

ELECTRICITY INDUSTRY PARTICIPATION CODE
RECONCILIATION PARTICIPANT AUDIT REPORT



For

CONTACT ENERGY LIMITED

Prepared by: Steve Woods

Date audit commenced: 18 June 2018

Date audit report completed: 30 August 2018

Audit report due date 30 August 2018

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EXECUTIVE SUMMARY

This Electricity Industry Participation Code Reconciliation Participant audit was performed at the request of **Contact Energy Limited (Contact)**, 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 7.2.

The audit found 32 non-compliance issues and two recommendations are made.

Improvements have been made in the following areas since the last audit:

- the accuracy of registry information has further improved
- some issues with the meter read attainment process have been resolved, and the process is no longer terminated if a customer read is received
- the timeliness of corrections for consumption while inactive has improved.

The main issues identified during this audit are:

- there are a significant number of ICPs with different profiles used for submission to what is recorded on the registry, I found that in almost all cases with a profile discrepancy the profiles used for submission are correct
- some distributed unmetered load issues are still existing, leading to incorrect submission information
- some historic consumption has not been submitted for some ICPs at the deenergised status, this will all be submitted within the 14-month revision window.

The date of the next audit is determined by the Electricity Authority and is dependent on the level of compliance during this audit. The table below provides some guidance on this matter and contains a future risk rating score of 53, which results in an indicative audit frequency of six months. I have considered this result in conjunction with Contact's plans to remedy the issues raised and my recommendation for next audit date is 12 months.

The matters raised are shown in the tables below:

AUDIT SUMMARY

NON-COMPLIANCES

Subject	Section	Clause	Non-Compliance	Controls	Audit Risk Rating	Breach Risk Rating	Remedial Action
Relevant information	2.1	11.2 of part 11	Some incorrect registry information.	Moderate	Low	2	Identified
Metering certification	2.11	10.33(2) of part	4 ICPs were not certified within five business days of becoming active. 54 ICPs were reconnected without having metering certification in place.	Moderate	Low	2	Identified
Changes to registry	3.3	10 of schedule 11.1	Registry information not provided within 5 business days of change.	Moderate	Low	2	Identified
MEP nomination	3.4	11.8 of part 11	Four incorrect MEP nominations.	Moderate	Low	2	Identified
Provision of registry information	3.5	Clause 9 of schedule 11.1	Some late changes to Active. Some late MEP notifications. Some incorrect Active dates.	Moderate	Low	2	Identified
ANZSIC codes	3.6	9(1)(k) of schedule 11.1	Some incorrect ANZSIC codes.	Moderate	Low	2	Identified
Unmetered load	3.7	9(1)(f) of schedule 11.1	Daily unmetered kWh values are blank or incorrect for some ICPs.	Moderate	Low	2	Cleared
Active status	3.8	17 of schedule 11.1	Some incorrect Active dates.	Moderate	Low	2	Identified
Inactive status	3.9	19 of schedule 11.1	Incorrect de-energised status for some ICPs.	Strong	Low	1	Identified
Switching	4.3	5 of schedule 11.3	3 late CS files.	Strong	Low	1	Identified

	4.4	6 of schedule 11.3	35 Late RR files.	Strong	Low	1	Identified
	4.10	11 Schedule 11.3	1 late CS file.	Strong	Low	1	Identified
	4.11	12 of schedule 11.3	150 Late RR files.	Strong	Low	1	Identified
	4.12	14 of Schedule 11.3	1 late NT file.	Strong	Low	1	Identified
	4.14	16 of schedule 11.3	1 Late CS file.	Strong	Low	1	Identified
	4.15	17 of schedule 11.3	68 Late NW files.	Strong	Low	1	Identified
Shared unmetered	5.1	11.14 of part 11	One ICP with incorrect shared unmetered load and one ICP with missing shared unmetered load.	Strong	Low	1	Identified
Unmetered threshold	5.2	10.14(2)(b) of part 10	Seven standard unmetered ICPs have estimated annual consumption over 6000 kWh per annum.	Strong	Low	1	Identified
	5.3	10.14(5) of part 10	11 standard unmetered ICPs have estimated annual consumption over 6,000 kWh per annum and were not resolved within 20 business days.	Strong	Low	1	Identified
Distributed unmetered load	5.4	11 of schedule 15.3	Inaccurate submission information for several databases.	Moderate	High	6	Identified
Electricity conveyed	6.1	10.13 of part 10	While meters were bridged, energy was not metered and quantified according to the code.	Moderate	Low	2	Identified

