ELECTRICITY INDUSTRY PARTICIPATION CODE
RECONCILIATION PARTICIPANT AUDIT REPORT

VERITEK

For

SWITCH UTILITIES LIMITED

switch utilities ltd

Prepared by: Tara Gannon

Date audit commenced: 12 October 2020

Date audit report completed: 3 November 2020

Audit report due date: 20 November 2020

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 has continued to steadily increase their customer numbers, resulting in increasing workloads.

At the time of the previous audit in February 2020, Switch Utilities was in the process of implementing a number of process changes and minor system changes designed to improve compliance. The changes included improved validation and NHH correction processes, and enhancements to the registry notification process and CS file content. Two issues prevented Switch Utilities from fully integrating these changes into their business as usual processes:

1. The operational staff member who initiated many of these changes left Switch Utilities and it was not possible to adequately hand over all tasks and processes during his notice period.
2. Some defects were identified in the new notification and CS processes after they were initially implemented.

The new reports to improve NHH consumption validation, and tool to process NHH corrections are not in use, while users await training. By the time this report was drafted, Switch Utilities was beginning to process corrections for all meters which were unbridged from January 2019 onwards. In parallel, users will be provided training on the correction tool to ensure that future corrections are processed as they are required.

The registry notification process was suspended due to defects identified when the process was automated. This, combined with not manually reviewing the notification files or separately validating metering data against the registry, has resulted in some discrepancies between registry and Energy Database information. The impact on reconciliation is minimised, because DART (NHH) and DRS/MDMS (HHR) import registry lists prior to calculating submission information, which ensures that aggregation factors are correct. There is a higher impact on switching. Switching files sometimes failed because the metering information held in the Energy Database and switching files was inconsistent with the registry. Failed switching files are reported in the Electricity App, but there were sometimes delays in reviewing the files and resolving the issues that caused the failures.

The following key areas require further improvement to achieve compliance:

1. **Registry data validation**
   Notification files have not been reviewed or imported into the Energy Database for approximately six months, resulting in registry data discrepancies which are impacting on other processes including switching and reconciliation.

2. **NHH meter read validation**
   The new reports to improve NHH consumption validation are not in use while users await training, and NHH meter condition information is not consistently reviewed to identify events which could affect meter accuracy.

3. **Corrections for defective and bridged meters**
   Once training is complete backdated corrections for bridged and stopped meters should be completed.

4. **Inactive consumption**
   Submission does not occur for periods where an ICP's status is "inactive". Where consumption is detected during an "inactive" period, the status must be returned to "active" to allow

submission. Some issues were identified during review of the disconnection and reconnection process:

a) Disconnection and reconnection reads are not consistently entered. This means that where part of a read period is active and part is inactive, some of the consumption will be apportioned to the inactive period by the historic estimate process and excluded from submission. Review of historic estimate scenarios identified two ICPs where this issue occurred.
b) Disconnections dates are not consistently applied as the first full day the ICP was disconnected. If the disconnection is processed effective from the day the disconnection is carried out, consumption for the day of disconnection will be apportioned to the inactive period and excluded from submission.
c) Monitoring is in place for inactive consumption, but corrections are not always made as required.

Several recommendations are made to improve monitoring of inactive consumption and ensure that disconnections and reconnections are processed in a way that supports accurate calculation of historic estimate.

5. **CS content**
   As recorded in the previous audit, a small number of CS files had an incorrect last actual read date, and I recommend this is investigated.

6. **Switching file failures**
   The Energy Database identifies registry import and export file failures, including for switching files and displays these in the user interface. I found that these are not always reviewed and actioned promptly, which appears to partly be because of training and workload issues.

7. **Read renegotiation process**
   Switch Utilities' read renegotiation process still allows RR files to be supported by unvalidated customer or photo readings. The code requires all RRs to be supported by at least two validated actual readings.

8. **Reconciliation processes**
   A zeroing process is required for ICP days submissions where an aggregation line appears in the previous revision but is not available in the current revision.
   Differences between billed and submitted data should be monitored, and any large variances should be investigated.

Switch Utilities has made improvements to increase compliance following the February 2020 audit, including:

1. Improved timeliness of status and trader updates.
2. Improved validation processes for distributed generation, and the Billing Analyst is completing thorough submission validation in an effort to find and resolve issues before submission.
3. Meter event information is now reviewed and actioned.
4. Average daily consumption in CS files is now recorded as the consumption for the last read to read period in most cases. Some system defects in this process affecting a small number of ICPs are under investigation.
5. Issues relating to switch save protection and win-backs have been cleared.

The breach risk rating total is 75, which results in a recommended audit frequency of three months. During and following the audit, Switch Utilities investigated each of the non-compliances to identify the underlying causes, and implemented or intends to implement changes to prevent recurrence. Most inaccurate data identified during this audit and previous audits was corrected by the time this audit report

was finalised, including most corrections for consumption during bridged periods. All of the recommendations made have been implemented, or are accepted and intended to be implemented.

All remaining improvements are expected to be made by mid 2021. I recommend that the next audit is completed in a minimum of 10 months to allow Switch Utilities time for the improved processes to be bedded in and demonstrated.

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	Notification files have not been reviewed or actioned since April 2020. Some inaccurate information is recorded on the registry and/or in the Energy Database.	Moderate	Medium	4	Identified
Provision of information	2.2	15.35	25 corrections for consumption during bridged periods remain outstanding from the previous audit.	Moderate	Medium	4	Identified
Data transmission	2.3	20 Schedule 15.2	BOPE AMI volumes and readings are provided in a zip file attached to an email, which is not password protected.	Strong	Low	1	Identified
Audit trails	2.4	21 Schedule 15.2	The DRS/MDMS audit logs do not record the individual who imported information into the database.	Strong	Low	1	Identified
Electrical Connection of Point of Connection	2.11	10.33A	Five bridged ICPs were not re-certified on unbridging. Nine late certifications for reconnected meters.	Strong	Low	1	Identified
Changes to registry information	3.3	10 Schedule 11.1	303 late status updates to active. 44 late status updates to inactive. 20 late trader updates.	Moderate	Low	2	Identified
ANZSIC codes	3.6	9 (1(k) of Schedule 11.1	ICP 1001267567LC7DB temporarily had a T99 series ANZSIC code applied. Incorrect ANZSIC codes were temporarily assigned for at least 12 ICPs.	Moderate	Low	2	Cleared
Changes to unmetered load	3.7	9(1)(f) of Schedule 11.1	0010426583EL500 had an incorrect unmetered flag and has now switched out. ICPs 0001951000TG7C9 and 1000007422BP18E recorded unmetered load when none was present and were corrected during the audit.	Moderate	Low	2	Cleared
Management of "active" status	3.8	17 Schedule 11.1	ICP 0005278970RN79A was reconnected from 22/03/19 but should have remained disconnected until it was reconnected by the customer's electrician on 26/03/19 because the paperwork confirmed the job was turned down.	Strong	Low	1	Identified

Subject	Section	Clause	Non-Compliance	Controls	Audit Risk Rating	Breach Risk Rating	Remedial Action
Management of "inactive" status	3.9	19 Schedule 11.1	Three ICPs had status reason code 1,10 (Electrically disconnected at meter box fuse) applied but should have had 1,8 (Electrically disconnected at pole fuse). At least eight ICPs with inactive consumption did not have status corrections processed, or disconnection and/or reconnection reads had not been entered resulting in consumption being recorded in inactive periods.	Weak	Medium	6	Identified
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.	Moderate	Low	2	Identified
Losing trader must provide final information - standard switch	4.3	5 Schedule 11.3	Three late transfer CS files. Incorrect average daily consumption for at least eight transfer CS files. Incorrect last actual read dates for at least two transfer CS files.	Moderate	Low	2	Identified
Retailers must use same reading - standard switch	4.4	6(1) and 6A Schedule 11.3	Seven late RR files. Two late AC files. The RRs for 0424308045LCD00 (09/03/2020) and 0000007471TE5D1 (20/02/2020) were supported by some unvalidated customer readings instead of validated actual readings.	Moderate	Low	2	Identified
Losing trader provides information - switch move	4.8	10(1) Schedule 11.3	Ten late switch move AN files. 123 late switch move CS files. ICPs 0042147873PC9D7 (25/03/2020) and 0000029100UN28F (10/08/2020) had the AA (acknowledge and accept) response code applied when AD (advanced metering) was expected.	Moderate	Low	2	Identified
Losing trader must provide final information - switch move	4.10	11 Schedule 11.3	Incorrect average daily consumption for at least six switch move CS files. Incorrect last actual read dates for at least three switch move CS files.	Moderate	Low	2	Identified
Gaining trader changes to switch meter reading - switch move	4.11	12 Schedule 11.3	Three late RR files. Six late AC files. The RR for 0327269985LC9D7 (08/06/2020) was supported by	Moderate	Low	2	Identified

Subject	Section	Clause	Non-Compliance	Controls	Audit Risk Rating	Breach Risk Rating	Remedial Action
			unvalidated customer readings instead of validated actual readings. 0000001165TRE25 (19/02/2020), did not have a final reading recorded which matched the outcome of the RR process.				
Losing trader provision of information - gaining trader switch	4.13	15 Schedule 11.3	Four late HH AN files.	Strong	Low	1	Identified
Withdrawal of switch requests	4.15	17 and 18 Schedule 11.3	19 late AW files. Nine late withdrawal cycle resolutions. 0452063043LCFAB (07/04/2020) had a NW issued in error. 1000000207BP3F2 (05/06/2020) had CX (customer cancellation) withdrawal code applied, but WP (wrong premises) was a better fit.	Moderate	Low	2	Identified
Electricity conveyed & notification by embedded generators	6.1	10.13, Clause 10.24 and 15.13	ICP 0000292879WE5FA has submission against the RPS profile only, but the RPS and PV1 profiles are recorded on the registry. 15 bridged meters were identified during the audit period. Energy was not quantified in accordance with the code during the bridged periods.	Moderate	Medium	4	Identified
Derivation of meter readings	6.6	3(1), 3(2) and 5 Schedule 15.2	Four readings which appear to have been taken by the customer were recorded as actual readings by Wells, and actual readings in the Energy Database.	Strong	Low	1	Identified
Interrogate meters once	6.8	7(1) and (2) Schedule 15.2	106 ICPs were not read during the period of supply. The best endeavours requirement was not met for at least seven of these ICPs.	Moderate	Low	2	Identified
NHH meters interrogated annually	6.9	8(1) and (2) Schedule 15.2	The best endeavours requirement was not met for at least seven ICPs not read in the previous 12 months.	Moderate	Low	2	Identified
NHH meters 90% read rate	6.10	9(1) and (2) Schedule 15.2	The best endeavours requirement was not met for at least three ICPs not read in the previous four months.	Moderate	Low	2	Identified
Identification of readings	9.1	Clause 3(3)	Apparent customer readings for ICPs 0002925110WFD92 (03/12/19), 0000958958TUE71 (12/09/20) and	Strong	Low	1	Identified

Subject	Section	Clause	Non-Compliance	Controls	Audit Risk Rating	Breach Risk Rating	Remedial Action
		Schedule 15.2	0000909065TUD0F (24/02/20 and 22/07/20) were provided by Wells as actual readings and recorded in the Energy Database as actual readings. An actual meter reader reading ICP 0000212320TP100 (06/12/19) was incorrectly classified as a customer reading.				
Meter data used to derive volume information	9.3	3(5) of schedule 15.2	AMI meter reading data is rounded on import into the Energy Database, and the rounded data is transferred to DART.	Moderate	Low	2	Identified
Calculation of ICP days	11.2	15.6	There is no zeroing process for ICP days submissions which resulted in some incorrect NHH and HHR ICP days. One ICP day each was excluded from the ICP days submission because 0000909109TU8E5, 0194357368LC792, 0005269052WA075, 0000547801TP241, 0087824400PC1CA, 0000048697UNC58 and 1000007658BPC45 were supplied for one day, and a final reading was not recorded. 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.	Moderate	Low	2	Identified
Electricity supplied information provision to the reconciliation manager	11.3	15.7	The AV120 report does not consistently reflect the quantity billed for the period.	Moderate	Low	2	Identified
HHR aggregates information provision to the reconciliation manager	11.4	15.8	Aggregates file contains submission information.	Strong	Low	1	Identified
Creation of submission information	12.2	15.4	There was some missing submission data including, including: • unreported consumption during periods with inactive status for at least eight ICPs, and • unreported consumption during periods where meters were bridged for at least 39 ICPs.	Weak	Medium	6	Identified

Subject	Section	Clause	Non-Compliance	Controls	Audit Risk Rating	Breach Risk Rating	Remedial Action
Allocation of submission information	12.3	15.5	WTS0011-WFNZ-EN-RPS-WFNZ01 was omitted from later revisions for January 2019 to September 2019, but no zero line was added.	Moderate	Low	2	Identified
Accuracy of submission information	12.7	15.12	Some incorrect submission data was provided, including: • unreported consumption during periods with inactive status for at least eight ICPs, • unreported consumption during periods where meters were bridged for at least 39 ICPs, • invalid generation of forward estimate for one ICP, • historic estimate was calculated based on customer readings provided by Wells for four ICPs, • an actual reading was not used to calculate historic estimate because it was incorrectly classified as a customer reading, and • agreed switch readings for one ICP were not used to calculate historic estimate because they were not entered.	Weak	Medium	6	Identified
Permanence of meter readings for reconciliation	12.8	4 Schedule 15.2	Some estimates were not replaced by revision 14.	Strong	Low	1	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						75	

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
Relevant information	2.1	Requirements to complete material change audits	When making changes to systems and/or processes, consider whether a material change audit is required. If in doubt, the Authority should be consulted. Clause 8(1) of Schedule 15.1 requires that if a reconciliation participant intends to make a "material" change to any certified facilities, processes, or procedures then the changes must be subject to an audit prior to the change taking place.
Relevant information	2.1	Review of notification files	Until the automated process for notifications is corrected and resumed, manually review notification files to identify changes that require update in the Energy Database (e.g. changes to network distributed generation details or metering information) or files to be reissued (e.g. rejected MEP nominations).
Relevant information	2.1	Review of registry file exceptions in the Electricity App	Complete training as planned to ensure that registry processing exceptions identified by the Electricity App are promptly investigated and resolved.
Relevant information	2.1	Data validation – metering information	To reduce the incidence of switching file failures, reconcile the Energy Database metering information to the registry to ensure that each meter register has correct information recorded, including multipliers and settlement indicators.
Relevant information	2.1	Data validation – unmetered load	A monthly check between the trader and distributor unmetered load details on the registry should be completed, including confirming that the daily unmetered kWh is correct.
Electrical Connection of Point of Connection	2.11	Certification on reconnection	Provide refresher training on the requirement to request meter certification where a reconnection is completed for a metered ICP without full meter certification.
Trader responsibility for an ICP	3.4	MEP nomination timeliness	Raise MEP nominations for all MEPs and brands at the time that a service order for meter installation is raised.
Trader responsibility for an ICP	3.4	MEP nomination rejections	Develop a process to promptly identify MEP nomination rejections, so that they can be checked and reissued. Rejected nominations will appear on the registry notification files.
ANZSIC codes	3.6	ANZSIC code validation	Review ANZSIC codes at least monthly, to identify and validate codes which are likely to be incorrect. As a minimum the review should include T99 series (unknown) ANZSIC codes, blank ANZSIC codes, and metering category two or higher ICPs with residential ANZSIC codes. These are identified on the registry AC020 trader compliance report. Consider also performing consistency checks to identify ICPs with business network pricing codes and residential ANZSIC codes, and vice versa.
Management of "inactive" status	3.9	Processing of disconnections and reconnections	To ensure that historic estimate is correctly calculated when an ICP is disconnected or reconnected: 1. Enter actual or permanent estimate reads on disconnection or reconnection. 2. Update ICPs to disconnected status on the first full day which they are disconnected. Record active status for any part or full days where the ICP is active and/or has consumption recorded.

Subject	Section	Description	Recommendation
Management of "inactive" status	3.9	Inactive consumption monitoring and correction	Review ICPs with historic consumption during inactive periods to confirm whether the consumption is genuine, and corrections are required. Consider excluding consumption between estimation reads from the exceptions, the process needs to consider any consumption between actual reads, or actual reads and permanent estimates.
ICPs at new or ready status for 24 months	3.10	Monitoring of "new" and "ready" ICPs	A Registry List (type P) with proposed trader = SWCH and status = 000 and 999 should be run at least quarterly to identify ICPs which have been at "new" or "ready" status for more than 18 months and require follow up.
Losing trader must provide final information - standard switch	4.3	Last actual read date CS discrepancies	Investigate the CS files with incorrect last actual read dates applied and resolve the issue.
Retailers must use same reading - standard switch	4.4	RR supporting reads policy	Update the RR policy to ensure that all RRs are supported by at least two validated actual readings which are not provided by the customer.
Gaining trader changes to switch meter reading - switch move	4.11	Investigate missing switch event reading	Add the correct switch event readings for 0000001165TRE25 (19/02/2020) to the Energy Database. Investigate to determine why a final reading matching the outcome of the RR process was not entered into the Energy Database.
Derivation of meter readings	6.6	Review of meter condition information provided by Wells	Review all meter condition information provided by Wells and investigate and resolve any issues identified.
Half hour estimates	9.4	HHR estimation	Investigate whether scripts are still available to calculate HHR estimates where surrounding readings are available.
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. Consider adding further validation for high and low consumption, including for vacant accounts. Vacant accounts are required to be included in submission data.
Electricity supplied information provision to the reconciliation manager	11.3	AV080 versus AV120 submission differences	Closely monitor differences between billed and submitted data and take corrective action if invalid invoices are included.
Allocation of submission information	12.3	Zeroing of aggregation lines included in previous revisions but excluded from the current revision	Establish processes to identify rows provided to the reconciliation manager in previous AV080 and AV110 submissions which are not provided in the current version and add zero lines as necessary.
Permanence of meter readings for reconciliation	12.8	Permanent estimate process	Update the permanent estimate process to ensure that leading zeros are not missed from meter numbers. After updating the permanent estimates, re-check the submission to ensure that no forward estimate remains.

Subject	Section	Description	Recommendation
Permanence of meter readings for reconciliation	12.8	Unexpected forward estimate remaining for ICP 1000512831PCD0D	Investigate why forward estimate remained for ICP 1000512831PCD0D for January 2019, February 2019 and March 2019 and take corrective action as required.

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

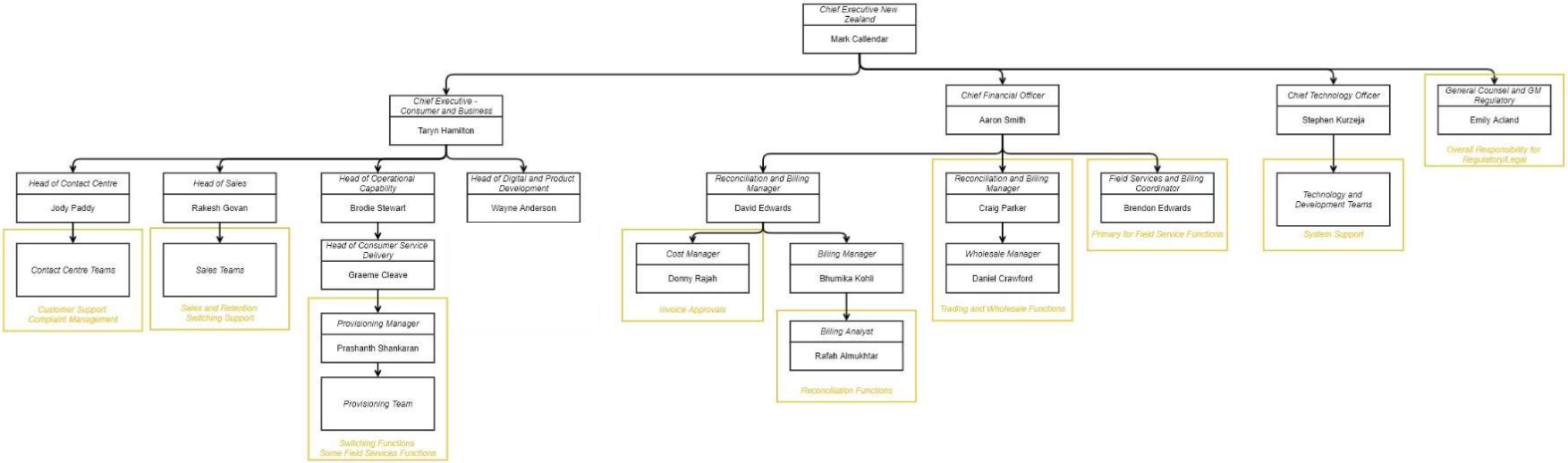
Current code exemptions were reviewed on the Electricity Authority website.

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 organisational 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
Brendon Edwards	Field Services and Billing Co-ordinator
Cameron Waiariki	Provisioning Specialist
Diana Costea	Provisioning Specialist
Jonathan Drake	Senior Product Manager
Joseph Yoon	Senior Applications Developer
Justine Trethewey	Finance Project Manager
Karl Hunter	Provisioning Specialist
Nick Shaw	Provisioning Specialist
Prashanth Shankaran	Provisioning Manager
Rafah Almukhtar	Billing Analyst
Richard Mackie	Network Operations Co-ordinator

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. The agent audits were completed within seven months of this audit being undertaken.

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.

