VERITEK

Electricity Industry Participation Code Reconciliation Participant Audit Report

For

Trustpower Limited

Prepared by Steve Woods – Veritek Limited

Date of Audit: 22/05/17 -24/05/17

Date Audit Report Complete: 07/07/17

Date Audit Report Due: 24/08/17

Executive Summary

This Electricity Industry Participation Code Reconciliation Participant audit was performed at the request of Trustpower Limited (Trustpower), 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.

Trustpower have made year on year improvements in all areas audited. The registry maintenance and switching areas have a robust set of reports to assist the teams, which provide day to day visibility of the activity being undertaken and performance in relation to the Code requirements. There were a small number of minor issues identified with little or no impact on submission. These include:

- Late updates to the registry for a small number of new connections and changes
- A small number of late switching files
- Two ICPs not certified within five business days.

Trustpower has strong controls in place to ensure submission information is accurate. There were only a small number of issues identified in this area, as follows:

- AMI event information is not being routinely monitored and acted upon
- Non-compliance still exists with many distributed unmetered load databases, leading to incorrect submission information in some cases
- There are some minor ICP days discrepancies for a small number of ICPs.

The audit found 30 non-compliances, makes three recommendations and raises two issues. The increase in the number of non-compliances from the last audit does not reflect a decline of the level of compliance but is related to the new audit report structure which has added some additional areas of compliance to be evaluated, or has split single sections into multiple sections. The next audit frequency indicator recommends that the next audit be conducted in six months. I recommend the next audit be conducted in 12 months. This is reflective of the overall high level of compliance and that the majority of the non-compliances have an audit risk rating of low. The matters raised are shown in the tables below:

Table of Non-Compliance

Subject	Section	Clause	Non-compliance	Controls	Audit Risk Rating	Breach Risk Rating	Remedial Action
Relevant information	2.1	10.6, 11.2, 15.2	Some registry discrepancies.	Strong	Low	1	Identified
Metering Certification	2.10	10.33(2)	2 ICPs not certified within 5 business days of energisation.	Strong	Low	1	Identified
Changes to registry	3.3	10 of Schedule 11.1	Registry information not provided within 5 business days.	Strong	Low	1	Identified
Trader responsibility for an ICP	3.4	11.18	Correct MEP nomination late for three ICPs.	Weak	Low	3	Identified
Management of "active" status	3.8	17 of Schedule 11.1	Some builders' temporary supplies energised without Trustpower's knowledge.	Weak	Low	3	Identified
Change of MEP	3.11	10.22(1)(a)(i)	MEP change process not being managed in all instances.	Weak	Low	3	Identified
Losing trader to provide final information	4.3	5 of Schedule 11.3 and 15.2	Some late CS files.	Strong	Low	1	Identified
Readers must use same reading	4.4	6 & 6A of schedule 11.3	11 late RR files.	Strong	Low	1	Identified
Losing trader provides information- switch move	4.8	10 of Schedule 11.3	1 incorrect AN response code sent. Some late CS files.	Strong	Low	1	Identified
Changes to switch meter reading- switch move	4.11	12(2A)&(2B) of Schedule 11.3	21 late RR files. 1 RR sent with only one validated read gained.	Strong	Low	1	Identified
Losing trader provision of information	4.13	15 of schedule 11.3	Incorrect AN code of MU sent for 3 HH switches.	Moderate	Low	2	Investigating

Subject	Section	Clause	Non-compliance	Controls	Audit Risk Rating	Breach Risk Rating	Remedial Action
Withdrawal of switches	4.15	17 & 18 of Schedule 11.3	6 switches withdrawn greater than 2 months of the event date. 1 late AW sent.	Moderate	Medium	4	Investigating
Unmetered threshold	5.2	10.14(2)(b) of part 10	28 ICPs with annual consumption over 6,000 kWh per annum.	Strong	Low	1	Identified
Unmetered threshold exceeded	5.3	10.14(2)(b) of part 10	28 ICPs with annual consumption over 6,000 kWh per annum and remedial actions are not yet complete.	Strong	Low	1	Identified
Distributed unmetered load	5.4	11(1) of schedule 15.3, 10.14 & 15.13	Some incorrect submission information for DUML ICPs.	Moderate	Low	2	Identified
Electricity conveyed & notification of embedded generators	6.1	10.13 & 15.13	Some incorrect submission information for ICPs with distributed generation.	Strong	Low	1	Identified
		10.12 & 10.24(b) of part 10	Six metering installations bridged and two metering installations interfered with.	Strong	Low	1	Identified
Responsibility for metering at GIP	6.2	10.26(7) of part 10	RM not notified of the new expiry date for Matahina metering installation.	Moderate	Low	2	Cleared
Certification of control devices	6.3	33(1A) & (1) of schedule 10.7	4 ICPs without certified control devices.	Moderate	Low	2	Identified
Derivation of meter readings	6.6	5(b)&(c) of schedule 15.2	Customer reads being treated as actuals. Checks for phase failure not conducted and recorded by Datacol.	Moderate	Low	2	Identified
Interrogate meters once	6.8	7(1) and 7(2) of Schedule 15.2	Customer reads being treated as actuals. Checks for phase failure not conducted and recorded by Datacol.	Moderate	Low	2	Identified

Subject	Section	Clause	Non-compliance	Controls	Audit Risk Rating	Breach Risk Rating	Remedial Action
NHH meters interrogated annually	6.9	8(1) & (2) of schedule 15.2	ICPs unread at 12 months under reporting.	Moderate	Low	2	Identified
Electronic meter readings & estimated reads	9.6	17(4)(f) of schedule 15.2	Event information not evaluated in accordance with the Code.	Moderate	Low	2	Identified
Calculation of ICP days	11.2	15.6	NHH ICP days discrepancies due to incorrect meter change dates in GTV. HHR ICP days incorrect for ICP 0003443370BU50D.	Moderate	Low	2	Identified
HHR aggregates information	11.4	15.8	HHR aggregates missing from the February 2017 file for 3 ICPs. HHR aggregates file does not contain electricity supplied information.	Moderate	Low	2	Identified
Permanence of meter readings	12.8	4 of schedule15.2	Some estimated data still existing at 14 months.	Strong	Low	1	Cleared
Forward estimate process	12.12	6 of schedule 15.3	FE accuracy threshold not met for some balancing areas.	Strong	Low	1	Identified
Compulsory meter reading after profile change	12.13	7 of schedule 15.2	Profile changes made on estimates.	Strong	Low	1	Identified
Historical estimate reporting	13.4	10 of schedule 15.3	HE targets not met for a small number of NSPs.	Strong	Low	1	Identified
Breach risk rating total						48	
Indicative Next Audit Frequency						6 months	

Table of Recommendations

Subject	Section	Clause	Recommendation for Improvement	Remedial Action
Interrogate meters once	6.8	7(1) & (2) of schedule 15.2	Check unread during period of supply report parameters to ensure the correct ICPs are captured.	Investigating
Calculation of ICP days	11.2	15.6 of part 15	Check whether the ICP days discrepancies due to incorrect meter changes are widespread and consider additional monitoring if this is the case. Include ICPCOMP and ICPMISS reporting in the monthly controls for HHR.	Identified
HHR aggregates information	11.4	15.8	Suggest Trustpower liaise with other participants to consider recommending a code change to allow aggregates files	Identified

Table of Issues

Subject	Section	Clause	Issue	Action
Losing trader provides final information	4.10	11 of schedule 11.3	The switch file must contain the date of the last actual reading for the meter. The code does not state whether this last actual reading must be during the period of supply. In the case of switch moves these requests can be backdated and therefore reads will have been gained after the switch event date.	Add to the issues register
NHH meter reading application	6.7	6 of schedule 15.2	Some NHH meter readings made effective the day before the physical meter change to ensure continuity of consumption information and accuracy of ICP days. This may require a Code change to ensure compliance is possible.	Add to the issues register

Persons Involved in This Audit

Auditor:

Name	Company	Role
Steve Woods	Veritek Limited	Lead Auditor
Rebecca Elliot	Veritek Limited	Supporting Auditor

Trustpower personnel assisting in this audit were:

Name	Title
Bronwyn Jackson	Assurance and Compliance Specialist
Ben Rice	Reconciliation Analyst
Stuart Milsom	Customer Connections Service Delivery Manager
Cushla Dyer	Connections Team Leader
Howard Wood	Commercial Manager (Wholesale)
Karen Vanstone	HHR data
Delwyn Jeffrey	Commercial and Industrial Billing Manager
Kristy Knox	Team Leader – Provisioning
Angela Lumby	Meter Reading Manager
Fleur McDonald	Reconciliation Analyst
Lisa Edge	Customer Connections Analyst
Annastacia Barklay	Billing and Payments Team Leader
Suzanne Shilton	Documentation and Learning Co-ordinator
Philip Bocock	Workflow Analyst
Stephanie Roberts	Revenue Assurance Analyst
Hayley Gillard	Customer Connection Specialist
Charlie Lockington	Commercial and Service Level Analyst

Contents

1. Administrative

1.1 Summary of Previous Audit

Trustpower provided a copy of the report from their previous audit conducted in May 2016 by Veritek Limited. The summary tables below show that many of the issues raised have now been cleared.

Further comment is made in the relevant sections of this report.

Table of Non-Compliance

Subject	Section	Clause	Non compliance	Status
Switching	2.1.4 now 4.3	5 of schedule 11.3	Some late CS files.	Still existing
			Incorrect last read date when the account is finalled on an estimate.	Cleared
	2.1.5 now 4.4	6 of schedule 11.3	Incorrectly rejecting some AMI RR requests.	Cleared
			11 late RR files.	Still existing
	2.2.2 now 4.8	10 of schedule 11.3	Some late CS files.	Still existing
	2.2.3 now 4.10	11 of schedule 11.3	Incorrect last read date when the account is finalled on an estimate.	Cleared
	2.2.4 now 4.11	12 of schedule 11.3	16 late RR files.	Still existing
	2.3.3 now 4.14	16 of schedule 11.3	6 late CS files.	Cleared
Provision of Information to the Registry	2.8.2 now 3.5	11.7 of part 11 & 9 of schedule 11.1	Registry information not provided within 5 business days.	Still existing
Changes to Registry Information	2.8.3 now 3.3	10 of schedule 11.1	Registry information not provided within 5 business days.	Still existing
Registry Discrepancies	2.8.9 now 2.1	11 of schedule 11.1	Registry discrepancies found.	Still existing
ANZSIC Codes	2.8.10 now 3.6	9(1)(k) of schedule 11.1	27 Active ICPs with no or incorrect ANZSIC codes assigned.	Cleared
Unmetered Threshold	2.10.1 now 5.4	10.14 of part 10	31 UML connections exist which exceed 6,000 kWh per annum.	Still existing
Maintaining Shared Unmetered Load	2.10.2 now 5.1	11.14 of Part 11	8 shared ICPs records incomplete or incorrect.	Cleared

Subject	Section	Clause	Non compliance	Status
HHR clock synchronisation	3.2.4 now 7.4	2(5)&(6) of schedule 15.2	Clocks not synchronised when manual data collection occurs for FCLM metering.	Cleared
Meters Interrogated Annually	3.3.5 now 6.9	8(1) & (2) of schedule 15.2	ICPs unread at 12 months under reporting.	Still existing
NNH Metering Information Data Validation	4.2.4 now 6.1	10.24 of part 10	8 meters bypassed leading to electricity not being quantified.	Still existing
Electronic Meter Readings	4.2.5 now 6.14	17 (4) of schedule15.2	AMI event logs not checked as part of the validation process.	Cleared
Forward Estimates	6.1.5 now 12.12	6 of schedule 15.3	FE accuracy threshold not met for some balancing areas.	Still existing
Historical Estimates	6.2.4 now 13.4	10 of schedule 15.	HE targets not met for some NSPs.	Still existing
DUML Non Compliance				
Deriving submission information	2.10.2 now 5.4	11(1) of schedule 15.3	Not compliant 11 databases.	Still existing
ICP identifier	2.10.2 now 5.4	11(2)(a) of schedule 15.3	Not compliant 6 databases.	Still existing
Location of items of load	2.10.2 now 5.4	11(2)(b) of schedule 15.3	Not compliant 5 databases.	Still existing
Description of items of load	2.10.2 now 5.4	11(2)(c) of schedule 15.3	Not compliant 7 databases	Still existing
Capacity of items of load	2.10.2 now 5.4	11(2)(d) of schedule 15.3	Not compliant 9 databases.	Still existing
Tracking of load changes	2.10.2 now 5.4	11(3) of schedule 15.3	Not compliant 8 databases.	Still existing
Audit trail	2.10.2 now 5.4	11(4) of schedule 15.3	Not compliant 3 databases.	Still existing

Table of Recommendations

Subject	Section	Clause	Recommendation for Improvement	Remedial Action
Event logs and clock errors	3.2.2	11(2)(d) of schedule 15.2	Ensure manual data collection for FCLM metering includes the event log and clock errors.	Cleared

Table of Issues

Subject	Section	Clause	Issue	Action
Switching	2.1.5	6 of schedule 11.3	Switch breach reporting duplicating RR breaches. Does not align with registry records.	EA have reviewed report. In progress with Jade for development

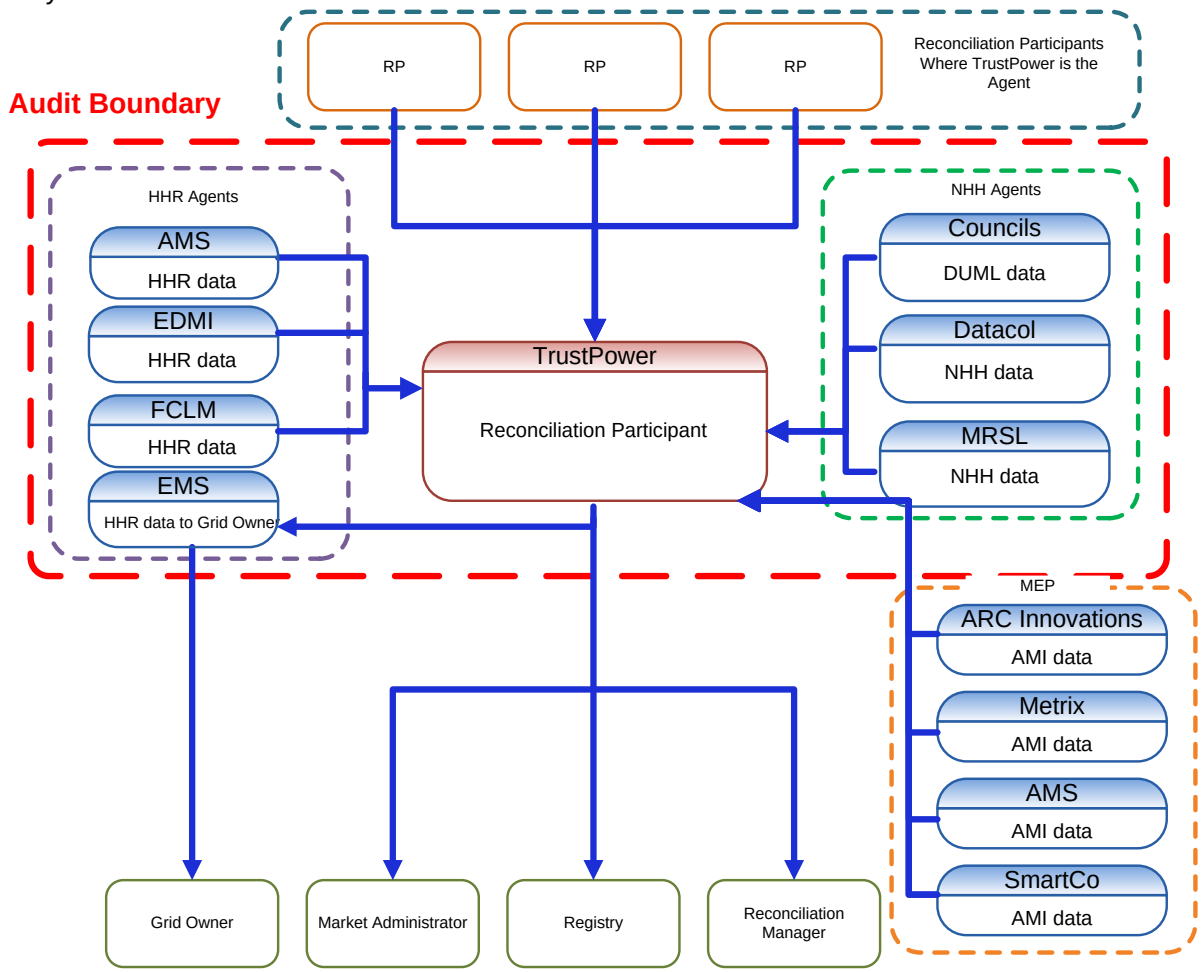
1.2 Scope of Audit

This Electricity Industry Participation Code Reconciliation Participant audit was performed at the request of Trustpower, 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 V7.1.

The audit was carried out at Trustpower's premises in Tauranga, on May 22nd to 24th 2017.

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



The table below shows the tasks under clause 15.38 of part 15 for which Trustpower requires certification. This table also lists those agents who assist with these tasks:

Tasks Requiring Certification Under Clause 15.38(1) of Part 15	Agents providing services	MEPs providing services
(a) - Maintaining registry information and performing customer and embedded generator switching		
(b) – Gathering and storing raw meter data	Datacol – NHH MRSL- NHH AMS – HHR EMS – HHR AMS – HHR manual data collection EDMI – HHR	Metrix – AMI as an MEP ARC Innovations – AMI as an MEP AMS – AMI as an MEP Smartco – AMI as MEP
(c)(iii) - Creation and management of HHR and NHH volume information	AMS – HHR Pulse Metering – HHR Various Councils – DUML databases EMS – HHR EDMI - HHR	
(d) – Calculation of ICP days		
(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		
(f) - Provision of metering information to the Grid Owner	EMS	

Trustpower receives DUML data from a number of Councils, who are considered agents under clause 15.34 of part 15. Trustpower conducted some internal and external audits of DUML databases during the audit period. The results are discussed in Section 2.10.3.

Trustpower also receives data from Powerco, Westpower and Marlborough Lines, who provide NHH meter readings from their substations. These parties provide digital photos of the meters and the readings are entered into GTV by Trustpower personnel. They are considered contractors rather than agents and they operate under Trustpower's control.

The remaining agents listed above have been audited in accordance with the Guidelines for Reconciliation Participant Audits V6.2, which was in place at the time of their audits being undertaken. Their audit reports are attached as appendices, and comments are included in this report in relation to any issues found.

1.3 Exemptions From Obligations to Comply With Code (Section 11 of Electricity Industry Act 2010)

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.

Three exemptions in place are relevant to the scope of this audit. They are as follows:

- Exemption 159 allows ICP 0001131999MLC77 to be treated as standard unmetered load rather than distributed unmetered load. This exemption expires when Trustpower ceases to be the responsible trader for this ICP. This ICP is now decommissioned and the exemption is therefore not required.

- Exemption 250 Exemption 146 allows ICPs: 0007146031RN859, 0007146032RN499, 0007146034RN516, 0007146035RN953 and 0007146036RN593 to consume more than 6,000 kWh per annum. This exemption expires when either the ICPs are all metered or Trustpower is no longer responsible for the ICPs. None of these ICPs are metered and Trustpower is still responsible for them all.

- Exemption 258 allows ICP 0001177008ML889 to be exempt from complying with the unmetered load obligations in clause 10.14 of the code from 01/05/17 to 12/05/17. This installation is now metered and the exemption is not required.

1.4 Organisation Structure

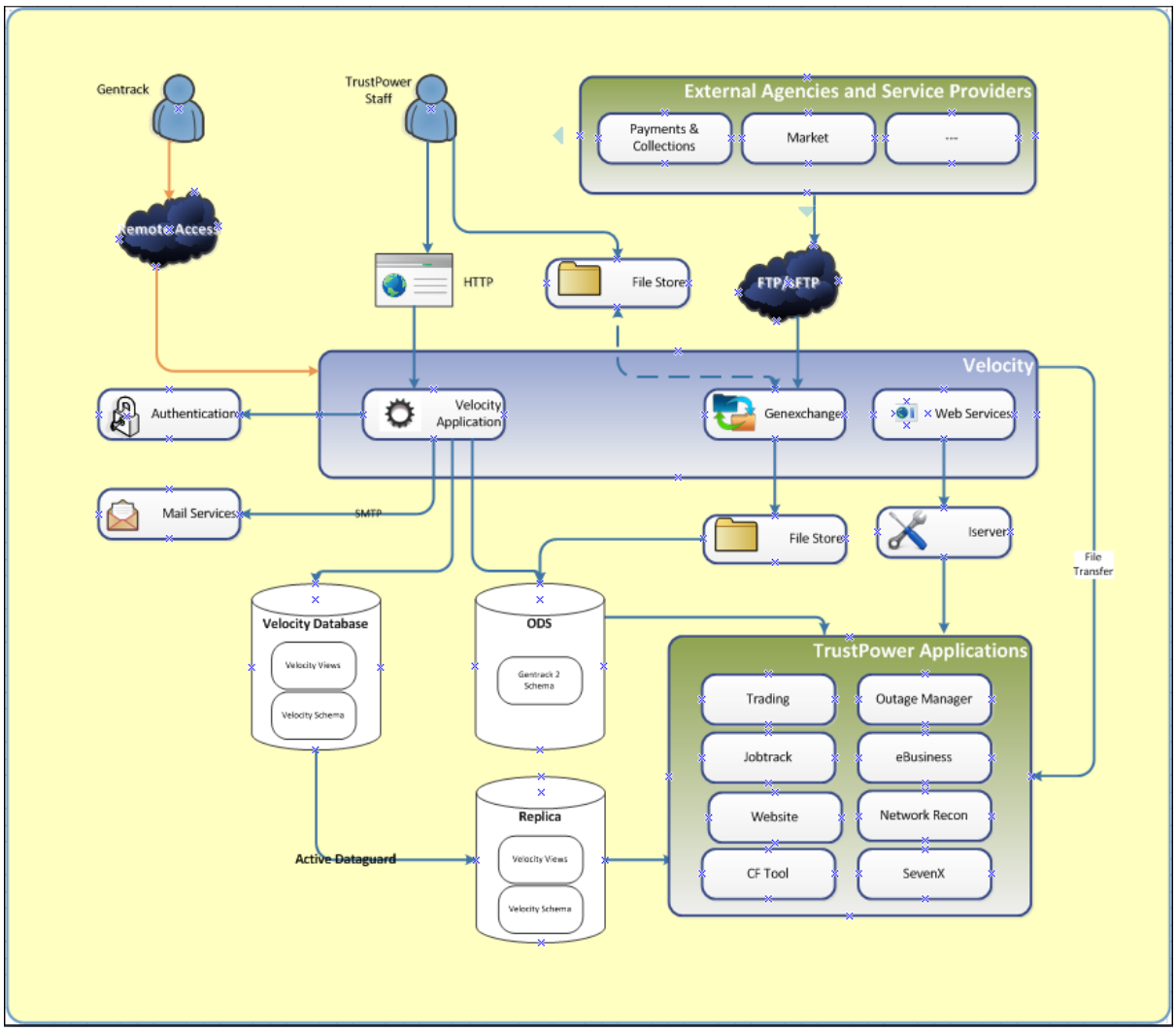
Trustpower's organisational structure was sighted.