			12 ICPs with generation have an incorrect profile used for submission and recorded on the registry.				
Derivation of meter readings	6.6	Clause 5 of schedule 15.2	Datacol does not conduct checks for phase failure.	Moderate	Low	2	Investigating
NHH reading application	6.7	6 Schedule 15.2	NHH meter readings not applied at 2400 on the day of the meter reading for NHH to HHR upgrades.	Strong	Low	1	Investigating
Interrogate meters once	6.8	7(1) & (2) of schedule 15.2	For eight ICPs unread during the period of supply, exceptional circumstances did not exist, and the best endeavours requirement was not met.	Weak	Low	3	Identified
Annual interrogation	6.9	8(1) & (2) of schedule 15.2	For one ICP supplied for over one year exceptional circumstances did not exist and the best endeavours requirement was not met. Some report accuracy issues were identified, and require further investigation.	Strong	Low	1	Identified
NHH correction	8.1	19(1) Schedule 15.2	One correction for addition of a missing register was overwritten. One bridged meter did not have a correction processed.	Strong	Low	1	Cleared
Event logs	9.6	17 of schedule 15.2	HHR meter event information is not formally reviewed and acted upon. Full NHH meter event information is not reviewed, but events	Moderate	Low	2	Identified

			emailed by the MEPS are reviewed and acted upon.				
HHR aggregates file	11.4	15.8 of part 15	HHR aggregates file does not contain electricity supplied information. Data for eight ICPs was missing from some volumes files, due to inaccurate profiles and missing loss factors. The data has been corrected and will be washed up.	Strong	Low	1	Identified
Accuracy of submission information	12.7	15.12 of part 15	Some submission data was inaccurate.	Moderate	Low	2	Identified
Permanence of meter readings	12.8	4 of schedule 15.2 and clause 15.2 of part 15	Some estimates not replaced at R14.	Moderate	Low	2	Identified
Forward estimate accuracy	12.12	6 of Schedule 15.3	The accuracy threshold was not met for all months and revisions.	Strong	Low	1	Identified
HE targets	13.3	10 of Schedule 15.3	HE targets were not met for some NSPs.	Moderate	Low	2	Identified
Future Risk Rating					53		
Indicative Audit Frequency					6 months		

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

RECOMMENDATIONS

Subject	Section	Clause	Recommendation
Interrogate meters once	6.8	Clause 7(1) and (2) Schedule 15.2	<p>The POS report includes ICPs within the period of supply, as well as ICPs where the period of supply has ended.</p> <p>The start and end dates for the report are incorrect in some cases. Some ICPs which have end dates of 31Dec9999 indicating they are still active with Contact, despite switching out more than six months before the report was generated.</p>
Annual interrogation	6.9	8(1) & (2) of schedule 15.2	<p>Review and update the meter read frequency reports, including:</p> <ul style="list-style-type: none"> • check the accuracy of the read attainment rates and the reads required to reach targets • check that the report is based only on the reads used to generate reconciliation consumption • check that only continuous periods of supply are considered • check that pre-pay meters are included.

ISSUES

Subject	Section	Description	Issue

1. ADMINISTRATIVE

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

Code reference

Section 11 of Electricity Industry Act 2010.

Code related audit information

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

Audit observation

The Electricity Authority's website was reviewed to identify any exemptions relevant to the scope of this audit.

Audit commentary

There are five exemptions in place relevant to the scope of this audit:

Exemption No. 177: Exemption to clause 8(g) of schedule 15.3 of the Electricity Industry Participation Code 2010 in respect of providing half-hour ("HHR") submission information instead of non half-hour ("NHH") submission information for distributed unmetered load ("DUML"). This exemption expires at the close of 31 October 2023.

Exemption No. 185: Exemption to clause 11 of schedule 15.3 of the Electricity Industry Participation Code 2010 in respect of creating DUML databases for the following ICPs. This exemption expires on the date on which Contact no longer has responsibility as the trader for these ICPs on the registry.

ICP identifier	Comments
0000038627NTADB	Decommissioned 17/05/17
0000557925UND32	Switched out 28/02/14
0000600085HBD8B	Switched out 23/01/13
0000916610TEA3F	Switched out 01/12/16
0001183605HB0B0	Contact still has responsibility for this ICP, under verandah lights with load of 3.7 kWh per day are connected.
0005000772HBA61	Switched out 28/08/14
0008801012TP900	Unmetered load details have been removed on the registry effective 23/06/14
0014189134HBC96	Switched out 03/11/15
0016096032EL6DD	Switched out 16/07/16
0018137292HB7F1	Decommissioned 05/02/13
0046054751HBE7	Switched out 08/11/12

Exemption No. 191: Exemption to clause 10.24(c) of the Electricity Industry Participation Code 2010 to allow subtraction to determine submission information for ICP 0000032431HR99C. This exemption expires on the earlier of:

- the close of 31 December 2023; and
- the completion date of a major upgrade to the Ohaaki substation.

The major upgrade has not occurred; therefore, this exemption is still valid.

Exemption No. 203: Exemption to clause 10.24(c) of the Electricity Industry Participation Code 2010 to allow subtraction to determine submission information for ICP 0000880392WEA92. This exemption expires on the earlier of:

- the close of 31 December 2022; and
- the completion date of a major upgrade to the switchboards at Contact's co-generation plant at the Te Rapa dairy factory.

The major upgrade has not occurred; therefore, this exemption is still valid.

