ELECTRICITY INDUSTRY PARTICIPATION CODE
RECONCILIATION PARTICIPANT AUDIT REPORT

For

PULSE ENERGY ALLIANCE LP

Prepared by: Rebecca Elliot

Date audit commenced: 15 January 2019

Date audit report completed: 18 March 2019

Audit report due date: 1 April 2019

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EXECUTIVE SUMMARY

This Electricity Industry Participation Code Reconciliation Participant audit was performed at the request of **Pulse Energy Alliance LP (Pulse),** to support their application for renewal of certification in accordance with clauses 5 and 7 of schedule 15.1. The audit was conducted in accordance with the Guideline for Reconciliation Participant Audits version 7.1

At the beginning of this audit period Pulse used two participant codes; Pulse (PUNZ) and Property Power (CPPL). The CPPL ICPs switched to PUNZ effective from 01/08/18. This audit has examined compliance for both codes, including the transition of the CPPL ICPs to PUNZ.

Pulse also acts as an agent for submission of generation volumes for Pioneer Energy. Accucal provides generation volumes to Pulse, which are used to produce generation volumes submissions as Pioneer's agent. Processes relating to services provided to Pioneer are documented in the relevant sections of this report. Where the audit outcome differs to Pulse's for a report section it is separately listed, and a separate table of non-compliance for Pioneer is included in the audit summary section.

Pulse have made good progress during the audit period. The validation processes have been greatly improved. This audit identifies some further validations that will increase the overall level of compliance if adopted.

In the area of registry management and switching training has been a focus for Pulse. To support this staff have ready access to a comprehensive knowledgebase and Gentrack 4 provides good visibility of processes and which step of a process has failed if there are exceptions. Work queues are now at a manageable level. These are managed as part of the daily BAU. There were some areas of improvement identified, specifically:

- Incorrect active dates applied by Gentrack in a small number of instances
- Certification of metering at the time of reconnection
- ICP switch in dates being requested for a later date than the reconnection is actioned
- The application of meter reads in switching files

In the area of meter reading and reconciliation there has been good improvement in the management of meter reading attainment and reconciliation processes. There were some areas of improvement identified, specifically:

- Validation of zero consumption reads not being carried out
- Some corrections not processed
- Leaving negative consumption unvalidated until it catches up
- Some late submissions

The next audit frequency table indicates that the next audit be due in three months, based on Pulse's final score of 91. This score does not reflect the progress Pulse has made during the audit period due to the inclusion of the corrections and backdating that was carried out to improve compliance.

I have reviewed Pulse's responses to the compliance plan and based on these I recommend a next audit period of six to nine months.

The matters identified are shown in the tables below:

AUDIT SUMMARY

TABLE OF NON COMPLIANCE

Subject	Section	Clause	Non-Compliance	Controls	Audit Risk Rating	Breach Risk Rating	Remedial Action
Participants to give access	1.11	16A.4	Late provision of audit information	Weak	Low	3	Identified
Relevant information	2.1	11.2 & 15.2	**Pulse** Discrepancies between Gentrack and the Registry. **Property Power** Discrepancies between Gentrack and the Registry.	Moderate	Low	2	Identified
Provision of information	2.2	15.35	One breach was recorded for late provision of submission information.	Strong	Low	1	Identified
Audit Trails	2.4	21 Schedule 15.2	**Pulse and Property Power** Viper audit trails do not record the operator identifier for the person who completed the activity; there is only one operator identifier for Viper.	Strong	Low	1	Disputed
Electrical Connection of Point of Connection	2.11	10.33A	**Pulse** 15 reconnections had expired certification recorded on the registry when they were reconnected.	Weak	Low	3	Identified
Changes to registry information	3.3	10 Schedule 11.1	**Pulse** 173 late updates to active status and 60 late updates to inactive status. 186 late MEP nominations. 453 late trader updates.	Moderate	Low	2	Identified

Subject	Section	Clause	Non-Compliance	Controls	Audit Risk Rating	Breach Risk Rating	Remedial Action
Trader responsibility for an ICP	3.4	11.18	**Pulse** Final reads not used for two decommissioned ICPs.	Moderate	Low	2	Investigating
Provision of information to the registry manager	3.5	9 Schedule 11.1	**Pulse** 77 late updates to active.	Moderate	Low	2	Identified
ANZSIC codes	3.6	9 (1(k)) Schedule 11.1	**Pulse** Ten ICPs with incorrect ANZSIC codes.	Weak	Low	3	Identified
Changes to unmetered load	3.7	9 (1)(f)) of Schedule 11.1	**Pulse** Unmetered load incorrectly recorded for one ICP.	Moderate	Low	2	Identified
Management of "active" status	3.8	17 Schedule 11.1	**Pulse** Nine ICPs had incorrect active dates.	Weak	Low	3	Investigating
Management of "inactive" status	3.9	19 Schedule 11.1	**Property Power** Two ICPs with consumption while disconnected did not have their status updated to "active".	Moderate	Low	2	Identified
Losing trader response to switch request and event dates-standard switch	4.2	3 and 4 Schedule 11.3	**Pulse** Four incorrect AN response codes were applied by Pulse.	Moderate	Low	2	Identified

Subject	Section	Clause	Non-Compliance	Controls	Audit Risk Rating	Breach Risk Rating	Remedial Action
Losing trader must provide final information-standard switch	4.3	5 Schedule 11.3	**Pulse** Average daily consumption calculation methodology incorrect. Six of 12 examples of questionable average daily consumptions checked found to be incorrect. **Property Power** Average daily consumption calculation methodology incorrect. One transfer CS file had an incorrect estimated daily consumption recorded.	Weak	Low	3	Disputed
Retailers must use same reading-standard switch	4.4	6(1) Schedule 11.3	**Pulse** Eight late RR files for transfer switches. Three RRs were not supported by two validated actual reads.	Moderate	Low	2	Identified
Gaining trader informs registry of switch request - switch move	4.7	9 Schedule 11.3	**Pulse** Incorrect switch type used for three ICPs (all related to the ICPs moving from Property Power to Pulse). Some NTs not issued for the correct gain date and therefore not issued within two days after pre-conditions were cleared.	Weak	Medium	6	Investigating

Subject	Section	Clause	Non-Compliance	Controls	Audit Risk Rating	Breach Risk Rating	Remedial Action
Losing trader provides information - switch move	4.8	10(1) Schedule 11.3	**Pulse** Four incorrect AN response codes applied. Pulse proposed an event date more than ten business days after NT receipt for two switch moves. **Property Power** One incorrect AN response code was applied. Property Power proposed an event date before the gaining trader's requested date for one switch move.	Moderate	Low	2	Identified
Losing trader determines a different date - switch move	4.9	10(2) Schedule 11.3	**Pulse** Pulse proposed a different event date more than ten days from receipt of NT for two switch moves. Both switches were later completed with the same date as the gaining trader requested. **Property Power** Pulse proposed an event date before the gaining trader's requested date for one switch move. The switch was later completed with a compliant event date.	Strong	Low	1	Identified
Losing trader must provide final information - switch move	4.10	11 Schedule 11.3	**Pulse** Average daily consumption calculation methodology incorrect. 12 of 15 examples of questionable average daily consumptions checked found to be incorrect.	Weak	Medium	6	Disputed

Subject	Section	Clause	Non-Compliance	Controls	Audit Risk Rating	Breach Risk Rating	Remedial Action
			Three ICPs with reads incorrectly labelled as actual. One ICP sent with the incorrect final read. **Property Power** Average daily consumption calculation methodology incorrect.				
Gaining trader changes to switch meter reading - switch move	4.11	12 Schedule 11.3	**Pulse** Five late RR files for switch moves. Three RRs were not supported by two validated actual reads.	Moderate	Low	2	Identified
Withdrawal of switch requests	4.15	17 and 18 Schedule 11.3	**Pulse** 1 incorrect NW code applied. 45 late NW files. **Property Power** 1 late NW file.	Moderate	Low	2	Identified
Electricity conveyed & notification by embedded generators	6.1	10.13, and 15.13	**Pulse** Energy is not metered and quantified according to the code where meters are bridged.	Strong	Low	1	Identified
Derivation of meter readings	6.6	3(1), 3(2) and 5 Schedule 15.2	**Pulse** Meter condition information provided by Wells is not routinely reviewed. Seven photo reads were treated as validated, when they had not been validated against at least two actual reads from other sources. **Property Power** Meter condition information provided by Wells is not routinely reviewed.	Weak	Low	3	Disputed

Subject	Section	Clause	Non-Compliance	Controls	Audit Risk Rating	Breach Risk Rating	Remedial Action
Interrogate meters once	6.8	7(1) and (2) Schedule 15.2	**Pulse** Two ICPs were unread during the period of supply. Exceptional circumstances did not apply, and the best endeavours requirement was not met. **Property Power** One ICP was unread during the period of supply. Exceptional circumstances did not apply, and the best endeavours requirement was not met.	Moderate	Low	2	Investigating
NHH meters interrogated annually	6.9	8(1) and (2) Schedule 15.2	**Pulse** For nine ICPs without an actual read for 12 months, exceptional circumstances could not be confirmed, and there was insufficient evidence that the best endeavours requirement was met. **Property Power** No meter reading frequency report was submitted for July 2018, although some NHH ICPs were active with Property Power until August 2018. For four ICPs without an actual read for 12 months, exceptional circumstances could not be confirmed, and there was insufficient evidence that the best endeavours requirement was met.	Moderate	Low	2	Identified
NHH meters 90% read rate	6.10	9(1) and (2) Schedule 15.2	**Pulse** For NSPs without at least 90% of ICPs read within four months, exceptional circumstances could not be confirmed, and there	Weak	Low	3	Identified

Subject	Section	Clause	Non-Compliance	Controls	Audit Risk Rating	Breach Risk Rating	Remedial Action
			was insufficient evidence that the best endeavours requirement was met.				
Correction of NHH meter readings	8.1	19(1) Schedule 15.2	**Pulse** Two corrections for defective meters from the 2018 audit have not been processed. Five corrections for bridged meters have not been processed, including three relating to the 2018 audit.	Weak	Low	3	Investigating
Correction of HHR metering information	8.2	19(2) Schedule 15.2	**Pulse** Estimates replaced some actual HHR data for October 2018.	Strong	Low	1	Identified
Identification of readings	9.1	3(3) Schedule 15.2	**Pulse** Seven ICPs with customer photo reads were treated as validated, when they had not been validated against at least two actual reads from other sources.	Moderate	Low	2	Identified
NHH metering information data validation	9.5	16 Schedule 15.2	Actual reads not applied when negative consumption is present.	Moderate	Low	2	Disputed
Electronic meter readings and estimated readings	9.6	17 Schedule 15.2	**Pulse** Meter event information for AMI meters is not consistently reviewed. **Property Power** Meter event information for AMI meters is not consistently reviewed.	Weak	Low	3	Disputed
Buying and selling notifications	11.1	15.3	Trading notifications were not provided to cease using the HHB profile effective from 01/08/18 at ALB0331, ALB1101, SVL0331, HEP0331, HOB1101, MNG0331, OTA0221,	Strong	Low	1	Disputed

Subject	Section	Clause	Non-Compliance	Controls	Audit Risk Rating	Breach Risk Rating	Remedial Action
			PAK0331, PEN0221, PEN0331, PEN1101, ROS0221, ROS1101, TAK0331 or WIR0331.				
HHR aggregates information provision to the reconciliation manager	11.4	15.8	**Pulse** HHR aggregates files do not contain electricity supplied information. One breach was recorded for late provision of HHR submission information in November 2018. **Property Power** HHR aggregates files do not contain electricity supplied information.	Strong	Low	1	Identified
Creation of submission information	12.2	15.4	**Pulse** One breach was recorded for late provision of HHR submission information in November 2018.	Strong	Low	1	Identified
Accuracy of submission information	12.7	15.12	**Pulse** Some submission information was inaccurate.	Moderate	Medium	4	Investigating
Permanence of meter readings for reconciliation	12.8	4 Schedule 15.2	**Pulse** Some estimates are not replaced by revision 14.	Weak	Medium	6	Identified
Forward estimate process	12.12	6 Schedule 15.3	**Pulse** The accuracy threshold was not met for all months and revisions.	Moderate	Low	2	Identified
Historical estimate reporting to RM	13.3	10 Schedule 15.3	**Pulse** Historic estimate thresholds were not met for some revisions.	Moderate	Low	2	Identified
					Future Risk Rating	**91**	
					Next indicative audit frequency	**3 months**	

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

The following non-compliances relate to Pioneer only:

Subject	Section	Clause	Pioneer non-compliance	Controls	Audit Risk Rating	Breach Risk Rating	Remedial Action
Data transmission	2.3	20 Schedule 15.2	ANI0331 HHR data is transmitted as a .csv file attached to an email. The transmission method does not ensure the security and integrity of the data transmitted.	Moderate	Low	2	Investigating
Audit Trails	2.4	21 Schedule 15.2	No audit trails exist for ANI0331 HHR data, it is processed manually using Excel.	Moderate	Low	2	Investigating

RECOMMENDATIONS

Subject	Section	Description	Recommendation
Relevant information	2.1	11.2 & 15.2	**Pulse** Check for ICP first active date misalignment with the Distributor's initial electrical connection date and the first meter certification date Check for any ICPs that are at "Ready" or "Inactive- new connection in progress" with an initial electrical connection date populated.
Uncertified reconnections	2.11	10.33A	**Pulse** Check certification is full and current before reconnection. Follow up reconnections with expired and/or interim certification on the registry with the MEP.
Trader Responsibility for an ICP	3.4	11.18	**Pulse** Check for any decommissioned ICPs with meters still installed.
ANZSIC Codes	3.6	9 (1(k)) Schedule 11.1	**Pulse** Confirm the ANZSIC code for all customers switching in.
Changes to unmetered load	3.7	9 (1)(f)) of Schedule 11.1	**Pulse** Check ICPs with unmetered load recorded where the Distributor has none.

Subject	Section	Description	Recommendation
Monitoring of new and ready ICPs	3.10	15 Schedule 11.1	**Pulse** Review the reporting to ensure that that ALL ICPs at new or ready are captured.

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

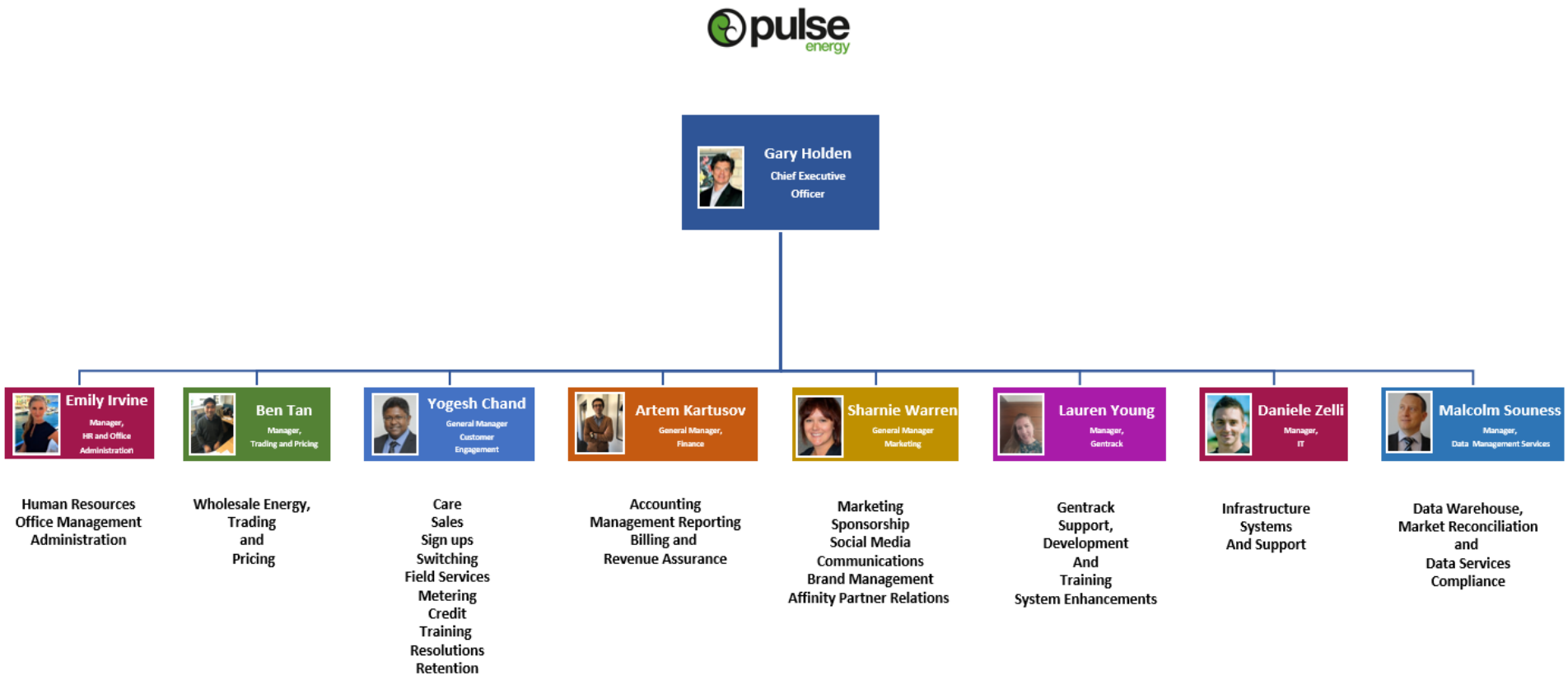
Current code exemptions were reviewed on the Electricity Authority website.

Audit commentary

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

1.2. Structure of Organisation

Pulse provided their current organisational structure:



1.3. Persons involved in this audit

Auditors:

Name	Company	Role
Rebecca Elliot	Veritek Limited	Lead Auditor
Tara Gannon	Veritek Limited	Supporting Auditor

Pulse and Property Power personnel assisting in this audit were:

Name	Title
Mike Kew	Compliance Manager
Malcolm Souness	Data Services Manager
	Senior Care Specialist Switching and Field Services
	Customer Operations Team Leader
	Sales and Retention Manager
	Reconciliation Analyst
	Customer Operations Manager
	Billing Team Leader
	Software Developer

Wells personnel assisting with this audit were:

Name	**Title**
Craig Simpson	Operations Manager

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 Pulse.

Audit commentary

Pulse

Pulse uses the following agents:

- Wells as an agent for NHH data collection
- AMS and EDMI as HHR agents.

NHH data is also received from Arc, AMS, FCLM, IHUB, Metrix and Smartco as MEPs.

Because the agent audit reports are all more than seven months old, additional checks were undertaken to confirm that there were no changes to processes or systems which could have a negative impact on Pulse's compliance, and checks were conducted for a sample of meter condition events

Property Power

Property Power used the following agents until all of their ICPs switched to Pulse on 1/08/18:

- AMS and EDMI as HHR data agents
- Wells as a NHH data agent
- JCC to complete NHH reconciliation submissions.

NHH data was also received from AMS, FCLM and Metrix as MEPs.

Pioneer

Accucal is a HHR agent for generation data for ANI0331.

1.5. Hardware and Software

Pulse

- Gentrack 4 is used for switching, registry management, billing, and as billed reporting.
- The PRADA data warehouse is used for data storage and reporting.
- Pulse migrated from PRADA to the JCC's half hour reconciliation database (named Viper by Property Power and Pulse) following the switch in of the Property Power ICPs in August 2018.
- Cobra is used for NHH reconciliation.

Property Power

- Agility's Orion system is used for switching, registry management, billing, and as billed reporting.
- Viper is used for half hour reconciliation and ICP days reporting.
- JCC prepares NHH consumption and ICP days reporting on behalf of Property Power.

Backup arrangements for Pulse and Property Power

Back up processes are the same for Pulse and Property Power.

The backup schedule/rotation consists of four daily backups (Monday to Thursday), four weekly backups (Friday), two monthly backups (last business day) and a quarterly backup (always on a new tape and never re-used). The daily backups are incremental, with all other backups being full. Validation and integrity checks are performed on all backups.

1.6. Breaches or Breach Allegations

Pulse

There were two alleged breaches for Pulse during the audit period:

Ref	Clauses breached	Description	Outcome
1811PEAL1 (27/11/18)	Part 15 clause 15.4 (2)	PUNZ failed to submit HHR data to the reconciliation manager by 16:00 on business day 13. The file was submitted one hour late.	Currently being considered.
1901PEAL1 (13/12/18)	Part 15 clause 15.2	Pulse initially submitted an overstatement of volume on BD 13, 24th December.	No further action was taken because there was no impact and steps have been taken to prevent recurrence.

Property Power

There were no alleged breaches recorded for Property Power during the audit period.

1.7. ICP Data

Pulse

The active ICPs from the list file are summarised by meter category in the table below. The active sites with meter category 9 or blank were reviewed. Four were unmetered, and an MEP nomination had been made and accepted for the other 11.

Metering Category	(2019)	(2018)	(2017)	(2016)
1	75,465	71,822	62,947	55,316
2	156	100	119	106
3	7	1	1	1
4	4	2	2	2
5	2	1	1	1
9	6	5	2	1
Blank	9	2	7	3

Status	Number of ICPs (2019)	Number of ICPs (2018)	Number of ICPs (2017)	Number of ICPs (2016)
Active (2,0)	75,649	71,933	63,079	55,430
Inactive – new connection in progress (1,12)	3	9	-	1
Inactive – electrically disconnected vacant property (1,4)	223	259	379	437
Inactive – electrically disconnected remotely by AMI meter (1,7)	18	22	70	4
Inactive – electrically disconnected at pole fuse (1,8)	4	5	16	0
Inactive – electrically disconnected due to meter disconnected (1,9)	2	1	0	0
Inactive – electrically disconnected at meter box fuse (1,10)	-	1	1	0
Inactive – electrically disconnected at meter box switch (1,11)	4	4	4	0
Inactive – electrically disconnected ready for decommissioning (1,6)	32	29	25	27
Inactive – reconciled elsewhere (1,5)	-	-	-	-
Decommissioned (3)	590	534	431	349

Property Power

The active ICPs from the list file are summarised by meter category in the table below. All active ICPs switched to Pulse effective from 01/08/18. Property Power has retained three ICPs; two are decommissioned and one is inactive.

Metering Category	(2019)	(2018)
1	-	934
2	-	43
3	-	2
4	-	1
9	-	3
(blank)	-	2

Status	Number of ICPs (2019)	Number of ICPs (2018)
Active (2,0)	-	985
Inactive – electrically disconnected vacant property (1,4)	-	2
Inactive – electrically disconnected due to meter disconnected (1,9)	1	1
Decommissioned (3)	2	2

1.8. Authorisation Received

Pulse and Property Power provided all information required directly.

1.9. Scope of Audit

This Electricity Industry Participation Code Reconciliation Participant audit was performed at the request of Pulse, 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.

At the beginning of this audit period Pulse used two participant codes; Pulse (PUNZ) and Property Power (CPPL). The CPPL ICPs switched to PUNZ effective from 01/08/18. This audit has examined compliance for both codes, including the transition of the CPPL ICPs to PUNZ.

Pulse also acts as an agent for submission of generation volumes for Pioneer Energy.

The audit was carried out at Pulse and Property Power's premises in Auckland on 26-27 February 2019.

The table below shows the tasks under clause 15.38 of part 15 for which Pulse requires certification. This table also lists those agents who assist with these tasks. Agents and MEPs listed in the table below provide services to both Pulse and Property Power during the audit period unless otherwise specified.

Tasks Requiring Certification Under Clause 15.38(1) of Part 15	Agents Involved in Performance of Tasks	MEPs Providing AMI data
(a) - Maintaining registry information and performing customer and embedded generator switching		
(b) – Gathering and storing raw meter data	EDMI – HHR AMS – HHR Accucal - HHR Wells – NHH	ARC – NHH AMI (Pulse only) AMS – NHH AMI Metrix – NHH AMI FCLM – NHH AMI IHUB- NHH AMI (Pulse only)
(c)(iii) - Creation and management of volume information	EDMI – HHR AMS – HHR Accucal - HHR	
(d) – Calculation of ICP days	JCC – NHH (Property Power only)	
(da) - delivery of electricity supplied information under clause 15.7		
(db) - delivery of information from retailer and direct purchaser half hourly metered ICPs under clause 15.8		
(e) – Provision of submission information for reconciliation	JCC – NHH (Property Power only)	

Because the agent audit reports are all more than seven months old, additional checks were undertaken to confirm that there were no changes to processes or systems which could have a negative impact on Pulse's compliance, and checks were conducted for a sample of meter condition events.

1.10. Summary of previous audit

Pulse provided a copy of their previous audit report conducted in July 2018 by Tara Gannon of Veritek Limited. The summary tables below show the status of the non-compliances and recommendations raised in the previous audit. Further comment is made in the relevant sections of this report.

Subject	Section	Clause	Non-compliance	Status
Relevant information	2.1	10.6, 11.2, 15.2	**Pulse** Discrepancies between Gentrack and the Registry.	Still existing
Provision of information	2.2	15.35	**Pulse** Two breaches were recorded for late provision of submission information.	Still existing
Audit trails	2.4	21 Schedule 15.2	**Pulse** HHR and NSP volume audit trails do not contain all the required information and are not stored with the meter data.	Still existing
Electrical Connection of Point of Connection	2.11	10.33A	**Pulse** 22 reconnections had expired certification recorded on the registry when they were reconnected. **Property Power** One ICP was not certified within five business days of electrical connection on the registry.	Still existing Cleared
Changes to registry information	3.3	10 Schedule 11.1	**Pulse** 489 late updates to active status and 115 late updates to inactive status. 1647 late MEP nominations. **Property Power** 22 late updates to active status and three late updates to inactive status.	Still existing Cleared

Subject	Section	Clause	Non-compliance	Status
Provision of information to the registry manager	3.5	9 Schedule 11.1	**Pulse** 44 late updates to active. **Property Power** One late update to active.	Still existing Cleared
ANZSIC codes	3.6	9 (1(k)) of Schedule 11.1	**Pulse** Two ICPs had unknown ANZSIC codes. Two ICPs had incorrect ANZSIC codes recorded.	Still existing
Management of "active" status	3.8	17 Schedule 11.1	**Pulse** Two ICPs had incorrect active dates.	Still existing
Management of "inactive" status	3.9	19 Schedule 11.1	**Pulse** 15 ICPs have incorrect statuses or status reason codes recorded on the registry. Five ICPs with consumption while disconnected did not have their status updated to active.	Still existing
Inform registry of switch request for ICPs - standard switch	4.1	2 Schedule 11.3	**Property Power** An NT was issued more than two days after pre-conditions were cleared for one Property Power ICP.	Cleared
Losing trader response to switch request and event dates - standard switch	4.2	3 and 4 Schedule 11.3	**Pulse** Two incorrect AN response codes were applied by Pulse.	Still existing
Losing trader must provide final information - standard switch	4.3	5 Schedule 11.3	**Pulse** 18 transfer CS files had incorrect estimated daily consumption recorded. **Property Power** Three transfer CS files had incorrect estimated daily consumption recorded.	Still existing

Subject	Section	Clause	Non-compliance	Status
Retailers must use same reading - standard switch	4.4	6(1) and 6A Schedule 11.3	**Pulse** 18 late RR files for transfer switches. Four RRs were not supported by two validated actual reads. Issues relating to treatment of RR, switch in readings and estimated switch readings prevent Pulse from using the same reading as the other trader for settlement in some cases. **Property Power** One late AC file for a transfer switch.	Still existing
Gaining trader informs registry of switch request - switch move	4.7	9 Schedule 11.3	**Property Power** An NT was issued more than two days after pre-conditions were cleared for one ICP.	Still existing But NC for Pulse in this audit
Losing trader provides information - switch move	4.8	10(1) Schedule 11.3	**Pulse** One incorrect AN response code was applied. Pulse proposed an event date before the gaining trader's requested date for one switch move. The switch was later completed with a compliant event date. **Property Power** One incorrect AN response code was applied. One AN file was late.	Still existing
Losing trader determines a different date - switch move	4.9	10(2) Schedule 11.3	**Pulse** Pulse proposed an event date before the gaining trader's requested date for one switch move. The switch was later completed with a compliant event date.	Still existing

Subject	Section	Clause	Non-compliance	Status
Losing trader must provide final information - switch move	4.10	11 Schedule 11.3	**Pulse** 27 switch move CS files had incorrect estimated daily consumption recorded. Two ICPs had readings which did not relate to the last day the ICP was supplied by Pulse. Pulse switches ICPs on the last read billed to a customer. **Property Power** Five switch move CS files had incorrect estimated daily consumption recorded. Two Property Power CS files were late.	Still existing Still existing
Gaining trader changes to switch meter reading - switch move	4.11	12 Schedule 11.3	**Pulse** 12 late RR files for switch moves. One RR contained an incorrect reading and was rejected and re-requested with the correct reading. Issues relating to treatment of RR, switch in readings and estimated switch readings prevent Pulse from using the same reading as the other trader for settlement in some cases. **Property Power** One late AC file for a switch move.	Still existing Cleared
Gaining trader informs registry of switch request - gaining trader switch	4.12	Clause 14 Schedule 11.3	**Pulse** One switch move had a HH NT issued in error. The switch was withdrawn and re-requested as a switch move.	Cleared
Gaining trader to advise the registry manager - gaining trader switch	4.14	16 Schedule 11.3	**Pulse** One late HH CS file.	Cleared

Subject	Section	Clause	Non-compliance	Status
Withdrawal of switch requests	4.15	17 and 18 Schedule 11.3	**Pulse** 48 late NW files; at least nine of which were issued in error. **Property Power** One late NW and one late AW.	Still existing
Maintaining shared unmetered load	5.1	11.14	**Pulse** Two ICPs with shared unmetered load had missing trader unmetered load details in Gentrack and on the registry.	Cleared
Electricity conveyed & notification by embedded generators	6.1	10.13 and Clause 15.2	**Pulse** Energy is not metered and quantified according to the code where meters are bridged.	Still existing
Derivation of meter readings	6.6	3(1), 3(2) and 5 Schedule 15.2	**Pulse** Meter condition information provided by Wells is not routinely reviewed. Seven customer and photo reads were treated as validated, when they had not been validated against at least two actual reads from other sources. **Property Power** Meter condition information provided by Wells is not routinely reviewed.	Still existing Cleared Still existing
Interrogate meters once	6.8	7(1) and (2) Schedule 15.2	**Property Power** Three ICPs were unread during the period of supply. Exceptional circumstances did not apply, and the best endeavours requirement was not met.	Still existing

Subject	Section	Clause	Non-compliance	Status
NHH meters interrogated annually	6.9	8(1) and (2) Schedule 15.2	**Pulse** For nine ICPs without an actual read for 12 months, exceptional circumstances could not be confirmed, and there was insufficient evidence that the best endeavours requirement was met. **Property Power** Some meter reading frequency reports were submitted late.	Still existing Still existing, one report was not submitted
NHH meters 90% read rate	6.10	9(1) and (2) Schedule 15.2	**Pulse** For five ICPs without an actual read for 12 months, exceptional circumstances could not be confirmed, and there was insufficient evidence that the best endeavours requirement was met.	Still existing
Correction of NHH meter readings	8.1	19(1) Schedule 15.2	**Pulse** Two corrections for defective meters were not processed using the reads provided by revenue assurance. One correction for a multiplier was not backdated to the correct date in Cobra. Five corrections for inactive ICPs with consumption had not been processed. Three bridged meters did not have corrections processed. One unmetered load correction was not processed accurately.	Partially cleared • The two defective meter corrections have not been processed • The multiplier correction has been backdated correctly • Two of the ICPs with inactive consumption have switched out, and still have consumption recorded during an inactive period. The other two ICPs have been corrected. • The bridged meter corrections have not been processed. • The unmetered load correction has been processed.