1.5 Use of Agents (Clause 15.34 of Part 15)

Trustpower uses a number of agents in relation to the functions covered by the scope of this audit. They are identified in Section 1.2.

1.6 Hardware and Software

A diagram of Trustpower's system configuration is shown below.



1.7 Breaches or Breach Allegations

Trustpower has two breach allegations relevant to the scope of this audit recorded by the Electricity Authority since May 2016. Both of these allegations related to submission accuracy and were considered to be minor. Comment is made regarding current compliance in the body of this report.

1.8 ICP Data

Trustpower provided a list file as at April 2017. The table below shows the ICPs by status.

ICP Status	Number of ICPs 2017	Number of ICPs 2016	Number of ICPs 2015
Active (2)	262,047	245,534	225,507
Inactive - new connection in progress (1,12)	654	770	748
Inactive - AMI remote disconnection (1,7)	7	7	0
Inactive – disconnected at meter box (1,11)	0	0	2
Inactive – disconnected at pole fuse (1,8)	20	2	1
Inactive - meter disconnected (1,9)	7	0	0
Inactive - no reason found (1,0)	0	0	70
Inactive – vacant (1,4)	4,388	4,350	4,469
Inactive - reconciled elsewhere (1,5)	0	0	1
Inactive – ready for decommissioning (1,6)	802	976	930
Decommissioned (3)	23,734	22,624	21,647

The active ICPs from the list file are summarised by meter category in the table below:

Category	2017	2016	2015	2014	2013	2012	2011
1	256,587	238,159	218,400	199,437	200,696	203,988	218,826
2	2,305	2,362	2,463	2,303	2,298	2,461	2,691
3	450	457	479	424	494	526	574
4	170	164	158	135	120	119	115
5	34	36	50	51	13	12	12
9	1,056	1,441	1,470	1558	-	-	-
Blank	1,445	2,915	2,487	2191	-	-	-

1.9 Authorisation Received

Trustpower provided a letter of authorisation to Veritek permitting the collection of data from other parties for matters directly related to the audit.

2. Operational Infrastructure

2.1 Relevant Information (Clause 10.6 of Part 10 & Clause 11.2 of Part 11 &15.2 of Part 15)

A participant must take all practicable steps to ensure that information that the participant is required to provide to any person under Part 15 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 list file was examined to confirm that all information was correct and not misleading. The registry validation process was examined in detail in relation to the achievement of this requirement. The list file was examined to identify any registry discrepancies.

Audit Commentary

There has been an improvement in the monitoring of registry and submission discrepancies over the last two audit periods and I consider Trustpower has robust controls in place to identify and correct any misleading or incorrect information. The analysis of the list file returned the following findings:

Item No.	Issue	2017	2016	2015	Comments
1	Status of "new connection in progress with an initial energisation date populated	5	12	90	Three of these have since been updated to active. The remaining two ICPs are discussed in detail in Section 3.5 "Provision of Information to the Registry". All were compliant.
2	Active with no MEP	13	6	4	All had an MEP nominated. See Section 3.4 "Trader Responsibility for an ICP".
3	Incorrect submission flag	2	67	3	2 HHR ICPs switched in and had GXP profile applied. These were updated to the correct profile when the metering was loaded. See Section 4.14 "Gaining Trader to Notify Registry" below.
4	Blank ANZSIC codes	0	1	56	All active ICPs had an ANZSIC code applied – compliant.
5	ANZSIC "T999" not stated	1	22	47	Corrected to residential on 11/5/17 for 11/4/17. See Section 3.6 "ANZSIC Codes" below.
6	ANZSIC "T994" don't know	0	4	10	No ICPs found with this code applied - compliant
7	Category 9 but Active with MEP and UML "N"	5	9	7	All were checked on the registry and they had either been updated to an inactive status or the MEP has

Item No.	Issue	2017	2016	2015	Comments
					since loaded metering.
8	ICPs with Distributor unmetered load populated but retail unmetered load is blank	31	43	185	The Distributor field appears to be incorrect for 26 ICPs which are metered telecommunications cabinets. The distributor has 0.00 in the kW field but this is still confusing and should be removed. A further three non-telecommunications ICPs have zero in the distributor field which should be removed. ICP 0007150280RN188 switched in with incorrect unmetered load data from the losing trader. This is now resolved. ICP 0007162962RNAD5 also switched in without the retailer unmetered load field populated. This is still under investigation.
9	ICPs with unmetered load flag Y but load is recorded as zero	2	4	4	These are for fixed charges where metering has been removed and there is no supply to the property but the customer wants to retain the supply point so are for line charge only.
10	ICPs with incorrect shared unmetered load	0	8	6	Compliant.
11	ICPs with Distributed Generation indicated but no DG profile	24	0	0	These have been corrected since the list file was run. See Section 6.1 "Electricity Conveyed & Notification by Embedded Generators" for details.

Submission information was correct in all cases in relation to those identified in the ICP missing report. The discrepancies above are recorded as non-compliance.

Non-compliance	Description
Audit ref: 2.1 With: Clause 11.2 & 15.2 From/to: 1/6/16-30/4/17	Some registry discrepancies. Potential impact: Low Actual impact: Low Audit history: Multiple times Controls: Strong Breach Risk Rating: 1
Audit Risk Rating	**Rationale for audit risk rating**
Low	The controls are strong and most issues have been identified and resolved. The impact on settlement is minor, therefore the audit risk rating is low.

Actions taken to resolve the issue	Completion date	Remedial action Status
Trustpower continues to utilise exception reporting as part of our BAU processes to identify and resolve Registry discrepancies. It's pleasing to see that our focus on data integrity is reflected in the results achieved this audit. We will continue to engage with 3rd parties ie Traders, Distributors and customers to maintain and where possible, improve our performance in this area.	Ongoing	Identified
Preventative actions taken to ensure no further issues will occur	**Completion date**	
Trustpower will continue its focus on identifying and resolving Registry discrepancies to ensure the integrity of our data.	Ongoing	

2.2 Provision of Information (Clause 15.35 of Part 15)

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

Audit Observation

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

Audit Commentary

This area is discussed in a number of sections in this report and compliance is confirmed with regard to timeliness and format of information in accordance with Part 15.

2.3 Data Transmission (Clause 20 of Schedule 15.2)

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

The data transmission method and security was examined for all data sources to Trustpower.

Audit Commentary

Data is transmitted to Trustpower using FTP or zipped and emailed files. NHH meter reading data is collected in the field and entered into a personal digital assistant (PDA) device. The data is stored in the PDA in Structured Query Language (SQL) mobile format. Raw meter data enters SevenX many times per day (every seven minutes) from meter readers' PDA devices via the cellular network in compressed and encrypted serialised format. A non-editable copy is created and these are retained in an archive directory.

The security of data from streetlight databases has improved and this matter is raised with all providers when new databases are taken on.

HHR data is provided by all agents in a secure format. Some files are provided by AMS and Electrix for manually read sites and these are supplied in a secure format as required by this clause. Compliance is confirmed.

2.4 Audit Trails (Clause 21 of Schedule 15.2)

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

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

The audit trail was examined for all data gathering, validation and processing functions by a walk though of the processes.

Audit Commentary

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

2.5 Retailer Responsibility for Electricity Conveyed – Participant Obligations (Clause 10.4 of Part 10)

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

Trustpower's contract term and conditions were reviewed.

Audit Commentary

This requirement was confirmed to be covered in Trustpower's customer contract terms and conditions. Compliance is confirmed.

2.6 Retailer Responsibility for Electricity Conveyed – Access to Metering Installations (Clause 10.7(2),(4),(5) and (6) of Part 10)

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.

Audit Observation

Trustpower's contract term and conditions were reviewed.

Audit Commentary

Trustpower's contract with their customers includes consent to access for authorised parties for the duration of the contract. Compliance is confirmed.

2.7 Physical Location of Metering Installations (Clause 10.35(1)&(2) of Part 10)

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. This point is not specifically mentioned in the Terms and Conditions, but the existing practices in the electrical industry achieve compliance.

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

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

Audit Commentary

Trustpower confirmed they do not deal with any installations with loss compensation.

2.8 Trader Contracts to Permit Assignment by the Authority (Clause 11.15B of Part 11)

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

Audit Observation

Trustpower's contract term and conditions were reviewed.

Audit Commentary

Trustpower's terms and conditions were checked and I confirm appropriate clauses are recorded. Compliance is confirmed.

2.9 Electrical Connection of an ICP (Clause 10.32 of Part 10)

A reconciliation participant must only request electrical connection of a point of connection if they:
- accept responsibility for the ICP and the obligations under Parts 10 and 11, and, under Part 15; and
- have an arrangement with an MEP to provide metering at the point of connection under Part 15.

Audit Observation

The new connection process was examined in detail to evaluate the strength of controls. The list file and event detail report for the period from October 2016 to March 2017 were analysed to confirm process compliance and controls are functioning as expected.

Audit Commentary

Trustpower's new connection process varies dependant on the network. The customer's agent, usually the electrician, contacts Trustpower to request a new connection. Some networks advise Trustpower of the new connection request via their service portal complete with the ICP. For other networks Trustpower request the creation of an ICP from the relevant Network. Once the ICP is known the new connection is loaded into GTV. GTV then draws all the relevant ICP details through from the registry. This creates a job in GTV to move the ICP to the "New connection in progress" status. All the trader details, including the ANZSIC code and MEP are required to be populated. This writes up to the registry and the MEP nomination is sent at the same time. The job will not proceed unless all required information is populated. Any missing or mismatched data will stop the job progressing. Reporting is in place to identify exceptions and ensure visibility of all work in progress. Compliance is confirmed.

2.10 Metering Certification (Clause 10.33(2) of Part 10)

A reconciliation participant may energise or authorise the energisation of a connection only if the reconciliation participant has accepted responsibility for the point of connection if one or more certified metering installations are in place.

Audit Observation

The new connection process was examined in detail and the list file as at April 2017, and event detail report for the period October 2016 - March 2017 were analysed.

Audit Commentary

The new connection process is discussed in detail in Section 2.9 above and this confirms that Trustpower accepts responsibility for the point of connection prior to energisation and an MEP has been nominated in all instances. Robust reporting is in place to monitor the workflow and identify any exceptions and addressing these in a timely manner.

There were 14 active ICPs with no MEP recorded in the list file. These were all checked on the registry. All had an MEP nominated prior to energisation and the metering has been loaded to the registry since the list file was provided. All were confirmed to have been certified on the same day as they were energised. Compliance is confirmed.

Analysis of the event detail report found all new connection ICPs were certified within five business days of energisation except for two. These were identified on the discrepancy reporting and are both under investigation as part of BAU. As detailed in Section 3.5 below for ICP 0000755006WAA5A it appears that the meter certification is greater than five business days after energisation. The original active date of 27/10/16 which matches that of the meter certification was amended to the earlier date energisation date of 18/10/16. The customer's notes did not clearly indicate which date is correct hence this is being investigated. ICP 0000232170MP8A1 is a similar scenario to the ICP above. This ICP was made active on the registry for 12/12/16 but the meter was not certified until 13/1/17. The customer's notes did not clearly indicate which date is correct. This is recorded as non-compliance.

Non-compliance	Description
Audit ref:2.10 With: Clause 10.33(2) From/to: Oct 16-Jan 17	2 ICPs not certified within 5 business days of energisation. 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 new connection process is robust with strong controls in place. The two examples found of late meter certification are exceptions. These had already been identified through BAU reporting and were under investigation hence audit risk rating is low.

Actions taken to resolve the issue	Completion date	Remedial action Status
As noted by the auditors, the 2 ICP's are exceptions only and sound reporting enables Trustpower to identify and investigate where this has occurred as part of our BAU processes.	ongoing	Identified
Preventative actions taken to ensure no further issues will occur	**Completion date**	
Trustpower will continue its focus on identifying and investigating instances where a late meter certification has occurred and will monitor our own performance to measure our compliance in this area.	ongoing	

2.11 Arrangements for Line Function Services (Clause 11.16 of Part 11)

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

Audit Observation

The process to ensure an arrangement is in place before trading commences on a Network was examined and controls within GTV were checked.

Audit Commentary

A table within GTV prevents the loading of any installation data, prior to the establishment of arrangements for line function services. Not all Use of Systems Agreements are signed, however the clause requires that an arrangement is in place and does not require a signed agreement.

Compliance is confirmed.

2.12 Arrangements for Metering Equipment Provision (Clause 10.36 of Part 10)

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, and also a check of controls within GTV.

Audit Commentary

Trustpower has an arrangement in place with all MEPs that manage metering in relation to their customer base. All new connections are taken to the status "New connection in Progress" (1,12) and an MEP is nominated as part of this process. GTV holds a table detailing all the MEPs that they have an arrangement in place ensuring that only MEPs that have an arrangement are selected or the job will error. Compliance is confirmed.

3. Maintaining Registry Information

3.1 Obtaining ICP Identifiers (Clause 11.3 of Part 11)

The following participants must obtain an ICP identifier for any point of connection, as defined in clause 11.3(3) of part 11, to any local network or embedded network:

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.*

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 Trustpower. The process is detailed in Section 2.9 above.

ICPs exist where Trustpower is the direct purchaser from an embedded generator and where Trustpower is the embedded generator selling directly to the clearing manager. Compliance is confirmed.

3.2 Providing Registry Information (Clause 11.7(2) of Part 11)

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

Audit Observation

The new connection process was examined in detail. The list file was analysed in conjunction with the event detail report for the six month period from October 2016 through to April 2017 to evaluate the updating of the registry in relation to new connections. This clause links directly to Section 3.5 below. The findings for the timeliness of updates is detailed there.

Audit Commentary

The new connection process is detailed in Section 2.9 above. The process in place ensures that the trader required information is populated as required by this clause. A robust suite of reports is in place to manage any discrepancies and workflow issues for both NHH and HHR new connections. Compliance is confirmed.

3.3 Changes to Registry Information (Clause 10 of Schedule 11.1)

If information provided by a trader to the registry about an ICP changes, the trader must notify the registry 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 event detail report for the six month period from October 2016 through to April 2017 to determine the overall performance for that period. I used the extreme case methodology examining a sample of ten ICPs that were updated greater than 30 days from the event date for each of the status type updates, with the exclusion of new connections in progress as these can only be non-compliant if not updated within five business days of energisation. A sample of ten of these were examined where the status was not updated within five business days from the date of energisation.

The process to manage MEP changes is discussed in detail in Section 3.11 below. The event detail analysis identified 657 MEP nomination events. The nomination date was compared to the metering event effective date to identify any ICPs that were not nominated within five business days.

Audit Commentary

The table below shows that the registry was not updated within five business days for 634 of 6,600 ICPs where a status change has been made (this excludes new connections in progress for the reasons stated above). A longer event detail report period was selected this year, hence the difference in the number of interactions year on year. The registry was updated later than 30 business days after the actual event date for 169 of the 6,580 ICPs. 84 of these were to status "Active", 38 of these were to status Inactive - Ready for decommissioning" and 47 were to status "Inactive - vacant".

Event	Year	Total ICPs	ICPs Notified Within 5 Days	ICPs Notified Greater Than 5 Days	Average Notification Days	Percentage Compliant
Changes to active-reconnections	2015	240	183	57	10.5	76%
	2016	877	700	177	8.1	80%
	2017	3,335	2,942	393	5.4	88%
Change to de-energised vacant (excl new connections in progress and pending disconnection statuses)	2015	359	353	6	1.5	98%
	2016	613	563	50	4.6	92%
	2017	2,988	2,851	137	3.5	95%
Change to de-energised ready for decommissioning	2015	62	29	33	19.4	47%
	2016	111	56	55	88	50%
	2017	257	153	104	35	56%
Change of MEP	2017	657	605	52	-77*	92%

*Note that MEP nominations can be many days in advance of the meter being certified hence a negative figure is recorded as the average notification days.

Event	Year	Total ICPs	ICPs Notified Within 5 Days of Energisation	ICPs Notified Greater Than 5 Days of Energisation	Average Notification Days	Percentage Compliant
Change to de-energised new connection in progress	2015	380	287	93	7.9	76%
	2016	1238	1162	76	3.2	99%
	2017	3,294	3,274	20	3.5	99%

Inactive - Vacant

The ICP vacant management process is described in detail in Section 3.9 below. A sample of ten ICPs that were updated greater than 30 days were examined and found:

- Six were due to advice received from the network that the ICP had been de-energised for a variety of reasons including fire and Kaikoura earthquake damage. The status was updated as soon as practicable by Trustpower.
- Two were corrections to a carnival supply that is used intermittently.
- Two were backdated to bill off vacant consumption. This process has been changed since these occurred with any vacant consumption being billed off on the last active date.

The known issue identified in the last audit with Gentrack GTV where in some instances the field work task was closed but the status update was not occurring was resolved shortly after the audit. Of the sample checked the late notification from Distributors is the main cause of the backdating of these events. Trustpower has robust reporting and controls in this area to identify such instances as soon as possible.

Inactive - Ready for Decommissioning

As discussed in detail in Section 3.9 below, Trustpower actively monitors vacant properties from seven days with requests to disconnect properties issued if no response if received within 14 days. Once an installation is disconnected, these are updated on the registry.

A sample of ten ICPs that were updated greater than 30 days were examined and found:

- Four instances where the meter reader has advised the meter has been removed. These were followed up with the customer and the network, and the status updated. These can take some time to resolve hence being backdated.
- Four instances where the network has advised Trustpower to update the ICP status to enable decommissioning.
- Two instances of late paperwork from the contractor.

The lack of notification and late notification from customers and Distributors continues to cause the backdating of these events. Trustpower has robust reporting and controls in this area to identify such instances as soon as possible. This is evident when these sites are identified by a meter reader as noted above.

Inactive - New Connection in Progress

The new connection process is described in detail in Section 2.9 above. Trustpower's new connection process takes all ICPs to the "inactive – new connection in progress" status. As this action occurs before energisation, non-compliance can only occur if this status update occurs greater than five business days after energisation (i.e. a backdated new connection). Analysis of the event detail report found 20 ICPs that were updated greater than five business days of the energisation date. A sample of ten of these ICPs were examined and found:

- Two were late due to the ICPs being at "New" on the registry. Trustpower updated them as soon as possible once they had been made "Ready" by Marlborough Lines
- Two were updated to "new connection in progress" within the required timeframe but a correction to the energisation date caused them to appear as backdated
- The remaining six ICPs were backdated new connections.

The late updating of the backdated connected ICPs is recorded as non-compliance below. I note that these are a small number in relation to the overall number of new connections and are not indicative of a systematic issue, but rather exceptions. Trustpower have robust reporting and controls in place to manage and monitor such instances.

Reconnections

There has been an 8% improvement in time to update reconnected ICPs on the registry. The average time to update has also reduced during the audit period from 8.1 days to 5.4 days. There is year on year improvement.

Analysis found 84 reconnected ICPs where the notification date was greater than 30 business days. A sample of ten of these backdated reconnections was examined and found:

- Two were due to corrections to the ICP energisation date. In both instances, these were updated as soon as practicable.
- Two were due to backdated move switch ICPs. In both instances, these were updated as soon as the switch completed.
- Two were backdated to bill off vacant consumption.
- Two were corrections to the active period due to the ICP being in the incorrect status.
- ICP 0000005596UN2AB was due to revenue assurance finding a site illegally reconnected.
- ICP 0000473751HBE40 was due to the previous trader updating the status in their time slice which caused Trustpower to then have to backdate the active status to correct their time slice.

Change of MEP

The analysis carried out identified 52 ICPs (8%) where the MEP was nominated five days after the metering certification date. These were all checked on the registry and found:

- 38 related to meter replacements where the new MEP e.g. LGML replaced CTCT metering.
- Eight had the wrong MEP nominated in the first instance. The correct MEP was nominated late.
- Six require further investigation to determine the cause for the late nomination.

As discussed in Section 3.4 below the issue of the incorrect MEP being nominated in the first instance and then the correct MEP being nominated late was evident in three new connection ICPs.

Two instances of late updates to profiles for HH sites were found when examining gaining trader switches in **Section 4.14 Gaining trader to notify registry**. These were not updated until the meter details were loaded to GTV thereby causing the profile to be updated late.

The late updating of the registry is recorded as non-compliance.

Non-compliance	Description
Audit ref: 3.3 With: Clause 10 of schedule 11.1 From/to: 1/10/16-30/4/17	Registry information not provided within 5 business days. Potential impact: Low Actual impact: Low Audit history: Seven times previously Controls: Strong Breach Risk Rating: 1
Audit Risk Rating	**Rationale for audit risk rating**
Low	The updating of registry information process is robust and the overall level of compliance is high.

