, and the files were 122-189 business days overdue. The late files were caused by delays in obtaining actual readings to support the RR files.

AC

Switch Utilities issued 66 AC files for transfer switches. 53 were accepted and 13 were rejected. Four of the rejected files were issued by traders within five business days of the CS file where they indicated they would use HHR profile, in all cases the CS file contained actual reads. I checked a sample of five rejections and five accepted files. In all cases the agreed switch readings were recorded in Switch Utilities' systems and the rejections were for valid reasons.

Two AC breaches were listed on the switch breach history report, which were one and six business days late. One was resolved one business day late after being identified on the switch breach history report. The incoming RR for ICP 0000456665UN554 was unable to be processed in the Energy Database because there was a difference between the meter serial number recorded in the CS file (CS-3608216 meter 213573441) and RR file (RR-173029 meter 250283458) due to a backdated meter change processed on the same day that the CS file was issued. Switch Utilities issued a withdrawal for metering issues and re-switched the ICP with the correct metering details, instead of providing a response to the RR.

Incoming CS files with estimated reads and no RR

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

Audit outcome

Non-compliant

Non-compliance	Description
Audit Ref: 4.4 With: Clause 6(1) and 6A Schedule 11.3 From: 03-Nov-21 To: 13-Jun-22	Three RR breaches. Two AC breaches. Potential impact: Low Actual impact: Low Audit history: Multiple times Controls: Moderate Breach risk rating: 2
Audit risk rating	**Rationale for audit risk rating**
Low	The controls are recorded as moderate because most files are issued on time. The impact is low because a small number of files were late, and the delays were minor.

Actions taken to resolve the issue	Completion date	Remedial action status
We have continued to develop our read attainment processes over the last audit period, including adding additional staff member to focus on this process. We will focus on additional activity to improve early-ownership read attainment for legacy sites to reduce the frequency of delayed RRs. We have improved our monitoring for registry breaches, and expect to see continued improvement in this area.	Completed	Identified
Preventative actions taken to ensure no further issues will occur	**Completion date**	

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 5 business days after receiving final information from the registry manager, may provide the losing trader with a switch event meter reading from that meter. The losing trader must use that switch event meter reading.*

Audit observation

The event detail report for the period from 1 August 2021 to 11 July 2022 was reviewed to identify all read change requests and acknowledgements where clause 6(2) and (3) of schedule 11.3 applied.

Audit commentary

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

Review of the event detail report found 24 RR files were issued to Switch Utilities within five business days of switch completion by traders using a half hour profile. Of those, 20 were accepted and four were rejected. The rejections were valid because the CS files recorded actual event reads.

Audit outcome

Compliant

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

Code reference

Clause 7 Schedule 11.3

Code related audit information

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

Audit observation

Disputes were discussed with Switch Utilities.

Audit commentary

Switch Utilities 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 2 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 Switch Utilities deem all conditions to be met. A typical sample of five ICPs were checked to confirm that these were notified to the registry within two business days, and that the correct switch type was selected.

Audit commentary

Switch Utilities' processes are compliant with the requirements of Section 36M of the Fair Trading Act 1986. NT files are sent as soon as all pre-conditions are met, and a five day cool off period has passed. The withdrawal process is used if the customer changes their mind.

An online sign-up form is completed by the customer, or by one of Switch Utilities' customer service agents using information provided by the customer following the process documented in **section 4.1**. NTs are issued through the Energy Database once the application has been approved and credit checks are complete, and the switch type is determined from the application responses on whether the customer is transferring between retailers at their existing address or moving in.

Review of the event detail report found 8,713 transfer switch NTs were issued which were also present on the registry list with history. None had a metering category of three or above.

The five NT files checked had the correct switch type selected. All five NT files were sent more than five business days after pre-conditions were originally cleared and had been re-issued following the completion of withdrawals. Compliance is recorded in this section because the original NTs were issued on time and based on the application information provided.

Audit outcome

Compliant

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

Code reference

Clause 10(1) Schedule 11.3

Code related audit information

10(1) Within 5 business days after receiving notice of a switch move request from the registry manager—

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

Audit observation

The event detail reports were reviewed to:

- identify AN files issued by Switch Utilities 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 reports were examined for the audit period.

Audit commentary

AN content

AN files are generated by the Energy Database, and a hierarchy is used to determine the correct AN response code. The codes applied are based on customer and ICP information recorded in the Energy Database. I checked the accuracy of AN response codes for ICPs which also appeared on the registry list with history and found:

- 513 ANs had the AA (acknowledge and accept) response code which was correct for 507 ICPs and six indicated unmetered load and should have had the MU (unmetered supply) code applied (Switch Utilities had believed that MU should only be applied for ICPs which are solely unmetered and a recommendation to resolve this is raised in **section 4.2**),
- 7,314 ANs had the AD (advanced metering) response code of which 7,238 were confirmed to have the correct code applied, but for 76 ANs the latest registry list record available indicated that an AMI meter was not present; I checked a sample of five of these and found that backdated metering updates had occurred and at the time the AN was generated AMI metering was present, and
- 226 ANs had the PD (premises electrically disconnected) response code and were disconnected at the time the AN was issued.

The Energy Database applies the NT proposed event date as the AN proposed event date for switch moves. The event detail report was reviewed for all 8,159 switch move ANs to assess compliance with the setting of event dates requirements. All proposed AN dates matched the gaining trader's requested date and were within ten business days of NT receipt.

AN and CS timeliness

AN and CS files are generated automatically by the Energy Database. If an error or data inconsistency prevents the file from being generated the Energy Database creates an exception and the file will be checked and released by the IT Team.

Since late 2021, the switch breach history report has been automatically downloaded and imported into the Energy Database and used to create exceptions which are checked daily. Prior to this the switch breach history report was manually run and reviewed daily.

The switch breach report was reviewed and found:

- 29 T2 breaches for switch moves of which 28 were three or less days overdue and one was eight days overdue; I checked the five latest files and found exceptions had prevented the files from being generated automatically, and the files were manually released by the IT team - two of the ICPs had metering mismatches where either no metering was present on the registry, or an upgrade was in progress delaying switch completion, and
- three AN breaches for switch moves, which were two or less days overdue - exceptions had prevented the files from being generated automatically, and the files were manually released by the IT team.

Audit outcome

Non-compliant

Non-compliance	Description
Audit Ref: 4.8 With: Clause 10(1) Schedule 11.3 From: 09-Aug-21 To: 05-Jul-22	29 T2 breaches for switch moves. Three AN breaches for switch moves. Six ICPs with unmetered load had the AA (acknowledge and accept) response code applied instead of MU (unmetered supply). Potential impact: Low Actual impact: Low Audit history: Multiple times Controls: Moderate Breach risk rating: 2
Audit risk rating	**Rationale for audit risk rating**
Low	The controls are rated as moderate and will improve to strong once the AN code selection logic is updated to apply MU instead of AA for partially unmetered ICPs. Most AN and CS files are issued on time. The audit risk rating is low because the late AN and CS files were generally issued close to the due date, and unmetered load information was available to the other retailer on the registry for the three ICPs issued with AA instead of MU.

Actions taken to resolve the issue	Completion date	Remedial action status
The MU code selection will be addressed through material change as noted in other sections. We have reinforced to the relevant teams the importance of clearing exceptions early to avoid late-resolved CS file generation and will continue to monitor internally our compliance on file timing.	Q4 2022 including material change audit	Identified
Preventative actions taken to ensure no further issues will occur	**Completion date**	

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 subclause (1)(a):

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

Audit observation

The event detail report was reviewed to identify AN files issued by Switch Utilities during the audit period, and assess compliance with the requirement to meet the setting of event dates requirement. The switch breach history report was reviewed.

Audit commentary

Analysis found all switch move ANs had a valid switch response code, and a proposed event date consistent with the gaining trader's requested date. Switches were completed as required by this clause.

Audit outcome

Compliant

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

Code reference

Clause 11 Schedule 11.3

Code related audit information

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

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

Audit observation

The event detail reports were reviewed to identify CS files issued by Switch Utilities 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

CS files are generated by the Energy Database, using its stored meter, reading, and consumption information. There is currently a defect in the process to select last actual read dates, which is separate to the process to retrieve other CS file data. In some cases, it is selecting the last read ever received for the ICP, even if this is outside of the period of supply and in some cases, it is selecting earlier reads than the last actual reading. Switch Utilities is working on a system change which will ensure that last actual read dates are correctly recorded, and a material change audit will be completed before the change becomes live.

The Registry Functional Specification v22.21 states that average daily consumption within the CS file should be the average kWh per day for the last read period. The Energy Database calculates average daily consumption between the last two actual readings. Where no actual reads have been obtained

the average daily kWh from the incoming CS file applies unless it is less than 8 kWh or more than 70 kWh, in these cases the closest value in the range 8-70 kWh is applied.

The analysis of estimated daily kWh provided in CS files on the event detail report identified:

- 16 switch move CS files with daily average kWh over 200; the five largest were checked and four were correct but ICP 0000371346TUB89's average daily kWh was recorded as 2,599 kWh because a misread which was not invalidated was included in the calculation (there was no impact on the CS event reading or reconciliation because the agreed switch reading was correct),
- 1,532 switch move CS files with daily average kWh of zero; I checked a sample of five ICPs and confirmed the values were correct, and
- no switch move CS files with negative average daily kWh.

I checked for consistency between the last actual read date, switch event date, and switch event read type for all 8,056 switch move CS files:

- 217 CS files had CS event dates before the last actual read date. I checked three and found the last actual read date was recorded as the last day which Switch Utilities held readings for, instead of the last day within the period of supply which Switch Utilities held readings for. The other information in the CS files was correct, apart from one average daily kWh.
- 519 CS files had last actual read dates on the CS event date. I checked two and found the last actual read date was recorded as the last day which Switch Utilities held readings for, instead of the last day within the period of supply which Switch Utilities held readings for. The other information in the CS files was correct.
- 45 CS files had last actual read dates the day before the event date with estimated reads. I checked five and found the last actual read date was incorrectly recorded. The other information in the CS files was correct apart from 0422283185LC8DB which had an incorrect average daily kWh.
- 954 CS files had CS event dates more than one day after the last actual read date with actual reads. I checked five and found the last actual read dates were incorrectly recorded and all other information was correct.
- Two CS files had CSPREMISES lines only, both had HHR metering with the AMI flag set to no.

I checked the accuracy of a further three CS files selected at random and found that two had incorrect last actual read dates. All other CS content was correct.

All CS content exceptions identified are listed in the table below.

Exception type	Description
Incorrect last actual read date	0000216972UN7CE (19 August 2021) 21 August 2021 should be 18 August 2021. 0007188684RNDD2 (9 September 2021) 26 September 2021 should be 8 September 2021. 0799643913LC859 (19 August 2021) 16 August 2021 should be 20 July 2021. 0000613178UNBCD (25 May 2022) 20 May 2022 should be 19 May 2022. 0000074952TR983 (23 May 2022) 23 May 2022 should be 22 April 2022. 0000123715UN947 (16 February 2022) 15 February 2022 should be 18 January 2022. 0000175300UN410 (22 April 2022) 21 April 2022 should be 11 April 2022. 0000520580TU85C (8 June 2022) 7 June 2022 should be 22 May 2022. 0422283185LC8DB (1 July 2022) 30 June 2022 no reads during period of supply, switched in 30 June 2022. 0141277181LC47D (11 November 2022) 10 November 2022 should be 28 October 2022.

Exception type	Description
	0000504502DE23A (21 December 2021) 17 December 2021 should be 20 December 2021. 1000022316BP693 (3 March 2022) 27 October 2018 should be 2 March 2022. 0000637049UN639 (26 February 2022) 16 January 2022 should be 25 February 2022. 0001002364PC480 (6 April 2022) 1 March 2022 should be 5 April 2022. 0000033913EAA69 (19 June 2022) 1 August 2021 should be 18 June 2022. 0000012535TR02D (22 October 2021) 1 August 2021 should be 21 October 2021. 0000085305TR277 (8 September 2021) 8 September 2021 should be 7 September 2021.
Incorrect average daily kWh	0799643913LC859 (19 August 2021) 3 kWh should be 0 kWh 0422283185LC8DB (1 July 2022) 8 kWh, no reads during the period of supply and the incoming CS contained zero. 8 kWh was applied because the incoming CS value did not fall within the expected range of 8-70 kWh. 0000371346TUB89 (17 February 2022) was incorrectly recorded as 2599 kWh because a misread was included in the calculation.

Audit outcome

Non-compliant

Non-compliance	Description
Audit Ref: 4.10 With: Clause 11 of Schedule 11.3 From: 19-Aug-21 To: 01-Jul-22	17 switch move CS files had incorrect last actual read dates. Three switch move CS files had an incorrect average daily kWh. Potential impact: Medium Actual impact: Low Audit history: Multiple times Controls: Moderate Breach risk rating: 2
Audit risk rating	**Rationale for audit risk rating**
Low	The controls are recorded as moderate because most CS content was correct, including all critical fields used for customer billing and settlement. • The last actual read date field is used for determining how accurate estimates may be, by allowing the gaining trader to determine the period since a reading was last received. • The average daily kWh is used to give an indication of average daily consumption, and may be used as an input into calculating forward estimate by the gaining trader where readings are not received post switch in. The audit risk rating is low, based on the fields affected and the potential impact that they have on customers, participants, and settlement.

Actions taken to resolve the issue	Completion date	Remedial action status
We are addressing the issue relating to defective last actual reading dates in the material change audit which is currently underway. A work item has been raised which will support avoiding defective average daily consumptions due to mis-readings where the validation error needs to be addressed.	Material change audit underway with Auditor.	Identified
Preventative actions taken to ensure no further issues will occur	**Completion date**	

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 4 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 2 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 5 business days after receiving final information from the registry manager, may provide the losing trader with a switch event meter reading from that meter. The losing trader must use that switch event meter reading (clause 12(2B)).*

Audit observation

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

The event detail report was 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 Switch Utilities' systems 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 Switch Utilities' systems.