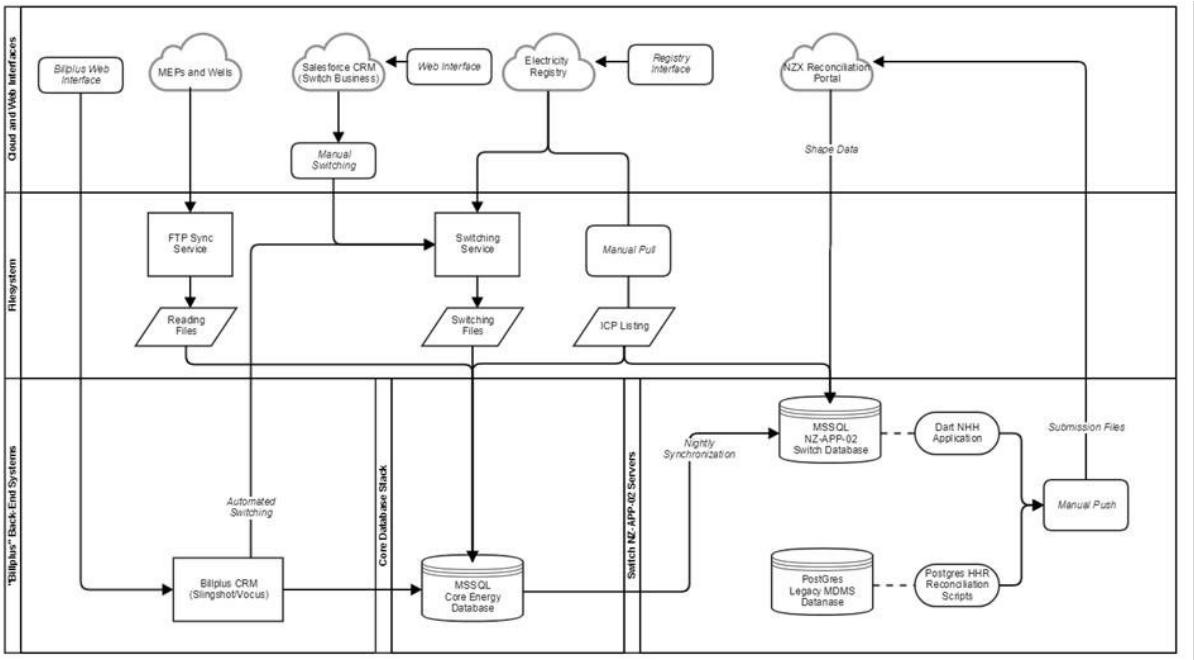
1.5. Hardware and Software

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** 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 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.
- **SalesForce** was used as the customer relationship management system for Accredo (HHR Vocus Communications customers) and did not interact with the registry.
- **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 EA 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	Aug 2020	Dec 2019	2019	2018	2017
1	34,054	28,472	21,390	11,635	3,287
2	257	267	329	287	236
3	16	22	37	45	44
4	4	4	12	12	11
5	-	-	1	1	52
9	-	-	1	1	1
Blank	-	-	-	1	1

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

Status	Aug 2020	Dec 2019	2019	2018	2017
Active (2,0)	34,331	28,765	21,770	11,982	3,580
Inactive – new connection in progress (1,12)	-	6	7	6	1
Status	**Aug 2020**	**Dec 2019**	**2019**	**2018**	**2017**
Inactive – electrically disconnected remotely by AMI meter (1,7)	28	18	35	1	-
Inactive – electrically disconnected at pole fuse (1,8)	30	28	23	-	-
Inactive – electrically disconnected due to meter disconnected (1,9)	8	24	23	1	-
Inactive – electrically disconnected at meter box fuse (1,10)	5	5	8	-	-
Inactive – electrically disconnected at meter box switch (1,11)	10	5	11	-	-
Inactive – electrically disconnected ready for decommissioning (1,6)	7	5	3	-	-
Inactive – reconciled elsewhere (1,5)	-	-	-	-	-
Decommissioned (3)	274	234	187	162	21

1.8. Authorisation Received

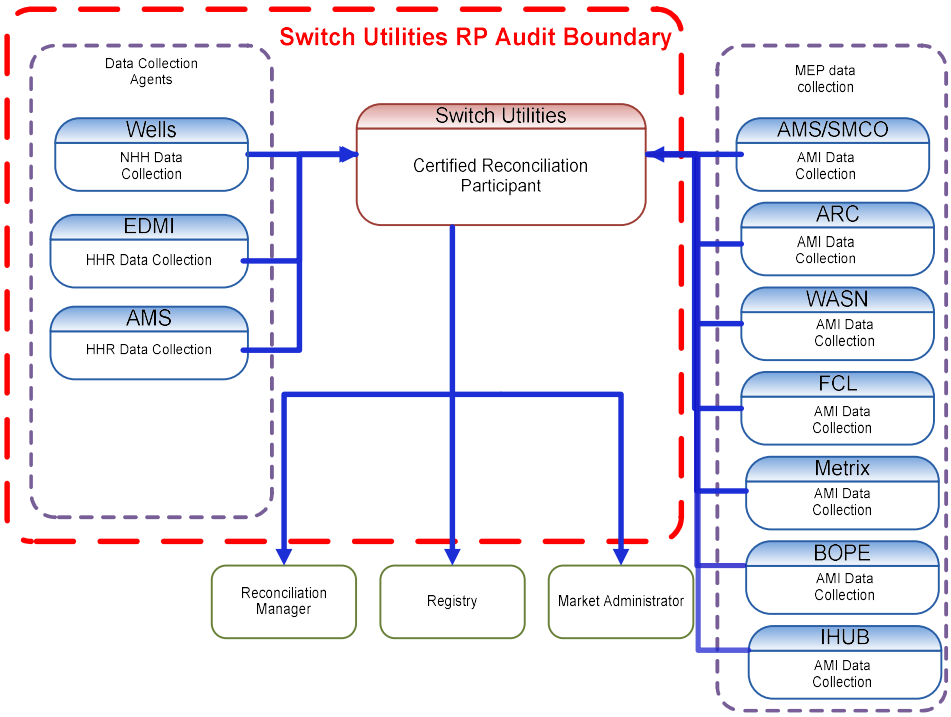
Switch Utilities provided a letter of authorisation.

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 Zoom meetings between 12 and 27 October 2020.

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

Tasks Requiring Certification Under Clause 15.38(1) of Part 15	Agents Involved in Performance of Tasks	MEPs Providing Data
		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 were completed within seven months of this audit being undertaken and 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 February 2020 by Tara Gannon 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 errors found in registry data.	Still existing
Audit trails	2.4	21 Schedule 15.2	EDMI's IE2 and DQM audit trails do not record the operator identifier for the person who completed the activity; operator identifiers correspond to a user group not an individual. The DRS/MDMS audit logs do not record the individual who imported information into the database.	Cleared Still existing
Electrical Connection of Point of Connection	2.11	10.33A	Five bridged ICPs were not re-certified on unbridging.	Still existing

Subject	Section	Clause	Non-compliance	Status
Changes to registry information	3.3	10 Schedule 11.1	167 late status updates to active. 111 late status updates to inactive. Nine late trader updates. Two late ANZSIC code updates.	Still existing
Provision of information to the registry manager	3.5	9 Schedule 11.1	Five late status updates to "active" for new connections. Two newly connected ICPs had incorrect "active" status event dates applied.	Cleared, no new connections were completed
ANZSIC codes	3.6	9 (1(k) of Schedule 11.1	ICP 0009725850CNA35 temporarily had a T99 series ANZSIC code applied. Incorrect ANZSIC codes were assigned for at least 16 ICPs.	Still existing. Previous exceptions are cleared but some new exceptions were identified.
Changes to unmetered load	3.7	9(1)(f) of Schedule 11.1	ICP 0010426583EL500 does not have unmetered load connected, but the daily unmetered kWh applied for submission and recorded on the registry is 6.9 kWh.	Still existing.
Management of "active" status	3.8	17 Schedule 11.1	ICP 1002023505LC6A8 was reconnected on 26/11/19 but had an "active" event date of 25/11/19. Two newly connected ICPs had incorrect "active" status event dates applied.	Still existing.
Management of "inactive" status	3.9	19 Schedule 11.1	At least nine ICPs with inactive consumption did not have status corrections processed, or disconnection and/or reconnection reads had not been entered resulting in consumption being recorded in inactive periods.	Still existing.
Losing trader must provide final information - standard switch	4.3	5 Schedule 11.3	One late CS file. Incorrect average daily consumption for at least 12 ICPs.	Still existing.
Retailers must use same reading - standard switch	4.4	6(1) and 6A Schedule 11.3	One late RR file. One late AC file. The RRs for 0000426550TP490 (24/05/19) and 0000845315NVB5A (13/11/19) were supported by unvalidated customer readings instead of validated actual readings.	Still existing.

Subject	Section	Clause	Non-compliance	Status
Non-half hour switch event meter reading - standard switch	4.5	6(2) and (3) Schedule 11.3	The RR for 1001150629CK277 was invalidly rejected.	Still existing.
Losing trader provides information - switch move	4.8	10(1) Schedule 11.3	One late switch move AN file. 73 late switch move CS files. 253 ANs had proposed event dates before the requested event date, because of a temporary system issue for AN files between 31/07/19 and 15/08/19.	Still existing.
Losing trader must provide final information - switch move	4.10	11 Schedule 11.3	Incorrect average daily consumption for at least 13 ICPs. Incorrect last actual read dates for two ICPs.	Still existing.
Gaining trader changes to switch meter reading - switch move	4.11	12 Schedule 11.3	Four late RR files. Seven late AC files. The RRs for 0000946432TEE9C (18/07/19) and 0000219844UN1DD (24/08/19) were supported by unvalidated customer readings instead of validated actual readings. For ICP 0000166984UN05B (19/08/19) the agreed switch reading was recorded as actual, when it was an estimate, because an actual reading was received on the same day.	Still existing.
Losing trader provision of information - gaining trader switch	4.13	15 Schedule 11.3	Six late AN files.	Still existing.
Withdrawal of switch requests	4.15	17 and 18 Schedule 11.3	63 late AW files. One late withdrawal cycle resolution. 0006178600RNAB7 (16/09/19) was sent with withdrawal reason code “wrong switch type” instead of “wrong premises”. 0026169175WE3AA (20/07/19) had a withdrawal sent in error.	Still existing.
Switch saving protection	4.17	11.15AA to 11.15AB	Switch Utilities is a save protected retailer, and an account credit was offered as an enticement to remain a customer before the switch was completed for ICP 0000119574UNF99.	Cleared.

Subject	Section	Clause	Non-compliance	Status
Electricity conveyed & notification by embedded generators	6.1	10.13, Clause 10.24 and 15.13	Notifications of gifting have not been provided to the RM for ICPs 0000158386UN338, 0000292879WE5FA, 0001418721UNA13 and 0113877767LCF32, and generation consumption is not measured or submitted. ICP 0000292879WE5FA has submission against the RPS profile only, but the RPS and PV1 profiles are recorded on the registry. 24 bridged meters were identified during the audit period. Energy was not quantified in accordance with the code during the bridged periods.	Cleared Still existing Still existing
Collection of information by certified reconciliation participant	6.5	2 Schedule 15.2	FCLM does not usually provide a screen shot confirming time differences for meters which are manually read using MV90. If this information is not provided, EDMI is unable compare the system time to the meter time. Clock synchronisation events provided by MEPs are not consistently reviewed and actioned.	Cleared Cleared
Interrogate meters once	6.8	7(1) and (2) Schedule 15.2	122 ICPs were not read during the period of supply. The best endeavours requirement was not met for at least seven of these ICPs.	Still existing
NHH meters interrogated annually	6.9	8(1) and (2) Schedule 15.2	The best endeavours requirement was not met for at least three ICPs not read in the previous 12 months. Meter reading frequency reports were submitted to the Market Administrator late for April 2019 and June 2019.	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 two ICPs not read in the previous four months.	Still existing
Correction of NHH meter readings	8.1	19(1) Schedule 15.2	24 ICPs had bridged meters for part of the audit period, and no corrections to capture unmetered consumption during the bridged periods were processed. ICP 0006980139RNFF1's meter was not recording consumption and no correction was processed. The removal readings applied matched the meter removal paperwork.	Still existing (non-compliance is recorded in sections 2.1 and 2.2 for unprocessed corrections this audit)

Subject	Section	Clause	Non-compliance	Status
			Eight ICPs with inactive consumption did not have status corrections processed, or disconnection and/or reconnection reads had not been entered resulting in consumption being recorded in inactive periods.	
Electronic meter readings and estimated readings	9.6	17 Schedule 15.2	For EDMI's manual downloads, the meter event information is not imported into IE2 and is not reviewed and sent to the retailer. Meter event information is not consistently reviewed and actioned.	Cleared. Cleared.
Calculation of ICP days	11.2	15.6	There is no zeroing process for ICP days submissions which resulted in some incorrect NHH and HHR ICP days. One ICP day was excluded from the ICP days submission because ICP 0000348556MP8EF was supplied for one day, and a final reading was not recorded. 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. Still existing. Still existing.
HHR aggregates information provision to the reconciliation manager	11.4	15.8	Aggregates file contains submission information.	Still existing.
Creation of submission information	12.2	15.4	Breach 1812SWIT1 recorded that some reconciliation submission information was provided 15 minutes late.	Cleared.
Accuracy of submission information	12.7	15.12	Breach 1812SWIT1 recorded that some reconciliation submission information was provided 15 minutes late. 24 ICPs had bridged meters for part of the audit period, and no corrections to capture unmetered consumption during the bridged periods were processed. ICP 0006980139RNFF1's meter was not recording consumption and no correction was processed. The removal readings applied matched the meter removal paperwork. At least nine ICPs with inactive consumption did not have status corrections processed, or disconnection and/or reconnection reads had not been	Still existing.

Subject	Section	Clause	Non-compliance	Status
			entered resulting in consumption being recorded in inactive periods. ICP 1002051199LCFA9 became active on 21/07/19, but the status was updated to active effective from 28/07/19. Consumption was only calculated for the registry active days, instead of the true active days. ICP 0010426583EL500 does not have unmetered load connected, but the daily unmetered kWh applied for submission and recorded on the registry is 6.9 kWh.	
Permanence of meter readings for reconciliation	12.8	4 Schedule 15.2	Some estimates were not replaced by revision 14.	Still existing.
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
Relevant Information	2.1	Data validation	Registry notifications indicating changes to the distributor unmetered load details, installation type, fuel type or generation capacity should be directed to a work queue and checked to determine whether Switch Utilities' trader information requires an update, or a notification of gifting should be provided to the reconciliation manager. The following data should be checked for consistency (preferably monthly): • ICPs with installation type B or G, generation capacity, a generation fuel type and/or injection flow metering which do not have a profile consistent with distributed generation details (EG1, PV1 or HHR) recorded, • ICPs with a profile consistent with generation (EG1 or PV1) which do not have installation type B or G, generation capacity, a generation fuel type and injection flow metering; and • a check between the trader and distributor unmetered load details on the registry, including	Not implemented this audit period. Implemented. Implemented. Not implemented this audit period.

Subject	Section	Description	Recommendation	Status
			confirming that the daily unmetered kWh is correct.	
Electrical Connection of Point of Connection	2.11	Certification on reconnection	Provide refresher training on the requirement to request meter certification where a reconnection is completed for a metered ICP without full meter certification.	Not implemented this audit period.
Changes to unmetered load	3.7	Confirm unmetered load details	Confirm unmetered load and on hours for 0001951000TG7C9 and 1000007422BP18E, so the correct daily unmetered kWh can be calculated. Update the registry daily unmetered kWh as necessary.	Implemented.
Management of "inactive" status	3.9	Inactive consumption	Review ICPs with historic consumption during inactive periods to confirm whether the consumption is genuine and corrections are required. Ensure that disconnection and reconnection reads are consistently entered, so that boundary reads are present for use by the historic estimate calculation process.	Not implemented this audit period. Not implemented this audit period.
Derivation of meter readings	6.6	Review of meter condition information provided by Wells	Review all meter condition information provided by Wells, and investigate and resolve any issues identified.	Not implemented this audit period.
Electricity supplied information provision to the reconciliation manager	11.3	AV080 versus AV120 submission differences	Review the October 2019 AV080 and AV120 submission data to determine the cause of the difference, and process corrections as necessary. Monitor differences between billed and submitted data.	Implemented. Not implemented this audit period.
Permanence of meter readings for reconciliation	12.8	Investigate small differences between the total and historic estimate at revision 14	Check the rounding differences between the total and historic estimate to determine why they have occurred, and whether there is an underlying issue with the total or historic estimate calculation process.	Resolved.

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 list file as at 12/08/20 and AC020 trader compliance report for 01/01/20 to 12/08/20 were examined to confirm that information was correct and not misleading. The registry validation process was examined in detail in relation to the achievement of this requirement.

Audit commentary

Registry synchronisation

Status and trader updates (excluding MEP nominations) are generated from the Energy Database. Users add and modify information including event dates using 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.

MEP nominations are completed manually using the registry web interface, and the process is discussed in detail in **section 3.4**.

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. I viewed these queues during the audit.

Early in the audit period, registry notification files were processed in the same way as acknowledgement files. In the first quarter of 2020, a change was made to allow the notification files to directly update the Energy Database without user intervention unless an error occurred. The process was only intended to allow "non-metering" information to be updated, with metering details checked and updated manually. Some issues were identified when the process was implemented, including that it was allowing automatic updates of meter related information. The notification review and update process has been on hold for approximately six months while these issues are investigated and resolved. This means that changes to status, metering, address, pricing, and network data made by other parties are not reviewed to determine whether Switch Utilities needs to update its own data. Switch Utilities field services processes will identify some of the updates required, but any updates or corrections where paperwork is not provided to the trader may be missed.

Clause 8(1) of Schedule 15.1 requires that if a reconciliation participant intends to make a "material" change to any certified facilities, processes, or procedures then the changes must be subject to an audit prior to the change taking place. I recommend that when making future changes to systems and/or processes, Switch Utilities should consider whether a material change audit is required. If in doubt, the Authority should be consulted.

There is no comprehensive validation between the Energy Database and the registry. Full validation between the Energy Database and the registry is not possible, because not all registry fields are held within the Energy Database.

The impact on reconciliation is minimised, because DART (NHH) and DRS/MDMS (HHR) import registry lists prior to calculating submission information, which ensures that aggregation factors are correct. The reconciliation process can be affected by metering data discrepancies caused by the notification file process suspension, and I saw one example of forward estimate being calculated unnecessarily for a closed meter register.

There is higher impact on switching, which is exacerbated by validation between the registry and Energy Database not being completed. Switching files sometimes failed because the metering information held in the Energy Database and switching files was inconsistent with the registry. Failed switching files are reported in the Electricity App, but there were sometimes delays in reviewing these failed files and resolving the issues that caused the failures.

The previous audit found that the original registry notification process did not trigger actions where distributor information which could affect trader information changed, particularly distributed generation and unmetered load details. The Billing Analyst implemented checks to identify any ICPs with profiles and/or metering inconsistent with the distributor's distributed generation details using registry list rather than notification information. There are still no checks in place to check whether distributor and trader unmetered load details are consistent, or to identify changes to distributor unmetered load details which may indicate a change to trader details is required. I have repeated the previous audit's recommendation in relation to unmetered load to maintain visibility.

Description	Recommendation	Audited party comment	Remedial action
Requirements to complete material change audits	When making changes to systems and/or processes, consider whether a material change audit is required. If in doubt, the Authority should be consulted. Clause 8(1) of Schedule 15.1 requires that if a reconciliation participant intends to make a "material" change to any certified facilities, processes, or procedures then the changes must be subject to an audit prior to the change taking place.	Our Billing/Energy Analyst has re-reviewed the requirements and we confirm she understands when we need to complete Material Change audit and will be mindful of these requirements as we make changes in the future	Identified
Review of notification files	Until the automated process for notifications is corrected and resumed, manually review notification files to identify changes that require update in the Energy Database (e.g. changes to network distributed generation details or metering information) or files to be reissued (e.g. rejected MEP nominations).	Automated Synchronisation of the NOT files will occur in the week beginning Monday the 15th November. Historical updates for the Electricity App will be synced and this will ensure all notification files are updated correctly.	Identified

Description	Recommendation	Audited party comment	Remedial action
Review of registry file exceptions in the Electricity App	Complete training as planned to ensure that registry processing exceptions identified by the Electricity App are promptly investigated and resolved.	A Breach Report Process has been implemented from the 2nd November and will be run every second day with any potential Breaches which cannot be solved by provisioning agents to be raised with Technology teams 3 days prior to the Breach occurring for investigation.	Identified
Data validation – metering information	To reduce the incidence of switching file failures, reconcile the Energy Database metering information to the registry to ensure that each meter register has correct information recorded, including multipliers and settlement indicators.	Two reasons for CS Files being Late 1) Agent Overlooks Readings 2) Missing Meter Change Paperwork We are implementing a weekly process where outstanding jobs are to be followed up our Field Services and Billing Coordinator. Team briefed on processes 10th November - first email to Metering Contractors sent 12 November	Identified
Data validation – unmetered load	A monthly check between the trader and distributor unmetered load details on the registry should be completed, including confirming that the daily unmetered kWh is correct.	Our Field Services and Billing Coordinator will receive an unmetered load report on a monthly basis from our Blling Analyst and will then chase the Metering Companies and/or Distributors starting from November.	Identified

Registry and static data accuracy

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

Item No.	Issue	Aug 2020	Dec 2019	2019	2018	Comments
1	Status or status date mismatch between registry and Switch Utilities	12	11	140	12	ICP 0005278970RN79A was reconnected from 22/03/19 but should have remained disconnected until it was reconnected by the customer's electrician on 26/03/19 because the paperwork confirmed the job was turned down. See **section 3.8**. Three ICPs had status reason code 1,10 (Electrically disconnected at meter box fuse) applied but should have had 1,8 (Electrically disconnected at pole fuse). See **section 3.9**.

Item No.	Issue	Aug 2020	Dec 2019	2019	2018	Comments
						At least eight ICPs with inactive consumption did not have status corrections processed, or disconnection and/or reconnection reads had not been entered resulting in consumption being recorded in inactive periods. See **section 3.9**.
2	Active ICPs with blank MEP and no MEP nominated and UML = N	-	-	-	1	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	-	-	ICP 1001267567LC7DB had a T99 series ANZSIC code which was corrected during the audit. See **section 3.6**.
7	Incorrect ANZSIC code	13	16	19	1	ICP 1001267567LC7DB temporarily had a T99 series ANZSIC code applied. Incorrect ANZSIC codes were temporarily assigned for at least 12 ICPs. See **section 3.6**.
8	Active ICP with cat 9 and UML= N	-	-	1	0	Compliant.
9	ICPs with Distributor unmetered load populated but retail unmetered load is blank	-	-	-	-	Compliant.
10	ICPs with unmetered load flag Y but load is recorded as zero	1	-	5	-	0010426583EL500 had an incorrect unmetered flag and has now switched out. See **section 3.7**.
11	ICPs with incorrect shared unmetered load	-	-	-	-	Compliant.
12	ICPs with Distributed Generation indicated but no DG profile	4	4	2	4	Four ICPs have distributed generation indicated and did not have injection flow metering and/or profiles compatible with generation installed. In all cases the generated energy is gifted, and the profile should be RPS. See **section 6.1**.

Item No.	Issue	Aug 2020	Dec 2019	2019	2018	Comments
13	ICP at status "new connection in progress" (1,12) or "ready" (0,0) with an initial energisation date populated by the Distributor	1	-	1	-	The AC020 report found that ICP 0000020599EABBF had its initial electrical connection date populated as 10/12/2019 but had not been made active. Switch Utilities advised the customer that they were unable to complete new connections and the proposed trader was later updated to CTCT. The ICP remains at ready status and was not connected during Switch Utilities' period of supply. See **sections 3.5** and **3.8**.
15	Active date variance with initial electrical connection date	-	5	10	-	Compliant.
16	Meter cat 3 or known commercial site with residential ANZSIC code	-	-	-	1	Compliant.

I found that some registry and switching file information was inaccurate. This is discussed further and recorded as non-compliance in **sections 3** and **4.**

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	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 corrected data is transferred to DART with the next extract; each extract contains all reads used by the reconciliation process for each ICP. Ten examples of potential defective meters were provided and reviewed. Four of the defects did not relate to the way in which the meter recorded consumption, and no correction was required. The other six ICPs (listed in the bridged meter table in **section 12.7**) had bridged meters and no corrections were processed.
Bridged meters	Bridged meters are normally identified when reviewing reconnection paperwork. Upon discovery of a bridged meter staff raise a job to unbridge the meter. A bridged meter correction process was created within the Electricity App but has not been used to date because staff have not been trained to use it. By the time this report was drafted, Switch Utilities was beginning to process corrections for all meters which were unbridged from January 2019 onwards. In parallel, users will be provided training on the correction tool to ensure that future corrections are processed as they are required. • 15 ICPs had their meters bridged during the audit period, and corrections to estimate consumption during the bridged period were not processed. • 24 ICPs had their meters bridged during the previous audit period, and corrections to estimate consumption during the bridged period have not been processed. The affected ICPs are listed in **section 12.7**.