Actions taken to resolve the issue	Completion date	Remedial action Status
Trustpower continues to look for opportunities to refine our reporting and processes to improve our performance in updating registry information within 5 business days. It's pleasing to see this reflected in our results and we will continue to monitor our own performance and work with our MEP and contractors to ensure the timely and accurate return of metering paperwork. Reporting has been created to address the issue of late MEP nominations where a change of MEP has occurred. This will identify any fieldwork service order that has been logged without the relevant MEP nomination.	30/06/2017	Identified
Preventative actions taken to ensure no further issues will occur	**Completion date**	
Trustpower will continue its focus on identifying and resolving Registry discrepancies to ensure the integrity of our data.	ongoing	

3.4 Trader Responsibility for an ICP (Clause 11.18 of Part 11)

A trader becomes responsible for an ICP when the trader is recorded in the registry as being responsible for the ICP. The responsible trader must ensure that an MEP is recorded in the Registry.

A trader ceases to be responsible for an ICP if another trader accepts responsibility in the registry; or the ICP is decommissioned. If decommissioning an ICP, the trader must ensure that a final meter interrogation takes place, and that the MEP is notified.

Audit Observation

Retailers Responsibility to Nominate and Record MEP in the Registry

The new connection process was discussed and the list file, as at April 2017, was examined to confirm that all active ICPs have an MEP recorded. This analysis found 14 active ICPs that do not have an MEP recorded in the registry.

ICP Decommissioning

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

Audit Commentary

Retailers Responsibility to Nominate and Record MEP in the Registry

The new connection process is discussed in detail in Section 2.9 above. Trustpower takes all new connections to status (1,12) “New connection in progress” in the first instance. An MEP nomination is sent as part of the same action within GTV.

The 14 ICPs with no MEP recorded in the registry were examined and confirmed that all had had an MEP nominated prior to energisation and that all of the nominations were accepted by the MEP. I found three ICPs had the incorrect MEP nominated in the first instance. These then required an MEP change. This process is not well defined and can result in late nomination of the correct MEP. This is discussed in detail in **Section 3.11 Change of MEP**. This is recorded as non-compliance below.

ICP Decommissioning

Trustpower continues with their obligations under this clause. ICPs that are vacant and either active or inactive are still maintained in GTV.

In all cases, an attempt is made to read the meter at the time of removal and if this is not possible then the last actual meter reading is used. This last actual reading is normally the one taken at the time of de-energisation. Trustpower also advise the MEP responsible that a site is to be decommissioned. A sample of ten ICPs was examined to confirm an attempt to read the meter was made at the time of removal. This was confirmed in all but one instance for ICP 0000271731MP932 which was earthquake damaged so no access could be gained. Compliance is confirmed.

Non-compliance	Description
Audit ref: 3.4 With: Clause 11.18 From/to: 1/10/16-30/4/17	Correct MEP nomination late for three ICPs. Potential impact: Low Actual impact: Low Audit history: None Controls: Weak Breach Risk Rating: 3
Audit Risk Rating	**Rationale for audit risk rating**
Low	The process for managing MEP changes does not have robust controls resulting in the MEP being nominated late hence the rating of weak. Whilst the controls are weak analysis found only three examples of late MEP hence the audit risk rating of low.

Actions taken to resolve the issue	Completion date	Remedial action Status
As noted by the auditors only 3 ICP's were identified where a late MEP nomination occurred through the New Connection process. Trustpower has well defined MEP areas which ensures a high level of performance in this area, however reporting has now been created to address the issue of late MEP nominations. This reporting will identify new connection fieldwork service order that has been logged without the relevant MEP nomination.	30/06/2017	Identified
Preventative actions taken to ensure no further issues will occur	**Completion date**	
Reporting is now in place to identify new connection fieldwork service orders that have been logged without the relevant MEP nomination and we will monitor our own performance to measure our compliance in this area.	ongoing	

3.5 Provision of Information to the Registry (Clause 9 of Schedule 11.1)

The content of files provided to the registry contains the information set out in clause 9 of schedule 11.1.

Audit Observation

The new connection process was examined in detail. The event detail report was examined for the six months from October 2016 through to April 2017. This was analysed to assess compliance with updating the registry within five business days of commencement of supply at each ICP. All examples of ICPs not updated to active within 30 days were examined.

The HHR new connection process was examined in detail and five examples using the homogenous sampling methodology were examined to assess controls.

The event detail report was analysed in conjunction with the list file to identify any ICPs where there was a variance between the initial energisation date and the meter certification date. Any ICPs with a mismatched active date to the meter certification and initial energisation dates were checked.

Audit Commentary

The process of taking a pending new connection was examined. Once the metering paperwork is received back from the field the ICP is updated to active for the energisation date recorded. The service order will remain open in Gentrack until the MEP loads the metering information to the registry. Robust controls are in place to ensure that new connections are actively managed. This includes the monitoring of new connections which are active and where the service order is still open. Reporting also identifies any ICPs that are pending energisation where the Distributor has recorded an initial energisation date and any date mismatches between initial energisation and metering certification date. These reports are reviewed on a daily basis.

HHR new connections follow the same process until the metering is required. At this point it passes to TOU metering team to liaise directly with MEP and manage the meter install process. Reporting captures when the metering is loaded. This done manually by the TOU metering team and then either the job request is closed or the connections team are advised by the TOU team that job can be closed. Five HHR new connections were examined and found all except one were processed as expected except for ICP 1000560076PCB96. This was made ready by the network for the incorrect date and then made active for the incorrect active date. This was identified through discrepancy reporting and has since been corrected.

The table below shows that the registry was not updated within five business days for 169 of 2,700 newly connected ICPs. A longer event detail report period was selected this year, hence the difference in the number of interactions year on year. The registry was updated later than 30 business days after the actual event date for 12 of the 2,700 ICPs.

Event	Year	Total ICPs	ICPs Notified Within 5 Days	ICPs Notified Greater Than 5 Days	Average Notification Days	Percentage Compliant
Changes to active-new connections	2015	416	58	358	14.3	14%
	2016	695	555	140	4.7	80%
	2017	2,700	2,461	169	2.8	91%

The average time to update newly connected ICPs has shown further improvement from 80% to 91% from the last audit. The average time to update the registry has further improved to an average of 2.8 days. This is well below the maximum five business days as required by the code. The continued improvement has been as a result having a stable team in place, supported by a robust reporting suite monitoring jobs in progress and performance against key KPIs.

Of the late updates to registry there were 12 ICPs that were backdated greater than 30 days and the average time of the update was 57 days. Analysis of these found:

- Five were due to late paperwork back from the field.
- Four were corrections to active dates based on updated information received from the MEP
- ICP 1000563055PC8E3 was made ready by the network for the incorrect date. This required correction by the network before Trustpower could update to active.
- ICP 0000039229HR8C3 is an example of a builders temporary supply that was never advised by the contractor to Trustpower until the permanent supply connection was advised. This is discussed in detail in Section 3.8 below.
- ICP 0000038757HRAA0 was identified from the business as usual process in place to check all new ICPs pending connection greater than 180 days. This process is discussed in Section 3.9 below.

The accuracy of the active dates for the new connections was checked against the meter certification date and the initial energisation date across all identifiable new connections:

Active Date vs. Initial Energisation Date

	Total New Connections	Initial Energisation Date recorded	Of those populated Active vs. IED Matched	Different
Distributor Initial Energisation Date	2,695	2,695	2,673 (99%)	22

All new connections had an initial energisation date populated. 19 of the ICPs with a different initial energisation date were found to have a meter certification date that matched to Trustpower's active date suggesting that the Distributors date is incorrect in these instances. The three ICPs with a variance between the meter certification and the initial energisation date were examined and the findings detailed in the table below.

ICP	Active Date	IED	Meter Cert Date	Comment
0000416439WT33B	28-Feb-17	24-Feb-17	24-Feb-17	This did align but was then updated to active for 28/2/17 active date. This is under investigation.
0000755006WAA5A	18-Oct-16	27-Oct-16	27-Oct-16	This did align but was then updated to active for 28/2/17 active date. This is under investigation.
1000559185PC3C9	05-Oct-16	07-Oct-16	07-Oct-16	This is a HHR new connection. This is under investigation.

All three of these have been identified in discrepancy reporting and are under investigation.

Active Date vs. Meter Certification

	Total New Connections	Matched	Different
Meter Certification	2,695	2,459 (91%)	239

Analysis of those ICPs that didn't match found the following:

- 233 ICPs initial energisation date matches Trustpower's active date. Certification has to occur within five days of energisation therefore energisation date and meter certification dates will not always align and these connections were taken to active on the correct date.
- The remaining three ICPs are the same ICPs discussed above.

The issue identified in the last audit of in relation to the incorrect active date being recorded for new connections in the Westpower area has been resolved and no evidence of this occurring was found in this audit.

3.6 ANZSIC Codes (Clause 9 (1(k) of Schedule 11.1)

Traders must 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 list file snapshot was analysed.

Audit Commentary

ANZSIC codes are captured at the point of customer registration and then reconfirmed as part of the welcome call to newly connected customers. Any discpreancies are captured as part of the registry discrepancy reporting and managed accordingly.

As detailed in Section 2.1 "Provision of Information" above, one ICP was identified with the ANZSIC code T99 "don't know"applied. This has since been corrected to be residential as part of the BAU registry discrepancy process. Compliance is confirmed.

3.7 Changes to Unmetered Load (Clause 9(1)(f) of Schedule 11.1)

Traders must populate the unmetered load details for all ICPs with unmetered load for which they are responsible.

Audit Observation

The process to manage unmetered load was examined. The list file as at April 2017 was examined to identify any ICPs where:

- Unmetered load is identified by the Distributor but none is recorded by Trustpower
- Trustpower's unmetered load figure doesn't match with the Distributor's figure (where it's possible to calculate this if the Distributor is using the recommended format) and the variance is greater than 1.0kWh per day. 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

All unmetered load new connections or capacity changes require an application to Trustpower that is reviewed and authorised to ensure accuracy. Trustpower continually monitors unmetered load differences and they are working with the relevant Distributors to resolve these differences.

Trustpower has strong controls in place for the management of unmetered load. The table below lists the validation checks that occur on a daily basis.

UNMETERED REPORTING - TRUSTPOWER
SHARED - Discrepancy Between Distributor Unmetered Load and GTV Unmetered KWH (> 0.01 KWH per day)
SHARED - Distributor Unmetered Load - GTV has Null or 0 Unmetered KWH Field
STANDARD - Discrepancy Between Distributor Unmetered Load and GTV Unmetered KWH (<0.01 KWH per day) - CHORUS
STANDARD - Discrepancy Between Distributor Unmetered Load and GTV Unmetered KWH (<0.01 KWH per day) - NON CHORUS
STANDARD - Distributor Meter Load Field Populated TRUS Has No Unmetered Load Details
STANDARD - Retailer Unmetered Load Details on Registry is Blank or Incorrect Format - CHORUS
STANDARD - Retailer Unmetered Load Details on Registry is Blank or Incorrect Format - NON CHORUS
Unmetered - UNM Flag is Y but the Daily Unmetered KWH is 0
Unmetered Daily KWH over 8.2 - CHORUS
Unmetered Daily KWH over 8.2 - NON CHORUS

Unmetered KWH - Install Fixtures vs Registry1

The table below lists the discrepancies found. Where the daily unmetered load figure is different to the Distributor's information, there is not sufficient information to conclude that Trustpower is incorrect, therefore compliance is recorded.

Issue	Quantity 2017	Quantity 2016	Comments
Daily kWh does not match distributor information where the Distributor has a load description that can be calculated (762 total).	762	1,344	253 are different by more than 2%. This is a reduction from the 366 recorded in 2016.
Daily kWh difference more than 1.0kWh per day	189	122	
Distributor's unmetered field is populated but the retailer field is not populated	31	43	28 of these appear to be metered connections; therefore the distributor should remove their information. The distributor has changed their field to indicate zero kW, but they should remove their information completely in order to be compliant. The remaining 3 ICPs were checked with the following findings: ICP 0000251048UN45B had the unmetered load removed on 13/04/16 so the distributor's field is incorrect. ICP 0007150280RN188 switched in on 01/04/17 with the unmetered load field blank. This was identified through validation and the field was populated following an investigation, which was conducted as soon as practicable. ICP 0007162962RNAD5 is under investigation by the account manager to confirm whether unmetered load is present and if so, what the load is.

3.8 Management of "Active" Status (Clause 17 of Schedule 11.1)

Before being given an "Active" status the retailer is required to ensure that the ICP has only one customer, embedded generator, or direct purchaser; and that the electricity consumed is quantified by a metering installation(s) or other approved method of calculation.

Audit Observation

New Connections

The new connection process was examined in detail as discussed in Sections 2.9 & 3.5 above. The list file as at April 2017 was examined to identify any ICPs still at the status "Inactive - new connection in progress" with an initial energisation date populated.

Reconnections

The process for the management of ICP reconnection was examined. The event detail report for the period from October 2016 to April 2017 was analysed and the findings in relation to the timeliness of updates to registry is recorded in Section 3.3 above.

Audit Commentary

New Connections

The new connection process is discussed in detail in Sections 2.9 & 3.5 above. Specific to this clause GTV will not allow more than one party per ICP nor will it allow an ICP to be set up without either a meter or, if it is unmetered, the daily kWh.

The status of an ICP is changed to "Active" once confirmation has been received by the energisation contractor or the Distributor has populated the initial energisation date. For those instances where the active date is updated based on the Distributor's initial energisation date, the active date is confirmed when the energisation paperwork is received by the contractor.

I identified one scenario in relation to builders temporary supplies that are being energised but do not get advised to Trustpower by the contractor until the site goes to the permanent supply. ICP 0000039229HR8C3 is an example of this scenario. The builder's temporary supply was energised on 21/12/16 but was not known to be energised until the paperwork for the permanent supply was received on 13/3/2017. This process requires review to put better controls in place to prevent a contractor energising builders' temporary supplies without the Trustpower's knowledge. This is recorded as non-compliance below.

The list file identified five ICPs that had an initial energisation date populated but were still at status "new connection in progress". These were all checked on the registry and found:

- three had since been updated compliantly to active
- ICP 0000032996EA3CC was a backdated switch in and the status was updated to active once the switch completed
- ICP 1000564966PCEB2 has had the metering hung and certified but has not been energised as yet.

Reconnections

All reconnections have a job issued to the relevant service provider to action. These are managed through job tracker. Remotely disconnected sites are attempted in the first instance remotely. If this is not successful a field contractor is dispatched to complete. Metrix do this automatically as part of their service. AMS notify Trustpower and then Trustpower dispatch the field contractor to reconnect.

If a meter is bridged a job is logged to unbridge the site. If a reconnection job is open after three days from being issued, it is followed up with the contractor to ensure closure of the job occurs within five business days. The ICP status is updated to active when the job is closed.

Discrepancy reporting is in place to monitor any status mismatches between GTV and the registry. These are managed on a daily basis.

The timeliness is detailed in Sections 3.3 and 3.5 above.

Non-compliance	Description
Audit ref: 3.8 **With:** Clause 17 of Schedule 11.1 **From/to:** 21/12/16-13/3/17	Some builders' temporary supplies energised without Trustpower's knowledge. **Potential impact:** Medium **Actual impact:** Low **Audit history:** None **Controls:** Weak Breach Risk Rating: 3
Audit Risk Rating	**Rationale for audit risk rating**
Low	Controls are weak in relation to when an approved contractor energises a builders temporary supplies without advising Trustpower. Trustpower only become aware of the connection when the site moves to the permanent supply. Overall the level of compliance is high but the lack of controls in this area is resulting in submission occurring late for these ICPs hence the audit risk rating of low.

Actions taken to resolve the issue	Completion date	Remedial action Status
As noted by the Auditors, Trustpower's level of compliance is high with only exceptions identified where BTS supplies have been energised without our knowledge. Reporting is in place to review any ICP where a new connection is still in progress after 185 days and we will continue to work with our MEP and contractors for the timely return of metering and livening paperwork. Where breaches are identified feedback is provided for improved performance. Additional reporting has been created to identify any new connection not yet energised where a BTS to Permanent application has been received. This reporting will be used as an indicator that livening has potentially occurred or is imminent and therefore requires urgent follow up.	24/07/2017	Identified
Preventative actions taken to ensure no further issues will occur	**Completion date**	
Trustpower will continue to monitor our own performance and work with MEP's and contractors to ensure the timely and accurate return of metering and livening data to maintain our compliance levels.	ongoing	

3.9 Management of "Inactive" Status (Clause 19 of Schedule 11.1)

The ICP status of "inactive" must be managed by the relevant trader and indicates that:
- electricity cannot flow at that ICP; or
- submission information related to the ICP is not required by the reconciliation manager for the purpose of compiling reconciliation information.

Audit Observation

The process to manage new connections pending connection (recorded in the registry at status "inactive - new connection in progress") was examined. The list file was examined to identify any ICPs that had been at the "Inactive - new connection in progress" for greater than 24 months. A sample of ten of these ICPs selected using the typical sample methodology were checked.

The process to manage ICPs at the other inactive statuses was examined. A sample of five ICPs at each inactive statuses using the typical characteristics methodology were checked.

Audit Commentary

Inactive - New Connection in progress

As recorded in Section 1.8 there were 654 ICPs at this status in the list file. Trustpower monitors any ICPs that have been at this status for greater than 180 days. After this time they contact the customer to confirm if the ICP is still required. If they are no longer required the "new connection in progress status is reversed and the Distributor is advised via email that the ICP is no longer required. If the ICP is found to be connected Trustpower follows up with the energisation agent to get the paperwork in relation to these ICPs and updates accordingly. ICP 0000038757HRAA0 is an example of this is noted in Section 3.5 above. All contacts with the customer are recorded in the customer's memo section. There are 22 ICPs that have been at this status greater than 24 months. The sample checked confirmed that all had been contacted on a regular basis, supported by a customer memo.

Inactive Status (excluding new connection in progress)

ICPs are only changed to inactive vacant or similar or ready for decommissioning once a Trustpower approved contractor has confirmed that the ICP has been disconnected.

Once a customer finals Trustpower sends a request to the premise for any new customer to register supply or the supply will be disconnected. If after 14 days there has been no response a work order is issued to the field. As with reconnections, if a disconnection job is open after three days from being issued it is followed up with the contractor to ensure closure of the job occurs within five business days. The ICP status is updated to active when the job is closed.

Discrepancy reporting is in place to monitor any status mismatches between GTV and the registry. These are managed on a daily basis. AMI remotely disconnected sites are added to a manual meter reading round to maintain visibility of these vulnerable sites.

Contractors are periodically audited to ensure the appropriate policies and procedures are being complied with.

Trustpower have robust processes and controls in place to manage this process. Compliance is confirmed.

3.10 ICPs at New or Ready Status for 24 months (Clause 15 of Schedule 11.1)

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.

Audit Commentary

Trustpower take all new connections to the "Inactive - new connection in progress" status. They also have regular reporting in place to that captures any ICPs where they have been nominated but do not have a new connection registered with them. All are investigated and actioned accordingly. There is nothing older than a month in the latest report. No requests from any Distributors have been received.

3.11 Change of MEP (Clause 10.22(1)(a)(i) of Part 10)

If the MEP for an ICP which is not also an NSP changes, the trader must notify the registry of the gaining MEP in accordance with Part 11.

Audit Observation

The process to manage a change of MEP was examined.

Audit Commentary

MEP changes occur across a variety of different scenarios. The MEP change process is well managed in relation to switching. When an ICP switches in the MEP is reviewed and if an MEP change is required a nomination is sent as soon as the switch completes. The process of changing the MEP is less well defined for other scenarios. The analysis in Section 3.3 above identified the bulk of the late nominations are in relation to meter changes. The MEP nomination in many of these instances was being prompted by the MEP when they were wanting to load metering to the registry but hadn't been nominated. Controls in this area are weak and I recommend the change of MEP processes be reviewed to identify in which scenarios the MEP nomination is being missed and what process changes and reporting is needed to better manage this area. This is recorded as non-compliance.

Non-compliance	Description
Audit ref:3.11 With: Clause 10.22(1)(a)(i) From/to: 1/10/16-30/4/17	MEP change process not being managed in all instances. Potential impact: Medium Actual impact: Low Audit history: None Controls: Weak Breach Risk Rating: 3
Audit Risk Rating	**Rationale for audit risk rating**
Low	The bulk of the MEP changes are managed compliantly. The audit highlighted weaknesses in the management of this process in certain scenarios and the lack of controls in relation to these instances is causing non-compliance for Trustpower and the MEP delaying them in the uploading of metering to the registry hence the controls rating of weak and audit risk rating of low.

Actions taken to resolve the issue	Completion date	Remedial action Status
As noted by the auditor the bulk of the MEP changes are managed compliantly. Reporting has now been created to address the issue of late MEP nominations where a change of MEP has occurred. This will identify any fieldwork service order that has been logged without the relevant MEP nomination. Trustpower will monitor its own performance to ensure our level of compliance remains high.	30/06/2017	Identified
Preventative actions taken to ensure no further issues will occur	**Completion date**	
Reporting is now in place to address the risk of late MEP nominations and we will monitor our own performance to measure our compliance in this area.	ongoing	

4. Performing Customer and Embedded Network Switching

I note that the switch breach reporting is in the process of being updated by Jade to align with the current code. Therefore, the switch breach report has been used to indicate non-compliance but due to inaccuracies it is not always possible to give a definitive number of the volume of late files.

4.1 Inform Registry of Switch Request for ICPs (Clause 2 of Schedule 11.3)

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 of a switch no later than two business days after the arrangement comes into effect and include in its advice to the registry 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 Trustpower deem all conditions to be met and a sample of five ICPs using the typical sampling methodology were checked to confirm that these were notified to the registry within two business days.

Audit Commentary

Trustpower's processes are compliant with the requirements of Section 36M of the Fair Trading Act 1986. Trustpower confirmed that they do not hold electricity only customers switches for the five business day cooling off period but withdraw the switch if the customer changes their mind within the cooling off period. The exception is bundled customers which do get held for the five business day cooling off period. Both of these approaches are confirmed to be a compliant practice as advised by the Electricity Authority via email on May 22nd, 2013.

No late NT files were identified of the sample checked. Compliance is confirmed.

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

Within three business days after receipt of notification of a switch from the registry, 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 providing the proposed event date to the registry and a valid switch response code; or providing a request for withdrawal.