Subject	Section	Clause	Non-compliance	Status
Identification of readings	9.1	3(3) Schedule 15.2	**Pulse** Seven customer and photo reads were treated as validated, when they had not been validated against at least two actual reads from other sources.	Cleared
Electronic meter readings and estimated readings	9.6	17 Schedule 15.2	**Pulse** Meter event information is not obtained and reviewed for all MEPs. **Property Power** Meter event information is not obtained and reviewed for all MEPs.	Still existing Still existing
HHR aggregates information provision to the reconciliation manager	11.4	15.8	**Pulse** HHR aggregates files do not contain electricity supplied information. **Property Power** HHR aggregates files do not contain electricity supplied information.	Still existing
Creation of submission information	12.2	15.4	**Pulse** Two breaches were recorded for late provision of submission information.	Still existing
Grid connected generation	12.6	15.11	**Pulse** A breach was recorded for late provision of submission information.	Cleared
Accuracy of submission information	12.7	15.12	**Pulse** Some submission information was inaccurate. **Property Power** Submission information for one ICP was inaccurate in the initial submission.	Partially cleared Cleared

Subject	Section	Clause	Non-compliance	Status
Permanence of meter readings for reconciliation	12.8	4 Schedule 15.2	**Pulse** Some estimates are not replaced by revision 14.	Still existing
Forward estimate process	12.12	6 Schedule 15.3	**Pulse** The accuracy threshold was not met for all months and revisions. **Property Power** The accuracy threshold was not met for all months and revisions.	Still existing Cleared
Historical estimate reporting to RM	13.3	10 of Schedule 15.3	**Pulse** Historic estimate thresholds were not met for some revisions.	Still existing

Subject	Section	Description	Recommendation	Status
Relevant information	2.1	Validation against the registry	**Pulse** As a minimum, I recommend reconciling all Gentrack fields that impact on reconciliation submission to the registry and investigating and resolving discrepancies before business day 4 and 13 each month.	Cleared
			Property Power I recommend checking the Unmetered Load Details – Distributor and shared ICP list fields to identify new unmetered load, and the Installation Type and Generation Capacity fields to identify new distributed generation. Checks should be completed to ensure that backdated updates to the registry are identified and corrected on an ongoing basis. A full reconciliation to the registry should be completed prior to transferring the Property Power ICPs to Pulse.	Cleared
Electrical Connection of Point of Connection	2.11	Uncertified reconnections	**Pulse** Check certification is full and current before reconnection. Follow up reconnections with expired and/or interim certification on the registry with the MEP.	Still existing

Subject	Section	Description	Recommendation	Status
ICPs at new or ready status for 24 months	3.10	Monitoring of new and ready ICPs	**Pulse** Monitor ICPs at new or ready for extended periods using Gentrack if possible. Alternatively, a Registry List (type P) with proposed trader = PUNZ 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.	Still existing
Electricity conveyed & notification by embedded generators	6.1	Identification of new distributed generation	**Pulse** All ICPs with potential distributed generation without import/export metering or a notification under clause 15.13 of Part 15 in place should be reviewed. Import/export metering should be installed as necessary.	Cleared
Half hour estimates	9.4	HHR estimates	**Pulse** When creating estimates, consider readings and average daily consumption in the current month as well as the previous month's average consumption.	Cleared
Accuracy of submission information	12.7	Identification of accepted RRs	**Pulse** To make sure agreed switch reads are applied, use the registry event detail report to identify all AC files accepting the RR. The report should be run by update date to ensure that backdated RR acceptances are identified. Accepted RRs will need to have their reads checked and/or updated in Cobra.	Cleared
		Submission flag N adjustment	**Pulse** Investigate whether meters channels outside the Lines Company Network have submission flags set to N and adjust the process as necessary.	Cleared

1.11. Participants to give access (Clause 16A.4)

Code reference

Clause 16A.4

Code related audit information

A participant must give the Authority or an auditor full access to all information that may be required for the purposes of carrying out an audit.
(2) The participant must provide the information—
(a) at no charge; and
(b) no later than 15 business days after receiving a request for the information from the Authority or an auditor, as the case may be.

Audit observation

The information request was provided to Pulse on 13/12/2018. The information was due to be provided to Veritek by 7/1/2019.

Audit commentary

The information was not received in full until the 24/1/2019. The provision of information to undertake an audit is critical to ensure that all the required analysis can be undertaken. The late provision of information is recorded as non-compliance.

Non-compliance	Description
Audit Ref: 1.11 With: Clause 16A.4 From: 09-Jan-2019 To: 24-Jan-2019	Late provision of audit information Potential impact: Low Actual impact: Low Audit history: None Controls: Weak Breach risk rating: 3
Audit risk rating	**Rationale for audit risk rating**
Low	Controls are rated as weak as the late provision of audit information has been consistent with this participant. The impact is assessed to be low.

Actions taken to resolve the issue	Completion date	Remedial action status
Information was provided to a revised schedule in agreement with the auditors.	21/01/2019	Identified
Preventative actions taken to ensure no further issues will occur	**Completion date**	
The Compliance Manager will ensure that auditors' deadlines are noted and auditors are kept informed if there is an issue with meeting them.	01/03/2019	

2. OPERATIONAL INFRASTRUCTURE

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

Code reference

Clause 10.6, 11.2, 15.2

Code related audit information

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

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

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

Audit observation

The process to find and correct incorrect information was examined. The registry validation process was examined in detail in relation to the achievement of this requirement. The Pulse and Property Power registry lists as at 09/01/19 were examined to identify any registry discrepancies and confirm that all information was correct and not misleading.

Audit commentary

Pulse

In the last audit it was found that Pulse had not validated non-metering fields against the registry since soon after the Gentrack 4 implementation on October 1st, 2017. In addition to this the validation of the metering fields was returning a high volume of discrepancies. Both of these issues have been resolved with the new reporting implemented in late July 2018. All relevant fields are validated against the registry. The volumes in these reports are now at a workable volume. This includes status mismatches. As detailed in **section 3.8**, there were a small number of ICPs with first active dates different to the Distributor's initial electrical connection date and/or the first meter certification date. I recommend this is added to the validation checks. I also recommend that any ICPs that are at "Ready" or "Inactive- new connection in progress" with an initial electrical connection date are checked. This is a good mechanism to catch any potentially newly electrically connected ICPs that are in the incorrect status.

Description	Recommendation	Audited party comment	Remedial action
Relevant Information	**Pulse** Check for ICP first active date misalignment with the Distributor's initial electrical connection date and the first meter certification date Check for any ICPs that are at "Ready" or "Inactive- new connection in progress" with an initial electrical connection date populated.	The list of ICPs in 'READY' status is checked weekly. Our priority is always to ensure accurate data is recorded. Sometimes this means asking other participants (networks and MEPs) to reverse and correct Registry updates; we are dependent on them to complete corrections in a timely manner.	The intent of this recommendation has been missed. This is not to pick ICPs at the incorrect status but to confirm they have been made active for the correct date.

Gentrack receives registry notification files, and a work queue is created so that these can be reviewed and acted upon. Gentrack indicates to the operator exactly where in the process the has stopped. These files are held in the interface file manager. This file manager holds all errored transactions in Gentrack not just the files from the registry. The volumes in these queues are now at a manageable level, however there is still a backlog of historic metering information transactions which are being worked through.

Gentrack has now been configured correctly and all the required fields are now mandatory for trader updates. The backlog of failed registry updates has been largely worked through. This is discussed further in **section 3.3**.

Pulse loads a registry list file with history into PRADA each day, which is imported into Cobra. NSP mapping table, shape file, and read information are all uploaded into Cobra overnight. There is no separate reconciliation between Cobra and Gentrack. HHR reconciliation reports are generated from Viper and also based on status information recorded on the registry.

Each NHH submission is compared at meter register level against an extract from the Registry by JCC. This process is described further in **section 12.3** and identifies meters and ICPs that are missing or incorrectly included in submissions, and mismatched Network, GXP, unmetered load, and profile details.

The list file was analysed, and I found the following:

Issue	2019 Qty	2018 Qty	2017 Qty	2016 Qty	2015 Qty	2014 Qty	Comments
Active with blank ANZSIC codes	-	-	-	-	48	28	Compliant
Active with ANZSIC "T999" not stated	-	-	-	1	137	5	Compliant
Active with ANZSIC "T994" don't know	-	2	-	-	159	1,407	Compliant

Issue	2019 Qty	2018 Qty	2017 Qty	2016 Qty	2015 Qty	2014 Qty	Comments
Active with ANZSIC "T998 "response outside of scope"	-	-	-	-	10	-	Compliant
Active with incorrect UML load	2	1	2	1	2	17	Refer to **section 3.7**
Active with No MEP recorded or nominated and UML= "N"	-	2	7	3	1	-	All ICPs without an MEP recorded had an accepted nomination, or were unmetered.
Active with shared unmetered load incorrect	-	1	-	1	1	-	Compliant
Active ICPs with Distributor unmetered load populated but retail unmetered load is blank and UML flag = N	-	2	2	-	-	-	Compliant
Incorrect profile	356	317	28	-	-	-	345 ICPs with import/export metering have RPS profile recorded on the registry but are submitted with RPS PV1. Two of these ICPs should have been submitted with RPS EG1. Refer to **section 6.1**. Four ICPs had incorrectly processed profile changes which resulted in discrepancies between their submission type and profile, as discussed in **section 12.13**. All were corrected during the audit. A further five ICPs had profiles inconsistent with their submission type recorded on the registry, all were corrected during the audit. Two ICPs had profile changes applied from an incorrect date. ICP 0000084821TRC86 was corrected during the audit, and ICP 1001115999LCD16 changed from RPS

Issue	2019 Qty	2018 Qty	2017 Qty	2016 Qty	2015 Qty	2014 Qty	Comments
							to RPS PV1 on 21/09/18 but should have changed from 18/09/18. Refer to **section 12.13**.
Active date variance with Initial Electrical Connection Date	8	2	3	3	1	2	Refer to **section 3.8**
Active Category 9 and UML "N"	-	-	2	1	1	-	All active ICPs with meter category 9 recorded had an accepted nomination or were unmetered.
Incorrect status or status dates	13	22	-	-	-	-	Two ICPs connected to PEN1101 with consumption while inactive in May 2018 were not returned to active status on the registry. Refer to **section 11.2**. Refer to **sections 3.8** and **3.9**.

I found that some corrections that were required following the 2018 audit have not been processed**:**

- the two defective meter corrections have not been processed, as described in **section 8.1**;
- two of the ICPs with inactive consumption have switched out, and still have consumption recorded during an inactive period, as described in **sections 3.9** and **8.1**;
- three bridged meter corrections have not been processed, as described in **section 8.1**; and
- four ICPs have profile changes to PV1 applied from incorrect dates, as described in **section 6.1.**

Property Power

Property Power's registry list as at 09/01/19 contained two decommissioned and one inactive ICP. Registry data was reviewed and found to be compliant.

Two ICPs which were inactive with consumption were identified during the ICP days submission review in **section 11.2**. The affected ICPs had consumption and ICP days submitted for May 2018 but were not returned to active status on the registry because they had switched out. The incorrect statuses are recorded as non-compliance below.

A full validation was done between Orion and the registry before ICPs switched to Pulse as was recommended in the last audit.

Audit outcome

Non-compliant

Non-compliance	Description
Audit Ref: 2.1 With: Clause 10.6, 11.2, 15.2 From: 01-Jul-2018 To: 27-Feb-2019	**Pulse** Discrepancies between Gentrack and the Registry. **Property Power** Discrepancies between Gentrack and the Registry. 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	Controls are rated as moderate and will mitigate risk most of the time but there is room for improvement. Additional discrepancy checks are recommended within the report. The impact is assessed to be low as the overall volume of discrepancies has decreased during the audit period and this trend is expected to continue.

Actions taken to resolve the issue	Completion date	Remedial action status
Maintenance of registry data remains a strong focus of our improvement programme. Training, monitoring, and configuration of Gentrack have all been improved within the past three months. More than 355 historic profile errors have been corrected since the audit.	11/03/2019	Identified
Preventative actions taken to ensure no further issues will occur	**Completion date**	
Pulse places a strong priority on maintaining the accuracy of registry data wherever possible. When we discover an error, we correct it at the expense of a post-dated update.	11/03/2019	

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. Alleged breaches during the audit period were reviewed.

Audit commentary

Pulse

One alleged breach for late provision of submission information required under part 15 is discussed in **section 1.6** and recorded as non-compliance below.

Property Power

No alleged breaches were recorded for late submission of volume information.

Audit outcome

Non-compliant

Non-compliance	Description
Audit Ref: 2.2 With: Clause 15.35 From: November 2018	**Pulse** One breach was recorded for late provision of submission information. Potential impact: High Actual impact: Unknown Audit history: Multiple times Controls: Strong Breach risk rating: 1
Audit risk rating	**Rationale for audit risk rating**
Low	The controls are assessed to be strong and the impact as low. The file was submitted one hour late, after Pulse discovered an error and worked through correction and validation prior to submission. The reconciliation manager was kept informed throughout the process.

Actions taken to resolve the issue	Completion date	Remedial action status
Correct data were provided as soon as humanly possible after we became aware of the issue. The reconciliation manager was kept informed throughout the process.	19/11/2018	Identified
Preventative actions taken to ensure no further issues will occur	**Completion date**	
Submission procedures have been improved to eliminate a bottleneck where an error in one file could cause delay in submitting others.	01/12/2018	

2.3. Data transmission (Clause 20 Schedule 15.2)

Code reference

Clause 20 Schedule 15.2

Code related audit information

Transmissions and transfers of data related to metering information between reconciliation participants or their agents, for the purposes of the Code, must be carried out electronically using systems that ensure the security and integrity of the data transmitted and received.

Audit observation

I reviewed the method to receive meter reading information. MEP and agent data transmission processes were reviewed as part of their MEP and agent audits.

Pulse

NHH information is received via FTP from Wells and the MEPs. The data is reformatted if necessary and then imported into the PRADA data warehouse, then exported as an REA file which is imported into Gentrack. For AMI meters, a monthly read is recorded in Gentrack on a scheduled read date.

Validated reads in Gentrack are exported to Cobra, as well as end of month AMI reads which are received directly from PRADA. RR readings are extracted from the accepted RR files and imported into Cobra, as part of the daily import, and pass through the Cobra validation process.

EDMI HHR data is provided via FTP, AMS HHR data is emailed in password protected zip files.

Property Power

NHH information is provided via FTP by Wells and MEPs. The raw files provided by AMS and Metrix are reformatted, then the data is imported in Orion.

Switch readings and validated NHH readings are extracted from Orion using a query and sent to JCC via Dropbox for use in reconciliation submissions.

HHR information is transferred to Property Power via email for EDMI, and FTP for AMS.

Pioneer

Generation data for ANI0331 is provided as a CSV file attached to an email from Accucal. The file is received directly by the reconciliation analyst who processes the data, minimising the risk of unauthorised or accidental modification of the data.

Audit commentary

The data transfer method was confirmed to be compliant as part of each MEP and agent audit.

Pulse

To confirm the NHH data transmission process I traced readings for a diverse sample of 12 ICPs from the source files, to PRADA, Gentrack, and Cobra. I also traced a sample of accepted RR reads to Cobra. I found that all the reads matched, however one read for ICP 0007731600WM053 was not validated in Cobra due to negative consumption. Compliance is recorded in this section because the difference relates to the validation process, not the transmission process. The validation process is discussed in **section 9.5**.

To confirm the HHR data transmission process, I traced data for a diverse sample of seven ICPs from the source files to Viper and the HHR aggregates submissions for January 2019. The volumes matched the source data.

Property Power

To confirm the data transmission process, I traced a diverse sample of NHH meter readings for two ICPs from the source files to the Orion read data, and read data provided to JCC, and found they matched.

The process for transmission of HHR data was walked through, and I confirmed that the process is unchanged.

Pioneer

I traced volumes for two months from the source files to the AV130 submissions for ANI0331. All volumes checked were consistent with the source file information.

Audit outcome

Compliant

Audit outcome (Pioneer)

Non-compliant

Non-compliance	Description
Audit Ref: 2.3 With: Clause 20 Schedule 15.2 From: 01-Jul-18 To: 27-Feb-19	**Pioneer** ANI0331 HHR data is transmitted as a .csv file attached to an email. The transmission method does not ensure the security and integrity of the data transmitted. 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 and the impact as low. The files are received directly by the person who processes them, which minimises the risk of authorised access or modification of the files.

Actions taken to resolve the issue	Completion date	Remedial action status
We are in discussion with the MEP to identify a compliant delivery mechanism for this data.	25/03/2019	Investigating
Preventative actions taken to ensure no further issues will occur	**Completion date**	
See above	25/03/2019	

2.4. Audit trails (Clause 21 Schedule 15.2)

Code reference

Clause 21 Schedule 15.2

Code related audit information

Each reconciliation participant must ensure that a complete audit trail exists for all data gathering, validation, and processing functions of the reconciliation participant.

The audit trail must include details of information:

- *provided to and received from the registry manager*
- *provided to and received from the reconciliation manager*
- *provided and received from other reconciliation participants and their agents.*

The audit trail must cover all archived data in accordance with clause 18.

The logs of communications and processing activities must form part of the audit trail, including if automated processes are in operation.

Logs must be printed and filed as hard copy or maintained as data files in a secure form, along with other archived information.

The logs must include (at a minimum) the following:

- *an activity identifier (clause 21(4)(a))*
- *the date and time of the activity (clause 21(4)(b))*
- *the operator identifier (clause 21(4)(c)).*

Audit observation

A complete audit trail was checked for all data gathering, validation and processing functions. I reviewed audit trails for a small sample of events.

Audit commentary

A complete audit trail was viewed for all data gathering, validation and processing functions.

Pulse

Audit trails exist for NHH and HHR data gathering, validation, and processing functions:

System	Used for	Comments
Gentrack	Switching Registry Billing	Compliant audit trails exist.
Cobra	NHH submission	Data is imported into Cobra but is not modified, apart from to invalidate it or add permanent estimate readings. A compliant audit trail is created when data is invalidated or added.
Viper	HHR submission	Viper only has one user ID, which does not correspond to an individual person. This is recorded as non-compliance below. The remainder of the audit trail content is compliant.
PRADA	Data warehouse	NHH and AMI data is imported into the PRADA database and then exported to Gentrack. The 2018 audit found PRADA data is able to be replaced without an audit trail being created, and this is still the case. The raw data is archived, and PRADA is no longer used for HHR submission.

Property Power

Audit trails exist for NHH and HHR data gathering, validation, and processing functions:

System	Used for	Comments
Orion	Switching Registry Billing NHH submission	Compliant audit trails exist.
Viper	HHR submission	Viper only has one user ID, which does not correspond to an individual person. This is recorded as non-compliance below. The remainder of the audit trail content is compliant.

Pioneer

There are no audit trails for the ANI0331 NSP volume data. The files provided by Accucal are manually reformatted and submitted.

Audit outcome

Non-compliant

Non-compliance	Description
Audit Ref: 2.4 With: Clause 21 Schedule 15.2 From: 01-Jul-18 To: 27-Feb-19	**Pulse and Property Power** Viper audit trails do not record the operator identifier for the person who completed the activity; there is only one operator identifier for Viper. 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 rated as strong and the impact as low. Viper audit trails are available and contain the required information, but the person who processed the change is not identifiable within the audit trail because there is only one operator identifier. A small number of users have access to Viper.

Actions taken to resolve the issue	Completion date	Remedial action status
Since only one person at a time can use Viper, and we have a de facto record of who that was (meaning: we know who was using it on each date), we do not believe this omission introduces any material risk.	22/03/2018	Disputed
Preventative actions taken to ensure no further issues will occur	**Completion date**	
Since only one person at a time can use Viper, and we have a de facto record of who that was (meaning: we know who was using it on each date), we do not believe this omission introduces any material risk. The error identified in the audit was caused by HHR reconciliation analyst being unavailable, and the alternative HHR reconciliation analyst was on vacation overseas. A third party with in-depth knowledge of the HHR submission system was brought in to assist with the submission.	22/03/2018	

Audit outcome (Pioneer)

Non-compliant

Non-compliance	Description
Audit Ref: 2.4 With: Clause 21 Schedule 15.2 From: 01-Jul-18 To: 27-Feb-19	**Pioneer** No audit trails exist for ANI0331 HHR data, it is processed manually using Excel. 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 and the impact as low. Generation data has only been adjusted to process daylight savings adjustments during the audit period, and the raw data is retained.

Actions taken to resolve the issue	Completion date	Remedial action status
Raw data is preserved for audit purposes.		Investigating
Preventative actions taken to ensure no further issues will occur	**Completion date**	
Documentation will be created to detail the conversion steps from raw data to finished EIEP3 file, including accounting for DST changes when necessary.	01/08/2019	

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 Pulse's terms and conditions. Property Power's terms and conditions were not examined as they are no longer trading.

Audit commentary

Pulse's terms and conditions include 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 Pulse's terms and conditions. Property Power's terms and conditions were not examined as they are no longer trading.

Audit commentary

Pulse's terms and conditions include consent to access for authorised parties for the duration of the contract.

Pulse and Property Power confirmed that they have been able to arrange access for other parties when requested.

Audit outcome

Compliant

2.7. Physical location of metering installations (Clause 10.35(1)&(2))

Code reference

Clause 10.35(1)&(2)

Code related audit information

A reconciliation participant responsible for ensuring there is a category 1 metering installation or category 2 metering installation must ensure that the metering installation is located as physically close to a point of connection as practical in the circumstances.

A reconciliation participant responsible for ensuring there is a category 3 or higher metering installation must:

- *a) if practical in the circumstances, ensure that the metering installation is located at a point of connection; or*
- *b) if it is not practical in the circumstances to locate the metering installation at the point of connection, calculate the quantity of electricity conveyed through the point of connection using a loss compensation process approved by the certifying ATH.*

Audit observation

Pulse and Property Power were requested to provide details of any installations with loss compensation.

Audit commentary

Pulse and Property Power do not deal with any data where error or loss compensation occurs.

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 Pulse's terms and conditions. Property Power's terms and conditions were not examined as they are no longer trading.

Audit commentary

Pulse's terms and conditions include assignment by the Electricity Authority in the event of retailer default.

Audit outcome

Compliant

2.9. Connection of an ICP (Clause 10.32)

Code reference

Clause 10.32

Code related audit information

A reconciliation participant must only request the connection of a point of connection if they:

- *accept responsibility for their obligations in Parts 10, 11 and 15 for the point of connection; and*
- *have an arrangement with an MEP to provide 1 or more metering installations for the point of connection.*

Audit observation

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

The Pulse and Property Power registry list and event detail reports for 01/07/18 to 09/01/19 were analysed to confirm process compliance and that controls are functioning as expected.

Audit commentary

Pulse

New connections on the Vector, Powerco and Unison networks are advised by the network, and Pulse provides approval. For the other networks, the application is received from the customer's agent and Pulse contacts the network to request creation of an ICP.

Pulse accepts responsibility for the ICP and works with the MEP and electrician to progress the connection. The MEP is nominated on the registry once Pulse claims the ICP and moves it to either the "Inactive-new connection in progress" or "Active" status.

The issues found in the last audit of some mandatory fields for trader updates containing null values, resulting the trader update being rejected by the registry and then the rejected registry files not being managed was fixed in November 2018. Some manual updates to the registry were made prior to this while the process was being corrected. The operators did not understand the correct event date to be applied in some instances. These were identified and corrected but caused some late backdates to correct. This is recorded as non-compliance in **section 3.5**. Staff training has been undertaken and an online knowledge base is available to all staff with all the relevant processes detailed for staff to refer to at any time. No late new connections have occurred since November 2018.

Compliance is recorded in this section because Pulse had accepted responsibility and had an arrangement with the MEP when the ICPs were connected. Non-compliance is recorded in **section 12.7** for the impact that the incorrect statuses had on reconciliation submission completeness and accuracy.

No HHR new connections were completed during the audit period.

Property Power

No new connections were completed during the audit period.

Audit outcome

Compliant

2.10. Temporary Electrical Connection of an ICP (Clause 10.33(1))

Code reference

Clause 10.33(1)

Code related audit information

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

- *they are recorded in the registry as being responsible for the ICP; and*
- *one or more certified metering installations are in place at the ICP in accordance with Part 10; and*
- *for an ICP that has not previously been electrically connected, the network owner has given written approval.*

Audit observation

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

The Pulse and Property Power registry list and event detail reports for 01/07/18 to 09/01/19 were analysed to confirm process compliance and that controls are functioning as expected.

Audit commentary

No temporary electrical connections were identified for Pulse or Property Power.

Audit outcome

Compliant

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

Code reference

Clause 10.33A(1)

Code related audit information

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

- *they are recorded in the registry as being responsible for the ICP; and*
- *one or more certified metering installations are in place at the ICP in accordance with Part 10; and*
- *for an ICP that has not previously been electrically connected, the network owner has given written approval.*

Audit observation

The new connection and reconnection processes were examined in detail to evaluate the strength of controls.

The Pulse and Property Power registry list and event detail reports for 01/07/18 to 09/01/19 were analysed to confirm process compliance and that controls are functioning as expected.

Audit commentary

Pulse

New connections

The new connection process ensures that an MEP is nominated.

88 (94%) of the 94 new connections were certified within five business days of electrical connection. Six NHH ICPs appear to not have been certified within five business days of electrical connection on the registry. Connection paperwork was checked, and found:

- three ICPs (1002051131UNFB6, 0002221032TG603 and 1002056270UN635) were manually updated to "Active" in the registry but the effective event date wasn't updated resulting in them appearing to be electrically connected for the same date as they were claimed by Pulse in the registry, all were certified on the same day as they were electrically connected and these will need to be corrected;
- two ICPs (0000570147NR153 and 0000507980DE919) had the correct active date applied manually but Gentrack sent a subsequent update to the registry making these active for an incorrect earlier date, both were certified on the same day as they were electrically connected, and these will need to be corrected; and
- ICP 0000507515DE7BD has the correct active date recorded and was certified but in this instance the MEP has not loaded the BTS supply and only loaded the first permanent meter, making it appear to be active with no certification.

The incorrect active dates are recorded as non-compliance in **section 3.8**.

Reconnections

Pulse do not actively check reconnections for expired meters and arrange for recertification. I repeat the recommendation from the last audit that this is added

Description	Recommendation	Audited party comment	Remedial action
Uncertified reconnections	**Pulse** Check certification is full and current before reconnection. Follow up reconnections with expired and/or interim certification on the registry with the MEP.	Reporting is being put in place to identify installations with expired certification, and specifically to follow up reconnections with expired or interim certification as soon as possible after the event.	Identified

ICP 0356865796LCA90 had expired full certification when it was reconnected. Metrix have notified Pulse that this ICP is part of the scheduled AMI rollout at which time the meter will be replaced. The site has been uncertified since reconnection on 20/7/2018.

Seven reconnections had expired interim certification when they were reconnected.

ICP	Reconnection date	Certification type	Certification expiry date	Comments
0001255102UND52	8/06/2018	I	1/04/2015	No action
0000160352UN35C	7/12/2018	I	1/04/2015	No action
0000008507UNB29	31/08/2018	I	1/04/2015	No action
0000544270TP3B3	28/09/2018	I	1/04/2015	Attempted to recertify but advised switchboard unsafe 11/8/17- no follow up since
0000052154TR40C	15/08/2018	I	1/04/2015	No action
0000012804UN440	30/08/2018	I	1/04/2015	No action
0000031488CP1A6	18/12/2018	I	1/04/2015	No action

I recommend Pulse follows these up with the MEPs.

I rechecked certification details for ICPs which were reconnected with interim certification during the 2018 audit period and found seven of the eight are still interim certified.

ICP	Reconnection date	Certification type	Certification expiry date	2019 comment
0001803000CA5F7	23/02/2018	I	1/04/2015	Fully certified
0033862144PC014	18/05/2018	I	1/04/2015	Interim certified
0030164289PCAB5	6/04/2018	I	1/04/2015	Interim certified
0000403925WE0EB	21/10/2017	I	1/04/2015	Interim certified
0000038818UNA7E	15/01/2018	I	1/04/2015	Interim certified
0030128090PC45B	10/08/2017	I	1/04/2015	Interim certified
0033860005PC4B0	1/09/2017	I	1/04/2015	Interim certified
0168888505LC510	1/06/2018	I	18/02/2011	Interim certified

Bridged meters

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

Property Power

No new connections or reconnections were completed during the audit period.

No bridged meters were identified.

Audit outcome

Non-compliant

Non-compliance	Description
Audit Ref: 2.11 With: Clause 10.33A From: 15-Sep-17 To: 31-Dec-18	**Pulse** 15 reconnections had expired certification recorded on the registry when they were reconnected. Potential impact: Low Actual impact: Low Audit history: Once Controls: Weak Breach risk rating: 3
Audit risk rating	**Rationale for audit risk rating**
Low	Controls are rated as weak because Pulse does not have robust processes in place to ensure meters are certified when an ICP is reconnected. The impact is assessed to be low due to the small number of ICPs affected.

Actions taken to resolve the issue	Completion date	Remedial action status
Reporting is being put in place to identify expired certification.	01/05/2019	Identified
Preventative actions taken to ensure no further issues will occur	**Completion date**	
Once appropriate reporting is available, Field Services will be alerted to follow up immediately when a reconnection is made on an installation with expired certification. We are also reviewing disconnection procedures to investigate the most cost-effective way to ensure that certification is checked before requesting disconnection	01/07/2019	

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.

The Pulse and Property Power registry lists for 01/07/18 to 09/01/19 were reviewed to determine which networks the ICPs were connected to.

Audit commentary

A Use of Systems Agreement is in place for all networks Pulse and Property Power trade on. Pulse and Property Power did not begin trading on any new networks during the audit period.

The network must be created in Gentrack for Pulse, and Orion for Property Power, before any ICPs can be assigned to it.

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.

The Pulse and Property Power registry lists for 01/07/18 to 09/01/19 were reviewed to determine which MEPs were responsible for metering.

Audit commentary

Pulse and Property Power have arrangements or agreements in place with all MEPs that manage metering for their ICPs. The new connection process also contains a step that requires the nomination of an MEP.

Pulse began supplying ICPs with two new MEPs during the audit period; IHUB and TRSV. Pulse has an arrangement in place with both of these MEPs.

The MEP must be created in Gentrack for Pulse, and Orion for Property Power, before any ICPs can be assigned to it.