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

Audit commentary

When a high or low read is identified through the read validation process for a new switch in, the ICP is investigated to determine whether a read change is required. Switch Utilities will issue an RR file once they have obtained readings which confirm that the difference between the event reading and expected reading on the event date is more than ±200 kWh. Users enter the proposed replacement reading and read type into the "create replacement read" screen in the Energy App, to produce an RR file. When an AC file is returned, the Energy Database will automatically update the switch event readings if the RR is accepted.

RR files received from other traders are displayed in the Electricity App work queue. The user selects accept or reject in the "replacement read requests" screen of the Electricity App to produce an AC file. If the RR is accepted the process will also automatically update the readings to match the request.

Timeliness is also monitored using the switch breach history report. Since late 2021, the switch breach history report has been automatically downloaded and imported into the Energy Database and used to create exceptions which are checked daily. Prior to this the switch breach history report was manually run and reviewed daily.

RR

Switch Utilities issued 228 RR files for switch moves. 76 were rejected and 152 were accepted. A sample of ten RRs were checked, including five rejected files. In all cases there was a genuine reason for Switch Utilities' RR, the file content was accurate, the files were supported by two validated actual reads, and the reads recorded in Switch Utilities' systems reflected the outcome of the RR process.

20 RR breaches were listed on the switch breach history report. I checked the five latest and found they were caused by delays in obtaining actual readings to support the RR files, or while investigation occurred to determine whether the meter reader's readings were correct in the case of transposed readings being supplied in the other trader's CS file.

AC

Switch Utilities issued 1,143 AC files for switch moves. 17 were rejected and 128 were accepted. I checked a sample of five acceptances and five rejections. 0030362342PC792 had a reading of 30326 (E) applied for 6 September 2021, instead of the agreed switch reading of 30285 (E). The incorrect reading was applied because the AC was processed manually in the registry because an error prevented it being issued by the Energy Database, and a ticket was not raised for the reads to be updated as part of the manual process. The reading was corrected during the audit and revised volume information will be provided through the revision process, and non-compliance is recorded in **sections 2.1** and **3.7**. In all other cases, the agreed switch readings were recorded in Switch Utilities' systems. The rejections were for valid reasons.

Two AC breaches were listed on the switch breach history report. Both were resolved one business day late after being identified on the switch breach history report.

Incoming CS files with estimated reads and no RR

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

Audit outcome

Non-compliant

Non-compliance	Description
Audit Ref: 4.11 With: Clause 12 of Schedule 11.3 From: 14-Dec-21 To: 07-Jul-22	20 RR breaches. Two AC breaches. Potential impact: Low Actual impact: Low Audit history: Multiple times Controls: Moderate Breach risk rating: 2
Audit risk rating	**Rationale for audit risk rating**
Low	The controls are recorded as moderate because most files are issued on time, and the incorrectly applied reading was an isolated incident. The impact on settlement and participants is minor and the audit risk rating is low.

Actions taken to resolve the issue	Completion date	Remedial action status
Refer to commentary under 4.4		Identified
Preventative actions taken to ensure no further issues will occur	**Completion date**	

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

Code reference

Clause 14 Schedule 11.3

Code related audit information

The gaining trader switch process applies when a trader has an arrangement with a customer or embedded generator to trade electricity at an ICP at which the losing trader trades electricity with the customer or embedded generator, and one of the following applies at the ICP:

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

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

A gaining trader must advise the registry manager of the switch and expected event date no later than 3 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 Switch Utilities deem all conditions to be met. The event detail report was reviewed to identify any HH NTs and confirm whether any ICPs with meter categories 3 or higher were requested as TR or MI switches.

Audit commentary

NTs are created using the Energy Database. Application details including the ICP, price plan, switch type, proposed transfer date and proposed ANZSIC code are entered into the "create switch request" screen within the Energy Database and submitted by the user to create the NT request.

Switch Utilities did not issue any HH NTs during the audit period. No switch move or transfer switch NT files had a metering category of 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

The event detail report was reviewed to identify HH AN files issued by Switch Utilities during the audit period. The switch breach history report was examined for the audit period.

Audit commentary

HH AN files are generated by the Energy Database, and a user triggers their release. The proposed event date, and response code are selected by the user for HH switches.

Two HH AN files were issued during the audit period, and both had the AA (acknowledge and accept) response code applied. 0140244034LC7F1 (AN-7299952 1 March 2022) had an AMI meter, and the AD (advanced metering) response code should have been applied. The other AN had the correct response code.

The switch breach history report is monitored daily to identify HH AN files which are due. The switch breach history report did not identify any HH AN breaches.

Audit outcome

Non-compliant

Non-compliance	Description
Audit Ref: 4.13 With: Clause 15 Schedule 11.3 From: 01-Mar-22 To: 01-Mar-22	0140244034LC7F1 (AN-7299952 1 March 2022) had the AA response code applied but should have had AD. 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 strong, users are aware of the rules for selecting an AN response code, but an incorrect code was applied accidentally. The impact is low because one ICP was affected, and metering information was available on the registry.

Actions taken to resolve the issue	Completion date	Remedial action status
This error was made due to human error on selection; and given we have very few half hourly sites it is unlikely to recur.	No further action required	Identified
Preventative actions taken to ensure no further issues will occur	**Completion date**	

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 3 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 5 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 event detail report was reviewed to identify CS files issued by Switch Utilities during the audit period. The switch breach history report was examined for the audit period.

Audit commentary

HH AN files are generated by the Energy Database, and a user triggers their release. There were no HH CS files sent during the audit period.

The switch breach history report is monitored daily to identify HH CS files which are due. The switch breach history report did not identify any HH CS breaches.

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 2 calendar months after the event date of the switch.

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

- *for each ICP, the trader withdrawing the switch request must provide the registry manager with (clause 18(c)):*
  - *the participant identifier of the trader making the withdrawal request (clause 18(c)(i)); and*
  - *the withdrawal advisory code published by the Authority (clause 18(c)(ii))*
- *within 5 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

The event detail reports were reviewed to:

- identify all switch withdrawal requests issued by Switch Utilities and check a sample of NWs for each trader code, and
- identify all switch withdrawal acknowledgements issued by Switch Utilities and check a sample of NWs for each trader code.

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

Audit commentary

NW and AW files are issued from the Energy Database, and users provide the information necessary to complete the process using the Electricity App. Workflows are managed within the Energy Database and Electricity App. Correspondence with other traders regarding withdrawals is managed using Zendesk.

NW

135 (8.5%) of the 1,584 NWs issued were rejected. I checked a sample of at least two NWs issued with each advisory code. The NW codes were correctly applied apart from 0006101178RN4E5 NW-1043185 and 0000111978UND8B NW-1055376 which did not have proposed event dates more than ten business days in the future and had the DF (date failed) advisory code. CE (customer error) should have been applied.

The switch breach history report recorded eight SR breaches and 65 NA breaches.

I checked the five latest SR breaches for withdrawal processes not resolved within ten business days. The breaches were caused by multiple withdrawals, delays in resolving disagreements with other traders for "wrong premises" withdrawals, and delays in receiving AW rejections from other traders before a new NW could be issued.

I reviewed the 65 NA breaches where the NW was not sent within two calendar months of the CS transfer:

NW code	Count of NWs	Count of ICPs	Minimum days overdue	Average days overdue	Maximum days overdue
WP	45	44	60	106.4	215
CX	11	10	60	104.6	168
CE	5	5	104	132.6	188
DF	2	2	99	101	103
MI	2	2	75	111	147
Total	**65**	**64**	**60**	**108.1**	**215**

I checked the ten latest files and found they:

- were subsequent withdrawals where multiple withdrawals were required,

- were delayed by late notification from the customer that a withdrawal was required,
- required investigation to confirm the withdrawal, and
- required negotiations with the other trader where they disputed the need for a withdrawal.

45 of the 65 late withdrawals occurred where Switch Utilities had requested the wrong property initially, usually because the customer had selected the wrong ICP during the application process (e.g., selecting the correct street address but wrong town, or an incorrect unit number where there are multiple units). A recommendation is made in **section 4.1** to reduce the risk of customers selecting the wrong ICP during the application process and the number of wrong premises withdrawals required.

AW

93 (3.5%) of the 2,643 AWs issued by Switch Utilities were rejections. I reviewed a sample of 12 rejections by Switch Utilities including two for each withdrawal reason code, and confirmed they were rejected based the information available at the time the response was issued.

The switch breach report recorded two AW breaches, where the files were one day overdue. One was sent late because a staff member was on leave, and another was delayed as an internal transfer between brands was in progress at the time the NW was received. Intervention by the IT team was required before the AW could be issued.

Audit outcome

Non-compliant

Non-compliance	Description
Audit Ref: 4.15 With: Clauses 17 and 18 of Schedule 11.3 From: 05-Nov-21 To: 08-Jul-22	0006101178RN4E5 NW-1043185 and 0000111978UND8B NW-1055376 had the DF (date failed) advisory code applied instead of CE (customer error). Eight SR breaches. 65 NA breaches. Two AW breaches. Potential impact: Low Actual impact: Low Audit history: Multiple times Controls: Moderate Breach risk rating: 2
Audit risk rating	**Rationale for audit risk rating**
Low	The controls are recorded as moderate because they ensure that correct advisory codes are applied most of the time, and most withdrawals and responses are issued on time. The audit risk rating is low because the impact on settlement and participants is minor. Withdrawals are issued as soon as possible once Switch Utilities confirms that a withdrawal is required and has agreement from the other trader.

Actions taken to resolve the issue	Completion date	Remedial action status
We accept that there is opportunity for improvement on the speed at which withdrawals are processed, especially in the	Under Review	Investigating

case of back-dated move switches where due to the event date reference in the code any withdrawal will result in a non-compliance as soon as the switch completes. We have noted the auditors feedback on improvements to the sign up form, and we will consider how best to apply this feedback in future revisions of the website.		
Preventative actions taken to ensure no further issues will occur	**Completion date**	

4.16. Metering information (Clause 21 Schedule 11.3)

Code reference

Clause 21 Schedule 11.3

Code related audit information

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

> *21(a)- the trader who carries out the interrogation, switch event meter reading must ensure that the interrogation is as accurate as possible, or that the switch event meter reading is fair and reasonable.*
>
> *21(b) and (c) - the cost of every interrogation or switch event meter reading carried out in accordance with clauses 5(b) or 11(b) or (c) must be met by the losing trader. The costs in every other case must be met by the gaining trader.*

Audit observation

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

Audit commentary

The reads applied in switching files were examined in **section 4.3** for standard switches, **section 4.10** for switch moves, and **sections 4.4** and **4.11** for read changes. The meter readings used in the switching process are predominantly validated meter readings or permanent estimates, and no incorrect read values were identified in the files checked.

Switch Utilities' policy regarding the management of meter reading expenses is compliant.

Audit outcome

Compliant

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

Code reference

Clause 11.15AA to 11.15AC

Code related audit information

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

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

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

Audit observation

Win-back processes were discussed. The event detail report was analysed to identify all withdrawn switches with a CX code applied within 180 days of switch completion post 31 March 2020. A sample were checked to determine compliance.

Audit commentary

Switch Utilities has a customer retention team who contact the customer to verify that they wish to switch out when a switch request is received and advise of contract termination fees (if any). They do not complete win-backs, and do not offer any enticements to electricity customers who are switching out.

Alerts are added to the accounts of ICP losses warning against attempting to win back the customer until a specified date which is 180 days after switch completion.

36 NWs with the CX (customer cancellation) withdrawal reason code were issued within 180 days of switch completion during the audit period. Five were rejected by the other trader. One was accepted on reissue with the same advisory code, one was accepted on reissue with WP (wrong premises) and three were not reissued. I checked a sample of ten including the rejected NWs and found that win-backs were not initiated by Switch Utilities.

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 list and AC020 report were reviewed to identify any ICPs with shared unmetered load.

Audit commentary

Switch Utilities supplies six active ICPs with shared unmetered load. For four ICPs the trader and distributor unmetered load values matched within ±0.1 kWh, and the other two ICPs (0005700531RNF1C and 0005700558RNEBD) had unmetered load recorded by the distributor but not the trader. I found that the notification file which contained the additions of unmetered load had not been added to the Energy database. Both ICPs had their unmetered load details corrected during the audit and would have been identified through the next AC020 report review or check of distributor unmetered load without trader unmetered load. The unmetered load details field was added to the monthly ICP mismatch validation which detects differences between the Energy Database and the registry to ensure prompt identification of future changes.

The process to monitor existing ICPs for addition of unmetered load is discussed in **section 3.7**.

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 trader compliance report was examined to identify all unmetered load over 3,000 kWh per annum.

Audit commentary

No ICPs with unmetered load over 3,000 kWh per annum are supplied.

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:*
    - *the date the limit was calculated or estimated to have been exceeded*
    - *the details of the corrective measures that the retailer proposes to take or is taking to reduce the unmetered load.*

Audit observation

The AC020 trader compliance report was examined to identify all unmetered load over 3,000 kWh per annum.

Audit commentary

No ICPs with unmetered load over 3,000 kWh per annum are supplied.

Audit outcome

Compliant

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

The registry list was examined to identify any ICPs with distributed unmetered load.

Audit commentary

There are no distributed unmetered load ICPs.

Audit outcome

Compliant

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 for metering, submission, and distributed generation were reviewed. The registry list and AC020 report were examined to determine compliance.