Audit Observation

The switching process was examined in relation to Trustpower as the "losing trader". An event detail report for the period from October 2016 to April 2017 was reviewed, to identify AN files issued by Trustpower during the audit period. A sample of five NHH ICPs was selected using the typical sample methodology.

The switch breach report was examined for the 12 months April 2016 to March 2017.

The event detail report was analysed to assess compliance with the requirement to meet the setting of event dates requirement.

Audit Commentary

Trustpower have a switch breach report that gives the team visibility on a day to day basis of switches pending breach and day countdown to breach. There is also a monthly switch performance looking at all aspects of compliance which measures the level of compliance.

The registry switch breach report is monitored multiple times during the work day to ensure switches are completed before they breach. The AA AN response code is only used when no other code applies. In all cases, the correct codes AN codes was used.

There were no AN files sent late during the audit period.

The event detail report found no event dates set greater than 10 days and 95% of switches were completed in five days or less. Trustpower provided a copy of their internal reporting which reflects the same result. This reporting is used internally to monitor compliance. Compliance is confirmed.

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

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

Audit Observation

An event detail report for the audit period was reviewed, to identify CS files issued by Trustpower 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
- accuracy of average daily consumption (this is based on the most recent read to read consumption).

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

The switch breach report was analysed for the audit period.

Audit Commentary

The CS file content checked was found to be correct. An issue was noted from the last audit that Gentrack was not including the correct last read date when an account finalled on an estimate and a fix was being sought for this. The fix has been in place since 13/2/17. All ICPs that I checked were correct. Actual reads are being used when they are available. This includes customer reads supported by a photograph. As discussed in **Section 6.6 Derivation of meter readings,** these are to be treated as estimates. Trustpower are working with Gentrack to correct this. This is recorded as non-compliance in **Section 6.6**.

Reporting is in place to track this process and measure performance for the sending of the CS information. The switch breach report recorded 102 late CS files during the audit period. This is a reduction from the 427 late CS's reported in 2016. Four of these were reported under the breach code "CS". These four ICPs were examined on the registry and found only one to be a valid breach. The remaining 98 ICPs were reported under the code "E2". I found that 57 of these breaches were recorded as being one day late. A sample of five of these ICPs was checked and confirmed to be compliant. A sample of five ICPs of the remaining 41 ICPs that were recorded as being late by two days or more were checked and all were found to be breaches. Based on this analysis I believe that there were 42 late CS files sent during the audit period. This is recorded as non-compliance.

Non-compliance	Description
Audit ref:4.3 With: Clause 5 of schedule 11.3 & 15.2 From/to: 1/6/16-30/4/17	Some late CS files. Potential impact: Low Actual impact: Low Audit history: Seven times Controls: Strong Breach Risk Rating: 1
Audit Risk Rating	**Rationale for audit risk rating**
Low	Trustpower has robust controls in place hence controls are rated as strong. The volume of late CS files in relation to the total process is minor hence the audit risk rating of low.

Actions taken to resolve the issue	Completion date	Remedial action Status
Trustpower has further enhanced their internal Switch Breach Reporting to pick up all late CS File scenarios, some that had been previously missed. Internal process changes were also made to deal with standard switch customers ringing in to final their accounts.	01/8/2017	Identified
Preventative actions taken to ensure no further issues will occur	**Completion date**	
Trustpower will remain focused on improving our results further.	01/8/2017	

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

If the validated meter reading or permanent estimate provided by the losing trader differs by less than 200 kWh from a value established by the gaining trader for a Transfer Switch event, the gaining trader uses the losing trader's validated meter reading or permanent estimate as the switch event meter reading.

Audit Observation

The process for the management of read requests was examined.

The event detail report and switch breach report were analysed to identify all read change requests and acknowledgements during the audit period.

A combined sample of ten read change requests from the event detail report was selected using the diverse sample methodology. The sample included both transfer and gaining trader read requests, files exchanged with different traders, and a mix of acceptances and rejections.

A sample of five read change rejections and acceptances was selected from the event detail report using the diverse sample methodology. The sample covered both transfer and gaining trader read requests, and files exchanged with different traders.

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

Audit Commentary

The billing team advise the switching team if the start read needs to revised. The sample checked found all transfer switches were supported with two validated reads.

The sample of reads request acceptances and rejections were found to be compliant.

The switch breach report recorded 11 RR files sent late during the audit period. The list was analysed and found all were valid breaches. The issue recorded in the last audit report of the RR files being duplicated was not found in this audit. These were all sent late due to an earlier RR being rejected by the losing trader. The late sending of RR requests is recorded as non-compliance.

Non-compliance	Description
Audit ref:4.4 With: Clause 6 & 6A of schedule 11.3 From/to: 1/6/16-30/4/17	11 late RR files. Potential impact: Low Actual impact: Low Audit history: Seven times Controls: Strong Breach Risk Rating: 1
Audit Risk Rating	**Rationale for audit risk rating**
Low	Trustpower has robust controls in place and the late RR files were all subsequent to the original RR which was sent within 2 months, hence the audit risk rating of low.

Actions taken to resolve the issue	Completion date	Remedial action Status
Trustpower is creating additional reporting to look into the accepting and rejecting of RRs and to ensure that the team are making the right decisions.	01/10/2017	Identified
Preventative actions taken to ensure no further issues will occur	**Completion date**	
Trustpower will remain focused on improving in this area and as noted above, the additional reporting will assist those improvements.	01/10/2017	

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

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 on the registry: and

- the gaining trader will trade electricity from a meter with a half hour submission type in the registry;

- the gaining trader within five business days after receiving final information from the registry, may provide the losing trader with a switch event meter reading from that meter. The losing trader must use that switch event meter reading.

Audit Observation

The process for the management of read requests was examined. The event detail report and switch breach report were analysed. A sample of five ICPs (or all were checked if less than five were found) for the following scenarios were selected using the typical sample methodology from the event detail report:

- other retailer's request accepted by Trustpower
- other retailer's request rejected by Trustpower.

The sample covered both transfer and gaining trader read requests, and a variety of other participants.

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

Audit Commentary

Trustpower's team have a good understanding of the requirement of this clause. The sample checked found that the two rejected read requests were due to the switch being subsequently withdrawn. Compliance is confirmed.

4.6 Disputes (Clause 7 of Schedule 11.3 & Clause 15.29 of Part 15)

A losing trader or gaining trader may notify the other that it disputes a switch event meter reading, notified under clauses 1 to 6. Such a dispute must be resolved in accordance with clause 15.29.

Audit Observation

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

Audit Commentary

Trustpower confirms that no disputes have needed to be resolved in accordance with this clause.

4.7 Gaining trader informs registry of switch request – switch move (Clause 9 Schedule 11.3)

The code requires that "for each ICP, to which a switch relates, the gaining trader must advise the registry of the switch no later than two business days after the arrangement with the customer or embedded generator comes into effect."

Audit Observation

The switch gain process was examined to determine when Trustpower deem all conditions to be met. A sample of five ICPs using the typical sampling methodology were checked to confirm that these were notified to the registry within two business days.

Audit Commentary

The sample checked confirmed all were sent within two days of all conditions being met. Compliance is confirmed.

4.8 Losing Trader Provides Information (Clause 10 of Schedule 11.3)

After receiving notification of a switch request from the registry, the losing trader must respond to the switch request within five business days.

Audit Observation

The switching process was examined in relation to Trustpower as the "losing trader". An event detail report for the period from October 2016 to April 2017 was reviewed, to identify AN files issued by Trustpower during the audit period. A sample of five NHH ICPs was selected using the typical sample methodology.

The switch breach history report for the audit period was reviewed in relation to both late AN and CS files and no breaches were recorded.

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

Audit Commentary

The sample of NHH ICPs checked were correctly coded with the exception of ICP 0000025011EAEC4. This was a de-energised site but was sent with an AN code of MU (unmetered) as the meters have been removed. Trustpower are working with Gentrack to correct this. This was the only instance of this code being sent.

There were no late AN files recorded on the switch breach report during the audit period.

Trustpower's switching team have robust controls in place to ensure that CS files are sent within the required timeframe. I note that the code conflict where an NT can be sent up to 10 days in advance but the CS file must be sent within five days of the NT receipt, can cause the losing trader to be non-compliant if the NT is sent more than five days in advance. The switch breach report recorded 153 late CS files during the audit period. This is an improvement on the 630 late CS files reported in 2016 and the 1,051 late files in 2015. Two of these were reported under the breach code "CS". These were examined on the registry and found neither were valid as both switches had been withdrawn and no CS was sent. The remaining 151 ICPs were reported under the code "E2". The ten checked found that seven were compliant and the remaining three were valid breaches. I have recorded non-compliance for some late CS files.

Non-compliance	Description
Audit ref: 4.8 With: Clause 10 of schedule 11.3 From/to: 1/6/16-30/4/17	1 incorrect AN response code sent. Some late CS files. Potential impact: Low Actual impact: Low Audit history: Three times Controls: Strong Breach Risk Rating: 1
Audit Risk Rating	**Rationale for audit risk rating**
Low	Trustpower has robust controls in place hence the controls rating of strong. The volume of late files reported is minor compared to the volume of switches processed, and some of these are not valid breaches hence the audit risk rating of low.

Actions taken to resolve the issue	Completion date	Remedial action Status
Trustpowers current breach report is excellent however Trustpower does not believe it can reach 100% compliance while the known code conflict remains in place with regards to move in switches. In regard to the one incorrect AN response that was sent, Trustpower is working with Gentrack to ensure that the incorrect code isn't automatically sent for de-energised sites. AN and CS must be sent within 5 business days of NT receipt – Note Code Conflict – NT can be sent up to 10 days in advance but code requires CS within 5 days of NT receipt causing the losing trader to be non-compliant if the NT is sent more than 5 days in advance.	01/9/2017	Identified
Preventative actions taken to ensure no further issues will occur	**Completion date**	
Trustpower will continue to manage our breach report as part of our everyday process. If there is a change to the code conflict, this would help improve our numbers even more.	01/8/2017	

4.9 Losing Trader Determines a Different Date (Clause 10 of Schedule 11.3(2))

If the losing trader determines a different date, the losing trader must also complete the switch by providing to the registry as described in sub-clause (1)(a):
- the event date proposed by the losing trader; and
- a valid switch response code; and
- final information as required under clause 1.

Audit Commentary

The setting of event dates for move switches was examined. The event detail report for the period of October 2016 to April 2017 was examined comparing the NT requested event date with the AN event date sent by Trustpower.

Audit Commentary

Trustpower accept the date proposed unless their customer has a final date later than the gaining trader's date. If the property is occupied the switch will stop and the customer is contacted to confirm the move and book a final or appropriate action e.g. withdrawal if a customer isn't moving.

Analysis of the event detail report identified seven ICPs with event dates earlier than the NT requested event date. These were all checked on the registry and confirmed that the AN sent event date was not earlier than the requested date. All were withdrawn switches which resets the event date to the withdrawal request date hence they appear to be earlier. Compliance is confirmed.

4.10 Losing Trader Must Provide Final Information (Clause 11 of Schedule 11.3)

If the losing trader has provided information to the registry in accordance with clause 10(a), must provide a CS file containing the event date and switch event meter reading.

Audit Observation

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
- accuracy of average daily consumption (this is based on the most recent read to read consumption).

Audit Commentary

The issue found in the last audit of the final estimate date being used for the last meter read date was fixed as of 13/2/17. No examples of this were found past this date. I did find that the last read date being sent is for the last read prior to the NT request date, not the event date. The code doesn't state that the last read date must within the period of supply or not. I raise this as an issue with the code.

Clause	Issue	Audited party comment	Action
With: Clause 11 of schedule 11.3	The switch file must contain the date of the last actual reading for the meter. The code does not state whether this last actual reading must be during the period of supply. In the case of switch moves these requests can be backdated and therefore reads will have been gained after the switch event date.	Trustpower has already released changes into GTV that provides the last read date prior to the event date and not the NT request date.	Add to the Issues Register

As discussed in **Section 4.3 Losing trader must provide final information**, actual reads are being used wherever possible. This includes customer reads supported by a photograph which are to be treated as estimates. Trustpower are working with Gentrack to correct this. This is recorded as non-compliance in **Section 6.6 Derivation of meter readings**. The sample checked found that all information was supplied correctly. Compliance is confirmed.

4.11 Gaining Trader Changes to Switch Meter Reading (Clause 12 of Schedule 11.3)

As of October 9th, 2015, the gaining trader may provide an AMI switch event meter reading within five business days of the event date to the losing trader. In this instance the losing trader MUST use the gaining traders switch event meter reading. If no AMI switch event meter reading is available the gaining trader MUST use the losing traders switch event meter reading. If the validated meter reading or permanent estimate provided by the losing trader differs by less than 200 kWh from a value established by the gaining trader for a Move Switch event, the gaining trader uses the losing trader's validated meter reading or permanent estimate as the switch event meter reading.

Audit Observation

The process for the management of read requests was examined. The event detail report and switch breach report were analysed. A combined sample of five ICPs from the event detail report covering both transfer and gaining trader read requests were examined using the typical sample methodology. The switch breach report was examined and a sample of five ICPs were checked using the extreme sampling methodology.

Audit Commentary

The billing team advise the switching team if the start read needs to revised. The sample checked found one example for ICP 0000000634CE206 where the read request was initiated after only one validated meter reading had been gained. This is recorded as non-compliance.

The event detail report found two AC rejected files. These are discussed in Section 4.5 above. There were no rejected AC files found in relation to Move Switches.

The switch breach report shows 21 late RR files. The sample checked found these were due to access issues delaying reads being gained. This is recorded as non-compliance.

Non-compliance	Description
Audit ref:4.11 With: Clause 12 of schedule 11.3 From/to: 1/6/16-30/4/17	21 late RR files. 1 RR sent with only one validated read gained. Potential impact: Low Actual impact: Low Audit history: Seven times Controls: Strong Breach Risk Rating: 1
Audit Risk Rating	**Rationale for audit risk rating**
Low	Trustpower has robust controls in place hence the control rating of strong. The RR sent with 1 validated read was due to human error and the volume of late RR files was low in relation to the overall volume of RR files processed hence the audit risk rating of low.

Actions taken to resolve the issue	Completion date	Remedial action Status
Trustpower is creating additional reporting to look into the accepting and rejecting of a RRs and to ensure that the team are making the right decisions.	01/10/2017	Identified
Preventative actions taken to ensure no further issues will occur	**Completion date**	
Trustpower will remain focused on improving in this area and as noted above, the additional reporting will assist those improvements.	01/10/2017	

4.12 (HH) Gaining Trader Informs Registry of Switch Request (Clause 14 of Schedule 11.3)

The gaining trader 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 to trade electricity through or assume responsibility for:
- a half hour metering installation that is not a category 1 or 2 metering installation, that has an ICP with a submission type half hour on the registry and an AMI flag of "N"; or
- a half hour metering installation that has a submission flag of half hour 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 with the losing trader trades through a half hour metering installation with an AMI flag of "N".

Audit Observation

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

A sample of five ICPs using the typical sampling methodology from the event detail report from October 2016 to April 2017 were checked to confirm that these were notified to the registry within two business days.

The switch breach report was examined for the 12 months April 2016 to March 2017.

Audit Commentary

The half hour billing team manage these switches. The Account Manager sends through the signed contract. This is then loaded into GTV with an entry date. The NT is sent on the entry date, or if later than the entry date the date of loading.

The switch breach report recorded one late NT file. This was examined on the registry and confirmed to be compliant. The switch breach reporting has not yet been updated to reflect the current code. Compliance is confirmed.

4.13 Losing Trader Provision of Information (Clause 15 of Schedule 11.3)

Within three business days after the losing trader is informed about the switch by the registry, the losing trader must:
15(a) - provide to the registry 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 switching process was examined in relation to Trustpower as the "losing trader". An event detail report for the period from October 2016 to April 2017 was reviewed to identify AN files issued by Trustpower during the audit period. A sample of five HH ICPs was selected using the typical sample methodology.

The event detail report from October 2016 to April 2017 did not identify any gaining trader (HH) switch losses that had occurred during this period.

The switch breach report was examined for the 12 months April 2016 to March 2017.

Audit Commentary

The AN code is determined by GTV based on a hierarchy. Of the five ICPs checked it was found that the incorrect AN code of "MU" - Unmetered was sent for three of these. This is recorded as non-compliance.

The switch breach report confirmed that all AN files were sent within three business days of the NT being received.

Non-compliance	Description
Audit ref: 4.13 With: Clause 15 of schedule 11.3 From/to: 1/3/17 -30/4/17	Incorrect AN code of MU sent for 3 HH switches. Potential impact: Low Actual impact: None Audit history: None Controls: Moderate Breach Risk Rating: 2
Audit Risk Rating	**Rationale for audit risk rating**
Low	The AN code assignment is system set and therefore was assumed to be correct with no checks to confirm the correct code was being sent hence the control rating of moderate. This information is available for each ICP on the registry therefore this has no material impact on settlement hence the audit risk rating of low.

Actions taken to resolve the issue	Completion date	Remedial action Status
All of our AN files are sent within 3 business days of the NT being received. This happens automatically within our system. We will investigate how to mitigate any incorrect AN codes being used for HH sites within the system automation.	01/10/2017	Investigating
Preventative actions taken to ensure no further issues will occur	**Completion date**	
All of our AN files are sent within 3 business days of the NT being received. This happens automatically within our system. We will investigate how to mitigate any incorrect AN codes being used for HH sites within the system automation.	01/10/2017	

4.14 Gaining Trader to Notify Registry (Clause 16 of Schedule 11.3)

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

Audit Observation

The switching process was examined in relation to Trustpower as the Gaining Trader. A sample of five HH ICPs was selected using the typical sample methodology.

The switch breach report was examined for the 12 months April 2016 to March 2017.

Audit Commentary

The half hour billing team manage these switches. All ICPs default to the NHH GXP profile when they switch in and are manually updated when the metering is loaded. The metering was loaded late for ICPs 0000189096TRDBF and 0435026194LCC88. The late updates to the registry are recorded as non-compliance in **Section 3.3 Changes to registry.**

The switch breach report recorded one late CS file during the audit period. This was examined on the registry and confirmed to be compliant. Compliance is confirmed.

4.15 Withdrawal of Switch Requests (Clauses 17 & 18 of Schedule 11.3)

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.

Within five business days after receiving a notification from the registry of a switch, the trader receiving the withdrawal must notify the registry 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.

On receipt of a rejection notification from the registry, a trader may re-submit the switch withdrawal request for an ICP. All switch withdrawal requests must be resolved within 10 business days after the date of the initial switch withdrawal request.

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 receipt of notification from the registry 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.

Audit Observation

The process for management of switch withdrawals was examined.

A sample of five ICPs using the typical sampling methodology from the event detail report from October 2016 to April 2017 for switch withdrawal requests and rejections were checked. The event detail report was also analysed to confirm timeliness of switch requests. This is not currently being correctly identified in the switch breach report.

Audit Summary

The win back process is manual and withdrawals can get delayed as this is managed by emails between departments as per the example detailed below. The process to manage withdrawals is well understood by the switching team and once in progress these are managed via a dashboard.

The content of five of NW files was compared to GTV details and in all cases; the withdrawal reason provided by Trustpower was accurate.

The event detail report found six switch withdrawals backdated greater than two months. These were checked and found:

- Three were due to the wrong premise being switched in - this can take time to resolve.
- Two were due to the customer changing their mind. In one instance, the customer advised Trustpower after two months. For ICP 0000016307NT386 it appears that the email sent to the switching team to withdraw the switch was not actioned.
- One was an unauthorised switch, late due to the customer advising late.

The switch breach report recorded four ICPs where the switch withdrawal was not resolved within 23 days and one late AW file. All of these were checked and confirmed that the four ICPs had multiple withdrawals and Trustpower sent an AW within five days for each request. The one late AW file was confirmed to be a valid breach. This was sent one day late.

The late sending of six switch withdrawals and AW files is recorded as non-compliance.

Non-compliance	Description
Audit ref: 4.15 **With:** Clause 17&18 of schedule 11.3 **From/to:** 1/3/17 -30/4/17	6 switches withdrawn greater than 2 months of the event date. 1 late AW sent. **Potential impact:** Low **Actual impact:** Low **Audit history:** None **Controls:** Moderate Breach Risk Rating: 4
Audit Risk Rating	**Rationale for audit risk rating**
Medium	The manual process to manage win backs can result in ICPs being delayed in getting actioned effecting billing and submission.

Actions taken to resolve the issue	Completion date	Remedial action Status
Trustpower believes they have some good controls in place to monitor and respond to these in a timely manner. We will look at other improvements in this area too, to avoid any breaches at all.	01/10/2017	Investigating
Preventative actions taken to ensure no further issues will occur	**Completion date**	
As stated above we will see if there is any other improvements we can make, whether it be staff training or reports to avoid any breaches.	01/10/2017	

4.16 Metering Information (Clause 21 of Schedule 11.3)

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

All meter readings used in the switching process are validated meter readings or permanent estimates. This has included treating customer reads supported by a photograph as actuals. As discussed in **Section 6.6 Derivation of meter readings,** these are to be treated as estimates. Trustpower are working with Gentrack to correct this. This is recorded as non-compliance in **Section 6.6**

Trustpower's policy regarding the management of meter reading expenses is compliant.

4.17 Switch Saving Protection (Clause 11.15AA to 11.15AB of Part 11)

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

If the protected trader enters into an arrangement with a customer of another trader (the "losing trader") to commence trading electricity with the customer, the losing trader must not, by any means, initiate contact with the customer to attempt to persuade the customer to terminate the arrangement during the period from the receipt of NT to the event date of the switch, including by:
(a) making a counter-offer to the customer; or
(b) offering an enticement to the customer.

If a trader enters into an arrangement with a customer of a protected trader to commence trading electricity with the customer, the protected trader must not, by any means, initiate contact with the customer to attempt to persuade the customer to terminate the arrangement during the period from the receipt of NT to the event date of the switch, including by:
(a) making a counter-offer to the customer; or
(b) offering an enticement to the customer.