Audit outcome

Compliant

3. MAINTAINING REGISTRY INFORMATION

3.1. Obtaining ICP identifiers (Clause 11.3)

Code reference

Clause 11.3

Code related audit information

The following participants must, before assuming responsibility for certain points of connection on a local network or embedded network, obtain an ICP identifier for the point of connection:

- *a) a trader who has agreed to purchase electricity from an embedded generator or sell electricity to a consumer*
- *b) an embedded generator who sells electricity directly to the clearing manager*
- *c) a direct purchaser connected to a local network or an embedded network*
- *d) an embedded network owner in relation to a point of connection on an embedded network that is settled by differencing*
- *e) a network owner in relation to a shared unmetered load point of connection to the network owner's network*
- *f) a network owner in relation to a point of connection between the network owner's network and an embedded network.*

ICP identifiers must be obtained for points of connection at which any of the following occur:

- *a consumer purchases electricity from a trader 11.3(3)(a)*
- *a trader purchases electricity from an embedded generator 11.3(3)(b)*
- *a direct purchaser purchases electricity from the clearing manager 11.3(3)(c)*
- *an embedded generator sells electricity directly to the clearing manager 11.3(3)(d)*
- *a network is settled by differencing 11.3(3)(e)*
- *there is a distributor status ICP on the parent network point of connection of an embedded network or at the point of connection of shared unmetered load. 11.3(3)(f)*

Audit observation

The new connections process was examined in detail to confirm compliance with the requirement to obtain ICP identifiers for points of connection to local or embedded networks.

Audit commentary

This requirement is well understood and managed by Pulse and Property Power. The process is detailed in **section 2.9**.

Audit outcome

Compliant

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

Code reference

Clause 11.7(2)

Code related audit information

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

Audit observation

The new connection, MEP nomination, and switching processes were examined in detail.

The Pulse and Property Power registry list and event detail reports for 01/07/18 to 09/01/19 were analysed in relation to updating of the registry.

This clause links directly to **section 3.5** below. The findings for the timeliness of updates is detailed there.

Audit commentary

Pulse

The new connection process is detailed in **sections 2.9** and **3.5**. The process in place ensures that the trader required information is populated as required by this clause.

Property Power

No new connections were completed during the audit period.

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.

In this section I have examined the Pulse and Property Power registry list and event detail reports for 01/07/18 to 09/01/19.

Pulse

For Pulse, I used the extreme case methodology to examine ten late status updates over 30 business days (or all the late updates if there were less than ten) for each status event type update.

The process to manage MEP changes was examined, and I used the typical case methodology to examine 20 nominations made more than 30 days after the event date. The list file was examined to identify any active ICPs with no MEP recorded, or with meter category nine recorded and the UML flag set to "N". In all cases Pulse was compliant, and the ICPs were either unmetered or the MEP had accepted a nomination.

The process to manage trader updates not relating to MEP nominations or NTs was examined. 20 late updates over 30 days were examined to determine why they were late.

Property Power

There were no status updates, MEP nominations or trader updates for Property Power, and all ICPs currently supplied have an MEP recorded.

Audit commentary

Pulse

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

Event		Total ICPs	ICPs notified within 5 days	ICPs notified greater than 5 days	Average notification days	Percentage compliant
Status updates						
Change to active reconnection (2,0)	2018	782	293	489	25	37%
	2019	**459**	**286**	**173**	**15**	**62%**
Change to de-energised-vacant (1,4)	2014	17	2	15	12.7	12%
	2015	903	599	304	12.8	66%
	2016	804	650	154	6.7	81%
	2017	265	200	65	5	75%
	2018	224	137	87	8	61%
	2019	**186**	**163**	**23**	**20**	**88%**
Change to reconciled Elsewhere (1,5)	**2019**	**1**	**-**	**1**	**6**	**0%**
Change to de-energised ready for decommissioning (1,6)	2014	-	-	-	-	-
	2015	38	13	25	91.3	34%
	2016	49	28	21	34	57%
	2017	16	4	12	67	25%
	2018	30	8	22	69	27%
	2019	**66**	**35**	**31**	**51**	**53%**
Change to de-energised	2017	225	210	15	2	98%
	2018	37	37	-	1	100%

Event		Total ICPs	ICPs notified within 5 days	ICPs notified greater than 5 days	Average notification days	Percentage compliant
remotely by AMI meter (1,7)	**2019**	**6**	**5**	**1**	**1**	**83%**
Change to de-energised at pole fuse (1,8)	2017	31	5	26	30	16%
	2018	8	3	5	25	38%
	2019	**6**	**3**	**3**	**10**	**50%**
Change to de-energised due to meter disconnected (1,9)	2017	3	0	3	28	0%
	2018	5	5	-	2	100%
	2019	**6**	**5**	**1**	**3**	**83%**
Change to de-energised due at meter box switch (1,11)	2017	2	2	0	2	100%
	2018	5	4	1	4	80%
	2019	-	-	-	-	-
Trader updates						
MEP nominations	2018	4041	2394	1647	10	59%
	2019	**1661**	**1319**	**342**	**11**	**79%**
Trader updates (excluding MEP nominations and NT updates)	**2019**	**1086**	**453**	**633**	**198**	**42%**

Late status updates

Pulse has improved their level of compliance in relation to active updates from 37% to 62%. There were 70 status updates to active that were made more than 30 business days after the event date. Ten late status updates to active over 30 business days were reviewed and found:

- five were backdated due to the initial ICP reconnection request failing as the NT request was sent for a later date causing the first request to fail at the registry resulting in a further request for the reconnection at the gain date to be sent to ensure it completes, this practice is discussed in **section 4.7**;
- three were corrections where two ICPs were set to vacant due to human error and the third was reconnected but the operator closed the service request without updating the status; and
- two were backdated by Revenue Assurance to correct for vacant consumption.

18 status updates to disconnected vacant were made more than 30 business days after the event date. Ten late status updates to disconnected vacant (1,4) over 30 business days were reviewed and found:

- six of these were due to a staff member who was not closing jobs correctly, they no longer work for Pulse and these were corrected as soon as they were identified via the improved registry discrepancy report (these were backdated an average of 244 days); and
- three were corrections relating to the last audit and were corrected in July 2018 for December 2017 and March 2018.

All late status updates to electrically disconnected remotely by AMI meter, electrically disconnected at pole fuse, electrically disconnected due to meter disconnected and Reconciled Elsewhere were reviewed and found:

- ICP 0006917119RN100 was updated late to electrically disconnected remotely by AMI meter due to late paperwork received from AMS;
- three ICPs were updated late to electrically disconnected at pole fuse, these were all credit disconnections but due to a Gentrack issue these updates were not flowing to the registry (corrected in Gentrack in December);
- ICP 0000009345WW25A was incorrectly updated to electrically disconnected due to meter disconnected nine days after the event date due to a staff misunderstanding, this event was reversed on 20/9/18 and correctly set to ready for decommissioning effective 15/6/18; and
- ICP 0000006547CED58 was updated late to inactive - reconciled elsewhere due to late paperwork being received and was a safety disconnection. This is recorded as non-compliance in **section 3.9**.

15 status updates to de-energised ready for decommissioning were made more than 30 business days after the event date. Nine late status updates to electrically disconnected ready for decommissioning (1,6) over 30 business days were reviewed and found:

- five were due to late advice from either the MEP or the Distributor;
- three were late due to meter reading notes advising of site being demolished not being actioned (these were backdated an average of 452 days); this process is discussed in detail in **section 6.8**; and
- ICP 0000019809CP068 was delayed due to Pulse's requirement to have a customer to pay for the decommissioning so a customer had to be signed into the ICP before it could be processed.

Late MEP nominations

Pulse's management of MEP nominations has improved during the audit period. The volume of exceptions in the work queue has improved since the last audit from 1,600 items to eight. These are reviewed on a daily basis. Pulse also monitor MEP nominations made that have no metering loaded within ten business days of the nomination. Any such incident creates a work queue to be investigated.

186 MEP nominations were made more than 30 business days after the event date. 19 MEP nominations more than 30 business days after the event date were reviewed and found:

- eight were late due to late advice from the nominated MEP (no rejection or acceptance was sent) that they were no longer the MEP, and Pulse then nominated the correct MEP;
- five were due to staff lack of understanding of how the MEP nomination process worked (all occurred in July 2018 and the incorrect MEP was nominated in the first instance causing the correct MEP to be nominated late); this process is now well understood, and process documentation has been improved;
- five were to correct the meter start date; and
- ICP 0000925710TU852 was a switch which had multiple withdrawals and MEP nominations before it completed in July 2018 for an event date of 17/11/2017; the MEP nomination was made manually in the registry in October 2018.

Trader updates

453 (42%) of the 1086 trader updates made were within five business days of the event date. 399 were more than 30 business days late. 20 trader updates more than 30 business days after the event date were reviewed and found all were ANZSIC updates that were made to the registry to populate missing information in Gentrack. No change was made to the registry information, so this has no material impact.

Property Power

The event detail report was examined to confirm the registry is notified within five business days when information referred to in clause 9 of schedule 11.1 changes. No status or trader updates were completed during the audit period.

Event		Total ICPs	ICPs notified within 5 days	ICPs notified greater than 5 days	Average notification days	Percentage compliant
Status updates						
Change to active reconnection (2,0)	2018	24	2	22	24	83.3%
	2019	-	-	-	-	-
Change to de-energised ready for decommissioning (1,6)	2018	1	0	1	154	0%
	2019	-	-	-	-	-
Change to de-energised due to meter disconnected (1,9)	2018	2	0	2	40	0%
	2019	-	-	-	-	-
Trader updates						
MEP nominations	**2018**	1	1	0	1	100%
	2019	-	-	-	-	-
Trader updates (excluding MEP nominations and NT updates)	**2019**	-	-	-	-	-

Audit outcome

Non-compliant

Non-compliance	Description
Audit Ref: 3.3 With: Clause 10 Schedule 11.1 From: 13-Apr-17 To: 31-Dec-18	**Pulse** 173 late updates to active status and 60 late updates to inactive status. 186 late MEP nominations. 453 late trader updates. Potential impact: Low Actual impact: Low Audit history: Multiple times Controls: Moderate Breach risk rating: 2
Audit risk rating	**Rationale for audit risk rating**
Low	Controls are rated as moderate, as controls have been improved during the audit period and now staff can manage exceptions and have a good understanding of how the end to end processes work. The audit risk rating is assessed to be low as the updates to the registry have improved overall. Corrections are being carried out as expected so any consumption volumes will be washed up.

Actions taken to resolve the issue	Completion date	Remedial action status
See Audit Ref 2.1.		Identified
Preventative actions taken to ensure no further issues will occur	**Completion date**	
See Audit Ref 2.1.		

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 new connection process was discussed.

The Pulse and Property Power registry list and event detail reports for 01/07/18 to 09/01/19 were examined to identify:

- any active ICPs that do not have an MEP recorded, which were then checked to confirm whether an MEP had been nominated and accepted; and
- any MEP nomination rejections.

ICP Decommissioning

The process for the decommissioning of ICPs was examined. A selection of ten decommissioned ICPs for Pulse and all decommissioned ICPs for Property Power were checked using the typical case method of sampling to prove the process and confirm controls are in place.

Work queues within Gentrack were checked for Pulse.

Audit commentary

Pulse

Retailers Responsibility to Nominate and Record MEP in the Registry

Pulse's management of MEP nominations has improved during the audit period. The volume of exceptions in the work queue has improved since the last audit from 1,600 items to eight. These are reviewed on a daily basis. Pulse monitors MEP nominations made that have no metering loaded within ten business days of the nomination. Any such incidents create a work queue item to be investigated. There have been some late MEP nominations, and these are discussed in **section 3.3**.

Review of the registry list found seven active Pulse ICPs with no MEP recorded and the unmetered flag set to no. In all cases, an MEP nomination had been made and accepted.

For new connections, Pulse nominates the MEP in the registry when the ICP is claimed and moved to "inactive new connection in progress" status, or "active" status. For ICPs that switch in that require an MEP change, they are nominated once the switch completes.

Seven of the 1,661 MEP nominations were rejected. All were checked to determine the root cause of the rejections:

- six of these were due to the incorrect MEP being nominated in the first instance due to staff lack of understanding of how the MEP nomination process worked resulting in the incorrect MEP being nominated and rejected, this process is now well understood, and process documentation has been improved; and
- the incorrect ICP was nominated in one instance due to human error.

ICP Decommissioning

Pulse continue with their obligations under this clause. ICPs that are vacant and active, or inactive are still maintained in Gentrack.

A sample of ten Pulse ICPs decommissioned during the period were examined and confirmed an attempt to read the meter was made before decommissioning, and the MEP was notified. The last read gained was not applied in two instances. Both had AMI meters and the final read was not used because the meter had not been removed in Gentrack. I recommend that a validation be added to check for any decommissioned ICPs with meters still installed against them.

Description	Recommendation	Audited party comment	Remedial action
Trader Responsibility for an ICP	Check for any decommissioned ICPs with meters still installed.	MEPs are unlikely to update a decommissioned ICP. Our own records are likely to be increasingly hard to follow as we go back further in time. Is it your recommendation that we should extend this check to all decommissioned ICPs, or can we limit it to recent history?	As per recommendation a check of all decommissioned ICPs with meters still installed if managed on a regular basis is likely to return exceptions only. History can be excluded if Pulse can be sure that these have no meters still installed.

This affected ICPs 0403108071LCF1C and 0007249605TU189. ICP 0403108071LCF1C was corrected during the site audit and the corrected volume is expected to flow through the November 2018 R7 revision in June 2019. ICP 0007249605TU189 is going to be corrected and will flow through September 2018 R7 revision in April 2019. This is recorded as non-compliance below and in **section 12.7**.

Property Power

Retailers Responsibility to Nominate and Record MEP in the Registry

Review of the registry list found no Property Power ICPs without an MEP, and no MEP nominations were made.

ICP Decommissioning

Property Power continue with their obligations under this clause. ICPs that are vacant and active, or inactive are still maintained in Orion.

No ICPs were decommissioned during the audit period.

Audit outcome

Non-compliant

Non-compliance	Description
Audit Ref: 3.4 With: Clause 11.8 From: 28-Nov-17 To: 27-Feb-19	**Pulse** Final reads not used for two decommissioned ICPs. Potential impact: Low Actual impact: Low Audit history: None Controls: Moderate Breach risk rating: 2
Audit risk rating	**Rationale for audit risk rating**
Low	Controls are rated as moderate as the process is documented but was not followed in two instances. The addition of the suggested validation would move the controls to strong. The potential impact is assessed to be low as the volume of decommissioned ICPs is small. Revised volumes will be submitted using the revision process in the two instances found.

Actions taken to resolve the issue	Completion date	Remedial action status
The service order structure includes a checklist item for meter updates. However, it is possible to bypass this check. We are reviewing the structure.	01/08/2019	Investigating
Preventative actions taken to ensure no further issues will occur	**Completion date**	
We are reviewing the ability of frontline staff to make status changes without following prescribed service orders.	01/08/2019	

3.5. Provision of information to the registry manager (Clause 9 Schedule 11.1)

Code reference

Clause 9 Schedule 11.1

Code related audit information

Each trader must provide the following information to the registry manager for each ICP for which it is recorded in the registry as having responsibility:

- *a) the participant identifier of the trader, as approved by the Authority (clause 9(1)(a))*
- *b) the profile code for each profile at that ICP, as approved by the Authority (clause 9(1)(b))*
- *c) the metering equipment provider for each category 1 metering or higher (clause 9(1)(c))*
- *d) the type of submission information the trader will provide to the RM for the ICP (clause 9(1)(ea)*
- *e) if a settlement type of UNM is assigned to that ICP, either:*
  - *the code ENG if the load is profiled through an engineering profile in accordance with profile class 2.1 (clause 9(1)(f)(i)); or*
  - *in all other cases, the daily average kWh of unmetered load at the ICP (clause 9(1)(f)(ii)).*
  - *the type and capacity of any unmetered load at each ICP (clause 9(1)(g))*
  - *the status of the ICP, as defined in clauses 12 to 20 (clause 9(1)(j))*
  - *except if the ICP exists for the purposes of reconciling an embedded network or the ICP has distributor status, the trader must provide the relevant business classification code applicable to the customer (clause 9(1)(k)).*

The trader must provide information specified in (a) to (j) above within 5 business days of trading (clause 9(2)).

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

Audit observation

The new connection process was examined in detail.

In this section I have examined the Pulse and Property Power registry list and event detail reports for 01/07/18 to 09/01/19.

I used the extreme case methodology to examine ten late updates over 30 business days for status changes to active, and all updates to new connection in progress for Pulse.

No new connections were completed by Property Power during the audit period.

Audit commentary

Pulse

The new connection process is described in detail in **section 2.9**. The table below shows a decreased level of compliance from the last audit.

Event	Year	Total ICPs	ICPs Notified Within 5 Days	ICPs Notified Greater Than 5 Days	Average Notification Days	Percentage Compliant
Change to active - new connections	2014	27	18	9	9.4	67%
	2015	16	4	12	10.7	25%
	2016	97	69	28	10.3	71%
	2017	90	46	44	9.0	51%
	2018	88	16	72	35	18%
	2019	**100**	**23**	**77**	**28**	**23%**
New connection in progress (1,12)	2016	36	28	8	5.5	86%
	2017	1	1	0	2	100%
	2018	29	21	8	9	72%
	2019	**44**	**12**	**32**	**26**	**28%**

Ten late updates to "active" over 30 days after the event date were checked. I found the delays were all due to the continued clean up from when Gentrack was implemented and notification files were not being actioned due to a workflow issue. This was corrected in November 2018 and there is now reconciliation occurring between Gentrack and the registry status data which identifies any exceptions and therefore I expect the level of compliance to improve going forward.

All late updates to "inactive new connection in progress" were checked, and I confirmed that all ICPs were moved to "new connection in progress" status prior to being electrically connected and were compliant.

Property Power

No new connections were completed during the audit period.

Audit outcome

Non-compliant

Non-compliance	Description
Audit Ref: 3.5 With: Clause 9 Schedule 11.1 From: 11-Sept-2017 To: 14-Dec-2018	**Pulse** 77 late updates to active. Potential impact: Low Actual impact: Unknown Audit history: Multiple times Controls: Moderate Breach risk rating: 2
Audit risk rating	**Rationale for audit risk rating**
Low	Controls are rated as moderate as the workflow now works correctly and there is reporting in place to identify ICPs with a status mismatch between Gentrack and the registry. The audit risk rating is assessed to be low overall as status differences are expected to be corrected, and volumes will be washed up through the revision process.

Actions taken to resolve the issue	Completion date	Remedial action status
Reporting is in place and reviewed weekly to identify status mismatches between Gentrack and the Registry.	03/01/2019	Identified
Preventative actions taken to ensure no further issues will occur	**Completion date**	
Work is ongoing to streamline and automate the reporting so that the team updating/correcting statuses have a clearer report to work with	01/05/2019	

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 as at 09/01/19 was reviewed to check ANZSIC codes for active Pulse ICPs. To confirm the validity of the ANZSIC codes selected I checked a diverse sample of 45 active ICPs across 15 different ANZSIC codes which made up more than 0.1% of the total ICPs.

Property Power did not supply any active ICPs on 09/01/19. Their registry list for 01/07/18 to 09/01/19 was reviewed to confirm that valid ANZSIC codes applied while active ICPs were supplied.

Audit commentary

Pulse

As part of the new connection application process, Pulse confirms the type of property and enters an ANZSIC code. ANZSIC codes are not checked as part of the sign-up process for ICPs switching in and the previous trader's code is accepted as correct. I recommend that the ANZSIC code is checked for all customers as part of the switch in process.

Description	Recommendation	Audited party comment	Remedial action
ANZSIC Codes	**Pulse** Confirm the ANZSIC code for all customers switching in.	Sales staff will be asked to note the nature of the customer's business on all non-residential signups. The Field Services team will be briefed to convert their responses into ANZSIC codes.	Identified

Review of the registry list did not identify any blank or unknown ANZSIC codes, or ICPs with meter category 2 or higher and a residential ANZSIC code.

The accuracy of the ANZSIC codes for 45 ICPs with a diverse sample of ANZSIC codes were checked. 25 were confirmed to be accurate, and findings for 10 were inconclusive, but there was insufficient evidence to confirm of the code was incorrect. Ten ICPs had incorrect codes recorded. These have been corrected.

I followed up the incorrect ANZSIC codes recorded in the 2018 audit:

ICP	Recorded code	Industry	Comment
0094422001CN9F9	G426000 (Department stores)	Implement shed on a rural property	Corrected during the site audit
0102147752LCF86	G426000 (Department stores)	Glass and glass product manufacturing	Switched out

Property Power

Analysis of the registry list found no active ICPs had unknown or blank ANZSIC codes.

Audit outcome

Non-compliant

Non-compliance	Description
Audit Ref: 3.6 With: Clause 9 (1(k)) of Schedule 11.1 From: 01-Jul-18 To: 31-Dec-18	**Pulse** Ten ICPs with incorrect ANZSIC codes. Potential impact: Low Actual impact: Low Audit history: Once Controls: Weak Breach risk rating: 3
Audit risk rating	**Rationale for audit risk rating**
Low	Controls are rated as weak as there is no validation of the ANZSIC code when ICPs switch in. 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
ANZSIC codes are reviewed from time to time (to ensure that non-residential ICPs have non-residential codes) and corrected as soon as we become aware of an error.	01/09/2018	Identified
Preventative actions taken to ensure no further issues will occur	**Completion date**	
Sales staff will be asked to note the nature of the customer's business on all non-residential signups. The Field Services team will be briefed to convert their responses into ANZSIC codes.	01/06/2019	

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 Pulse and Property Power list files as at 09/01/19 were examined to identify any ICPs where:

- Unmetered load is identified by the Distributor, but none is recorded by the trader.
- The trader unmetered kWh differs from the distributor's unmetered kWh by 1.0 kWh per day or more, where it was possible to calculate the distributor's unmetered kWh from the distributor's unmetered load details. 1.0 kWh per day was chosen as a sample only; this does not indicate compliance is achieved if an error is found that is less than 1.0 kWh per day.

Audit commentary

Pulse

All unmetered load new connections require an application, which follows the new connections process.

Pulse relies on the registry notifications which are processed by the Gentrack Task Manager to identify any changes to unmetered load details. Pulse have adopted the recommendation made in the last audit that all unmetered load is checked as part of the pre-submission checks by undertaken by JCC. In addition to this Pulse has their own validation check that is run to check for any unmetered load discrepancies.

Examination of the list file found 39 active ICPs with the UNM flag checked; all had daily unmetered kWh greater than zero populated. The trader unmetered kWh was compared to the distributor's unmetered kWh for 29 ICPs where it was possible to calculate the distributor's unmetered kWh from the distributor's unmetered load details. All matched within ±1 kWh.

Two ICPs had unmetered load details recorded by Pulse, but not recorded by the distributor. Both were examined and found:

- ICP 0007181224RN56C is a metered supply and does not have an unmetered BTS load present (this is not being billed to the customer), the Distributor removed the unmetered load effective 1/11/2017 and the ICP is being updated to remove this; and
- ICP 0000505719DEDE4 is a metered supply and is also still being billed for the BTS supply although it is likely that there is no longer a BTS supply present (this is being investigated) and this ICP has never had an unmetered supply recorded by the Distributor.

I recommend that this is added a check for where Pulse have an unmetered volume and the distributor has none is added to the validation to identify such sites as above.

Description	Recommendation	Audited party comment	Remedial action
Changes to Unmetered Load	**Pulse** Check ICPs with unmetered load recorded where the Distributor has none.	Registry records will be reviewed monthly, and any discrepancies followed up with the distributor. In the longer term, we are looking into adding a validation alert to be raised when distributor UML details are updated.	Identified

Property Power

Property Power does not currently supply any ICPs with unmetered load.

Property Power supplied four ICPs with standard unmetered load during the audit period. The trader unmetered kWh was compared to the distributor's unmetered kWh for the three ICPs where it was possible to calculate the distributor's unmetered kWh from the distributor's unmetered load details. All matched within ±0.4 kWh.

Audit outcome

Non-compliant

Non-compliance	Description
Audit Ref: 3.7 With: Clause 9 (1)(f)) of Schedule 11.1 From: 01-Nov-17 To: 31-Dec-18	**Pulse** Unmetered load incorrectly recorded for one ICP. 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 as they identified mismatches in all but one scenario which will be corrected if the additional recommended validation is actioned. The audit risk rating is low, as the only ICP identified is being correctly submitted.

Actions taken to resolve the issue	Completion date	Remedial action status
The submission process ensures that UML is submitted correctly, even if the registry records are imperfect.	03/01/2019	Identified
Preventative actions taken to ensure no further issues will occur	**Completion date**	
Registry records will be reviewed monthly, and any discrepancies followed up with the distributor. In the longer term, we are looking into adding a validation alert to be raised when distributor UML details are updated.	01/05/2019	

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

Code reference

Clause 17 Schedule 11.1

Code related audit information

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

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

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

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

Audit observation

The new connection process was examined in detail as discussed in **sections 2.9** and **3.5** above.

The Pulse and Property Power registry list and event detail reports for 01/07/18 to 09/01/19 were checked for any variances between the initial electrical connection date, meter certification date, and the active date. All variances were checked.

The registry lists as at 09/01/19 were reviewed to identify any ICPs still at the "inactive - new connection in progress" status with an initial electrical connection date populated.

The process for the management of ICP reconnection and the timeliness of registry updates are discussed in **section 3.3**.

Audit commentary

Pulse

Pulse's policies only allow one customer per ICP. I saw evidence of the Gentrack EMS9115 process, which runs overnight to identify any ICPs which are recorded against more than one customer for billing. Exceptions typically occur where a customer account is in the process of being finalised for a customer moving out, and a new customer account is loaded ready for billing for a customer moving in. The report is reviewed each morning and exceptions are resolved.

An ICP cannot be billed in Gentrack without a meter or unmetered load recorded.

Pulse changes the status of an ICP to "active" once confirmation has been received from a contractor, or meter readings confirm that an inactive ICP is consuming energy.

The accuracy of registry updates to "active" was checked by comparing the active date to the initial electrical connection date and meter certification date for all 93 new connections identified. 11 exceptions were identified:

- five have the incorrect first active date due to Gentrack system issue which is making these active for the same date as the first ICP claim date, the last occurrence of this was 4/12/2018 (these are the same five ICPs identified in **section 2.9)**;
- the first active date was correct for three ICPs but the network had the incorrect initial electrical connection date recorded in two instances and the MEP never loaded the BTS supply for ICP 0000507515DE7BD causing it to look like the site was uncertified for a period (I sighted paperwork confirming the BTS supply installation date and this the same ICP identified in **section 2.9**);
- two had the correct first active date manually populated on the registry but a subsequent system generated update incorrectly backdated the ICP to the first ICP claim date, the last occurrence of this was 5/12/2018; and
- the start date for ICP 1002056318UN2D5 was miss keyed.

The registry list showed ICP0000009190TEEEB with an initial electrical connection date populated while at" new connection in progress status". This was examined and has since been updated to "active" but for the same date as the ICP claimed (16/11/2018) but was first electrically connected on 12/12/2018.

I recommend in **section 2.1**, that further validations are added to check for date misalignments between the first active date, the Distributor initial electrical connection date and the first meter certification date and for any ICPs at the "ready" or "inactive-new connection in progress" status with an initial electrical connection date populated.

The three ICPs with incorrect active dates identified in the 2018 audit were rechecked, and all have been corrected.

Property Power

Orion only allows one customer per ICP and requires at least one meter to be created for each ICP, even if it is unmetered.

No new connections were completed during the audit period, and no ICPs are at new connection in progress status.

Audit outcome

Non-compliant

Non-compliance	Description
Audit Ref: 3.8 With: Clause 17 Schedule 11.1 From: 15-Jun-17 To: 31-Dec-18	**Pulse** Nine ICPs had incorrect active dates. Potential impact: Low Actual impact: Low Audit history: Multiple times Controls: Weak Breach risk rating: 3
Audit risk rating	**Rationale for audit risk rating**
Low	Controls are rated as weak as there are no checks in place to check the correct active date is applied. If the recommendation is adopted this will assist in identifying such incidents. The impact is rated as low because a small number of ICPs were affected and the incorrect dates will have a small impact on settlement.

Actions taken to resolve the issue	Completion date	Remedial action status
The list of ICPs in 'READY' status is checked weekly. Our priority is always to ensure accurate data is recorded. Sometimes this means asking other participants (networks and MEPs) to reverse and correct Registry updates; we are dependent on other participants to complete corrections in a timely manner.	03/01/2019	Investigating
Preventative actions taken to ensure no further issues will occur	**Completion date**	
We will continue to do our utmost to ensure that correct dates are recorded.	01/05/2019	

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 files as at 09/01/19 were examined and confirmed no ICPs were at "inactive - new connection in progress" for more than 24 months.

The process to manage ICPs at the other inactive statuses was examined. A sample of ten ICPs at each inactive status (or all ICPs if less than ten were available) were checked using the typical characteristics methodology. The findings in relation to the timeliness of updates to registry is recorded in **section 3.3**.

Audit commentary

Pulse

Inactive status is only applied once confirmation that the ICP has been disconnected is received.

I reviewed the reason codes for a sample of 32 disconnections and found all but two ICP had the correct inactive status applied:

- ICP 0000009345WW25A was incorrectly updated to electrically disconnected due to meter disconnected nine days after the event date due to a staff misunderstanding, this event was reversed on 20/9/18 and correctly set to ready for decommissioning effective 15/6/18; and
- ICP 0000006547CED58 was updated late to "inactive- reconciled elsewhere" due to late paperwork being received and this was a safety disconnection.

A list of inactive ICPs with consumption recorded was provided, and compared to lists provided in previous years:

Year	Inactive sites with consumption
2019	25 (with a latest actual reading since July 2018)
2018	408
2017	127
2016	82
2015	275

An extreme case sample of ten "inactive" sites with inactive consumption over 6 kWh were reviewed. I found that consumption for all but one ICP was genuine. This ICP had never been inactive and appeared on the list of inactive ICPs with consumption in error. When consumption on an inactive ICP is identified, Pulse changes the status to "active" on the registry so that the consumption and ICP days will be included in the reconciliation reports and disconnects the ICP again if appropriate.

The 2018 status and status date issues were followed up all have been corrected.

ICP	Inactive kWh	2019 comment
0000039626NT73E	-101	**Cleared.** Now no consumption during inactive period.
1000008489BPE25	105	**Cleared.** Now no consumption during inactive period.
0000006170DE570	149	**Cleared.** Now no consumption during inactive period.
0325859280LC861	104	**Cleared.** Now no consumption during inactive period.
0000171510EN67A	578	**Cleared.** Now no consumption during inactive period.
0000171510EN67A	183	**Cleared.** Now no consumption during inactive period.

Property Power

No ICPs have had status updates to "inactive" during the audit period, and no ICPs are at "new connection in progress" status.

Two ICPs which were inactive with consumption were identified during the ICP days submission review in **section 11.2**. The affected ICPs had consumption and ICP days submitted for May 2018 but were not returned to "active" status on the registry because they had switched out. The incorrect statuses are recorded as non-compliance below and in **section 2.1**.

Audit outcome

Non-compliant

Non-compliance	Description
Audit Ref: 3.9 With: Clause 19 Schedule 11.1 From: 01-Sep-17 To: 31-Dec-18	**Property Power** Two ICPs with consumption while disconnected did not have their status updated to "active". Potential impact: Low Actual impact: Low Audit history: Multiple times Controls: Moderate Breach risk rating: 2
Audit risk rating	**Rationale for audit risk rating**
Low	Controls are rated as moderate, because these appear to be manual data entry errors and most updates were correct. The impact is rated as low as the volume of ICPs affected is small.