Consumption while inactive	Submission does not occur for periods where an ICP's status is "inactive". Where consumption is detected during an "inactive" period, the status must be returned to "active" to allow submission. The historic estimate process calculates the total consumption for the read to read period, and then uses the seasonal adjusted shape values (SASV) to apportion consumption to each day. Consumption for any days with inactive status are omitted from the submission. To ensure all consumption is captured and reported, Switch Utilities historic estimate process requires: 1. Disconnection and reconnection actual or permanent estimate reads to be consistently entered, to ensure that the entire read to read period has one status (i.e. active or inactive). 2. There is no consumption during periods with inactive status. Disconnection and reconnection reads are not normally entered when processing a disconnection or reconnection. I found that reconnection dates were consistently applied as the date the reconnection was completed, but disconnection dates were applied either as the disconnection date or the first day full day that the ICP was disconnected. If the status change occurs on the day of disconnection, some of the read period consumption will be allocated to that inactive day and excluded from submission. Since August 2019, any ICPs with consumption during inactive periods have been directed to a work queue within the Electricity App. ICPs in the queue are checked to determine whether the consumption is genuine and/or reconnection paperwork has been received, and the status is updated as necessary and/or the exception is acknowledged. Once an exception is acknowledged it will disappear from the list until new inactive consumption is identified. The process identifies "new" inactive consumption and I saw evidence that the queue is worked through and cleared daily. Switch Utilities provided a list of 120 ICPs which had 285,850.2 kWh of consumption recorded during "inactive" periods from January 2020 onwards. Because disconnection and reconnection readings are not consistently entered and the report includes estimated readings, some of this consumption will not have genuinely occurred during inactive periods. I checked a sample of 28 of these and found 14 were not genuine, eight were genuine and had been corrected, and six were genuine but had not been corrected. The exceptions are detailed in **section 3.9**, along with recommendations to improve monitoring of inactive consumption, and ensure that disconnections and reconnections are processed in a way that supports accurate calculation of historic estimate.
Incorrect multipliers	If an incorrect multiplier is identified, Switch Utilities would reverse all billing data for the affected periods and process a backdated meter change, then swap the consumption to a new meter with the correct multiplier. The corrected data would be transferred to DART with the next extract. No incorrect multipliers were identified during the audit period, and there have been no multiplier corrections.
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. I confirmed that where there were unmetered daily kWh changes on the registry, revised submission information is provided.

Audit outcome

Non-compliant

Non-compliance	Description
Audit Ref: 2.1 With: Clause 10.6, 11.2, 15.2 From: 22-Jan-19 To: 27-Oct-20	Notification files have not been reviewed or actioned since April 2020. Some inaccurate information is recorded on the registry and/or in the Energy Database. Potential impact: Low Actual impact: Low Audit history: Multiple times Controls: Moderate Breach risk rating: 4
Audit risk rating	**Rationale for audit risk rating**
Medium	Controls are rated as moderate as they are sufficient to mitigate risk most of the time, but there is room for improvement particularly for corrections. The impact is assessed as medium overall: • DART and DRS/MDMS retrieve ICP attribute information directly from the registry, including data used to determine the aggregation factors. The failure to import and review notification files in the Energy Database is expected to have little to no impact on reconciliation. • Some corrections have been outstanding for more than two years. • The notification file issues have impacted the CS process.

Actions taken to resolve the issue	Completion date	Remedial action status
Based on auditor feedback we built additional validation alerts from the NOT files which we import to flag other actions required	20th November 2020	Identified
Preventative actions taken to ensure no further issues will occur	**Completion date**	
Automated Synchronisation of the NOT files will occur and historical updates for the Electricity App will be synced once further development work is carried out	20th November 2020	

2.2. Provision of information (Clause 15.35)

Code reference

Clause 15.35

Code related audit information

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

Audit observation

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

Audit commentary

This area is discussed in several sections in this report. I saw evidence during the audit that most discrepancies identified were promptly investigated and updated, apart from corrections relating to bridged meters.

By the time this report was drafted, Switch Utilities was beginning to process corrections for all meters which were unbridged from January 2019 onwards. In parallel, users will be provided training on the correction tool to ensure that future corrections are processed as they are required.

The affected ICPs are listed in **section 2.1**, and some of the corrections have been outstanding since January 2019.

Audit outcome

Non-compliant

Non-compliance	Description
Audit Ref: 2.2 With: Clause 15.35 From: 22-Jan-19 To: 27-Oct-20	25 corrections for consumption during bridged periods remain outstanding from the previous audit. Potential impact: Low Actual impact: Low Audit history: None Controls: Moderate Breach risk rating: 4
Audit risk rating	**Rationale for audit risk rating**
Medium	Controls are rated as moderate as they ensure corrections are processed on time most of the time, but there is room for improvement for bridged meters. The impact is assessed as medium overall, because some corrections have been outstanding for more than two years.

Actions taken to resolve the issue	Completion date	Remedial action status
Historical Corrections have been carried out and the method/timing of corrections communicated to Veritek	First week of November	Identified
Preventative actions taken to ensure no further issues will occur	**Completion date**	
Electricity App additional validation and checks for both Legacy and Smart Meters development work completed. Team to have training on use of application.	20 November	

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.

I reviewed the method to receive meter reading data from each agent, and traced a sample of one month of HHR data from the source EIEP3 files to DRS/MDMS and the HHR aggregates submission for one ICP with data provided by AMS, and one ICP with data provided by EDMI.

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 NHH meters are read manually by Wells as an agent.

To confirm the data transmission process:

- I reviewed the method to receive meter reading data from each MEP and agent,
- I traced a diverse sample of readings for 575 ICPs from the source files to the Energy Database and DART's latest results, including all data providers, and
- I traced volumes for a diverse sample of six HHR settled AMI ICPs from the source files to DRS/MDMS and the HHR aggregated submissions, including all data providers.

Audit commentary

HHR

HHR data transmission was reviewed as part of AMS and EDMI's agent audits and found to be compliant. I traced a sample of one month of HHR data from the source EIEP3 files to DRS/MDMS and the HHR aggregates submission for two ICPs and confirmed the data matched.

NHH

NHH agents and MEPs transfer meter reading and AMI volume data to Switch Utilities via SFTP apart from BOPE, who emails a zip file which is not password protected. This is not considered to be a secure data transfer method and is recorded as non-compliance.

Upon receipt NHH readings are imported into the Energy Database. All readings are imported for Arc meters, but for other meters end of month reads are extracted, and intramonth reads are extracted where they are a boundary reading (e.g. a switch in, switch out, or meter change reading) or there are no end of month readings.

Validated NHH readings are extracted from the Energy Database and used by DART to produce NHH reconciliation submissions. 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 a diverse sample of readings for 575 ICPs from the source files to the Energy Database and the supporting information for the most recent DART submissions. I found the readings matched the source files or agreed switch event readings.

I traced a diverse sample of volumes for six HHR settled AMI ICPs from the source files to DRS/MDMS and the HHR aggregated submissions, and confirmed the data matched.

Audit outcome

Non-compliant

Non-compliance	Description
Audit Ref: 2.3 With: Clause 20 Schedule 15.2 From: 01-Jan-20 To: 27-Oct-20	BOPE AMI volumes and readings are provided in a zip file attached to an email, which is not password protected. Potential impact: Low Actual impact: Low Audit history: Once Controls: Strong Breach risk rating: 1
Audit risk rating	**Rationale for audit risk rating**
Low	The controls are rated as strong and the impact as low, because almost all metering data is provided via SFTP. Review of the event detail report found 153 active ICPs had BOPE meters at some time during the audit period.

Actions taken to resolve the issue	Completion date	Remedial action status
We have contacted the one ICP which we receive metering data via email and arranged with the Vendor to receive an automated daily file delivery and cancelled the email delivery	13 November	Identified
Preventative actions taken to ensure no further issues will occur	**Completion date**	
Monitor metering data method of receipt	in the future	

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.

DRS/MDMS contains audit logs which record all files imported, including the date, time, and source. The audit trails do not record the individual user who imported the file.

Audit outcome

Non-compliant

Non-compliance	Description
Audit Ref: 2.4 With: Clause 21 Schedule 15.2 From: 01-Jun-18 To: 27-Oct-20	The DRS/MDMS audit logs do not record the individual who imported information into the database. Potential impact: Low Actual impact: Low Audit history: Once Controls: Strong Breach risk rating: 1
Audit risk rating	**Rationale for audit risk rating**
Low	The controls are rated as strong and the impact as low. Audit trails are available and contain the required information, but the person who processed the change is not identifiable within the audit trail. A small number of users have access to the affected system.

Actions taken to resolve the issue	Completion date	Remedial action status
We assumed we had fulfilled the requirements when we updated the Switching Audit Logs to clearly indicate the individual user who imported the file for the NT, NW, AN files. This was a significant amount of development work.	Completed	Identified
Preventative actions taken to ensure no further issues will occur	**Completion date**	
We note the auditor comment and now understand the requirements with regards to EIEP files provided by MEPs and agents containing HHR interval data. We have internally raised a request for further development work and this is likely to be completed in mid 2021.	Mid 2021	

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.

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 confirmed that there have been no instances where access could not be arranged for other parties 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. The registry list as at 12/08/20 was reviewed.

Audit commentary

Switch Utilities supplies 20 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

Review of the registry list and event detail reports for 01/01/20 to 12/08/20 did not identify any new connections, or non-compliances relating to new connections.

Audit commentary

Switch Utilities has not completed any new connections during the audit period. When new connections were completed, ICPs were usually claimed at "inactive new connection in progress" status and the MEP was nominated when the ICP was claimed.

Review of the AC020 report confirmed that no active ICPs had a blank MEP or metering category of 9, null or zero if they were metered. All ICPs had an MEP nomination accepted within 14 business days.

Audit outcome

Compliant

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

Code reference

Clause 10.33(1)

Code related audit information

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

- *for a point of connection to the grid – the grid owner has approved the connection*
- *for an NSP that is not a point of connection to the grid - the relevant distributor has approved the connection.*
- *for a point of connection that is an ICP, but is not as NSP:*
- *the reconciliation participant is recorded in the registry as the trader responsible for the ICP*
- *if the ICP has metered load, one 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

Review of the registry list and event detail reports for 01/01/20 to 12/08/20 did not identify any new connections, or non-compliances relating to new connections.

Audit commentary

Switch Utilities has not completed any new or temporary electrical connections during the audit period.

When new connections were completed, ICPs were usually claimed at "inactive new connection in progress" status and the MEP was nominated when the ICP was claimed. 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 reconciliation participant is recorded in the registry as the trader responsible for the ICP*
- *if the ICP has metered load, 1 or more certified metering installations are in place*
- *if the ICP has not previously been electrically connected, the relevant distributor has given written approval of the temporary electrical connection.*

Audit observation

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

The AC020 trader compliance report for 01/01/20 to 12/08/20 was examined to confirm process compliance and that controls are functioning as expected.

Audit commentary

MEP information for active ICPs

All ICPs recorded as active with metering installed have an MEP 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
- nine late certifications for reconnections of metered ICPs.

The previous audit confirmed processes were in place to request re-certification where an uncertified ICP requires reconnection, but these processes are not being followed. I recommend that the processes are re-established, and training is provided.

Description	Recommendation	Audited party comment	Remedial action
Certification on reconnection	Provide refresher training on the requirement to request meter certification where a reconnection is completed for a metered ICP without full meter certification.	This Training was overlooked as part of the transition of staff. We will provide further training to our teams, and ask them to follow up with metering equipment providers to remind them of the need to complete recertification. Key to this will be incorporating the checks of certification in the sign up and reconnection process to ensure certification is checked at that point.	Identified

Meters are required to be re-certified if they are unbridged. 15 bridged meters were identified during the audit period. Nine were re-certified when they were unbridged, one remains bridged and five were not re-certified on unbridging:

ICP	Unbridged date	Meter certification date[1]
0007160652RN162	29/05/2020	05/06/2020
0000132220TR56C	27/07/2020	8/08/2020
0001257613UN7F8	29/07/2020	07/08/2020
0000016158UN0DF	29/07/2020	21/07/2020
1002073008LCF82	11/08/2020	05/09/2020

Audit outcome

Non-compliant

Non-compliance	Description
Audit Ref: 2.11 With: Clause 10.33A From: 19-Dec-19 To: 27-Jul-20	Five bridged ICPs were not re-certified on unbridging. Nine late certifications for reconnected meters. Potential impact: Medium Actual impact: Low Audit history: Twice 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 and all were certified at a later date. 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
This Training was overlooked as part of the transition of staff. We will provide further training to our teams and ask them to follow up with metering equipment providers to remind them of the need to complete recertification.	Mid November 2020	Identified

[1] First re-certification date on or after the unbridged date, or the most recent certification date if not recertified on or after the unbridged date.

Preventative actions taken to ensure no further issues will occur	Completion date	
Key to this will be incorporating the checks of certification in the sign up and reconnection process to ensure certification is checked at that point.	By 31/12/2020	

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, including the two new networks they began trading on 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

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

Review of the registry list and event detail reports for 01/01/20 to 12/08/20 did not identify any new connections, or non-compliances relating to new connections.

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

Review of the registry list and event detail reports for 01/01/20 to 12/08/20 did not identify any new connections, or non-compliances relating to new connections.

Audit commentary

The new connection process is detailed in **sections 2.9** and **3.5**. The process in place ensures that trader information is populated as required by this clause, although no new connections have been completed.

Audit outcome

Compliant

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

Code reference

Clause 10 Schedule 11.1

Code related audit information

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

Audit observation

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

The AC020 trader compliance report for 01/01/20 to 12/08/20 was reviewed. A sample of late updates were checked, including:

- 15 late updates to active status made over 30 business days after the event date,
- the five latest (or all late) updates to each inactive status,
- the ten latest trader updates, and
- all late ANZSIC code updates for switch ins.

Audit commentary

The AC020 trader compliance report was reviewed to determine the timeliness of registry updates.

Status updates

Status updates are processed in the Energy Database and transferred to the registry. The status and status event date are entered into the Electricity App once confirmation of the disconnection or reconnection is received.

Service requests are tracked by brand in a spreadsheet, which records the date the job was issued. The spreadsheet is reviewed daily. Jobs which do not have receipt of paperwork recorded ten business days after the issue date are checked to determine whether paperwork has been received and followed up with the contractor if necessary.

Status update processes moved from being centralised to decentralised by brand in mid-October 2019 to allow better management of workloads, and this appears to have reduced the number of late updates.

Submission does not occur for periods where an ICP's status is "inactive". Where consumption is detected during an "inactive" period, the status must be returned to "active" to allow submission. Some issues were identified during review of the disconnection and reconnection process:

1. Disconnection and reconnection reads are not consistently entered. This means that where part of a read period is active and part is inactive, some of the consumption will be apportioned to the inactive period by the historic estimate process and excluded from submission. Review of historic estimate scenarios identified two ICPs where this issue occurred.
2. Disconnections dates are not consistently applied as the first full day the ICP was disconnected. If the disconnection is processed effective from the day the disconnection is carried out, consumption for the day of disconnection will be apportioned to the inactive period and excluded from submission.
3. Monitoring is in place for inactive consumption, but corrections are not always made as required.

Several recommendations are made in **section 3.9** to improve monitoring of inactive consumption and ensure that disconnections and reconnections are processed in a way that supports accurate calculation of historic estimate. Non-compliance is recorded in **section 12.7** relating to the inaccurate submission information**.**

Reconnections

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
2017	5	67%	16.6
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

191 of the late updates were within 10 business days of the event date, and 280 were within 30 business days of the event date. The latest update was 341 business days after the event date.

I checked a sample of the ten latest updates (81-341 business days after the event date), and five late updates between 30 and 80 business days after the event date. The late updates were caused by:

- backdated switches in where the reconnection cannot be processed on the registry until the switch is complete, and
- late or missing paperwork (in some cases job completion paperwork was misdirected to an individual user's email account instead of a shared email inbox, which caused delays and the late or missing paperwork was identified and followed up through the service request monitoring or inactive consumption processes).

The late updates were accurately processed from the correct event date except for ICP 0005278970RN79A, which was reconnected from 22/03/19 but should have remained disconnected until it was reconnected by the customer's electrician on 26/03/19 because the paperwork confirmed the job was turned down. The incorrect update is recorded as non-compliance in **section 3.8**.

The February 2020 audit found that ICP 1002023505LC6A8 was reconnected on 26/11/19 but had an event date of 25/11/18. The ICP switched out effective from 20/03/20 before the status date was corrected.

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
2017	0	100.0%	1.00
2018	43	4.4%	23.93
2019	42	96.5%	2.10
Dec 2019	138	91.20%	3.27
Aug 2020	44	96.07%	2.27

18 of the late updates were within 10 business days of the event date, and 39 were within 30 business days of the event date. The latest update was 480 business days after the event date.

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

- late receipt of paperwork
- late advice of an MEP change
- difficulty in processing an update which required assistance from the IT team
- corrections where validation processes had confirmed that the status was incorrect, or
- late processing of updates due to workload and staff absences, particularly during holiday periods.

The late updates were accurately processed with the correct status, apart from ICP 0000001569UNBE2 (08/01/20) which had status reason 1,10 (Electrically disconnected at meter box fuse) but should have had status reason 1,8 (Electrically disconnected at pole fuse). This is recorded as non-compliance in **section 3.9**.

Trader updates

Trader updates (excluding 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 completed manually using the registry web interface.

For Orcon and Slingshot ICPs, MEP nominations are processed at the time a service order for meter installation is raised.

For Switch Utilities ICPs, the MEP nominations are processed at the time a service order for meter installation is raised for FCLM, and when the work completion paperwork is received for all other MEPs. To ensure that MEP nominations are made on time, I recommend that they are consistently raised when the service order is created for all MEPs in **section 3.4**.

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

Year	ICPs notified greater than 5 days	Percentage on time	Average Business Days between Status Event and Status Input Dates
Aug 2020	20	88.76%	3.52

Six of the late updates were within 10 business days of the event date, and 14 were within 30 business days of the event date. The latest update was 79 business days after the event date.

I checked the ten latest trader updates and found they were delayed because:

- the MEP was nominated once completion paperwork was received instead of when the service order was raised,
- a backdated correction to an existing trader record or MEP nomination was required, or
- there was a delay in confirming the correct attributes for the record, including receiving paperwork.

The late updates contained the correct attributes and event dates.

The AC020 report identified one late update to an ANZSIC code for an ICP which switched in. The late update was not caused by Switch Utilities, it was the initial trader update processed automatically by the registry when the CS file was provided by the losing trader.

Audit outcome

Non-compliant

Non-compliance	Description
Audit Ref: 3.3 With: Clause 10 Schedule 11.1 From: 01-Jan-20 To: 23-Jul-20	303 late status updates to active. 44 late status updates to inactive. 20 late trader updates. Potential impact: Low Actual impact: Low Audit history: Multiple times Controls: Moderate Breach risk rating: 2
Audit risk rating	**Rationale for audit risk rating**
Low	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
- Late updates due to backlogs/staffing issues will be addressed by streamlining tasks, removing single-person dependency	November 2020	Identified

- Difficulties where assistance is required from the IT team will be addressed by establishing clear escalation pathways - MEP nominations being done upon service order completion will be addressed via training to ensure this is done at time of service order creation.		
Preventative actions taken to ensure no further issues will occur	**Completion date**	
See above	November 2020	

3.4. Trader responsibility for an ICP (Clause 11.18)

Code reference

Clause 11.18

Code related audit information

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

A trader ceases to be responsible for an ICP if:

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

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

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

Audit observation

Retailers Responsibility to Nominate and Record MEP in the Registry

The AC020 trader compliance report and event detail report for 01/01/20 to 12/08/20 were examined to confirm whether all active ICPs have an MEP recorded, and MEP nominations were accepted.

ICP decommissioning

The process for the decommissioning of ICPs was examined. The event detail report 01/01/20 to 12/08/20 was reviewed to identify all ICPs decommissioned during the period. A diverse sample of ten decommissioned ICPs were checked to prove the process, and confirm controls are in place.

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 recorded.

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

For Orcon and Slingshot ICPs, MEP nominations are processed at the time a service order for meter installation is raised.

For Switch Utilities ICPs, the MEP nominations are processed at the time a service order for meter installation is raised for FCLM, and when the work completion paperwork is received for all other MEPs. I recommended that nominations are consistently processed when the service order is raised to help to ensure future nominations are on time.

There is no process to actively monitor MEP nomination rejections, and Switch Utilities relies on the MEP to contact them where this occurs before a new nomination is issued.

One of the 166 MEP nominations identified on the event detail report was rejected. It was initially raised for MTRX in error. After rejection was reprocessed for IHUB, first with a date of 05/03/20 and then with 05/02/20. Both reprocessed nominations were accepted by IHUB.

Description	Recommendation	Audited party comment	Remedial action
MEP nomination timeliness	Raise MEP nominations for all MEPs and brands at the time that a service order for meter installation is raised.	Awareness to be improved via Training.	Identified
MEP nomination rejections	Develop a process to promptly identify MEP nomination rejections, so that they can be checked and reissued. Rejected nominations will appear on the registry notification files.	Awareness to be improved via Training. Need to review and confirm who has access to the files and who will have ownership for processing them	Identified

ICP Decommissioning

Switch Utilities continue with their obligations under this clause. ICPs that are vacant and active, or inactive are still maintained in the database. An attempt is made to read the meter at the time of removal and if this is not possible then the last actual meter reading is used. This last actual reading is normally the one taken at the time of disconnection. Switch Utilities also advises the MEP responsible that their metering can be removed, and the site is to be decommissioned, or has been decommissioned, dependent on the distributor's process.

42 ICPs were decommissioned during the audit period, one was set up in error and 41 were dismantled. 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.

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

Review of the registry list and event detail reports for 01/01/20 to 12/08/20 did not identify any new connections, or non-compliances relating to new connections.

Audit commentary

New connection information timeliness

Switch Utilities has not completed any new connections during the audit period. When new connections were completed, ICPs were usually claimed at "inactive new connection in progress" status and the MEP was nominated when the ICP was claimed.

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
2017	4	50%	6.6
2018	5	72%	11.2
2019	1	75%	4.25
Dec 2019	**7**	**0%**	**49.57**
Aug 2020	-	-	-

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.

The AC020 report found that ICP 0000020599EABBF had its initial electrical connection date populated as 10/12/2019 but had not been made active. Switch Utilities advised the customer that they were unable to complete new connections and the proposed trader was later updated to CTCT. The ICP remains at ready status and was not connected during Switch Utilities' period of supply.

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 process to capture and manage ANZISC codes was examined.

The registry list file as at 12/08/20 and AC020 trader compliance report for 01/01/20 to 12/08/20 were examined to check ANZSIC codes, including active ICPs with T99 series or blank ANZSIC codes.

To confirm the validity of the ANZSIC codes selected, I checked a diverse sample of 80 active ICPs across 13 different ANZSIC codes which were assigned to at least 0.2% of active ICPs.

Audit commentary

ANZSIC codes are checked and confirmed as part of the application process.

- Orcon and Slingshot customers are expected to be residential and have the residential ANZSIC code applied.
- Commercial ANZSIC codes for Switch Utilities customers are checked in the pricing tool, named Switch Saver. Users are required to acknowledge whether the existing ANZSIC code is correct and select a new ANZSIC code if it is indicated to be incorrect.

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

- ICP 1001267567LC7DB had a T99 series ANZSIC code which was corrected during the audit,
- no ICPs had blank ANZSIC codes,
- no ICPs had meter category three or higher and a residential ANZSIC codes, and.
- six ICPs had meter category two with a residential ANZSIC code, all were businesses and their ANZSIC codes were corrected during the audit.

To confirm the validity of the ANZSIC codes selected, I checked a diverse sample 80 active ICPs across 13 different ANZSIC codes which were assigned to at least 0.2% of active ICPs. Six ICPs were found to have incorrect ANZSIC codes and were corrected during the audit.

I rechecked ANZSIC codes which were found to be incorrect during the previous audit. All were updated on the registry apart from ICPs 1001138404UN15B and 0363662324LC91F which switched to other traders before they were corrected.

I recommend regular validation of ANZSIC codes to improve accuracy.

Description	Recommendation	Audited party comment	Remedial action
ANZSIC code validation	Review ANZSIC codes at least monthly, to identify and validate codes which are likely to be incorrect. As a minimum the review should include T99 series (unknown) ANZSIC codes, blank ANZSIC codes, and metering category two or higher ICPs with residential ANZSIC codes. These are identified on the registry AC020 trader compliance report. Consider also performing consistency checks to identify ICPs with business network pricing codes and residential ANZSIC codes, and vice versa.	We will review the AC020 trader compliance report on the 30th of each month as part of our submission processes	Identified

Audit outcome

Non-compliant

Non-compliance	Description
Audit Ref: 3.6 With: Clause 9 (1(k) of Schedule 11.1 From: 16-Aug-20 To: 27-Oct-20	ICP 1001267567LC7DB temporarily had a T99 series ANZSIC code applied. Incorrect ANZSIC codes were temporarily assigned for at least 12 ICPs. 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	Controls are moderate, because all ANZSIC codes are checked upon customer sign up but there was evidence that some ANZSIC codes are incorrectly recorded. 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.