Exemption No. 223: Exemption to clause 10.24(c) of the Electricity Industry Participation Code 2010 to allow subtraction to determine submission information for ICP 0000840407WE388. This exemption expires on the earlier of:

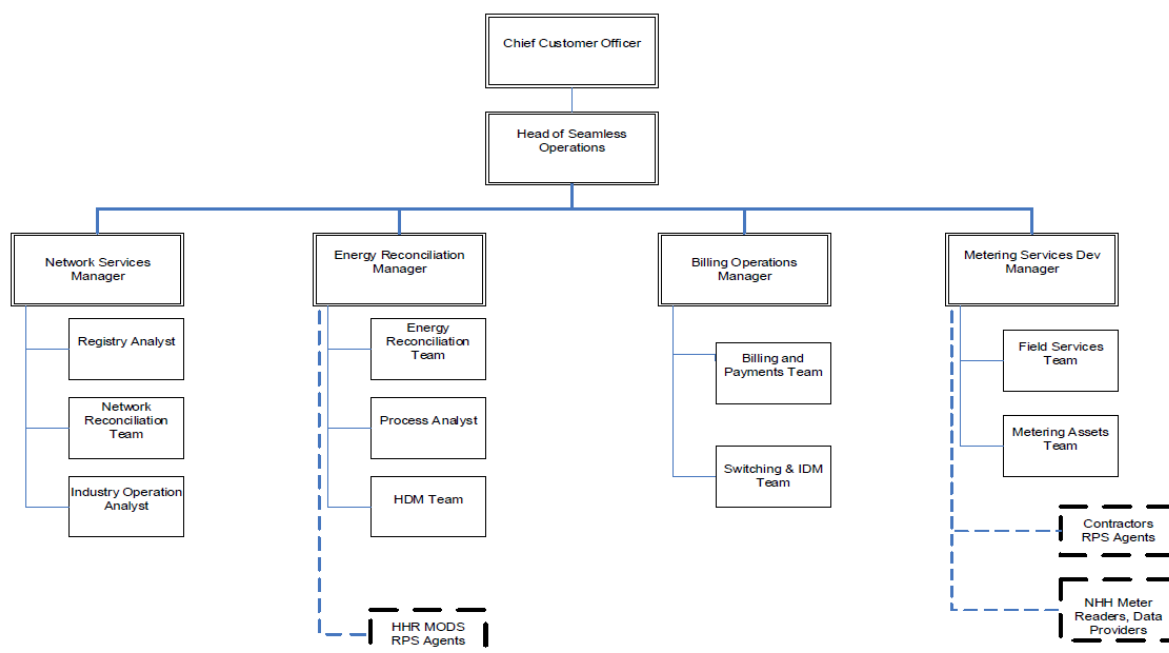
- the close of 31 December 2024;
- the date on which Contact no longer has the responsibility in the registry as the trader for ICP identifier 0000840407WE388;
- the date on which Contact no longer has an agreement to receive half-hour metered data with the retailer of any ICP required in the subtraction calculation at Solid Energy New Zealand Limited's ("Solid Energy") Rotowaro mine; and
- the date on which any embedded generation is installed on any part of Solid Energy's Rotowaro mine site between Contact's outgoing and incoming metering points.

None of the events above have occurred; therefore, this exemption is still valid.

Exemption No. 266 in relation to supplying consumer information under clause 11.32A(1) of the Electricity Industry Participation Code 2010 falls outside the scope of this audit.

1.2. Structure of Organisation

Contact Energy provided a copy of their organisational structure.



1.3. Persons involved in this audit

Auditors:

Name	Company	Role
Steve Woods	Veritek Limited	Lead Auditor
Tara Gannon	Veritek Limited	Supporting Auditor

Contact personnel assisting in this audit were:

Name	Title
Allie Jones	HDM Team Analyst
Avtar Singh	Switching Team Leader
Bernie Cross	Energy Reconciliation Manager
Darren Law	Field Services Team Leader
Euan Lucie-Smith	Field Services Coordinator

Name	Title
James Buckley	Energy Reconciliation Analyst
Joel Kisteria	Reconciliation Process Analyst
KP Chiew	Senior Reconciliation Analyst
Nathan Joyce	Registry Analyst
Paul Robson	Field Services Team Leader
Tina Papadopoulos	HDM Team Member
Norma Wynne	HDM Team Member
Candice Tutauha	HDM Team Member

1.4. Use of Agents (Clause 15.34)

Code reference

Clause 15.34

Code related audit information

A reconciliation participant who uses an agent

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

Audit observation

Use of agents was discussed with Contact.