Actions taken to resolve the issue	Completion date	Remedial action status
Reconciliation is training the Switching Team to update status of ICPs found with Consumption by Cobra NHH reconciliation system.	01/05/2019	Identified
Preventative actions taken to ensure no further issues will occur	**Completion date**	
The application of status updates has been improved by the programme mentioned in audit section 2.1. We are continuing to focus on this area, and if weaknesses remain after the current improvements, these will be addressed.	01/08/2019	

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 a registry list of ICPs with "new" or "ready" status.

Audit commentary

Pulse

Pulse occasionally receives requests for further information on ICPs which have been at "new" or "ready" for more than 24 months from distributors. They respond accordingly. No recent communications have been received. Pulse produce a weekly new connection report where Pulse has been nominated as the trader. This is checked against the applications received to ensure none are missing. I identified three ICPs that have been at the "ready" status since 1/10/2016, 8/11/2016 and 17/10/2016 respectively. These were all prior to the Gentrack 4 deployment and are not in Pulse's current system. The checks put in place appear to be working for recent ICPs generated but hasn't identified any historic ICPs. I recommend that Pulse review this reporting to ensure it includes all ICPs where they are nominated as a trader.

Description	Recommendation	Audited party comment	Remedial action
Monitoring of new and ready ICPs	**Pulse** Review the reporting to ensure that that ALL ICPs at new or ready are captured.	Connections at NEW and READY are reviewed weekly.	The intent of this recommendation has been missed as ICPs were identified during the audit at new or ready but not identified in the existing reporting

Property Power

No new connections were completed during the audit period.

No requests for information on "new" or "ready" ICPs have been received from distributors. If received these would be actioned on a case by case basis.

There is no regular monitoring of ICPs at "new" or "ready" status. Property Power's customers have now migrated to Pulse's systems.

I identified two ICPs at the "ready" status which have Property Power as the nominated trader. ICP 1001302561LC740 is now active with Pulse. Property Power were unaware that they had been nominated as the trader for ICP 1002045411UN987. They are investigating this with the Distributor.

Audit outcome

Compliant

4. PERFORMING CUSTOMER AND EMBEDDED GENERATOR SWITCHING

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

Code reference

Clause 2 Schedule 11.3

Code related audit information

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

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

A gaining trader must advise the registry manager of a switch no later than 2 business days after the arrangement comes into effect and include in its advice to the registry manager that the switch type is TR and one or more profile codes associated with that ICP.

Audit observation

The switch gain process was examined to determine when Pulse and Property Power deem all conditions to be met.

The Pulse and Property Power event detail reports for 01/07/18 to 09/01/19 were reviewed to identify all transfer NTs issued during the audit period.

A typical sample of five transfer switch NTs for Pulse were checked to confirm whether they were notified to the registry within two business days, and that the correct switch type was selected. No NTs were issued by Property Power.

Audit commentary

Pulse and Property Power's processes are compliant with the requirements of Section 36M of the Fair Trading Act 1986. NT files are sent once all pre-conditions are met, and the withdrawal process is used if the customer changes their mind.

Switch type is selected based on information provided by the customer on application.

Pulse

The five NT files checked were sent within two business days of pre-conditions being cleared, and the correct switch type was selected. I note that three of the NT requests were backdated by the losing trader to the start of the month requested.

I matched the transfer NT records to the registry list metering category where available. For the 5,767 records where there was a match, the ICP was unmetered, or had metering category 1 or 2.

Property Power

No transfer NTs were issued by Property Power during the audit period.

Audit outcome

Compliant

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

Code reference

Clauses 3 and 4 Schedule 11.3

Code related audit information

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

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

When establishing an event date for clause 4, the losing trader must disregard every event date established by the losing trader for a customer who has been with the losing trader for less than two calendar months (clause 4(2) of Schedule 11.3).

Audit observation

The Pulse and Property Power event detail reports for 01/07/18 to 09/01/19 were reviewed to:

- identify AN files issued by Pulse and Property Power during the audit period; a sample of two ANs per response code were reviewed to determine whether the codes had been correctly applied; and
- assess compliance with the setting of event dates requirements.

The switch breach history reports for Pulse and Property Power were examined for the audit period.

Audit commentary

Pulse

The switching process was examined in relation to Pulse as the "losing trader" for a sample of transfer switch ICPs. These are applied automatically based on a hierarchy. For two ICPs, the AA (accept and acknowledge) code was applied, when an advanced meter was present and AD (advanced metering) should have been applied. For a further two ICPs, the AD (advanced metering) code was applied, when a non-communicating AMI meter was present and AA (accept and acknowledge) should have been applied. These were all switches that were completed manually completed. This is recorded as non-compliance below.

The event detail report was reviewed for 3,555 Pulse transfer switches:

- 3,378 (95.0%) had an event date within five business days of receipt of the NT; and
- 3,526 (99.2%) had an event date within ten business days of receipt of the NT, all 29 ICPs with event dates more than ten business days after receipt of the NT had an AN proposed event date which matched the NT request date.

The switch breach report did not record any late transfer AN files for Pulse.

Property Power

The switching process was examined in relation to Property Power as the "losing trader" for a sample of three transfer switch ICPs. In all cases the correct response codes were used.

The event detail report was reviewed for all 12 Property Power transfer switches, all had an event date within five business days of receipt of the NT.

The switch breach report did not record any late transfer AN files for Property Power.

Audit outcome

Non-compliant

Non-compliance	Description
Audit Ref: 4.2 With: Clauses 3 and 4 Schedule 11.3 From: 01-Jul-18 To: 31-Dec-18	**Pulse** Four incorrect AN response codes were applied by Pulse. Potential impact: Low Actual impact: None Audit history: Twice previously Controls: Moderate Breach risk rating: 2
Audit risk rating	**Rationale for audit risk rating**
Low	Controls are rated as moderate as they are sufficient to mitigate risk most of the time, but there is room for improvement. Four AN response codes were applied incorrectly. The information to determine the correct AMN code for the ICPs was available on the registry.

Actions taken to resolve the issue	Completion date	Remedial action status
Training and procedures are being revised to identify gaps and ensure that all staff are aware of procedures to set AN codes correctly.	01/05/2019	Identified
Preventative actions taken to ensure no further issues will occur	**Completion date**	
Adherence to procedures will be periodically checked, and procedures modified as necessary to ensure that they can be followed in practice and will result in correct outcomes.	01/10/2019	

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

Code reference

Clause 5 Schedule 11.3

Code related audit information

If the losing trader provides information to the registry manager in accordance with clause 3(a) of Schedule 11.3 with the required information, no later than 5 business days after the event date, the losing trader must complete the switch by:

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

Audit observation

The Pulse and Property Power event detail reports for 01/07/18 to 09/01/19 were reviewed to identify CS files issued during the audit period. The accuracy of the content of CS files was confirmed by checking a sample of five files. The content checked included:

- correct identification of meter readings and correct date of last meter reading;
- accuracy of meter readings; and
- accuracy of average daily consumption (this is based on the most recent read to read consumption).

CS files with an average daily kWh that was negative, zero, or over 200 kWh were identified, and a sample were checked to confirm whether the average daily kWh was recorded correctly.

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

Pulse

CS content

CS files are automatically generated by Gentrack, and the estimated daily consumption is expected to be based on the last billed period, regardless of whether these are actuals or estimates. The average daily consumption is expected to be calculated using the volume from the last two validated reads divided by the days between these reads and calculated using only each meter register with an **X flow**. If there are no reads available during the period of supply the last values provided by the last trader in their CS file are expected to be used. Pulses calculation methodology is recorded as non-compliance below.

Analysis estimated daily kWh on the event detail report identified:

Count of transfer CS files	Estimated daily kWh
Negative	3
Zero	94
More than 200 kWh	15

A sample of 12 of these ICPs were checked (all negative, five with zero, and five with more than 200 kWh), and I found six (50%) were incorrectly calculated (all those with negative consumption, two with consumption more than 200 kWh per day and one with zero consumption). This was largely due to the average daily consumption is being calculated from the invoicing area of Gentrack and if there has been any reverse and rebilling this creates an invalid figure.

I checked the accuracy of CS content by reviewing a sample of files and found all were correct.

CS timeliness

The switch breach report did not record any late transfer CS files for Pulse.

Property Power

CS content

CS files were automatically generated by Orion and manually checked prior to being sent to the registry. Analysis estimated daily kWh on the event detail report identified:

Count of transfer CS files	Estimated daily kWh
Negative	-
Zero	-
More than 200 kWh	1

The ICP with consumption over 200 kWh was checked, and I found the average daily consumption was being calculated over the last 12 months rather than from the last validated read to read period. This is recorded as non-compliance below.

I checked the accuracy of the CS file content using the read files as the Orion system is no longer in use. Therefore, I was able to check the accuracy of all fields except that of average daily consumption. All files checked confirmed that the details were correct.

CS timeliness

The switch breach report did not record any late transfer CS files for Property Power.

Audit outcome

Non-compliant

Non-compliance	Description
Audit Ref: 4.3 With: Clause 5 Schedule 11.3	**Pulse** Average daily consumption calculation methodology incorrect. Six of 12 examples of questionable average daily consumptions checked found to be incorrect. **Property Power** Average daily consumption calculation methodology incorrect. One transfer CS file had an incorrect estimated daily consumption recorded. Potential impact: Low Actual impact: Low Audit history: Multiple times
From: 09-Jul-18	Controls: Weak
To: 09-Jan-19	Breach risk rating: 3

Audit risk rating	Rationale for audit risk rating
Low	Controls are rated as weak, because the calculation of average daily consumption for both Pulse and Property Power is incorrect resulting in inaccuracy in the CS files being sent. I estimate the potential impact will be low, but this will vary depending on the kWh difference, and whether the gaining retailer creates forward estimates for reconciliation or billing based on the estimated daily consumption provided in the CS file.

Actions taken to resolve the issue	Completion date	Remedial action status
The Code does not specify any methodology by which average daily consumption should be calculated. Indeed, it does not mention the requirement to provide this data at all. The only requirement is imposed by the Registry functional spec, which uses the term "last read period". Moreover, the value is only required to "indicate" this average, suggesting that approximations are expected. Since the term "last read period" is not defined either in the code or the spec, we believe we are fully compliant in this respect.	03/01/2019	Disputed
Preventative actions taken to ensure no further issues will occur	**Completion date**	

We have identified a process for ensuring that a non-negative value is set, using the most accurate reads available (billed Actual reads, or Meter Removal/ Installation or Switching reads if these are not available). We are looking at implementing this process later this year.	31/12/2019	

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

Code reference

Clause 6(1) and 6A Schedule 11.3

Code related audit information

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

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

If the gaining trader disputes a switch meter reading because the switch event meter reading provided by the losing trader differs by 200 kWh or more, the gaining trader must, within four calendar months of the actual event date, provide to the losing trader a changed switch event meter reading supported by two validated meter readings.

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

Audit observation

The Pulse and Property Power event detail reports for 01/07/18 to 09/01/19 were analysed to identify all read change requests and acknowledgements during the audit period. A sample of ten RR files issued by Pulse, and ten AC files issued by Pulse were checked. No RR or AC files were issued by Property Power for transfer switches.

I also checked a sample of five estimated CS files provided by other traders where no RR was issued to determine whether the correct readings were recorded in Gentrack for Pulse. No affected CS files were identified for Property Power.

The switch breach history reports for the audit period were reviewed to identify late RR and AC files.

Audit commentary

Pulse

RR requests are generally initiated via email between the two parties and only once an agreement has been reached an RR file is sent to complete. All RR requests are evaluated and validated against the ICP information. If the request is within validation requirements these are accepted.

Pulse issued 63 RR files for transfer switches. 54 were accepted and nine were rejected. Five of the rejected files were accepted on reissue. A sample of five rejected files and five accepted files were checked. In all cases there was a genuine reason for Pulse's RR. Three of the RRs sent were not supported by two actual reads obtained by Pulse. In these instances a customer photo read was treated as one of the actual reads. This is discussed and recorded as non-compliance in **section 6.6**.

Pulse issued 67 AC files for transfer switches. 44 were accepted and 23 were rejected. A sample of five AC rejections were checked. All were rejected for valid reasons and a subsequent RR was received and accepted in four instances with corrected data. The remaining ICP was part of a double withdrawal which removed Pulse's time slice.

The 2018 audit found some issues relating to the application of CS estimate and accepted RR reads in Cobra. Controls have been improved and monitoring has been put in place to prevent recurrence of these issues, as discussed in **section 12.7**.

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

The switch breach report recorded no late AC files and eight late RR files for transfer switches. These were all checked and found that the delay was caused by the time to gain two actual reads in all instances.

Property Power

No RR or AC files were issued by Property Power for transfer switches.

The switch breach report did not record any late RR or AC files for Property Power.

Audit outcome

Non-compliant

Non-compliance	Description
Audit Ref: 4.4 With: Clause 6(1) and 6A Schedule 11.3 From: 11-Oct-18 To: 03-Jan-19	**Pulse** Eight late RR files for transfer switches. Three RRs were not supported by two validated actual reads. 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 as apart from the treatment of customer photo reads (which is being addressed) the process ensures that the RR are sent appropriately, and RR's received are managed correctly. The impact on reconciliation is assessed to low due to the high level of accuracy found.

Actions taken to resolve the issue	Completion date	Remedial action status
In agreement with the consensus view of relevant industry groups, we believe that late RR updates are better than none.		Identified
Preventative actions taken to ensure no further issues will occur	**Completion date**	
Procedures and training have been improved to ensure correct handling of customer and photo reads. In future, photo reads will be treated as equivalent to any other customer reads. Only contractor and/or MEP reads will be considered "validated" for purposes of determining an RR read.	01/04/2019	

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

Code reference

Clause 6(2) and (3) Schedule 11.3

Code related audit information

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

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

Audit observation

The process for the management of read requests was examined. The Pulse and Property Power event detail reports for 01/07/18 to 09/01/19 were analysed to identify read change requests issued and received under Clause 6(2) and (3) Schedule 11.3 and determine compliance.

Audit commentary

Pulse

Analysis of the event detail report confirmed that no RR files were issued by Pulse under Clause 6(2) and (3) Schedule 11.3.

12 RR files for transfer switches were issued within five business days of switch completion, where the gaining trader listed a HHR proposed profile. All were validly accepted or rejected by Pulse.

Property Power

Property Power did not issue or receive any RR files for transfer switches.

Audit outcome

Compliant

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

Code reference

Clause 7 Schedule 11.3

Code related audit information

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

Audit observation

I confirmed with Pulse and Property Power whether any disputes have needed to be resolved in accordance with this clause.

Audit commentary

Pulse and Property Power 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 Pulse and Property Power deem all conditions to be met.

The Pulse and Property Power event detail reports for 01/07/18 to 09/01/19 were reviewed to identify all switch move NTs issued during the audit period.

A typical sample of five switch move NTs for Pulse were checked to confirm whether they were notified to the registry within two business days, and that the correct switch type was selected. No NTs were issued by Property Power.

Audit commentary

Pulse and Property Power's processes are compliant with the requirements of Section 36M of the Fair Trading Act 1986. NT files are sent once all pre-conditions are met, and the withdrawal process is used if the customer changes their mind.

Switch type is selected based on information provided by the customer on application.

Pulse

The five NT files checked were sent within two business days of pre-conditions being cleared. Three of the ICPs related to the ICPs switching from Property Power to Pulse and were technically transfer switches but as Gentrack doesn't hold transfer switches the move switch process was used as the switch could be held in Gentrack until the correct date. This is recorded as non-compliance below.

Examination of backdated ICP reconnection updates identified that the sales team are reconnecting customers and requesting the ICP for a later date. This is detailed in **section 3.3.** In these instances, the NT is not being sent for the correct gain date and therefore consumption is either being absorbed by the losing trader or allocated incorrectly as the switch completes for an incorrect gain date. This is recorded as non-compliance below.

I matched the switch move NT records to the registry list metering category where available. For the 5,263 records where there was a match, the ICP was unmetered, or had metering category 1 or 2.

Property Power

No switch move NTs were issued by Property Power during the audit period.

Audit outcome

Non-compliant

Non-compliance	Description
Audit Ref: 4.7 With: Clause 9 Schedule 11.3 From: 01-Jul-18 To: 31-Dec-18	**Pulse** Incorrect switch type used for three ICPs (all related to the ICPs moving from Property Power to Pulse). Some NTs not issued for the correct gain date and therefore not issued within two days after pre-conditions were cleared. Potential impact: Low Actual impact: Unknown Audit history: Once Controls: Weak Breach risk rating: 6
Audit risk rating	**Rationale for audit risk rating**
Medium	The controls are rated as weak as the sales process does not have controls in place to ensure that the NT gain date is for the same date as the reconnection occurs. The impact was assessed to be medium due to half of the sample checked for backdated reconnections indicating this practice is common place for the sales team which causes reconciliation inaccuracies.

Actions taken to resolve the issue	Completion date	Remedial action status
The three ICPs with incorrect switch type were switching from Pulse to Pulse – therefore there is no market impact from this breach. When a reconnection is backdated before the NT date, our corrective procedure is to issue a NW/DF to the other retailer, then reprocess the NT for the correct date.		Investigating
Preventative actions taken to ensure no further issues will occur	**Completion date**	
Customer service staff will be retrained to understand that reconnections cannot be dated before the NT date. Customers will be advised that they will be billed from the date of reconnection.		

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 Pulse and Property Power event detail reports for 01/07/18 to 09/01/19 were reviewed to:

- identify AN files issued by Pulse and Property Power during the audit period; a sample of two ANs per response code were reviewed to determine whether the codes had been correctly applied; and
- assess compliance with the setting of event dates requirements.

The switch breach history reports were examined for the audit period.

Audit commentary

Pulse

The switching process was examined in relation to Pulse as the "losing trader" for a sample of switch move ICPs. These are applied automatically based on a hierarchy. For one ICP, the AA (accept and acknowledge) code was applied, when an advanced meter was present and AD (advanced metering) should have been applied. This switch was manually completed, and the incorrect code was selected in these instances. This is recorded as non-compliance below.

5,110 switch move requests were identified on the event detail report for Pulse. These were analysed and found:

- 5101 (99.8%) had an event date within ten business days of receipt of the NT;.
- nine had event dates more than ten business days after receipt of the N, of those seven had an AN proposed event date which matched the NT proposed event date, and two did not (these were due to human error) and both switches were completed for the NT request date; and
- no proposed event dates were earlier than the NT proposed event date.

The switch breach report did not record any late transfer AN files for Pulse.

Property Power

The switching process was examined in relation to Property Power as the "losing trader" for a sample of switch move ICPs and all had the correct AN code applied.

935 switch move requests were identified on the event detail report for Property Power. These were analysed and found:

- 100% had an event date within ten business days of receipt of the NT; and
- for one ICP Property Power's proposed event date was the day before the gaining trader's requested date due to human error, and the switch was completed for the requested date.

The switch breach recorded one late AN for a switch move. The breach was not genuine, no AN was issued for the switch the breach was recorded for, and the CS file was issued on time.

Audit outcome

Non-compliant

Non-compliance	Description
Audit Ref: 4.8 With: Clause 10(1) Schedule 11.3 From: 06-Jul-18 To: 29-Nov-18	**Pulse** Four incorrect AN response codes applied. Pulse proposed an event date more than ten business days after NT receipt for two switch moves. **Property Power** One incorrect AN response code was applied. Property Power proposed an event date before the gaining trader's requested date for one switch move. Potential impact: Low Actual impact: Low Audit history: Twice previously Controls: Moderate Breach risk rating: 2
Audit risk rating	**Rationale for audit risk rating**
Low	Controls are rated as moderate overall as they are sufficient to mitigate risk most of the time, but there is room for improvement. The impact is assessed to be low as the switches were completed for the correct date and the incorrect AN codes manually applied have no direct impact on reconciliation.

Actions taken to resolve the issue	Completion date	Remedial action status
Training and procedures are being revised to identify gaps and ensure that all staff are aware of procedures to set AN codes and proposed switch dates correctly.	01/05/2019	Identified
Preventative actions taken to ensure no further issues will occur	**Completion date**	
Adherence to procedures will be periodically checked, and procedures modified as necessary to ensure that they can be followed in practice and will result in correct outcomes.	01/10/2019	

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

Code reference

Clause 10(2) Schedule 11.3

Code related audit information

If the losing trader determines a different date, the losing trader must also complete the switch by providing to the registry manager as described in subclause (1)(a):

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

Audit observation

The Pulse and Property Power event detail reports for 01/07/18 to 09/01/19 were reviewed to assess compliance with the setting of event dates requirements.

Audit commentary

Pulse

Switches were completed as required by this clause.

Analysis found nine ICPs had event dates more than ten business days after receipt of the NT. Of those seven had an AN proposed event date which matched the NT proposed event date, and two did not. This is recorded as non-compliance below and in **section 4.8**.

Property Power

Switches were completed as required by this clause.

Analysis found one ICP where Property Power's proposed event date was the day before the gaining trader's requested date. This is recorded as non-compliance below and in **section 4.8**.

Audit outcome

Non-compliant

Non-compliance	Description
Audit Ref: 4.9 With: Clause 10(2) Schedule 11.3 From: 01-Jul-18 To: 07-Jan-19	**Pulse** Pulse proposed a different event date more than ten days from receipt of NT for two switch moves. Both switches were later completed with the same date as the gaining trader requested. **Property Power** Pulse proposed an event date before the gaining trader's requested date for one switch move. The switch was later completed with a compliant event date. Potential impact: Low Actual impact: Low Audit history: Twice previously Controls: Strong Breach risk rating: 1
Audit risk rating	**Rationale for audit risk rating**
Low	Controls are rated as strong, as all three instances were due to human error and represent a very small error rate. The impact is assessed to be low. The incorrect proposed event dates occurred due to human error and the three switches affected were completed with a compliant date.

Actions taken to resolve the issue	Completion date	Remedial action status
All errors were identified and corrected before they could have any effect.	-	Identified
Preventative actions taken to ensure no further issues will occur	**Completion date**	
Procedures will be reviewed periodically to ensure that they match actual working practices and result in compliant outcomes. Human error is to be expected, but each instance will be treated as a learning opportunity for the entire team.	01/08/2019	

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 Pulse and Property Power event detail reports for 01/07/18 to 09/01/19 were reviewed to identify CS files issued 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 an average daily kWh that was negative, zero, or over 200 kWh were identified, and a sample were checked to confirm whether the average daily kWh was recorded correctly.

The process to manage the sending of the CS file within five business days of the NT receipt date was examined. The switch breach history reports for the audit period were reviewed to identify late CS files.

Audit commentary

Pulse

CS content

CS files are automatically generated by Gentrack, and the estimated daily consumption is expected to be based on the last billed period, regardless of whether these are actuals or estimates. The average daily consumption is expected to be calculated using the volume from the last two validated reads divided by the days between these reads and calculated using only each meter register with an **X flow**. If there are no reads available during the period of supply the last values provided by the last trader in their CS file are expected to be used. Pulses calculation methodology is recorded as non-compliance below.

Analysis estimated daily kWh on the event detail report identified:

Count of switch move CS files	Estimated daily kWh
Negative	22
Zero	506
More than 200 kWh	10

A sample of 15 of these ICPs were checked (five negative, five with zero, and five with more than 200 kWh), and I found 12 (80%) (all six ICPs with negative consumption, three with consumption more than 200 kWh per day and three with zero consumption) were incorrectly calculated. This was largely due to the average daily consumption is being calculated from the invoicing area of Gentrack and if there has been any reverse and rebilling this creates an invalid figure.

I checked the accuracy of CS content by reviewing a sample of files. I identified the following issues with CS content:

- three ICPs where the actual reads from a date earlier than the CS event date were incorrectly labelled as actuals, these should be labelled as estimates as they weren't for the event date; and
- ICP 0000375181HB5CF had an actual read for the event date but an read from an earlier date was used in the CS file therefore the 18 kWh of consumption for the intervening period to was passed to the gaining trader.

ICP	CS read date	Switch event date
0000375181HB5CF	14/11/2018	27/11/18

CS timeliness

The switch breach report contained nine late CS files for switch moves for Pulse. All were checked and found not to be genuine, the CS files were issued within the required timeframes.

Property Power

CS content

CS files were automatically generated by Orion and manually checked prior to being sent to the registry. Analysis estimated daily kWh on the event detail report identified:

Count of switch move CS files	Estimated daily kWh
Negative	-
Zero	41
More than 200 kWh	28

A sample of ten of these ICPs were checked (five with zero and five with more than 200 kWh), and I found that all were calculated incorrectly as the average daily consumption was being calculated over the last 12 months rather than from the last validated read to read period. This is recorded as non-compliance below.

I checked the accuracy of the CS file content using the read files as the Orion system is no longer in use. Therefore, I was able to check the accuracy of all fields except that of average daily consumption. All files checked confirmed that the details were correct.

CS timeliness

The switch breach report recorded one late CS file for a switch move. The breach was checked and found not to be genuine.

Audit outcome

Non-compliant

Non-compliance	Description
Audit Ref: 4.10 With: Clause 11 Schedule 11.3 From: 09-Jul-18 To: 09-Jan-19	**Pulse** Average daily consumption calculation methodology incorrect. 12 of 15 examples of questionable average daily consumptions checked found to be incorrect. Three ICPs with reads incorrectly labelled as actual. One ICP sent with the incorrect final read. **Property Power** Average daily consumption calculation methodology incorrect. Potential impact: Medium Actual impact: Unknown Audit history: Once previously Controls: Weak Breach risk rating: 6
Audit risk rating	**Rationale for audit risk rating**
Medium	Controls are rated as weak, because the calculation of average daily consumption for both Pulse and Property Power is incorrect resulting in inaccuracy in the CS files being sent. Additional to this, final reads being ignored is resulting in consumption being passed to the gaining trader. The impact is assessed to be medium based on those ICPs that are not sent with the correct read for the event date when this information is available. And the potential that the sending of the incorrect average daily consumption has, but this will vary dependent on how the gaining trader uses this information.

Actions taken to resolve the issue	Completion date	Remedial action status
The Code does not specify any methodology by which average daily consumption should be calculated. Indeed, it doesn't mention the requirement to provide this data at all. The only requirement is imposed by the Registry functional spec, which uses the term "last read period". Moreover, the value is only required to "indicate" this average, suggesting that approximations are expected. Since the term "last read period" is not defined either in the code or the spec, we believe we are fully compliant in this respect.	03/01/2019	Disputed
Preventative actions taken to ensure no further issues will occur	**Completion date**	

We have identified a process for ensuring that a non-negative value is set, using the most accurate reads available (billed Actual reads, or Meter Removal/ Installation or Switching reads if these are not available). We are looking at implementing this process later this year.	31/12/2019	

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

Code reference

Clause 12 Schedule 11.3

Code related audit information

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

- *if the switch meter reading established by the gaining trader differs by less than 200 kWh from that provided by the losing trader, both traders must use the switch event meter reading provided by the gaining trader (clause 12(2)(a)); or*
- *if the switch event meter reading provided by the losing trader differs by 200 kWh or more from a value established by the gaining trader, the gaining trader may dispute the switch meter reading. In this case, the gaining trader, within 4 calendar months of the actual event date, must provide to the losing trader a changed validated meter reading or a permanent estimate supported by two validated meter readings and the losing trader must either (clause 12(2)(b) and clause 12(3)):*
- *advise the gaining trader if it does not accept the switch event meter reading and the losing trader and the gaining trader must resolve the dispute in accordance with the disputes procedure in clause 15.29 (with all necessary amendments) (clause 12(3)(a)); or*
- *if the losing trader notifies its acceptance or does not provide any response, the losing trader must use the switch event meter reading supplied by the gaining trader (clause 12(3)(b)).*

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

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

Audit observation

The Pulse and Property Power event detail reports for 01/07/18 to 09/01/19 were analysed to identify all read change requests and acknowledgements during the audit period. A sample of 11 RR files issued by Pulse and five AC files issued by Pulse were checked. No RR files were issued by Property Power for switch moves, and one AC file was issued.

I also checked a sample of five estimated CS files provided by other traders where no RR was issued to determine whether the correct readings were recorded in Gentrack for Pulse. No affected CS files were identified for Property Power.

The switch breach history reports for the audit period were reviewed to identify late RR and AC files.

Audit commentary

Pulse

RR requests are generally initiated via email between the two parties and only once an agreement has been reached an RR file is sent to complete. All RR requests are evaluated and validated against the ICP information. If the request is within validation requirements these are accepted.

Pulse issued 59 RR files for transfer switches. 46 were accepted and 13 were rejected. Nine of the rejected files were accepted on reissue. A sample of five rejected files and six accepted files were checked. In all cases there was a genuine reason for Pulse's RR. Four of the RRs sent were not supported by two actual reads obtained by Pulse. In these instances a customer photo read was treated as one or both of the actual reads. This is discussed and recorded as non-compliance in **section 6.6**.

Pulse issued 437 AC files for transfer switches. 324 were accepted and 113 were rejected. A sample of five AC rejections were checked. All were rejected for valid reasons and a subsequent RR was received and accepted in two instances with corrected data. The other two ICPs were withdrawn and the switch completed for a different date.

The 2018 audit found some issues relating to the application of CS estimate and accepted RR reads in Cobra. Controls have been improved and monitoring has been put in place to prevent recurrence of these issues, as discussed in **section 12.7**.

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

The switch breach report recorded no late AC files and six late RR files for switch moves. One of the breaches was not genuine, and the remaining breaches were checked to determine the reasons for the delays. These were all checked and found that the delay was caused by the time to gain two actual reads in all instances.

Property Power

No RR files were issued by Property Power for switch moves. One AC file was issued, which accepted the other trader's RR. This final read was sent as an estimate and the gaining trader provided an actual read for the event date.

The switch breach report did not record any late RR or AC files for Property Power.

Audit outcome

Non-compliant

Non-compliance	Description
Audit Ref: 4.11 With: Clause 12 Schedule 11.3 From: 02-Oct-18 To: 04-Jan-19	**Pulse** Five late RR files for switch moves. Three RRs were not supported by two validated actual reads. Potential impact: Low Actual impact: Low Audit history: Multiple times Controls: Moderate Breach risk rating: 6
Audit risk rating	**Rationale for audit risk rating**
Low	The controls are rated as moderate as apart from the treatment of customer photo reads (which is being addressed) the process ensures that the RR are sent appropriately, and RR's received are managed correctly. The impact on reconciliation is assessed to low due to the high level of accuracy found.

Actions taken to resolve the issue	Completion date	Remedial action status
See section 4.4		Identified
Preventative actions taken to ensure no further issues will occur	**Completion date**	
See section 4.4.		

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

Code reference

Clause 13 Schedule 11.3

Code related audit information

The gaining trader switch process applies when a trader has an arrangement with a customer or embedded generator to trade electricity through or assume responsibility for:

- *a half hour metering installation (that is not a category 1 or 2 metering installation) at an ICP with a submission type of half hour in the registry and an AMI flag of "N"; or*
- *a half hour metering installation at an ICP that has a submission type of half hour in the registry and an AMI flag of "N" and is traded by the losing trader as non-half hour; or*
- *a non-half hour metering installation at an ICP at which the losing trader trades electricity through a half hour metering installation with an AMI flag of "N".*

If the uninvited direct sale agreement applies to an arrangement described above, the gaining trader must identify the period within which the customer or embedded generator may cancel the arrangement

in accordance with section 36M of the Fair Trading Act 1986. The arrangement is deemed to come into effect on the day after the expiry of that period.

A gaining trader must advise the registry manager of the switch and expected event date no later than 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 Pulse and Property Power deem all conditions to be met.