Actions taken to resolve the issue	Completion date	Remedial action status
We identified that this was principally from third-party sales channels where incorrect ANZISC codes were selected, and we will be providing refresher training to those agents to remind them of the importance of correct ANZSIC code selection.	Completed	Cleared
Preventative actions taken to ensure no further issues will occur	**Completion date**	
We will review the AC020 trader compliance report on the last day of each month as part of our submission processes	Starting 31 December	

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 file as at 12/08/20 and AC020 trader compliance report for 01/01/20 to 12/08/20 were examined to identify any ICPs where:

- unmetered load is identified by the Distributor and none is recorded by Switch Utilities, and
- Switch Utilities' unmetered load figure does not match with the Distributor's figure (where it is possible to calculate this if the Distributor is using the recommended format) and the variance is greater than 0.1 kWh per day (0.1 kWh per day was chosen as a sample only; this does not indicate compliance is achieved if an error is found that is less than 0.1 kWh per day).

Audit commentary

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 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 notifications indicating changes to distributor unmetered load are not monitored, and regular reconciliations between trader and distributor unmetered load details are not completed. I have recommended that notifications of changes to distributor unmetered load are monitored, and daily unmetered kWh values are compared to the distributor values at least monthly in **section 2.1**.

Switch Utilities supplies 55 active ICPs with unmetered load indicated. 51 ICPs have standard unmetered load, and four ICPs have shared unmetered load. Review of the AC020 report found:

- no ICPs where the distributor had unmetered load recorded, but Switch Utilities did not,
- ICP 0010426583EL500 had its unmetered flag set to Y, with daily unmetered kWh of zero - a site visit confirmed that no unmetered load was connected, and the unmetered flag was incorrect, however the ICP switched out effective 08/09/2020 before the registry was updated,

- ICP 0001951000TG7C9's trader daily kWh differed from the distributor's daily kWh by more than ±0.1 kWh (1.08 kWh recorded by Switch Utilities versus 2.016 kWh recorded by the distributor) - a site visit confirmed that no unmetered load was connected to the ICP, and the registry was updated during the audit, and
- ICP 1000007422BP18E had a daily unmetered load of 1.0 kWh recorded, and no distributor unmetered load details were recorded -a site visit confirmed that no unmetered load was connected, and the registry was updated during the audit.

Audit outcome

Non-compliant

Non-compliance	Description
Audit Ref: 3.7 With: Clause 9(1)(f) of Schedule 11.1 From: 02-May-17 To: 15-Oct-20	0010426583EL500 had an incorrect unmetered flag and has now switched out. ICPs 0001951000TG7C9 and 1000007422BP18E recorded unmetered load when none was present and were corrected during the audit. Potential impact: Low Actual impact: Low Audit history: Once Controls: Moderate Breach risk rating: 2
Audit risk rating	**Rationale for audit risk rating**
Low	Controls are rated as moderate overall. Most unmetered load details were correct, but a small number of exceptions were identified because there no regular validation between the trader and distributor unmetered load details. The impact is low. Corrected data will be provided through the revision process for ICPs 0001951000TG7C9 and 1000007422BP18E. ICP 0010426583EL500 has no impact on submission because the daily kWh was correctly recorded as zero.

Actions taken to resolve the issue	Completion date	Remedial action status
We have raised a development item internally to trigger automatic validation events for internal teams to check unmetered load when a site with unmetered load is gained, and then every 12 months thereafter. All unmetered loads identified during the audit have been fixed (apart from one who switched out)	Completed	Cleared
Preventative actions taken to ensure no further issues will occur	**Completion date**	
Our Field Services and Billing Coordinator will receive an unmetered load report on a monthly basis from our Billing/Energy Analyst and chase the Metering Companies	Starting 20 November	

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

Review of the registry list and event detail reports for 01/01/20 to 12/08/20 did not identify any new connections, or non-compliances relating to new connections.

The process to manage status updates was examined. The registry list file as at 12/08/20 and AC020 trader compliance report for 01/01/20 to 12/08/20 were reviewed to determine compliance. 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.

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. Unmetered load is not billed by Switch Utilities, and solely unmetered ICPs are not supplied. If an ICP was set up without a meter in error, the missing meter register would be detected through billing validations because there would be no variable charges for the ICP.

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.

The AC020 report found that ICP 0000020599EABBF had its initial electrical connection date populated as 10/12/2019 but had not been made active. Switch Utilities advised the customer that they were unable to complete new connections and the proposed trader was later updated to CTCT. The ICP remains at ready status and was not connected during Switch Utilities' period of supply.

Reconnection information accuracy

A sample of 15 reconnections were checked to confirm that the correct status and date had been applied apart from ICP 0005278970RN79A, which was reconnected from 22/03/19 but should have remained disconnected until it was reconnected by the customer's electrician on 26/03/19 because the paperwork confirmed the job was turned down.

The February 2020 audit found that ICP 1002023505LC6A8 was reconnected on 26/11/19 but had an event date of 25/11/18. The ICP switched out effective from 20/03/20 before the status date was corrected.

Some late status changes to active are recorded as non-compliance in **section 3.3**.

Audit outcome

Non-compliant

Non-compliance	Description
Audit Ref: 3.8 With: Clause 17 of Schedule 11.1 From: 22-Mar-19 To: 27-Oct-20	ICP 0005278970RN79A was reconnected from 22/03/19 but should have remained disconnected until it was reconnected by the customer's electrician on 26/03/19 because the paperwork confirmed the job was turned down. Potential impact: Low Actual impact: Low Audit history: Three times Controls: Strong Breach risk rating: 1
Audit risk rating	**Rationale for audit risk rating**
Low	The controls are recorded as strong, because only one data accuracy error was identified. The impact is low. Submission data is revised once late updates are completed, and corrections are processed.

Actions taken to resolve the issue	Completion date	Remedial action status
Agent was aware that both hard and remote reconnection had failed so no changes made to status. 0005278970RN79A ended up being reconnected by customer's own electrician who replaced fuses. We only updated registry status on 24/03/2020 (agent not sure how we were notified of this though).	Completed	Cleared
Preventative actions taken to ensure no further issues will occur	**Completion date**	
We will implement a daily review of deenergised sites with consumption and update statuses where applicable. The above example was an exception and customer had independently arranged access and communication to provisioning was not triggered.	November 2020	

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

Code reference

Clause 19 Schedule 11.1

Code related audit information

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

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

Audit observation

The registry list file as at 12/08/20 and AC020 trader compliance report for 01/01/20 to 12/08/20 were reviewed to determine compliance.

Switch Utilities does not complete new connections, and no issues were identified in relation to use of the "inactive new connection in progress" status. The process to manage ICPs at the other inactive statuses was examined, and a diverse sample of 35 status updates to inactive, including at least five for each status reason code, were checked for accuracy.

The findings in relation to the timeliness of updates to registry are recorded in **section 3.3.**

Audit commentary

Use of 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.

No ICPs are at "inactive new connection in progress" status. The AC020 report found that ICP 0000020599EABBF had its initial electrical connection date populated as 10/12/2019 but had not been made active. Switch Utilities advised the customer that they were unable to complete new connections and the proposed trader was later updated to CTCT. The ICP remains at ready status and was not connected during Switch Utilities' period of supply.

I reviewed a sample of 35 updates to inactive status, including at least five ICPs updates to each inactive status. I confirmed the status reason codes and event dates were correctly applied based on the paperwork provided at the time of the update except:

ICP	Event date	Applied status reason	Correct status reason
0000001569UNBE2	08/01/2020	1,10 (Electrically disconnected at meter box fuse)	1,8 (Electrically disconnected at pole fuse)
0000168469TR2AA	21/07/2020	1,10 (Electrically disconnected at meter box fuse)	1,8 (Electrically disconnected at pole fuse)
0000130331TR9C0	4/06/2020	1,10 (Electrically disconnected at meter box fuse)	1,8 (Electrically disconnected at pole fuse)

The AC020 report recorded two ICPs with 1,7 (Electrically disconnected remotely by AMI meter) status which had the AMI flag set to no. Both ICPs had HHR meters and were confirmed to be disconnected remotely.

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

Inactive periods with consumption

Submission does not occur for periods where an ICP's status is "inactive". The historic estimate process calculates the total consumption for the read to read period, and then uses the seasonal adjusted shape values (SASV) to apportion consumption to each day. Consumption for any days with inactive status are

omitted from the submission. To ensure all consumption is captured and reported, Switch Utilities historic estimate process requires:

1. disconnection and reconnection actual or permanent estimate reads to be consistently entered, to ensure that the entire read to read period has one status (i.e. active or inactive, and
2. there is no consumption during periods with inactive status.

Disconnection and reconnection reads are not normally entered when processing a disconnection or reconnection. Where a read to read period contains volume but has inactive status for one or more days, the consumption allocated to the inactive days will not be reported. For example:

- ICP 0243719043LC615 switched in on 16/01/2020 and was reconnected on 20/01/2020 - the read to read period was 16/01/2020 to 30/01/2020 and 0.8 kWh allocated to the period between 16/01/2020 and 19/01/2020 was not reported, and
- ICP 0000003057TR31C was disconnected on 09/03/2020 and switched out on 18/03/2020 - the ICP received daily readings, and 2 kWh allocated to the period between the disconnection and switch out was not reported.

I found that reconnection dates were consistently applied as the date the reconnection was completed, but disconnection dates were applied either as the disconnection date or the first day full day that the ICP was disconnected. Although disconnections usually occur during the day, the registry only allows one status to be recorded per day, and the code specifies that status events are to be applied from the beginning of the day of the status change (0.00.00am). In contrast, readings are to be applied effective from the end of the day (11.59.59pm). If the disconnection read and status change are recorded on the same day, consumption allocated to the disconnection date will be excluded from the historic estimate calculations in DART. To ensure that all consumption is captured for reconciliation the disconnection reading should be entered effective 11.59.59pm on the disconnection date, and the status should change one second later at 0.00.00am the following day (i.e. the first full day that the ICP is disconnected).

Description	Recommendation	Audited party comment	Remedial action
Processing of disconnections and reconnections	To ensure that historic estimate is correctly calculated when an ICP is disconnected or reconnected: 1. Enter actual or permanent estimate reads on disconnection or reconnection. 2. Update ICPs to disconnected status on the first full day which they are disconnected. 3. Record active status for any part or full days where the ICP is active and/or has consumption recorded.	Incorrect reason code: Agent confirmed that the wrong option had been chosen in error. Agent will take care in future to ensure the correct reason code is always applied. As at 6th November the confirmed disconnections status process has been updated. The Non-Compliance was due to a lack of awareness. This has since been advised to agents concerned and updates to disconnected status are being made for the date after disconnection was completed.	Identified

Since August 2019, any ICPs with consumption during inactive periods have been directed to a work queue within the Electricity App. ICPs in the queue are checked to determine whether the consumption is genuine and/or reconnection paperwork has been received, and the status is updated as necessary and/or the exception is acknowledged. Once an exception is acknowledged it will disappear from the

list until new inactive consumption is identified. The process identifies "new" inactive consumption and I saw evidence that the queue is worked through and cleared daily.

Switch Utilities provided a list of 120 ICPs which had 285,850.2 kWh of consumption recorded during "inactive" periods from January 2020 onwards. I checked all 23 ICPs with more than 500 kWh of inactive consumption and five ICPs with between 5 and 500 kWh of inactive consumption:

- eight ICPs had been corrected to active status for the period where consumption occurred, and all consumption was reported,
- 14 ICPs had estimated rather than actual consumption during the period with inactive status, and no genuine inactive consumption was identified and
- six ICPs were made inactive prior to switching out and there was genuine usage during the inactive period which was excluded from submissions:

ICP	Start date	End date	Inactive kWh
0007179377RN03C	16/04/2019	3/07/2020	10,744.49
0000116378UN3E1	9/07/2019	31/03/2020	3533
1001155567LC903	18/06/2019	6/01/2020	2143
0000188261UN11D	18/06/2019	13/02/2020	47.8
0000466864HB439	18/12/2019	4/02/2020	33
0000217419UN242	28/08/2019	2/03/2020	5,965

The previous audit recommended that the report of ICPs with consumption recorded during inactive periods is reviewed to identify and correct historic "inactive" consumption which will not be detected by the new process implemented in August 2019, but this has not been implemented. I repeat the recommendation to maintain visibility.

Description	Recommendation	Audited party comment	Remedial action
Inactive consumption monitoring and correction	Review ICPs with historic consumption during inactive periods to confirm whether the consumption is genuine, and corrections are required. Consider excluding consumption between estimation reads from the exceptions, the process needs to consider any consumption between actual reads, or actual reads and permanent estimates.	Effective October 2020, our Billing Analyst has been reviewing ICPs with historic consumption during inactive periods and sharing these exceptions (as/if they arise) with the Field Services Coordinators. The Field Services Coordinators then confirm whether the consumption is genuine (whilst considering any consumption between actual reads, or actual reads and permanent estimates). Any exceptions which need correction are done via our Electricity Application which is reflected in our submissions.	Identified

Audit outcome

Non-compliant

Non-compliance	Description
Audit Ref: 3.9 With: Clause 19 Schedule 11.1 From: 01-Jan-20 To: 27-Oct-20	Three ICPs had status reason code 1,10 (Electrically disconnected at meter box fuse) applied but should have had 1,8 (Electrically disconnected at pole fuse). At least eight ICPs with inactive consumption did not have status corrections processed, or disconnection and/or reconnection reads had not been entered resulting in consumption being recorded in inactive periods. Potential impact: Low Actual impact: Low Audit history: Once Controls: Weak Breach risk rating: 6
Audit risk rating	**Rationale for audit risk rating**
Medium	Controls are rated as weak, because they are not sufficient to identify and correct all instances of inactive consumption. The audit risk rating is medium based on the kWh differences identified. The report of ICPs with inactive consumption during the audit period indicated that 285,520.213 kWh of consumption was attributed to the 120 ICPs on the report, indicating potential under submission. Because disconnection and reconnection readings are not consistently entered and the report includes estimated readings, some of this consumption will not have genuinely occurred during inactive periods.

Actions taken to resolve the issue	Completion date	Remedial action status
Incorrect reason code: Feedback provided to the agent involved. The ICPs with inactive consumption identified during the audit have had status corrections processed, or disconnection and/or reconnection reads entered. Our process for reviewing ICPs with historic consumption during inactive should ensure this exceptions are addressed as/if they occur moving forward.	Completed	Identified
Preventative actions taken to ensure no further issues will occur	**Completion date**	
Incorrect reason code: Agent confirmed that the wrong option had been chosen in error. Agent will take care in future to ensure the correct reason code is always applied.	Completed	

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

Code reference

Clause 15 Schedule 11.1

Code related audit information

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

Audit observation

Whilst this is a Distributor's code obligation, I investigated whether any queries had been received from Distributors in relation to ICPs at the "new" or "ready" status for more than 24 months and 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 new connections were completed, ICPs were usually claimed at "inactive new connection in progress" status once the distributor moved the ICP to "ready" status.

Because new connections are no longer completed, ICPs at "new" or "ready" status are not actively monitored, but I recommend that monitoring is completed to ensure that any new ICPs assigned to Switch Utilities in error are identified and followed up.

Description	Recommendation	Audited party comment	Remedial action
Monitoring of "new" and "ready" ICPs	A Registry List (type P) with proposed trader = SWCH and status = 000 and 999 should be run at least quarterly to identify ICPs which have been at "new" or "ready" status for more than 18 months and require follow up.	Taken into account Auditor comments and we will implement quarterly reporting from Nov 20. Historical data now cleaned up and no new customer connections in the future	Identified

Any requests from distributors on ICPs which have been at "new" or "ready" status for more than two years are investigated and responded to when they are received. None of these requests were received during the audit period.

Analysis of the registry list found no ICPs had "new" status for more than two years. Two ICPs created more than two years ago had ready status record on the registry:

- ICP 1002052227LCF63 was no longer required and was decommissioned before the audit, and
- ICP 0000020599EABBF was not connected by Switch Utilities and the proposed trader has been updated to CTCT.

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.

NTs are issued through the Energy Database once the application has been approved. Customers sign up through a website and provide the information required to produce the NT, including whether they are transferring between retailers at their existing address, or moving into a new address. This information is used to determine the correct switch type, with transfer switch type 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.

Review of the event detail report found 8,120 transfer switch NTs were issued. I checked the metering category for the 6,913 ICPs which were present on the registry list with history and confirmed that 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 selected.

Audit outcome

Compliant

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

Code reference

Clauses 3 and 4 Schedule 11.3

Code related audit information

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

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

When establishing an event date for clause 4, the losing trader may disregard every event date established by the losing trader for an ICP for which when the losing trader received notice from the registry manager under clause 22(a) the losing trader had been responsible for less than two months.

Audit observation

The event detail report for 01/01/20 to 12/08/20 was 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 sample of two (or all) ANs per response code were reviewed to determine whether the codes had been correctly applied.

The switch breach report was examined for the audit period.

Audit commentary

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 and the AA (acknowledge and accept) response code is only used where none of the other codes apply. A sample of six ANs were checked for accuracy, and the response codes were correctly applied.

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 + five business days.

The event detail report was reviewed for all 3,343 transfer ANs to assess compliance with the setting of event dates requirements.

- 3,319 ANs (99.2%) had proposed event dates within five business days of the NT receipt date.
- 3,341 ANs (99.9%) had proposed event dates within ten business days of the NT receipt date.
- Two ANs had proposed event dates more than ten business days after the NT receipt date, because the initial import of the NT into the Energy Database failed, and the file was reimported and processed at a later date. The AN proposed event date was set to be five business days from the Energy Database import date, not the date the file was received by the registry. Several recommendations are made in **section 2.1** to reduce the likelihood of file imports being delayed by data discrepancies.

AN timeliness is managed using the Energy Database and its interface the Electricity App. Files are generated automatically on NT receipt unless an exception is identified; and are directed to a user via the Electricity App for resolution.

The switch breach report recorded four late transfer AN files. One was not genuinely late, and the other three were up to 11 business days late because the initial import of the NT into the Energy Database failed, and the file was reimported and processed at a later date.

Audit outcome

Non-compliant

Non-compliance	Description
Audit Ref: 4.2 With: Clauses 3 and 4 Schedule 11.3 From: 14-Feb-20 To: 03-Aug-20	Two ANs had proposed event dates more than ten business days after the NT receipt date. Three late AN files. 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. AN compliance is expected to be achieved if NT files are successfully imported into the Energy Database and processed soon after they are received. Unsuccessful attempted file imports are identified by the Energy Database, but are not consistently actioned promptly, resulting in some non-compliant proposed event dates and late AN files. The audit risk rating is low as this has no direct impact on reconciliation.

Actions taken to resolve the issue	Completion date	Remedial action status
Breach Reporting to appropriate teams now implemented as part of a weekly process	Completed	Identified
Preventative actions taken to ensure no further issues will occur	**Completion date**	
Breach reporting should identify these as they occur and therefore will be fixed in a timely manner	Completed	

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

Code reference

Clause 5 Schedule 11.3

Code related audit information

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

- *providing event date to the registry manager (clause 5(a)); and*
- *provide to the gaining trader a switch event meter reading as at the event date, for each meter or data storage device that is recorded in the registry with accumulator of C and a settlement indicator of Y (clause 5(b)); and*
- *if a switch event meter reading is not a validated reading, provide the date of the last meter reading (clause 5(c)).*

Audit observation

The event detail report for 01/01/20 to 12/08/20 was reviewed to 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 five records. 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 ten of these CS files were checked to determine whether the average daily consumption was correct.

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

Audit commentary

CS timeliness

CS timeliness is managed using the Energy Database and its interface the Electricity App. CS files are 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.

The switch breach report recorded 19 late CS files for transfer switches. Three were genuine breaches, where the initial CS file was rejected by the registry due to a discrepancy between the registry and CS file meter channel information, and there was a delay in actioning the acknowledgement and resolving the issue.

I reviewed examples of CS acknowledgement rejection reasons and found they were most common where there was a discrepancy between the meter component or channel information between the switch file and the registry. Files were also rejected where the switch had been completed manually on the registry, but the Energy Database had also attempted to complete the switch.

CS content

CS files are generated by the Energy Database, using its stored meter, reading, and consumption information.

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.

In April 2020, the Energy Database moved from populating the average daily consumption with the Energy Database's "average daily estimate" of consumption over the previous month to calculating the average daily consumption between the last two actual readings before the ICP switched out. Where there are not two actual readings for an ICP which has switched in, the average daily consumption for the incoming CS file is applied. Where there are not two actual readings for a new ICP which has not switched in (i.e. a new connection), an estimate of the average daily consumption will be applied. Following implementation of the change, Switch Utilities found that some system defects were resulting

in unexpected average daily kWh values in some cases. Several defects have already been corrected but others are currently being investigated.

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

Estimated daily kWh	Count of transfer CS files	Findings
Negative	0	Compliant.
Zero	30	A sample of five values were checked, and two did not match the average daily consumption for the last read to read period: 0000200375TPFE6 (09/03/20) recorded the actual consumption over the previous month rather than the last read to read period; and was generated before the system change. 0208431047LCB57 (05/05/20) recorded 0 in the CS file instead of 30.5. The file was processed after the system change, but a defect (now resolved) caused incorrect estimated daily kWh to be reported.
More than 200 kWh	56	The five highest estimated daily kWh values were checked, and four were more than ± 1 kWh different to the average daily consumption for the last read to read period: 0007151229RN666 (04/03/20), 0001595583CNDB8 (15/03/20) and 0000233525MP047 (23/02/20) recorded the actual consumption over the previous month rather than the last read to read period; and were generated before the system change. 0000011220HBAFA (30/06/20) recorded 3,933 in the CS file instead of 120. The file was processed after the system change, but a defect relating to meter reading rollovers caused incorrect estimated daily kWh to be reported. The defect is currently under investigation.

The content of a sample of five transfer CS files were checked, and the following exceptions were identified:

Type	ICP	Event date	Comment
TR	0000910500TUEF4	09/08/2020	The estimated kWh was recorded as 52 but was expected to be 34. The file was generated after the system change and the error is believed to have been caused by a system defect. The last actual read date was recorded as 09/08/2020 but should have been 08/08/2020.
TR	0099552607CN121	15/04/2020	The estimated kWh was based on the month's consumption not the least read to read period; and was generated before the system change. The last actual read date was recorded as 15/04/2020 but should have been 14/04/2020.

It appears that the Energy Database is applying the date of the last validated read received before the ICP switches out (which may be after the end of the period of supply), instead of the last actual read received during the period of supply. I recommend that this is investigated:

Description	Recommendation	Audited party comment	Remedial action
Last actual read date CS discrepancies	Investigate the CS files with incorrect last actual read dates applied and resolve the issue.	API had a known bug which has now been fixed and will be monitored to ensure no additional noncompliance arising via a monthly review of randomised ICPS	Identified

Audit outcome

Non-compliant

Non-compliance	Description
Audit Ref: 4.3 With: Clause 5 of Schedule 11.3 From: 10-Feb-20 To: 21-Aug-20	Three late transfer CS files. Incorrect average daily consumption for at least eight transfer CS files. Incorrect last actual read dates for at least two transfer CS files. 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 moderate. Most CS files were issued on time, most CS information checked was correct. The method to calculate average daily kWh was updated during the audit period, but system defects which are under investigation are resulting in some incorrect values being applied. The impact on settlement and participants is minor, because the event readings were correct and the average daily kWh differences were less than ± 18 kWh.