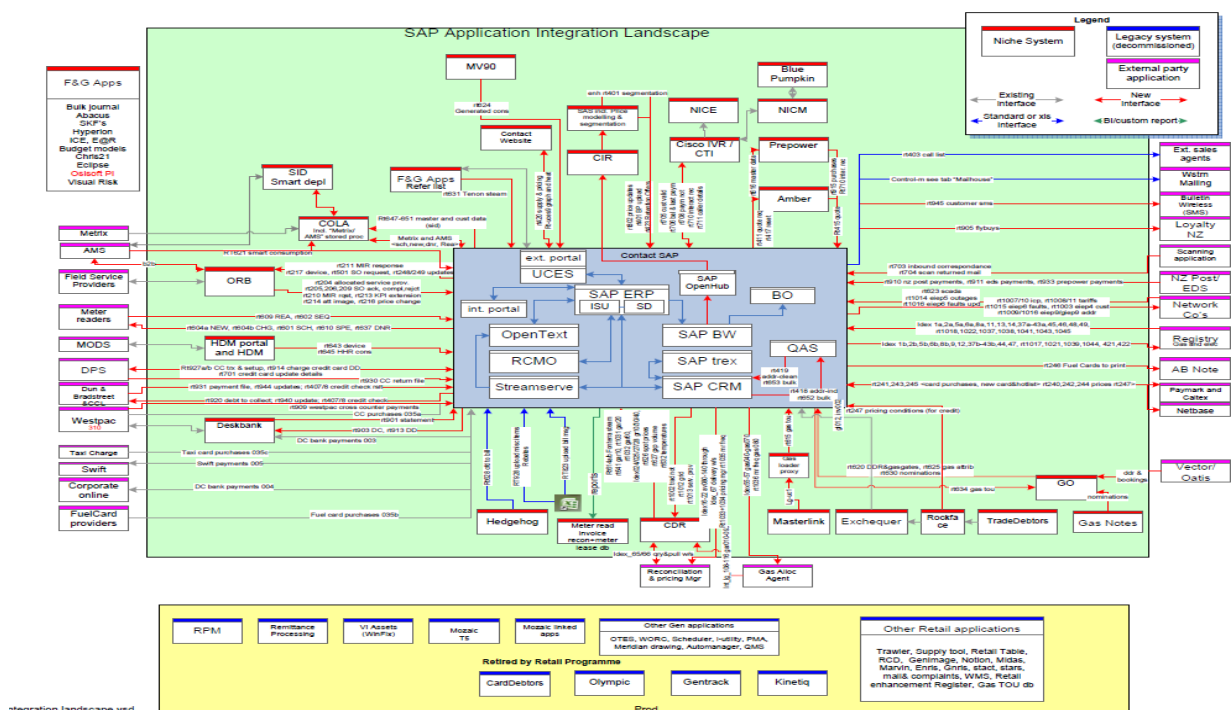
Audit commentary

Contact uses a number of agents in relation to the functions covered by the scope of this audit. They are identified in **section 1.9**.

Some DUML audit reports contain a number of non-compliance issues. I have noted a "summary" non-compliance in **section 5.4**.

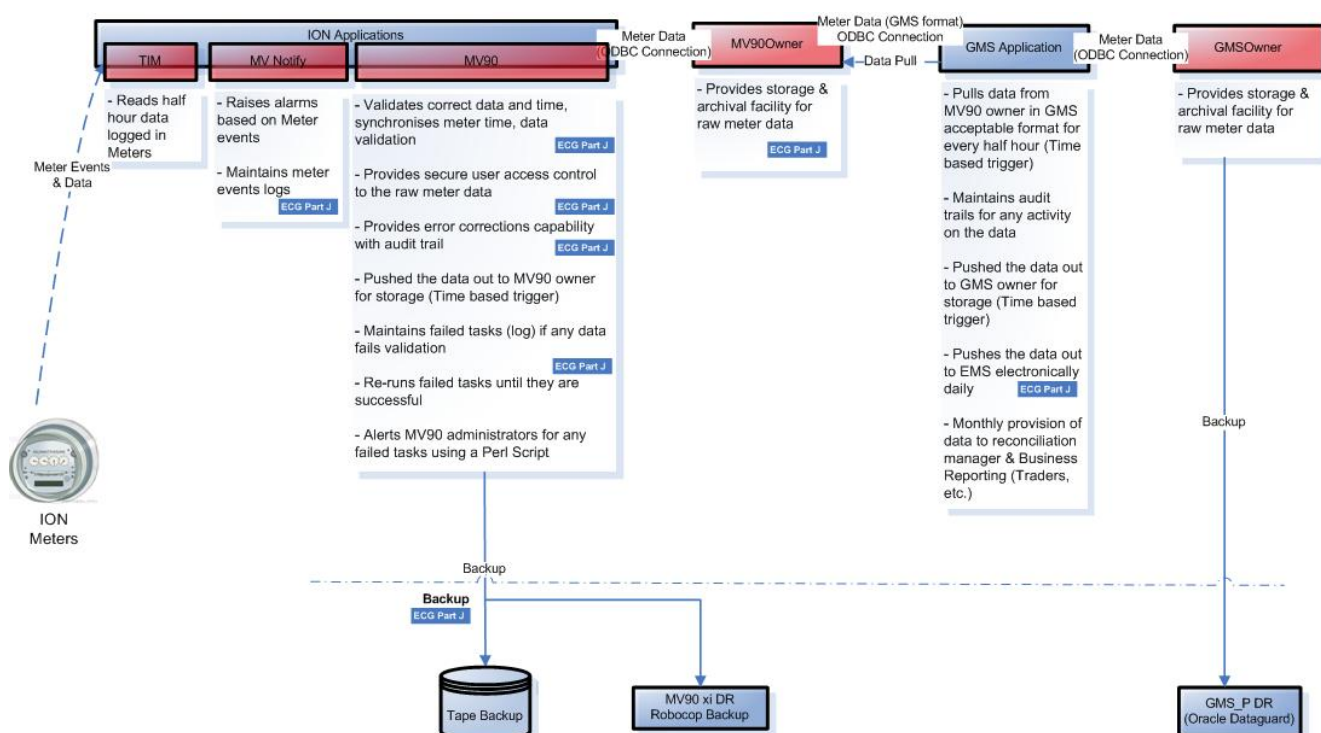
1.5. Hardware and Software

A diagram of Contact's system configuration is shown below. Backups are conducted in accordance with standard industry protocols.