The Pulse and Property Power event detail reports for 01/07/18 to 09/01/19 were reviewed to identify all HH NTs issued during the audit period.

A typical sample of five switch move NTs for Pulse were checked to confirm whether they were notified to the registry within three business days, and that the correct switch type was selected. No NTs were issued by Property Power.

Audit commentary

Pulse

Nine Pulse HH switch requests were issued during the audit period.

The NT files for the Pulse HH switches contained the information required by this clause. The five NT files checked were sent within three days of pre-conditions being met.

As discussed in **sections 4.1** and **4.7**, I did not identify any ICPs with meter category 3 or higher, which were requested as transfer switches or switch moves.

Property Power

No HH NTs were issued by Property Power during the audit period.

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 3 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 Pulse and Property Power event detail reports for 01/07/18 to 09/01/19 were reviewed to identify all HH switches during the audit period and confirm that they were on time and correct content codes were provided.

The switch breach history reports for the audit period were reviewed to identify late AN files.

Audit commentary

Pulse

Review of the event detail report confirmed that no HH switch requests were issued to Pulse, and no HH AN files were provided.

The switch breach report did not record any late HH AN files for Pulse.

Property Power

Review of the event detail report confirmed that three HH switch requests were issued to Property Power, and AN files were provided on time.

The three files recorded the correct content code.

The switch breach report did not record any late HH AN files for Property Power.

Audit outcome

Compliant

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

Code reference

Clause 16 Schedule 11.3

Code related audit information

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

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

> *16(a)- give the losing trader or MEP for the ICP an opportunity to interrogate the metering installation immediately before the ICP is electrically disconnected or the metering equipment is removed; or*
>
> *16(b)- carry out an interrogation and, no later than five business days after the metering installation is electrically disconnected or removed, advise the losing trader of the results and metering component numbers for each data channel in the metering installation.*

Audit observation

The HH switching process was examined. The Pulse and Property Power event detail reports for 01/07/18 to 09/01/19 were reviewed to identify all HH switches during the audit period.

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

Audit commentary

Pulse

Pulse completed nine HH switches. The content for the files was as expected.

The switch breach report did not record any late HH CS files for Pulse.

Property Power

Property Power did not complete any HH switches during the audit period.

The switch breach report did not record any late HH CS files for Property Power.

Audit outcome

Compliant

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

Code reference

Clauses 17 and 18 Schedule 11.3

Code related audit information

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

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

- *for each ICP, the trader withdrawing the switch request must provide the registry manager with (clause 18(c)):*
    - *the participant identifier of the trader making the withdrawal request (clause 18(c)(i)); and*
    - *the withdrawal advisory code published by the Authority. (clause 18(c)(ii))*
- *within five business days after receiving notice from the registry manager of a switch, the trader receiving the withdrawal must advise the registry manager that the switch withdrawal request is accepted or rejected. A switch withdrawal request must not become effective until accepted by the trader who received the withdrawal (clause 18(d))*
- *on receipt of a rejection notice from the registry manager, in accordance with clause 18(d), a trader may re-submit the switch withdrawal request for an ICP in accordance with clause 18(c). All switch withdrawal requests must be resolved within 10 business days after the date of the initial switch withdrawal request (clause 18(e))*
- *if the trader requests that a switch request be withdrawn, and the resolution of that switch withdrawal request results in the switch proceeding, within 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

The Pulse and Property Power event detail reports for 01/07/18 to 09/01/19 was reviewed to:

- identify all switch withdrawal requests issued by Pulse and Property Power, the content of a sample of at least two ICPs from the event detail report for each withdrawal code (or all if less than two were available) were checked using the typical sampling methodology;
- identify all switch withdrawal acknowledgements issued by Pulse or Property Power (a sample of 15 rejections were checked for Pulse, no files were rejected by Property Power); and
- confirm timeliness of switch requests, as this is not currently being identified in the switch breach report.

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

Audit commentary

Pulse

The content of 16 Pulse NW files was checked. In all cases the withdrawal reasons provided were accurate. I identified one incorrect withdrawal code applied in section **4.17**. This is recorded as non-compliance.

45 (1.7%) of the 1,898 NWs were issued more than two calendar months after the event date. 12 of those used the code for wrong premises, and I note that this issue often does not become apparent for an extended period after a switch completes. A sample of the ten latest files were checked, and I found that in eight instances it took longer than the two months allowed to discover that the switch needed to be withdrawn for a variety of valid reasons. In six of these instances it was the customer who initiated the withdrawal process. Whilst technically non-compliant it was more accurate in all instances to withdraw the switch. The remaining two ICPs had a switch withdrawal issued in error. These were both rejected by the other trader.

243 (7.4%) of the 3,255 AWs issued by Pulse were rejections. I reviewed a sample of 15 rejections by Pulse, and confirmed they were rejected based the information available at the time the response was issued. In some cases, Pulse asked the other trader to reissue the withdrawal with the correct code, and later accepted.

The switch breach report recorded no late NWs and one late AW for Pulse. The breach was found not to be genuine.

Property Power

The content of eight Property Power NW files was checked. In all cases the withdrawal reasons provided were accurate.

One (3%) of the 30 NWs was issued more than 60 business days after the event date. The late file was checked, and this was issued in error.

All 17 AWs issued by Property Power accepted the other trader's NW.

The switch breach report recorded no late AWs and one late NW for Property Power. The breach was found not to be genuine.

Audit outcome

Non-compliant

Non-compliance	Description
Audit Ref: 4.15 With: Clauses 17 and 18 Schedule 11.3 From: 01-Jul-18 To: 09-Jan-19	**Pulse** 1 incorrect NW code applied. 45 late NW files. **Property Power** 1 late NW file. Potential impact: Low Actual impact: Low Audit history: Twice Controls: Moderate Breach risk rating: 2
Audit risk rating	**Rationale for audit risk rating**
Low	Controls are rated as moderate, as they are sufficient to prevent most errors. The impact is assessed to be low: • the NWs issued in error have no impact, because Pulse is the only participant affected • a small proportion of NWs were issued late.

Actions taken to resolve the issue	Completion date	Remedial action status
As noted, late NW files cannot always be avoided. We believe the Code should be amended to reflect the fact that switching errors may take more than 2 months to detect.	01/03/2019	Identified
Preventative actions taken to ensure no further issues will occur	**Completion date**	
Every late NW request is manually reviewed, and issued only if the relevant team leader considers it is necessary.	01/03/2019	

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. Examples to confirm this procedure have been examined as part of the sending of final information for switches and read requests made.

Audit commentary

Pulse

All meter readings used in the switching process are validated meter readings or permanent estimates.

The 2018 audit found some issues which resulted in closing estimate switch and some switch gain reads being ignored by the Cobra historic estimate process. Changes have been made and monitoring has been put in place to prevent recurrence of these issues, as discussed in **section 12.7**.

Pulse's policies regarding the management of meter reading expenses is compliant.

Property Power

All meter readings used in the switching process are validated meter readings or permanent estimates.

Property Power's policies regarding the management of meter reading expenses is compliant.

Audit outcome

Compliant

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

Code reference

Clause 11.15AA to 11.15AB

Code related audit information

A trader that buys electricity from the clearing manager may elect to have a switch saving protection by giving notice to the Authority in writing.

If a protected trader enters into an arrangement with a customer of another trader (the losing trader), or a trader enters into an arrangement with a customer of a protected trader, to commence trading electricity with the customer, the losing trader must not, by any means, initiate Pulse with the customer to attempt to persuade the customer to terminate the arrangement during the period from the receipt of the NT to the event date of the switch including by:

11.15AB(4)(a)- making a counter offer to the customer; or

11.15AB(4)(b)- offering an enticement to the customer.

Audit observation

The Electricity Registry switch save protected retailer list was examined and confirmed that Property Power has been switch save protected since 31/8/15, and Pulse has been switch save protected since 13/01/15.

Win back processes were examined to determine whether they are compliant.

I checked the Pulse and Property Power event detail reports for 01/07/18 to 09/01/19 to identify any withdrawn switches with a CX code applied prior to the switch completion date in relation to any switch save protected retailers.

Audit commentary

Pulse

Pulse does not initiate any win-back activity with lost customers during or after the switch. Contact is only made with departing customers to confirm their notice period and any termination fees that apply and discuss outstanding accounts, if required.

Analysis of the event detail report identified two Pulse NWs with reason code CX that were issued before the switch event date. Both were checked and found:

- the customer at ICP 0000527625NR630 was contacted to confirm that they wished the switch to go ahead and the customer notes recorded that during the course of the conversation they requested Pulse make a better offer for them to stay; unfortunately, the call recording system was not working that day, so I was unable to listen to the call to verify this and therefore am unable to determine compliance for this call.
- the call was provided in relation to the cancellation of the switch for ICP 0339050705LC706 and this was a wrong premise requested by the gaining trader as the customer clearly stated they were with Pulse and were not moving - this should have been sent with a withdrawal reason of wrong premise and is recorded as non-compliance in **section 4.15**.

Property Power

Analysis of the event detail report did not identify any Property Power NWs with reason code CX that were issued before the switch event date. They are no longer trading customers so no win back activity is undertaken.

Property Power does not initiate any win-back activity with lost customers during or after the switch. Contact is only made with departing customers to discuss outstanding accounts if required.

Audit outcome

Unable to determine

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

I reviewed the processes to identify shared unmetered load.

The Pulse and Property Power registry list files as at 09/01/19 were examined and found:

- Pulse has 18 ICPs with shared unmetered load; and
- Property Power has no ICPs with shared unmetered load.

Audit commentary

Pulse

The trader unmetered kWh was compared to the distributor's unmetered kWh for the 18 ICPs with shared unmetered load. All matched within ±1 kWh.

Property Power

No shared unmetered load was supplied during the audit period.

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 Pulse and Property Power list files for 09/01/19 were examined to identify any ICPs with annual unmetered load that exceeds 3,000 kWh.

Audit commentary

Pulse

Pulse supplied one ICP with annual unmetered consumption between 3,000 and 6,000 kWh. The load was predictable and of a type approved and published by the Authority.

Property Power

Property Power does not currently supply any ICPs with unmetered load.

Property Power supplied one ICP with annual unmetered consumption between 3,000 and 6,000 kWh. The load was predictable and of a type approved and published by the Authority.

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 MEP proposes to take or is taking to reduce the unmetered load.*

Audit observation

The Pulse and Property Power list files for 09/01/19 were examined to identify any ICPs with annual unmetered load that exceeds 3,000 kWh.

Audit commentary

Pulse

Pulse supplies one ICP with annual unmetered consumption between 3,000 and 6,000 kWh. The load was predictable and of a type approved and published by the Authority. No ICPs had load exceeding 6,000 kWh.

Property Power

Property Power does not currently supply any ICPs with unmetered load.

Property Power supplied one ICP with annual unmetered consumption between 3,000 and 6,000 kWh. The load was predictable and of a type approved and published by the Authority. No ICPs had load exceeding 6,000 kWh.

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 Pulse and Property Power list files for 09/01/19 were examined to identify any DUML ICPs.

Audit commentary

Pulse and Property Power do not deal with any 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

The registry list and meter installation detail reports as at 09/01/19 were examined to determine whether any ICPs with generation were supplied during the audit period. Processes for distributed generation were reviewed.

Audit commentary

Pulse

Metering installations installed

Pulse's new connection process includes a check that metering is installed before electrical connection occurs, and that any unmetered load is quantified. No submission information is determined using subtraction.

Analysis of the registry list found 11 ICPs without metering recorded and the unmetered flag set to no. For all 11 ICPs an MEP nomination had been made and accepted, and Pulse is compliant.

Distributed Generation

To identify new distributed generation, Pulse relies on solar installers or customers informing them when distributed generation is present, and registry notifications received when the distributor updates generation related fields. This is checked as part of the registry validation process.

1,318 active ICPs with generation listed by the distributor were identified on Pulse's registry list. The records were matched to the metering installation details report, and I found 28 ICPs did not have import/export metering installed. Pulse advised that these ICPs are in the process of having solar generation installed, and their metering will be upgraded as part of the process. A sample of eight ICPs were checked, four now have generation metering installed and RPS PV1 profiles, and the other four are still in the process of having solar installed.

Generation profiles were checked.

- 345 ICPs with import/export metering and a profile that did not indicate generation were identified. I checked the database code in Cobra and found that any meters with ICP installation type B or G, fuel type solar and an EG content code have their profile automatically changed to PV1 for submission. The incorrect profile is recorded on the registry, and this is recorded as non-compliance in **section 2.1**.
- Two of the 345 ICPs described above (0011207188EL866 and 1001152044CK79A) had a generation fuel type of wind, and generation consumption was automatically reported with PV1 profile. Pulse updated the profile to EG1 during the audit and intends to provide corrected wash up information.
- Profiles for all generating ICPs were compared to the fuel type and found to be reasonable, except for the two wind generation ICPs described above.

Non-compliances identified in the 2018 audit were followed up:

- no ICPs had PV1 or EG1 profile only; and
- five ICPs with distributed generation had an incorrect profile start date recorded on the registry at the time of the 2018 audit which had no impact on submission because Cobra's processes ensure that any NHH ICP with EG metering with consumption will have the consumption reported against the PV1 profile, however one date had been corrected, but four remain unchanged.

ICP	Profile	Recorded date	Correct date	2019 Comments
0000002887TRFF3	RPS PV1	1/04/2018	23/01/2018	No change
0000003680UNF4A	RPS PV1	1/04/2018	02/02/2018	No change
0000004804NT7E9	RPS PV1	23/05/2018	26/01/2018	Cleared
0000004977UN9F8	RPS PV1	1/03/2018	19/01/2018	No change
0000005103UNC02	RPS PV1	22/02/2018	21/02/2018	No change

Bridged meters

Pulse provided a list of four ICPs where remote disconnection had occurred then the meter had been bridged to reconnect. This is recorded as non-compliance below. I reviewed the affected meters and found they had all later been unbridged.

Corrections were not consistently processed for all bridged ICPs. This is recorded as non-compliance in **section 8.1**.

Property Power

Property Power's new connection process includes a check that metering is installed before electrical connection occurs, and that any unmetered load is quantified. No submission information is determined using subtraction.

Property Power's list file showed no ICPs with generation capacity listed by the distributor.

No bridged Property Power meters were identified during the audit period.

Audit outcome

Non-compliant

Non-compliance	Description
Audit Ref: 6.1 With: Clause 10.13 and Clause 15.2 From: 09-Sep-18 To: 17-Jan-19	**Pulse** Energy is not metered and quantified according to the code where meters are bridged. Potential impact: Low 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. Bridging only occurs where a soft reconnection cannot be performed after hours and the customer urgently requires their energy supply for health and safety reasons. The impact as rated as low, because only four bridged meters were identified, and consumption during the bridged period is expected to be low.

Actions taken to resolve the issue	Completion date	Remedial action status
Contractor reports are routinely reviewed to identify bridged meters, and reports of bridging are addressed immediately.	03/01/2019	Identified
Preventative actions taken to ensure no further issues will occur	**Completion date**	
The Revenue Assurance team is responsible for ensuring that bridged consumption is estimated and records updated appropriately.	01/05/2019	

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

Code reference

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

Code related audit information

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

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

The participant responsible for the metering installation must:

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

Audit observation

The NSP table was reviewed to confirm whether Pulse or Property Power is responsible for any GIPs.

Audit commentary

Review of the NSP table confirmed that Pulse and Property Power are not responsible for any GIPs.

Audit outcome

Compliant

6.3. Certification of control devices (Clause 33 Schedule 10.7 and clause 2(2) Schedule 15.3)

Code reference

Clause 33 Schedule 10.7 and clause 2(2) Schedule 15.3

Code related audit information

The reconciliation participant must advise the metering equipment provider if a control device is used to control load or switch meter registers.

The reconciliation participant must ensure the control device is certified prior to using it for reconciliation purposes.

Audit observation

The Pulse and Property Power registry list reports for 1/07/18 to 09/01/19 were reviewed to confirm the profiles used.

Audit commentary

Pulse and Property Power have not used any profiles which rely on the use of control devices for reconciliation purposes.

Audit outcome

Compliant

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

Code reference

Clause 10.43(2) and (3)

Code related audit information

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

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

Audit observation

Processes relating to defective metering were examined.

Nine examples of potential defective meters were reviewed for Pulse, to determine whether the MEP was advised and if appropriate action was taken.

No defective meters were identified for Property Power.

Audit commentary

Pulse

Defective meters are typically identified through the meter reading validation process, or from information provided by the meter read provider or customer.

Upon identifying a possible defective meter, Pulse raises a field services job to investigate. I reviewed nine examples of potential defective meters, including stopped or faulty meters and bridged meters. In all cases a field services job was raised, and the MEP advised.

Property Power

Defective meters are typically identified through the meter reading validation process, or from information provided by the meter read provider or customer.

No defective 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

Pulse and Property Power

The data collection process was examined.

Clock synchronisation processes for agents and MEPS were reviewed as part of their agent and MEP audits. Agents are to advise Pulse and Property Power of clock synchronisation discrepancies and adjustments.

Pioneer

ANI0331 generation data is collected by Accucal. Accual have not undergone an agent audit to confirm their compliance with the data collection and clock synchronisation requirements.

Audit commentary

Pulse and Property Power

All information used to determine volume is collected by agents or MEPs. Agents and MEPs monitor clock synchronisation, this is covered as part of their audits.

Pulse and Property Power receive emailed information on clock synchronisation events and confirmed that no errors outside the thresholds have occurred during the audit period.

Pioneer

Compliance was unable to be confirmed because Accucal have not undergone an agent audit.

Audit outcome

Compliant

Audit outcome (Pioneer)

Unable to determine

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. I traced reads for a small sample of manually read NHH ICPs from the source files to Gentrack and Cobra for Pulse, and Orion data and submission data for Property Power.

Processes for review of meter condition information provided by Wells were reviewed, including reviewing a sample of events.

Processes for customer and photo reads were reviewed.

Audit commentary

Pulse

A sample of readings were checked from the source files provided by Wells to Gentrack and Cobra and found to match.

Data validation

During manual interrogation, the meter register value is collected and entered into a hand-held device. This reading enters Pulse's 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. I confirmed with Wells that there were no changes to their processes or systems since their May 2018 audit that could have a negative impact on Pulse's compliance.

Pulse archives the files containing meter condition information, but they are not consistently reviewed. The files may be searched if an issue is identified for a particular ICP through other validations. This is recorded as non-compliance below.

Wells also sends a monthly email containing any ICPs with missing or broken seals, which are reviewed and acted upon. I reviewed six months of these reports and found there was one meter with a missing or broken seal, and a job had been raised with the MEP.

Customer readings

Pulse's customer care team validate customer against the customer read history. If the read cannot be validated against at least two actual validated readings from another source, staff have been instructed to enter the readings as estimates. Pulse were using an online tool to validate the date of customer photo read and applying this as an actual read based on the date of the photo being verified. I explained that as the photo does not include all sides of the meter that a customer photo read can only be treated as an actual if it can be validated against two actual validated reads obtained by Pulse. Pulse are modifying their processes accordingly.

I reviewed four examples of customer readings and found:

- three had been appropriately validated with two of these were entered as validated reads, and one was entered as a customer reading which is treated as an estimate in Cobra; and
- one was not entered, because actual readings were received from the meter reader three days before.

I identified seven instances of photo readings which had not been validated against at least two readings from another source to support RRs. This is discussed in **sections 4.4** and **4.11**.

Property Power

A sample of readings were checked from the source files provided by Wells to Orion data and submission data and found to match.

Data validation

During manual interrogation, the meter register value is collected and entered into a hand-held device. This reading enters Property Power's 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 reports containing all missing seal and broken seal events.

This information is saved on Property Power's network and is reviewed only if an issue is identified through other validation processes. Not routinely reviewing the meter condition information is recorded as non-compliance below. The monthly report of missing and broken seal events is reviewed and acted upon if any issues are present. No meter condition events were identified during the audit period.

Customer readings

Customer and photo readings are treated as actual in Orion and sent to JCC as validated readings. Two examples of customer readings were identified during the audit period, both had been validated against at least two actual readings from another source. Examination of the RR files found seven examples where the customer photo reads had not been validated against two actual reads from other sources. This is detailed in **sections 4.4** and **4.11**.

Audit outcome

Non-compliant

Non-compliance	Description
Audit Ref: 6.6 With: Clause 3(1), 3(2) and 5 Schedule 15.2 From: 01-Jul-18 To: 27-Feb-19	**Pulse** Monthly reporting on missing and broken seals is reviewed, but reporting on other meter events is not reviewed unless an issue is identified. Seven photo reads were treated as validated, when they had not been validated against at least two actual reads from other sources. **Property Power** Meter condition information provided by Wells is not routinely reviewed. Potential impact: Low Actual impact: Low Audit history: Once Controls: Weak Breach risk rating: 3
Audit risk rating	**Rationale for audit risk rating**
Low	The controls are rated as weak, because they are not sufficient to ensure that meter condition information provided by Wells is reviewed and acted upon. The impact is expected to be low.

Actions taken to resolve the issue	Completion date	Remedial action status
We are concerned to note that the Auditor has been given incorrect information on this topic. In fact, Wells meter condition reports are routinely reviewed by the Field Services team, and any actionable reports are acted upon.		Disputed
Preventative actions taken to ensure no further issues will occur	**Completion date**	
N/A		

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

Code reference

Clause 6 Schedule 15.2

Code related audit information

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

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

Audit observation

The process of the application of meter readings was examined.

Audit commentary

NHH meter readings provided by MEPs and agents are applied as at 2400hrs. Switch in readings are appropriately treated as if they have occurred at midnight on the switch in date. Application of reads was reviewed as part of the historic estimate checks, discussed in **section 12.11**.

All AMI systems have a clock synchronisation function, which ensures correct time-stamping. Manual readings taken by MRSL and 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**.

Audit outcome

Compliant

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

Code reference

Clause 7(1) and (2) Schedule 15.2

Code related audit information

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

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

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

Audit observation

The process to manage missed reads was examined.

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".

Pulse

Pulse has made good progress with read attainment during the audit period.

At the beginning of the audit period, weekly reports were provided showing all unread ICPs. The field services team started with the oldest unread ICPs and moved them to manual reading routes and/or referred them to customer care so that the customer could be contracted to arrange access to read the meters. Customer care would contact the affected customers as other workload allowed.

The process was changed in late January 2019, and new staff have been employed to contact affected customers and improve read attainment. PRADA is also checked to determine whether there are AMI reads available on surrounding dates which can be loaded into Gentrack. The billing and field services teams are working closely to improve read attainment.

This process change has had a dramatic impact, the number of ICPs unread for six months or more was 1500 in late January but had dropped to 700 by late February. Pulse will continue to focus on the ICPs with the longest unread periods first and work backwards.

Pulse provided a report which contained 27 ICPs where the period of supply had ended and the ICP did not receive an actual read. Of those:

- 25 switched in on actual readings and are compliant;
- one was a backdated switch out and had a 38 day period of supply (readings were obtained before the switch request was received, but these fell outside the period of supply because the switch request was backdated); and
- one had a 27 day period of supply, and there was insufficient time to obtain an actual read before it switched out.

Property Power

AMI reads were received for most Property Power NHH ICPs, with the remainder read manually by Wells.

Historically, when a new ICP without AMI metering switched in, Property Power would send a request to Wells to read the ICP. This was largely a manual process and was not completed in the last three to four months that Property Power supplied ICPs, resulting in one ICP unread during the period of supply.

Up to July 2018, a query was run in Orion to identify any ICPs which had not had an actual read in the previous four months. The ICPs were followed up, and the action taken depended on the reason a read cannot be obtained. This process was ceased just prior to Property Power's ICPs switching out to Pulse.

Property Power provided a report which contained six ICPs where the period of supply had ended and the ICP did not receive an actual read. Of those:

- one switched in on actual reading and is compliant;
- three were withdrawn, leaving no period of supply and are compliant;
- one period of supply ended before the current audit period; and
- one ICP was unread because a read request was not sent to Wells, the ICP was supplied for 136 days.

Audit outcome

Non-compliant

Non-compliance	Description
Audit Ref: 6.8 With: Clause 7(1) and (2) Schedule 15.2 From: 03-Jul-18 To: 26-Aug-18	**Pulse** Two ICPs were unread during the period of supply. Exceptional circumstances did not apply, and the best endeavours requirement was not met. **Property Power** One ICP was unread during the period of supply. Exceptional circumstances did not apply, and the best endeavours requirement was not met. Potential impact: Low Actual impact: Low Audit history: Multiple times Controls: Moderate Breach risk rating: 2
Audit risk rating	**Rationale for audit risk rating**
Low	Controls are rated as moderate, because most ICPs had actual reads during the period of supply. No ICPs are currently supplied by Property Power. The impact is low, because only three ICPs without an actual read during the period of supply were identified.

Actions taken to resolve the issue	Completion date	Remedial action status
Missing read reports are reviewed regularly.	Date	Investigating
Preventative actions taken to ensure no further issues will occur	**Completion date**	
We are investigating the feasibility of adding a new check to alert relevant teams when an NT is received for an ICP that has never been read. If it is feasible to do so, a special read may be requested at that time. However, this would only work with NTs where we can set a future completion date.	01/10/2019	

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 the months of August to November 2018 were provided by Pulse, and June 2018 was provided by Property Power.

A sample of ten ICPs not read in the previous 12 months were reviewed for Pulse to determine whether reasonable endeavours were used to attain reads, and if exceptional circumstances existed.

ICPs unread in the previous 12 months were discussed with Property Power.

Audit commentary

Pulse

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

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
Aug 18	182	44	79	98.9%
Sep 18	181	51	92	99.9%
Oct 18	173	60	125	99.8%
Nov 18	173	53	109	99.9%

I reviewed ten ICPs not read in the previous 12 months determine whether exceptional circumstances existed, and if Pulse had used their best endeavours to obtain readings.

- one ICP was decommissioned, and was included in the unread ICPs in error;
- for four ICPs exceptional circumstances existed or the best endeavours requirements were met; and
- for five ICPs no action was taken and exceptional circumstances did not exist, in three cases the issues preventing read attainment were intermittent and actual reads have now been received, in the other two cases the customer has now been contacted or is scheduled to be contacted.

Meter reading frequency reports are scheduled to be submitted to the EA by business day 20. Copies of the reports for August to November 2018 were provided during the audit. I viewed emails to confirm that the reports were sent earlier than 20 business days after the end of the month.

Property Power

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

The monthly meter reading report for June 2018 was reviewed.

Month	Total NSPs where ICPs were supplied > 12 months	NSPs <100% read	ICPs unread for 12 months	Overall percentage read
Jun 2018	23	3	4	99.35%

Four ICPs active for 12 months or more as at 30/06/18 had not received an actual reading in the previous 12 months. This was largely due to ICPs not being passed to Wells for reading in the final few months of supply.

The final meter reading frequency report was submitted to the EA for June 2018. No July 2018 report was provided although 12 NHH ICPs were supplied until August 2018, and this is recorded as non-compliance below. The content and format of the meter reading frequency reports is compliant.

Audit outcome

Non-compliant

Non-compliance	Description
Audit Ref: 6.9 With: Clause 8(1) and (2) Schedule 15.2 From: July 2018, November 2018	**Pulse** For nine ICPs without an actual read for 12 months, exceptional circumstances could not be confirmed, and there was insufficient evidence that the best endeavours requirement was met. **Property Power** No meter reading frequency report was submitted for July 2018, although some NHH ICPs were active with Property Power until August 2018. For four ICPs without an actual read for 12 months, exceptional circumstances could not be confirmed, and there was insufficient evidence that the best endeavours requirement was met. Potential impact: Low Actual impact: Low Audit history: Once previously Controls: Moderate Breach risk rating: 2
Audit risk rating	**Rationale for audit risk rating**
Low	Controls for Pulse and Property Power were weak at the beginning of the audit period but have improved during the audit period to moderate and are expected to move to strong in future. The impact is low for Pulse and Property Power, because overall read attainment rates are high.

Actions taken to resolve the issue	Completion date	Remedial action status
New resources have been allocated to improving read attainment for ICPs that have not been read in 6 months. Thanks to these efforts, the number of such ICPs has decreased dramatically in the past 3 months. Efforts will be made to extract the memo content relating to meter read attainment from Gentrack.	03/01/2019	Identified
Preventative actions taken to ensure no further issues will occur	**Completion date**	
New reporting and procedures are being prepared to ensure that read attainment is maximised before reaching the 12 month threshold, and that best endeavours are being made to reach every meter.	01/08/2019	

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 the months of August to November 2018 were provided by Pulse, and June 2018 was provided by Property Power.

A sample of ten ICPs not read in the previous four months were reviewed for Pulse to determine whether reasonable endeavours were used to attain reads, and if exceptional circumstances existed.

Property Power achieved compliance for all NSPs.

Audit commentary

Pulse

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

The monthly meter reading reports provided were reviewed.

Month	Total NSPs where ICPs were supplied > 4 months	NSPs <90% read	ICPs unread for 4 months	Overall percentage read
Aug 18	182	-	860	98.9%
Sep 18	181	3	1053	98.6%
Oct 18	173	3	1259	98.3%
Nov 18	173	11	1891	97.5%

All NSPs where less than 90% of ICPs were read for August to November 2018 were reviewed. Pulse confirmed that they have not reviewed ICPs unread for four months or less. Exceptional circumstances could not be confirmed, and there was insufficient evidence that the best endeavours requirement was met.

Property Power

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

The monthly meter reading report for June 2018 was reviewed.

Month	Total NSPs where ICPs were supplied > 4 months	NSPs <90% read	ICPs unread for 4 months	Overall percentage read
Jun 2018	22	-	10	98.52%

Compliance was achieved for all NSPs.

Audit outcome

Non-compliant

Non-compliance	Description
Audit Ref: 6.10 With: Clause 9(1) and (2) Schedule 15.2 From: Sep-Nov 2018	**Pulse** For NSPs without at least 90% of ICPs read within four months, exceptional circumstances could not be confirmed, and there was insufficient evidence that the best endeavours requirement was met. Potential impact: Low Actual impact: Low Audit history: Once Controls: Weak Breach risk rating: 3
Audit risk rating	**Rationale for audit risk rating**
Low	Controls remain weak for ICPs unread at four months but are expected to improve to at least moderate during the next audit period. The impact is low, because overall read attainment rates are high.

Actions taken to resolve the issue	Completion date	Remedial action status
New resources have been allocated to improving read attainment for ICPs that have not been read in 6 months. Thanks to these efforts, the number of such ICPs has decreased dramatically in the past 3 months.	03/01/2019	Identified
Preventative actions taken to ensure no further issues will occur	**Completion date**	
New reporting and procedures are being prepared to ensure that read attainment is maximised before reaching the 12 month threshold, and that best endeavours are being made to reach every meter.	01/08/2019	

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 as an agent. 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 Pulse's and Property Power's agents and MEPs as part of their own audits.

I confirmed with Wells that there were no changes to their processes or systems since their May 2018 audit that could have a negative impact on Pulse or Property Power's compliance.

Audit outcome

Compliant

6.12. HHR data collection (Clause 11(1) Schedule 15.2)

Code reference

Clause 11(1) Schedule 15.2

Code related audit information

Raw meter data from all electronically interrogated metering installations must be obtained via the services access interface.

This may be carried out by a portable device or remotely.