Actions taken to resolve the issue	Completion date	Remedial action status
Files updated manually where appropriate	Completed	Identified
Preventative actions taken to ensure no further issues will occur	**Completion date**	
API had a known bug which is has now been fixed and will be monitored to ensure no additional non compliance arising via a monthly review of randomised ICPS	November 2020	

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

Code reference

Clause 6(1) and 6A Schedule 11.3

Code related audit information

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

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

If the gaining trader disputes a switch meter reading because the switch event meter reading provided by the losing trader differs by 200 kWh or more, the gaining trader must, within four calendar months of the registry manager giving the gaining trader written notice of having received information about the switch completion, provide to the losing trader a changed switch event meter reading supported by two validated meter readings.

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

Audit observation

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

The event detail report for 01/01/20 to 12/08/20 was analysed to identify all read change requests and acknowledgements during the audit period. A sample of ten RR files and ten AC files were checked.

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

The switch breach report for the audit period was reviewed.

Audit commentary

RR and AC 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, and the process to update the database to reflect the outcome of the RR process is automated.

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. RR files received from other traders are directed to an Electricity App work queue and individually considered before the AC is issued.

Switch Utilities issued 36 RR files for transfer switches. 28 were accepted and eight were rejected. 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, and the reads recorded in Switch Utilities' system reflected the outcome of the RR process. The RRs for 0424308045LCD00 (09/03/2020) and 0000007471TE5D1 (20/02/2020) were supported by some unvalidated customer readings instead of validated actual readings. Switch Utilities' internal policy allows for RRs to be supported by one customer read and one contractor or AMI read, and this practice is non-compliant.

Description	Recommendation	Audited party comment	Remedial action
RR supporting reads policy	Update the RR policy to ensure that all RRs are supported by at least two validated actual readings which are not provided by the customer.	This was addressed and awareness created to ensure all RRs were supported with 2 actual contractor readings.	Identified

Switch Utilities issued 108 AC files for transfer switches. 103 were accepted and five were rejected, including two which were issued under Clause 6(2) and (3) Schedule 11 and are discussed in **section 4.5**. A sample of ten ACs were checked, including all rejected files. All rejections were for valid reasons, and the Energy Database reflected the outcome of the RR process for all AC files checked.

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

The switch breach report recorded eight late RR files and two late AC file for transfer switches. Seven RRs and two ACs were genuinely late.

- The RRs were late because there was a delay in obtaining actual reads to confirm that the CS reading was incorrect.
- The ACs were late because there was a delay in clearing the work queue during holiday periods, or there was a delay in receiving or reviewing supporting information for the RR from another trader.

Audit outcome

Non-compliant

Non-compliance	Description
Audit Ref: 4.4 With: Clause 6(1) and 6A Schedule 11.3 From: 07-Apr-20 To: 24-Jul-20	Seven late RR files. Two late AC files. The RRs for 0424308045LCD00 (09/03/2020) and 0000007471TE5D1 (20/02/2020) were supported by some unvalidated customer readings instead of validated actual readings. Potential impact: Low Actual impact: Low Audit history: Twice Controls: Moderate Breach risk rating: 2
Audit risk rating	**Rationale for audit risk rating**
Low	The controls are rated as moderate, because: • in most cases the sampled RRs were supported by two validated actual readings, but Switch Utilities' policy allows RRs to be supported by one validated actual and one customer reading, and • most RR and AC files were issued on time, and the delays were caused by waiting for information, or a temporary issue with workloads which delayed processing of some AC files.

	The impact is low because, the event readings were correctly recorded, the read type difference has no impact on submission, and the customer readings appeared reasonable.

Actions taken to resolve the issue	Completion date	Remedial action status
Additional training was completed in November to create further awareness on this issue	November 2020	Identified
Preventative actions taken to ensure no further issues will occur	**Completion date**	
Breach reporting should identify these as they occur and therefore will be fixed in a timely manner	November 2020	

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

Code reference

Clause 6(2) and (3) Schedule 11.3

Code related audit information

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

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

Audit observation

The event detail report for the period from 01/01/20 to 12/08/20 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 20 RR files were issued to Switch Utilities within five business days of switch completion by traders using a half hour profile. Of those, 18 were accepted and two were rejected:

- 0007117322RNFE3 (14/06/20) was validly rejected because the CS contained an actual reading. the switch event was later withdrawn, and
- 0000102020UN49F (23/06/20) was validly rejected at Flick's request because it contained incorrect readings. The RR was accepted on reissue with the correct readings.

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 two business days after the arrangement comes into effect.

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

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

Audit observation

The switch gain process was examined to determine when 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.

NTs are issued through the Energy Database once the application has been approved. Customers sign up through a website and provide the information required to produce the NT, including whether they are transferring between retailers at their existing address, or moving into a new address. This information is used to determine the correct switch type, with switch move applied where a customer is moving into a new address.

Review of the event detail report found 6,507 switch move NTs were issued. I checked the metering category for the 6,032 ICPs which were present on the registry list with history and confirmed that 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 selected.

Audit outcome

Compliant

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

Code reference

Clause 10(1) Schedule 11.3

Code related audit information

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

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

Audit observation

The event detail report for 01/01/20 to 12/08/20 was 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 sample of two (or all) ANs per response code were reviewed to determine whether the codes had been correctly applied.

The switch breach report was examined for the audit period. All genuinely late AN files and the ten latest genuinely late CS files were checked.

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 and the AA (acknowledge and accept) response code is only used where none of the other codes

apply. A sample of five ANs were checked for accuracy, and I found ICPs 0042147873PC9D7 (25/03/2020) and 0000029100UN28F (10/08/2020) had the AA (acknowledge and accept) response code applied when AD (advanced metering) was expected. The AN for 0042147873PC9D7 was manually created on the registry and it is believed that the incorrect code was selected in error. The AN for 0000029100UN28F was created by the Energy Database and the incorrect code was selected because there was a discrepancy between the metering data recorded in the database and on the registry. The metering information discrepancy was caused by the suspension of the notification file process, which is discussed in **section 2.1**.

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 4,123 switch move ANs to assess compliance with the setting of event dates requirements:

- 4,122 (99.9%) had proposed event dates within ten business days of NT receipt,
- ICP 0000000719DE717 had a proposed event date which was more than ten business days after NT receipt, but the proposed date matched the gaining trader's requested date, and
- no AN proposed event dates were before the gaining trader's proposed event date.

In all cases the AN proposed event date matched the gaining trader's proposed event date.

AN and CS timeliness

AN and CS timeliness is managed using the Energy Database and its interface the Electricity App. AN files are generated automatically on NT receipt, and CS files are generated within five business days of AN receipt, unless an exception is identified and directed to a user via the Electricity App for resolution.

The switch breach report was reviewed to determine whether switch move AN and CS files were issued on time. Ten late AN files and 409 late CS files were recorded for switch moves.

All ten late AN files were genuine breaches, and were delayed up to 34 business days because either the initial import of the NT into the Energy Database failed and the file was reimported at a later date, or a TOU site alert was raised for an agent and not resolved until a later date.

123 of the late CS files were genuine breaches. I checked the ten latest files which were up to 47 days overdue. Eight were delayed because the initial import of the AN into the Energy Database failed and the file was imported and processed at a later date. For two ICPs the initial CS file was rejected by the registry due to a discrepancy between the registry and CS file meter channel information, and there was a delay in actioning the acknowledgement and resolving the issue.

Audit outcome

Non-compliant

Non-compliance	Description
Audit Ref: 4.8 With: Clause 10(1) Schedule 11.3 From: 22-Jan-20 To: 10-Aug-20	Ten late switch move AN files. 123 late switch move CS files. ICPs 0042147873PC9D7 (25/03/2020) and 0000029100UN28F (10/08/2020) had the AA (acknowledge and accept) response code applied when AD (advanced metering) was expected. 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. • AN and CS files are expected to be issued on time if NT and AN files are successfully imported into the Energy Database, and CS failures are investigated and resolved. Unsuccessful attempted file imports and exceptions are identified by the Energy Database; but are not consistently actioned promptly resulting in some late files. • AN file content is applied according to a hierarchy and expected to be accurate where files are processed by the Energy Database and the database information is consistent with the registry. The exceptions related to an AN file which was manually processed on the registry, and a metering information discrepancy between the registry and Energy Database. The audit risk rating is low as this has no direct impact on reconciliation.

Actions taken to resolve the issue	**Completion date**	**Remedial action status**
		Identified
Preventative actions taken to ensure no further issues will occur	**Completion date**	
Implementation of a breaching report after training and access to obtaining this. Based on an agreed flag value (number of days before breach), agents will submit a list of ICPs close to breaching to IT to try and resolve the moving of AN/CS files before breach.	02/11/2020	

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

Code reference

Clause 10(2) Schedule 11.3

Code related audit information

If the losing trader determines a different date, 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

An event detail report for 01/01/20 to 12/08/20 was reviewed to identify AN files issued by Switch Utilities during the audit period, and assess compliance with the setting of event dates requirements.

Audit commentary

Analysis found all 4,123 switch move ANs had a valid switch response code.

No AN proposed event dates were before the gaining trader's proposed event date. In all cases the AN proposed event date matched the gaining trader's proposed event date.

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 report for 01/01/20 to 12/08/20 was 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 five records. 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 ten 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.

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.

In April 2020, the Energy Database moved from populating the average daily consumption with the Energy Database's "average daily estimate" of consumption over the previous month to calculating the average daily consumption between the last two actual readings before the ICP switched out. Where there are not two actual readings for an ICP which has switched in, the average daily consumption for the incoming CS file is applied. Where there are not two actual readings for a new ICP which has not switched in (i.e. a new connection), an estimate of the average daily consumption will be applied. Following implementation of the change, Switch Utilities found that some system defects were resulting in unexpected average daily kWh values in some cases. Several defects have already been corrected but others are currently being investigated.

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

Estimated daily kWh	Count of switch move CS files	Findings
Negative	0	Compliant.
Zero	536	A sample of five values were checked, and one did not match the average daily consumption for the last read to read period: 1000570535PC817 (06/01/20) recorded the actual consumption over the previous month rather than the last read to read period; and was generated before the system change.
More than 200 kWh	10	The five highest estimated daily kWh values were checked, and three were more than ± 1 kWh different to the average daily consumption for the last read to read period: 1001119251UNA77 (01/01/20) recorded the actual consumption over the previous month rather than the last read to read period; and was generated before the system change. 0004606531WM206 (21/07/20) recorded 533 in the CS file instead of 0 and 0001750870TG92F (15/06/20) recorded 536 in the CS file instead of 362. The files were processed after the system change, but a defect caused incorrect estimated daily kWh to be reported. The defect is currently under investigation.

The content of a sample of five transfer CS files were checked, and the following exceptions were identified:

ICP	Event date	Comment
0239881001LC59E	25/03/2020	The estimated kWh was based on the month's consumption not the least read to read period; and was generated before the system change.
1001156103UN30C	24/06/2020	The last actual read date was recorded as 05/07/2020 but should have been 23/06/2020.
0000247563UNFFE	01/05/2020	The last actual read date was recorded as 01/05/2020 but should have been 30/04/2020.
0326273026LC419	01/05/2020	The estimated kWh was recorded as 0 but was expected to be 16. The file was generated after the system change and the error is believed to have been caused by a system defect. The last actual read date was recorded as 27/06/2020 but should have been 09/05/2020.

It appears that the Energy Database is applying the date of the last validated read received before the ICP switches out (which may be after the end of the period of supply), instead of the last actual read received during the period of supply. A recommendation to investigate and resolve this issue is made in **section 4.3**.

Audit outcome

Non-compliant

Non-compliance	Description
Audit Ref: 4.10 With: Clause 11 of Schedule 11.3 From: 03-Apr-19 To: 06-Dec-19	Incorrect average daily consumption for at least six switch move CS files. Incorrect last actual read dates for at least three switch move CS files. 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 moderate. Most CS files were issued on time, most CS information checked was correct. The method to calculate average daily kWh was updated during the audit period, but system defects which are under investigation are resulting in some incorrect values being applied. The impact on settlement and participants is minor, because the event readings were correct and the average daily kWh differences were less than ± 16 kWh.

Actions taken to resolve the issue	Completion date	Remedial action status
Refer to 4.3	Completed	Identified
Preventative actions taken to ensure no further issues will occur	**Completion date**	
Refer to 4.3	Completed	

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

Code reference

Clause 12 Schedule 11.3

Code related audit information

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

- *if the switch meter reading established by the gaining trader differs by less than 200 kWh from that provided by the losing trader, both traders must use the switch event meter reading provided by the gaining trader (clause 12(2)(a)); or*
- *if the switch event meter reading provided by the losing trader differs by 200 kWh or more from a value established by the gaining trader, the gaining trader may dispute the switch meter reading. In this case, the gaining trader, within four calendar months of the date the registry manager gives the gaining trader written notice of having received information about the switch completion, must provide to the losing trader a changed validated meter reading or a permanent estimate supported by two validated meter readings and the losing trader must either (clause 12(2)(b) and clause 12(3)):*

- *advise the gaining trader if it does not accept the switch event meter reading and the losing trader and the gaining trader must resolve the dispute in accordance with the disputes procedure in clause 15.29 (with all necessary amendments) (clause 12(3)(a)); or*
- *if the losing trader notifies its acceptance or does not provide any response, the losing trader must use the switch event meter reading supplied by the gaining trader (clause 12(3)(b)).*

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

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

Audit observation

The event detail report for 01/01/20 to 12/08/20 was analysed to identify all read change requests and acknowledgements during the audit period. A sample of ten RR files and ten AC files were checked.

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

The switch breach report for the audit period was reviewed.

Audit commentary

RR and AC 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, and the process to update the database to reflect the outcome of the RR process is automated.

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.

RR files received from other traders are directed to an Electricity App work queue and individually considered before the AC is issued.

Switch Utilities issued 87 RR files for switch moves. 58 were accepted and 29 were rejected. 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, and the reads recorded in Switch Utilities' system reflected the outcome of the RR process. The RR for 0327269985LC9D7 (08/06/2020) was supported by unvalidated customer readings instead of validated actual readings. Switch Utilities' internal policy allows for RRs to be supported by one customer read and one contractor or AMI read, and this practice is non-compliant. A recommendation to change this is made in **section 4.4**.

Switch Utilities issued 115 AC files for switch moves. 113 were accepted and two were rejected. A sample of ten ACs were checked, including both rejected files. Both rejections were for valid reasons, and the Energy Database reflected the outcome of the RR process for all AC files checked apart from ICP 0000001165TRE25, which did not have a final reading recorded. The last reading was an OR (ordinary reading) and matches the original switch reading, rather than the RR reading which Switch Utilities later agreed to.

ICP	Event date	Meter	Register	Agreed switch read	Energy Database read	Difference
0000001165TRE25	19/02/2020	216104848	1	37357 (E)	37371.17 (OR)	-14.17 kWh
0000001165TRE25	19/02/2020	216104848	2	1562 (E)	1561.89 (OR)	0.11 kWh
					Total	**-14.06 kWh**

I recommend this ICP is checked to determine why the automated process did not record a final switch event reading which matched the outcome of the RR process, and the missing reads should be added. Non-compliance is also recorded in **section 12.7** for submission accuracy.

Description	Recommendation	Audited party comment	Remedial action
Investigate missing switch event reading	Add the correct switch event readings for 0000001165TRE25 (19/02/2020) to the Energy Database. Investigate to determine why a final reading matching the outcome of the RR process was not entered into the Energy Database.	Awareness created to ensure all RRs were supported with 2 actual contractor readings. Electricity APP information to be reviewed and followed up by Provisioning Team	Identified

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

The switch breach report recorded four late RR files and six late AC files for switch moves. Three of the RR files and all six of the AC files were genuinely late.

- The RRs were late because there was a delay in obtaining actual reads to confirm that the CS reading was incorrect.
- The ACs were late because there was a delay in clearing the work queue during holiday periods, or there was a delay in receiving or reviewing supporting information for the RR from another trader.

Audit outcome

Non-compliant

Non-compliance	Description
Audit Ref: 4.11 With: Clause 12 of Schedule 11.3	Three late RR files. Six late AC files. The RR for 0327269985LC9D7 (08/06/2020) was supported by unvalidated customer readings instead of validated actual readings. 0000001165TRE25 (19/02/2020), did not have a final reading recorded which matched the outcome of the RR process. Potential impact: Low Actual impact: Low

From: 13-Jan-20 To: 30-Jul-20	Audit history: Three times Controls: Moderate Breach risk rating: 2

Audit risk rating	Rationale for audit risk rating
Low	The controls are rated as moderate, because: • in most cases the sampled RRs were supported by two validated actual readings, but Switch Utilities' policy allows RRs to be supported by one validated actual and one customer reading, • most RR and AC files were issued on time, and the delays were caused by waiting for information, and a temporary issue with workloads which delayed processing of some AC files, and • only one read discrepancy was identified. The impact is low because most event readings were correctly recorded, the read type difference has no impact on submission, and the customer readings appeared reasonable. The difference between the reading applied and the agreed switch reading for ICP 0000001165TRE25 (19/02/2020) was 14 kWh.

Actions taken to resolve the issue	Completion date	Remedial action status
Read discrepancy identified was investigated	Completed	Identified
Preventative actions taken to ensure no further issues will occur	**Completion date**	
Awareness created to ensure all RRs were supported with 2 actual contractor readings.	October 2020	

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 for 01/01/20 to 12/08/20 was reviewed to identify any HH NTs; and confirm whether any ICPs with meter categories above 3 were requested as TR or MI switches.

Audit commentary

HH NTs are issued through the Energy Database once the application has been approved.

Switch Utilities did not issue any HH NTs during the audit period. Review of switch move and transfer NTs confirmed that none of the 12,975 NTs checked 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 for 01/01/20 to 12/08/20 was analysed to:

- identify AN files issued by Switch Utilities during the audit period, and
- assess compliance with the timeliness requirements.

All AN response codes were reviewed to determine whether they had been correctly applied.

The switch breach report was examined.

Audit commentary

HH ANs are issued through the Energy Database once the NT has been received. The event detail report was reviewed for all six HH ANs to determine the accuracy of AN codes applied, and all codes were found to be accurate.

The switch breach report recorded four late AN files for HH switches. The Energy Database directs any ICPs with TOU channels to a work queue for a user to action, and the files were up to five business days late because there were delays in resolving items which appeared in these work queues.

Audit outcome

Non-compliant

Non-compliance	Description
Audit Ref: 4.13 With: Clause 15 Schedule 11.3 From: 10-Jun-20 To: 19-Aug-20	Four late HH AN files. Potential impact: Low Actual impact: Low Audit history: Twice Controls: Strong Breach risk rating: 1
Audit risk rating	**Rationale for audit risk rating**
Low	The controls are recorded as strong, because the HH process is automated but there were some delays in processing files directed to work queues. The impact on settlement and participants is minor, as all the files were provided between three and five business days late. The audit risk rating is low.

Actions taken to resolve the issue	Completion date	Remedial action status
We have automated the HH switching process.	Completed	Identified
Preventative actions taken to ensure no further issues will occur	**Completion date**	
Review of the Electricity App but any issues will be picked up via the Breach Report	Nov 2020	

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

Code reference

Clause 16 Schedule 11.3

Code related audit information

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

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

16(a)- give the losing trader or MEP for the ICP an opportunity to interrogate the metering installation immediately before the ICP is electrically disconnected or the metering equipment is removed; or

16(b)- carry out an interrogation and, no later than five business days after the metering installation is electrically disconnected or removed, advise the losing trader of the results and metering component numbers for each data channel in the metering installation.

Audit observation

The HH switching process was examined. The event detail report for 01/01/20 to 12/08/20 was reviewed to identify any HH CS files, and the switch breach history report was reviewed to identify late CS files.

Audit commentary

HH CS files are issued through the Energy Database once the AN is received. No CS files were issued during the period, and no late HH CS files were recorded on the switch breach report.

Audit outcome

Compliant

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

Code reference

Clauses 17 and 18 Schedule 11.3

Code related audit information

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

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

- *for each ICP, the trader withdrawing the switch request must provide the registry manager with (clause 18(c)):*
  - *the participant identifier of the trader making the withdrawal request (clause 18(c)(i)); and*
  - *the withdrawal advisory code published by the Authority. (clause 18(c)(ii))*
- *within 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 two business days after receiving notice from the registry manager in accordance with clause 22(b), the losing trader must comply with clauses 3,5,10 and 11 (whichever is appropriate) and the gaining trader must comply with clause 16 (clause 18(f))*

Audit observation

An event detail report for 01/01/20 to 12/08/20 was reviewed to:

- identify all switch withdrawal requests issued by Switch Utilities, and check the content of a sample of at least two ICPs from the event detail report for each withdrawal code,
- identify all switch withdrawal acknowledgements issued by Switch Utilities, and check the content of a sample of five rejections, and
- confirm timeliness of switch withdrawal requests, as this is not currently being identified in the switch breach report.

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

Audit commentary

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.

51 (4.6%) of the 1,105 NWs were issued more than two calendar months after the event date. 27 of the late files had withdrawal reason code "wrong premises", and I note that this issue often does not become apparent for an extended period after a switch completes. A sample of the ten latest NWs were checked and found to be delayed while Switch Utilities confirmed that a NW was required, or because the NW file was rejected by the registry and the exception was not immediately actioned.

A sample of at least two NWs per withdrawal reason code were checked. File content was confirmed to be accurate except for:

- 0452063043LCFAB (07/04/2020) which had a withdrawal issued in error; the ICP was to be moved to a different brand managed by Switch Utilities and no NW was required, and
- 1000000207BP3F2 (05/06/2020) was sent with the CX (customer cancellation) withdrawal code, but WP (wrong premises) was a better fit.

Both NWs were rejected by the other trader, and there was no impact.

131 (6.8%) of the 1,926 AWs issued by Switch Utilities were rejections. I reviewed a sample of five rejections by Switch Utilities, and confirmed they were rejected based the information available at the time the response was issued.

The switch breach report recorded:

- 46 NA breaches, none of which were genuine,
- 18 NW breaches, none of which were genuine,
- ten WC breaches, nine of which were genuine - the files were late because there was a delay in clearing the work queue due, and
- 19 late AWs, all of which were genuinely up to six business days late, because there was a delay in clearing the work queues, a delay in reaching the customer to confirm the correct response, or a temporary issue relating to correspondence with another trader (who was not receiving emails which Switch Utilities had sent using Zendesk).

Audit outcome

Non-compliant

Non-compliance	Description
Audit Ref: 4.15 With: Clauses 17 and 18 of Schedule 11.3 From: 13-Jan-20 To: 08-Jul-20	19 late AW files. Nine late withdrawal cycle resolutions. 0452063043LCFAB (07/04/2020) had a NW issued in error. 1000000207BP3F2 (05/06/2020) had CX (customer cancellation) withdrawal code applied, but WP (wrong premises) was a better fit. 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	Controls are moderate. Workflows are automated but there are sometimes delays in processing files during periods with high workloads. The incorrect NW codes were caused by data processing errors. The impact on other participants is minor, therefore the audit risk rating is low. The two withdrawals sent with incorrect codes were rejected by the other trader.

Actions taken to resolve the issue	Completion date	Remedial action status
The Provisioning Team believed that withdrawal codes were pre-populated so the agent actioning the NW could not choose an appropriate code but discussions indicated this not the case and further training to increase awareness provided	November 2020	Identified
Preventative actions taken to ensure no further issues will occur	**Completion date**	
AW withdrawals and NW issues all addressed via the Breach Report or Training and Awareness	November 2020	

4.16. Metering information (Clause 21 Schedule 11.3)

Code reference

Clause 21 Schedule 11.3

Code related audit information

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

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

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

Audit observation

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

Audit commentary

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

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

Audit outcome

Compliant

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

Code reference

Clause 11.15AA to 11.15AB

Code related audit information

A 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 activity was discussed. The event detail report for 01/01/20 to 12/08/20 was analysed to identify all withdrawn switches with a CX code applied prior to the switch event date for any switch save protected retailer up to 31/03/20, or within 180 days of switch completion after 31/03/20.