Audit Observation

Trustpower is a switch save protected retailer having joined on 24/8/16. The processes in place to manage this were examined. The event detail report for the period October 2016 to April 2017 was examined. A sample of five ICPs where the switch was withdrawn on the event date were checked.

Audit Commentary

They exclude any Switch Save protected retailer files from their pre switch completion save programme and all staff have been trained in relation to the requirements of this clause. I checked the event detail report for all withdrawn switches from the audit period. There were no switches that were withdrawn with the code "CX" applied prior to the switch completion date in relation to any switch save protected retailers. Compliance is confirmed.

5. Maintenance of Unmetered Load

5.1 Maintaining Shared Unmetered Load (Clause 11.14 of Part 11)

The trader must adhere to the process for maintaining shared unmetered load.

Audit Observation

The shared unmetered load process was examined. The list file as at April 2017 was examined in relation to ICPs with shared unmetered load indicated. The load was calculated against the Distributor's record.

Audit Commentary

Trustpower has 84 ICPs where shared unmetered load exists. These were examined and found all had the UNM flag populated correctly. The load calculations confirmed matched with the Distributor's figure with the exception of Northpower which is discussed in the paragraph below. Compliance is confirmed.

Most distributors have populated the registry correctly and have used the recommended format for their data including the ballast figure where appropriate. Northpower has only populated the daily kWh figure. Therefore there is no watts or hours data to support the daily kWh calculation. Trustpower hold only two ICPs on the Northpower network with shared unmetered load.

5.2 Unmetered Threshold (Clause 10.14 (2)(b) of Part 10)

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 process for the management of the unmetered threshold was examined. The list file as at April 2017 was examined. Any ICPs with an unmetered threshold greater than 3,000 kWh per annum were examined.

Audit Commentary

Trustpower has 2,598 ICPs with standard unmetered load.

There are 24 ICPs with an unmetered load of between 3,000 and 6,000 kWh per annum. I checked the records to confirm whether they had an approved load type and found that 14 ICPs were for telecommunications equipment, nine relate to street or traffic lighting and one ICP recently switched in with unknown details. Trustpower is currently investigating this ICP. Compliance is confirmed for ICPs with annual unmetered consumption between 3,000 and 6,000 kWh per annum.

There are 39 ICPs where the annual consumption exceeds 6,000 kWh per annum. The details are as follows:

- five ICPS have current exemptions in place and are therefore compliant
- five ICPs relate to the Invercargill City Council which switched into Trustpower on 01/03/17 and are expected to be audited by September 2017
- ICPs 0001111170WMD3F & 0008807415WMBD6 are recorded as streetlights in the Otorohonga area and are included in the DUML audit for Otorohanga DC
- 28 of the ICPs are part of the Chorus project where separate ICPs are being created for each cabinet and these master ICPs will be decommissioned. Trustpower has made sound progress with the Chorus project; a summary is shown below:

ICP	TRUS Quantity	Network quantity	Network	GXP	Improvement
0001416838UN920	32	34	HAWK	WRK0331	15 of the 34 sites now have independent ICPs.
0001416872UN914	6		POCO	MTM0111	5 of the 6 sites now have independent ICPs.
0001416873UN551	20	15	POCO	MTM0331	13 of the 15 sites now have independent ICPs
0001416874UN89B	10	18	POCO	TGA0111	10 of the 18 sites now have independent ICPs
0001416876UN81E	26		POCO	TGA0331	23 of the 26 sites now have independent ICPs
0001416910UNF65	14	6	HAWK	OWH0111	Awaiting site visits for 6 sites that I suspect fall under this ICP.
0001416908UN7DC	12	16	HAWK	ROT0111	13 of the 16 sites now have independent ICPs
0001416909UNB99	6	21	HAWK	ROT0331	Changed from 21 to 6 on 2/6/2010. 4 of the 6 sites now have independent ICPs. 1 Duplicated also under Bucket 0001416908UN7DC.
0001416911UN320	4	4	HAWK	WRK0331/OWH0111	1 of the 4 sites now has an independent ICP
0001416954UNCCA	4	4	HAWK	ROT0111/ATI0111	1 of the 4 sites Duplicated also under Bucket ICP 0001416908UN7DC
0001416957UN00A	18	14	UNET	ALB1101	3 of the 14 are Marine Beacons are solar powered. 8 or the remainder 11 now have independent ICPs
0001416958UNFD4	37	44	UNET	ALB0331	26 of the 44 sites now have independent ICPs
0001416960UNA38	7	9	UNET	HEP0331	6 of the 9 sites now have independent ICPs
0001416961UN67D	20	45	UNET	HEN0331	29 of the 45 sites now have independent ICPs
0001416962UNABD	26	32	UNET	WEL0331	13 of the 32 sites now have independent ICPs
0001417100UN465	10		POCO	HIN0331	8 of the 10 sites now have independent ICPs
0001417104UN56F	3		POCO	WHU0331	Awaiting meter reader confirmation & site visits

ICP	TRUS Quantity	Network quantity	Network	GXP	Improvement
0001417105UN92A	7		POCO	WKO0331	4 of the 7 sites now have independent ICPs
0001417128UNB24	5 (now 4)		CKHK	CPK0331	1 of the 4 sites now has an independent ICP
0001417129UN761	7		CKHK	GFD0331	3 of the 7 sites now have independent ICPs
0001417130UN39D	3		CKHK	HAY0111	2 of the 3 sites now have independent ICPs
0001417131UNFD8	7		CKHK	HAY0331	7 of the 7 sites now have independent ICPs. Awaiting confirmation from CKHK to decommission the master ICP
0001417132UN318	7		CKHK	KWA0111	7 of the 7 sites now have independent ICPs. Awaiting confirmation from CKHK to decommission the master ICP
0001417134UN297	3		CKHK	MLG0331	3 of the 3 sites now have independent ICPs. Awaiting confirmation from CKHK to decommission the master ICP
0001417135UNED2	5		CKHK	PNI0331	4 of the 5 sites now have independent ICPs
0001417136UN212	12		CKHK	TKR0331	10 of the 12 sites now have independent ICPs
0001417137UNE57	3		CKHK	UHT0331	Awaiting confirmation from CKHK to decommission the master ICP if independent ICPs have been created
0001417138UN189	3		CKHK	WIL0331	1 of the 3 sites now have independent ICPs. Awaiting confirmation from CKHK to decommission the master ICP
0001454794UN5FB	10	10	UNET	SVL0331	3 of the 10 sites now have independent ICPs

Trustpower has a comprehensive set of validation reports in place to identify ICPs where the threshold has been exceeded. These are identified on a daily basis and investigations commence immediately. Compliance has not been achieved for the Chorus ICPs, because the issues were not resolved within 20 business days. Trustpower has determined that no other participants are affected by the annual consumption for Chorus ICPs being over 6,000 kWh per annum.

Non-compliance	Description
Audit ref: 5.2 With: Clause 10.14(2)(b) of part 10 From/to: 01/06/16 -30/04/17	28 ICPs with annual consumption over 6,000 kWh per annum. Potential impact: Low Actual impact: Low Audit history: six times Controls: Strong Breach Risk Rating: 1
Audit Risk Rating	**Rationale for audit risk rating**
Low	The unmetered load figures used for submission are accurate, and the main issue is that more ICPs are required to lower the annual kWh per fixture.

Actions taken to resolve the issue	Completion date	Remedial action Status
As noted by the Auditor, Trustpower has a comprehensive set of validation reports in place to identify ICPs where the threshold has been exceeded. These are identified on a daily basis and investigations commence immediately. Trustpower continues its project with Chorus our account managed customer to review and individually meter cabinet supplies that are in breach of this regulation.	ongoing	Identified
Preventative actions taken to ensure no further issues will occur	**Completion date**	
As noted by the Auditor, Trustpower has a comprehensive set of validation reports in place to identify ICPs where the threshold has been exceeded. These are identified on a daily basis and investigations commence immediately. Trustpower continues its project with Chorus our account managed customer to review and individually meter cabinet supplies that are in breach of this regulation.	ongoing	

5.3 Unmetered Threshold Exceeded (Clause 10.14(5) of Part 10)

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 process for the management of unmetered load thresholds is discussed in Section 3.4 above. The list file was examined to identify any ICPs that exceed the 6,000 kWh per annum threshold. All were examined to determine compliance.

Audit Commentary

As mentioned in **Section 5.2**, non-compliance exists for 28 ICPs where the annual unmetered consumption exceeds 6.000 kWh. Trustpower has commenced corrective actions but they are not yet complete and were not completed within 20 business days of commencement. This issue does not affect any other participants.

Non-compliance	Description
Audit ref:5.3 With: Clause 10.14(2)(b) of part 10 From/to: 01/06/16 -30/04/17	28 ICPs with annual consumption over 6,000 kWh per annum and remedial actions are not yet complete. Potential impact: Low Actual impact: Low Audit history: six times Controls: Strong Breach Risk Rating: 1
Audit Risk Rating	**Rationale for audit risk rating**
Low	The unmetered load figures used for submission are accurate, and the main issue is that more ICPs are required to lower the annual kWh per fixture.

Actions taken to resolve the issue	Completion date	Remedial action Status
As noted by the Auditor, Trustpower has a comprehensive set of validation reports in place to identify ICPs where the threshold has been exceeded. These are identified on a daily basis and investigations commence immediately. Trustpower continues its project with Chorus our account managed customer to review and individually meter cabinet supplies that are in breach of this regulation.	ongoing	Identified
Preventative actions taken to ensure no further issues will occur	**Completion date**	
As noted by the Auditor, Trustpower has a comprehensive set of validation reports in place to identify ICPs where the threshold has been exceeded. These are identified on a daily basis and investigations commence immediately. Trustpower continues its project with Chorus our account managed customer to review and individually meter cabinet supplies that are in breach of this regulation.	ongoing	

5.4 Distributed Unmetered Load (Clause 11 of Schedule 15.3)

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

Trustpower has responsibility for 21 DUML databases. Trustpower manages the database for some customers and others are managed by Councils or Distributors.

Some of the databases were audited during the audit period by Trustpower's internal audit function. I evaluated the audits conducted by Trustpower's internal audit function against the NZICA Auditing Standard AS-604 and a summary of this evaluation is attached to each individual audit report. For the databases not audited during the audit period, I have not evaluate the accuracy of submission information.

Some discrepancies were identified between the database kW and the kW used by Trustpower for submission. Incorrect submission information is summarised as follows:

Database	Annual kWh difference	Over submission or under submission
Otorohanga DC	3,100	Under
Westland DC	1,350	Over
Waipa Sth NZTA	3,200	Under
Taupo DC	6,500	Over

The following table summarises compliance issues for the relevant databases.

		Compliance Achieved (Yes/No)						
Database	Last audit 11(5) of schedule 15.3	Deriving submission information 11(1) of schedule 15.3	ICP identifier 11(2)(a) of schedule 15.3	Location of items of load 11(2)(b) of schedule 15.3	Description of load 11(2)(c) of schedule 15.3	Capacity of load 11(2)(d) of schedule 15.3	Tracking of load changes 11(3) of schedule 15.3	Audit trail 11(4) of schedule 15.3
NZTA Tauranga	20/05/16	No	No	Yes	Yes	No	No	Yes
Taupo DC	06/04/16	Yes	Yes	No	No	No	No	Yes
Tauranga CC	19/05/16	No	No	Yes	No	No	No	Yes
Ashburton DC	March 2016	No	Unknown	Unknown	Unknown	Unknown	Unknown	Unknown
WBOP DC (Westlink)	23/05/16	No	Yes	Yes	Yes	Yes	Yes	Yes
WBOP DC (Parks & Reserves	10/05/17	Yes	Yes	No	Yes	Yes	Yes	Yes
Westland	April 2017	No	Yes	Yes	No	No	Yes	Yes
NZTA Waipa Nth	20/07/16	No	No	No	No	No	No	Yes
NZTA Waipa Sth	18/05/17	No	No	Yes	Yes	Yes	Yes	Yes
NZTA Otago	07/04/16	No	Yes	No	Yes	Yes	No	No
NZTA Central Otago	May 2016	No	Yes	Yes	Yes	Yes	Yes	Yes
Nelson CC	April 2016	No	No	Yes	No	No	No	Yes
NZTA Taupo	14/02/17	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Otorohanga DC	02/03/17	No	No	No	Yes	No	No	Yes
Kawakawa BA	22/09/16	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Parawera	20/10/16	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Invercargill CC	Newly switched in							
Waimakariri DC – Pegasus SL	None							
Ocean Shores Village	30/05/17	Yes	Yes	Yes	Yes	Yes	Yes	Yes

Non-compliance	Description
Audit ref:5.4 With: Clauses 11(1) of schedule 15.3, 10.14 & 15.13 From/to: 01/06/16 - 30/04/17	Some incorrect submission information for DUML ICPs. 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	The controls are rated as moderate, because some databases were not checked during the audit period. The impact on settlement is minor, therefore the audit risk rating is low.

Actions taken to resolve the issue	Completion date	Remedial action Status
As noted by the Auditor, Trustpower has a comprehensive set of validation reports in place to identify ICPs where the threshold has been exceeded. These are identified on a daily basis and investigations commence immediately. Trustpower continues its project with Chorus our account managed customer to review and individually meter cabinet supplies that are in breach of this regulation.	ongoing	Identified
Preventative actions taken to ensure no further issues will occur	**Completion date**	
We will continue to work with our customers and network companies to improve databases and maintenance processes, and any submission data will be revised accordingly.	Ongoing	

6. Gathering Raw Meter Data

6.1 Electricity Conveyed & Notification by Embedded Generators (Clause 10.13 & 10.24 of Part 10 & 15.13 of Part 15)

A trader must ensure that for each energised ICP that electricity is conveyed in accordance with the code.

A participant is not required to quantify the electricity at a point of connection if the electricity is supplied by an embedded generator who has given the Reconciliation Manager a notification under clause 15.13 of Part 15.

Audit Observation

The process to manage distributed generation was examined. The list file was analysed and all ICPs where the Distributor has indicated distributed generation were identified. This was further broken down to identify any ICPs with a non-distributed generation profile. The metering configuration for these ICPs was analysed to confirm if an injection channel was present and therefore if distributed generation is present.

There were six examples of bridged meters provided for the audit period. All six examples were examined to identify the reasons for bridging, and whether compliance had been achieved.

Audit Commentary

Trustpower monitors all ICPs with distributed generation to ensure it is correctly recorded by the Distributor, and to ensure metering is correct if Trustpower has an agreement with the customer to purchase their output.

Trustpower's list file was examined in relation to ICPs where distributed generation is indicated by the Distributor. 1,478 ICPs were identified. Until recently, the GXP profile was being applied to all DG sites which does not allow generation to be submitted. This has been corrected since the list file was provided and reporting put in a place to identify any sites with generation indicated. Trustpower checks with the customer to determine if they wish to be paid for generation or wish to gift. Those who wish to gift send a letter to the Reconciliation Manager to advise, and the letter is appended to customer account.

The list file was checked and found 44 ICPs with the GXP profile applied. 24 ICPs of these did have metering with an injection channel recorded on the registry. These have been corrected since the list file was provided. A sample of five was checked to confirm this. The remaining 20 ICPs had no injection channel recorded on the registry which raises the question as to whether distributed generation is installed or not. These are being investigated. The lack of submission of embedded generation due to the incorrect GXP profile being applied to ICPs with embedded generation is recorded as non-compliance.

Non-compliance	Description
Audit ref:6.1 With: Clause 10.13 & 15.13 From/to: May 16-April 17-	Some incorrect submission information for ICPs with distributed generation. Potential impact: Medium Actual impact: Low Audit history: None Controls: Strong Breach Risk Rating: 1
Audit Risk Rating	**Rationale for audit risk rating**
Low	Trustpower have put robust reporting in place to address ICPs with embedded generation indicated therefore going forward these will be managed effectively hence controls are strong. This issue has been addressed therefore the audit risk rating is low.

Actions taken to resolve the issue	Completion date	Remedial action Status
System was changed (during audit period) to allow PV1 and EG1 profiles to be used.	Completed	Identified
Preventative actions taken to ensure no further issues will occur	**Completion date**	
Nothing further	Completed	

Trustpower had six examples of bridged meters during the audit period. Bridging occurred at Trustpower's request for two ICPs, by the MEP for one ICP and three ICPs switched in with meters bridged and this was found by TrustPower's revenue assurance reporting. When a meter is bridged, Trustpower is not compliant with the requirement to ensure all electricity conveyed is quantified in accordance with the Code. For the two ICPs where Trustpower initiated the bridging, compliance is not achieved with Clause 10.12, which relates to interference with metering installations.

Non-compliance	Description
Audit ref:6.1 With: Clause 10.12 & 10.24(b) of part 10 From/to: 01/06/16 -30/04/17	Six metering installations bridged and two metering installations interfered with. 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	Controls are strong with regard to identification of bridged meters. Trustpower only initiates bridging themselves in exceptional circumstances to ensure customers have electricity supply. Submission information is estimated for the bridged period so the impact on submission accuracy is considered low.

Actions taken to resolve the issue	Completion date	Remedial action Status
We are picking up the majority of these with current reporting in place but have found a small number of exceptions that slipped through. These are corrected as they are identified.	Ongoing	Identified
Preventative actions taken to ensure no further issues will occur	**Completion date**	
An additional report will be created to pick up AMI sites that have been reconnected after hours and there is no use on the meter in the days following the reconnection. Reporting should be completed in the next month to be actioned as needed and we expect this will pick up the ones that had been missed previously.	30/09/2017	

6.2 Responsibility for Metering at GIP (Clause 10.26 of Part 10)

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 on the Authority's website was checked to confirm updates had occurred as required. Certification records were checked to confirm the correct dates were loaded.

Audit Commentary

Trustpower is responsible for the two grid connected metering installations shown in the table below:

Responsible party	Description	NSP	MEP	Reconciliation Type	Certification expiry date (NSP table)
TRUS	COLERIDGE	COL0661TRUSGG	TRUM	GG	07/04/18
TRUS	MATAHINA	MAT1101TRUSGG	TRUM	GG	03/09/16

All metering installations have current certification; however the RM has not been advised of the new certification expiry date for Matahina.

There have not been any new or modified metering installations during the audit period.

Non-compliance	Description
Audit ref: 6.2 With: Clause 10.26(7) of part 10 From/to: 03/09/16 to 03/06/17	RM not notified of the new expiry date for Matahina metering installation. 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 strong with regard to ensuring certification is conducted, but they are only moderate for ensuring the RM is notified. There is no risk that submission information will be incorrect, therefore the audit risk rating is low.

Actions taken to resolve the issue	Completion date	Remedial action Status
Notified Reconciliation manager NOTE: Metering was certified and compliant but register not updated.	Completed	Cleared
Preventative actions taken to ensure no further issues will occur	**Completion date**	
Jason (RM) provided list of NSP Meters we should submit.	Completed	

6.3 Certification of Control Devices (Clause 33(1A)&(1) of Schedule 10.7)

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

A registry list file was reviewed for the audit period to confirm what profiles were being used by Trustpower and whether control devices were certified where necessary.

Audit Commentary

Four ICPs have profiles requiring certified control devices where the control device is not certified. They are shown in the table below.

ICP	Profile	Comments
0000012289EAC7C	T07 GXP	Meter only has UN24. No control device recorded.
0000804640WP372	T07 GXP	Registry does not have a control device recorded.
0001109027ML87B	T07 GXP	Meter only has UN24. No control device recorded.
0004357272BUEC6	T07 T24	Registry does not have a control device recorded.

Non-compliance	Description
Audit ref: 6.3 With: Clause 33(1A) & (1) of schedule 10.7 From/to: 01/06/16 - 30/04/17	4 ICPs without certified control devices. Potential impact: Low Actual impact: Low Audit history: None Controls: Moderate Breach Risk Rating: 2
Audit Risk Rating	**Rationale for audit risk rating**
Low	The controls are recorded as moderate because these 4 ICPs were not identified. There is no effect on submission accuracy because the control devices have not failed, therefore the audit risk rating is low.

Actions taken to resolve the issue	Completion date	Remedial action Status
We have investigated it and will amend the ICPs as soon as possible.	25/07/2017	Identified
Preventative actions taken to ensure no further issues will occur	**Completion date**	
Trustpower will build reporting to identify all ICPs and look at correcting any profiling issues, or following up any Certification issues, if required.	31/08/2017	

6.4 Reporting of Defective Metering Installations (Clause 10.43(2)& (3) of Part 10)

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

Examples of defective metering installations were requested from Trustpower, including stopped meters, incorrect multipliers and bridged meters. Relevant MEPs were advised as required for stopped meters. The two multiplier issues were found and notified by the MEP.

The matter of "bypassed" metering was evaluated during the audit. This occurs when an ICP has an AMI metering installation and remote disconnection has occurred, then Trustpower requests a reconnection and the field technician physically bypasses the meter. The bypass occurs due to a lack of communications (bypass occurs by the MEP) or because it is an afterhours reconnection and the MEP does not provide a 24/7 reconnection service.

Trustpower provided a list of all ICPs with AMI where bridging had occurred during the audit period. There were six examples. Three of the ICPs switched in with bridged meters, one was bridged by the MEP and Trustpower arranged for the bridging at two ICPs. Trustpower has a robust methodology to identify and resolve bridged meters. Reporting is in place for ICPs switched in with AMI meters and zero consumption, plus there is reporting for the word "bridged" in the reconnection reports.

In all cases, the MEP had been notified in accordance with this clause, but recertification had not been conducted for five of the six ICPs. This is recorded as non-compliance in **Section 6.1**. Compliance is confirmed in relation to this clause.

6.5 Collection of Information by Certified Reconciliation Participant (Clause 2 of Schedule 15.2)

A reconciliation participant must obtain raw meter data used to determine volume information from the services access interface. Except when only the Metering Equipment Provider can electronically interrogate a metering installation for which it is responsible and they have an arrangement with the reconciliation participant which prevents them from interrogating the metering installation themselves.

Audit Observation

The data collection process was examined and any agents identified in **Section 1.5** have an audit reports attached as appendices. A sample of five meter reads per agent were checked using the typical case sample methodology

Audit Commentary

Most information used to determine volume information is collected by Trustpower or one of their agents. Data is provided by way of photos for some substations in the Marlborough Lines, Westpower and Powerco areas by personnel engaged by these distributors where meter readers are not allowed to enter such facilities due to the health and safety requirements. Some special readings are conducted as "hard copy" and some readings are provided in a spreadsheet format. These readings become "raw meter data" once they have been entered into GTV.