Audit observation

Pulse and Property Power

HHR data is collected by EDMI and AMS. HHR data collection was reviewed as part of their agent audits.

Pioneer

ANI0331 generation data is collected by Accucal. Accual have not undergone an agent audit.

Audit commentary

Pulse and Property Power

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

Pioneer

Compliance was unable to be confirmed because Accucal have not undergone an agent audit.**Audit outcome**

Compliant

Audit outcome (Pioneer)

Unable to determine

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

Pulse and Property Power

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

Pioneer

ANI0331 generation data is collected by Accucal. Accual have not undergone an agent audit.

Audit commentary

Pulse and Property Power

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

Pioneer

Compliance was unable to be confirmed because Accucal have not undergone an agent audit.

Audit outcome

Compliant

Audit outcome (Pioneer)

Unable to determine

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

Pulse and Property Power

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

Pioneer

ANI0331 generation data is collected by Accucal. Accual have not undergone an agent audit.

Audit commentary

Pulse and Property Power

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

Pioneer

Compliance was unable to be confirmed because Accucal have not undergone an agent audit.

Audit outcome

Compliant

Audit outcome (Pioneer)

Unable to determine

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

Pulse and Property Power

Trading period duration was reviewed as part of the MEP audits, and AMS and EDMI's agent audits.

Pioneer

Accual have not undergone an agent audit.

Audit commentary

Pulse and Property Power

Compliance with this clause has been demonstrated by the agents and MEPs and is discussed in their audit reports.

Pioneer

Compliance was unable to be confirmed because Accucal have not undergone an agent audit.

Audit outcome

Compliant

Audit outcome (Pioneer)

Unable to determine

7.2. Archiving and storage of raw meter data (Clause 18 Schedule 15.2)

Code reference

Clause 18 Schedule 15.2

Code related audit information

A reconciliation participant who is responsible for interrogating a metering installation must archive all raw meter data and any changes to the raw meter data for at least 48 months, in accordance with clause 8(6) of Schedule 10.6.

Procedures must be in place to ensure that raw meter data cannot be accessed by unauthorised personnel.

Meter readings cannot be modified without an audit trail being created.

Audit observation

Processes to archive and store raw meter data were reviewed.

Audit commentary

Compliance with this clause has been demonstrated by the MEPs and agents.

Pulse

Access to modify readings is restricted through log on privileges.

Review of audit trails confirmed that reads and volumes cannot be modified without an audit trail being created. Audit trails for some systems were not fully compliant, as recorded in **section 2.4**.

Raw reading files are retained on Pulse's network. I viewed HHR and NHH files from 2015 during the audit.

Property Power

Access to modify readings is restricted through log on privileges.

Review of audit trails confirmed that reads and volumes cannot be modified without an audit trail being created. Audit trails for some systems were not fully compliant, as recorded in **section 2.4**.

Property Power's Orion license has been ceased, and the system can no longer be accessed. Data was extracted from Orion prior to the shutdown, including full extracts of customer, meter, meter reading, invoice and receipt data. This data is archived on Property Power's network and was viewed during the audit.

Raw reading files are retained on Property Power's network. I viewed HHR and NHH files from 2014 during the audit.

Pioneer

Compliance was unable to be confirmed because Accucal have not undergone an agent audit.

Audit outcome

Compliant

Audit outcome (Pioneer)

Unable to determine

7.3. Non-metering information collected / archived (Clause 21(5) Schedule 15.2)

Code reference

Clause 21(5) Schedule 15.2

Code related audit information

All relevant non-metering information, such as external control equipment operation logs, used in the determination of profile data must be collected, and archived in accordance with clause 18.

Audit observation

Processes to record non-metering information were discussed.

Audit commentary

No non-metering information is collected by Pulse or Property Power.

Audit outcome

Compliant

8. CREATING AND MANAGING (INCLUDING VALIDATING, ESTIMATING, STORING, CORRECTING AND ARCHIVING) VOLUME INFORMATION

8.1. Correction of NHH meter readings (Clause 19(1) Schedule 15.2)

Code reference

Clause 19(1) Schedule 15.2

Code related audit information

If errors are detected during validation of non-half hour meter readings, one of the following must be undertaken:

> *19(1)(a) - confirmation of the original meter reading by carrying out another meter reading*
>
> *19(1)(b) - replacement of the original meter reading by another meter reading (even if the replacement meter reading may be at a different date)*
>
> *19(1)(c) - if the original meter reading cannot be confirmed or replaced by a meter reading from another interrogation, then an estimated reading is substituted, and the estimated reading is marked as an estimate and it is subsequently replaced in accordance with clause 4(2).*

Audit observation

Processes for correction of NHH meter readings were reviewed, including checking a sample of corrections.

Audit commentary

Pulse

Where errors are detected during the validation process, Pulse may request a check meter reading for meters read by Wells, or review AMI readings for surrounding dates. If an original meter reading cannot be confirmed then an estimated reading is used, which is appropriately labelled.

I reviewed examples of corrections to determine whether they had been processed correctly and flowed through to revision submissions.

Defective meters

Where a defective meter is identified a field services job is raised, and the meter is usually replaced. The revenue assurance team calculates an estimated closing read for the affected meter or meters, and the correction is processed by the field services team.

I reviewed nine examples of defective meters, all related to communications faults and no corrections were required.

The 2018 audit found two ICPs where revenue assurance's estimate was not applied, possibly due to a typo, or another user re-estimating the consumption. These were followed up:

ICP	Difference (calculated – applied volume)	2019 comment
0081061529TU31A	-70 kWh	**Still existing.** No correction processed.
0004100603ALAE3	-446 kWh	**Still existing.** No correction processed.

The 2018 audit found estimated closing reads were treated as deleted reads and ignored in Cobra's historic estimate calculation process. I confirmed that this issue has now been cleared, and estimated closing reads are correctly treated as final estimates by Cobra.

Multipliers

Multipliers are checked against the PR255 metering installation details report to ensure that they are correctly applied.

I reviewed five examples of multiplier corrections and confirmed that the multiplier correction was accurately backdated to the gain date in Gentrack and Cobra for all five ICPs.

The 2018 audit found ICP 1099570059CNA76's multiplier correction from 1 to 40 was not backdated to the gain date (01/04/18) in Cobra. A backdated correction has now been processed.

Inactive ICPs with consumption

Disconnected ICPs with consumption are identified by the reconciliation team's Cobra checks, and by the revenue assurance team using the vacant consumption report. ICPs with confirmed consumption while inactive are passed to the field services team. It is intended that any inactive ICPs with consumption will be returned to active status, and re-disconnected if necessary. I checked a sample of ten inactive ICPs with consumption and found:

- nine had been corrected to active status for the period with consumption, and correct consumption will be washed up; and
- one ICP had never been inactive and appeared on the list of inactive ICPs with consumption in error.

The five ICPs with inactive consumption at the time of the last audit were rechecked and all have been corrected:

ICP	Inactive kWh	2019 comment
0000039626NT73E	-101	**Cleared.** Now no consumption during inactive period.
1000008489BPE25	105	**Cleared.** Now no consumption during inactive period.
0000006170DE570	149	**Cleared.** Now no consumption during inactive period
0325859280LC861	104	**Cleared.** Now no consumption during inactive period.
0000171510EN67A	578	**Cleared.** Now no consumption during inactive period

Bridged meters

Pulse provided a list of four ICPs where remote disconnection had occurred then the meter had been bridged to reconnect. I reviewed the affected meters and noted that they had all later been unbridged. Corrections were processed to estimate the consumption during the bridged period for two ICPs, but corrections were not processed for the following ICPs:

ICP	Bridged dates
0000018420CPEC0	09/09/18 - 10/01/19
0000555636NR9A4	24/12/18 - 10/01/19

The 2018 audit found three bridged meters had not had corrections processed, and these have still not been corrected:

ICP	Bridged period	2019 comment
0000021999WE275	20/09/17 - 30/10/17	**Still existing.** The ICP switched out on 25/10/17, prior to being unbridged. The switch out read did not include an estimate of consumption during the bridged period.
0232520003LCAEC	17/01/18 - 05/02/18	**Still existing.** No consumption was estimated for the bridged period.
0075322263WE44A	08/02/18 - 13/2/18	**Still existing.** No consumption was estimated for the bridged period.

Transposed meter readings

Transposed meters are identified through the read validation process and corrected within Gentrack and Cobra to ensure that reads are recorded against the correct registers. No recent examples were available for review.

Unmetered load

Cobra reports unmetered load based on the registry daily unmetered kWh and active ICP days. JCC reviews unmetered load submissions to ensure that they are accurate prior to submission as discussed in **section 12.3**.

I confirmed that the unmetered load for ICP 0007175794RN1C7 has been corrected to 0.175 for revision submissions.

Property Power

Defective meters, bridged meters, incorrect multipliers, unmetered load and transposed meters

No examples of defective meters, bridged meters, incorrect unmetered load, incorrect multipliers, or transposed reads were identified during the audit period. Property Power is aware that corrections are required if these events occur and has processes in place for correction.

Inactive ICPs with consumption

Inactive ICPs with consumption are identified by JCC prior to business day 4 and business day 13 reconciliation submissions. A list of any affected ICPs is provided to Property Power, who correct the status back to active effective from the date that the consumption began.

No inactive Property Power ICPs with consumption were identified; all inactive ICPs switched out before the beginning of the audit period.

Audit outcome

Non-compliant

Non-compliance	Description
Audit Ref: 8.1 With: Clause 19(1) Schedule 15.2 From: 01-Jul-18 To: 27-Feb-19	**Pulse** Two corrections for defective meters from the 2018 audit have not been processed. Five corrections for bridged meters have not been processed, including three relating to the 2018 audit. Potential impact: Medium Actual impact: Unknown Audit history: Twice Controls: Weak Breach risk rating: 3
Audit risk rating	**Rationale for audit risk rating**
Low	Controls are rated as weak as they are unlikely to mitigate the risk of incorrect data. Processes are in place to identify corrections required, but they are not consistently followed through to completion. The impact is difficult to quantify but is estimated to be low based on the corrections reviewed during the audit.

Actions taken to resolve the issue	Completion date	Remedial action status
Identified corrections have been entered into Cobra as permanent estimates.	25/03/2019	Investigating
Preventative actions taken to ensure no further issues will occur	**Completion date**	
Procedures are being reviewed to identify changes that would ensure required corrections are consistently entered in a timely fashion.	01/08/2019	

8.2. Correction of HHR metering information (Clause 19(2) Schedule 15.2)

Code reference

Clause 19(2) Schedule 15.2

Code related audit information

If errors are detected during validation of half hour metering information the correction must be as follows:

> *19(2)(a) - if a check meter or data storage device is installed at the metering installation, data from this source may be substituted*
>
> *19(2)(b) - in the absence of any check meter or data storage device, data may be substituted from another period if the total of all substituted intervals matches the total consumption recorded on the meter, if available, and the pattern of consumption is considered materially similar to the period in error.*

Audit observation

Processes for correction of HHR meter readings were reviewed.

A sample of ten HHR corrections for Pulse were reviewed. No HHR corrections occurred for Property Power.

Audit commentary

Pulse

HHR data correction is completed by Pulse. No faulty HHR meters were identified during the audit period; corrections typically occur where estimated data is replaced by actual volumes or where missing consumption is estimated during meter changes. The estimation process is discussed in **section 9.4**.

I reviewed ten examples of corrections, and all related to replacement of estimated data with actuals. I found that for October 2018 estimates were accidentally reimported and replaced some actual data. This is recorded as non-compliance below.

System audit trails for corrections are discussed in **section 2.4**.

Property Power

Property Power replaces estimated data where actual data becomes available at a later date. There were no examples of corrections to actual data during the audit period.

Pioneer

Pulse confirmed that no corrections have been made during the audit period.

Audit outcome

Compliant

Non-compliance	Description
Audit Ref: 8.2 With: Clause 19(2) Schedule 15.2 From: 01-Oct-18 To: 31-Oct-18	**Pulse** Estimates replaced some actual HHR data for October 2018. 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 assessed to be strong, this appears to be an isolated human error. The impact is assessed to be low, the estimated data will be replaced, and corrected data will be provided through the revision process.

Actions taken to resolve the issue	Completion date	Remedial action status
The erroneous data were replaced during the audit. This event was caused by HHR reconciliation analyst being unavailable, and the alternative HHR reconciliation analyst was on vacation overseas. A third party with in-depth knowledge of the HHR submission system was brought in to assist with the submission.	25/02/2019	Identified
Preventative actions taken to ensure no further issues will occur	**Completion date**	
Estimation is only generated when actual data is not available. Estimation files are now isolated from import files.	01/03/2019	

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

Code reference

Clause 19(3) Schedule 15.2

Code related audit information

If error compensation and loss compensation are carried out as part of the process of determining accurate data, the compensation process must be documented and must comply with audit trail requirements.

Audit observation

Error and loss compensation arrangements were discussed.

Audit commentary

Pulse and Property Power do not deal with any data where error or loss compensation occurs.

Audit outcome

Compliant

8.4. Correction of HHR and NHH raw meter data (Clause 22(1) and (2) Schedule 15.2)

Code reference

Clause 22(1) and (2) Schedule 15.2

Code related audit information

In correcting a meter reading in accordance with clause 19, the raw meter data must not be overwritten. If the raw meter data and the meter readings are the same, an automatic secure backup of the affected data must be made and archived by the processing or data correction application.

If data is corrected or altered, a journal must be generated and archived with the raw meter data file. The journal must contain the following:

22(2)(a) - the date of the correction or alteration

22(2)(b) - the time of the correction or alteration

22(2)(c) - the operator identifier of the reconciliation participant

22(2)(d) - the half-hour metering data or the non-half hour metering data corrected or altered, and the total difference in volume of such corrected or altered data

22(2)(e) - the technique used to arrive at the corrected data

22(2)(f) - the reason for the correction or alteration.

Audit observation

Corrections are discussed in **sections 8.1** and **8.2**, which confirmed that raw meter data is not overwritten as part of the correction process. Audit trails are discussed in **section 2.4**.

Raw meter data retention was reviewed as part of MEP and agent audits.

Audit commentary

Pulse and Property Power

Pulse and Property Power's agents and MEPs collect and retain raw NHH reading information. Compliance with the requirements to retain raw reading data was assessed as part of their agent and MEP audits.

Audit trails are created when data is modified, however some of the audit trails do not contain sufficient information or exist. This is recorded as non-compliance in **section 2.4**.

Pioneer

Pulse confirmed that no corrections have been made during the audit period.

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 Pulse and Property Power's systems in **section 2.3**.

Provision of estimated reads to other participants during switching was reviewed in **sections 4.3**, **4.4**, **4.10** and **4.11**.

Correct identification of estimated reads, and review of the estimation process was completed in **sections 8.1** and **8.2**.

Audit commentary

Readings are clearly identified as required by this clause for Pulse and Property Power.

As discussed in **section 6.6,** Pulse routinely treats customer and photo readings as actual validated reads for switching and reconciliation purposes. I found that seven of the customer photo reads were not validated against at least two readings from another source and should not have been treated as validated reads.

Audit outcome

Compliant

Non-compliance	Description
Audit Ref: 9.1 With: Clause 3(3) Schedule 15.2 From: 25-Jul-18 To: 09-Jan-19	**Pulse** Seven ICPs with customer photo reads were treated as validated, when they had not been validated against at least two actual reads from other sources. Potential impact: Low Actual impact: Low Audit history: Once previously Controls: Moderate Breach risk rating: 2
Audit risk rating	**Rationale for audit risk rating**
Low	The controls are assessed to be moderate, Pulse are revising their process to comply, and the impact is assessed to be low.

Actions taken to resolve the issue	Completion date	Remedial action status
Procedures and training have been reviewed. In future, photo reads will be treated as customer reads. Only contractor and/or MEP reads will be considered "validated" for reconciliation purposes.	01/03/2019	Identified
Preventative actions taken to ensure no further issues will occur	**Completion date**	
In future, photo reads will be treated as equivalent to other customer reads. Only contractor and/or MEP reads will be considered "validated" for reconciliation purposes.	01/04/2019	

9.2. Derivation of volume information (Clause 3(4) Schedule 15.2)

Code reference

Clause 3(4) Schedule 15.2

Code related audit information

Volume information must be directly derived, in accordance with Schedule 15.2, from:

3(4)(a) - validated meter readings

3(4)(b) - estimated readings

3(4)(c) - permanent estimates.

Audit observation

A sample of submission data was reviewed in **sections 11** and **12**, to confirm that volume was based on readings as required.

Audit commentary

Volume information is directly derived from validated meter readings, estimated readings, or permanent estimates.

Audit outcome

Compliant

9.3. Meter data used to derive volume information (Clause 3(5) Schedule 15.2)

Code reference

Clause 3(5) Schedule 15.2

Code related audit information

All meter data that is used to derive volume information must not be rounded or truncated from the stored data from the metering installation.

Audit observation

A sample of submission data was reviewed in **sections 11** and **12**, to confirm that volume was based on readings as required.

NHH data is collected by MEPs and agents, and HHR data is collected by AMS and EDMI. Compliance was assessed as part of their MEP and agent audits.

Audit commentary

The MEPs and agents retain the raw, unrounded data. Compliance with this clause has been demonstrated by Pulse and Property Power's agents and MEPs as part of their own audits.

Pulse

Manual meter readings do not record decimal places and are not rounded or truncated on import into Orion. AMI readings are stored unrounded in Cobra and truncated on import into Gentrack and Cobra.

HHR and generation readings are rounded to two decimal places.

Property Power

Manual meter readings do not record decimal places and are not rounded or truncated on import into Orion. AMI reads are rounded to the nearest whole unit, and HHR readings are rounded to two decimal places.

Audit outcome

Compliant

9.4. Half hour estimates (Clause 15 Schedule 15.2)

Code reference

Clause 15 Schedule 15.2

Code related audit information

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

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

Audit observation

The HHR estimate process was examined, and a sample of 13 estimates were reviewed for Pulse. No estimates occurred for Property Power.

Property Power's HH estimation process document was reviewed, and the estimation process was walked through for Pulse and Property Power.

Audit commentary

Pulse

Up to July 2018 estimates were manually created and imported into PRADA as a raw reading file. If actual volumes are provided later, the replacement file is imported into PRADA to replace the original data.

Since August 2018, Pulse has used Viper for HHR submission and estimation. A registry list is imported into Viper to identify all ICPs and days that HHR volumes are expected for, which is compared to the HHR data received to identify missing days and trading periods. Viper's estimation process is used to estimate missing data based on surrounding reads, with the data profiled between trading periods based on the consumption history.

It is also possible to manually enter reads, which are then profiled by Viper, this is typically only done where there is insufficient history to allow Viper to accurately estimate. The reconciliation team liaises with the pricing team to ensure that these estimates are as accurate as possible. Once actual data becomes available the estimates are replaced.

To confirm the process and check the accuracy of estimates I reviewed ten estimates created during the audit period.

- six estimates were within ±10% of the actual data; and
- four were within ±21% of the actual data, and reasonable endeavours were applied.

I also reviewed a further three ICPs where actual data was unable to be obtained at all and found that reasonable endeavours were applied.

The previous audit recommended that current month actual data should be considered as well as previous months' data when creating estimates. This recommendation has been implemented, as Viper considers this data when creating estimates.

Property Power

HHR estimates were calculated in the Orion system and entered into Viper for use in reconciliation submissions. At a high level the process to create estimates was:

1. Enter the raw metering data into Viper.
2. Viper produces a report of missing days of data during the month.
3. A request is made to Orion to produce estimates for the missing days based on the register readings available. If no reads are available, the estimates are based on historic consumption.
4. The estimated days of data are loaded back into Viper.
5. Viper outputs data for all trading periods for the month, which are loaded into Orion.
6. A request is made for Orion to produce estimates for any missing trading periods based on the readings available.
7. All trading period data including estimates is extracted from Orion and reviewed, including comparing the sum of the trading period data to the difference in readings for the month. Scaling is applied where necessary to ensure that the sum of the trading period data is within ±1 kWh of the difference between the midnight readings at the beginning and end of the month.
8. The checked and updated data is then imported back into Orion and Viper.
9. A final check is completed to confirm there are no missing days and no missing trading periods.

Property Power did not identify any estimated data during the audit period.

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 procedure and training documents.

Orion validations could not be viewed, because the system is no longer available.

Audit commentary

Pulse

NHH data is validated by several processes.

Meter reader checks

For non-AMI reads collected by Wells, the handheld data input devices perform a localised validation to ensure that the reading is within expected high-low parameters. Readings outside these parameters must be re-entered and acknowledged by the data collector. A meter cannot be skipped without reading unless a reason is entered. Wells is required to identify issues which may affect metering information accuracy, such as stopped or damaged meters, and report this information to Pulse. This is discussed further in **section 6.6**.

I confirmed with Wells that there were no changes to their processes or systems since their May 2018 audit that could have a negative impact on Pulse's compliance.

Gentrack validations

When the files from PRADA are uploaded into Gentrack, they are validated through Gentrack's validations manager and readings validation manager processes.

The validations manager process occurs first and identifies:

- readings with no matching ICP, meter serial and register number which are referred to the field services team for resolution;
- read dates prior to the last read date; and
- readings for ICPs with unbillable statuses, including vacant, inactive and decommissioned.

The readings validation manager identifies:

- negative consumption;
- average daily consumption exceeds the maximum expected value;
- average daily consumption is less than the minimum expected value;
- average daily consumption is not within the expected percentage of the expected average daily consumption;
- missing start reads which are reviewed by the field services team; and
- consumption on vacant installations which are reviewed by the revenue assurance team.

Any readings which pass validation are billed, and exceptions are held and directed to work queues for investigation and approval or resolution. Approved exceptions are billed the following night.

Before they are sent, a sample of invoices are checked by the revenue assurance team, along with all invoices over 60 days, credits of more than $200 and invoices over $1500.

Post billing analysis queries are run to monitor any billing issues, including under or over estimation, read issues, switch issues and metering issues.

Zero consumption

A weekly report is produced showing all meters with an average daily consumption of less than 1 kWh for the past 120 days. The report currently shows almost 12,000 meters, and the field services team have found it difficult to prioritise the ICPs which require investigation. They plan to refine the report so that they can focus on ICPs with zero consumption overall first.

Disconnected and vacant consumption

Disconnected and vacant ICPs continue to be read. Disconnected and vacant consumption is identified through Gentrack's validations manager and read validations manager processes and directed to work queues.

Where vacant consumption occurs, staff review the vacant consumption to determine whether it is valid, and then move the ICP into the disconnection process.

Where disconnected consumption occurs, the reading is reviewed and loaded against the customer account and validated. If the consumption is more than 200 kWh higher than the last reading, it is referred to the revenue assurance team to arrange a site visit, update the ICP status, and re-disconnect if required. If the consumption is less than 200 kWh, the validated read will still flow through to Cobra and be identified through Cobra's inactive consumption checks.

Cobra read validation

Further validation is completed in the Cobra NHH reconciliation system. If a reading is found to be invalid, it can be marked as invalidated, to prevent it being used in historic estimate calculations. In some cases, the validation can result in reads in Gentrack not being included in reconciliation submissions. The Cobra validation checks include:

- material update (more than ± 50% difference to the last period);
- negative consumption;
- consumption on inactive ICPs;
- future dated readings;
- no gain read;
- no actual read for more than four months (including active and decommissioned ICPs);
- no actual read for more than 12 months (including active and decommissioned ICPs); and
- zero consumption per meter register.

As discussed in **section 2.3**, a read for ICP 0007731600WM053 was not validated in Cobra due to negative consumption, and forward estimate was created. It is expected that actual reads should be applied where received, even if that causes negative consumption for an ICP. This ensures that the sum of total consumption reported by the gaining and losing retailer will be correct. If the negative consumption is zeroed out, total consumption reported by the gaining and losing retailer will be overstated. The only exception is situations where the total consumption for the AV080 aggregation line will be negative, which will prevent the report from being uploaded into the allocation portal. This is recorded as non-compliance below.

Queries are run to identify high ICP level consumption after the other validations have been completed. ICPs with high consumption are checked, and if the consumption is invalid reads will be invalidated in Cobra.

JCC continues to review NHH data prior to submission and returns the exceptions to Pulse to be reviewed and corrected prior to submission. The review includes:

- ICPs where aggregation factors are inconsistent with the registry;
- excessively high consumption;
- missing consumption or ICPs;
- incorrect unmetered load submissions; and
- meter record mismatches.

Property Power

NHH data is validated by several processes.

Meter reader checks

For non-AMI reads collected by Wells, the handheld data input devices perform a localised validation to ensure that the reading is within expected high-low parameters. Readings outside these parameters must be re-entered and acknowledged by the data collector. A meter cannot be skipped without reading unless a reason is entered. Wells is required to identify issues which may affect metering information accuracy, such as stopped or damaged meters, and report this information to Property Power. This is discussed further in **section 6.6**.

Orion validation

NHH meter reading validation occurs in Orion. The following checks are automatically conducted:

1. high consumption;
2. low consumption (including zero consumption);
3. unknown site;
4. unknown meter;
5. duplicate read;
6. incorrect date;
7. closing read exists;
8. read before the opening read;
9. rollover reads.

Any exceptions are addressed, and action is taken depending on the type of exception.

Other validation

Vacant ICPs with consumption were identified by issuing an invoice to the occupier (or vacant) account. This process was stopped in April 2018, and all vacant ICPs switched to Pulse from 1 June 2018.

Disconnected ICPs with consumption are identified by JCC during pre-reconciliation submission checks. This process is discussed further in **section 8.1**.

Audit outcome

Compliant

Non-compliance	Description
Audit Ref: 9.5 With: Clause 16 Schedule 15.2 From: 29-Jan-19 To: 29-Jan-19	Actual reads not applied when negative consumption is present. 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, and the impact is assessed to be low. Any read differences greater than 200 kWh are expected to be dealt with through the read renegotiation process.

Actions taken to resolve the issue	Completion date	Remedial action status
Since we are obliged by the Code to accept the losing retailer's closing estimate (where conditions for issuing an RR are not met), the only possible way to correct this issue is by ignoring the validation rule that prevents negative consumption from being entered. The negative reading is *not a validated read* (at least, unless and until supporting data can be provided) and therefore it would be incorrect to report it as historical estimation. We believe that in these circumstances, our forward estimation process is likely to be more accurate than a negative consumption report.		Disputed
Preventative actions taken to ensure no further issues will occur	**Completion date**	
See above.		

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

Pulse and Property Power

I reviewed the HHR and AMI data validation process, including meter event logs, the time of use validations training document, and validation exceptions.

Validation of electronic readings was reviewed as part of the HHR agent audits.

Pioneer

Accucal validate generation data for ANI0331 as an agent. Accual have not undergone an agent audit.

Audit commentary

Electronic meter reading information is provided to Pulse and Property Power by agents and MEPs. Meters are interrogated regularly, and there is little risk that data can be overwritten. Data is held for a longer period at the meter and can be re-interrogated later if required.

Validation of electronic data was examined as part of the agent audits for EDMI and AMS and found to be compliant.

Pulse

HHR and AMI data is validated:

- Pulse checks HHR data for missing days and missing trading periods; if the data cannot be obtained, estimation is conducted as described in **section 9.4**;
- the Gentrack billing process checks for invalid data and compares data to historic consumption patterns; and
- AMI data is validated according to the NHH validation process described in **section 9.5**.

Pulse receives and retains meter event information from its MEPs and agents, but it is not consistently reviewed. The files may be searched if an issue is identified for a particular ICP through other validations. This is recorded as non-compliance below.

Property Power

HHR and AMI data is validated:

- Property Power's Viper database completes a sum-check and checks for missing days and missing trading periods; if the data cannot be obtained, estimation is conducted as described in **section 9.4**;
- the Orion billing process checks for invalid data, and compares data to historic consumption patterns; and
- AMI data is validated according to the NHH validation process described in **section 9.5**.

Property Power receives and retains meter event information, but it is not consistently reviewed. The files may be searched if an issue is identified for a particular ICP through other validations. This is recorded as non-compliance below.

Pioneer

Generation data for ANI0331 is provided by Accucal who advise of meter event and clock synchronisation events if they occur. Accual has not undergone an agent audit to confirm their procedures, and compliance was unable to be determined.

Pulse confirmed that no events have occurred during the audit period. The ANI0331 data is reviewed to identify any missing information and check it is consistent with expected values.

Audit outcome

Non-compliant

Non-compliance	Description
Audit Ref: 9.6 With: Clause 17 Schedule 15.2 From: 01-Jul-18 To: 27-Feb-19	**Pulse** Meter event information for AMI meters is not consistently reviewed. **Property Power** Meter event information for AMI meters is not consistently reviewed. Potential impact: Low Actual impact: Low Audit history: Multiple times Controls: Weak Breach risk rating: 3
Audit risk rating	**Rationale for audit risk rating**
Low	Controls are rated as weak as they are insufficient to mitigate risk of non-compliance. The risk rating is low because most issues should be identified through Pulse and Property Power's other read validation processes, and some events are emailed by the MEPs for urgent action.

Actions taken to resolve the issue	Completion date	Remedial action status
We are chagrined to note that the Auditor has been given incorrect information on this topic. In fact, MEPs' meter event reports are routinely reviewed by the Field Services team, and any actionable reports are acted upon.		Disputed
Preventative actions taken to ensure no further issues will occur	**Completion date**	
N/A		

Audit outcome (Pioneer)

Unable to determine

10. PROVISION OF METERING INFORMATION TO THE PRICING MANAGER IN ACCORDANCE WITH SUBPART 4 OF PART 13 (CLAUSE 15.38(1)(F))

10.1. Generators to provide HHR metering information (Clause 13.136)

Code reference

Clause 13.136

Code related audit information

The generator (and/or embedded generator) must provide to the pricing manager and the grid owner connected to the local network in which the embedded generator is located, half hour metering information in accordance with clause 13.138 in relation to generating plant that is subject to a dispatch instruction:

- *that injects electricity directly into a local network; or*
- *if the meter configuration is such that the electricity flows into a local network without first passing through a grid injection point or grid exit point metering installation.*

Audit observation

The NSP table on the registry was reviewed.

Audit commentary

Pulse & Property Power

Pulse and Property Power are not responsible for any NSPs. No information is provided to the pricing manager in accordance with this clause.

Pioneer

Pulse advised they were not aware if the NSP in question was subject to dispatch instructions and therefore I am unable to determine compliance in relation to this clause.

Audit outcome

Not applicable

Audit outcome (Pioneer)

Unable to determine

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

Code reference

Clause 13.137

Code related audit information

Each generator must provide the pricing manager and the relevant grid owner half-hour metering information for:

- *any unoffered generation from a generating station with a point of connection to the grid 13.137(1)(a)*
- *any electricity supplied from an intermittent generating station with a point of connection to the grid. 13.137(1)(b)*

The generator must provide the pricing manager and the relevant grid owner with the half-hour metering information required under this clause in accordance with the requirements of Part 15 for the collection of that generator's volume information. (clause 13.137(2))

If such half-hour metering information is not available, the generator must provide the pricing manager and the relevant grid owner a reasonable estimate of such data. (clause 13.137(3))

Audit observation

The NSP table on the registry was reviewed.

Audit commentary

Pulse and Property Power

Pulse and Property Power are not responsible for any NSPs. No information is provided to the pricing manager in accordance with this clause.

Pioneer

Pulse advised they were not aware if the NSP in question was subject to dispatch instructions and therefore I am unable to determine compliance in relation to this clause.