Audit commentary

Switch Utilities was a switch save protected retailer from 01/03/17 until the code change on 31/03/2020. 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. They do not complete win-backs, and do not offer any enticements to electricity customers who are switching out.

To ensure compliance with the requirement not to complete win-backs in the 180 business days after switch completion from 31/03/2020, alerts are added to the accounts of any ICP losses warning any operator who accesses the account not to attempt to win-back the customer.

No NWs with the CX (customer cancellation) withdrawal reason code were issued prior to switch completion before 31/03/20.

278 NWs with the CX (customer cancellation) withdrawal reason code were issued within 180 days of switch completion from 31/03/20 onwards. I checked a sample of 34 CX withdrawals made after 31/03/20 and found that win-backs had not been attempted, and alerts were appropriately added to the customer accounts.

Audit outcome

Compliant

5. MAINTENANCE OF UNMETERED LOAD

5.1. Maintaining shared unmetered load (Clause 11.14)

Code reference

Clause 11.14

Code related audit information

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

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

Audit observation

The process to identify and monitor unmetered load was discussed. The registry list file as at 12/08/20 and AC020 trader compliance report for 01/01/20 to 12/08/20 were examined to identify any ICPs with shared unmetered load.

Audit commentary

Switch Utilities supplies four active ICPs with shared unmetered load, and no shared unmetered load discrepancies were identified. 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 for 01/01/20 to 12/08/20 was examined to identify all unmetered load over 3,000 kWh per annum.

Audit commentary

Switch Utilities supplies 55 ICPs with unmetered load indicated. All the ICPs have unmetered load under 3,000 kWh per annum.

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 for 01/01/20 to 12/08/20 was examined to identify all unmetered load over 3,000 kWh per annum.

Audit commentary

Switch Utilities supplies 55 ICPs with unmetered load indicated. All the ICPs have unmetered load under 3,000 kWh per annum.

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 file as at 12/08/20 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 file and PR255 reports as at 12/08/20, and AC020 report for 01/01/20 to 12/08/20 were reviewed to determine compliance.

Audit commentary

Metering installations installed

All active, metered ICPs have an MEP, and at least one meter channel.

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

No ICPs have submission information determined by subtraction.

Distributed generation

Switch Utilities supplies 20 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.

Review of the AC020 report did not identify any ICPs with generation recorded by the distributor where Switch Utilities did not record a generation profile.

Review of the registry list and meter event details report found four active ICPs with generation indicated by the distributor where Switch Utilities did not have injection flow metering and/or profiles compatible with generation installed. In all cases notification of gifting had been provided to the reconciliation manager. The Billing Analyst completes a monthly check to identify any ICPs with potential generation, investigate and provide notification to the reconciliation manager if necessary.

ICP 0000292879WE5FA has RPS PV1 profile incorrectly recorded on the registry although EG metering is not installed and there is no I flow submission; and should be corrected to RPS.

Where generation profiles were recorded, they were consistent with the generation fuel type.

Bridged meters

15 bridged meters were identified during the audit period. Energy was not quantified in accordance with the code during the bridged periods.

Audit outcome

Non-compliant

Non-compliance	Description
Audit Ref: 6.1 With: Clause 10.13, Clause 10.24 and 15.13 From: 01-Jan-20 To: 27-Oct-20	ICP 0000292879WE5FA has submission against the RPS profile only, but the RPS and PV1 profiles are recorded on the registry. 15 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: Medium Audit history: Twice Controls: Moderate Breach risk rating: 4
Audit risk rating	**Rationale for audit risk rating**
Medium	The controls are recorded as moderate because they mitigate risk most of the time but there is room for improvement. The impact on settlement and participants is estimated to be medium based on the number and nature of exceptions identified, and because corrections for consumption during bridged periods do not consistently occur.

Actions taken to resolve the issue	Completion date	Remedial action status
Corrections have been carried out and the method/timing of corrections communicated to Veritek	Completed	Identified
Preventative actions taken to ensure no further issues will occur	**Completion date**	
Future processes addressed by changes to the Electricity App and training on using this to Provisioning Teams	20 November	

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

Code reference

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

Code related audit information

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

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

The participant responsible for the metering installation must:

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

Audit observation

The NSP table was reviewed.

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 file as at 12/08/20 and AC020 trader compliance report for 01/01/20 to 12/08/20 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 lead it to believe a metering installation could be inaccurate, defective, or not fit for purpose they must:

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

Audit observation

Processes relating to defective metering were examined.

Switch Utilities provided ten examples of defective NHH meters. They were reviewed to determine whether the MEP was advised and if appropriate action was taken.

Information on defective HHR meters during the audit period was requested.

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.

Ten examples of potentially defective 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 Switch Utilities' shared field services inbox. The emails are reviewed the team member responsible for each brand and action is taken as requested. I reviewed examples of these notifications and did not find any where action was required to be taken.

Audit outcome

Compliant

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

Code reference

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

Code related audit information

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

All validated meter readings must be derived from meter readings.

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

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

a) obtain the meter register
b) ensure seals are present and intact
c) check for phase failure (if supported by the meter)
d) check for signs of tampering and damage

e) *check for electrically unsafe situations.*

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

Audit observation

The data collection process was examined.

Processes to provide meter condition information were reviewed as part of Wells' agent audit. 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 but is not routinely reviewed. I saw evidence that any emails or phone calls regarding meter condition issues are actioned.

Compliance is recorded because Wells is completing the required checks, and no meter condition issues were identified during Wells' audit, or in the information Switch Utilities received from Wells. I recommend that Switch Utilities reviews any meter condition information provided by Wells and resolves any issues that are identified.

Description	Recommendation	Audited party comment	Remedial action
Review of meter condition information provided by Wells	Review all meter condition information provided by Wells; and investigate and resolve any issues identified.	We are implementing a weekly reporting process (effective end November 2020) for reviewing meter condition notes to ensure appropriate action is taken. We will initially review the notes/comments manually by searching key words, but are working with Wells to get definitions for all Error Reason Codes so we can refine appropriate parameters required for review.	Identified

I checked a sample of four 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

Customer and photo readings are entered as "CR" customer readings, which I confirmed are ignored by the historic estimate calculation process. Switch Utilities' internal policy allows for RRs to be supported by one customer read and one contractor or AMI read, and this practice is non-compliant. This is recorded as non-compliance in **sections 4.4** and **4.11**, and a recommendation is raised in **section 4.4**.

Wells' agent audit recorded that when a read is provided by the customer where Wells cannot access the meter directly, the customer read no read reason code should be applied, and the reading should be recorded in the meter reader notes rather than the reading field. When reviewing customer readings to check their classification, there appeared to be some instances where Wells had provided a reading taken by the customer in the reading field as an actual read. The Energy Database could not differentiate these customer readings from other readings provided by Wells, and they were imported with a read type of "OR" instead of "CR" and treated as actual readings for all processes. This is non-compliant.

ICP	Read date	Wells note
0002925110WFD92	3/12/2019	A:R:read given by customer# 02/12/19 (03/12/2019 13:06:09)
0000958958TUE71	12/09/2020	A:R:<PS>Call first.. give me over phone. (12/09/2020 12:37:48)
0000909065TUD0F	24/02/2020	A:R:<AN>Someone Is Always Hm knock on gate they will take photo of read for u as dogs bite (22/07/2020 11:09:27)
0000909065TUD0F	22/07/2020	A:G:Reads entered on behalf of: - Customer took a photo with my phone (24/02/2020 13:43:35)

During Covid-19 lockdown, Wells developed a process to conduct outbound calling to customers to obtain customer readings. These readings were entered into the handheld and were validated in the same way as meter reader readings. Switch Utilities confirmed that none of these customer readings were provided by Wells during lockdown.

I checked a sample of customer and photo readings provided directly to Switch Utilities by customers; and confirmed that they were correctly classified as "CR" readings.

Audit outcome

Non-compliant

Non-compliance	Description
Audit Ref: 6.6 With: Clause 3(1), 3(2) and 5 Schedule 15.2 From: 03-Dec-19 To: 12-Sep-20	Four readings which appear to have been taken by the customer were recorded as actual readings by Wells, and actual readings in the Energy Database. Potential impact: Low Actual impact: Low Audit history: None Controls: Strong Breach risk rating: 1
Audit risk rating	**Rationale for audit risk rating**
Low	The controls are rated as strong. Both Wells and Switch Utilities have processes in place to ensure that customer readings are correctly classified. A small number of exceptions were identified. The impact on settlement and participants is minor, because the readings were taken from the meter and were validated by Wells and Switch Utilities.

Actions taken to resolve the issue	Completion date	Remedial action status
Confirmed with Wells via email that they are sometimes recording customer readings in the "reads" field with a note indicating it is a customer read instead of following their usual process	Advised Wells of the findings on the 16/11/2020	Identified
Preventative actions taken to ensure no further issues will occur	**Completion date**	
Moving forward monthly sanity checks to ensure Wells process has been changed	From November 2020	

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 time-stamping. Manual readings taken by Wells are applied correctly.

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

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

31,878 (93.0%) of Switch Utilities' 34,269 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; and has been improved during the audit period.

- Unread AMI meters have been automatically added to the Wells manual meter reading schedule once they have had at least 30 days with no readings on at least one meter channel (a decrease from 60 days at the time of the last audit). Once the route is updated AMI reads will continue to be loaded into the Energy Database and DART if they are received.
- After business day 13 of each month, a report of NHH ICPs which have not received readings is provided to the field services team for each brand by the Billing Analyst. The report contains

the ICP, brand, last read date, and the no read reason code and notes if the ICP is read by Wells and a reading has been attempted. The field services teams review the reports, focussing on the ICPs with the oldest last read dates. Action taken varies depending on the reason no readings were obtained, typically the ICPs are sent to the customer services team who make contact with the customer to confirm access information and arrange a special reading. If the affected meter is AMI capable and the ICP is confirmed to be connected, a fault will be raised with the MEP.

- The Billing Analyst monitors compliance with the meter read attainment requirements and sends emails to the field services team listing any ICPs which are close to breaching the 12-month threshold and require urgent action.

Switch Utilities provided a report of 106 ICPs not read during the period of supply, where the period of supply ended between January 2020 and July 2020. 69 of the ICPs were supplied for less than 30 days and 90 were supplied for less than 120 days. I checked the ten ICPs with the longest periods of supply (193 to 337 days).

- Exceptional circumstances existed for two ICPs.
- For seven ICPs exceptional circumstances did not exist, and the best endeavours requirements were not met. Either there was a delay in adding the ICP to the Wells meter reading schedule due to a temporary issue with the automated route change process which was resolved in early 2020, or the ICP was not actioned on the meter read compliance report.
- A special reading obtained on 06/12/19 for ICP 0000212320TP100 was incorrectly entered as a customer read, and therefore ignored by the reconciliation and meter read attainment processes. Reads provided by customers and out of cycle meter reader photo readings are entered into the Energy Database by the IT team, and because the user did not clearly specify a read type the "customer" read type was applied. Non-compliance is recorded in **section 9.1** for incorrect read classification.

Audit outcome

Non-compliant

Non-compliance	Description
Audit Ref: 6.8 With: Clause 7(1) and (2) of Schedule 15.2 From: 01-Jan-20 To: 31-Jul-20	106 ICPs were not read during the period of supply. The best endeavours requirement was not met for at least seven of these ICPs. Potential impact: Low Actual impact: Low Audit history: Multiple times Controls: Moderate Breach risk rating: 2
Audit risk rating	**Rationale for audit risk rating**
Low	The controls are recorded as moderate, because they are not sufficient to ensure that a reading is received within the period of supply where the period is short. The impact on settlement from an estimate for a short period is minor therefore the audit risk rating is low.

Actions taken to resolve the issue	Completion date	Remedial action status
For those customers which respond, we are organising special reads. For those that don't respond, we are - Creating a keypack process for no-access customers. - Having a more robust response to meters that have not been read in a long time – organize special reads etc. - Ensuring best endeavours criteria met for all no-read meters. Making frontline aware of what 'best endeavours' are.	November 2020	Identified
Preventative actions taken to ensure no further issues will occur	**Completion date**	
Setting up a last attempt to contact process via a letter mailed out to customers	Early 2021	

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

Code reference

Clause 8(1) and (2) Schedule 15.2

Code related audit information

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

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

Audit observation

The meter reading process was examined. Monthly reports for January to July 2020 were provided; and reviewed to determine whether they met the requirements of clauses 8 and 9 of schedule 15.2.

Ten unread ICPs on NSPs where less than 100% read attainment was achieved 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
Jan-20	211	21	40	99.86%
Feb-20	210	18	40	99.87%

Month	Total NSPs where ICPs were supplied > 12 months	NSPs <100% read	ICPs unread for 12 months	Overall percentage read
Mar-20	212	20	41	99.87%
Apr-20	211	23	46	99.85%
May-20	211	27	53	99.83%
Jun-20	212	24	37	99.89%
Jul-20	212	21	28	99.92%

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

Ten unread ICPs on NSPs where less than 100% read attainment was achieved were reviewed for February 2020.

- Three ICPs had exceptional circumstances or the best endeavours requirements were met.
- For seven ICPs exceptional circumstances did not exist, and the best endeavours requirements were not met. Either there was a delay in adding the ICP to the Wells meter reading schedule due to a temporary issue with the automated route change process which was resolved in early 2020, or the ICP was not actioned on the meter read compliance report.

I reviewed meter reading reports for January to July 2020 and confirmed that they met the meter reading frequency report requirements and were submitted on time.

Audit outcome

Non-compliant

Non-compliance	Description
Audit Ref: 6.9 With: Clause 8(1) and (2) of Schedule 15.2 From: 01-Mar-19 To: 29-Feb-20	The best endeavours requirement was not met for at least seven ICPs not read in the previous 12 months. 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 not sufficient to ensure that the best endeavours requirements will be met for all ICPs. Consumption will be estimated for settlement and the impact is expected to be low, based on read attainment being close to 100% after 12 months.

Actions taken to resolve the issue	Completion date	Remedial action status
For those customers which respond, we are organising special reads. Ensuring best endeavours criteria met for all no-read meters. Making frontline aware of what 'best endeavours' are.	Completed	Identified
Preventative actions taken to ensure no further issues will occur	**Completion date**	
Implementing a template to so frontline can send a letter to customers as a last resort after extinguishing other contact attempts.	Early 2021	

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

Code reference

Clause 9(1) and (2) Schedule 15.2

Code related audit information

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

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

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

Audit observation

The meter reading process was examined. Monthly reports for January to July 2020 were reviewed.

All unread ICPs on NSPs where less than 90% read attainment was achieved in the previous four months on the July 2020 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
Jan-20	211	2	244	99.16%
Feb-20	210	2	319	98.92%
Mar-20	212	3	378	98.76%
Apr-20	211	2	277	99.12%

Month	Total NSPs where ICPs were supplied > 4 months	NSPs <90% read	Total ICPs unread for 4 months	Overall percentage read
May-20	211	4	315	99.01%
Jun-20	212	5	312	99.06%
Jul-20	212	3	246	99.26%

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 July 2020 report were reviewed. Exceptional circumstances did not exist, and the best endeavours requirements were not met. Either there was a delay in adding the ICP to the Wells meter reading schedule due to a temporary issue with the automated route change process which was resolved in early 2020, or the ICP was not actioned on the meter read compliance report.

Audit outcome

Non-compliant

Non-compliance	Description
Audit Ref: 6.10 With: Clause 9(1) and (2) of Schedule 15.2 From: 01-Nov-19 To: 29-Feb-20	The best endeavours requirement was not met for at least three ICPs not read in the previous four months. 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 not sufficient to ensure that the best endeavours requirements will be met for all ICPs. Consumption will be estimated for settlement and the impact is expected to be low, based on read attainment being over 99% after four months.

Actions taken to resolve the issue	Completion date	Remedial action status
See above	Completed	Identified
Preventative actions taken to ensure no further issues will occur	**Completion date**	
See above	Early 2021	

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 EDMI and AMS. 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 EDMI and AMS. 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 EDMI and AMS. 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 EDMI and AMS. 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 2016 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 photo reading is requested to confirm the correct registers and then 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. I reviewed three examples of ICPs with compensation factors and confirmed that they were correctly applied.

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. The registry list as at 12/08/20 was reviewed.

Audit commentary

Switch Utilities supplies 20 ICPs with metering category 3 or above; and is not responsible for any metering installations with error or 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 treated as estimates by the reconciliation process. Wells' agent audit recorded that where a read is provided by the customer when Wells cannot access the meter directly, the customer read no read reason code should be applied, and the reading should be recorded in the meter reader notes rather than the reading field. There appeared to be some instances where Wells had provided a reading taken by the customer in the reading field as an actual read. The Energy Database could not differentiate these customer readings from other readings provided by Wells, and they were imported with a read type of "OR" instead of "CR" and treated as actual readings for all processes. This is non-compliant.

ICP	Read date	Wells note
0002925110WFD92	3/12/2019	A:R:read given by customer# 02/12/19 (03/12/2019 13:06:09)
0000958958TUE71	12/09/2020	A:R:<PS>Call first.. give me over phone. (12/09/2020 12:37:48)
0000909065TUD0F	24/02/2020	A:R:<AN>Someone Is Always Hm knock on gate they will take photo of read for u as dogs bite (22/07/2020 11:09:27)
0000909065TUD0F	22/07/2020	A:G:Reads entered on behalf of: - Customer took a photo with my phone (24/02/2020 13:43:35)

One other misclassified read was identified. A special reading obtained on 06/12/19 for ICP 0000212320TP100 was incorrectly entered as a customer read, and therefore ignored by the reconciliation and meter read attainment processes. Reads provided by customers and out of cycle meter reader photo readings are entered into the Energy Database by the IT team, and because the user did not clearly specify a read type the "customer" read type was applied.

Audit outcome

Non-compliant

Non-compliance	Description
Audit Ref: 9.1 With: Clause 3(3) Schedule 15.2 From: 03-Dec-19 To: 12-Sep-20	Apparent customer readings for ICPs 0002925110WFD92 (03/12/19), 0000958958TUE71 (12/09/20) and 0000909065TUD0F (24/02/20 and 22/07/20) were provided by Wells as actual readings and recorded in the Energy Database as actual readings. An actual meter reader reading ICP 0000212320TP100 (06/12/19) was incorrectly classified as a customer reading. 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. • Most manually entered readings are customer readings and correctly classified. The error occurred because the read type was not clearly specified on the data entry request. • Both Wells and Switch Utilities have processes in place to ensure that customer readings are correctly classified. A small number of exceptions were identified. The impact on settlement is expected to be minor. The customer readings were taken from the meter and were validated by Wells and Switch Utilities.

Actions taken to resolve the issue	Completion date	Remedial action status
Confirmed with Wells via email that they are sometimes recording customer readings in the "reads" field with a note indicating it is a customer read instead of following their usual process, Additional training has been provided to the Provisioning Team with regards to classifying reads received. The Provisioning team needs to understand the method for raising tickets - this was an error in the type of request and further training has been provided.	Advised Wells findings on the 16/11/2020	Identified
Preventative actions taken to ensure no further issues will occur	**Completion date**	
Moving forward monthly sanity checks to ensure Wells process has been changed	From November 2020	

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. The non-compliance recorded in EDMI's agent audit did not affect Switch Utilities ICPs.

I traced a diverse sample of readings for 575 NHH ICPs from the source files to the Energy Database and DART's latest results including all data providers, and found that meter reading data is consistently rounded to zero decimal places on import into the Energy Database, and the rounded data is transferred to DART.

I traced a diverse sample of volumes for six HHR settled AMI ICPs from the source files to DRS/MDMS and the HHR aggregated submissions. The data is not rounded on import, and compliance is confirmed.

I traced a sample of one month of HHR data from the source EIEP3 files to DRS/MDMS and the HHR aggregates submission for a diverse sample of two ICPs. The data is not rounded on import, and compliance is confirmed.

Audit outcome

Non-compliant

Non-compliance	Description
Audit Ref: 9.3 With: Clause 3(5) of schedule 15.2 From: 01-Jan-20 To: 27-Oct-20	AMI meter reading data is rounded on import into the Energy Database, and the rounded data is transferred to DART. 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 moderate. Only AMI meters which are settled as NHH are affected. The impact is assessed to be low. Only NHH settled AMI readings provided with decimal places are affected, and the overall kWh difference is expected to be small.

Actions taken to resolve the issue	Completion date	Remedial action status
		Identified
Preventative actions taken to ensure no further issues will occur	**Completion date**	
Following the Audit's Recommendation and clarification of the non-compliance issue, we will raise a bug fix with our development team in order for fix the rounding of the data	Early 2021 due to Brown Out Period	

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 HHR data is identified by generating an AV140 submission once the data is imported into DRS/MDMS. The Billing Analyst checks the files from the MEP/agent for the missing data, and sends an

email requesting the data if it is unavailable. If the data is not received prior to submission an estimate will be created in DRS/MDMS.

HHR estimation typically occurs where HHR data is provided late. In these cases, readings surrounding the missing trading periods are typically not available, and consumption is estimated based on a similar trading period. 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.

If there is insufficient history for the system to create an estimate, an estimate will be manually calculated and imported.

Where some data is missing but surrounding readings are available, a manual calculation can be performed to backfill the missing data by calculating the difference between the readings and applying a profile shape. The data is then imported into DRS/MDMS. At the time of the previous audit, scripts were used to create estimates where surrounding reads were available.

Description	Recommendation	Audited party comment	Remedial action
HHR estimation	Investigate whether scripts are still available to calculate HHR estimates where surrounding readings are available.	Discussed with auditor and clarified requirements. ONLY impacts 59 customers in the HH submissions	Investigating

I reviewed five examples of estimated readings created where HHR data was not provided in time for the initial submission, and found the data was estimated based on a similar period. The reasonable endeavours requirement was met, and four of the five estimates were within ±10% of the actual data.

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

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. The validation process creates a case for each exception, which is emailed to the appropriate team for investigation and action.

1. Missing meter readings, which 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. Negative consumption between a switch gain reading and the next reading. If the difference is more than -200 kWh it is referred to the switching team to determine whether a read renegotiation is required, otherwise the exception is accepted.
3. Negative consumption between two readings, where the previous reading is not a switch gain reading. If the exception has been caused by a meter roll over a ticket is raised for the IT team to correct the data.
4. Multiple readings on the same day. 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.

<u>Material changes to consumption</u>

Material changes to consumption over ±300 kWh and ±50% compared to the last read period are identified by the Billing Analyst using queries as part of the reconciliation submission checks. A list of cases for investigation is provided to the billing team for review. I found that exceptions are not always reviewed and actioned promptly.

There are no separate reviews of high and low invoices, and no review of invoices for vacant accounts which has caused some accuracy issues for the AV120 as billed submissions (discussed in **section 11.3**), and can also result in inaccurate readings being applied for reconciliation.

<u>Stopped and faulty meters</u>

Stopped meters are checked monthly as part of the pre reconciliation submission checks described in **section 12.3**. ICPs with zero 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 spot checked, focussing on ICPs which have been active for the most ICP days in the reconciliation period.

In late 2019 a report of stopped meters was added to the Energy Database. The report shows ICPs with consecutive days of zero consumption and the number of days since the ICP last consumed electricity,

and is not currently used for validation because staff have not received training on how to review and resolve the exceptions.

Controlled load greater than uncontrolled load

In late 2019 a report of ICPs with controlled load greater than the uncontrolled load for 30 days or more was added to the Energy Database. The report shows ICPs with consecutive days of zero consumption and the number of days since the ICP last consumed electricity, and is not currently used for validation because staff have not received training on how to review and resolve the exceptions.

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, the vacant disconnection process is initiated. Switch Utilities tries to contact the occupant to arrange for them to sign up with Switch Utilities or switch to an alternative retailer. If this is unsuccessful a vacant disconnection will be initiated.