Audit commentary

Metering installations installed

All active, metered ICPs have an MEP, and at least one meter channel. No new connections were completed during the audit period, and no ICPs have submission information determined by subtraction.

Distributed generation

Switch Utilities supplies 16 active ICPs with distributed generation recorded by the distributor.

Currently, Switch Utilities declines applications for distributed generation and usually requires customers who wish to install generation to switch to another retailer. Generation metering will only be installed where the distributor requires it, otherwise any generated energy is gifted.

As part of the reconciliation process, the Billing Analyst runs a query to identify any ICPs with installation type B. If an EG meter register is present, a script is run to update the profile to PV1 for the affected meter registers. If an EG meter is not present, the Billing Analyst checks whether notice of gifting has been provided to the reconciliation manager. If no notice has been provided previously, the reconciliation manager is notified.

The accuracy of distributed generation information was checked using the AC020 and registry list reports:

- where PV1 or EG1 profiles were applied, they were consistent with the distributor's fuel type,
- all ICPs which had generation indicated by the distributor and I flow metering had a generation compatible profile recorded,

- eight ICPs have generation recorded by the distributor without I flow metering, or a generation compatible profile recorded; notification of gifting had been provided for seven ICPs, and 0000163355UNC76 is currently being investigated to determine whether generation is present, and
- five ICPs have generation profiles and I flow metering, but no generation recorded by the distributor; all five were confirmed to be generating, and ICP 0000218987UN256 incorrectly had an installation type of L recorded by the network (the query used to select ICPs with potential generation will be expanded to include ICPs with generation profiles where the distributor has recorded installation type L).

Recommendation	Description	Audited party comment	Remedial action
Identification of ICPs with distributed generation	Expand the query to identify ICPs with distributed generation which may require notifications of gifting to include ICPs with installation type L and generation metering.	We believe that the issue with "L" type installations with EG metering will instead be resolved by the new non-half hourly reconciliation system which completely automates the profile selection for EG metering. We note however that it is possible for a site to have an "L" type network load profile; no EG metering, but a "generation" type populated and will add this to our control report.	Identified

Bridged meters

I checked all 27 meters which were indicated to be bridged during the audit period. One was confirmed not to be bridged when the field service job to unbridge the meter was completed. Energy was not quantified in accordance with the code during the bridged periods. I checked nine examples of bridged meters and confirmed that consumption was appropriately estimated for the bridged period.

Audit outcome

Non-compliant

Non-compliance	Description
Audit Ref: 6.1 With: Clause 10.13, Clause 10.24 and 15.13 From: 21-May-21 To: 22-Aug-22	26 bridged meters were identified during the audit period. Energy was not quantified in accordance with the code during the bridged periods. Potential impact: Medium Actual impact: Low Audit history: Multiple times Controls: Strong Breach risk rating: 1

Audit risk rating	Rationale for audit risk rating
Low	The controls are recorded as strong because energy was quantified through the correction process, although it was not measured by the meter as required by the code. The impact on settlement and participants is estimated to be low because consumption was appropriately estimated.

Actions taken to resolve the issue	Completion date	Remedial action status
We note that our process now complies to the maximum extent possible where there is bridged meters by estimating in all cases. We will consider whether there is any process changes which could be made to avoid bridging meters as part of a reconnection through consultation with MEPs. To our knowledge no bridged sites had missing permanent estimates.	Completed	Identified
Preventative actions taken to ensure no further issues will occur	**Completion date**	

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 3 months for the grid owner to review and comment on the design*
- *respond within 3 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.

Audit commentary

Review of the NSP table confirmed that Switch Utilities is not responsible for any GIPs.

Audit outcome

Not applicable

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 reports were reviewed to determine compliance.

Audit commentary

Switch Utilities has only used the HHR, PV1, and RPS profiles. Control devices are not used for reconciliation purposes.

Audit outcome

Compliant

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

Code reference

Clause 10.43(2) and (3)

Code related audit information

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

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

Audit observation

Processes relating to defective metering were examined, and examples of defective meters were reviewed.

Audit commentary

Defective meters are typically identified through the meter reading validation process, or from information provided by the MEP or customer. Upon identifying a possible defective meter, Switch Utilities raises a field services job to investigate.

Nine examples of potentially defective meters and 26 examples of bridged meters were provided and reviewed. In all cases the MEP was notified of the fault by Switch Utilities.

No defective HHR meters were identified during the audit period.

Audit outcome

Compliant

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

Code reference

Clause 2 Schedule 15.2

Code related audit information

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

2(2) - The reconciliation participant must collect raw meter data used to determine volume information from the services interface or the metering installation or from the MEP.

2(3) - The reconciliation participant must ensure the interrogation cycle is such that is does not exceed the maximum interrogation cycle in the registry.

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

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

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

2(6) – The interrogation systems must record:

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

Audit observation

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

All HHR data is collected by EDMI and AMS. Switch Utilities receives AMI data from meter readings from AMS (for AMS and Smartco), Arc, BOPE, FCLM, Intellihub (for Intellihub and Metrix), and WASN as MEPs, and all other meters are read manually by Wells.

Audit commentary

All information used to determine volume information is collected from the services interface or the metering installation by Switch Utilities' agents, or the MEP. Fulfilment of the interrogation systems requirements, and clock synchronisation was examined as part of the MEP and agent audits and found to be compliant.

MEPs and agents advise Switch Utilities of clock synchronisation events, usually through emails to Switch Utilities' shared field services inbox. The emails are reviewed by the team member responsible for each

brand and action is taken as requested. I reviewed examples of these notifications and did not find any examples where action was required to be taken.

Audit outcome

Compliant

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

The data collection process was examined.

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

Processes for customer and photo reads were reviewed.

Audit commentary

Wells readings

Compliance is recorded in Wells' audit report.

During manual interrogation, the meter register value is collected and entered into a hand-held device. This reading enters Switch Utilities' systems and is labelled as a reading, which denotes that it is a meter reading collected and validated by a meter reader.

Wells monitors meter condition as required by schedule 15.2 and provides information on meter condition along with the daily reads, and monthly summary report containing missing seal and broken seal events. This meter condition information is imported into the Energy Database and each month a query is run to return notes with key words indicating that a meter condition event has occurred. During the audit the list was expanded to include further keywords to ensure that no events are missed.

The ICPs with notes containing the specified key words are exported to Excel where the report is reviewed to determine any action required. These are then forwarded to the appropriate team for resolution by email. I reviewed the events and found that almost all were meter changes, and dial differences which

were timing issues. One faulty meter was identified but due to a backdated switch fell outside Switch Utilities' period of supply and the information was passed to the new trader, and jobs were raised to replace two meters which had blank screens.

I checked a sample of readings provided by Wells and confirmed that they were recorded in the Energy Database, validated, and transferred to DART for use in the submission calculation process.

Customer and customer photo readings

Where a customer provides a read to Wells it is recorded in the notes field, and no read is provided in the reading field. Following an issue two years ago where some customer readings were recorded as ordinary readings by Wells, Switch Utilities runs a query to identify Wells readings recorded as "OR" ordinary reads where the notes indicate that that the read may have been provided by the customer using a keyword search. No customer readings were found to be recorded as ordinary readings during the audit period.

Customer readings are provided by the customer through the "my self service portal" or to one of Switch Utilities customer service agents who enter the reads into the Energy Database. The customer reads undergo the NHH read validation process. All customer readings including photos are recorded as CR (customer readings) in the Energy Database, and I confirmed that they are not used by DART to calculate historic estimate. I checked a sample of ten customer readings to confirm the process.

Audit outcome

Compliant

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

Code reference

Clause 6 Schedule 15.2

Code related audit information

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

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

Audit observation

The process of the application of meter readings was examined.

Audit commentary

NHH readings apply from 0000hrs on the day after the last meter interrogation up to and including 2400hrs on the day of the meter interrogation except in the case of a switch event meter reading. Switch event meter readings apply 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. Manual readings taken by Wells are applied correctly.

Application of reads was reviewed as part of the historic estimate checks in **section 12.11** and found to be compliant. The content of CS and RR files was examined in **sections 4.3**, **4.4**, **4.10** and **4.11**, and switch event readings were found to be correctly applied.

I walked through the process for NHH to HHR and HHR to NHH meter changes. The industry has adopted a process that achieves accuracy in relation to submission information and ICP days, but compliance with this clause is not achieved.

- For upgrades, the process is to "remove" the NHH meter from the registry and Energy Database on the day before the meter change, and then the ICP becomes HHR all day on the day of the meter change, with the trading periods up until the meter change being populated with zeros.
- The reverse applies for downgrades, with the ICP treated as HHR all day on the date of the removal, with zeros populated until the end of the day and the NHH meter installed the following day.

Both a NHH and HHR meter cannot be "present" on the same day in the registry. Compliance is recorded because no upgrades or downgrades occurred during the audit period.

Audit outcome

Compliant

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

Code reference

Clause 7(1) and (2) Schedule 15.2

Code related audit information

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

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

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

Audit observation

The process to manage missed reads was reviewed. Reporting on ICPs not read during the period of supply was examined.

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".

43,377 (93.9%) of Switch Utilities' 46,174 active NHH settled ICPs have AMI or HHR metering installed. Most meters receive regular readings and read attainment levels are high.

The process for missed reads was examined.

- Unread AMI ICPs are automatically moved to a Wells meter reading route after 40 days without an actual reading. If AMI readings are received while the ICP is on a Wells route, they will

continue to be imported into the Energy Database and validated readings will continue to be transferred to DART.

- If a manual ICP is unable to be read, the meter reader will leave a card. The exception to this where the meter reader is unable to locate the property.
- A no reads report is worked on daily, by a dedicated full time staff member. Wells no read reasons are recorded on the report along with any findings and a follow-up date. Generally, Switch Utilities will contact the customer to try to resolve the issues preventing readings and arrange for Wells to complete a special read. Persistent issues are escalated to the tier two customer team or complaints team for resolution.
- A report of unread ICPs is generated after business day 13 each month. The Billing Analyst also monitors compliance with the meter read attainment requirements and raises tickets via Zendesk for the provisioning team for any ICPs which are close to breaching the 12-month threshold and require urgent action.
- A new "Loss switches with no actual reads" exception report has been created in the Energy Database, which is intended to become live in the near future. This report will enable staff to attempt to obtain an actual reading before the switch. If an actual reading is not received until after the switch is complete, the reading will be compared to the switch event reading once it is received to determine whether an RR is required.

Switch Utilities provided a report of 127 ICPs not read during the period of supply, where the period of supply ended 1 August 2021 and 30 June 2022. 79 of the ICPs were supplied for less than 30 days and 111 were supplied for less than 100 days. I checked the five ICPs with the longest periods of supply, and five ICPs with periods of supply from 30-100 days. I found:

- four ICPs were vacant or disconnected, and there was no customer for Switch Utilities to contact,
- two ICPs met the best endeavours requirement, and
- four ICPs did not meet the best endeavours requirements, reads were attempted, and cards were left but no other attempts to contact the customer or resolve the issues were made; the ICPs were supplied for 30-40 days.

Audit outcome

Non-compliant

Non-compliance	Description
Audit Ref: 6.8 With: Clause 7(1) and (2) of Schedule 15.2 From: 01-May-21 To: 15-Jul-21	The best endeavours requirements were not met for four ICPs unread during the period of supply where the period of supply was 30-40 days. Potential impact: Low Actual impact: Low Audit history: Multiple times Controls: Strong Breach risk rating: 1
Audit risk rating	**Rationale for audit risk rating**
Low	The controls are now recorded as strong, the non-compliances occurred prior to having a dedicated staff member working to resolve read attainment issues every day. It is expected that the best endeavours requirements will usually be met in the future unless the period of supply is very short. The impact is assessed to be low because the ICPs were supplied for 30-40 days.

Actions taken to resolve the issue	Completion date	Remedial action status
We have focused significantly on improving our compliance since the last audit, including the allocation of a dedicated resource to management of read attainment.	Completed	Identified
Preventative actions taken to ensure no further issues will occur	**Completion date**	
There are a small number of sites with very short periods of ownership where readings were not able to be obtained. To assist in improving this compliance, we have implemented a switching validation which triggers an alert when a switch loss is received on a site not having had a reading, so that the matter can be investigated, and an attempt to obtain a reading can be made if necessary (and if not timely, once the reading is obtained we can share it with the new supplier to enable early identification of any issue that might impact the transfer reading and allow for an RR to be processed).	Completed	

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 December 2021 to April 2022 were provided and reviewed to determine whether they met the requirements of clauses 8 and 9 of schedule 15.2.

Ten ICPs unread in the previous 12 months were reviewed to determine whether exceptional circumstances existed.

Audit commentary

The monthly meter reading reports provided were reviewed.

Month	Total NSPs where ICPs were supplied > 12 months	NSPs <100% read	ICPs unread for 12 months	Overall percentage read
Dec-21	204	15	18	99.96%
Jan-22	204	12	18	99.96%

Month	Total NSPs where ICPs were supplied > 12 months	NSPs <100% read	ICPs unread for 12 months	Overall percentage read
Feb-22	205	12	20	99.95%
Mar-22	204	13	16	99.96%
Apr-22	203	12	16	99.96%

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

I checked ten ICPs unread in the previous 12 months and found that in all cases the best endeavours requirements were met, or the ICP was vacant and there was no customer for Switch Utilities to contact.

I reviewed meter reading reports for December 2021 to April 2022 and confirmed that they met the meter reading frequency report requirements and were submitted on time.

Audit outcome

Compliant

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

Code reference

Clause 9(1) and (2) Schedule 15.2

Code related audit information

In relation to each NSP, each reconciliation participant must ensure that for each NHH ICP at which the reconciliation participant trades continuously for each 4 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 December 2021 to April 2022 were reviewed.