Generation Meter data

The diagram below shows an overview of data flow, validation, storage and backup arrangements for generation.



1.6. Breaches or Breach Allegations

There have been two breach allegations relevant to the scope of this audit during the audit period:

- an alleged breach of Part 15 clause 15.2 (1) (ref 1710CTCT1) occurred on 19/12/17, because Contact submitted NSP information that was incorrect due to an error made when adjusting for daylight savings, the breach was closed early
- an alleged breach of Part 10 clause 10.33A (1) (a) (reference 1711CTCT1) occurred on 07/02/2018, because Contact bridged a disconnected meter without being the trader at this ICP, the EA declined to pursue and did not issue a warning.

1.7. ICP Data

All active ICPs are summarised by metering category in the table below. 714 of the active ICPs with a metering category of 9 or blank have unmetered load recorded, the remaining 129 are active but have no metering details entered on the registry.

Metering Category	(2018)	(2017)	(2016)
1	413,110	417,819	419,055
2	5,136	5,201	5,460
3	857	942	990
4	337	383	388
5	41	52	49
9	198	250	273
Blank	645	676	1,042

Status	Number of ICPs (2018)	Number of ICPs (2017)	Number of ICPs (2016)
Active (2,0)	420,324	425,323	427,257
Inactive – new connection in progress (1,12)	2	0	0
Inactive – electrically disconnected vacant property (1,4)	7,734	8,135	8,564
Inactive – reconciled elsewhere (1,5)	5	2	4
Inactive – electrically disconnected ready for decommissioning (1,6)	1,354	1,951	2,876
Inactive – electrically disconnected remotely by AMI meter (1,7)	1,778	1,678	1,283
Inactive – electrically disconnected at pole fuse (1,8)	26	103	2

Inactive – electrically disconnected due to meter disconnected (1,9)	11	1	1
Inactive – electrically disconnected at meter box fuse (1,10)			
Inactive – electrically disconnected at meter box switch (1,11)			
Decommissioned (3)	47,987	45,670	42,970

1.8. Authorisation Received

Contact provided a letter of authorisation.