A report of "inactive" ICPs with consumption was implemented in December 2019 and is reviewed daily by one staff member. 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.

Other staff will be trained on how to review this report so that the workload can be shared.

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**.

Description	Recommendation	Audited party comment	Remedial action
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. Consider adding further validation for high and low consumption, including for vacant accounts. Vacant accounts are required to be included in submission data.	Now understand that we have developed features in the Electricity Application which aren't being used. Switch Brand Review to be completed and understood first and then once tested and understood training to be rolled out to Slingshot/Orcon Provisioning Team.	Identified

Audit outcome

Compliant

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

Code reference

Clause 17 Schedule 15.2

Code related audit information

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

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

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

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

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

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

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

17(4)(f) - a review of meter and data storage device event list. Any event that could have affected the integrity of metering data must be investigated.

Audit observation

I reviewed 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, and if the data cannot be obtained estimation is conducted as described in **section 9.4**.

HHR submission data is checked for all ICPs where HHR volumes are expected. The data is exported to excel, and each ICP is reviewed individually to check that consumption is consistent with expected and previous flow patterns, by comparing the current month's consumption to the previous month. This check identifies unexpected patterns and periods with zero consumption, which are investigated.

AMS and EDMI provide information on HHR meter events, and none were identified during the audit period. Only 20 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 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 and found that action was taken, but there were sometimes delays due to workloads.

Audit outcome

Compliant

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 for 12/08/20 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 22 NSPs with a small number of HHR ICPs connected, and 40 NSPs with a small number of NHH ICPs connected.

I reviewed GR100 reports from February 2019 to July 2020 and investigated a diverse sample of ten NHH and ten HHR NSP level ICP days differences, to determine why the differences had occurred.

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 is used to determine the correct aggregation factors and the active ICP days which volume and ICP days submissions are to be provided for.

The process for the calculation of ICP days was examined by checking 22 NSPs with a small number of HHR ICPs connected, and 40 NSPs with a small number of NHH ICPs connected. The ICP days calculation was confirmed to be correct.

The following table shows the ICP days difference between Switch Utilities' database and the RM return file (GR100) for 18 months, and found the differences were small.

Month	Ri	R1	R3	R7	R14
Feb 2019	0.0%	0.0%	0.0%	0.0%	0.00%
Mar 2019	0.0%	0.0%	0.0%	0.0%	-0.02%
Apr 2019	0.0%	0.0%	0.0%	0.0%	0.00%
May 2019	0.0%	0.0%	-	-0.01%	-
Jun 2019	0.0%	0.0%	0.0%	0.00%	-
Jul 2019	0.0%	0.0%	0.0%	0.00%	-
Aug 2019	0.5%	0.0%	0.0%	0.00%	-
Sep 2019	0.0%	0.0%	0.00%	0.00%	-
Oct 2019	0.0%	0.0%	0.01%	0.00%	-
Nov 2019	0.01%	0.00%	0.01%	0.00%	-
Dec 2019	0.04%	0.01%	0.00%	-0.01%	-
Jan 2020	0.02%	0.02%	0.01%	-	-
Feb 2020	0.03%	0.01%	-0.01%	-	-
Mar 2020	0.01%	0.01%	0.00%	-	-
Apr 2020	-0.01%	0.01%	-0.01%	-	-
May 2020	0.04%	0.01%	-	-	-

Month	Ri	R1	R3	R7	R14
Jun 2020	0.02%	-0.01%	-	-	-
Jul 2020	0.03%	-	-	-	-

I reviewed a sample of ten NHH NSP level ICP days differences which remained for R7 or later and found the differences related to:

- NSPs where all the ICPs connected had undergone a backdated switch out and because there is no zeroing process for the AV110, the previous revision's ICP days data was not replaced with a zero. A recommendation to add zero lines to the AV080 and AV110 when this occurs is made in **section 12.3**.
- ICPs supplied for one day, or with only an opening reading. Where default forward estimate is applied for a new switch in, an ICP day is not recorded for the first day of consumption. Default forward estimate is only applied where there is a switch in reading and no subsequent readings. If any other reading is recorded after the switch in read (including an estimated reading), the forward estimate process will consider that reading, and ICP days will be reported correctly. This means that once another reading is received, revised ICP days data should be provided through the revision process. A system fix has not yet been implemented to resolve this issue.
- ICPs with negative consumption which are omitted from the AV080 submission, and the associated ICP days are also omitted. Negative consumption typically occurs after a high estimated gain reading.

I reviewed all ten HHR NSP level ICP days differences which remained for R7 or later and found the differences related to:

- NSPs where all the ICPs connected had undergone a backdated switch out and because there is no zeroing process for the AV110, the previous revision's ICP days data was not replaced with a zero.
- Timing differences relating to backdated submission type changes, where the differences washed out with the following revision.

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	There is no zeroing process for ICP days submissions which resulted in some incorrect NHH and HHR ICP days. One ICP day each was excluded from the ICP days submission because 0000909109TU8E5, 0194357368LC792, 0005269052WA075, 0000547801TP241, 0087824400PC1CA, 0000048697UNC58 and 1000007658BPC45 were supplied for one day, and a final reading was not recorded. 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. Potential impact: Medium Actual impact: Low

From: Mar-19 r14, Apr-19 r14, May-19 r7, Jul-19 r7, Dec-19 r7	Audit history: Three times Controls: Moderate Breach risk rating: 2
Audit risk rating	**Rationale for audit risk rating**
Low	The controls are recorded as moderate because they mitigate risk of incorrect ICP days being reported most of the time. The impact is low: • where the first ICP day is missed because default forward estimate is applied, corrected data is provided through the revision process once another reading is recorded for the ICP, • a small number of ICPs were supplied for one day, and • not zeroing submissions typically only affects NSPs with a small number of ICPs connected, the difference in ICP days is small and will be washed out once corrections are processed.

Actions taken to resolve the issue	Completion date	Remedial action status
1) and 2) Processes now understood and will not be a non-compliance issue moving forward	Completed	Identified
Preventative actions taken to ensure no further issues will occur	**Completion date**	
Some development is required to our DART reconciliation platform to achieve this change.	Aimed completion date for this review is mid 2021	

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.

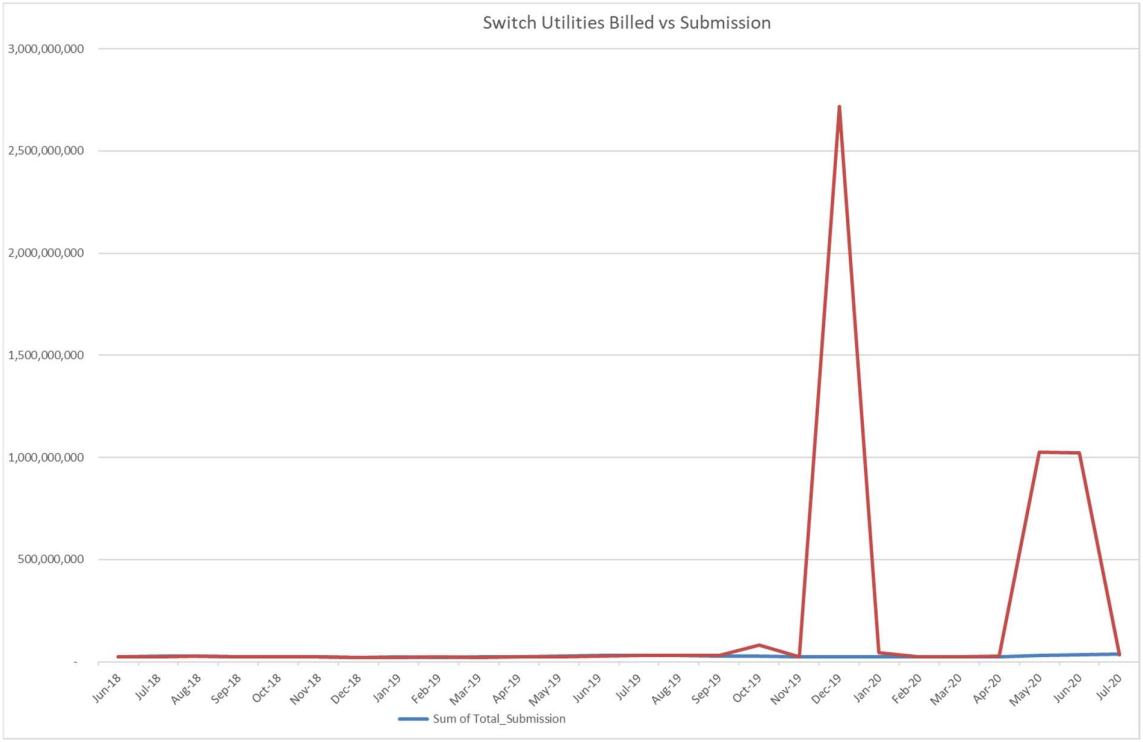
GR130 reports for June 2018 to July 2020 were reviewed to confirm whether the relationship between billed and submitted data appears reasonable.

Audit commentary

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 for the physical invoices to be produced. The Energy Database produces the AV120 submissions, based on the billing information.

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 July 2020 and was confirmed to be accurate.

I also checked the difference between submission and electricity supplied information for June 2018 to July 2020 and the results are shown in the chart below.



There are large differences between billed and submitted volumes for October 2019, December 2019, May 2020, and June 2020.

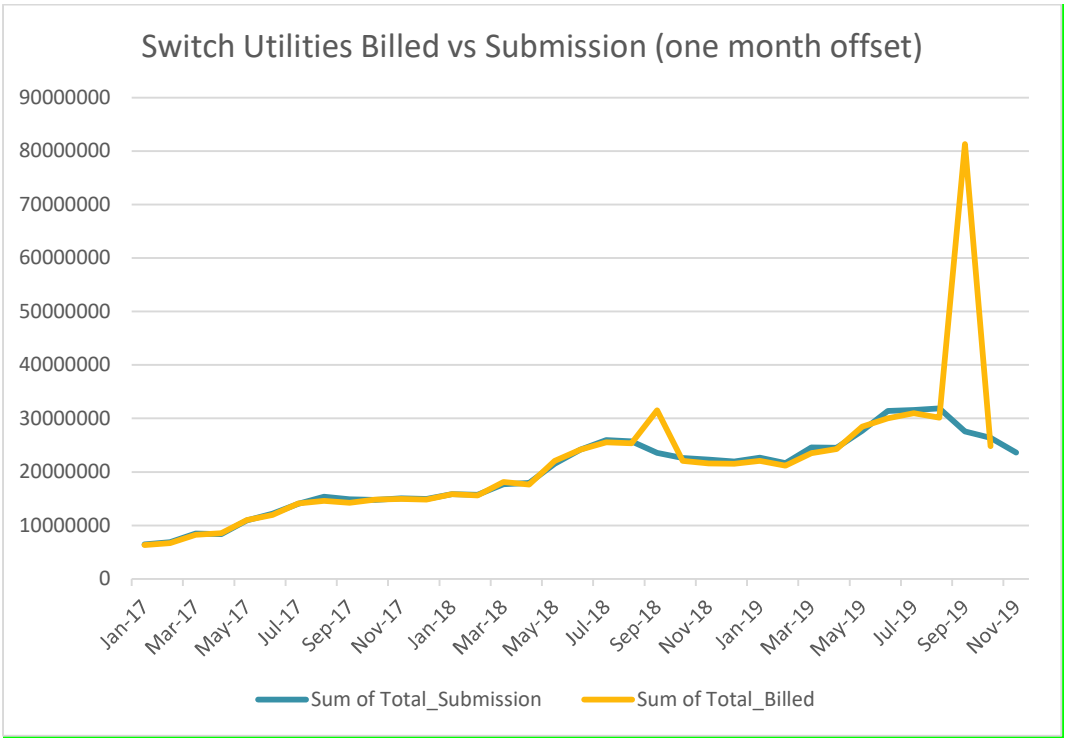
In some cases, volumes will be billed with a zero charge when processing corrections. The AV120 reports the "billed" volumes, rather than the billed volumes that the customer is expected to pay a unit charge for. This means that while the AV120 volume does reflect what was "billed" it does not necessarily reflect the amount charged to the customer when corrections of this nature are processed. The large discrepancies relate to corrections on vacant accounts which were not charged to the customer.

Switch Utilities can run scripts which exclude this billed consumption which is not charged to the customer from their submissions. In future, the Billing Analyst will check the AV120 data for anomalies which will be queried with the billing team and removed from the AV120 submission data if they have

not genuinely been billed to the customer. In **section 9.5** I have recommended that further billing validation is conducted.

Description	Recommendation	Audited party comment	Remedial action
AV080 versus AV120 submission differences	Closely monitor differences between billed and submitted data and take corrective action if invalid invoices are included.	Processes now understood and will not be a non-compliance issue moving forward	Identified

Due to Switch Utilities' billing cycle, there is a one month offset between billed and submitted consumption. With the exception of the billed spike in October 2019, the close relationship between billed and submitted data is visible, apart from where the spikes relating to invalid vacant account invoices occurred.



Audit outcome

Non-compliant

Non-compliance	Description
Audit Ref: 11.3 With: Clause 15.7 From: Oct-19, Dec-19, May-20 and Jun-20.	The AV120 report does not consistently reflect the quantity billed for the period. Potential impact: Low Actual impact: Low Audit history: None Controls: Moderate Breach risk rating: 2

Audit risk rating	Rationale for audit risk rating
Low	Controls are rated as moderate, because the report reflects the invoices generated but this is not always consistent with the invoices issued to the customer. The impact is assessed to be low because there is no impact on settlement.

Actions taken to resolve the issue	Completion date	Remedial action status
Processes now understood and will not be a non-compliance issue moving forward	Nov 2020	Identified
Preventative actions taken to ensure no further issues will occur	**Completion date**	

11.4. HHR aggregates information provision to the reconciliation manager (Clause 15.8)

Code reference

Clause 15.8

Code related audit information

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

> *15.8(a) - submission information for the immediately preceding consumption period, by 1600 hours on the 4th business day of each reconciliation period*
>
> *15.8(b) - revised submission information provided in accordance with clause 15.4(2), by 1600 hours on the 13th business day of each reconciliation period.*

Audit observation

I confirmed that the process for the calculation and aggregation of HHR data is correct, by matching HHR aggregates information with the HHR volumes data for four submissions.

The GR090 ICP Missing files were examined for April 2019 to July 2020. An extreme case sample of 30 ICPs missing were checked.

Audit commentary

DRS/MDMS produces HHR submissions. Non-compliance was found because the HHR aggregates report contains submission information, not electricity supplied information as specified under clause 15.8. Although the reports Switch Utilities produces are consistent with the Reconciliation Manager Functional Specification, this is recorded as technical non-compliance below.

I confirmed the process for aggregation of HHR data is correct by matching HHR aggregates information to the volumes for four submissions. The volumes and aggregates data matched within two decimal places.

The GR090 ICP Missing files were examined for July 2017 to November 2019. An extreme case sample of 30 ICPs missing from the most revisions were checked and found to be caused by backdated switches

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

Audit outcome

Non-compliant

Non-compliance	Description
Audit Ref: 11.4 With: Clause 15.8 From: 01-Feb-20 To: 27-Oct-20	Aggregates file contains submission information. 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 issue relating to content of the aggregates file is an error in the code, Switch Utilities is providing submission information as expected.

Actions taken to resolve the issue	Completion date	Remedial action status
No action to be taken as this is a code error		Identified
Preventative actions taken to ensure no further issues will occur	**Completion date**	

12. SUBMISSION COMPUTATION

12.1. Daylight saving adjustment (Clause 15.36)

Code reference

Clause 15.36

Code related audit information

The reconciliation participant must provide submission information to the reconciliation manager that is adjusted for NZDT using one of the techniques set out in clause 15.36(3) specified by the Authority.

Audit observation

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

Submission does not occur for periods where an ICP's status is "inactive". Where consumption is detected during an "inactive" period, the status must be returned to "active" to allow submission.

As described in **section 3.9**, the disconnection and reconnection process does not ensure that all consumption is captured and reported because:

1. Disconnection and reconnection reads are not consistently entered. This means that where part of a read period is active and part is inactive, some of the consumption will be apportioned to the inactive period by the historic estimate process and excluded from submission. Review of historic estimate scenarios identified two ICPs where this issue occurred.
2. Disconnections dates are not consistently applied as the first full day the ICP was disconnected. If the disconnection is processed effective from the day the disconnection is carried out, consumption for the day of disconnection will be apportioned to the inactive period and excluded from submission.
3. Monitoring is in place for inactive consumption, but corrections are not always made as required. Review of a report of inactive ICPs with consumption found at least six ICPs with combined inactive consumption of 22,466 kWh which had not been corrected.

Several recommendations are made in **section 3.9** to improve monitoring of inactive consumption and ensure that disconnections and reconnections are processed in a way that supports accurate calculation of historic estimate.

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 five 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 were the flow direction is I.

Submission information for all five ICPs with distributed generation was reviewed, and correct consumption was submitted.

Bridged meter consumption

Bridged meters are normally identified when reviewing reconnection paperwork. Upon discovery of a bridged meter staff raise a job to unbridge the meter, but no correction is processed to capture unmetered consumption during the bridged period.

A bridged meter correction process was created within the Electricity App but has not been used to date because staff have not been trained to use it. By the time this report was drafted, Switch Utilities was beginning to process corrections for all meters which were unbridged from January 2019 onwards. In parallel, users will be provided training on the correction tool to ensure that future corrections are processed as they are required.

- 15 ICPs had their meters bridged during the audit period, and corrections to estimate consumption during the bridged period were not processed.
- 24 ICPs had their meters bridged during the previous audit period, and corrections to estimate consumption during the bridged period have not been processed.

The affected ICPs are listed in **section 12.7**.

Audit outcome

Non-compliant

Non-compliance	Description
Audit Ref: 12.2 With: Clause 15.4 From: 22-Jan-19 To: 27-Oct-20	There was some missing submission data including, including: • unreported consumption during periods with inactive status for at least eight ICPs, and • unreported consumption during periods where meters were bridged for at least 39 ICPs. Potential impact: Medium Actual impact: Low Audit history: Twice Controls: Weak Breach risk rating: 6
Audit risk rating	**Rationale for audit risk rating**
Medium	The controls over corrections are rated as weak because processes have been developed but have not been consistently followed while users await training. New detection and correction processes are being implemented for stopped, faulty and bridged meters which are expected to improve the controls to strong.

	The audit risk rating is medium based on the kWh differences identified. Submission data will be revised once corrections are processed.

Actions taken to resolve the issue	Completion date	Remedial action status
Corrections have been carried out and the method/timing of corrections communicated to Tara	Completed	Identified
Preventative actions taken to ensure no further issues will occur	**Completion date**	
Future processes addressed by changes to the Electricity App and training on using this to Provisioning Teams	20 November	

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 process for aggregating the AV080 was examined by checking aggregation row level information for the September 2020 initial submission against detailed ICP level information.

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 checking aggregation row level information for September 2020 initial submission against detailed ICP level information for five NSPs. The NHH volume calculation was confirmed to be correct.

The reconciliation manager's database uses the replacement method when new submission information is received. This means that if an aggregation row is included in the previous revision, but not included in the current revision due to a backdated withdrawal, status change or switch, the previously submitted data for the row will remain in the reconciliation manager's database resulting in over submission. To prevent this, it is necessary to record the aggregation row in the current submission file with 0 units to replace the existing record, which is known as zeroing.

Switch Utilities has a process for zeroing for HHR submissions but does not have processes for the AV080 NHH volumes or AV110 ICP days. I found that WTS0011-WFNZ-EN-RPS-WFNZ01 was omitted from later revisions for January 2019 to September 2019, but no zero line was added.

Description	Recommendation	Audited party comment	Remedial action
Zeroing of aggregation lines included in previous revisions but excluded from the current revision	Establish processes to identify rows provided to the reconciliation manager in previous AV080 and AV110 submissions which are not provided in the current version and add zero lines as necessary.	Processes now understood and will not be a non compliance issue moving forward	Identified

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

- review of any ICPs with zero consumption using the batch level information (ICPs with zero consumption are extracted, and checked against a list of vacant ICPs to determine whether they are vacant and zero consumption is expected, and ICPs which are not vacant are spot checked, focussing on ICPs which have been active for the most ICP days) - a recommendation is made in **section 9.5** to increase the checks for zero consumption,
- review of variances between revisions, and variances to previous months, and
- material changes to consumption over ±300 kWh and ±50% compared to the last read period are identified by the Billing Analyst using queries as part of the reconciliation submission checks. A list of cases for investigation is provided to the billing team for review.

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

Audit outcome

Non-compliant

Non-compliance	Description
Audit Ref: 12.2 With: Clause 15.5 From: Jan-19 to Sep-19 for WTS0011-WFNZ-EN-RPS-WFNZ01	WTS0011-WFNZ-EN-RPS-WFNZ01 was omitted from later revisions for January 2019 to September 2019, but no zero line was added. Potential impact: Medium Actual impact: Low Audit history: None Controls: Moderate Breach risk rating: 2
Audit risk rating	**Rationale for audit risk rating**
Low	The controls are moderate. Zeroing processes are in place for HHR but not NSP volumes. The impact on settlement and participants is minor. Switch Utilities has over submitted volumes of around 2,400 kWh per month on average for this aggregation row.

Actions taken to resolve the issue	Completion date	Remedial action status
Processes now understood and will not be a non compliance issue moving forward	November 2020	Identified
Preventative actions taken to ensure no further issues will occur	**Completion date**	

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

Late provision of submission information

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

Accuracy of submission data

Corrections were processed as required and are discussed in **sections 2.1**, **8.1** and **8.2**.

Overall, I found processes to produce submission data were operating as intended. In some cases, incorrect inputs into these processes resulted in inaccurate submission data as discussed below.

ICP with incorrect unmetered load submissions

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. If the daily unmetered kWh is updated, revised information will be provided.

I rechecked the discrepancies identified in the previous audit. The correct unmetered load values have been confirmed and revised data will be/has been provided through the revision process. The corrections are discussed further in **section 3.7**.

ICPs with consumption during inactive periods

Submission does not occur for periods where an ICP's status is "inactive". Where consumption is detected during an "inactive" period, the status must be returned to "active" to allow submission.

As described in **section 3.9**, the disconnection and reconnection process does not ensure that all consumption is captured and reported because:

1. disconnection and reconnection reads are not consistently entered which means that where part of a read period is active and part is inactive, some of the consumption will be apportioned to the inactive period by the historic estimate process and excluded from submission - review of historic estimate scenarios identified two ICPs where this issue occurred,
2. disconnections dates are not consistently applied as the first full day the ICP was disconnected; if the disconnection is processed effective from the day the disconnection is carried out, consumption for the day of disconnection will be apportioned to the inactive period and excluded from submission, and
3. monitoring is in place for inactive consumption, but corrections are not always made as required - review of a report of inactive ICPs with consumption found at least six ICPs with combined inactive consumption of 22,466 kWh which had not been corrected.

ICP	Start date	End date	Inactive kWh
0007179377RN03C	16/04/2019	3/07/2020	10,744.49
0000116378UN3E1	9/07/2019	31/03/2020	3533
1001155567LC903	18/06/2019	6/01/2020	2143
0000188261UN11D	18/06/2019	13/02/2020	47.8
0000466864HB439	18/12/2019	4/02/2020	33
0000217419UN242	28/08/2019	2/03/2020	5965

Several recommendations are made in **section 3.9** to improve monitoring of inactive consumption and ensure that disconnections and reconnections are processed in a way that supports accurate calculation of historic estimate.

The ICPs identified in the previous audit as not having had reconnections processed have switched out, or had active status updated on the registry.

ICPs with incorrect active status dates

ICP 0005278970RN79A was reconnected from 22/03/19 but should have remained disconnected until it was reconnected by the customer's electrician on 26/03/19 because the paperwork confirmed the job was turned down as discussed in **section 3.8**. All consumption was reported.