The two unread ICPs on NSPs where less than 90% read attainment was achieved in the previous four months on the April 2022 report were reviewed to determine whether exceptional circumstances existed.

Audit commentary

The monthly meter reading reports provided were reviewed.

Month	Total NSPs where ICPs were supplied > 4 months	NSPs <90% read	Total ICPs unread for 4 months	Overall percentage read
Dec-21	204	2	267	99.35%
Jan-22	204	2	201	99.52%
Feb-22	205	1	220	99.48%
Mar-22	204	2	141	99.68%
Apr-22	203	2	149	99.67%

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

All unread ICPs on the NSPs where less than 90% read attainment was achieved in the previous four months on the April 2022 report were reviewed and I found that the best endeavours requirements were met, or the ICP was vacant and there was no customer for Switch Utilities to contact.

Audit outcome

Compliant

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

Code reference

Clause 10 Schedule 15.2

Code related audit information

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

10(a) - the means to establish the identity of the individual meter reader
10(b) - the ICP identifier of the ICP, and the meter and register identification
10(c) - the method being used for the interrogation and the device ID of equipment being used for interrogation of the meter.
10(d) - the date and time of the meter interrogation.

Audit observation

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

Audit commentary

Compliance with this clause has been demonstrated by Switch Utilities' agents 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

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

Audit commentary

Compliance with this clause has been demonstrated by AMS and EDMI as part of their agent audits.

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

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

Audit commentary

Compliance with this clause has been demonstrated by AMS and EDMI as part of their agent audits.

Audit outcome

Compliant

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

Code reference

Clause 11(3) Schedule 15.2

Code related audit information

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

11(3)(a)- the date of interrogation
11(3)(b)- the time of commencement of interrogation
11(3)(c)- the operator identification (if available)
11(3)(d)- the unique identifier of the meter or data storage device
11(3)(e)- the clock errors outside the range specified in Table 1 of clause 2
11(3)(f)- the method of interrogation
11(3)(g)- the identifier of the reading device used for interrogation (if applicable).

Audit observation

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

Audit commentary

Compliance with this clause has been demonstrated by AMS and EDMI as part of their agent audits.

Audit outcome

Compliant

7. STORING RAW METER DATA

7.1. Trading period duration (Clause 13 Schedule 15.2)

Code reference

Clause 13 Schedule 15.2

Code related audit information

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

Audit observation

All HHR data is collected by AMS and EDMI. Trading period duration was reviewed as part of their agent audits.

Audit commentary

Compliance with this clause has been demonstrated by AMS and EDMI as part of their agent audits.

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. The oldest raw meter data available was viewed, to confirm it is retained. Audit trails were reviewed in **section 2.4**.

Audit commentary

HHR

Compliance with this clause has been demonstrated by AMS and EDMI as part of their agent audits.

NHH

Compliance with this clause has been demonstrated by Wells as part of their agent audit.

Raw reading data is retained indefinitely, and raw data from 2017 was viewed during the audit. Review of audit trails in **section 2.4** confirmed that reads cannot be modified without an audit trail being created. Access to modify readings is restricted through log on privileges.

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

Switch Utilities does not deal with any non-metering information.

Audit commentary

Switch Utilities does not deal with any non-metering information.

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 read validation a check reading will be performed for manually read meters, or AMI readings for surrounding days will be checked. If an original meter reading cannot be validated it will be recorded as an unvalidated reading, and ignored by the switching, billing, and reconciliation processes.

If a transposed meter is identified, a correction is processed to move the readings to the correct meter register. Two recent examples of transposed meters were reviewed and were corrected compliantly.

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

Processes for the correction of HHR meter readings were reviewed.

Audit commentary

Processes for correction of HHR meter readings were reviewed. The correction process is compliant, and estimates are created according to the process described in **section 9.4**.

No corrections occurred for metering errors during the audit period, and Switch Utilities confirmed that AMS did not conduct any HHR corrections on their behalf during the audit period.

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

The physical meter location point is not specifically mentioned in Switch Utilities' standard terms and conditions, but the existing practices in the electrical industry achieve compliance.

Audit commentary

Switch Utilities supplies 11 ICPs with metering category 3 or above and is not responsible for any metering installations with loss compensation factors.

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**.

Raw meter data retention for MEPs and agents was reviewed as part of their own audits.

Audit commentary

Raw meter data is held by the MEPs and agents. Compliance was confirmed as part of their agent and MEP audits.

Switch Utilities only corrects working data and keeps an appropriate audit trail.

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 Switch Utilities' 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 2.1, 8.1, 8.2** and **9.4**.

Audit commentary

All estimated readings are clearly identified as required by this clause, including HHR estimates, which are flagged with an "E" at trading period level. Compliance with this clause has been demonstrated by AMS and EDMI as part of their agent audits.

Photo and customer readings are recorded as "CR" customer readings and are not used to calculate historic estimate.

I checked the classification of a sample of readings by tracing readings from the source files provided by agents and MEPs to systems, checking readings in a sample of CS and RR files, and checking readings applied during disconnection and reconnection processes. I identified one switch event read which was incorrectly classified:

Exception type	Description	Report section
Incorrect CS event read type	0007192721RN727 (18/08/21) E should be A	4.3

All readings checked in other sections were correctly identified.

Audit outcome

Non-compliant

Non-compliance	Description
Audit Ref: 9.1 With: Clause 5 of Schedule 11.3 From: 18-Aug-21 To: 18-Aug-21	One transfer CS had an incorrect read type. Potential impact: Medium Actual impact: Low Audit history: None Controls: Strong Breach risk rating: 1

Audit risk rating	Rationale for audit risk rating
Low	The controls are recorded as strong because most readings were correctly classified. The audit risk rating is low, because the reading was correct, and all switch event readings are treated as permanent by the reconciliation process.

Actions taken to resolve the issue	Completion date	Remedial action status
We believe this was a one-off exception.	Resolved	Identified
Preventative actions taken to ensure no further issues will occur	**Completion date**	

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 **section 12**, to confirm that volume was based on readings as required.

Audit commentary

The MEP or agent retains raw, unrounded data. Compliance was demonstrated by Switch Utilities' MEPs and agents during their own audits.

To confirm that meter reading data is not rounded before the point of submission, I traced:

- readings for a diverse sample of 18 ICPs from the source files to the Energy Database,
- volumes to DRS/MDMS and the HHR aggregates submissions for a diverse sample of six ICPs including all MEPs, and
- data for four category 3 and 4 ICPs from the source files to DRS/MDMS and submission information.

All of the readings checked were correctly recorded, classified, and not rounded until the point of submission.

Audit outcome

Compliant

9.4. Half hour estimates (Clause 15 Schedule 15.2)

Code reference

Clause 15 Schedule 15.2

Code related audit information

If a reconciliation participant is unable to interrogate an electronically interrogated metering installation before the deadline for providing submission information, the submission to the reconciliation manager must be the reconciliation participant's best estimate of the quantity of electricity that was purchased or sold in each trading period during any applicable consumption period for that metering installation.

The reconciliation participant must use reasonable endeavours to ensure that estimated submission information is within the percentage specified by the Authority.

Audit observation

Processes for the estimation of HHR meter readings were reviewed.

Audit commentary

Missing data is identified by DRS/MDMS. Missing trading period data is identified by running the HHR aggregates report. If any trading period data is missing the report will produce an extra line for the ICP with a NULL kWh value. The Billing Analyst will view the data in the system to determine which trading periods are missing and follow up with the MEP or agent.

If actual data is not provided prior to the submission deadline, estimates are created using the best available information and uploaded into DRS/MDMS. Readings surrounding the missing trading periods are typically not available, and consumption is estimated based on a similar trading period (usually the same calendar day and trading period for the previous month). The process does not take into account public holidays, weekdays, and weekends. If prior month data is not available, estimates will be based on earlier data (with seasonal shaping applied at the Billing Analysts discretion) or an equivalent ICP.

Recommendation	Description	Audited party comment	Remedial action
Consider public holidays, weekdays and weekends	Consider public holidays, weekdays and weekends when calculating estimates	We agree with the auditors recommendation and are implementing this change as part	Investigating

Recommendation	Description	Audited party comment	Remedial action
when calculating estimates	rather than using the same calendar day of the previous month to estimate consumption.	of the platform migration which will have a material change audit completed.	

If actual data for the estimated period is received at a later date, it will be imported into the Energy Database and replace the estimated data.

Estimates provided by Metrix are not used, and AMS and EDMI did not provide any estimated HHR data.

There were two examples of estimates during the audit period, both were based on the previous month's consumption and later replaced with actual readings. The reasonable endeavours requirements were met.

Audit outcome

Compliant

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

Code reference

Clause 16 Schedule 15.2

Code related audit information

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

> *16(2)(a) - confirmation that the meter reading or estimated reading relates to the correct ICP, meter, and register*
>
> *16(2)(b) - checks for invalid dates and times*
>
> *16(2)(c) - confirmation that the meter reading or estimated reading lies within an acceptable range compared with the expected pattern, previous pattern, or trend*
>
> *16(2)(d) - confirmation that there is no obvious corruption of the data, including unexpected 0 values.*

Audit observation

I reviewed and observed the NHH data validation process, including checking a sample of data validations and validation parameters within the Energy Database.

Audit commentary

NHH data is validated by several processes.

Meter reader validation

Compliance is recorded in Wells' audit report. For meters read by Wells, a localised validation occurs at the hand-held device to ensure the reading is within expected high/low parameters. Readings which fail this validation are required to be re-entered, and if the two readings are the same the second reading will be accepted. If the second reading is different (potentially indicating the first reading was incorrect) then the second reading is required to be re-entered. Wells also provide meter condition information, as discussed in **section 6.6.**

Switch Utilities validation

The Energy Database performs validation against the previous validated reads for the meter register. If there is no previous validated read, reads are compared to the switch in read or opening reads, which are treated as validated for this purpose.

The read import process confirms that readings relate to a valid ICP meter and register which is supplied by Switch Utilities, and that the date and time are as expected.

The following validations are performed by the Energy Database.

1. The Missing meter readings process identifies any ICPs that do not have a switch event reading as their first reading. Switch Utilities no longer completes new connections, and all initial readings for an ICP are expected to be switch in readings.
2. ICPs with negative consumption between a switch gain reading and the next reading are identified. If the difference is more than -200 kWh it is referred to the provisioning team to determine whether a read renegotiation is required via a Zendesk ticket, otherwise the exception is accepted.
3. Negative consumption between two readings, where the previous reading is not a switch gain reading is identified. If the exception has been caused by a meter roll over a ticket is raised for the IT team to correct the data.
4. Where multiple readings occur on the same day, the second and subsequent readings fail validation and are checked to determine the correct reading for the day.
5. Material changes to consumption over ±300 kWh and ±50% compared to the last read period are identified for review.
6. The exceptional differences screen in the Energy Database identifies consumption anomalies for recent switch ins and shows differences between the CS reading and first actual reading over ± 200 kWh. The provisioning team reviews the exceptions to identify ICPs which potentially require RRs once another read is obtained to support the RR being issued.

Stopped and faulty meters

Potentially stopped or faulty meters are checked monthly as part of the pre reconciliation submission checks described in **section 12.3**. ICPs with less than 3 kWh of consumption are extracted from the ICP level submission information and checked against a list of vacant ICPs to determine whether they are vacant, and zero consumption is expected. ICPs which are not vacant are checked, focussing on ICPs which have been active for the most ICP days in the reconciliation period.

Vacant and disconnected ICPs

Vacant ICPs are recorded in the Energy Database under the "vacant" brand, and the normal validation process applies. When an ICPs becomes vacant, Switch Utilities tries to contact the occupant to arrange for them to sign up with Switch Utilities or switch to an alternative retailer. Vacant disconnections are on hold, while Switch Utilities reviews its disconnection processes to ensure compliance with its customer care obligations.

A report of "inactive" ICPs with consumption is reviewed daily. Consumption is investigated to determine whether it is genuine. If genuine the ICP will be moved to "active" status for the consumption period, and another disconnection will be arranged if necessary. Acknowledging the exception removes it from the exception list.

Controlled load greater than uncontrolled load

A report showing ICPs with controlled load greater than uncontrolled load is available and reviewed periodically by the provisioning team. ICPs are reviewed to determine whether the consumption is valid, including contacting the customer where necessary. Switch Utilities has found that many of the

ICPs which appear on the report do not have consumption issues and is investigating updating the report to look at consumption over a longer period of time.

Pre submission checks

Reconciliation submissions are also reviewed prior to submission including identification of ICPs with zero consumption, this process is discussed in **section 12.3**.

Audit outcome

Compliant

9.6. Electronic meter readings and estimated readings (Clause 17 Schedule 15.2)

Code reference

Clause 17 Schedule 15.2

Code related audit information

Each validity check of electronically interrogated meter readings and estimate readings must be at a frequency that will allow a further interrogation of the data storage device before the data is overwritten within the data storage device and before this data can be used for any purpose under the Code.

Each validity check of a meter reading obtained by electronic interrogation, or an estimated reading must include:

17(4)(a) - checks for missing data

17(4)(b) - checks for invalid dates and times

17(4)(c) - checks of unexpected 0 values

17(4)(d) - comparison with expected or previous flow patterns

17(4)(e) - comparisons of meter readings with data on any data storage device registers that are available

17(4)(f) - a review of the meter and data storage device event log for any event that could have affected the integrity of metering data

17(4)(g) – a review of the relevant metering data where there is an event that could have affected the integrity of the metering data

If there is an event that could affect the integrity of the metering data (including events reported by MEPs but excluding where the MEP is responsible for investigating and remediating the event) the reconciliation must investigate and remediate any events.

If the event may affect the integrity or operation of the metering installation the reconciliation participant must notify the metering equipment provider.