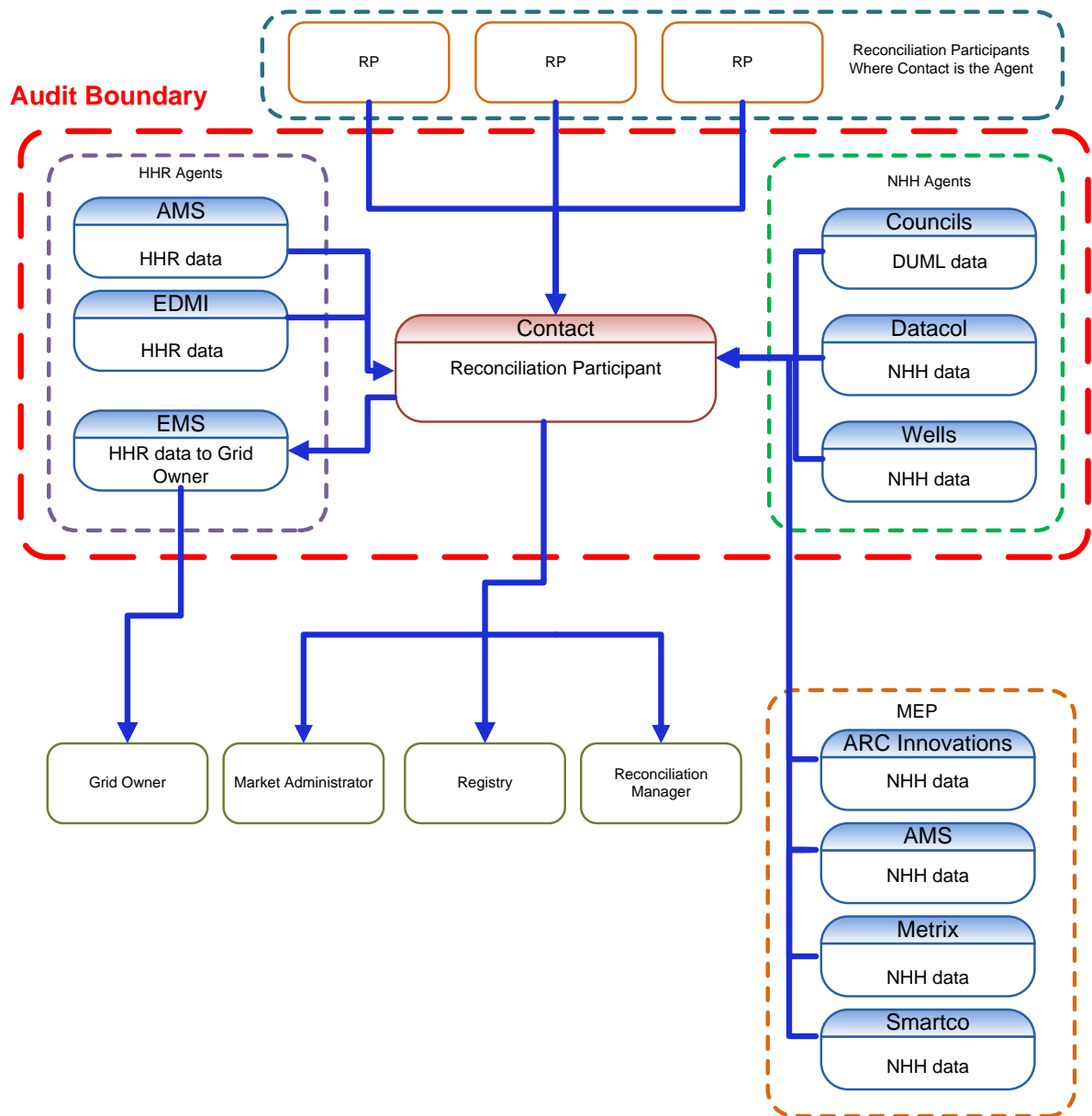
1.9. Scope of Audit

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

The audit was conducted in accordance with the Guideline for Reconciliation Participant Audits V7.2

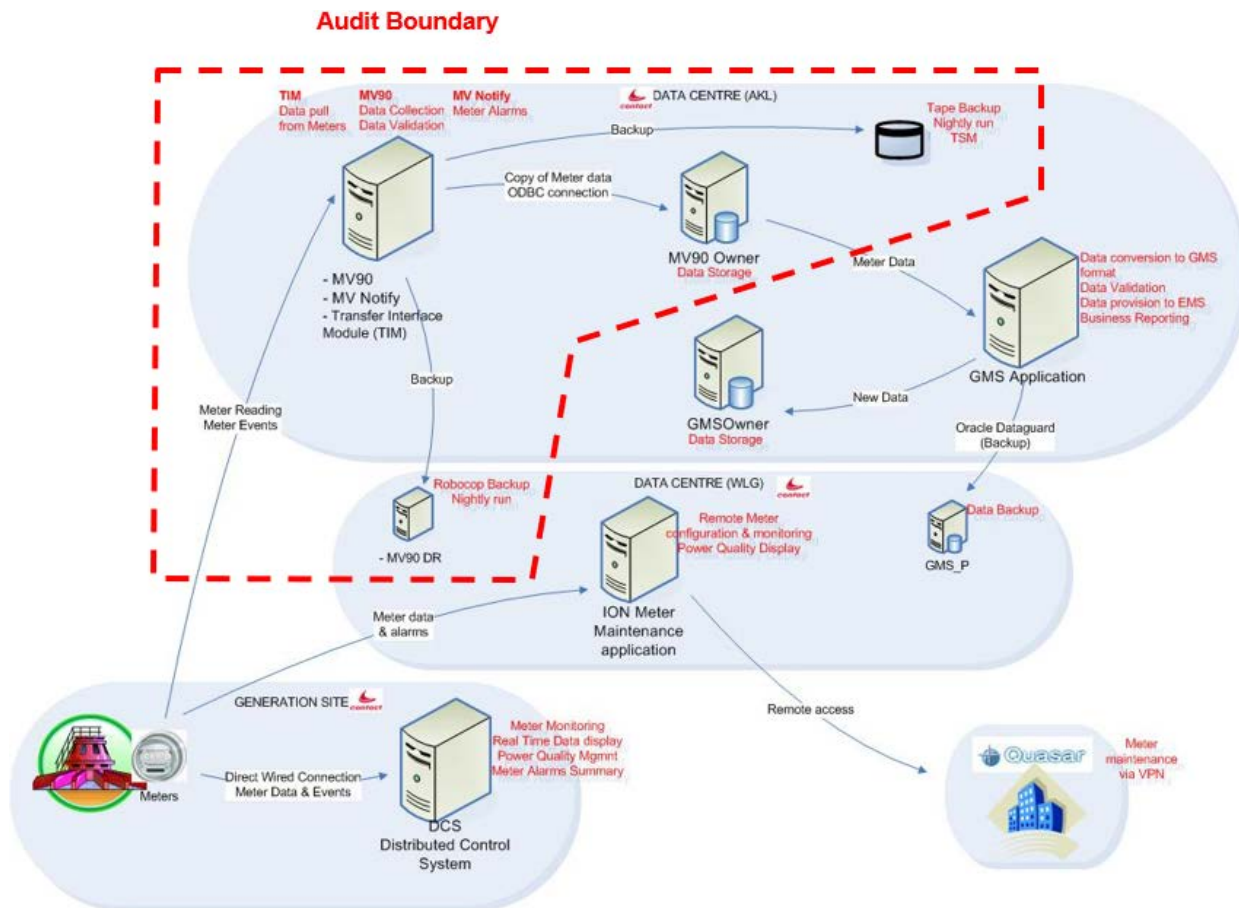
The audit was carried out at Contact's premises in Wellington on 18-20 June 2018.

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



Contact acts as an agent to other Reconciliation Participants who have responsibility for embedded network “gate” ICPs. It is intended that these parties will use Contact’s audit report to support their application for certification.

The diagram below is specific to Contact’s HHR data collection activities for generation metering, and it shows the audit boundary for this area.