The previous audit found ICP 1002051199LCFA9 became active on 21/07/19, but the status was updated to active effective from 28/07/19. Consumption was only calculated for the registry active days, instead of the true active days. The ICP switched out effective 01/08/2019 before a correction was processed.

Bridged meters

Bridged meters are normally identified when reviewing reconnection paperwork. Upon discovery of a bridged meter staff raise a job to unbridge the meter, but no correction is processed to capture unmetered consumption during the bridged period.

A bridged meter correction process was created within the Electricity App but has not been used to date because staff have not been trained to use it. By the time this report was drafted, Switch Utilities was beginning to process corrections for all meters which were unbridged from January 2019 onwards. In parallel, users will be provided training on the correction tool to ensure that future corrections are processed as they are required.

The ICPs below had their meters bridged during the audit period, and corrections to estimate consumption during the bridged period were not processed:

ICP	Unbridged
0000039208UNB79	25/02/2020
1002039198LCCB4	9/03/2020
0007115021RN360	5/06/2020
0000041521WEC87	19/06/2020
0006998550RN7B0	23/06/2020
0000904425TU98B	10/07/2020
0000052441CP8A0	29/07/2020
0000542004NR45E	11/08/2020
0007160652RN162	29/05/2020
0000132220TR56C	27/07/2020
0001257613UN7F8	29/07/2020
0000016158UN0DF	29/07/2020
1002073008LCF82	11/08/2020
0007115899RN3CB	Still bridged
0000048168TR64B	20/02/2020

The ICPs below had their meters bridged during the previous audit period, and corrections to estimate consumption during the bridged period have not been processed:

ICP	Unbridged
0036800502PCA75	22/01/2019
0000542435NR3E2	30/01/2019
0443295603LC7BE	21/01/2019
0000359044TPCE0	10/03/2019
0113857440LC563	12/02/2019
0000505955NR6EF	19/02/2019
0000513114NR523	20/02/2019
0001242420PCB60	21/02/2019
0000119754UN8CB	08/03/2019
0000005729UN5C0	22/03/2019
0000014849HB671	22/03/2019
0004005585TP4E4	01/05/2019
0000565457NR13A	17/05/2019
1000558438PCA85	03/07/2019
1000559513PC1A0	01/08/2019
0075342026WE3FF	22/08/2019
0002312683CNF52	21/08/2019
0000161139UN9DF	24/09/2019
0001853445AL915	01/10/2019
0000722886NV331	05/11/2019
0000378784TUC42	14/10/2019
2007001000CH294	13/11/2019
0000019364CP3CD	28/11/2019
0000066362TRFD0	15/05/2019

Defective meters

The previous audit found ICP 0006980139RNFF1's meter was not recording consumption and an estimate of the missing consumption had not been created. The ICP switched out effective 03/06/2020 and no correction was processed.

Invalid forward estimate

A meter channel which had been removed on the registry for 0001652243PCF08 remained in the Energy Database, and forward estimate was created because no readings were received. This issue was undetected because the import and review of notification files into the Energy Database has been suspended.

Incorrectly classified reads

As discussed in **section 9.1**, there appeared to be some instances where Wells had provided a reading taken by the customer in the reading field as an actual read. The Energy Database could not differentiate these customer readings from other readings provided by Wells, and they were imported with a read type of "OR" instead of "CR" and treated as actual readings for all processes. This is non-compliant.

ICP	Read date	Wells note
0002925110WFD92	3/12/2019	A:R:read given by customer# 02/12/19 (03/12/2019 13:06:09)
0000958958TUE71	12/09/2020	A:R:<PS>Call first.. give me over phone. (12/09/2020 12:37:48)
0000909065TUD0F	24/02/2020	A:R:<AN>Someone Is Always Hm knock on gate they will take photo of read for u as dogs bite (22/07/2020 11:09:27)
0000909065TUD0F	22/07/2020	A:G:Reads entered on behalf of: - Customer took a photo with my phone (24/02/2020 13:43:35)

An actual read obtained on 06/12/19 for ICP 0000212320TP100 was incorrectly entered as a customer read, and therefore ignored by the reconciliation process. Reads provided by customers and out of cycle meter reader photo readings are entered into the Energy Database by the IT team, and because the user did not clearly specify a read type the "customer" read type was applied.

Incorrect agreed switch readings

ICP 0000001165TRE25 did not have a final reading recorded in the Energy Database, or DART. The last reading was an OR (ordinary reading) rather than a final reading and matches the original switch reading, rather than the RR reading which Switch Utilities later agreed to.

ICP	Event date	Meter	Register	Agreed switch read	Energy Database read	Difference
0000001165TRE25	19/02/2020	216104848	1	37357 (E)	37371.17 (OR)	-14.17 kWh
0000001165TRE25	19/02/2020	216104848	2	1562 (E)	1561.89 (OR)	0.11 kWh
					Total	**-14.06 kWh**

I recommend this ICP is checked to determine why the automated process did not record a final switch event reading which matched the outcome of the RR process, and the missing reads are added in **section 4.11**.

Audit outcome

Non-compliant

Non-compliance	Description
Audit Ref: 12.7 With: Clause 15.12 From: 22-Jan-19 To: 27-Oct-20	Some incorrect submission data was provided, including: • unreported consumption during periods with inactive status for at least eight ICPs, • unreported consumption during periods where meters were bridged for at least 39 ICPs, • invalid generation of forward estimate for one ICP, • historic estimate was calculated based on customer readings provided by Wells for four ICPs, • an actual reading was not used to calculate historic estimate because it was incorrectly classified as a customer reading, and • agreed switch readings for one ICP were not used to calculate historic estimate because they were not entered. Potential impact: Medium Actual impact: Low Audit history: Twice Controls: Weak Breach risk rating: 6
Audit risk rating	**Rationale for audit risk rating**
Medium	Controls are assessed to be weak overall. • The controls over corrections are rated as weak because correction processes have been developed but have not been consistently followed while users await training. • The controls over readings are strong, the issues occurred because Wells provided a small number of customer readings as actual readings, which was against their policy. The other incorrect or incorrectly classified readings appear to be isolated issues. The audit risk rating is medium based on the kWh differences identified. Submission data will be revised once corrections are processed.

Actions taken to resolve the issue	Completion date	Remedial action status
1. De-energized sites with consumption are tracked through the Switching UI and reviewed daily 2. This is now resolved and requires testing for future bridged sites 3. A process exists for creating permanent estimates for meters not recording consumption, but this was not applied in one instance more checks will be conducted to avoid such instances in the future	November/December 2020	Identified

4.Relates to Wells not following their normal process as they classified customers readings as real reads, we informed them of these findings the 16/11/2020 5. Provisioning team needs to understand the method for raising tickets - this was an error in the type of request and further training has been provided. 6. This instance has been raised with our DB team who are investigating the cause		
Preventative actions taken to ensure no further issues will occur	**Completion date**	

12.8. Permanence of meter readings for reconciliation (Clause 4 Schedule 15.2)

Code reference

Clause 4 Schedule 15.2

Code related audit information

Only volume information created using validated meter readings, or if such values are unavailable, permanent estimates, has permanence within the reconciliation processes (unless subsequently found to be in error).

The relevant reconciliation participant must, at the earliest opportunity, and no later than the month 14 revision cycle, replace volume information created using estimated readings with volume information created using validated meter readings.

If, despite having used reasonable endeavours for at least 12 months, a reconciliation participant has been unable to obtain a validated meter reading, the reconciliation participant must replace volume information created using an estimated reading with volume information created using a permanent estimate in place of a validated meter reading.

Audit observation

NHH volumes 14-month revisions were reviewed for January to March 2020 to identify any forward estimate still existing.

Audit commentary

Review of the 14-month revisions for January to March 2020 showed that not all estimated meter readings had been replaced with validated meter readings. This is recorded as non-compliance below.

Month	Forward estimate
Jan-19	1,033.59
Feb-19	507.87
Mar-19	1,303.63
Total	2,845.09

Switch Utilities has a process to enter permanent estimates where readings are not received within 14 months, but I found it was not consistently followed where time to complete pre-submission checks was short. ICPs with forward estimate remaining are identified by reviewing the submission information and a permanent estimate text file is created and loaded into DART. In parallel 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.

I checked all NSPs with forward estimate remaining in the January to March 2020 r14 submissions and found it was caused by:

- an error when loading the file of permanent estimate readings where Excel had dropped the leading zero on the meter number when the file was opened, and the text file for import into DART also had the leading zero missing - the reading was not loaded into DART because there was no meter number match,
- permanent estimates were missed when the file was created due to a processing error, and
- a meter channel which had been removed on the registry for 0001652243PCF08 remained in the Energy Database, and forward estimate was created because no readings were received, this issue was undetected because the import and review of notification files into the Energy Database has been suspended.

ICP 1000512831PCD0D appears to have actual readings covering the entire reconciliation periods of January 2019, February 2019 and March 2019 but still has forward estimate created. I recommend this ICP is checked to determine the reason for the forward estimate to prevent recurrence.

Description	Recommendation	Audited party comment	Remedial action
Permanent estimate process	Update the permanent estimate process to ensure that leading zeros are not missed from meter numbers. After updating the permanent estimates, re-check the submission to ensure that no forward estimate remains.	Processes now understood and will not be a non compliance issue moving forward	Identified
Unexpected forward estimate remaining for ICP 1000512831PCD0D	Investigate why forward estimate remained for ICP 1000512831PCD0D for January 2019, February 2019 and March 2019 and take corrective action as required.	No need for a correction for the historical data as those lines get self fixed when we upload the PE lines in the Energy DB	Identified

The previous audit found some rounding differences between the historic and forward estimate in the previous audit. For the submissions reviewed only one difference was under 1 kWh (0.6 kWh) and it appears that this issue is no longer present.

Audit outcome

Non-compliant

Non-compliance	Description
Audit Ref: 12.8 With: Clause 4 of Schedule 15.2 From: Jan-19, Feb-19, Mar-19	Some estimates were not replaced by revision 14. Potential impact: Low Actual impact: Low Audit history: Three times Controls: Strong Breach risk rating: 1
Audit risk rating	**Rationale for audit risk rating**
Low	The controls are recorded as strong because a permanent estimate process is in place and has been followed. Some forward estimate still remains due to errors made when processing the files, and metering information discrepancies. The impact is low. Total forward estimate for the three months reviewed was 2,845 kWh.

Actions taken to resolve the issue	Completion date	Remedial action status
Processes now understood and will not be a non-compliance issue moving forward , no need a correction for the historical data as those lines get self-fixed when we upload the PE lines in the Energy DB	November 2020	Identified
Preventative actions taken to ensure no further issues will occur	**Completion date**	

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

Code reference

Clause 2 Schedule 15.3

Code related audit information

If a reconciliation participant prepares submission information for each NSP for the relevant consumption periods in accordance with the Code, such submission information for each ICP must comprise the following:

- *half hour volume information for the total metered quantity of electricity for each ICP notified in accordance with clause 11.7(2) for which there is a category 3 or higher metering installation (clause 2(1)(a))for each ICP about which information is provided under clause 11.7(2) for which there is a category 1 or category 2 metering installation (clause 2(1)(b)):*
  - *a) any half hour volume information for the ICP; or*
  - *b) any non half hour volumes information calculated under clauses 4 to 6 (as applicable).*
  - *c) unmetered load quantities for each ICP that has unmetered load associated with it derived from the quantity recorded in the registry against the relevant ICP and the number of days in the period, the distributed unmetered load database, or other sources of relevant information. (clause 2(1)(c))*
- *to create non half hour submission information a reconciliation participant must only use information that is dependent on a control device if (clause 2(2)):*

a) *the certification of the control device is recorded in the registry; or*
b) *the metering installation in which the control device is location has interim certification.*

- *to create submission information for a point of connection the reconciliation participant must apply to the raw meter data (clause 2(3):*
  a) *for each ICP, the compensation factor that is recorded in the registry (clause 2(3)(a))*
  b) *for each NSP the compensation factor that is recorded in the metering installations most recent certification report (clause 2(3)(b))*

Audit observation

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 were 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 following techniques to create historical estimates and forward estimates. (clause 3(1))

Each estimate that is a forward estimate or a historical estimate must clearly be identified as such. (clause 3(2))

If validated meter readings are not available for the purpose of clauses 4 and 5, permanent estimates may be used in place of validated meter readings. (clause 3(3))

Audit observation

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 (Clause 4 and 5 Schedule 15.3)

Code reference

Clause 4 and 5 Schedule 15.3

Code related audit information

The methodology outlined in clause 4 of Schedule 15.3 must be used when preparing historic estimates of volume information for each ICP when the relevant seasonal adjustment shape is available.

If a seasonal adjustment shape is not available, the methodology for preparing an historical estimate of volume information for each ICP must be the same as in clause 4, except that the relevant quantities kWh_{Px} must be prorated as determined by the reconciliation participant using its own methodology or on a flat shape basis using the relevant number of days that are within the consumption period and within the period covered by kWh_{Px}.

Audit observation

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.

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

Submission does not occur for periods where an ICP's status is "inactive". Where consumption is detected during an "inactive" period, the status must be returned to "active" to allow submission. Some issues were identified during review of the disconnection and reconnection process:

1. disconnection and reconnection reads are not consistently entered which means that where part of a read period is active and part is inactive, some of the consumption will be apportioned to the inactive period by the historic estimate process and excluded from submission - review of historic estimate scenarios identified two ICPs where this issue occurred,
2. disconnections dates are not consistently applied as the first full day the ICP was disconnected; if the disconnection is processed effective from the day the disconnection is carried out, consumption for the day of disconnection will be apportioned to the inactive period and excluded from submission, and
3. monitoring is in place for inactive consumption, but corrections are not always made as required.

Several recommendations are made in **section 3.9** to improve monitoring of inactive consumption and ensure that disconnections and reconnections are processed in a way that supports accurate calculation of historic estimate. Non-compliance is recorded in **section 12.7** relating to the inaccurate submission information**.**

Test	Scenario	Test Expectation	Result
a	ICP becomes Active part way through a month	Consumption is only calculated for the Active portion of the month.	Compliant
b	ICP becomes Inactive part way through a month.	Consumption is only calculated for the Active portion of the month.	Compliant
c	ICP become Inactive then Active again within a month.	Consumption is only calculated for the Active portion of the month.	Has not occurred
d	ICP switches in part way through a month on an estimated switch reading	Consumption is calculated to include the 1st day of responsibility.	Compliant
e	ICP switches out part way through a month on an estimated switch reading	Consumption is calculated to include the last day of responsibility.	Compliant
f	ICP switches out then back in within a month	Consumption is calculated for each day of responsibility.	Compliant
g	Continuous ICP with a read during the month	Consumption is calculated assuming the readings are valid until the end of the day	Compliant
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

Test	Scenario	Test Expectation	Result
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	Compliant

Audit outcome

Compliant

12.12. Forward estimate process (Clause 6 Schedule 15.3)

Code reference

Clause 6 Schedule 15.3

Code related audit information

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

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

Audit observation

The process to create forward estimates was reviewed. Forward estimates were checked for accuracy by analysing the GR170 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, 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. 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
Mar 2019	-	-	-	-	130
Apr 2019	-	-	-	-	126
May 2019	-	-	-		125
Jun 2019	-	-	-		125
Jul 2019	-	-	-		125
Aug 2019	-	-	-		124
Sep 2019	-	-	-		122
Oct 2019	-	-	-		123
Nov 2019	-	-	-		122
Dec 2019	-	-			121
Jan 2020	-	-			121
Feb 2020	-	-			122
Mar 2020	-	-			122
Apr 2020	-				122
May 2020	-				122

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

Month	Revision 1	Revision 3	Revision 7	Revision 14
Mar 2019	-0.32%	-0.03%	0.05%	-0.11%
Apr 2019	0.33%	0.74%	0.52%	0.00%
May 2019	-0.29%	0.24%	-0.13%	
Jun 2019	-0.05%	-0.24%	-0.23%	

Month	Revision 1	Revision 3	Revision 7	Revision 14
Jul 2019	-0.28%	-0.46%	-0.55%	
Aug 2019	-0.55%	-0.64%	-0.83%	
Sep 2019	0.04%	-0.39%	-0.09%	
Oct 2019	-0.38%	-0.78%	-0.74%	
Nov 2019	0.25%	0.64%	0.90%	
Dec 2019	0.13%	0.46%		
Jan 2020	0.23%	0.49%		
Feb 2020	0.58%	0.67%		
Mar 2020	-0.21%	0.75%		
Apr 2020	1.15%			
May 2020	0.84%			

I checked all balancing area differences over ± 50% and ± 2,000 kWh for periods from April 2020 onwards to determine the reasons for the differences, and found they were caused by:

- fluctuations in forward estimate, as ICPs swapped from having default forward estimate when only the switch in read was available to ICP meter register specific forward estimate as readings were received,
- fluctuations in the profile shape, and
- differences between forward estimate and actual readings received as the historic estimate proportion increased.

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 as at 12/08/20 and event detail report for 01/01/20 to 12/08/20 were reviewed to identify any ICPs which have had profile changes.

Audit commentary

No ICPs had profile changes during the period reviewed. Profile changes typically coincide with a meter change, which ensures that profile changes occur on an actual reading.

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 HE 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
Jan 2019			211	208
Feb 2019			213	211
Mar 2019			216	213
Sep 2019		206		206
Oct 2019		206		209
Nov 2019		206		208
Jan 2020	205			206
Feb 2020	201			207
Mar 2020	193			207

I checked all NSPs with forward estimate remaining in the January 2019 to March 2019 revision 14 submissions and found it was caused by:

- an error when loading the file of permanent estimate readings where Excel had dropped the leading zero on the meter number when the file was opened, and the text file for import into DART also had the leading zero missing - the reading was not loaded into DART because there was no meter number match,
- permanent estimates were missed when the file was created due to a processing error, and
- a meter channel which had been removed on the registry remained in the Energy Database, and forward estimate was created because no readings were received; this issue was undetected because the import and review of notification files into the Energy Database has been suspended.

The table below shows that the percentage HE at a summary level for all NSPs is at or above the required targets for revisions 3 and 7, and below the targets the January 2019 to March 2019 revision 14 submissions.

Month	Revision 3 80% Target	Revision 7 90% Target	Revision 14 100% Target
Jan 2019	-	-	99.994%
Feb 2019	-	-	99.997%
Mar 2019	-	-	99.993%
Sep 2019	-	99.204%	-
Oct 2019	-	99.083%	-
Nov 2019	-	99.002%	-
Jan 2020	97.411%	-	-
Feb 2020	96.771%	-	-
Mar 2020	95.987%	-	-

Audit outcome

Non-compliant

Non-compliance	Description
Audit Ref: 13.3 With: Clause 10 of Schedule 15.3 From: Jan-Mar 19 (r14), Oct-Nov 19 (r7) and Jan-Mar 20 (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. Total forward estimate for the three months reviewed was 2,845 kWh.

Actions taken to resolve the issue	Completion date	Remedial action status
Auditors comments are noted, processes are in place for obtaining reads but awareness of the process and timelines required are being reiterated with the team to improve the read attainment processes moving forward	November 2020	Identified
Preventative actions taken to ensure no further issues will occur	**Completion date**	

CONCLUSION

Switch Utilities has continued to steadily increase their customer numbers, resulting in increasing workloads.

At the time of the previous audit in February 2020, Switch Utilities was in the process of implementing a number of process changes and minor system changes designed to improve compliance. The changes included improved validation and NHH correction processes, and enhancements to the registry notification process and CS file content. Two issues prevented Switch Utilities from fully integrating these changes into their business as usual processes:

3. The operational staff member who initiated many of these changes left Switch Utilities and it was not possible to adequately hand over all tasks and processes during his notice period.
4. Some defects were identified in the new notification and CS processes after they were initially implemented.

The new reports to improve NHH consumption validation, and tool to process NHH corrections are not in use, while users await training. By the time this report was drafted, Switch Utilities was beginning to process corrections for all meters which were unbridged from January 2019 onwards. In parallel, users will be provided training on the correction tool to ensure that future corrections are processed as they are required.

The registry notification process was suspended due to defects identified when the process was automated. This, combined with not manually reviewing the notification files or separately validating metering data against the registry, has resulted in some discrepancies between registry and Energy Database information. The impact on reconciliation is minimised, because DART (NHH) and DRS/MDMS (HHR) import registry lists prior to calculating submission information, which ensures that aggregation factors are correct. There is higher impact on switching. Switching files sometimes failed because the metering information held in the Energy Database and switching files was inconsistent with the registry. Failed switching files are reported in the Electricity App, but there were sometimes delays in reviewing the files and resolving the issues that caused the failures.

The following key areas require further improvement to achieve compliance:

1. **Registry data validation**
   Notification files have not been reviewed or imported into the Energy Database for approximately six months, resulting in registry data discrepancies which are impacting on other processes including switching and reconciliation.

2. **NHH meter read validation**
   The new reports to improve NHH consumption validation are not in use while users await training, and NHH meter condition information is not consistently reviewed to identify events which could affect meter accuracy.

3. **Corrections for defective and bridged meters**
   Once training is complete backdated corrections for bridged and stopped meters should be completed.

4. **Inactive consumption**
   Submission does not occur for periods where an ICP's status is "inactive". Where consumption is detected during an "inactive" period, the status must be returned to "active" to allow submission. Some issues were identified during review of the disconnection and reconnection process:
   d) Disconnection and reconnection reads are not consistently entered. This means that where part of a read period is active and part is inactive, some of the consumption will be apportioned to the inactive period by the historic estimate process and excluded from

submission. Review of historic estimate scenarios identified two ICPs where this issue occurred.

e) Disconnections dates are not consistently applied as the first full day the ICP was disconnected. If the disconnection is processed effective from the day the disconnection is carried out, consumption for the day of disconnection will be apportioned to the inactive period and excluded from submission.
f) Monitoring is in place for inactive consumption, but corrections are not always made as required.

Several recommendations are made to improve monitoring of inactive consumption and ensure that disconnections and reconnections are processed in a way that supports accurate calculation of historic estimate.

5. **CS content**
   As recorded in the previous audit, a small number of CS files had an incorrect last actual read date, and I recommend this is investigated.

6. **Switching file failures**
   The Energy Database identifies registry import and export file failures, including for switching files and displays these in the user interface. I found that these are not always reviewed and actioned promptly, which appears to partly be because of training and workload issues.

7. **Read renegotiation process**
   Switch Utilities' read renegotiation process still allows RR files to be supported by unvalidated customer or photo readings. The code requires all RRs to be supported by at least two validated actual readings.

8. **Reconciliation processes**
   A zeroing process is required for ICP days submissions where an aggregation line appears in the previous revision but is not available in the current revision.
   Differences between billed and submitted data should be monitored, and any large variances should be investigated.

Switch Utilities has made improvements to increase compliance following the February 2020 audit, including:

1. Improved timeliness of status and trader updates.
2. Improved validation processes for distributed generation, and the Billing Analyst is completing thorough submission validation in an effort to find and resolve issues before submission.
3. Meter event information is now reviewed and actioned.
4. Average daily consumption in CS files is now recorded as the consumption for the last read to read period in most cases. Some system defects in this process affecting a small number of ICPs are under investigation.
5. Issues relating to switch save protection and win-backs have been cleared.

The breach risk rating total is 75, which results in a recommended audit frequency of three months. During and following the audit, Switch Utilities investigated each of the non-compliances to identify the underlying causes, and implemented or intends to implement changes to prevent recurrence. Most inaccurate data identified during this audit and previous audits was corrected by the time this audit report was finalised, including most corrections for consumption during bridged periods. All of the recommendations made have been implemented, or are accepted and intended to be implemented.

All remaining improvements are expected to be made by mid 2021. I recommend that the next audit is completed in a minimum of 10 months to allow Switch Utilities time for the improved processes to be bedded in and demonstrated.

PARTICIPANT RESPONSE

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