Audit observation

I reviewed the HHR and AMI data validation processes, including meter event logs and validation checks.

Audit commentary

Electronic data used to determine volume information is provided by MEPs, and AMS and EDMI as agents. This function was examined as part of the MEP and agent audits and found to be compliant.

HHR

HHR data is imported into DRS/MDMS. As part of the process the data is mapped to the correct ICP meter and register number. If there is no match, the data is not imported into DRS/MDMS.

Missing data is identified by DRS/MDMS. Missing trading period data is identified by running the HHR aggregates report. If any trading period data is missing the report will produce an extra line for the ICP with a NULL kWh value. The Billing Analyst will view the data in the system to determine which trading periods are missing and follow up with the MEP or agent. If actual data is not provided prior to the submission deadline, estimates are created using the best available information as described in **section 9.4** and uploaded into DRS/MDMS.

The HHR aggregates files are checked at ICP-NSP-flow direction level against the previous month's submission for initial submission and the previous revisions for revision submissions. Highs, lows, zeros and large kWh and percentage differences are investigated. This check identifies unexpected patterns and periods with zero consumption.

AMS and EDMI provide information on HHR meter events, and none were identified during the audit period. Only 11 ICPs with metering category three or higher are supplied.

NHH

Switch Utilities receives AMI data from meter readings from AMS (for AMS and Smartco), Arc, BOPE, FCLM, Intellihub (for Intellihub and Metrix), and WASN as MEPs, and all other meters are read manually. NHH data is validated as described in **section 9.5**.

AMI event information is provided by MEPs. Where action is required, the MEP usually emails the Switch Utilities' shared field services inbox. The emails are reviewed by the team member responsible for each brand and action is taken as requested.

This clause requires that all events that could affect the integrity of the metering data must be checked. Switch Utilities does not receive and investigate the complete event list; therefore, some events are not reviewed, specifically the tamper event.

Audit outcome

Non-compliant

Non-compliance	Description
Audit Ref: 9.6 With: Clause 17 Schedule 15.2 From: 01-Oct-20 To: 19-Aug-22	Not all events in the event log are reviewed. Potential impact: Low Actual impact: Low Audit history: None Controls: Strong Breach risk rating: 1
Audit risk rating	**Rationale for audit risk rating**
Low	The controls are recorded as strong because they mitigate risk to an acceptable level. The only relevant event not reviewed is the tamper event and there is checking of low consumption to identify potential tampering. The audit risk rating is low because the impact on settlement and participants is expected to be minor.

Actions taken to resolve the issue	Completion date	Remedial action status
We have noted the auditors feedback and a development item has been raised to further enhance event log monitoring controls	TBC	Investigating
Preventative actions taken to ensure no further issues will occur	**Completion date**	

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

The NSP table on the registry was reviewed.

Audit commentary

Switch Utilities is not responsible for any NSPs. No information is provided to the grid owner in accordance with this clause.

Audit outcome

Not applicable

10.2. Unoffered & intermittent generation provision of metering information (Clause 13.137)

Code reference

Clause 13.137

Code related audit information

Each generator must provide the 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

The NSP table on the registry was reviewed.

Audit commentary

Switch Utilities is not responsible for any NSPs. No information is provided to the grid owner in accordance with this clause.

Audit outcome

Not applicable

10.3. Loss adjustment of HHR metering information (Clause 13.138)

Code reference

Clause 13.138

Code related audit information

The generator must provide the information required by clauses 13.136 and 13.137,

13.138(1)(a)- adjusted for losses (if any) relative to the grid injection point or, for embedded generators the grid exit point, at which it offered the electricity

13.138(1)(b)- in the manner and form that the pricing manager stipulates

13.138(1)(c)- by 0500 hours on a trading day for each trading period of the previous trading day.

The generator must provide the half-hour metering information required under this clause in accordance with the requirements of Part 15 for the collection of the generator's volume information.

Audit observation

The NSP table on the registry was reviewed.

Audit commentary

Switch Utilities is not responsible for any NSPs. No information is provided to the grid owner in accordance with this clause.

Audit outcome

Not applicable

10.4. Notification of the provision of HHR metering information (Clause 13.140)

Code reference

Clause 13.140

Code related audit information

If the generator provides half-hourly metering information to a grid owner under clauses 13.136 to 13.138, or 13.138A, it must also, by 0500 hours of that day, advise the relevant grid owner.

Audit observation

The NSP table on the registry was reviewed.

Audit commentary

Switch Utilities is not responsible for any NSPs. No information is provided to the grid owner in accordance with this clause.

Audit outcome

Not applicable

11. PROVISION OF SUBMISSION INFORMATION FOR RECONCILIATION

11.1. Buying and selling notifications (Clause 15.3)

Code reference

Clause 15.3

Code related audit information

Unless an embedded generator has given a notification in respect of the point of connection under clause 15.3, a trader must give notice to the reconciliation manager if it is to commence or cease trading electricity at a point of connection using a profile with a profile code other than HHR, RPS, UML, EG1, or PV1 at least five business days before commencing or ceasing trader.

The notification must comply with any procedures or requirements specified by the reconciliation manager.

Audit observation

The registry list was reviewed. I checked whether any breach allegations had been made in relation to buying and selling notifications.

Audit commentary

No trading notifications were required during the audit period. Switch Utilities has only used the HHR, PV1, and RPS profiles, and trading notifications are not required.

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 the GR100 reports.

Alleged breaches were reviewed to determine whether any submissions were made late.

Audit commentary

A registry list with history is imported into DART (for NHH ICPs) and DRS/MDMS (for HHR ICPs). The status and ICP information on the registry list are used to determine the correct aggregation factors and the active ICP days which volume and ICP days submissions are to be provided for.

NHH and HHR ICP days are included in the same report. The process for the calculation of ICP days was examined by checking all 16 NSPs with HHR ICPs and 100 NSPs with a small number of NHH ICPs on the May 2022 revision one submission. There were two NSP differences that did not relate to timing:

- BUEL-ORO1102 had two active ICP days excluded from submission for ICPs 0003443905BU715 and 0004458718BUAC9 which were both supplied for one day (31 May 2022).
- LINE-TKU0331 had five active ICP days excluded from submission for ICPs 0001110722WM214, 0005206081WMAB7, 0005206121WMBAC, 0052069643WM9BC and 0053069600WM160 which were all supplied for one day (31 May 2022).

Where ICPs are supplied for only one day or only have an opening reading recorded, forward estimate is calculated but the process does not count the first day of supply. This results in one day of consumption and one ICP day being omitted from submissions. If supply continues, the issue will be resolved once an actual reading is received and historic estimate is calculated. A new NHH reconciliation system is to be implemented, and this issue will be resolved as part of this.

The following table shows the ICP days difference between Switch Utilities' database and the RM return file (GR100) for 21 months. The differences were small and decreased to zero for later revisions.

Month	Ri	R1	R3	R7	R14
Sep 2020	0.00%	0.04%	0.00%	0.01%	0.00%
Oct 2020	0.02%	0.01%	0.01%	0.00%	0.00%
Nov 2020	0.00%	0.02%	0.00%	-0.01%	0.00%
Dec 2020	0.01%	0.00%	-0.01%	0.00%	0.00%
Jan 2021	0.05%	0.01%	0.01%	0.00%	0.00%
Feb 2021	0.04%	0.00%	0.00%	0.00%	0.00%
Mar 2021	0.05%	0.01%	-0.01%	0.00%	0.00%
Apr 2021	0.00%	0.03%	-0.01%	0.00%	-
May 2021	0.02%	-0.01%	0.00%	0.00%	-
Jun 2021	-0.01%	0.00%	-0.01%	0.00%	-
Jul 2021	0.01%	0.00%	0.00%	0.00%	
Aug 2021	-0.01%	-0.01%	0.00%	0.01%	

Month	Ri	R1	R3	R7	R14
Sep 2021	0.01%	0.01%	0.00%	0.00%	
Oct 2021	0.00%	0.01%	0.00%	0.00%	
Nov 2021	0.01%	-0.02%	0.00%	0.00%	
Dec 2021	0.02%	0.01%	0.00%	-	
Jan 2022	0.03%	-0.03%	0.00%	-	
Feb 2022	0.00%	0.01%	0.00%	-	
Mar 2022	0.00%	0.02%	0.01%	-	
Apr 2022	0.00%	0.00%	-	-	
May 2022	0.04%	0.02%	-	-	

I reviewed all ICP days differences which remained for R14 and five differences that remained at r7 and found they were caused by:

- ICPs supplied for one day, including VECT-PEN0331 ICP 1001284522LC7AC, POCO-CST0331 ICP 1000556474PC3FE and POCO-BPE0331 ICP 0000042311CP74B for February 2021 revision 14,
- CKHK-CPK0331 ICP 1001147153CK638 was supplied from 29 February 2020 until 19 February 2021 and was excluded from ICP days and submission information, causing under submission of 168 kWh and 356 ICP days; it appears that the ICP was excluded from submissions because the pre-pay meter flag was set to Y and the NHH flag, HHR flag and AMI flag were all set to N (no other ICPs with this meter configuration have been supplied by Switch Utilities and to prevent recurrence of this issue, Switch Utilities is investigating calculating their own expected ICP days based on a registry list with history and comparing it to their AV110 submissions to identify any anomalies), and
- timing differences caused by backdated switches and withdrawals.

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

Audit outcome

Non-compliant

Non-compliance	Description
Audit Ref: 11.2 With: Clause 15.6	Where default forward estimate is applied, an ICP day is not reported for the first day of supply. One ICP was excluded from ICP days submissions because it had the pre-pay meter flag set to Y and the NHH flag, HHR flag and AMI flag were all set to N. Potential impact: Medium Actual impact: Low

From: 01-Feb-20 To: 31-May-22	Audit history: Multiple times Controls: Moderate Breach risk rating: 2
Audit risk rating	**Rationale for audit risk rating**
Low	The controls are recorded as moderate because they mitigate risk of incorrect ICP days being reported most of the time. The impact is low. ICP days differences caused by default forward estimate will wash out once readings are received unless they are supplied for only one day. The omission of ICPs with only pre-pay metering has only affected one ICP, and pre-pay meters are now not accepted by the application process.

Actions taken to resolve the issue	Completion date	Remedial action status
Resolved as part of material change audit submitted in parallel with this report.	Resolved	Identified
Preventative actions taken to ensure no further issues will occur	**Completion date**	

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.

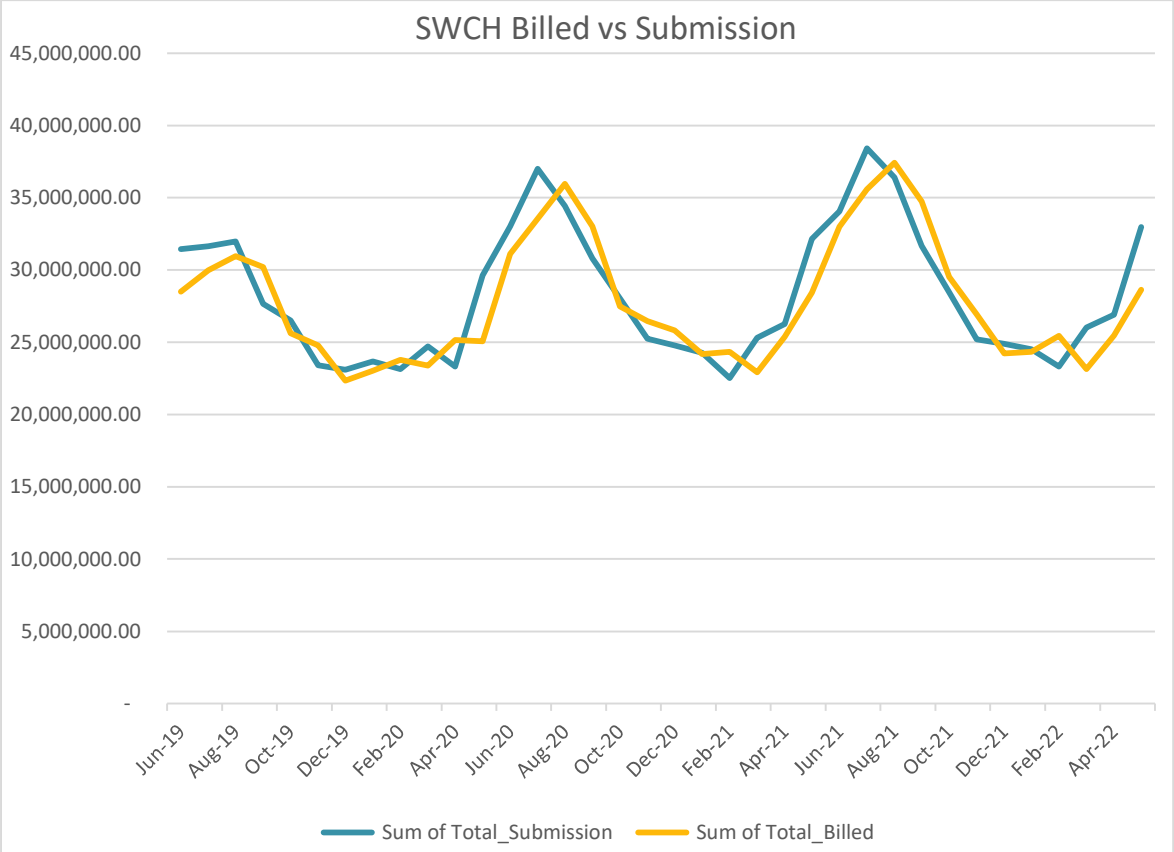
GR130 reports for June 2019 to May 2022 were reviewed to confirm whether the relationship between billed and submitted data appears reasonable.