The sample checked confirmed compliance.

The use of photos is now widespread in the industry and they are considered by participants as the most accurate form of manual meter reading, however the Authority confirmed in May 2017 that meter readings obtained by photos do not meet the requirements of the Code, because:

1. the consumer has the opportunity and financial incentive to tamper with the photo used to derive meter data, and this will not necessarily be detectable by the reconciliation participant

2. the raw meter data is not obtained from the services access interface (which is the meter, not the photo of the meter)

3. the reconciliation participant will be unable to perform all of the checks provided by clause 5 of Schedule 15.2

Therefore, the reads provided by photograph from the Distributors above should be treated as estimates. This is recorded as non-compliance in **Section 6.6 Derivation of Meter Readings**.

6.6 Derivation of Meter Readings (Clauses 3(1), 3(2) & 5 of Schedule 15.2)

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 meter reading process was reviewed to confirm that any broken seals and checks for phase failure (if appropriate) and any signs of tampering are checked for and noted if any evidence of this is found.

The data collection process was examined. A sample of five meter reads per agent were checked using the typical case sample methodology.

The process for customer reads was reviewed.

Audit Commentary

The checking of a metering installation is part of BAU for all Trustpower meter readers. Training revision has been undertaken with all of Trustpower's meter readers in March (the training documentation was sighted). Each meter reader must sign an acknowledgement of the training being undertaken and confirming their understanding of it. There was a specific focus on the identification of phase failure.

The MRSL report records compliance in relation to the checking of metering installations.

The Datacol report records non-compliance in relation to the lack of checks for phase failure. Datacol are working with the retailers to resolve this. This is recorded as non-compliance for Trustpower. This issue was checked at MRSL and compliance was confirmed.

During interrogation, the meter register value is collected and entered into a hand held device. This reading enters Trustpower's GTV system and is labelled "R" which denotes that it is a meter reading collected and validated by a meter reader.

Datacol reads are imported into the data repository. They are then processed and pulled through to GTV.

AMI data and reads from MRSL are stored in a separate database with appropriate controls in place. Two days after a scheduled read is due a web process is run. This retrieves the relevant read from the database and these then enter GTV and are treated as any other manual reads.

The sample checked confirmed compliance. Validated meter readings are derived from meter readings except in relation to customer reads provided with a supporting photograph as discussed in Section 6.5 above. This is recorded as non-compliance.

Non-compliance	Description
Audit ref:6.6 With: Clause 3(2) &3(2) & 5 of schedule 15.2 From/to: 1/6/16 -30/4/17	Customer reads being treated as actuals. Checks for phase failure not conducted and recorded by Datacol. Potential impact: Low Actual impact: Low Audit history: None Controls: Moderate Breach Risk Rating: 2
Audit Risk Rating	**Rationale for audit risk rating**
Low	The controls are recorded as moderate because clarification has only recently been provided in relation to the application of customer reads and Trustpower are working with Gentrack to remedy this and Datacol have a fix in progress to mitigate the risk. Trustpower have good overall controls in relation to the management of reads hence the audit risk rating is low.

Actions taken to resolve the issue	Completion date	Remedial action Status
Readings to be inputted as estimates as opposed to scheduled reads. To be completed by Meter Reading team. Phase failure is recorded whenever it is observed. Staff have been trained to identify this.	01/08/2017	Identified
Preventative actions taken to ensure no further issues will occur	**Completion date**	
Readings to be inputted as estimates as opposed to scheduled reads. To be completed by Meter Reading team. Phase failure is recorded whenever it is observed. Staff have been trained to identify this.	Ongoing	

6.7 NHH Meter Readings Application (Clause 6 of Schedule 15.2)

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 <u>except</u> in the case of a switch event meter reading which applies to the end of the day prior to the event date for the losing trader and the start of the event date for the gaining trader as required by this clause.

<u>Audit Observation</u>

The process of the application of meter readings was examined. An event detail report for the audit period was reviewed to identify CS files issued by Trustpower during the audit period. A sample of two TR CS files and three MI CS files containing actual reads were reviewed to determine whether the data provided was complete and accurate. I also checked the meter change processes to ensure they complied with the Code.

Audit Commentary

PDA time synchronisation occurs every time a meter reader logs on to SevenX, prior to the sending of meter read files and before any new rounds are downloaded.

If a PDA is unable to log onto SevenX due to being out of range, then the meter reader is expected to manually check the date and time prior to commencing the meter-reading round.

When a NHH to HHR meter change occurs, the process used by Trustpower (and most other traders) is to "remove" the NHH meter in GTV on the day before the physical meter change, which makes the NHH meter reading effective at 24:00 on that day. The day of the meter change is considered HHR all day. This process is employed because the registry won't allow two MEPs for the same day and it also ensures consumption information and ICP days aligns with the registry. Whilst this process is technically non-compliant, because the NHH meter reading is made effective at the beginning of the day rather than the end of the day, Trustpower has not identified a process that would comply with all relevant clauses of the Code. This matter is also relevant to decommissioned ICPs, where the day after the physical decommissioning is used to ensure the status aligns with the meter reading effective time (end of day). I have raised this as an issue for the Authority to consider.

Issue	Description	Audited party comment	Action
Regarding: Clause 6 of schedule 15.2	Some NHH meter readings made effective the day before the physical meter change to ensure continuity of consumption information and accuracy of ICP days. This may require a Code change to ensure compliance is possible.	Aware that this is an ongoing issue for our systems to manage.	Add to issues register

The checks of the CS files confirmed that Trustpower is using the correct application of meter reading for actuals for switch event meter readings. Compliance is confirmed.

6.8 Interrogate Meters Once (Clauses 7(1) & (2) of Schedule 15.2)

A validated meter reading must be 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, 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".

Audit Observation

The process to manage missed reads was examined. A sample of five ICPs using the typical case methodology from the report of all ICPs that were not read during the period of supply for the audit period of April 2016 to March 2017 were examined.

Audit Commentary

Trustpower uses best endeavours to get at least one read during the period of supply even if the period of supply is short. The process was confirmed by a "walk through" of the following steps:

- a "queue" is created when a NT file is received and a validated reading has not been obtained during the period of supply
- an attempt is then made to get a reading by booking a special reading or by calling the customer or landlord to get a customer reading
- if a reading cannot be obtained from the steps above, then the winning retailer is contacted to see if they have an actual start reading and this is used.

The provided reporting in relation to those ICPs that did not get a read during period of supply identified 476 ICPs. 438 (92%) of these sites were with Trustpower for less than 30 days. The sample checked found four were correctly recorded. One ICP related to a withdrawn switch and therefore shouldn't have been included in the report. I recommend that the report parameters are checked to ensure that the correct ICPs are captured.

Recommendation	Description	Audited party comment	Remedial action
Regarding: Clause 7(1)&(2) of schedule 15.2	Check unread during period of supply report parameters to ensure the correct ICPs are captured.	This comment will be followed up with the team concerned.	Investigating

Those ICPs with a supply period of greater than 60 days will have met the exceptional circumstances requirement but those with Trustpower for less than 60 days will not have met this requirement due to the short period of supply. These are recorded as non-compliance.

Non-compliance	Description
Audit ref: 6.8 With: Clause 7(1) & (2) of schedule 15.2 From/to: 1/6/16 -30/4/17	Customer reads being treated as actuals. Checks for phase failure not conducted and recorded by Datacol. Potential impact: Low Actual impact: Low Audit history: None Controls: Moderate Breach Risk Rating: 2
Audit Risk Rating	**Rationale for audit risk rating**
Low	The controls are recorded as moderate because clarification has only recently been provided in relation to the application of customer reads and Trustpower are working with Gentrack to remedy this and Datacol have a fix in progress to mitigate the risk. Trustpower have good overall controls in relation to the management of reads hence the audit risk rating is low.

Actions taken to resolve the issue	Completion date	Remedial action Status
Work will be completed with Datacol to rectify the situation moving forward for some sites.	31/08/2017	Identified
Preventative actions taken to ensure no further issues will occur	**Completion date**	
Review to ensure this is successfully addressed.	30/10/2017	

6.9 NHH Meters Interrogated Annually (Clauses 8(1) & (2) of Schedule 15.2)

At least once every 12 months, a validated meter reading must be obtained for every meter register for NHH metered ICPs, which Trustpower supplies continuously for each 12-month period, other than those ICPs for which exceptional circumstances prevent such an interrogation.

Audit Observation

The meter reading process was examined. Monthly reports for the months of October 2016 to March 2017 were provided.

Audit Commentary

Trustpower's meter reading process remains unchanged from the previous audit period and includes the following steps to assist with meter reading attainment:

- each round has a report with all meters that were "skipped" during the previous cycle and these are given a higher priority, including phone calls the night before to make arrangements
- meters that have been skipped more than twice are referred to regional team leaders for resolution, including requesting photos from customers
- some customers are sent "access" letters when other direct methods are not successful.

The annualised skip rate for the audit period is 4.5%. This is an increase from the previously reported figure of 0.09%. This increase is due to the new health and safety requirements. Skip rates of 4% to 5% are typical for manual meter reading operations.

Examination of the six months of reporting provided recorded:

Month	Not Read @ 12 months	Total ICPs
October	133	158,992
November (EDNZ ICPs switched in)	133	198,781
December	154	201,095
January	149	201,044
February	147	201,600
March	132	203,121

The sample checked from the March 2017 report confirmed that exceptional circumstances existed. In all cases, there had been many attempts to gain access. Compliance is confirmed.

The issue reported in last year's audit that was excluding the reporting of unread meters where an estimate had been changed to a "permanent estimate" to achieve compliance with the requirement to ensure all forward estimates become permanent estimates by the 14-month revision still exists. This will be resulting in an under reporting of unread sites. This is recorded as non-compliance below.

Non-compliance	Description
Audit ref:6.9 With: 8(1) & (2) of schedule 15.2 From/to: 1/6/16 -30/4/17	ICPs unread at 12 months under reporting. Potential impact: Low Actual impact: Low Audit history: Once previously Controls: Moderate Breach Risk Rating: 2
Audit Risk Rating	**Rationale for audit risk rating**
Low	The controls are recorded as moderate because the report was still excluding unread ICPs where the estimate has been replaced with a permanent estimate at 14 months were being excluded. Trustpower have indicated that this will be easy to correct and once done the reporting will be accurate therefore the risk rating is low.

Actions taken to resolve the issue	Completion date	Remedial action Status
EA Report to be updated to include Permanent Estimates.	31/08/2017	Identified
Preventative actions taken to ensure no further issues will occur	**Completion date**	
Thorough testing of reporting changes. Cross checking meter reading BAU reports with EA monthly compliance report.	30/10/2017	

6.10 NHH Meters 90% Read Rate (Clauses 9(1) & (2) of Schedule 15.2)

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 ICPs.

A report is to be sent to the market administrator 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 and is discussed in detail in the Sections above. Monthly reports for the months of October 2016 to March 2017 were provided.

Audit Commentary

Month	Total NSPs read	NSPs <90%
October	229	10
November (EDNZ ICPs switched in)	260	5
December	257	7
January	255	6
February	255	5
March	255	6

In all instances these were NSPs with a small number of ICPs recorded, therefore one missed ICP will cause the threshold requirement not to be met. A sample of five ICPS from the March 2016 report were checked and confirmed that exceptional circumstances had been proven. Compliance is confirmed.

6.11 NHH Meter Interrogation Log (Clause 10 of Schedule 15.2)

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

For the ICPs where the data is collected by agents these processes were reviewed as part of their agent audit, and these are attached to this report.

For the ICPs where the data is collected by the MEP these processes were reviewed as part of their MEP audits.

For those sites read by Trustpower meter readers, the interrogation log was checked.

Audit Commentary

All actual reads are received from Trustpower meter readers, agents, switching files or MEPs. The agents reports recorded compliance in relation to this clause.

The Trustpower read meters interrogation log contained the following information:

- meter reader ID
- a unique identifier including meter and register identification
- the method being used for the interrogation and the user ID for equipment being used for interrogation of the meter; and
- date and time.

Compliance is confirmed.

6.12 HHR Data Collection (Clause 11(1) of Schedule 15.2)

The following information is collected during each interrogation of HHR metering:

- *the unique identifier (device ID) of the meter or data logger;*
- *the connection time, disconnection time and recorder time;*
- *the half-hour metering information for each trading period;*
- *events log.*

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

A walkthrough of the HHR data collection function was performed to confirm compliance.

Audit Commentary

Trustpower interrogates half hour interval meters at approximately 2,000 ICPs with their MV90 system. This includes all Generation meters. Remotely collected data is also provided by EDMI and AMS. AMS collects some data manually and this is transmitted in a secure manner to Trustpower. The previous audit report noted non-compliance because event logs were not always being collected and clock synchronisation was not occurring. These matters are now resolved.

Trustpower receives some HHR AMI data. This data is transmitted in a secure manner. Appropriate validation is conducted and audit trails were demonstrated where changes were made.

Compliance is confirmed.

6.13 HHR Interrogation Data Requirement (Clause 11(2) of Schedule 15.2)

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
A walkthrough of the HHR data collection function was performed to confirm compliance.

Audit Commentary
The following information is collected during each interrogation of HHR metering:

- the unique identifier (device ID) of the meter or data logger;
- the connection time, disconnection time and recorder time;
- the half-hour metering information for each trading period;
- events log.

The events collected and reviewed in the events log by Trustpower are:

- phase failure
- less than 80% of voltage class
- pulse overflow
- power outage
- zero data
- battery failure
- low battery.

Compliance is confirmed.

6.14 Electronic Meter Interrogation Log (Clause 11(3) of Schedule 15.2)

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

A walkthrough of the HHR data collection function was performed to confirm compliance.

Audit Commentary

An interrogation log is generated by MV90 to record details of all interrogations. Appropriate action is taken where problems are apparent. The interrogation log contains the following information:

- the unique identifier of the meter or data logger
- the time of commencement of interrogation
- the date of interrogation
- the operator identifier (machine id)
- the clock errors outside the range specified in clause 12
- the method of interrogation
- the identifier of the reading device used for interrogation (where applicable).

In situations where agents provide data, the method of interrogation is not provided, however it is present in their systems. Compliance is confirmed.

7. Storing Raw Meter Data

7.1 Trading Period Duration (Clause 13 of Schedule 15.2)

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

7.2 Archiving and Storage of Raw Meter Data (Clause 18 of Schedule 15.2)

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

These processes were reviewed at Datacol as part of their agent audit. This report is attached as an appendix to this report.

Processes to archive and store raw meter data were reviewed and included the siting examples of archived raw meter data from 48 months prior.

Audit Commentary

All data is archived for a period well in excess of 48 months required by the code. Password protection is in place to ensure unauthorised personnel cannot access raw meter data.

Raw meter data from the SevenX system is archived in accordance with clause 10.7 of part 10. Unauthorised personnel cannot access this data. The PDA's have the data stored on SD cards, so if a device is damaged the data is still available.
Meter readings can also be modified in SevenX; however, Trustpower do not use this capability. If meter readings were changed in SevenX the previous reading would still be present. In addition, the database requires the user to record the reason for the change.

AMI data is stored in a separate database with appropriate controls in place. The data is archived in accordance with clause 10.7 of part 10.

Copies of paper-based readings are scanned and archived as pdf documents once the meter reading has been entered into GTV. Once a meter reading has been entered into GTV it can be discarded and another read entered. The original read is retained with a full audit trail.

Compliance is confirmed.

7.3 Non-Metering Information Collected / Archived (Clause 21(5) Schedule 15.2)

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

Examples of streetlight on/off time files were observed during the audit to confirm compliance.

Audit Commentary

The relevant files are securely stored for an indefinite period. Compliance is confirmed.

7.4 Data Storage Device Clock Synchronisation (Clause 2(5)&(6) of Schedule 15.2)

When electronically interrogating the meter the participant must ensure that the clock is synchronised and correct the clock and raw data where necessary.

Audit Observation

A walk through of the clock synchronisation process was conducted, including correction settings, along with a check of the most recent clock error report.

Audit Commentary

Trustpower synchronises MV90 against an internet time source at 90-minute intervals, and prior to any interrogation cycle. During interrogation, a comparison occurs between data logger and MV90 clocks and time is corrected automatically for all errors between two and 60 seconds.

If errors are detected that are greater than 60 seconds then the matter is referred to the data logger owner, and a manual re-set is performed. I checked the process for situations where clocks were "fast" by more than 30 minutes to ensure the data is not over written when the time is corrected. No examples were found, but Trustpower and AMS have a process to ensure data is not over written. AMS collects data prior to clock adjustments and sends the relevant data if required.
Compliance is confirmed.

8. Creation and Management of (including validating, estimating, storing, correcting and archiving) volume information

8.1 Correction of NHH Meter Readings (Clause 19(1) of Schedule 15.2)

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

I conducted a walk-through of the process and I checked the records for five stopped meters, two multiplier corrections and six bridged meters to confirm compliance.

Audit Commentary

Where errors are detected during validation of non-half hour meter readings then firstly a check reading is performed. If an original meter reading cannot be confirmed by a check reading then an estimated reading is used.

Changes to consumption information can occur if changes have been made to billing information. In these situations, Trustpower adopts a "reverse and rebill" process to correct billing and therefore consumption information. This process was examined and as long as the "reverse and rebill" process is used, consumption information for prior consumption periods is included in the revision process and provided to the reconciliation manager. In situations where consumption will not be billed to a consumer, GTV has a field for "adjustment consumption" (ADJ). The correct consumption is calculated and recorded on a "Revenue Assurance Case Summary" worksheet, then entered into the ADJ field, where it automatically flows through to submission and revision files. I checked the following worksheets during the audit:

- five stopped meters
- two multiplier corrections
- six bridged meters

All corrections were conducted accurately and the consumption information was correctly recorded in the relevant revision files. If the period of the correction is longer than 14 months, an adjustment is made to the period to ensure all consumption is apportioned to the 14 month period. Compliance is confirmed.

8.2 Correction of HHR Metering Information (Clause 19(2) of Schedule 15.2)

If errors are detected during validation of half hour metering information the correction must be as follows:
- if a check meter or data storage device is installed at the metering installation, data from this source may be substituted
- 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

I checked the records for five examples where correction had occurred.

Audit Commentary

Where errors are detected during validation of half-hour metering information, and check metering data is not available, then data from a period with a quantity and profile similar to that expected is used. Check metering is normally not available.

A "data edit worksheet" is produced as a record of this activity.

With all meter changes, a comparison occurs in trading (billing data) to verify consistency.

All switched sites have a HHR load check with the previous data collector for the same half hour to ensure the site is set up correctly.

Compliance is confirmed.

8.3 Error and Loss Compensation Arrangements (Clause 19(3) of Schedule 15.2)

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

I requested details of all ICPs where error or loss compensation occurs.

Audit Commentary

Trustpower confirms that they do not deal with any data where error or loss compensation occurs. The site set-up processes are designed to identify these arrangements for any new sites.

8.4 Correction of HHR and NHH Raw Meter Data (Clause 22 of Schedule 15.2)

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

I checked all relevant processes through interviews with relevant personnel to confirm whether any processes or people could access and alter raw meter data.

Audit Commentary

NHH raw meter data cannot be accessed or over written by any person or process. The raw data is "locked down" and even if working data is edited, the raw data remains unchanged.

In cases where HHR working data is corrected, a worksheet is created and archived, which serves as the journal required by clause 22(2). Some worksheet examples were reviewed during the audit. Raw meter data is not overwritten and is archived as required by this clause. Compliance is confirmed.

9. Estimation and Validation of Volume Information

9.1 Identification of Readings (Clause 3(3) of Schedule 15.2)

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

Identification of readings was checked as part of the meter reading, switching and reconciliation functions to confirm compliance.

Audit Commentary

All estimated readings, permanent estimates and actual readings are clearly identified as required by this clause. Compliance is confirmed.

9.2 Derivation of Volume Information (Clause 3(4) of Schedule 15.2)

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

Identification of readings was checked as part of the meter reading, switching and reconciliation functions to confirm compliance. I also checked the reconciliation function to confirm that all volume information was correctly derived.

Audit Commentary

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

9.3 Meter Data used to Derive Volume Information (Clause 3(5) of Schedule 15.2)

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

Audit Observation

I checked some AMI and C&I raw files (as received from the metering installation or from the agent) to confirm the same number of decimal places were present when reconciliation calculations occurred.

Audit Commentary

Rounding only occurs once submission calculations have been performed, not prior to that process occurring. Compliance is confirmed.

9.4 HHR Estimates (Clause 15 of Schedule 15.2)

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

Trustpower uses the same process for estimation as for correction. The five examples checked in Section 8.2 are also relevant to this section and were all checked in detail, along with a walk-through of the process.

Audit Commentary

When Trustpower is unable to interrogate any HHR metering installation prior to the deadline for providing submission information, then estimated data is provided. There is a requirement to use "reasonable endeavours" to ensure this data is accurate to within 10%.

Trustpower provided five examples where estimates had occurred. Estimates are based on a "like day and time" basis, when considering the load pattern either side of the missing data, and this is considered to meet the "reasonable endeavours" requirement of this clause. Estimates of more than 500 kWh have a management sign off process as an additional check to ensure the estimation processes are robust. Compliance is confirmed.

9.5 NHH Metering Information Data Validation (Clause 16 & 17 of Schedule 15.2)

Each validity check of non-half hour meter readings and estimated readings must include the following:
16(2)(a) - confirmation that the meter reading or estimated reading relates to the correct ICP, meter, and register
16(2)(b) - checks for invalid dates and times
16(2)(c) - confirmation that the meter reading or estimated reading lies within an acceptable range compared with the expected pattern, previous pattern, or trend
16(2)(d) - confirmation that there is no obvious corruption of the data, including unexpected zero values.