Audit outcome

Not applicable

Audit outcome (Pioneer)

Unable to determine

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

Pulse & Property Power

Pulse and Property Power are not responsible for any NSPs. No information is provided to the pricing manager in accordance with this clause.

Pioneer

Compliance was unable to be confirmed because Accucal have not undergone an agent audit.

Audit outcome

Not applicable

Audit outcome (Pioneer)

Unable to determine

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

Code reference

Clause 13.140

Code related audit information

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

Audit observation

The NSP table on the registry was reviewed.

Audit commentary

Pulse & Property Power

Pulse and Property Power are not responsible for any NSPs. No information is provided to the pricing manager in accordance with this clause.

Pioneer

Compliance was unable to be confirmed because Accucal have not undergone an agent audit.

Audit outcome

Not applicable

Audit outcome (Pioneer)

Unable to determine

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 Pulse and Property Power registry list reports for 1/07/18 to 09/01/19 were reviewed to confirm whether any non-standard profiles were used.

Audit commentary

Pulse

Pulse does not use any non-standard profiles and has not been required to issue any trading notifications.

Property Power

Property Power used the HHB profile, prior to its ICPs switching out.

Property Power did not begin trading at any NSPs using the HHB profile during the audit period but ceased trading using the HHB profile at 15 NSPs on 31/07/18. The Electricity Authority was advised, but trading notifications were not issued to the reconciliation manager.

Audit outcome

Non-compliant

Non-compliance	Description
Audit Ref: 11.1 With: Clause 15.3 From: 01-Aug-18 To: 14-Aug-18	Trading notifications were not provided to cease using the HHB profile effective from 01/08/18 at ALB0331, ALB1101, SVL0331, HEP0331, HOB1101, MNG0331, OTA0221, PAK0331, PEN0221, PEN0331, PEN1101, ROS0221, ROS1101, TAK0331 or WIR0331. Potential impact: None Actual impact: None Audit history: None Controls: Strong Breach risk rating: 1
Audit risk rating	**Rationale for audit risk rating**
Low	There is no impact. The notification process does not allow the trader to enter the profile.

Actions taken to resolve the issue	Completion date	Remedial action status
The Reconciliation Manager was notified via the Registry, when all profiles were changed from 'HHB' to 'HHR' or 'RPS' as appropriate, upon switching to PUNZ. Since no other means of notification is available, we believe this is the appropriate mechanism.	01/08/2018	Disputed
Preventative actions taken to ensure no further issues will occur	**Completion date**	
The Reconciliation Manager was notified of the discontinued use of HHB profile through update of the profile codes by the gaining Trader (Pulse) in Registry.		

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 a diverse sample of ten NSPs with a small number of ICPs each for Pulse and Property Power to confirm the AV110 ICP days calculation was correct.

I reviewed variances for nine months of GR100 reports for Pulse and Property Power and investigated any large discrepancies.

Audit commentary

Pulse

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

The following table shows the ICP days difference between Pulse files and the RM return file (GR100) for all revisions provided for nine months. Negative percentage figures indicate that the Pulse ICP days figures are higher than those contained on the registry.

Month	Initial	1-Mth	3-Mth	7-Mth
Mar 2018	-0.01%	-0.01%	0.00%	0.00%
Apr 2018	-0.02%	-0.01%	0.00%	0.00%
May 2018	0.00%	-0.02%	0.00%	0.00%
Jun 2018	-1.33%	-0.01%	0.00%	-
Jul 2018	0.00%	0.01%	0.00%	-
Aug 2018	-0.01%	0.00%	0.00%	-
Sep 2018	-0.01%	0.00%	-0.01%	-
Oct 2018	0.00%	0.00%	-	-
Nov 2018	0.00%	-0.01%	-	-

All NSP level differences over 90 days were checked. All related to:

- backdated switching activity;
- delays in processing NSP changes, which were corrected in later revisions; and
- the Bunnythorpe GXP having two keys, which was corrected for later revisions, this issue was present during the 2018 audit period and is discussed further in **section 12.7**.

Property Power

HHR ICP days are calculated using Viper. NHH ICP days are calculated by JCC based on registry list information. The same registry list information is used to validate the NHH submissions.

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

The following table shows the ICP days difference between Property Power files and the RM return file (GR100) for all revisions provided for nine months. Negative percentage figures indicate that the Property Power ICP days figures are higher than those contained on the registry.

Month	Initial	1-Mth	3-Mth	7-Mth
Mar 2018	-0.21%	0.06%	0.00%	0.00%
Apr 2018	-0.23%	-0.08%	-0.14%	-0.21%
May 2018	-	-0.19%	-0.19%	-0.29%
Jun 2018	-0.15%	-0.14%	-0.14%	-
Jul 2018	0.00%	0.00%	0.00%	-
Aug 2018	0.00%	0.00%	0.00%	-
Sep 2018	0.00%	0.00%	0.00%	-
Oct 2018	0.00%	0.00%	-	-
Nov 2018	0.00%	0.00%	-	-

Although the percentages fluctuate, the difference in days is small. The one difference over 31 days at NSP level was reviewed and found to relate to two ICPs which were inactive with consumption. The affected ICPs had consumption and ICP days submitted for May 2018 but were not returned to active status on the registry because they had switched out. The incorrect statuses are recorded as non-compliance in **section 2.1**.

Audit outcome

Compliant

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 electricity supplied was examined by checking ten NSPs with a small number of ICPs each for Pulse and five for Property Power to confirm the AV120 billed calculation was correct.

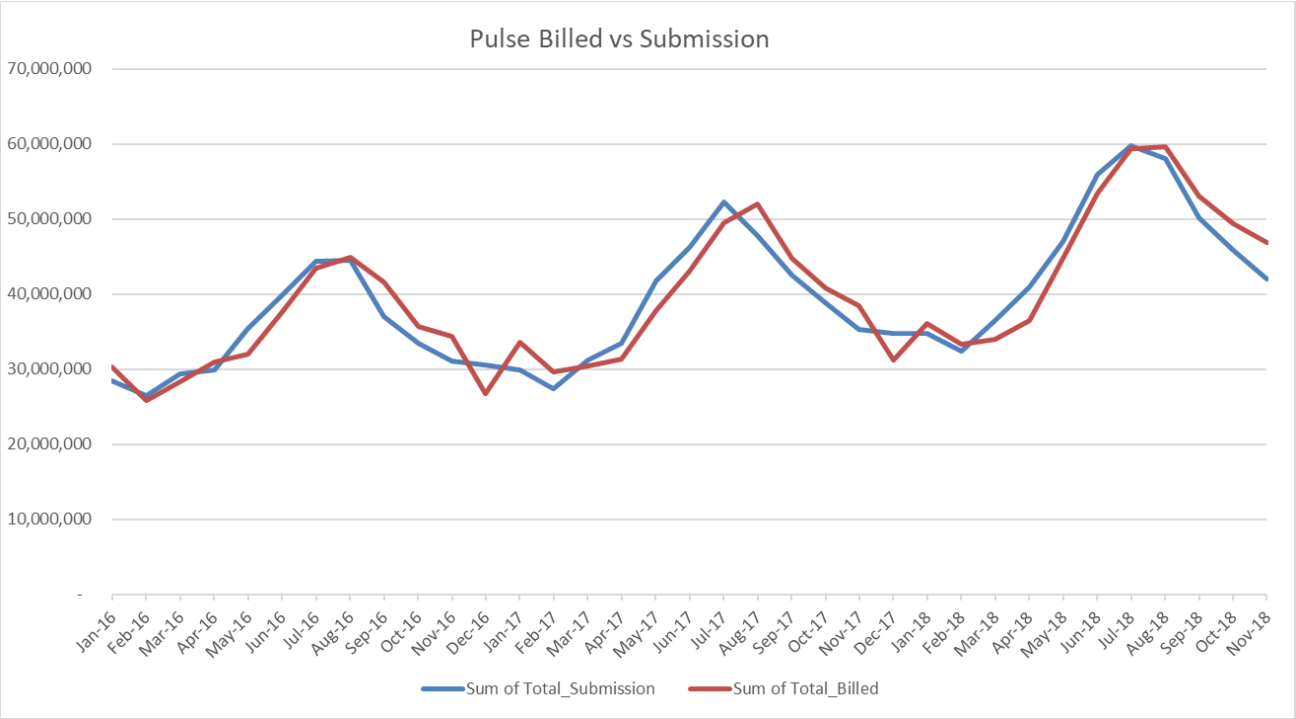
GR130 reports for January 2016 onwards were reviewed to confirm whether the relationship between billed and submitted data appears reasonable.

Audit commentary

Pulse

The accuracy of the NHH and HHR electricity supplied information was checked by examining ten NSPs with a small volume and checking all invoices in Gentrack. Compliance is confirmed.

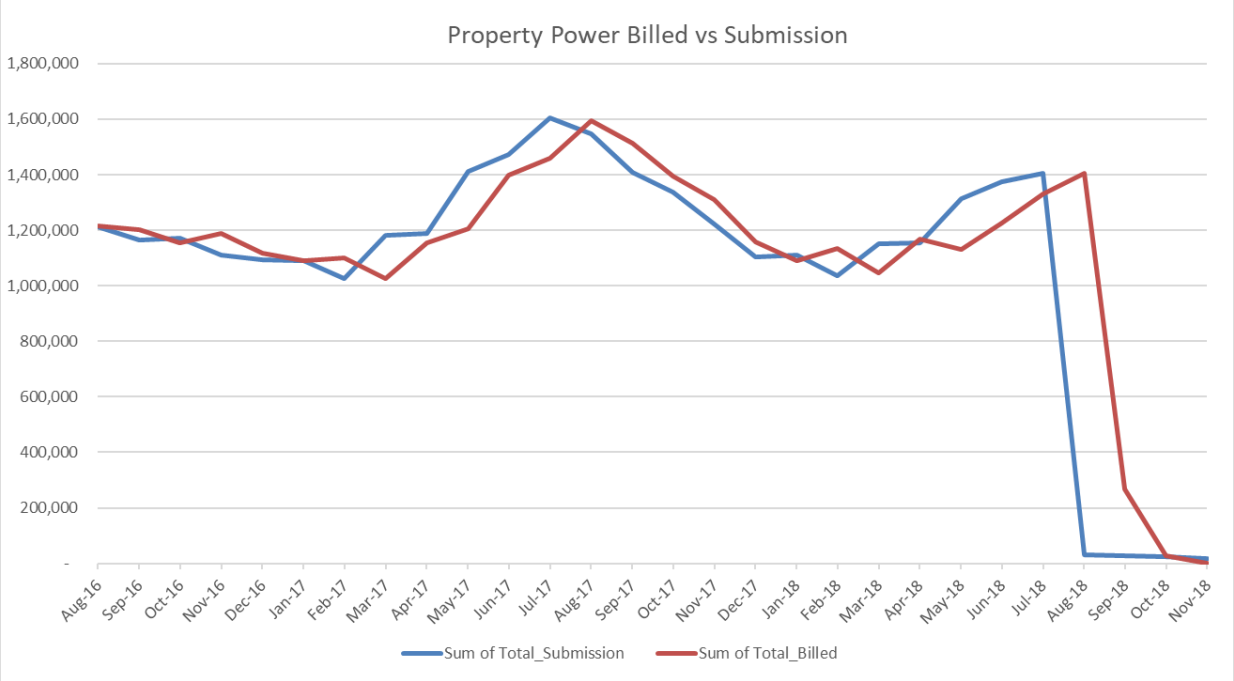
The chart below shows a comparison between submissions and electricity supplied information. At an aggregate level, submitted data is 0.1% lower than billed data for the year ended November 2018. The differences were reviewed, appear to primarily relate to timing differences between the billed and submitted data.



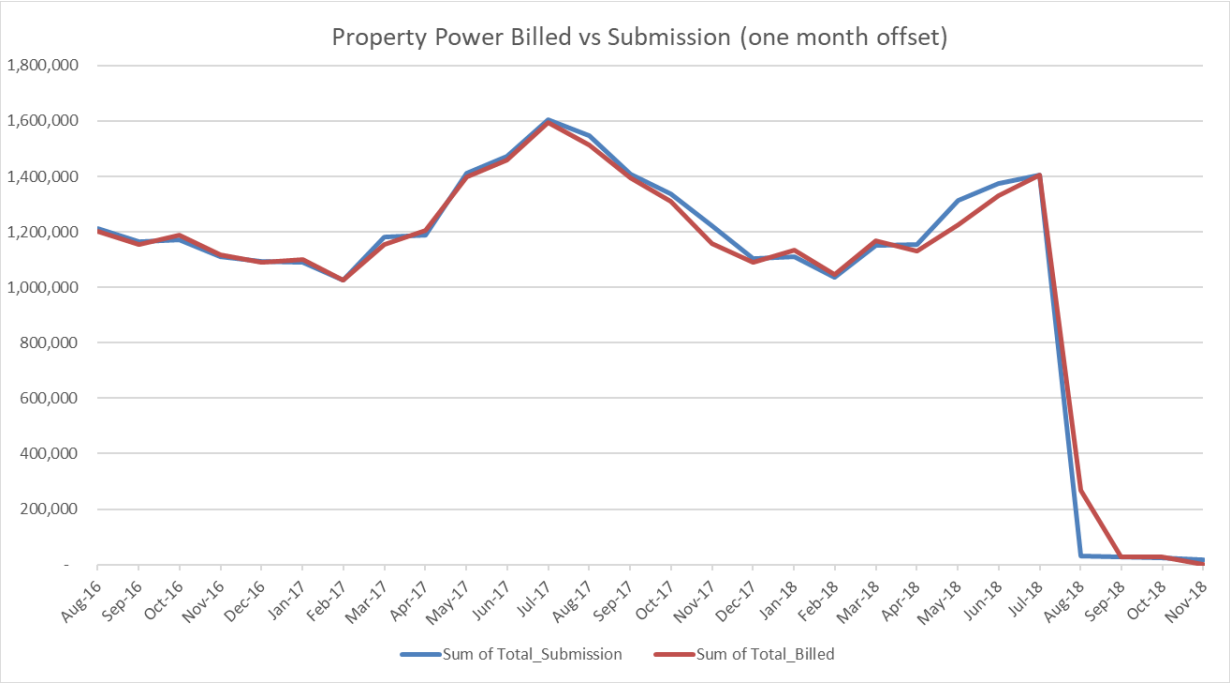
Property Power

The accuracy of the NHH and HHR electricity supplied information was checked by examining five NSPs with a small volume and checking all invoices in Orion. Compliance is confirmed.

The chart below shows a comparison between submissions and electricity supplied information. At an aggregate level, submitted data is 1.0% lower than billed data for the year ended November 2018.



The differences were reviewed, and primarily relate to timing differences between the billed and submitted data. When the billed and submission periods are aligned, the shape is close. The differences in September and October 2018 relate to back billing for some ICPs which had not been billed for usage for an extended period prior to switch out. All Property Power ICPs were billed for any outstanding consumption at the time of switch out.



Audit outcome

Compliant

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

Code reference

Clause 15.8

Code related audit information

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

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

Audit observation

I confirmed that the process for the calculation and aggregation of HHR data is correct, by matching HHR aggregates information with the HHR volumes data for eight submissions for Pulse and six submissions for Property Power. In **section 2.3** I traced a sample of volume data from the source files to the HHR aggregates submissions.

GR090 ICP Missing files were examined for December 2017 to November 2018 for Pulse, and December 2017 to August 2018 for Property Power. All missing ICPs were checked.

Alleged breaches for the audit period were reviewed.

Audit commentary

Pulse

Up to July 2018 HHR submissions were created using PRADA. Since August 2018, Pulse has used Viper for HHR submission and estimation.

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

I confirmed that the process for the calculation and aggregation of HHR data is correct, by matching HHR aggregates information with the HHR volumes data for eight submissions, and the source volumes files to submissions for a sample of seven ICPs.

GR090 ICP Missing files were examined for all revisions for December 2017 to November 2018. All ICPs missing were reviewed and found to be caused by backdated updates to submission type or NSP.

I also reviewed Pulse's GR170 HHR accuracy files for July to November 2018 for reasonableness and did not find any evidence of under submission of volumes for these months.

One alleged breach was recorded for late submission of HHR information. This is discussed further in **section 1.6** and recorded as non-compliance below.

Property Power

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

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

GR090 ICP Missing files were examined for all revisions for December 2017 to August 2018. Two ICPs were missing because of backdated withdrawals and switches.

Audit outcome

Non-compliant

Non-compliance	Description
Audit Ref: 11.4 With: Clause 15.8 From: 01-Jul-18 To: 27-Feb-19	**Pulse** HHR aggregates files do not contain electricity supplied information. One breach was recorded for late provision of HHR submission information in November 2018. **Property Power** HHR aggregates files do not contain electricity supplied information. 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 issue relating to content of the aggregates file is an error in the code, Pulse and Property Power are providing submission information as expected. For the late submission, the controls are rated as strong and the impact as low. The file was submitted one hour late, after Pulse discovered an error and worked through correction and validation prior to submission. The reconciliation manager was kept informed throughout the process.

Actions taken to resolve the issue	Completion date	Remedial action status
HHR submission files are now prepared by a dedicated HHR reconciliation analyst. Our preferred approach to submitting HHR Aggregate data is to aggregate the current month's submission volume. The strict alternative is to aggregate the previous month's submission volume and submit that in place of the current month. We will continue to use current month aggregate volumes in HHR Aggregate files.		Identified
Preventative actions taken to ensure no further issues will occur	**Completion date**	
N/A		

12. SUBMISSION COMPUTATION

12.1. Daylight saving adjustment (Clause 15.36)

Code reference

Clause 15.36

Code related audit information

The reconciliation participant must provide submission information to the reconciliation manager that is adjusted for NZDT using 1 of the techniques set out in clause 15.36(3) specified by the Authority.

Audit observation

Pulse and Property Power

Daylight savings processes for MEPs and agents were reviewed as part of their audits, and a sample of submissions during daylight savings were reviewed.

Pioneer

Pulse completes the daylight savings adjustments for ANI0331.

Audit commentary

Pulse and Property Power

Compliance with this clause has been demonstrated by Pulse and Property Power's agents and MEPs as part of their audits.

All HHR data provided to Pulse and Property Power is daylight savings adjusted using the "trading period run on" technique. I checked submission files for the start of daylight savings in 2018 and confirmed the correct number of trading periods were recorded in all cases.

Pioneer

Generation data is adjusted for daylight savings as part of the process to prepare submissions described in **section 12.6**. The trading period run on technique is applied, and I confirmed this by walking through the process and checking two submissions where daylight savings time applied.

Audit outcome

Compliant

12.2. Creation of submission information (Clause 15.4)

Code reference

Clause 15.4

Code related audit information

By 1600 hours on the 4th business day of each reconciliation period, the reconciliation participant must deliver submission information to the reconciliation manager for all NSPs for which the reconciliation participant is recorded in the registry as having traded electricity during the consumption period immediately before that reconciliation period (in accordance with Schedule 15.3).

By 1600 hours on the 13th business day of each reconciliation period, the reconciliation participant must deliver submission information to the reconciliation manager for all points of connection for which the reconciliation participant is recorded in the registry as having traded electricity during any consumption period being reconciled in accordance with clauses 15.27 and 15.28, and in respect of which it has obtained revised submission information (in accordance with Schedule 15.3).

Audit observation

The process to create submissions was reviewed.

Pulse

- NHH submissions are created using Cobra. A diverse sample of NHH ICPs were checked to confirm submissions were correct. Further information on calculation of historic estimate is recorded in **section 12.11**, and the aggregation of the AV080 report was found to be compliant in **section 12.3**.
- Up to July 2018 HHR submissions were created using PRADA. Since August 2018, Pulse has used Viper for HHR submission and estimation. HHR submissions are discussed in **section 11.4**.
- Alleged breaches were reviewed to determine whether any reconciliation submissions were late.

Property Power

- NHH submissions are created by JCC as an agent, and submission information was reviewed. Further information on calculation of historic estimate is recorded in **section 12.11**, and the aggregation of the AV080 report was found to be compliant in **section 12.3**.
- HHR submissions are created using Viper. HHR submissions are discussed in **section 11.4**.
- Alleged breaches were reviewed to determine whether any reconciliation submissions were late.

Pioneer

NSP volumes submissions are created manually. NSP volumes submissions are discussed in **section 12.6**.

Audit commentary

Pulse

Pulse prepares NHH reconciliation submissions using Cobra.

A sample of NHH ICPs were checked to confirm whether they were handled correctly:

- Five ICPs with vacant consumption were checked, and I found that vacant consumption is correctly included in submissions.
- Disconnected ICPs with consumption are only reported if their status is active for at least part of the read period. Ten ICPs with inactive consumption during the audit period were checked; nine were correctly returned to active status, and one ICP had never been inactive and appeared on the list of inactive ICPs with consumption in error. Two corrections to active status identified during the 2018 audit have not been processed. This is recorded as non-compliance in **section 8.1**.
- A typical sample of five ICPs with distributed generation were checked and found to have generation consumption correctly reported using the PV1 profile.
- A diverse sample of 10 ICPs with unmetered volumes were checked, including standard and shared unmetered load and found to be reported correctly. The 2018 audit found that some unmetered load connected to Bunnythorpe was double counted because the GXP was created with two keys. JCC now reviews the unmetered load submissions against the registry list information to confirm that it is correct prior to submission, and corrected submission information has been provided.

One alleged breach was recorded for late submission of HHR information. This is discussed further in **section 1.6** and recorded as non-compliance below.

Property Power

Property Power NHH submissions are prepared by JCC as an agent, and HHR submissions are prepared by Property Power using Viper.

I viewed detailed NHH submission information and confirmed that Property Power NHH ICPs were included in submission data up to their switch out date, including ICPs which were supplied beyond 31/07/17. I viewed a comparison of wash up data to initial submissions from 2016 onwards and confirmed that it was consistent, and wash ups are continuing to occur.

No ICPs with distributed generation were supplied during the audit period, and no disconnected ICPs with consumption or vacant ICPs with consumption were identified during the audit period. Two ICPs were found to have inactive consumption during the previous audit period and are recorded as non-compliance in **section 2.1**. Submission data for all ICPs with unmetered load supplied in July 2018 was checked and confirmed to be reported correctly.

HHR submission data was checked in **section 11.4**, and I confirmed that all ICPs were included in submission data up to their switch out date, including the one HHR ICP supplied until 31/12/18.

No alleged breaches were recorded for late submission of volume information.

Audit outcome

Non-compliant

Non-compliance	Description
Audit Ref: 12.2 With: Clause 15.4 From: November 2018	**Pulse** One breach was recorded for late provision of HHR submission information in November 2018. Potential impact: High Actual impact: Unknown Audit history: Multiple times Controls: Strong Breach risk rating: 1
Audit risk rating	**Rationale for audit risk rating**
Low	The controls are assessed to be strong and the impact as low. The file was submitted one hour late, after Pulse discovered an error and worked through correction and validation prior to submission. The reconciliation manager was kept informed throughout the process.

Actions taken to resolve the issue	Completion date	Remedial action status
Correct data were provided as soon as humanly possible after we became aware of the issue. The reconciliation manager was kept informed throughout the process.	19/11/2018	Identified
Preventative actions taken to ensure no further issues will occur	**Completion date**	
Submission procedures have been improved to eliminate a bottleneck where an error in one file could cause delay in submitting others.	01/12/2018	

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 processes to ensure that submissions are accurate were discussed and observed, including review of reports used in the process.

The process for aggregating the AV080 was examined for Pulse and Property Power. The GR170 to AV080 files for a diverse sample of ten months and revisions were compared for Pulse and Property Power, to confirm zeroing occurs.

Audit commentary

Pulse

ICP information from the registry is refreshed in Cobra prior to each reconciliation submission to ensure that aggregation factors and statuses are consistent with the registry. Discrepancies between Gentrack and the registry are identified through the registry validation process described in **section 2.1**.

The process for the calculation of NHH volumes was examined by checking the total submission for July 2018 revision 7 against ICP level detail data. I found that only small rounding differences were present and the AV080 was aggregated correctly.

Cobra automatically inserts zero lines where consumption has been reported in a previous revision but is not present in the current revision. GR170 and AV080 files were compared for a diverse sample of ten months and revisions, which confirmed that zeroing is occurring.

HHR processes are automated to ensure that volumes are submitted for every NSP with active ICPs, regardless of whether any consumption has been recorded.

Pulse has validation processes to ensure that submissions are correct. HHR and NHH volume and ICP days submissions are validated together, using queries. The queries compare the volumes and ICP days to previous months (for initial submissions) and previous revision (for revision submissions). Differences are generally reviewed at total and balancing area level, including a check for differences to the previous revision, or previous initial submission of more than ±100,000 kWh and ±15%. If anomalies are found, GXP level and ICP level data are reviewed. Due to the size and spread of Pulse's customer base, accuracy issues may not result in breaches of the balancing area thresholds.

JCC continues to review NHH data prior to submission. The review includes:

- ICPs where aggregation factors are inconsistent with the registry;
- excessively high consumption;
- missing consumption or ICPs;
- incorrect unmetered load submissions; and
- meter record mismatches.

Exceptions identified are referred back to Pulse's reconciliation team for investigation and resolution, and I saw evidence of this process in operation.

Pulse also reviews the return files from the reconciliation manager, any anomalies are investigated, and corrections are processed as required.

Property Power

JCC refreshes reconciliation data from the registry immediately prior to running reconciliation reports to ensure that aggregation factors and statuses are correct. Discrepancies between Orion and the registry are identified through the registry validation process described in **section 2.1**.

The process for the calculation of NHH volumes was examined by checking all ICPs supplied in August 2018. NHH volume aggregation was confirmed to be correct.

Comparison of the AV080 and GR170 for ten months and revisions confirmed that the same NSPs were included, and zeroing occurs as required.

JCC provides a copy of reconciliation submissions to Property Power. Property Power staff check the submission data for reasonableness, and query any issues found with JCC. These checks are largely at an aggregate level, and issues for individual ICPs can be missed if the total volume submitted looks reasonable.

HHR processes ensure that volumes are submitted for every NSP with active ICPs.

Audit outcome

Compliant

12.4. Grid owner volumes information (Clause 15.9)

Code reference

Clause 15.9

Code related audit information

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

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

Audit observation

The NSP table was reviewed to confirm whether Pulse or Property Power is responsible for any GIPs.

Audit commentary

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

Audit outcome

Not applicable

12.5. Provision of NSP submission information (Clause 15.10)

Code reference

Clause 15.10

Code related audit information

The participant (if a local or embedded network owner) must provide to the reconciliation manager for each NSP for which the participant has given a notification under clause 25(1) Schedule 11.1 (which relates to the creation, decommissioning, and transfer of NSPs) the following:

- *submission information for the immediately preceding consumption period, by 1600 hours on the 4th business day of each reconciliation period (clause 15.10(a))*
- *revised submission information provided in accordance with clause 15.4(2), by 1600 hours on the 13th business day of each reconciliation period. (clause 15.10(b))*

Audit observation

A registry list was reviewed to confirm that Pulse and Property Power do not own any local or embedded networks.

Audit commentary

Pulse and Property Power are 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

Pulse

Pulse is not required to create AV130 submissions.

Property Power

Property Power is not required to create AV130 submissions.

Pioneer

Pulse's process to create AV130 (NSP volume information) was walked through. AV130 submissions were matched to the source meter data received for November and December 2018.

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

Audit commentary

Pulse

Not applicable.

Property Power

Not applicable.

Pioneer

Pulse creates AV130 submissions for grid connected generation at ANI0331, as an agent to Pioneer.

Accucal emails volumes to Pulse as a CSV file. The CSV file is opened in Excel and a pivot table is used to group the data by day and trading period. The data is copied into a new file, and a header row is added. The file is saved and submitted to the reconciliation manager.

AV130 submissions were matched to the source meter data received for November and December 2018.

No breaches were recorded for late submission of AV130 information during the audit period.

Audit outcome

Not applicable

Audit outcome (Pioneer)

Compliant

12.7. Accuracy of submission information (Clause 15.12)

Code reference

Clause 15.12

Code related audit information

If the reconciliation participant has submitted information and then subsequently obtained more accurate information, the participant must provide the most accurate information available to the reconciliation manager or participant, as the case may be, at the next available opportunity for submission (in accordance with clauses 15.20A, 15.27, and 15.28).

Audit observation

The accuracy of submission information was reviewed, including a review of corrections in **sections 8.1** and **8.2**.

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

Audit commentary

Pulse

Two breaches were recorded in relation to submission information:

Ref	Clauses breached	Description	Outcome
1811PEAL1 (27/11/18)	Part 15 clause 15.4 (2)	PUNZ failed to submit HHR data to the reconciliation manager by 16:00 on business day 13. The file was submitted one hour late.	Currently being considered
1901PEAL1 (13/12/18)	Part 15 clause 15.2	Pulse initially submitted an overstatement of volume on BD 13, 24th December.	No further action was taken because there was no impact and steps have been taken to prevent recurrence

This audit found that many of the submission accuracy issues present at the time of the 2018 audit have been resolved, and procedures have been put in place to prevent recurrence.

Some accuracy issues still remain in relation to:

- two final reads for decommissioned ICPs were not used as described in **section 3.4**;
- corrections which have not been processed relating to the 2018 and 2019 audit periods as described in **section 8.1**;
- a small number of exceptions relating to incorrect profiles as described in **section 6.1**; and
- some actual HHR data temporarily being replaced with estimates as described in **section 8.2.**

Pulse advised that some ICPs may have historic consumption while inactive. These ICPs have their statuses corrected as they are identified.