Audit commentary

Volume calculations occur within the Energy Database and the data is transferred to Accredo to bill complex customers, HHR billing, and embedded networks, and BillPlus (Vocal) to bill other customers. The completed invoice data is transferred back to the Energy Database which produces the AV120 submissions based on the volumes physically invoiced during the calendar month.

The process for the calculation of as billed volumes was examined by checking five NSPs with a small number of ICPs against Switch Utilities' invoice information for June 2022 and was confirmed to be accurate.

I also checked the difference between submission and electricity supplied information for June 2019 to May 2022 and the results are shown in the chart below. The chart shows a reasonably close relationship between submitted and billed quantities. Billed data was 1.2% lower than submitted data for the year ended May 2022, and 1.4% lower than submitted data for the two years ended May 2022. The differences are caused by timing, because the billing generally occurs the month after consumption and because vacant consumption is not billed to customers. There has been an increase in the number of vacant connected ICPs during the audit period because vacant disconnections are on hold while Switch Utilities reviews its disconnection processes to ensure compliance with its customer care obligations.



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

Using relevant volume information, each retailer or direct purchaser (excluding direct consumers) must deliver to the reconciliation manager its total monthly quantity of electricity consumed for each half hourly metered ICP for which it has provided submission information to the reconciliation manager, including:

15.8(a) - submission information for the immediately preceding consumption period, by 1600 hours on the 4th business day of each reconciliation period

15.8(b) - revised submission information provided in accordance with clause 15.4(2), by 1600 hours on the 13th business day of each reconciliation period.

Audit observation

I confirmed that the process for the calculation and aggregation of HHR data is correct, by matching HHR aggregates information with the HHR volumes data for nine submissions and tracing a sample of ICPs from the raw data provided by the MEP or agent to submission.

The GR090 ICP Missing files were examined for November 2019 to May 2022. All 13 ICPs missing were checked.

Audit commentary

DRS/MDMS produces HHR submissions. I confirmed the process for aggregation of HHR data is correct by:

- matching HHR aggregates information to the volumes for nine submissions; the volumes and aggregates data matched within two decimal places, and
- tracing data for four category 3 and 4 ICPs from the source files to DRS/MDMS and submission information, and confirmed it matched.

The GR090 ICP Missing files were examined for November 2019 to May 2022. All 13 ICPs missing were checked and found to be caused by backdated switches, withdrawals, and updates to decommissioned status. Late switching files and updates to the registry are discussed in **sections 3** and **4**.

Switch Utilities does not routinely review the GR090 ICP missing reports and relies on their other validation checks to ensure that the correct ICPs are included, and correct aggregation factors applied.

Audit outcome

Compliant

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 1 of the techniques set out in clause 15.36(3) specified by the Authority.

Audit observation

All HHR data is collected by AMS and EDMI, and daylight savings adjustments were reviewed as part of their agent audit.

Audit commentary

Compliance with this clause has been demonstrated by AMS and EDMI as part of their agent audits. Review of submission information for the change to and from daylight savings time confirmed that the correct number of trading periods was recorded.

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

Switch Utilities prepares NHH submissions using DART and HHR submissions using DRS/MDMS. Processes to ensure that submissions are accurate were reviewed.

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

Audit commentary

Timeliness of submission information

The EA confirmed that no alleged breaches occurred during the audit period.

HHR submission creation

Switch Utilities prepares reconciliation submissions using reconciliation consumption generated by DRS/MDMS. Accuracy of HHR submission information was confirmed in **section 11.4**. The submission validation process identifies missing data, which is estimated, and validates the submission against previous consumption at ICP level.

NHH submission creation

DART is used for NHH reconciliation and produces AV080 and AV110 submissions. It receives readings used by the reconciliation process from the Energy Database and status and aggregation factor information from registry lists. The read and registry information is not held within DART. DART performs a calculation based on the current values provided and outputs files including submissions and supporting ICP level and batch (meter register) level information. Further information on calculation of historic estimate is recorded in **section 12.11**, and aggregation of the AV080 report is checked in **section 12.3**.

A sample of NHH ICPs were checked to make sure they are handled correctly, including vacant, disconnected, unmetered, and distributed generation ICPs.

Vacant consumption	Vacant ICPs are recorded in the Energy Database under the "vacant" brand, and the normal reading, validation, and submission process applies. Five ICPs with vacant consumption were checked, and consumption was correctly submitted.
Inactive consumption	Days with inactive status are excluded from historic estimate calculations. Where disconnection and/or reconnection boundary readings are not entered, or an ICP day has an incorrect status, some consumption may be allocated to inactive ICP days and omitted from submission. I checked 20 ICPs with suspected inactive consumption and found: • 14 ICPs had been corrected to "active" status for all days with volumes through Switch Utilities review process, • five ICPs did not have genuine consumption on inactive days and no correction was required, and • ICP 0000041710TEB32 appears to have a misread on one meter register and is believed to still be disconnected; investigation is underway to confirm that the ICP is still disconnected.
Unmetered consumption	Unmetered load data is not stored within the Energy Database; the daily unmetered kWh is retrieved directly from the registry and imported into DART, which calculates the unmetered load submission based on the daily unmetered kWh and number of days with "active" status. Unmetered load is not billed by Switch Utilities, and solely unmetered ICPs are not supplied. Submission information for six ICPs with unmetered volumes was reviewed including standard and shared unmetered load, and correct consumption was submitted.
Distributed generation	DART produces NHH submission information for all settled meter registers and automatically applies the RPS profile. Before the reconciliation reports are output, a script is run to update the profile to PV1 for any AV080 rows where the flow direction is I. Submission information for five ICPs with distributed generation was reviewed, and correct consumption was submitted.

Where ICPs are supplied for only one day or only have an opening reading recorded, forward estimate is calculated but the process does not count the first day of supply. This results in one day of consumption and one ICP day being omitted from submissions. If supply continues, the issue will be resolved once an actual reading is received and historic estimate is calculated. A new NHH reconciliation system is to be

implemented, and this issue will be resolved as part of this. I found the following ICPs supplied for one day had been omitted from volume and ICP days submissions:

- May 2022 revision 1 BUEL-ORO1102 had two active ICP days excluded from submission for ICPs 0003443905BU715 and 0004458718BUAC9 which were supplied for one day,
- May 2022 revision 1 LINE-TKU0331 had five active ICP days excluded from submission for ICPs 0001110722WM214, 0005206081WMAB7, 0005206121WMBAC, 0052069643WM9BC and 0053069600WM160 which were all supplied for one day,
- February 2021 revision 14 VECT-PEN0331 had one active ICP day excluded from submission for ICP 1001284522LC7AC which was supplied for one day,
- February 2021 revision 14 POCO-CST0331 had one active ICP day excluded from submission for ICP 1000556474PC3FE which was supplied for one day, and
- February 2021 revision 14 POCO-BPE0331 had one active ICP day excluded from submission for ICP 0000042311CP74B which was supplied for one day.

CKHK-CPK0331 ICP 1001147153CK638 was supplied from 29 February 2020 until 19 February 2021 and was excluded from ICP days and submission information, causing under submission of 168 kWh and 356 ICP days. It appears that the ICP was excluded from submissions because the pre-pay meter flag was set to Y and the NHH flag, HHR flag and AMI flag were all set to N. No other ICPs with this meter configuration have been supplied by Switch Utilities. To prevent recurrence of this issue, Switch Utilities is investigating calculating their own expected ICP days based on a registry list with history and comparing it to their AV110 submissions to identify any anomalies.

Audit outcome

Non-compliant

Non-compliance	Description
Audit Ref: 12.2 With: Clause 15.4 From: 29-Feb-20 To: 30-Apr-22	At least ten ICPs had one ICP and one day of volume omitted from ICP days and NHH volumes submissions because they were supplied for one day. ICP 1001147153CK638 was excluded from ICP days and NHH volumes submissions causing under submission of 168 kWh and 356 ICP days. Potential impact: Low Actual impact: Low Audit history: None Controls: Moderate Breach risk rating: 2
Audit risk rating	**Rationale for audit risk rating**
Low	Controls are moderate as the issue only affects ICPs supplied for one day, or which have switched in until they receive a subsequent reading. Approximately 94% of Switch Utilities' ICPs have AMI metering and read attainment is high. Only one ICP with a pre-pay meter has ever been supplied. The audit risk rating is low, because revised submission data will be washed up once readings are entered except for ICPs which are supplied for only one day. Few ICPs have a one-day period of supply.

Actions taken to resolve the issue	Completion date	Remedial action status
Resolved as part of material change audit submitted in parallel with this report.	Resolved	Identified
Preventative actions taken to ensure no further issues will occur	**Completion date**	

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, and reports used in the process were viewed.

The GR170 to AV080 files for nine revision submissions were compared, to confirm zeroing occurs.

Audit commentary

The process for aggregating the AV080 was examined by a walkthrough of the process. The registry is used as the starting point, to ensure correct aggregation factors. I checked the aggregation of the AV080 report for July 2022 revision 1 by comparing detailed ICP level submission information against the AV080 submission for 17 NSPs and confirmed compliance. Review of the GR100 ICP days comparison and GR090 ICP missing reports did not identify any issues with aggregation factors.

Switch Utilities has a process for zeroing for both NHH and HHR submissions. GR170 and AV080 files for nine revision submissions were compared, and found to contain the same NSPs, confirming that zeroing is occurring as required.

Submissions are validated prior to being provided to the reconciliation manager. The validation process includes:

- review of any ICPs with high, zero, or low consumption,
- review of variances between revisions, and variances to previous months for initial submissions at NSP and ICP level,

- material changes to consumption over ±800 kWh and ±50% compared to the last read period are identified by the Billing Analyst using queries as part of the reconciliation submission checks and a list of cases for investigation is provided to the billing team for review, and
- checking the file using the reconciliation manager portal's file checker.

Other consumption validation checks are discussed in **sections 9.5** and **9.6**.

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 Switch Utilities is not a grid owner.

Audit commentary

Switch Utilities 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

The registry list and NSP table were reviewed.

Audit commentary

Switch Utilities does not own any local or embedded networks and 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 registry list and NSP table were reviewed.

Audit commentary

Switch Utilities is not a grid connected generator.

Audit outcome

Not applicable

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 EA confirmed that no alleged breaches occurred during the audit period. Some NHH submission accuracy issues were identified as described below. Corrections are expected to be processed, and recurrence of issues is expected to be prevented by the implementation of the new NHH reconciliation system.

Missing boundary reads for disconnections and/or reconnections

Days with inactive status are excluded from historic estimate calculations. Where disconnection and/or reconnection boundary readings are not entered, or an ICP day has an incorrect status, some consumption may be allocated to inactive ICP days and omitted from submission. The following ICPs are missing disconnection and/or reconnection boundary reads:

ICP	Event date	Missing read type	Comment
0007186355RN110	10/02/22	Reconnection	A switch in reading is recorded on 2 February 2022 255 (E) and the next actual read is on 12 February 2022 411 (A). A recommendation is made to confirm the correct switch event date and reconnection read for this ICP. Switch Utilities will need to ensure that all consumption from the switch in date is captured and reported. If the reconnection read differs from 255, a permanent estimate reconnection read should be applied.
0000105502UN82A	26/03/22	Reconnection	No reconnection reading is recorded on 26 March 2022 for reconciliation. Readings are recoded on 16 March 2022 31260 (A) and 31 March 2022 31301.88 (A). An actual reading of 31260 (A) is available for 25 March 2022 on the charged readings table. This ICP is also missing a disconnection boundary reading as discussed in **section 3.9**.
0000105502UN82A	16/03/22	Disconnection	No disconnection boundary reading is recorded on 15 March 2022. Readings are recoded on 28 February 2022 31174.89 (A) and 16 March 2022 31260 (A). An actual reading of 31260 (A) is available for 15 March 2022 on the charged readings table. This ICP is also missing a reconnection boundary reading as discussed in **section 3.8**.
0000374053TU848	17/03/2022	Disconnection	A house was demolished prior to making the ICP ready for decommissioning on 17 March 2022. Wells actual readings were last received on 6 January 2022, and Wells reported that the house was demolished on 9 March 22. No permanent estimate reading was entered for the disconnection.
0005323266RN74E	02/09/2020	Disconnection	The last actual reading was recorded on 22 July 2020 and no permanent estimate reading was entered for disconnection.
0307808181LCD97	24/01/2022	Disconnection	A final reading was received on 5 April 2022 and Vector advised of a backdated decommission effective from 24 January 2022 on 28 April 2022. No permanent reading was entered for disconnection.
0307808181LCD97	24/01/2022	Disconnection ready for decommissioning	A final reading was received on 05 April 2022 and Vector advised of a backdated decommission effective

ICP	Event date	Missing read type	Comment
			from 24 January 2022 on 28 April 2022. No permanent reading was entered for disconnection.
0010366420EL645	18/03/2022	Disconnection ready for decommissioning	Final readings were entered on 22 February 2022 based on actual readings, which differed from the meter removal readings taken on 8 April 2022 as shown, and no permanent estimate read was entered for disconnection. Meter 214282526 R1 22 February 2022 31339.45 8 April 2022 22916 (-8243.45) R2 22 February 2022 22915.86 8 April 2022 31339 (+8243.14) R3 22 February 2022 31,339.45 8 April 2022 33614 (+2274.55) Net difference + 2274.24 I recommend in **section 3.4** that the reads for registers 1 and 2 are checked, if possible, as it appears that either the contractor readings or removal readings may be transposed.
0000006673TRE65	15/12/2021 20/12/2021	Vacant disconnection Disconnection ready for decommissioning	A meter removal read of 74421 was received for 25 January 2022. The last actual read recorded is 74417.74 on 5 December 2021, and no permanent estimate read was entered for disconnection.