The table below shows the tasks under clause 15.38 of part 15, for which Contact 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 Involved in Performance of Tasks	MEPs Providing Data to Contact
(a) - Maintaining registry information and performing customer and embedded generator switching		
(b) – Gathering and storing raw meter data	Datacol – NHH Wells – NHH AMS – HHR EDMI – HHR	AMS NHH AMI data Metrix NHH AMI data ARC Innovations NHH AMI data Smartco NHH AMI data
(c)(iii) - Creation and management of volume information	AMS – HHR EDMI – HHR	
(d) – Calculation of ICP days		

Tasks Requiring Certification Under Clause 15.38(1) of Part 15	Agents Involved in Performance of Tasks	MEPs Providing Data to Contact
(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	

1.10. Summary of previous audit

Contact provided a copy of their previous audit report conducted in August 2017 by Steve Woods (lead auditor) of Veritek Limited. The summary tables below show the status of the non-compliances, recommendations and issues raised in the previous audit. Further comment is made in the relevant sections of this report.

Subject	Section	Clause	Non-compliance	Status
Relevant information	2.1	11.2 of part 11	Some registry discrepancies.	Still existing. Refer to section 2.1.
Metering certification	2.11	10.33(2) of part	One metering installation not certified within 5 business days of energisation.	Still existing
Changes to registry	3.3	10 of schedule 11.1	10 of schedule 11.1.	Still existing
MEP nomination	3.4	11.8 of part 11	Four incorrect MEP nominations.	Still existing
Provision of registry information	3.5	Clause 9 of schedule 11.1	Some late changes to Active. Some late MEP notifications. Some incorrect Active dates.	Still existing
ANZSIC codes	3.6	9(1)(k) of schedule 11.1	Some incorrect ANZSIC codes.	Still existing

Subject	Section	Clause	Non-compliance	Status
Unmetered load	3.7	9(1)(f) of schedule 11.1	Daily unmetered kWh figures incorrect for some ICPs.	Still existing
Active status	3.8	17 of schedule 11.1	Some incorrect Active dates.	Still existing
Inactive status	3.9	19 of schedule 11.1	Incorrect deenergised status for some ICPs. Credit disconnections not recorded immediately in the registry.	Still existing
Switching	4.3	5 of schedule 11.3	6 late CS files.	Still existing
	4.4	6 of schedule 11.3	36 Late RR files.	Still existing
	4.11	12 of schedule 11.3	122 Late RR files.	Still existing
	4.14	16 of schedule 11.3	1 Late CS file.	Still existing
	4.15	17 of schedule 11.3	73 Late NW files.	Still existing
Shared unmetered	5.1	11.14 of part 11	21 incorrect shared unmetered load fields.	Still existing
Unmetered threshold	5.2	10.14(2)(b) of part 10	4 unmetered ICPs with consumption greater than 6,000 kWh per annum.	Still existing
	5.3	10.14(5) of part 10	4 unmetered ICPs with consumption greater than 6,000 kWh per annum and not resolved within 20 business days.	Still existing
Distributed unmetered load	5.4	11 of schedule 15.3	Inaccurate submission information for several databases.	Still existing

Subject	Section	Clause	Non-compliance	Status
Electricity conveyed	6.1	10.24 of part 10	Meters bypassed leading to no consumption being recorded for the bypassed period.	Still existing. Refer to section 6.1.
Derivation of meter readings	6.6	Clause 5 of schedule 15.2	Phase failure monitoring not in place for all regions.	Still existing. Refer to section 6.6.
Interrogate meters once	6.8	7(1) & (2) of schedule 15.2	The requirement to use best endeavours to obtain a read for all ICPs not read during the period of supply was not met.	Still existing. Refer to section 6.8.
Annual interrogation	6.9	8(1) & (2) of schedule 15.2	The requirement to use best endeavours to obtain a read for all ICPs annually was not met for 3 of 10 ICPs sampled. NHH pre-pay meters not included in the reporting to the authority.	Still existing. Refer to section 6.9.
90% read target	6.10	9 of schedule 15.2	The requirement to use best endeavours to obtain a read for 90% of ICPs every four months was not met.	Cleared. Refer to section 6.10.
Event logs	9.6	17 of schedule 15.2	AMI event information not adequately obtained and monitored.	Still existing. Refer to section 9.6.
HHR aggregates file	11.4	15.8 of part 15	HHR aggregates file does not contain electricity supplied information.	Still existing. Refer to section 11.4.
Creation of submission information	12.2	15.4 of part 15	No submission for some disconnected ICPs where consumption is present.	Cleared. Processes in relation to disconnected consumption have improved as discussed in section 8.1.

Subject	Section	Clause	Non-compliance	Status
Permanence of meter readings	12.8	4 of schedule 15.2 and clause 15.2 of part 15	Some estimates not replaced at R14.	Still existing. Refer to section 12.8.
Forward estimate accuracy	12.12	6 of Schedule 15.3	FE accuracy threshold not met for some balancing areas.	Still existing. Refer to section 12.12.
HE targets	13.3	10 of Schedule 15.3	HE targets were not met for some NSPs.	Still existing. Refer to section 13.3.