Audit Observation

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

Audit Commentary

Data validation for NHH metering information occurs at three levels. Firstly, at the handheld level where a localised validation will occur to ensure the reading is within expected high/low parameters. The parameters are set at 150% and 50% and changing of these parameters requires management sign off. Readings that fail this validation are required to be re-entered, and if the two readings are the same, the second reading will be accepted. If the second reading is different, (potentially indicating the first reading was incorrect) then the second reading is required to be re-entered.

If data becomes corrupted, including dates and times, SevenX will not allow this to be uploaded and an investigation will then occur.

Meter serial numbers are provided to meter readers and can be viewed in their hand held devices. This assists with ensuring that meter readings relate to the correct meter.

Meter readers are provided with training, which includes validation of the "order" of multiple register meters to ensure that readings for the correct registers are recorded.

The next two levels of validation occur in GTV, pre billing and post billing. This validation includes the following checks:

- High consumption.
- No consumption. There is a discrepancy management tool used to identify registers with zero consumption for the last three actual reads; zero consumption on AMI meters following switch in (to detect possible meter bypass) and day/night consumption discrepancies.
- Zero consumption on meters with a known high failure rate
- No reading.
- Consumption on vacant connected ICPs. This consumption is not billed until a disconnection occurs or a customer is moved in, but the consumption is included in submission files.
- Consumption on disconnected ICPs. This list is dealt with daily and issues are resolved in a short timeframe. If a customer is not identified the consumption is billed to "Trustpower unbilled" so it is included in submission files.
- Credit reads (reading lower than the previous reading or estimate).
- Minimum and maximum number of days.
- ICPs not on a meter reading schedule.
- ICPs with no registers.
- Multiple reads available.
- Transposed registers on two rate meters.

- Multipliers of one which should be greater than one.
- Embedded generation where GTV has load instead of generation.
- Incorrect register content codes
- Incorrect unit of measure.

Each register that fails validation is manually checked. If it is decided that the reading may be incorrect then billing is delayed and a check reading is performed. Readings are not edited as part of this process.

The matter of "bypassed" metering was evaluated to ensure validation processes are comprehensive enough to identify any meters that have been bypassed. The following checks are conducted which will identify any bridged meters:

- zero consumption on recently switched in ICPs
- consumption on controlled tariff but zero on the 24 hour tariff
- continuous consumption for six months then zero consumption.

Whilst bridged meters are being identified and the consumption information estimated, it is still a matter of non-compliance with clauses 10.12 and 10.24 of part 10, as recorded in Section 6.1. Compliance is confirmed for the validation processes.

9.6 Electronic Meter Readings and Estimated Readings (Clause 17 of Schedule 15.2)

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

Each validity check of a meter reading obtained by electronic interrogation or an estimated reading must include:
17(4)(a) - checks for missing data
17(4)(b) - checks for invalid dates and times
17(4)(c) - checks of unexpected 0 values
17(4)(d) - comparison with expected or previous flow patterns
17(4)(e) - comparisons of meter readings with data on any data storage device registers that are available
17(4)(f) - a review of meter and data storage device event list. Any event that could have affected the integrity of metering data must be investigated.

Audit Observation

I checked the HHR C&I and AMI data collection functions by conducting a walk-through of the processes, and I checked the management of events by checking a sample of files from all relevant providers.

Audit Commentary

MV90 Interrogation occurs either nightly or every second night, so there is little risk that data will be overwritten.

Each validity check for automatically collected half-hour metering information includes the following:

1. checks for missing data (an export to "trading" won't occur if data is missing)
2. checks for invalid dates and times (an export to "trading" won't occur if dates and times are invalid)
3. checks of unexpected zero values (these settings are at channel level and some are set to allow for a certain number of zeros depending on the customer type)
4. comparison with expected or previous flow patterns (demand and energy maximum and minimum settings exist at channel level)
5. a review of meter and data logger event list.

Any event that could have affected the integrity of metering is investigated.

Compliance is confirmed.

For AMI data collection (conducted by MEPs), the check for invalid dates and times is conducted at the time the files are loaded. There is an exception if the incorrect file is attempted to be loaded. A check for missing data, unexpected zeros and a comparison with previous flow patterns is conducted as part of the normal HHR validation process. That leaves the management of event information, which is not conducted in a compliant manner.

The Code requires *"…a review of meter and data storage device event log. Any event that could have affected the integrity of metering data must be investigated."*

The MEPs must check the event log for evidence of malfunctioning or tampering and they must pass relevant event log entries to the reconciliation participant for the metering installation. The reconciliation participant must conduct a review of meter and data storage device event log. Any event that could have affected the integrity of metering data must be investigated. Trustpower receives AMI data from some MEPs and although there has been some improvement in this area, there is not a routine monitoring function in place for all events from all MEPs.

I suggest the examination of at least the following events once all event information is provided:

- generation consumption indicating unknown solar installations (reverse power)
- phase failure on CT metered installations
- tampering
- large clock discrepancies.

The table below summarises the status of event information from the four relevant MEPs.

MEP	Event information provided	Summary
AMS	✓	Event information provided, including clock errors but the clock errors are not quantified.
SMCO	✓	Event information is provided but is not yet being examined by Trustpower
Metrix	✓	Event information provided, including clock errors but the clock errors are not quantified.
ARC	✗	Event information is not provided

Non-compliance	Description
Audit ref: 9.6 **With:** Clause 17(4)(f) of schedule 15.2 **From/to:** 01/06/16 - 30/04/17	Event information not evaluated in accordance with the Code. **Potential impact:** Medium **Actual impact:** Low **Audit history:** Once **Controls:** Moderate Breach Risk Rating: 2
Audit Risk Rating	**Rationale for audit risk rating**
Low	Event information is managed for two of four MEPs, and there are other validations in place to identify issues where consumption information may be effected, therefore the audit risk rating is low.

Actions taken to resolve the issue	Completion date	Remedial action Status
Will work with AMI Data providers to be provided the information and place this within Trustpower systems.	31/12/2017	Identified
Preventative actions taken to ensure no further issues will occur	**Completion date**	
A data manager is to be appointed and will take this as an area of responsibility.	31/12/2017	

10. Provision of Metering Information to the Grid Owner in Accordance with Subpart 4 of Part 13 (Clause 15.38(1)(f) of Part 15)

10.1 Generators to Provide HHR metering information (Clause 13.136 of Part 13)

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

This process is managed by EMS on behalf of Trustpower.

Audit Commentary

Compliance is confirmed in EMS's audit report.

10.2 Unoffered & Intermittent Generation Provision of Metering Information (Clause 13.137 of Part 13)

Each generator must give 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)*
- *electricity supplied from a type B industrial co-generating station with a point of connection to the grid 13.137 (1)(b).*

To avoid doubt, each generator must give the relevant grid owner 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 the half-hour metering information is not available, the generator must give the relevant grid owner a reasonable estimate of such data (clause 13.137(3)).

Audit Observation

This process is managed by EMS on behalf of Trustpower.

Audit Commentary

Compliance is confirmed in EMS's audit report.

10.3 Loss Adjustment of HHR Metering Information (Clause 13.138 of Part 13)

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

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

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

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

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

Audit Observation
This process is managed by EMS on behalf of Trustpower.

Audit Commentary
Compliance is confirmed in EMS's audit report.

10.4 Notification of the provision of HHR Metering Information (Clause 13.140 of Part 13)

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

Audit Observation
This process is managed by EMS on behalf of Trustpower.

Audit Commentary
Compliance is confirmed in EMS's audit report.

11. Provision of Submission Information for Reconciliation

11.1 Buying and Selling Notifications (Clause 15.3 of Part 15)

Unless an embedded generator has given a notification in respect of the point of connection under clause 15.3, a trader must notify 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

I checked examples of notifications provided and whether any breach allegations had been made.

Audit Commentary

Trustpower conducts a check each month as part of the process for preparing submission information. There have not been any breach allegations in relation to this clause during the audit period. Compliance is confirmed.

11.2 Calculation of ICP Days (Clause 15.6 of Part 15)

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

A check was conducted of ICP days discrepancies from the ICPCOMP report for a selection of ten NHH and ten HHR rows. The ICP days aggregation process was examined by selecting nine NSPs with a low number of ICPs (less than 10) and confirming that the ICP days was correct compared to the records in GTV.

Audit Commentary

The following table shows the ICP days difference between Trustpower files and the RM return file (GR100) for all available revisions for several months at an aggregate level. Negative percentage figures indicate that the Trustpower ICP days figures are higher than those contained on the registry. The discrepancies are very small and generally improve over time as expected.

Month	Ri	R1	R3	R7	R14
Oct 2015	-0.01%	-0.01%	0.00%	-0.01%	-1.12%
Nov 2015	0.11%	0.04%	-0.01%	0.01%	-0.01%
Dec 2015	0.05%	0.01%	0.00%	0.00%	-0.01%
June 2016	0.00%	0.01%	-0.01%	0.00%	-
July 2016	0.01%	-0.01%	-0.01%	-0.01%	-
Sept 2016	-0.01%	-0.01%	-0.01%	-	-
Oct 2016	0.00%	-0.01%	0.00%	-	-
Nov 2016	0.00%	0.00%	-0.01%	-	-

I found minor errors with NHH ICP days. For the 7-month revision for June 2016, for NSPs APC0011 and KMW0011, the registry was expecting 30 ICP days but Trustpower's file only contained 29 ICP days. This was caused by a meter change occurring during the month and an error with dates meant there was a one day period without a meter installed in GTV, although the ICP was Active for the whole month. I recommend Trustpower investigates this issue to see how widespread it is, and if it's deemed a problem, validation reporting could be put in place.

Most of the HHR ICP days discrepancies relate to backdated registry events or incorrect registry information for a period of time by Trustpower or the Distributor. I only found one HHR ICP days error that still needs attention. ICP 0003443370BU50D was a new connection energised and made Active on 19/07/16 but submission information and ICP days was only provided from 22/07/16. I confirmed that HHR data was available from 19/06/16 for one trading period, which may have been for certification tests. All other trading periods have zero kWh. Controls are in place to identify HHR ICP days discrepancies, however this one was not identified and actioned as expected. I recommend the ICPCOMP and ICPMISS reports are included in Trustpowers monitoring processes.

Non-compliance	Description
Audit ref: 11.2 **With:** Clause 15.6 of part 15 **From/to:** June 2016	NHH ICP days discrepancies due to incorrect meter change dates in GTV. HHR ICP days incorrect for ICP 0003443370BU50D. **Potential impact:** Low **Actual impact:** Low **Audit history:** None **Controls:** Moderate Breach Risk Rating: 2
Audit Risk Rating	**Rationale for audit risk rating**
Low	Incorrect ICP days affects scaling if the difference is above a certain threshold. These issues are below the threshold so the audit risk rating is considered low.

Actions taken to resolve the issue	Completion date	Remedial action Status
We have updated our checking process to also compare ICPCOMP and ICPMISS prior to any revision submissions which will identify these prior to submission.	Completed	Identified
Preventative actions taken to ensure no further issues will occur	**Completion date**	
Action completed	Completed	

Recommendation	Description	Audited party comment	Remedial action
Regarding: Clause 15.6 of part 15	Check whether the ICP days discrepancies due to incorrect meter changes are widespread and consider additional monitoring if this is the case. Include ICPCOMP and ICPMISS reporting in the monthly controls for HHR.	We will conduct these checks.	Identified

11.3 Electricity Supplied Information Provision to the Reconciliation Manager (Clauses 15.7 of Part 15)

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 "as billed" calculation was confirmed by selecting nine NSPs with a small number of ICPs and checking the consumption for all months that the customer record was "active". I also compared the submission information to the electricity supplied information at an aggregate level to identify any potential issues.

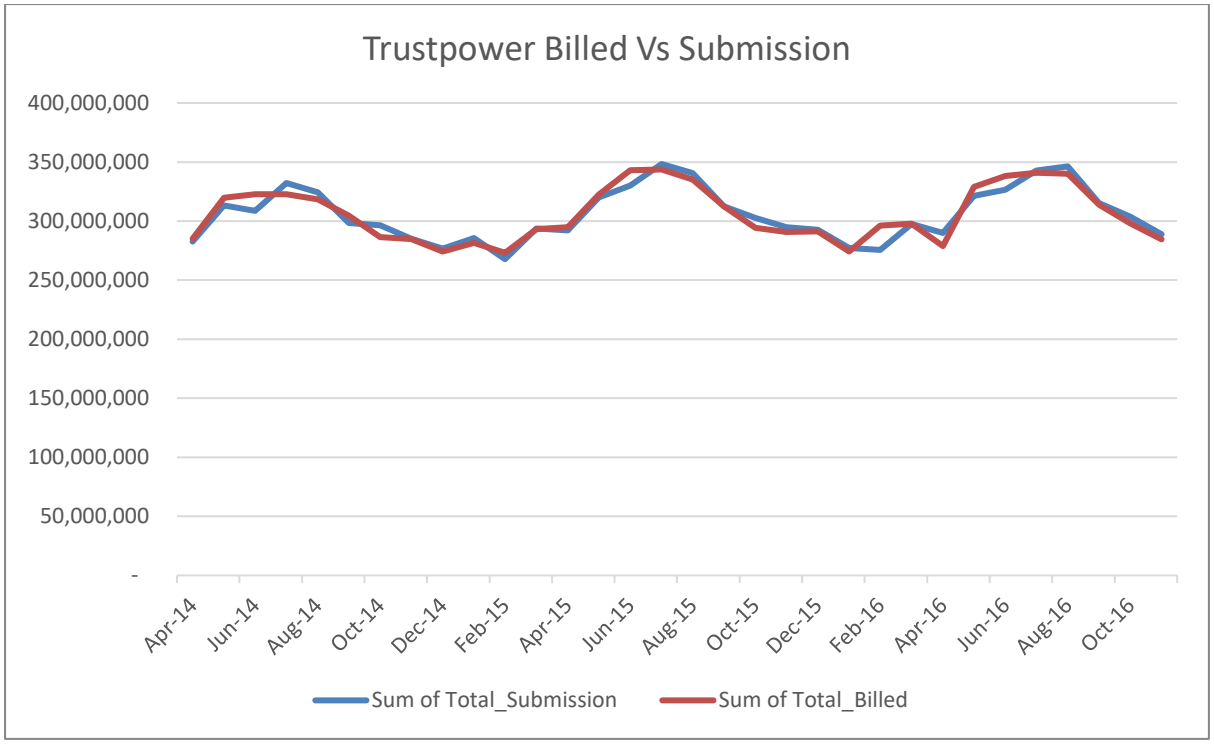
Audit Commentary

The calculation is accurate for the nine NSPs checked.

The overall difference between billed and submitted quantities for the period April 2014 to November 2016 is 0.02%, with the billed total being higher. The reason a more recent period was not included was to ensure the comparison excluded Ri and R1 data, which is not as accurate as data from R3 onwards.

Trustpower now has robust monitoring and controls in place to identify any possible errors in files.

The table below shows the difference between billed and submission totals.



11.4 HHR Aggregates Information Provision to the Reconciliation Manager (Clauses 15.8 of Part 15)

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 by comparing the HHR aggregates files to the HHR vols files for three NSPs for the R3 for November 2016. I also checked the ICP missing reports for any missing ICPs from the aggregates files, and finally I checked the raw data in MV090 through to the data in the aggregates file for five ICPs.

Audit Commentary

The HHR vols and HHR aggregates files matched. The check of raw data through to HHR aggregates records proved compliance. The ICPMISS report showed two minor errors, as follows:

- ICP 0800458060LCC6B should have had a record in the HHR aggs file for February 2017 because it ended on 03/02/17. The consumption was zero but there should still be a record.
- ICPs 1001157631CKEAE and 1001157630CK2EB started on 01/02/17 but the meter set-ups occurred late and submission did not occur for February 2017.

Another relevant matter is that the HHR Aggregates files are prepared at ICP level based on submission information. This has previously been recorded as compliant and this is the information expected by the reconciliation manager. In July 2016, it was found that clause 15.8 states that the aggregates file should contain electricity supplied information rather than submission information and electricity supplied information is defined as shown below:

electricity supplied means, for any particular period, the information relating to the quantities of **electricity** supplied by **retailers** across **points of connection** to **consumers**, sourced directly from the **retailer's** financial records, including quantities—

(a) that are metered or unmetered; and
(b) supplied through normal **customer** supply and billing arrangements; and
(c) supplied under sponsorship arrangements; and
(d) supplied under any other arrangement

This differs from the Reconciliation Manager Functional Specification. In Section 3 of the Reconciliation Manager Functional Specification, HHR Aggregates information is described as: *"…HHR submission information that is aggregated per ICP for the whole month (not half-hourly)",* which suggests an intention that this information should be sourced from submission information not electricity supplied information, which is covered by clause 15.7.

Type of information that is submission information	Description	Source	Classification in this document
information	electricity supplied information.		supplied
Monthly half-hour ICP aggregates	This is equivalent to the HHR submission information that is aggregated per ICP for the whole month (not half-hourly).	Purchasers (excluding direct consumers)	Monthly half-hour ICP aggregates

Data from the aggregates file is used to support other reporting by the Reconciliation Manager and will be of little value if it is based on Electricity Supplied data rather than submission data. Electricity Supplied data has a one month offset and invoicing is not required to occur within any specific timeframes.

Whilst the Code clearly states this file should be derived from financial records, I recommend Trustpower liaises with other participants to consider recommending a Code change which will allow for the aggregates files used in the industry to remain unchanged.

Recommendation	Description	Audited party comment	Remedial action
Regarding: Clause 15.8 of schedule 15.2	Suggest Trustpower liaise with other participants to consider recommending a code change to allow aggregates files	Trustpower will follow up at relevant forums	Identified

Non-compliance	Description
Audit ref: 11.4 With: Clause 15.8 From/to: 01/06/16 - 30/04/17	HHR aggregates missing from the February 2017 file for 3 ICPs. HHR aggregates file does not contain electricity supplied information. Potential impact: Low Actual impact: Low Audit history: None Controls: Moderate Breach Risk Rating: 2
Audit Risk Rating	**Rationale for audit risk rating**
Low	Consumption information was supplied for the next revision for the ICPs where records were missing from the HHR aggregates file; therefore, I conclude the risk rating is low. The HHR aggregates file cannot contain electricity supplied information, or other reports relying on the aggregates file will not be accurate, therefore I consider this matter does not have a risk rating.

Actions taken to resolve the issue	Completion date	Remedial action Status
The code is not consistent with the functional specification of what is required. It would not be possible to be compliant with the current wording. Will raise this issue at the next Retailers forum in August.	31/08/2017	Identified
Preventative actions taken to ensure no further issues will occur	**Completion date**	
Nothing further at this stage	31/08/2017	

12. Submission Calculation

12.1 Daylight Saving Adjustment (Clause 15.36 of Part 15)

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

I checked a file for the start and end of daylight savings to ensure they were correct.

Audit Commentary

Trustpower uses the "trading period run on" technique. The files for the start and end of daylight savings were correct. Compliance is confirmed.

12.2 Creation of Submission Information (Clauses 15.4 of Part 15)

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

I checked whether any breach allegations had been made for late files, and I checked that corrected data flowed through to revision files. I also compared the AV080 files to the GR170 files for three months to ensure complete revision files were being sent, and that "zeroing" occurred when a revision file needed to "back out" any consumption as a result of a backdated event, like a backdated switch out.

Audit Commentary

No files were sent late during the audit period. Corrected data flowed through to revision files for five examples of stopped meters, two multiplier errors and six examples of bridged meters. The AV080 files matched the GR170 files. Trustpower has robust monitoring and controls in place to ensure data looks reasonable at an aggregated level. Compliance is confirmed.

12.3 Allocation of Submission Information (Clause 15.5 of Part 15)

In preparing and submitting submission information, the reconciliation participant must allocate volume information for each ICP to the NSP indicated by the data held by 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

I evaluated the process for ensuring the correct NSP is recorded by conducting a walk-through of the registry validation and submission processes for NHH and HHR. NSP errors will also show in the ICPCOMP and ICPMISS reports, so these were checked as well. I requested Trustpower to provide any information regarding to notifications under clause 15.13.

Audit Commentary

HHR submission occurs by using the registry as the starting point; this ensures the correct NSP is used for any given submission because the data used includes history of NSP changes. NHH registry validation is robust and includes the NSP. There were no discrepancies in the ICPCOMP or ICPMISS files indicating incorrect NSPs. Trustpower is not aware of any notifications under clause 15.13 where they are the trader. Compliance is confirmed.

12.4 Grid Owner Volumes Information (Clause 15.9 of Part 15)

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

I checked whether Trustpower was a grid owner to determine whether this clause applied.

Audit Commentary

Trustpower is not a grid owner, therefore this clause does not apply.

12.5 Provision of NSP Submission Information (Clause 15.10 of Part 15)

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

Trustpower is responsible for the NSP vols submission for the Waipori Village embedded network. I checked the HHR submission processes by conducting a walk-through of the relevant steps and I checked that the data from MV090 flowed through to the relevant submission files.

Audit Commentary

Compliance is confirmed for all HHR submission steps.

12.6 Grid Connected Generation (Clause 15.11 of Part 15)

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

Trustpower is responsible for the NSP vols submission for six grid connected generators. I checked the HHR submission processes by conducting a walk-through of the relevant steps and I checked that the data from MV090 flowed through to the relevant submission files.

Audit Commentary

Compliance is confirmed for all HHR submission steps.

12.7 Accuracy of Submission Information (Clause 15.12 of Part 15)

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

I checked the revision process for five examples of stopped meters, two multiplier errors, six examples of bridged meters and one DUML database. I checked the kWh information in GTV before and after the corrections, and I confirmed that the data flowed through to the submission files by checking these at ICP level.

Audit Commentary

Corrected data flowed through to revision files for five examples of stopped meters, two multiplier errors and six examples of bridged meters. Corrected DUML data for the Otago NZTA database flowed through to the relevant AV080 file. Compliance is confirmed.

12.8 Permanence of Meter Readings for Reconciliation (Clause 4 of Schedule 15.2)

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

I checked two NSPs for September 2015 R14 and October 2015 R14 where the HE percentage was not 100.