Recommendation	Description	Audited party comment	Remedial action
Validate the readings for ICP 0010366420EL645	It appears that the contractor readings or meter removal readings for Meter 214282526 registers 1 and 2 may be transposed. Confirm the meter registers that the reads should be recorded against prior to updating the Energy Database.	We will complete the auditors recommendation.	Investigating
Consistently enter boundary readings for disconnections and reconnections	Develop processes to ensure that boundary readings are consistently entered, and missing boundary readings are detected.	We agree with the auditors recommendation and will modify the registry update process to require users to provide a reading or if necessary permanent estimate as part of the loading of registry status changes. A	Investigating

Recommendation	Description	Audited party comment	Remedial action
		development item has been raised with our platform team for this.	

ICPs omitted from NHH submission for one day

Where ICPs are supplied for only one day or only have an opening reading recorded, forward estimate is calculated but the process does not count the first day of supply. This results in one day of consumption and one ICP day being omitted from submissions. If supply continues, the issue will be resolved once an actual reading is received and historic estimate is calculated. A new NHH reconciliation system is to be implemented, and this issue will be resolved as part of this.

I found the following ICPs supplied for one day had been omitted from volume and ICP days submissions:

- May 2022 revision 1 BUEL-ORO1102 had two active ICP days excluded from submission for ICPs 0003443905BU715 and 0004458718BUAC9 which were supplied for one day,
- May 2022 revision 1 LINE-TKU0331 had five active ICP days excluded from submission for ICPs 0001110722WM214, 0005206081WMAB7, 0005206121WMBAC, 0052069643WM9BC and 0053069600WM160 which were all supplied for one day,
- February 2021 revision 14 VECT-PEN0331 had one active ICP day excluded from submission for ICP 1001284522LC7AC which was supplied for one day,
- February 2021 revision 14 POCO-CST0331 had one active ICP day excluded from submission for ICP 1000556474PC3FE which was supplied for one day, and
- February 2021 revision 14 POCO-BPE0331 had one active ICP day excluded from submission for ICP 0000042311CP74B which was supplied for one day.

Pre-pay ICP omitted from submission

CKHK-CPK0331 ICP 1001147153CK638 was supplied from 29 February 2020 until 19 February 2021 and was excluded from ICP days and submission information, causing under submission of 168 kWh and 356 ICP days. It appears that the ICP was excluded from submissions because the pre-pay meter flag was set to Y and the NHH flag, HHR flag and AMI flag were all set to N. No other ICPs with this meter configuration have been supplied by Switch Utilities. To prevent recurrence of this issue, Switch Utilities is investigating calculating their own expected ICP days based on a registry list with history and comparing it to their AV110 submissions to identify any anomalies.

Incorrect agreed switch reading

0030362342PC792 had a reading of 30326 (E) applied in the Energy Database for 6 September 2021, instead of the agreed switch reading of 30285 (E). The incorrect reading was applied because the AC was processed manually in the registry because an error prevented it being issued by the Energy Database, and a ticket was not raised for the reads to be updated as part of the manual process. The reading was corrected during the audit and revised volume information will be provided through the revision process. In all other cases, the agreed switch readings were recorded in Switch Utilities' systems.

Incorrect shaping where consumption fluctuates

As described in in NHH reconciliation calculations, where there was fluctuation between zero and large volumes in NHH reconciliation calculations, DART would sometimes invalidate the shapes and apply zeros instead resulting in over submission for some months and under submission for others. This issue will be resolved with the implementation of the new NHH reconciliation system. Switch Utilities has agreed with the Authority that the differences will be settled out of market and is currently preparing settlement calculations.

Historic estimate calculation method differs from the Code

DART's historic estimate calculation method differs from the method prescribed in clause 4 of schedule 15.3 of the Code. To explain further:

DART uses $HE = ((kWh_P \times X_1/Y) + (kWh_P \times X_2/Y) + \ldots + (kWh_P \times X_L/Y)) \times C$

Where:
kWh_P is read-to-read volume excluding the compensation factor
X_1 is the seasonal adjusted shape values for the first active day in the reconciliation period
X_2 is the seasonal adjusted shape values for the second active day in the reconciliation period
X_L is the seasonal adjusted shape values for the last active day in the reconciliation period
C is the compensation factor

The Code uses $HE = kWh_P \times A / B$

Where:
kWh_P is read-to-read volume including the compensation factor
A is the sum of seasonal adjusted shape values for the (active) days in the reconciliation period that fall within the read-to-read period
B is the sum of seasonal adjusted shape values for the read-to-read period

In most cases, DART and the Code prescribed calculation will produce the same result within ± 1 kWh and results will be identical if there are end of month readings covering the whole reconciliation period. Small differences can occur because DART profiles the read-to-read volume for each day individually by applying (the day's shape value)/(average shape value for the period) and applying the compensation factor to the sum of the daily values. Some rounding occurs in the calculation of each day's data because of the large number of decimal places produced by applying averages, which is then magnified if the compensation factor is more than one. For scenario O ICP 0000100257DE740 June 2022 in **section 12.11** a difference between the calculation according to the Code and DART's calculation is -13 kWh. A material change is in progress to replace the reconciliation system which is expected to resolve this issue.

Previous audit issues to be resolved

The previous audit identified some incorrect submission information including bridged meter corrections and incorrect compensation factors which had not been processed during the 14-month revision period. Switch Utilities has agreed with the Authority that the differences will be settled out of market and is currently preparing settlement calculations.

Audit outcome

Non-compliant

Non-compliance	Description
Audit Ref: 12.7 With: Clause 15.12 From: 01-Jul-18 To: 01-Sep-21	Some incorrect submission data was identified. Some incorrect submission data identified in the previous audit is still to be resolved through out of market settlement. Potential impact: High Actual impact: High Audit history: Multiple times Controls: Moderate Breach risk rating: 6

Audit risk rating	Rationale for audit risk rating
High	The controls are rated as moderate overall and there have been improvements to validation and correction processes. Implementation of the new reconciliation system is expected to improve the controls to strong. The audit risk rating is high based on the kWh differences to be resolved. A plan is in place to resolve the issues, including processing out of market settlement for the largest differences.

Actions taken to resolve the issue	Completion date	Remedial action status
Switch Utilities will perform an off-market settlement including interest payment calculated in the same manager as clearing manager interest payments under Part 14 of the Code for the identified discrepancies; for both the matters identified in the previous audit relating to historic periods; and the shaping related issue impacting some sites with unusual shape profiles where the washup relates to periods prior to the 14 month revision window.	Q4 2022	Identified
Preventative actions taken to ensure no further issues will occur	**Completion date**	
The development for the full replacement of our legacy non-half hourly reconciliation platform is complete. A material change audit is submitted with this report which confirms the new system meets our obligations. As part of our testing, we have covered all the scenarios the auditor has identified including the HE methodology, sites with pre-payment flags, sites held for a single day, sites without boundary readings across a disconnected period. The testing also includes ensuring that settlement occurs correctly for those sites with highly unusual usage profiles. The new platform also has significantly improved validation and controls relating to revision-to-revision comparisons, current to prior month comparisons, including materiality analysis from the highest levels of aggregation down to the channel level.	Completed	

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 December 2020 to February 2022 identify any forward estimate still existing.

Audit commentary

Review of the 14-month revisions for December 2020 to February 2022 showed that no forward estimate remained at revision 14.

Switch Utilities has a process to enter permanent estimates where readings were not received within 14 months. ICPs with forward estimate remaining are identified by reviewing the submission information and a permanent estimate text file is created and loaded into DART. A ticket is raised for the IT team to add the permanent estimate reading into the Energy Database, so that it will be included in future extracts.

Audit outcome

Compliant

12.9. Reconciliation participants to prepare information (Clause 2 Schedule 15.3)

Code reference

Clause 2 Schedule 15.3

Code related audit information

If a reconciliation participant prepares submission information for each NSP for the relevant consumption periods in accordance with the Code, such submission information 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)(ac) to 2(1)(ae)):*
  - *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 use volume information (clause 2(3))*
- *to calculate volume information the reconciliation participant must apply raw meter data:*

a) *for each ICP, the compensation factor that is recorded in the registry (clause 2(4)(a))*
b) *for each NSP the compensation factor that is recorded in the metering installations most recent certification report (clause 2(4)(b)).*

Audit observation

Aggregation and content of reconciliation submissions was reviewed.

Audit commentary

Compliance with this clause was assessed:

- all ICPs with metering category 3 or above are submitted as HHR,
- unmetered load submissions were checked in **section 12.2** and found to be correct,
- no profiles requiring a certified control device are used,
- no loss or compensation arrangements are required, and
- aggregation of the AV080, AV090 and AV140 reports is compliant.

Accuracy is recorded in this section because the processes to produce the submission information are compliant. Instances where incorrect inputs into some of those processes resulted in inaccurate submission information are recorded as non-compliance in **section 12.7**.

Audit outcome

Compliant

12.10.Historical estimates and forward estimates (Clause 3 Schedule 15.3)

Code reference

Clause 3 Schedule 15.3

Code related audit information

For each ICP that has a non-half hour metering installation, volume information derived from validated meter readings, estimated readings, or permanent estimates must be allocated to consumption periods using the techniques described in clauses 4 to 7 to create historical estimates and forward estimates.

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

I reviewed nine AV080 submissions for revisions 3 to 14, to confirm that historic estimates are included and identified.

Permanence of meter readings is reviewed in **section 12.8**. The methodology to create forward estimates is reviewed in **section 12.12**.

Audit commentary

I reviewed nine AV080 submissions for a diverse sample of months and revisions and confirmed that forward and historic estimates are included and identified as such.

Audit outcome

Compliant

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 historical estimates of volume information for each ICP when the relevant seasonal adjustment shape is available, and the reconciliation participant is not using an approved profile in accordance with clause 4A.

If the Authority has approved a profile for the purpose of apportioning volume information (in kWh) to part or full consumption periods, a reconciliation participant may use the profile despite the relevant seasonal adjustment shape being available; and if it uses the profile, must otherwise prepare the historical estimate in accordance with the methodology in clause 4.

*If a seasonal adjustment shape is not available, and the **reconciliation participant** is not using an approved **profile** under clause 4A, 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, Switch Utilities were supplied with a list of scenarios, and for some individual ICPs a manual HE calculation was conducted and compared to the result from DART.

Audit commentary

DART is used for NHH reconciliation and calculates the historic estimate. It receives readings used by the reconciliation process from the Energy Database, status and aggregation factor information from registry lists, and the latest PR030 (seasonal adjusted shape values) files from the reconciliation manager. The information is not held within DART. DART performs a calculation based on the current values provided and outputs files including submissions and supporting ICP level and batch (meter register) level information.

DART's historic estimate calculation method differs from the method prescribed in clause 4 of schedule 15.3 of the Code. To explain further:

DART uses $HE = ((kWh_{Px} \times X_1 / Y) + (kWh_{Px} \times X_2 / Y) + \ldots + (kWh_{Px} \times X_L / Y)) \times C$

Where:
kWh_{Px} is read-to-read volume excluding the compensation factor
X_1 is the seasonal adjusted shape values for the first active day in the reconciliation period
X_2 is the seasonal adjusted shape values for the second active day in the reconciliation period
X_L is the seasonal adjusted shape values for the last active day in the reconciliation period
Y is the sum of seasonal adjusted shape values for the read-to-read period
C is the compensation factor

The Code uses $HE = kWh_{Px} \times A / B$

Where:
kWh_{Px} is read-to-read volume including the compensation factor
A is the sum of seasonal adjusted shape values for the (active) days in the reconciliation period that fall within the read-to-read period
B is the sum of seasonal adjusted shape values for the read-to-read period

In most cases, DART and the Code prescribed calculation will produce the same result within ± 1 kWh and results will be identical if there are end of month readings covering the whole reconciliation period. Small differences can occur because DART profiles the read-to-read volume for each day individually by applying (the day's shape value)/(average shape value for the period) and applying the compensation factor to the sum of the daily values. Some rounding occurs in the calculation of each day's data because of the large number of decimal places produced by applying averages, which is then magnified if the compensation factor is more than one. For scenario O ICP 0000100257DE740 June 2022 a difference between the calculation according to the Code and DART's calculation is -13 kWh. A material change is in progress to replace the reconciliation system which is expected to resolve this issue.

Days with inactive status are excluded from historic estimate calculations. Where disconnection and/or reconnection boundary readings are not entered, or an ICP day has an incorrect status, some consumption may be allocated to inactive ICP days and omitted from submission. For scenario C ICP 0000105502UN82A (March 2022) boundary readings were not entered for 15 March 2022 or 26 March 2022, resulting in some consumption being apportioned to the inactive days between 16 March 2022 and 25 March 2022. Compliance is recorded in the table below because the calculation is correct, an incorrect result is returned because inputs required by the process are missing. The inaccurate submission data is recorded as non-compliance in **section 12.7**.

The table below shows that all HE scenarios are calculating as expected and correct SASV (seasonal adjusted shape values) are applied.