Submission accuracy issues present during the 2018 audit were followed up:

2018 Issue	Affects	Description	Risk and Implications	2019 update
Null and incorrect register content codes	NHH	Gentrack 4 has two fields for meter register content; one is used for billing, the other for reconciliation. These fields are not linked, and the data contained within them is inconsistent. The reconciliation register content is not mandatory.	Cobra relies on Gentrack for reconciliation register content codes, readings, and meter start and end dates. Missing content codes could result in readings for the meter not being able to be loaded in Cobra, or forward estimate not being correctly calculated. Inaccurate content codes could result in forward estimate being calculated for the wrong meter type and period of availability.	**Cleared.** Gentrack were engaged to correct all the register content codes using registry PR255 data. JCC reviews NHH submission data prior to it being provided to the reconciliation manager. This review identifies inconsistencies with PR255 metering information, and any ICPs where aggregation factors are not consistent with registry information. Exceptions are reviewed and corrected prior to submission.
Incorrect meter numbering	NHH	On 16 July 2018 Pulse identified six ICPs with meters recorded as registers on another meter, and five ICPs with incorrectly numbered meter channels. These ICPs were incorrectly set up in Gentrack 4.	Incorrectly recorded meter and serial numbers can result in reads being recorded against the wrong meter register.	**Cleared.** Gentrack were engaged to correct all the meter serial numbers codes using registry PR255 data. JCC reviews NHH submission data prior to it being provided to the reconciliation manager. This review identifies inconsistencies with PR255 metering information, and exceptions are reviewed and corrected prior to submission.
Trader profiles	NHH	Trader profiles are not mandatory in Gentrack 4 or reconciled to the registry.	Reconciliation consumption may not be reported or may be reported against an incorrect profile.	**Partially cleared.** Cobra automatically applies RPS profile for NHH ICPs, and PV1 profile to EG meters with generation consumption. Profiles are recorded for all ICPs. The JCC pre submission review identifies any ICPs present on the registry which are missing from submission data, which are corrected by Pulse prior to submission. The audit found 356 ICPs with incorrect profiles recorded on the registry (as discussed in **section 2.1**), including two which also had incorrect profiles recorded

2018 Issue	Affects	Description	Risk and Implications	2019 update
				for submission. Pulse is working through correcting these profiles.
Deleted meter channels	NHH	When a meter channel is set up in error in Gentrack, it is deleted and given status "99". 2,431 deleted meters have this status. Meter channels with status "99" are sent to Cobra for reconciliation.	Because no reads were received for the deleted meters, Cobra applied forward estimate based on the register content and period of availability according to the forward estimate process described in **section 12.12**.	**Cleared**. The records have been corrected and redundant meters have been end dated 01/01/2000 in Cobra.
Meter channels with submission flag set to no	NHH	Meters channels with submission flag N are sent to Cobra for reconciliation.	If not corrected, reconciliation consumption will be submitted for these meters in error. Registers with submission type N most commonly occurs for meters where one channel records the total consumption across the other channels.	**Cleared.** Gentrack records are compared to the PR255 metering information and corrections are carried out. Where the submission indicator is N, the register is end dated 01/01/2000 in Cobra to ensure that submission does not occur. JCC reviews NHH submission data prior to it being provided to the reconciliation manager. This review identifies inconsistencies with PR255 metering information, and exceptions are reviewed and corrected prior to submission.
Treatment of readings in Gentrack and Cobra	NHH	Some issues with readings used as inputs into the reconciliation process were identified. • Estimated closing reads were treated as deleted by Cobra. • Gentrack records switch gain reads on the day before the gain date, Cobra receives switch reads from Gentrack and ignores any reads dated prior to the gain date. • Accepted RR readings are only transferred to Cobra if entered as consumption records in Gentrack 4.	• Deleted estimated closing reads are ignored by the reconciliation process and forward estimate is created. This issue affects all deleted estimated closing reads, including switch reads. • Switch in reads recorded prior to the gain date are ignored by Cobra, and consumption is calculated from the first actual read received after switch in, with default volume applied to the balance of the period. • If accepted RR reads are entered into the invoice history but not the consumption records, they are not transferred to Cobra and are ignored by the reconciliation process	**Cleared**. • Estimated closing reads are now treated as final closing reads in Cobra. • No missing gain reads were identified during the audit. JCC's pre submission checks identify any ICPs which do not have consumption reported on a day it is expected to be. These exceptions are reviewed and resolved prior to submission. • A new process has been implemented to retrieve accepted RR reads directly from the RR files and load them into Cobra. • The validation process for customer and photo readings has changed, and I did not find any evidence of unvalidated photo or customer readings

2018 Issue	Affects	Description	Risk and Implications	2019 update
		• Customer and photo readings are routinely treated as validated readings, even if they are not validated.	• Unvalidated customer and photo readings are applied as validated readings by the historic estimate process.	being treated as actual readings for reconciliation purposes.
Duplication of the Bunnythorpe GXP	NHH	The Bunnythorpe GXP was created in Cobra with two keys (17 and 18). The GXP was duplicated by a manually loaded NSP mapping table on 20 June 2018.	Some missing and duplicated submission data for ICPs connected to Bunnythorpe.	**Cleared.** The duplicate NSP has been removed and revised submission information has been provided. JCC completes of all unmetered load submissions to ensure that they are consistent with the unmetered load details recorded on the registry.
Corrections not processed, or processed inaccurately	NHH	A small number of accuracy issues occurred because corrections had not been processed accurately. This is discussed further in **section 8.1**: Two corrections were not processed using the reads calculated by revenue assurance. One multiplier correction was not accurately backdated in Cobra. The multiplier is now correctly backdated. Five ICPs with inactive consumption had not been corrected to active status for the period with consumption. Three corrections for bridged meters had not been processed.	Inaccurate submission.	**Partially cleared.** • The two defective meter corrections have not been processed. • The multiplier correction has been backdated correctly. • Two of the ICPs with inactive consumption have switched out, and still have consumption recorded during an inactive period. The other three ICPs have been corrected. • The three bridged meter corrections have not been processed. A small number of corrections relating to the current audit period have not been processed, as described in **section 8.1**.
Incorrect statuses	NHH HHR	There are some status discrepancies between Gentrack and the registry as described in **sections 2.1, 3.8** and **3.9**.	Reconciliation submissions are based on registry status and this has led to some ICPs being incorrectly included in or excluded from submissions.	**Partially cleared.** Processes are in place to identify consumption while inactive and correct statuses. Pulse is continuing to work through checking historical status information.

2018 Issue	Affects	Description	Risk and Implications	2019 update
Daylight savings adjustment error	NHH	Incorrect processing of the transition between NZDT and NZST in PRADA in April 2018 resulted inaccurate submission data.	Breach 1801PEAL1 (24/01/18) was recorded. The EA declined to pursue without a warning being issued.	**Cleared.** Corrected data was submitted, and the issue has not recurred.
Revision submissions were not provided in January 2018	NHH NSP Vols	Revision submissions were not provided in January 2018 while data accuracy issues were investigated.	Breach 1804PEAL1 (12/04/18) was recorded. The EA declined to pursue without a warning being issued.	**Partially cleared.** Revision submissions have been provided. One breach was recorded during the audit period for late provision of HHR submission information. The data was one hour late, and the reconciliation manager was kept informed.

2018 recommendations to improve submission accuracy were followed up, and found to be implemented:

Description	Recommendation	2019 comment
Identification of accepted RRs	To make sure agreed switch reads are applied, use the registry event detail report to identify all AC files accepting the RR. The report should be run by update date to ensure that backdated RR acceptances are identified. Accepted RRs will need to have their reads checked and/or updated in Cobra.	**Implemented.** Accepted RR reads are loaded directly into Cobra for use in historic estimate calculations.
Submission flag N adjustment	Investigate whether meters channels outside the Lines Company Network have submission flags set to N and adjust the process as necessary.	**Implemented.** The PR255 meter installation details checks completed by Pulse and JCC consider all meters.
Pre-submission review by JCC	Investigate expanding the review to include a check of unmetered load.	**Implemented.** JCC reviews all unmetered load submissions against registry information.

Property Power

One submission accuracy issue was identified for Property Power during the previous audit period, which was corrected by revision one.

No submission inaccuracies were identified during this audit.

Audit outcome

Non-compliant

Non-compliance	Description
Audit Ref: 12.7 With: Clause 15.12	**Pulse** Some submission information was inaccurate. Potential impact: High Actual impact: Unknown Audit history: Once Controls: Moderate Breach risk rating: 4
From: 01-Jul-18 To: 27-Feb-19	

Audit risk rating	Rationale for audit risk rating
Medium	Controls are rated as moderate as they will ensure submission data is accurate most of the time. I note that Pulse has acted to investigate and resolve errors once they are identified and has enlisted the help of JCC. The potential impact is assessed to be medium, because there have been some errors during the audit period which were significant enough to resulted in alleged breaches. Revised volumes will be submitted using the revision process.

Actions taken to resolve the issue	Completion date	Remedial action status
Pulse remains committed to providing the most accurate information possible to the Reconciliation Manager. Where we become aware of a material error in submissions, we will advise the RM and correct the issue as quickly as possible. The root causes of such errors are investigated and resolved in each case, and not permitted to recur.		Investigating
Preventative actions taken to ensure no further issues will occur	**Completion date**	
We cannot guarantee that similar issues will not occur again. The best we can do is ensure that each individual error that has caused this in the past is not repeated.		

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

Code reference

Clause 4 Schedule 15.2

Code related audit information

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

Volume information created using estimated readings must be subsequently replaced at the earliest opportunity by the reconciliation participant by volume information that has been created using validated meter readings or permanent estimates by, at the latest, the month 14 revision cycle.

A permanent estimate may be used in place of a validated meter reading, but only if, despite having used reasonable endeavours; the reconciliation participant has been unable to obtain a validated meter reading.

Audit observation

NHH volumes 14-month revisions were reviewed for June to August 2017 for Pulse and Property Power to identify any forward estimate still existing.

Audit commentary

Pulse

Review of the 14-month revisions for June to August 2017 showed that not all estimated meter readings had been replaced with validated meter readings or permanent estimates. Pulse is investigating implementation of a permanent estimate process.

Improvements to the read attainment process described in **section 6.8** have recently been made, and these are expected to reduce the volume of forward estimate in the future.

Month	Forward estimate at r14
Jun 2017	154226
Jul 2017	148408
Aug 2017	127667
Total	430301

Forward estimate remained because ICPs had not received a validated read in the previous 14 months, and permanent estimate reads are not entered into Cobra.

Property Power

Review of the 14-month revisions for June to August 2018 showed that all estimated meter readings had been replaced with validated meter readings.

Audit outcome

Non-compliant

Non-compliance	Description
Audit Ref: 12.8 With: Clause 4 Schedule 15.2 From: June-August 2017 r14	**Pulse** Some estimates are not replaced by revision 14. Potential impact: Medium Actual impact: Unknown Audit history: Multiple times Controls: Weak Breach risk rating: 6
Audit risk rating	**Rationale for audit risk rating**
Medium	Controls are rated as weak because there is no permanent estimate process. The audit risk rating is assessed to be medium, based on the volume of forward estimate remaining.

Actions taken to resolve the issue	Completion date	Remedial action status
We have identified the need for a process to create permanent estimates after 12 months without actual reads, and are currently specifying and planning deployment of this process in Gentrack. The Cobra NHH reconciliation system has this capability, however we believe that the permanent estimates should be stored upstream to ensure consistency when NHH submissions are eventually performed via Gentrack.	01/10/2019	Identified
Preventative actions taken to ensure no further issues will occur	**Completion date**	
See above	01/10/2019	

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

Code reference

Clause 2 Schedule 15.3

Code related audit information

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

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

Audit observation

Processes to ensure that information used to aggregate the reconciliation reports is consistent with the registry were reviewed **in section 2.1**.

Aggregation and content of reconciliation submissions was reviewed, and the Pulse and Property Power Registry lists as at 09/01/19 and 01/07/18 to 09/01/19 were reviewed.

Audit commentary

<u>Pulse</u>

Compliance with this clause was assessed:

- all active ICPs with meter category 3 or higher have submission type 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 reports was checked in **sections 12.2** and **12.3**, aggregation of HHR data was checked in **section 11.4** and aggregation of NSP volumes was checked in **section 12.6.**

Property Power

Compliance with this clause was assessed.

Property Power did not supply any active ICPs as at 09/01/19. As at 31/07/18 when Property Power's ICPs transferred to Pulse:

- all active ICPs with meter category 3 or higher have submission type HHR;
- no profiles requiring a certified control device are used; and
- no loss or compensation arrangements are required.

Unmetered load submissions were checked in **section 12.2** and found to be correct. Aggregation of the AV080 reports was checked in **sections 12.2** and **12.3**, and aggregation of HHR data was checked in **section 11.4**.

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

Ten Pulse and Property Power AV080 submissions for revisions 3 to 14 were reviewed, to confirm that historic estimates are included and identified.

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

Audit commentary

Pulse

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

The 2018 audit found some permanent estimate reads were not correctly applied in Cobra. This issue has been resolved and is discussed further in **section 12.7**.

Property Power

I reviewed ten Property Power AV080 submissions for a diverse sample of months and revisions and confirm 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

Pulse provided examples of historic estimate calculations, which were reviewed. The check of calculations included confirming that readings and Seasonal Adjusted Shape Values (SASV) were applied correctly.

I confirmed that there have been no changes to Property Power's historic estimate processes since the previous audit.

Audit commentary

Pulse

Correct SASV are applied. SASV are downloaded from the reconciliation manager portal into the data warehouse. Cobra checks for updates to the profiles daily and retrieves any new profiles.

The historic estimate calculation excludes SASV for any days where the ICP is inactive, and is calculated as:

$$\text{Read period consumption} \times \frac{\text{SASV for active days within the reconciliation period}}{\text{SASV for active days within the read period}}$$

If the ICP is inactive for part of a read period where consumption occurs, all the consumption will be reported against the active days in the period.

If the ICP is inactive for an entire read period and consumption occurs, no consumption will be recorded because the SASV multiplier and divisor will be 0. This situation may occur where ICP status is incorrect, and inactive consumption occurs.

The table below shows that all scenarios are calculating as expected, as long as inputs into the calculation are as Cobra requires.

Test	Scenarios	Test expectations	Result
a	ICP becomes Active part way through a month	Consumption is only calculated for the Active portion of the month.	Compliant
b	ICP becomes Inactive part way through a month.	Consumption is only calculated for the Active portion of the month.	Compliant
c	ICP become Inactive then Active again within a month.	Consumption is only calculated for the Active portion of the month.	Compliant

Test	Scenarios	Test expectations	Result
d	ICP switches in part way through a month on an estimated switch reading	Consumption is calculated to include the 1st day of responsibility.	Compliant
e	ICP switches out part way through a month on an estimated switch reading	Consumption is calculated to include the last day of responsibility.	Compliant
f	ICP switches out then back in within a month	Consumption is calculated for each day of responsibility.	Compliant
g	Continuous ICP with a read during the month	Consumption is calculated assuming the readings are valid until the end of the day	Compliant
h	Continuous ICP without a read during the month	Consumption is calculated assuming the readings are valid until the end of the day	Compliant
i	Rollover Reads	Consumption is calculated correctly in the instance of meter rollovers.	Compliant
j	Unmetered load for a full month	Consumption is calculating based on daily unmetered kWh for full month.	Compliant
k	Unmetered load for a part month	Consumption is calculating based on daily unmetered kWh for active days of the month.	Compliant
l	Network/GXP/Connection (POC) alters partway through a month.	Consumption is separated and calculated for the separate portions of where it is to be reconciled to.	Compliant
m	ICP with a customer read during the month	Customer reads are not used to calculate historic estimate, unless they have been validated against actual reads	Compliant
n	ICP with a photo read during the month	Photo reads are not used to calculate historic estimate, unless they have been validated against actual reads.	No example provided
o	ICP has a meter with a multiplier greater than 1	The multiplier is applied correctly	Compliant

Property Power

Property Power confirmed that there have been no changes to their historic estimate processes since the previous audit, which occurred within a month of their NHH ICPs switching out.

Audit outcome

Compliant

12.12. Forward estimate process (Clause 6 Schedule 15.3)

Code reference

Clause 6 Schedule 15.3

Code related audit information

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

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

Audit observation

The process to create forward estimates was reviewed.

Forward estimates were checked for accuracy by analysing the GR170 file for variances between revisions for 18 months for Pulse and Property Power.

Audit commentary

Pulse

Pulse's forward estimate process is based on a straight-line methodology for initial allocations. Historic shape files are applied to forward estimates for revision submissions.

If there is a validated reading during the read period, Cobra applies the daily average for the period between that read and the previous read. Otherwise a default annual national average for the meter type and period of availability is applied. The process does not account for the type of ICP or other meters installed. For example, the same rate will be applied to each UN24 meter whether the customer has one UN24, two UN24s, or a CN16 and UN24.

The accuracy of the initial submission, in comparison to each subsequent revision is required to be within 15% and within 100,000kWh. The table below shows the number of balancing areas where this target was not met. Pulse actively monitors these variations prior to submission as described in **section 12.3**.

Quantity of balancing areas with differences over 15% (Over 100,000 units)

Month	Revision 1	Revision 3	Revision 7	Revision 14	Total
Jun 2017	0	0	0	0	72
Jul 2017	0	0	0	0	74
Aug 2017	0	0	0	0	75
Sep 2017	0	0	0	-	75
Oct 2017	0	0	0	-	76
Nov 2017	0	0	0	-	76
Dec 2017	0	0	0	-	76
Jan 2018	1	0	0	-	77
Feb 2018	0	0	1	-	77
Mar 2018	5	3	2	-	76
Apr 2018	3	3	3	-	78
May 2018	1	3	-	-	78
Jun 2018	1	1	-	-	78
Jul 2018	0	0	-	-	81
Aug 2018	0	0	-	-	81
Sep 2018	0	0	-	-	81
Oct 2018	0	-	-	-	81
Nov 2018	0	-	-	-	80

Total variation between revisions (Positive means initial higher than revision)

Month	Revision 1	Revision 3	Revision 7	Revision 14
Jun 2017	-4.01%	-6.69%	-6.69%	-6.66%
Jul 2017	-2.87%	-4.39%	-4.13%	-3.92%
Aug 2017	-1.84%	-0.92%	-0.18%	0.29%
Sep 2017	0.00%	3.86%	4.21%	-
Oct 2017	2.36%	2.36%	5.12%	-
Nov 2017	-0.95%	0.96%	0.92%	-
Dec 2017	0.00%	1.95%	2.04%	-
Jan 2018	3.24%	4.27%	3.79%	-
Feb 2018	3.04%	3.17%	2.21%	-
Mar 2018	-2.60%	-5.02%	-4.51%	-
Apr 2018	-2.59%	-6.60%	-6.62%	-
May 2018	-4.80%	-9.85%	-	-
Jun 2018	-5.99%	-8.48%	-	-
Jul 2018	-2.03%	-3.62%	-	-
Aug 2018	-1.89%	-2.54%	-	-
Sep 2018	2.83%	1.13%	-	-
Oct 2018	1.10%	-	-	-
Nov 2018	0.69%	-	-	-

All balancing area differences over the threshold for periods after January 2018 were reviewed, and found to relate to:

- incorrect submission data provided in the initial allocation in March 2018 for two NSPs, which was washed up;
- fluctuations in submission data for BA1WESTPOCOG, which were investigated and corrected in later revisions;
- forward estimate was high or low in relation to the actual readings received; and
- a FCLM register update in the registry resulted in total registers which record the accumulated consumption for all registers being included in the initial submission data in error in May 2018, correct data was washed up.

Property Power

JCC prepares forward estimates for Property Power. The JCC forward estimate process is based on the average daily consumption for the previous read period for each meter register. If previous read period information is not available, the forward estimate consumption is based on the estimated daily consumption provided by the previous retailer in the CS file.

The accuracy of the initial submission, in comparison to each subsequent revision is required to be within 15% and within 100,000kWh. The table below shows the number of balancing areas where this target was not met.

Quantity of balancing areas with differences over 15% (Over 100,000 units)

Month	Revision 1	Revision 3	Revision 7	Revision 14	Total
Jun 2017	0	0	0	0	5
Jul 2017	0	0	0	0	5
Aug 2017	0	0	0	0	5
Sep 2017	0	0	0	-	5
Oct 2017	0	0	0	-	5
Nov 2017	0	0	0	-	5
Dec 2017	0	0	0	-	5
Jan 2018	0	0	0	-	5
Feb 2018	0	0	0	-	5
Mar 2018	0	0	0	-	5
Apr 2018	0	0	-	-	5

Month	Revision 1	Revision 3	Revision 7	Revision 14	Total
May 2018	0	0	-	-	5
Jun 2018	0	0	-	-	5
Jul 2018	0	0	-	-	5
Aug 2018	0	0	-	-	5
Sep 2018	-	-	-	-	-
Oct 2018	-	-	-	-	-
Nov 2018	-	-	-	-	-

Total variation between revisions (Positive means initial higher than revision)

Month	Revision 1	Revision 3	Revision 7	Revision 14
Jun 2017	-0.38%	-1.35%	-1.33%	-1.26%
Jul 2017	-0.32%	-0.80%	-0.85%	-0.79%
Aug 2017	0.76%	0.32%	0.29%	0.36%
Sep 2017	12.83%	12.83%	13.00%	-
Oct 2017	0.08%	0.14%	0.41%	-
Nov 2017	0.38%	0.67%	0.59%	-
Dec 2017	1.79%	1.88%	2.16%	-
Jan 2018	-0.04%	-0.24%	0.03%	-
Feb 2018	-0.34%	-0.39%	-0.13%	-
Mar 2018	0.59%	1.06%	1.19%	-
Apr 2018	-0.33%	0.75%	0.82%	-

Month	Revision 1	Revision 3	Revision 7	Revision 14
May 2018	-0.30%	-0.52%	-	-
Jun 2018	-0.59%	-0.74%	-	-
Jul 2018	0.19%	0.40%	-	-
Aug 2018	11.58%	144.25%	-	-
Sep 2018	-	-	-	-
Oct 2018	-	-	-	-
Nov 2018	-	-	-	-

All differences were under the threshold, but larger than usual differences occurred for August 2018 due to backdated switches.

Audit outcome

Non-compliant

Non-compliance	Description
Audit Ref: 12.12 With: Clause 6 Schedule 15.3 From: Pulse Feb 2018 (r7), Mar 2018 (r1, r3, r7), Apr 2018 (r1, r3, r7), May 18 (r1, r3), Jun 18 (r1, r3)	**Pulse** The accuracy threshold was not met for all months and revisions. Potential impact: High Actual impact: Low Audit history: Multiple times Controls: Moderate Breach risk rating: 2
Audit risk rating	**Rationale for audit risk rating**
Low	Controls are rated as moderate, as there is room for improvement. Initial data is replaced with revised data and washed up. A small number of submissions had differences over the threshold.

Actions taken to resolve the issue	Completion date	Remedial action status
Within the past six months, we have instituted a policy of entering actual end-of-month reads for all AMI meters into the reconciliation engine. This substantially reduces our exposure to forward estimation.	01/11/2018	Identified
Preventative actions taken to ensure no further issues will occur	**Completion date**	
Other measures are undertaken to improve the attainment of actual readings, and the requirement for Permanent Estimates has been underlined by the points attained within this audit.	01/10/2019	

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

Pulse

The Pulse event detail report for 01/07/18 to 09/01/19 was reviewed to identify ICPs which had a profile change.

A typical sample of ten profile changes were reviewed to confirm that there was an actual or permanent estimate reading for profile change.

Property Power

The Property Power event detail report for 01/07/18 to 09/01/19 was reviewed to identify ICPs which had a profile change. No ICPs with profile changes were identified.

Audit commentary

Pulse

Analysis of the event detail report found 48 ICPs with profile changes.

I checked ten profile changes; eight had an actual validated reading on the day of or the day before the profile change. Two ICPs originally had their profiles changed from incorrect dates:

- ICP 0000084821TRC86 changed from RPS to PV1 on 22/02/18 and RPS PV1 on 22/02/18, but now correctly shows RPS PV1 from 22/02/18; and
- ICP 1001115999LCD16 changed from RPS to RPS PV1 on 21/09/18 but should have changed from 18/09/18.

Because these ICPs both had actual reads on the correct day of profile change, compliance is recorded in this section. Non-compliance is recorded in **section 2.1** in relation to the incorrect profile dates recorded on the registry.

I reviewed a sample of five ICPs which appeared to be upgraded or downgraded. Four were not genuine and had occurred because of incorrectly processed profile updates, all were corrected during the audit. Non-compliance is recorded in **section 2.1** in relation to the temporarily incorrect registry information. The genuine downgrade was processed correctly.

The 2018 audit found that five profile changes had an incorrect effective date recorded on the registry. These were rechecked in **section 6.1**, and I found four of the ICPs still had an incorrect profile date on the registry. Cobra's processes ensure that any NHH ICP with EG metering with consumption will have the consumption reported against the PV1 profile, and there is no impact on submission.

Property Power

No ICPs had a profile change during the audit period.

Audit outcome

Compliant

13. SUBMISSION FORMAT AND TIMING

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

Code reference

Clause 8 Schedule 15.3

Code related audit information

Submission information provided to the reconciliation manager must be aggregated to the following level:

- *NSP code (clause 8(a))*
- *reconciliation type (clause 8(b))*
- *profile (clause 8(c))*
- *loss category code (clause 8(d))*
- *flow direction (clause 8(e))*
- *dedicated NSP (clause 8(f))*
- *trading period for half hour metered ICPs and consumption period or day for all other ICPs (clause 8(g)).*

Audit observation

Processes to ensure that information used to aggregate the reconciliation reports is consistent with the registry were reviewed in **section 2.1**.

Aggregation of NHH volumes is discussed in **section 12.3**, aggregation of HHR volumes is discussed in **section 11.4** and NSP volumes are discussed in **section 12.6**.

Audit commentary

Submission information is provided to the reconciliation manager in the appropriate format and is aggregated to the following level for both Pulse and Property Power:

- NSP code;
- reconciliation type;
- profile;
- loss category code;
- flow direction;
- dedicated NSP; and
- consumption period.

The submitted data was also compared to billed data in **section 11.3**, and appeared reasonable.

Audit outcome

Compliant

13.2. Reporting resolution (Clause 9 Schedule 15.3)

Code reference

Clause 9 Schedule 15.3

Code related audit information

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

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

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

Audit observation

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

Audit commentary

Pulse

Review of ten Pulse AV080 non half hour volumes reports confirmed that submission data is rounded to zero decimal places.

Review of eight Pulse AV090 half hour volumes reports confirmed that submission data is rounded to zero decimal places.

Review of eight Pulse AV140 half hour aggregates reports confirmed that submission data is rounded to two decimal places.

Review of two Pulse AV130 NSP volumes reports confirmed that submission data is rounded to two decimal places.

Property Power

Review of ten Property Power AV080 non half hour volumes reports confirmed that submission data is rounded to zero decimal places.

Review of six Property Power AV090 half hour volumes reports confirmed that submission data is rounded to zero decimal places.

Review of six Property Power AV140 half hour aggregates reports confirmed that submission data is rounded to two decimal places.

Audit outcome

Compliant

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

Code reference

Clause 10 Schedule 15.3

Code related audit information

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

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

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

Audit observation

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

I reviewed ten AV080 reports each for Pulse and Property Power to determine whether historic estimate requirements were met.

Audit commentary

Pulse

The quantity of historic estimate is contained in the submission file, and is not a separate report. The three, seven and 14 month revision files were examined for a selection of ten months, and the table below shows that the thresholds were not met for some NSPs for some revisions. The reasons that forward estimate remains are discussed in **section 12.8**.

Month	Revision 3 80% Met	Revision 7 90% Met	Revision 14 100% Met	Total
Jun 2017	-	-	53	158
Jul 2017	-	-	54	160
Aug 2017	-	-	49	161
Dec 2017	-	130	-	163
Jan 2018	-	451	-	490
Feb 2018	-	141	-	163
Mar 2018	-	147	-	163
Jun 2018	161	-	-	167

Month	Revision 3 80% Met	Revision 7 90% Met	Revision 14 100% Met	Total
Jul 2018	163	-	-	168
Aug 2018	162	-	-	167

The table below shows that the percentage of historic estimate across all NSPs is well above the required targets for the three and seven month revisions, and below the target for the 14 month revisions.

Month	Revision 3 80% Target	Revision 7 90% Target	Revision 14 100% Target
Jun 2017	-	-	99.67%
Jul 2017	-	-	99.72%
Aug 2017	-	-	99.73%
Dec 2017	-	93.40%	-
Jan 2018	-	94.53%	-
Feb 2018	-	95.20%	-
Mar 2018	-	98.50%	-
Jun 2018	95.72%	-	-
Jul 2018	95.04%	-	-
Aug 2018	96.67%	-	-

Property Power

The quantity of historic estimate is contained in the submission file, and is not a separate report. The three, seven and 14 month revision files were examined for a selection of ten months. The table below shows the threshold was met for all revisions.

Month	Revision 3 80% Met	Revision 7 90% Met	Revision 14 100% Met	Total
Jun 2017	-	-	23	23
Jul 2017	-	-	23	23
Aug 2017	-	-	23	23
Dec 2017	-	23	-	23
Jan 2018	-	23	-	23
Feb 2018	-	23	-	23
Mar 2018	-	23	-	23
May 2018	23	-	-	23
Jun 2018	23	-	-	23
Jul 2018	23	-	-	23

The table below shows that the percentage of historic estimate across all NSPs is at or above the required target for all revisions.

Month	Revision 3 80% Target	Revision 7 90% Target	Revision 14 100% Target
Jun 2017	-	-	100.00%
Jul 2017	-	-	100.00%
Aug 2017	-	-	100.00%
Dec 2017	-	99.83%	-
Jan 2018	-	100.00%	-
Feb 2018	-	100.00%	-
Mar 2018	-	100.00%	-
May 2018	100.00%	-	-
Jun 2018	100.00%	-	-
Jul 2018	100.00%	-	-

Audit outcome

Non-compliant

Non-compliance	Description
Audit Ref: 13.3 With: Clause 10 of Schedule 15.3 From: Jun-Aug 17 (r14), Dec 17-Mar 18 (r7) and Jun-Aug 18 (r3)	**Pulse** Historic estimate thresholds were not met for some revisions. Potential impact: Low Actual impact: Low Audit history: Multiple times Controls: Moderate Breach risk rating: 2
Audit risk rating	**Rationale for audit risk rating**
Low	Controls are rated as moderate as they are sufficient to mitigate risk most of the time, but there is room for improvement. Pulse was close to the target in all cases.

Actions taken to resolve the issue	Completion date	Remedial action status
The read attainment programme described in sections 6.8 to 6.10 has already improved the accuracy of historic estimation at revisions 7 and 14. Use of end of month reads for reconciliation has improved historic estimation performance for earlier revisions, with less movement of volume due to seasonal shape changes.	01/03/2019	Identified
Preventative actions taken to ensure no further issues will occur	**Completion date**	
We believe that the measures already described to improve accuracy at all revisions will result in smaller corrections in future washups.	01/03/2019	

CONCLUSION

At the beginning of this audit period Pulse used two participant codes; Pulse (PUNZ) and Property Power (CPPL). The CPPL ICPs switched to PUNZ effective from 01/08/18. This audit has examined compliance for both codes, including the transition of the CPPL ICPs to PUNZ.

Pulse also acts as an agent for submission of generation volumes for Pioneer Energy. Accucal provides generation volumes to Pulse, which are used to produce generation volumes submissions as Pioneer's agent. Processes relating to services provided to Pioneer are documented in the relevant sections of this report. Where the audit outcome differs to Pulse's for a report section it is separately listed, and a separate table of non-compliance for Pioneer is included in the audit summary section.

Pulse have made good progress during the audit period. The validation processes have been greatly improved. This audit identifies some further validations that will increase the overall level of compliance if adopted.

In the area of registry management and switching training has been a focus for Pulse. To support this staff have ready access to a comprehensive knowledgebase and Gentrack 4 provides good visibility of processes and which step of a process has failed if there are exceptions. Work queues are now at a manageable level. These are managed as part of the daily BAU. There were some areas of improvement identified, specifically:

- Incorrect active dates applied by Gentrack in a small number of instances
- Certification of metering at the time of reconnection
- ICP switch in dates being requested for a later date than the reconnection is actioned
- The application of meter reads in switching files

In the area of meter reading and reconciliation there has been good improvement in the management of meter reading attainment and reconciliation processes. There were some areas of improvement identified, specifically:

- Validation of zero consumption reads not being carried out
- Some corrections not processed
- Leaving negative consumption unvalidated until it catches up
- Some late submissions

The next audit frequency table indicates that the next audit be due in three months, based on Pulse's final score of 91. This score does not reflect the progress Pulse has made during the audit period due to the inclusion of the corrections and backdating that was carried out to improve compliance.

I have reviewed Pulse's responses to the compliance plan and based on these I recommend a next audit period of six to nine months.

PARTICIPANT RESPONSE

Pulse have reviewed this report. Their comments are recorded in the body of the report and no further comments were provided.