Audit Commentary

An issue with one ICP per NSP (four ICPs in total) caused the HE percentages to be between 99.88 and 99.98. The issue was due to ICPs switching in, then being withdrawn then switching in for a different date. GTV estimated for the period between the original switch in date and the actual switch in date. Trustpower had already found and fixed this issue by the time of the audit. Although minor, it is still recorded as non-compliance.

Non-compliance	Description
Audit ref: 12.8 With: Clause 4 of schedule 15.2 From/to: September and October 2015	Some estimated data still existing at 14 months. 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 total consumption affected was very small. Controls had already identified this issue and it is now resolved.

Actions taken to resolve the issue	Completion date	Remedial action Status
Unsure why this is noted as we had already identified the issue and resolved by the time of the audit. (4 ICP's)	Completed	Cleared
Preventative actions taken to ensure no further issues will occur	**Completion date**	
Nothing further	Completed	

12.9 Creation of Submission Information (Clause 2 of Schedule 15.3)

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)):
- half hour volume information for the ICP; or
- non half hour volumes information calculated under clauses 4 to 6 (as applicable).
- 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 on 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):
- for each ICP, the compensation factor that is recorded in the registry (clause 2(3)(a))
- for each NSP the compensation factor that is recorded in the metering installations most recent certification report (clause 2(3)(b)).

Audit Observation

Numerous checks were conducted to determine compliance with this clause, as follows:

- check of unmetered submission at ICP level for a part month and complete month
- review of DUML reports to identify submission inaccuracies
- review of Revenue Assurances processes to ensure issues are found and resolved at the earliest opportunity
- check of ICPMISS files for the audit period
- check of total number of ICPs with NHH submission compared to the number of ICPs on the registry for three NSPs
- check of aggregation processes for nine NSPs
- check of HHR submission from raw meter data through to submission files.

Audit Commentary

A small number of issues were found with the HHR aggregates file, as recorded in Section 11.4. The only other issues found relate to DUML databases, where inaccurate submission information exists for the databases shown in the table below.

Database	Annual kWh difference	Over submission or under submission
Otorohanga DC	3,100	Under
Westland DC	1,350	Over
Waipa Sth NZTA	3,200	Under
Taupo DC	6,500	Over

This area has robust management and controls in place. I did not identify any non-compliance with regard to submission activities other than those recorded in Section 11.4 and those in relation to DUML.

12.10 Historical Estimates and Forward Estimates (Clause 3 of Schedule 15.3)

For each ICP that has a non-half hour metering installation, volume information derived from validated meter readings, estimated readings, or permanent estimates must be allocated to consumption periods using the following techniques to create historical estimates and forward estimates (clause 3(1)).

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

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

Audit Observation

I checked the processes for the calculation of forward and historic estimates, and I checked the identification of submission information by reviewing NSPs where the relevant thresholds had not been met to identify any potential incorrect recording.

Audit Commentary

Whilst some thresholds were not met for the proportion of HE, I did not identify any incorrect labelling of historic or forward estimates. Compliance is confirmed.

12.11 Historical Estimate Process (Clauses 4 & 5 of Schedule 15.3)

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 kWhPx 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 kWhPx.

Audit Observation

To assist with determining compliance of the Historical Estimate (HE) processes, Trustpower was supplied with a list of scenarios, and for some individual ICPs a manual HE calculation was conducted, and compared to the result from GTV.

Audit Commentary

Compliance is confirmed for all scenarios

Test	Scenario	Test Expectation	Result
A	ICPs become Inactive part way through a month.	Consumption is only calculated for the Active portion of the month.	Compliant
B	ICPs become active then inactive within a month.	Consumption is only calculated for the Active portion of the month.	Compliant
C	ICPs become inactive, then active, then inactive again within a month.	Consumption is only calculated for the Active portion of the month.	Compliant
D	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
E	ICPs start on the 1st day of a month.	Consumption is calculated to include the 1st day of responsibility.	Compliant
F	ICPs end on the last day of the month.	Consumption is calculated to include the last day of responsibility.	Compliant
G	ICPs start part way through a month.	Consumption is calculated to include the 1st day of responsibility.	Compliant
H	ICPs end part way through a month.	Consumption is calculated to include the last day of responsibility.	Compliant
I	ICP is Lost and Won Back in a month.	Consumption is calculated for each day of responsibility.	Compliant
J	Unmetered Load for a full month	Consumption is calculating correct based on daily unmetered kWh for a whole month	Compliant
K	Unmetered load for a part month (switch out or de-energisation partway through a month)	Consumption is calculating correct based on daily unmetered kWh only for the Active part of the month	Compliant
L	ICP starts on 1st and Ends on Last day of month.	Consumption is calculated for each day of responsibility.	Compliant
M	Rollover Reads	Consumption is calculated correctly in the instance of meter rollovers.	Compliant

12.12 Forward Estimate Process (Clause 6 of Schedule 15.3)

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

I checked the documentation for the forward estimate methodology and I checked examples where the difference between the Ri and subsequent revisions exceeded 100,000 kWh and 15%.

Audit Commentary

Trustpower's forward estimate methodology is based on the following:

- consumption from the same period one year earlier, adjusted by profile shape data (note that as the consumption may have changed over the one year period, another date range is compared and the most suitable one used)
- if a read was not conducted in the previous year then the last read period will be used
- where no reading history is available then a daily average figure is used from the CS file for a switch in or manually entered for new connections.

Where profile shape data is not available then the average of the read to read period is used.

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% and 100,000 kWh

Month	Revision 1	Revision 3	Revision 7	Revision 14	Total
Sept 2015	0	2	2	2	152
Oct 2015	1	1	1	1	154
Nov 2015					
May 2016	0	1	2	-	167
June 2016	1	1	1	-	168
Sept 2016	0	4	3	-	175
Oct 2016	1	9	-	-	179
Nov 2016	2	5	-	-	181

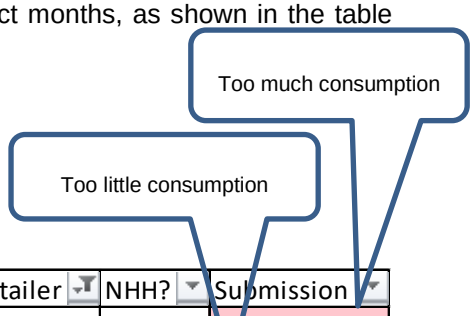
Trustpower has monitoring in place for variations between revisions and in all cases, could explain the reasons for the differences. This monitoring occurs at NSP and at ICP level and includes checks of any ICPs with a change of more than 20,000 kWh plus ICPs with credits of more than 500 kWh. The reasons mostly relate to the following issues:

- movement of volume following the application of seasonal shape files
- replacement of estimates with actual data
- seasonal loads.

One of the main challenges in achieving compliance with the FE accuracy threshold is the estimation of the start of irrigation in the Ashburton region. Trustpower has made recent improvements in this area (in January 2017) by reviewing the data for HHR metered irrigation ICPs and adjusting the shape files they use for NHH forward estimates (provisional shape files). Trustpower's use of provisional shape files helps the accuracy of their Ri submissions but for subsequent revisions they must use the published shape files, which may not be as accurate as their provisional files because they are dependent on the accuracy of other retailers' submissions. This is illustrated below where Trustpower's initial submission was adjusted by provisional shape files, and the submission is close to their final submission but for R1 where they had to use the published shape file, the submission becomes inaccurate.

		Initial	R1	R3	R7	R14
Oct-15	**ASHBURTEASHG**	**4,944,917**	**6,411,225**	**5,661,947**	**5,663,368**	**5,664,118**
	ASB0331	2,215,336	2,855,195	2,451,806	2,452,033	2,452,149
	ASB0661	2,729,581	3,556,030	3,210,141	3,211,336	3,211,970

One issue was identified where it appears there are duplicated shape files within GTV for at least one NSP, leading to consumption information being allocated to incorrect months, as shown in the table below.



Month	Revision	balancing area	NSP	Network	Retailer	NHH?	Submission
Sep-16	3	SWCKMPOWG	ASY0111	MPOW	TRUS	NHH	639,139
Oct-16	3	ASYAREAMPOWG	ASY0111	MPOW	TRUS	NHH	115,527
Nov-16	3	ASYAREAMPOWG	ASY0111	MPOW	TRUS	NHH	246,336

The table below shows the total variation between revisions, compared to the initial submission.

Month	Revision 1	Revision 3	Revision 7	Revision 14
Sept 2015	-0.19%	1.90%	1.91%	1.87%
Oct 2015	0.91%	5.03%	5.25%	5.20%
May 2016	-1.10%	-3.08%	-2.88%	-
June 2016	0.08%	-3.19%	-3.21%	-
Sept 2016	2.52%	3.36%	3.43%	-
Oct 2016	2.24%	5.41%	-	-
Nov 2016	2.96%	4.53%	-	-

Non-compliance	Description
Audit ref:12.12 With: Clause 6 of schedule 15.2 From/to: Sept 15 to Nov 16	FE accuracy threshold not met for some balancing areas. Potential impact: Low Actual impact: Low Audit history: Six times Controls: Strong Breach Risk Rating: 1
Audit Risk Rating	**Rationale for audit risk rating**
Low	The total consumption affected is small as a total percentage, therefore I consider the risk rating is low.

Actions taken to resolve the issue	Completion date	Remedial action Status
We have implemented our own Provisional Profile shapes which are proving to be very accurate.	Completed	Identified
Preventative actions taken to ensure no further issues will occur	**Completion date**	
Nothing further	Completed	

12.13 Compulsory Meter Reading after Profile Change (Clause 7 of Schedule 15.3)

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

Trustpower changed a number of profiles from RPS to PV1 or EG1 during the audit period. I checked the process employed for these changes by conducting a walk-through.

Audit Commentary

Trustpower did not make these profile changes with a validated meter reading or a permanent estimate. Although there will be no effect on submission accuracy, making the changes on an estimate does not achieve compliance.

Non-compliance	Description
Audit ref: 12.13 With: Clause 7 of schedule 15.2 From/to: April 2017	Profile changes made on estimates. Potential impact: Low Actual impact: Low Audit history: None Controls: Strong Breach Risk Rating: 1
Audit Risk Rating	**Rationale for audit risk rating**
Low	The controls are strong but the changes were made on estimates based on advice from the RM rather than in accordance with the Code. There is no effect on submission accuracy, in fact the submission information will be more accurate once the first meter reading after the profile change is obtained.

Actions taken to resolve the issue	Completion date	Remedial action Status
This was discussed with the RM before we made these changes.	Completed	Identified
Preventative actions taken to ensure no further issues will occur	**Completion date**	
Nothing further.	Completed	

13. Submission Format & Timing

13.1 Market Administrator Meter Reading Reports (Clauses 8 & 9 of Schedule 15.2)

Provision of meter read frequency reports to the Authority, no later than 20 business days after the end of the month.

Audit Observation

I reviewed meter reading reports for October 2016 to March 2017, to confirm that they meet the meter reading frequency report requirements.

Review processes to ensure the reports are accurate and submitted on time, and the timeliness of submission for a sample of reports.

Audit Commentary

I reviewed meter reading reports for October 2016 to March 2017, and confirmed that they met the meter reading frequency report requirements and were submitted in the required timeframe. The report content was found to be inaccurate and this is recorded as non-compliance in **Section 6.9 NHH meters interrogated annually**. Compliance with this clause is confirmed.

13.2 Provision of Submission Information to the RM (Clause 8 of Schedule 15.3)

Submission information is provided to the reconciliation manager in the appropriate format and is aggregated to the following level:

a) NSP code

b) reconciliation type

c) profile

d) loss category code

e) flow direction

f) dedicated NSP

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

Audit Observation

I conducted a walk-through of Trustpower's process in relation to the correct aggregation of submission information. I also checked the ICPCOMP report for obvious aggregation factor errors.

Audit Commentary

The "starting point" for aggregation factors is the data in GTV. The registry validation process includes all of the relevant fields and is designed to ensure the data in GTV is accurate.

The accuracy of submission files was confirmed by selecting nine NSPs with a small number of ICPs and confirming that the aggregate data was the correct sum of ICP level data. This was compared to the billed data as a "reasonableness" check.

Compliance is confirmed.

13.3 Reporting Resolution (Clause 9 of Schedule 15.3)

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 checked the content of all relevant types of submission files to confirm rounding practices are correct. I also compared the HHR Vols file to the HHR aggregates file to ensure they were the same and that incorrect rounding had not resulted in different totals.

Audit Commentary

Submission information is appropriately rounded to two decimal places.

13.4 Historical Estimate Reporting to RM (Clause 10 of Schedule 15.3)

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

I analysed the GR170 file for eight separate months to evaluate compliance.

Audit Commentary

The table below shows that compliance has not been achieved in every instance. The proportion of HE at an aggregate level is well above the required thresholds, and is close to 100% at the 14 month revision.

Quantity of NSPs where revision targets were met.

Month	Revision 3 80% Met	Revision 7 90% Met	Revision 14 100% Met	Total
Sept 2015	244	244	243	245
Oct 2015	245	245	245	247
Nov 2015	244	245	-	247
May 2016	256	259	-	260
June 2016	256	259	-	261
Sept 2016	262	267	-	268
Oct 2016	266	-	-	271
Nov 2016	269	-	-	273

The table below shows that Trustpower's percentage HE at a summary level for all NSPs is well above the required targets.

Proportion of HE at an aggregate level.

Month	Revision 3 80% Target	Revision 7 90% Target	Revision 14 100% Target
Sept 2015	99.1%	99.8%	99.99%
Oct 2015	98.8%	99.7%	99.99%
Nov 2015	98.3%	99.9%	-
May 2016	98.5%	99.6%	-
June 2016	98.7%	99.7%	-
Sept 2016	98.7%	99.8%	
Oct 2016	98.5%	-	-
Nov 2016	98.2%	-	-

Non-compliance	Description
Audit ref:13.4 With: Clause 10 of schedule 15.3 From/to: Sept 15 to Nov 16	HE targets not met for a small number of NSPs. Potential impact: Low Actual impact: Low Audit history: Six times Controls: Strong Breach Risk Rating: 1
Audit Risk Rating	**Rationale for audit risk rating**
Low	The controls are strong to ensure meter readings are obtained which in turn leads to a high percentage of HE. There is only a very small impact on consumption information therefore I consider the audit risk rating is low.

Actions taken to resolve the issue	Completion date	Remedial action Status
We have implemented our own Provisional Profile shapes which are proving to be very accurate.	Completed	Identified
Preventative actions taken to ensure no further issues will occur	**Completion date**	
Nothing further	Completed	

14. Conclusions

The audit found 30 non-compliances, makes three recommendations and raises two issues. The increase in the number of non-compliances from the last audit does not reflect a decline of the level of compliance but is related to the new audit report structure which has added some additional areas of compliance to be evaluated, or has split single sections into multiple sections. The next audit frequency indicator recommends that the next audit be conducted in six months. I recommend the next audit be conducted in 12 months. This is reflective of the overall high level of compliance and that the majority of the non-compliances have an audit risk rating of low. The matters raised are shown in the tables below:

Table of Non-Compliance

Subject	Section	Clause	Non-compliance	Controls	Audit Risk Rating	Breach Risk Rating	Remedial Action
Relevant information	2.1	10.6, 11.2, 15.2	Some registry discrepancies.	Strong	Low	1	Identified
Metering Certification	2.10	10.33(2)	2 ICPs not certified within 5 business days of energisation.	Strong	Low	1	Identified
Changes to registry	3.3	10 of Schedule 11.1	Registry information not provided within 5 business days.	Strong	Low	1	Identified
Trader responsibility for an ICP	3.4	11.18	Correct MEP nomination late for three ICPs.	Weak	Low	3	Identified
Management of "active" status	3.8	17 of Schedule 11.1	Some builders' temporary supplies energised without Trustpower's knowledge.	Weak	Low	3	Identified
Change of MEP	3.11	10.22(1)(a)(i)	MEP change process not being managed in all instances.	Weak	Low	3	Identified
Losing trader to provide final information	4.3	5 of Schedule 11.3 and 15.2	Some late CS files.	Strong	Low	1	Identified
Readers must use same reading	4.4	6 & 6A of schedule 11.3	11 late RR files.	Strong	Low	1	Identified

Subject	Section	Clause	Non-compliance	Controls	Audit Risk Rating	Breach Risk Rating	Remedial Action
Losing trader provides information- switch move	4.8	10 of Schedule 11.3	1 incorrect AN response code sent. Some late CS files.	Strong	Low	1	Identified
Changes to switch meter reading- switch move	4.11	12(2A)&(2B) of Schedule 11.3	21 late RR files. 1 RR sent with only one validated read gained.	Strong	Low	1	Identified
Losing trader provision of information	4.13	15 of schedule 11.3	Incorrect AN code of MU sent for 3 HH switches.	Moderate	Low	2	Investigating
Withdrawal of switches	4.15	17 & 18 of Schedule 11.3	6 switches withdrawn greater than 2 months of the event date. 1 late AW sent.	Moderate	Medium	4	Investigating
Unmetered threshold	5.2	10.14(2)(b) of part 10	28 ICPs with annual consumption over 6,000 kWh per annum.	Strong	Low	1	Identified
Unmetered threshold exceeded	5.3	10.14(2)(b) of part 10	28 ICPs with annual consumption over 6,000 kWh per annum and remedial actions are not yet complete.	Strong	Low	1	Identified
Distributed unmetered load	5.4	11(1) of schedule 15.3, 10.14 & 15.13	Some incorrect submission information for DUML ICPs.	Moderate	Low	2	Identified
Electricity conveyed & notification of embedded generators	6.1	10.13 & 15.13	Some incorrect submission information for ICPs with distributed generation.	Strong	Low	1	Identified
		10.12 & 10.24(b) of part 10	Six metering installations bridged and two metering installations interfered with.	Strong	Low	1	Identified
Responsibility for metering at GIP	6.2	10.26(7) of part 10	RM not notified of the new expiry date for Matahina metering installation.	Moderate	Low	2	Cleared
Certification of control devices	6.3	33(1A) & (1) of schedule 10.7	4 ICPs without certified control devices.	Moderate	Low	2	Identified

Subject	Section	Clause	Non-compliance	Controls	Audit Risk Rating	Breach Risk Rating	Remedial Action
Derivation of meter readings	6.6	5(b)&(c) of schedule 15.2	Customer reads being treated as actuals. Checks for phase failure not conducted and recorded by Datacol.	Moderate	Low	2	Identified
Interrogate meters once	6.8	7(1) and 7(2) of Schedule 15.2	Customer reads being treated as actuals. Checks for phase failure not conducted and recorded by Datacol.	Moderate	Low	2	Identified
NHH meters interrogated annually	6.9	8(1) & (2) of schedule 15.2	ICPs unread at 12 months under reporting.	Moderate	Low	2	Identified
Electronic meter readings & estimated reads	9.6	17(4)(f) of schedule 15.2	Event information not evaluated in accordance with the Code.	Moderate	Low	2	Identified
Calculation of ICP days	11.2	15.6	NHH ICP days discrepancies due to incorrect meter change dates in GTV. HHR ICP days incorrect for ICP 0003443370BU50D.	Moderate	Low	2	Identified
HHR aggregates information	11.4	15.8	HHR aggregates missing from the February 2017 file for 3 ICPs. HHR aggregates file does not contain electricity supplied information.	Moderate	Low	2	Identified
Permanence of meter readings	12.8	4 of schedule15.2	Some estimated data still existing at 14 months.	Strong	Low	1	Cleared
Forward estimate process	12.12	6 of schedule 15.3	FE accuracy threshold not met for some balancing areas.	Strong	Low	1	Identified
Compulsory meter reading after profile change	12.13	7 of schedule 15.2	Profile changes made on estimates.	Strong	Low	1	Identified

Subject	Section	Clause	Non-compliance	Controls	Audit Risk Rating	Breach Risk Rating	Remedial Action
Historical estimate reporting	13.4	10 of schedule 15.3	HE targets not met for a small number of NSPs.	Strong	Low	1	Identified
Breach risk rating total						48	
Indicative Next Audit Frequency						6 months	

Table of Recommendations

Subject	Section	Clause	Recommendation for Improvement	Remedial Action
Interrogate meters once	6.8	7(1) & (2) of schedule 15.2	Check unread during period of supply report parameters to ensure the correct ICPs are captured.	Investigating
Calculation of ICP days	11.2	15.6 of part 15	Check whether the ICP days discrepancies due to incorrect meter changes are widespread and consider additional monitoring if this is the case. Include ICPCOMP and ICPMISS reporting in the monthly controls for HHR.	Identified
HHR aggregates information	11.4	15.8	Suggest Trustpower liaise with other participants to consider recommending a code change to allow aggregates files	Identified

Table of Issues

Subject	Section	Clause	Issue	Action
Losing trader provides final information	4.10	11 of schedule 11.3	The switch file must contain the date of the last actual reading for the meter. The code does not state whether this last actual reading must be during the period of supply. In the case of switch moves these requests can be backdated and therefore reads will have been gained after the switch event date.	Add to the issues register
NHH meter reading application	6.7	6 of schedule 15.2	Some NHH meter readings made effective the day before the physical meter change to ensure continuity of consumption information and accuracy of ICP days. This may require a Code change to ensure compliance is possible.	Add to the issues register

Signed by:

Steve Woods
Veritek Limited
Electricity Authority Approved Auditor

Signed by:

Simon Darmody
Wholesale Supply and Reconciliation Manager

16. Trustpower Response

This is Trustpower's first Reconciliation Participant audit under the revised Electricity Authority audit programme that came into effect 1 June 2017.

In recent years, Trustpower has improved many of its processes and systems to achieve Code compliance. This is reflected in the low breach risk rating of the findings.

The final outcome is a calculated six month audit frequency recommendation. Veritek recommends an annual audit frequency. Trustpower supports this annual strategy as reflecting a continued regular audit regime, as its systems continue to improve.

The detailed findings against every clause of the Code give Trustpower a good baseline on which to leverage further improvements. Many of the findings were resolved during the audit period prior to the audit being conducted. Where corrective actions and preventative actions are possible these have been identified in the corrective action plan.

We look forward to continuing to improve performance and demonstrating willingness to meet Code compliance in all areas of operations.

Appendices – Agent Audit Reports

Datacol

MRSL

AMS

EDMI

EMS