Test	**Scenario**	**Test Expectation**	**Result** (compliance is recorded where the result is within ±1 kWh of code calculation)
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

Test	Scenario	Test Expectation	**Result** (compliance is recorded where the result is within ±1 kWh of code calculation)
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 are validated against a set of actual reads not provided by the customer.	Compliant – customer readings are not treated as validated readings
n	ICP with a photo read during the month	Photo reads are not used to calculate historic estimate, unless they are validated against a set of actual reads not provided by the customer.	Compliant – customer photo readings are not treated as validated readings
o	ICP has a meter with a multiplier greater than 1	The multiplier is applied correctly	Non-compliant Rounding difference of 13 kWh due to calculation method

Audit outcome

Non-compliant

Non-compliance	Description
Audit Ref: 12.11 With: Clauses 4 and 5 Schedule 15.3 From: 01-Aug-21 To: 19-Aug-22	DART's historic estimate calculation does not follow the method prescribed in the code. Potential impact: Low Actual impact: Low Audit history: None Controls: Weak Breach risk rating: 6
Audit risk rating	**Rationale for audit risk rating**
Medium	Controls are rated as weak as they do not ensure that historic estimate is calculated as prescribed by the Code. The impact is assessed as medium. In most cases DART's result is within ± 1 kWh of the Code method and results will be identical if there are end of month readings covering the whole reconciliation period. Small differences can occur because DART profiles the read-to-read volume for each day individually by applying (the day's shape value)/(average shape value for the period) and applying the compensation factor to the sum of the daily values. Some rounding occurs in the calculation of each day's data because of the large number of decimal places produced by applying averages, which is then magnified if the compensation factor is more than one. The maximum difference identified in the historic estimate checks was 13 kWh for an ICP with a compensation factor of 100. The highest multiplier identified for a NHH settled ICP was 100.

Actions taken to resolve the issue	Completion date	Remedial action status
A material change audit is submitted with this report for the new platform which resolves these issues.	Resolved	Identified
Preventative actions taken to ensure no further issues will occur	**Completion date**	

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 variances over the audit period.

Audit commentary

Forward estimate is applied for active days where historic estimate cannot be calculated because validated actual or permanent estimate readings are not available.

Default forward estimate is applied where no readings are available apart from the gain reading. Default forward estimate is set as 375 kWh per 31 days and is scaled for the number of active days in the submission period. Default forward estimate is not calculated for the switch in date, which results in the forward estimate being lower than expected (which is recorded as non-compliance in **sections 12.2** and **12.7**), and one ICP day being excluded from the AV110 submission (which is recorded as non-compliance in **section 11.2**). Once a subsequent reading is received, the difference is washed out. Compliance is recorded in this section, because the trader is entitled to use their own methodology to create forward estimates and no differences over ± 15% and ± 100,000 kWh were identified.

If customer readings or account estimates are available, these are used to calculate forward estimate for the ICP and meter. Account estimate readings are normally entered at the end of each month for each meter if an actual reading is not available. Estimated readings are inserted by the Energy Database, based on the "average daily estimate" of consumption over the previous month.

Quantity of balancing areas with differences over 15% and 100,000 kWh

Month	Revision 1	Revision 3	Revision 7	Revision 14	Total Balancing Areas
Jul 2020	-	-	-	-	124
Aug 2020	-	-	-	-	126
Sep 2020	-	-	-	-	125
Oct 2020	-	-	-	1	125
Nov 2020	-	-	-	1	125
Dec 2020	-	-	1	1	125
Jan 2021	-	-	1	1	125
Feb 2021	-	-	-	-	125
Mar 2021	-	-	-	-	123
Apr 2021	-	-	-	-	120
May 2021	-	-	-		120

Month	Revision 1	Revision 3	Revision 7	Revision 14	Total Balancing Areas
Jun 2021	-	-	-		120
Jul 2021	-	-	-		117
Aug 2021	-	-	-		117
Sep 2021	-	-	-		115
Oct 2021	-	-	-		115
Nov 2021	-	-	1		115
Dec 2021	-	-			114
Jan 2022	-	-			115
Feb 2022					115
Mar 2022					115

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

Month	Revision 1	Revision 3	Revision 7	Revision 14
Jul 2020	-0.47%	-0.49%	-0.30%	0.15%
Aug 2020	0.32%	0.00%	0.66%	1.14%
Sep 2020	0.12%	0.34%	0.94%	1.20%
Oct 2020	-0.06%	1.27%	1.73%	2.03%
Nov 2020	0.45%	1.24%	1.41%	1.74%
Dec 2020	-0.39%	0.68%	1.41%	1.38%
Jan 2021	0.20%	0.76%	1.37%	1.28%
Feb 2021	-0.01%	0.01%	0.28%	0.26%
Mar 2021	-0.20%	0.03%	0.04%	0.22%

Month	Revision 1	Revision 3	Revision 7	Revision 14
Apr 2021	-0.24%	0.08%	-0.04%	-0.02%
May 2021	-0.27%	-0.78%	-0.59%	
Jun 2021	-0.02%	0.15%	0.12%	
Jul 2021	-0.28%	-0.03%	0.10%	
Aug 2021	0.22%	0.64%	0.73%	
Sep 2021	0.83%	0.84%	1.19%	
Oct 2021	2.31%	2.63%	3.22%	
Nov 2021	-0.03%	0.46%	1.34%	
Dec 2021	0.15%	0.80%		
Jan 2022	-0.05%	0.30%		
Feb 2022	0.61%	0.86%		
Mar 2022	-0.18%	0.10%		

I checked all balancing area differences to determine the reasons for the differences, and found they were caused by an issue with shaping for irrigation ICPs. Where there was fluctuation between zero and large volumes, DART would sometimes invalidate the shapes and apply zeros instead resulting in over submission for some months and under submission for others. This issue will be resolved with the implementation of the new NHH reconciliation system and non-compliance is recorded in **sections 2.1** and **12.7**. Switch Utilities has agreed with the Authority that the differences will be settled out of market and is currently preparing settlement calculations.

Compliance is recorded in this section because the differences are not caused by inaccurate forward estimate.

Audit outcome

Compliant

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 registry list and event detail reports were reviewed to identify any ICPs which have had profile changes.

Audit commentary

No ICPs with genuine profile changes were identified during the audit period.

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**, and aggregation of HHR volumes is discussed in **section 11.4**.

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
- trading period for half hour metered ICPs and consumption period or day for all other ICPs.

NHH volumes and HHR volumes aggregation was confirmed to be compliant. The submitted data was also compared to billed data in **section 11.3** and appeared reasonable.

Audit outcome

Compliant

13.2. Reporting resolution (Clause 9 Schedule 15.3)

Code reference

Clause 9 Schedule 15.3

Code related audit information

When reporting submission information, the number of decimal places must be rounded to not more than two decimal places.

If the unrounded digit to the right of the second decimal place is greater than or equal to five, the second digit is rounded up, and

If the digit to the right of the second decimal place is less than five, the second digit is unchanged.

Audit observation

I reviewed the rounding of data on the AV080, AV090 and AV140 reports as part of the aggregation checks.

Audit commentary

Review of nine AV080 reports confirmed that submission information is appropriately rounded to two decimal places.

Review of four AV140 and four AV090 reports confirmed that submission information is appropriately rounded to two decimal places.

Audit outcome

Compliant

13.3. Historical estimate reporting to RM (Clause 10 Schedule 15.3)

Code reference

Clause 10 Schedule 15.3

Code related audit information

By 1600 hours on the 13th business day of each reconciliation period the reconciliation participant must report to the reconciliation manager the proportion of historical estimates per NSP contained within its non half hour submission information.

The proportion of submission information per NSP that is comprised of historical estimates must (unless exceptional circumstances exist) be:

- *at least 80% for revised data provided at the month 3 revision (clause 10(3)(a))*
- *at least 90% for revised data provided at the month 7 revision (clause 10(3)(b))*
- *100% for revised data provided at the month 14 revision (clause 10(3)(c)).*

Audit observation

The timeliness of submissions of historic estimate was reviewed in **section 12.2**.

I reviewed nine months of AV080 reports to determine whether historic estimate requirements were met.

Audit commentary

The quantity of historical estimates is contained in the submission file and is not a separate report. The proportion of historic estimate in the revision files was checked for nine separate months, and the table below shows that compliance has not been achieved in all instances.

Quantity of NSPs where revision targets were met

Month	Revision 3 80% Met	Revision 7 90% Met	Revision 14 100% Met	Total
Dec 2020			209	209
Jan 2021			209	209
Feb 2021			209	209
Sep 2021		197		199
Oct 2021		196		199
Nov 2021		198		199
Dec 2021	195			198
Jan 2022	194			199
Feb 2022	195			199

I checked all NSPs where forward estimate thresholds were not met and found the cause was estimates created because readings were not obtained, or a delay in loading readings where a meter change occurred.

The table below shows that the percentage HE at a summary level for all NSPs is at or above the required targets for all revisions.

Month	Revision 3 80% Target	Revision 7 90% Target	Revision 14 100% Target
Dec 2020	-	-	100.00%
Jan 2021	-	-	100.00%
Feb 2021	-	-	100.00%
Sep 2021	-	99.71%	-
Oct 2021	-	99.72%	-
Nov 2021	-	99.77%	-
Dec 2021	98.45%	-	-
Jan 2022	98.96%	-	-
Feb 2022	98.95%	-	-

Audit outcome

Non-compliant

Non-compliance	Description
Audit Ref: 13.3 With: Clause 10 of Schedule 15.3 From: Sep 21 to Nov 21 r7 and Dec 21 to Feb 22 r3	Historic estimate thresholds were not met for some revisions. Potential impact: Low Actual impact: Low Audit history: Multiple times Controls: Moderate Breach risk rating: 2
Audit risk rating	**Rationale for audit risk rating**
Low	The controls are recorded as moderate overall, based on my assessment of the read attainment processes (**sections 6.8-6.10**) and permanent estimate process (**section 12.8**). The impact is low due to the high percentage of HE.

Actions taken to resolve the issue	Completion date	Remedial action status
We have been working to improve our compliance in this area over the last audit period and as previously noted added additional resource to focus on read attainment. This will remain a focus for us over the next period.	Underway	Identified
Preventative actions taken to ensure no further issues will occur	**Completion date**	

GLOSSARY

AC breach	AC arrival date is more than five business days after receipt of replace switch reading (RR) where the switch re-read is rejected.
AN breach	AN arrival date is more than three business days after receipt of the NT, where the AN arrives immediately after the NT.
AW breach	AW arrival date is more than five business days after receipt of the NW.
CS breach for switch move	CS arrival date is more than five business days after receipt of the NT AND, before delivery of the CS and No NW notice has been provided, AND no AN notice has been provided OR an notice is provided, and the NT Proposed Transfer Date matches the AN Expected Transfer Date).
CS 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.
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 ten 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.

CONCLUSION

The timeliness and accuracy of registry status and trader updates has improved during this audit period.

Most switching processes are operating as intended, and most data exchanges are complete, accurate and on time. Some issues were identified:

- ICPs with partly unmetered load had the AA (acknowledge and accept) response code applied instead of MU (unmetered load); Switch Utilities intends to update their processes,
- the CS last actual read date selection methodology does not consistently choose the last actual read date during the period of supply; Switch Utilities is completing a material change to correct this which will be audited in September 2022 prior to being moved into production, and
- there continue to be a relatively large number of backdated "wrong premises" withdrawals, and I have recommended additional controls to ensure that the correct ICP is chosen as part of the application process to reduce these.

Validation processes have continued to improve, and almost all readings checked were recorded accurately and correctly classified. Read attainment is generally high and read attainment processes have improved during the audit period.

Inaccurate readings and potential meter defects appear to be consistently identified, and corrections are processed.

Reconciliation validation processes are generally robust, but some issues have resulted in inaccurate submission:

- **Missing boundary reads for disconnections and/or reconnections.** Days with inactive status are excluded from historic estimate calculations. Where disconnection and/or reconnection boundary readings are not entered, or an ICP day has an incorrect status, some consumption may be allocated to inactive ICP days and omitted from submission. Eight ICPs missing disconnection and/or reconnection boundary reads were identified.
- **ICPs omitted from NHH submission for one day.** Where ICPs are supplied for only one day or only have an opening reading recorded, forward estimate is calculated but the process does not count the first day of supply. This results in one day of consumption and one ICP day being omitted from submissions. If supply continues, the issue will be resolved once an actual reading is received and historic estimate is calculated. A new NHH reconciliation system is to be implemented, and this issue will be resolved as part of this.
- **Incorrect shaping where consumption fluctuates.** Where there was fluctuation between zero and large volumes in NHH reconciliation calculations, DART would sometimes invalidate the shapes and apply zeros instead resulting in over submission for some months and under submission for others. This issue will be resolved with the implementation of the new NHH reconciliation system. Switch Utilities has agreed with the Authority that the differences will be settled out of market and is currently preparing settlement calculations.
- **Historic estimate calculation method differs from the Code.** DART's historic estimate calculation method differs from the method prescribed in clause 4 of schedule 15.3 of the Code. In most cases, DART and the Code prescribed calculation will produce the same result within ± 1 kWh and results will be identical if there are end of month readings covering the whole reconciliation period. Small differences can occur because DART profiles the read-to-read volume for each day individually by applying (the day's shape value)/(average shape value for the period) and applying the compensation factor to the sum of the daily values. Some rounding occurs in the calculation of each day's data because of the large number of decimal places produced by applying averages, which is then magnified if the compensation factor is more than one.
- **An incorrect agreed switch reading.**
- **One Pre-pay ICP omitted from submission.**

Switch Utilities has identified corrective actions to resolve these issues and prevent recurrence, including implementation of a new NHH reconciliation system, which is expected to go live on business day four in October 2022. A material change audit has been completed and is expected to accompany this audit.

The previous audit identified some incorrect submission information including bridged meter corrections and incorrect compensation factors which had not been processed during the 14-month revision period. Switch Utilities has agreed with the Authority that the differences will be settled out of market and is currently preparing settlement calculations.

The breach risk rating total is 51. The recommended audit frequency is six months; however, I recommend the next audit is completed in a maximum of nine months as several of the non-compliances are already cleared and a material change to resolve the NHH reconciliation issues is scheduled to be implemented in October 2022. A material change to the process to select last actual read dates for CS files is underway.

Participant response

Switch Utilities have reviewed this report and their comments are contained within its body.