Subject	Section	Clause	Recommendation	Status
Provision of registry information	3.5	Clause 9 of schedule 11.1	Re-establish monitoring of the accuracy of active dates vs IED and certification dates. Require energisation agents to provide better clarity with dates.	Cleared
Annual interrogation	6.9	8(1) & (2) of schedule 15.2	Review the meter read compliance reports to confirm whether <ul style="list-style-type: none"> They are based on actual reads loaded in SAP. The report should include any actual read used for reconciliation. Period of supply includes periods where ICPs were switched out or inactive. It should only include periods where the ICP is continuously active. 	Still existing and raised again. Refer to section 6.9.
Pre-pay no vend	9.5	16 of schedule 15.2	Re-establish the management of pre-pay no vend examples.	Cleared
Historical estimates	12.11	4 of schedule 15.3	Confirm whether the 35 kWh recorded on 15/09/16 for ICP 0150821506LC1D3 is valid and supported by a validated meter reading.	Cleared. This scenario was generated in the test system.

Subject	Section	Clause	Issues	Status
NHH meter readings	6.7	6 of schedule 15.2	NHH readings apply to the end of the previous day for NHH to HHR meter changes to ensure accuracy of submission and ICP days files.	Investigating. The EA is investigating whether further guidance is required on NHH to HHR changes.

2. OPERATIONAL INFRASTRUCTURE

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

Code reference

Clause 10.6, 11.2, 15.2

Code related audit information

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

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

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

Audit observation

The process to find and correct incorrect information was examined. The registry list as at 22 May 2018 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 registry list was examined to identify any registry discrepancies.

Audit commentary

Registry data is verified against Contact's own records on a regular basis. All fields in the registry are validated against SAP. Contact demonstrated a comprehensive schedule detailing fields that are validated monthly and other fields that are validated on a more frequent basis determined by the discrepancy being assessed. This includes the submission aggregation factors. As recorded during the previous audit, the resulting discrepancies identified are not always being actioned within the required timeframe, leading to late updates to the registry.

The registry list as at 22 May 2018 was analysed and I found the following issues.

	Quantity			
Issue	2018	2017	2016	Comments
ICP at status "new connection in progress" (1,12)	2	0	0	See section 2.9
Active date variance with Initial Energisation Date	11	50	658	See section 3.5
Active ICPs with metering category 3 or higher with NHH submission flag	0	0	2	Compliant
Active ICPs with blank ANZSIC codes	0	0	0	Compliant
Active ICPs with ANZSIC "T994" or "T994000" don't know	183	524	448	Unknown ANZSIC codes are recorded as non-compliance. See section 3.6 .

	Quantity			
Issue	2018	2017	2016	Comments
Active ICPs with ANZSIC "T997" "response unidentifiable"	0	0	1	Compliant
Active ICPs with ANZSIC "T998" "response outside of scope"	0	1	0	Compliant
Active ICPs with ANZSIC "T99", "T999" or "T999999" not stated	30	161	54	Unknown ANZSIC codes are recorded as non-compliance. See section 3.6 .
Active ICPs with metering category 3 or above with a residential ANZSIC code	0	1	2	Compliant
Active ICP with no MEP and unmetered flag set to Y	97	116	1	See sections 2.9 and 3.4
Active ICP with metering category 9 but MEP MNON nominated and UML "N"	32	72	1	See section 2.9
ICPs with Distributor unmetered load populated but retail unmetered load is blank or 0	17	31	33	See section 3.7
ICPs with unmetered load flag Y but load is recorded as zero, excluding SB ICPs	6	0	0	See section 3.7 .
ICP with incorrect standard unmetered load	1	0	0	See section 3.7 .
ICPs with incorrect shared unmetered load	2	7	11	See section 5.1
ICPs have UML flag N and no unmetered load but Dist field shows shared unmetered load.	1	14	4	See section 5.1
Status 1,11 disconnected at meter box	0	0	0	Compliant
Submission against the RPS profile where the registry has a controlled profile.	16,816	19,821	4,510	<p>Contact's reconciliation process applies RPS if a profile requiring a certified control device is recorded on the registry and the ICP does not meet the metering or certification requirements for that profile to be applied.</p> <p>16,816 ICPs have a controlled profile recorded on the registry but are submitted as RPS. See section 6.3.</p>

	Quantity			
Issue	2018	2017	2016	Comments
Active ICPs with a combination of NHH and HHR profiles recorded on the registry.	394	10	41	<p>Where an AMI meter has some registers which are not used for settlement (e.g. a register that records total consumption across all other registers), SAP applies the HHR profile to those registers. This profile is sent to the registry along with the profiles that apply to the registers used for settlement. This can result in ICPs showing a mix of HHR and NHH profiles on the registry such as HHR T07 T23, HHR TOC TON, RPS HHR, RPS, HHR E08, RPS HHR PV1. 394 affected ICPs were identified. A diverse sample of at least five (or all) ICPs for each profile combination were checked.</p> <p>For the sample, I confirmed that HHR had been added on the registry in error and reconciliation submissions were correct.</p> <p>I saw evidence that an ICT ticket was open to resolve the issues relating to incorrect profiles being recorded on the registry.</p>
Incorrect generation profiles recorded on the registry.	45	-	-	<p>33 ICPs with generation were recorded as RPS on the registry but submitted correctly. The reconciliation team have logged a request for the IDM team to update the profile on the registry for these ICPs.</p> <p>12 ICPs had a generation profile inconsistent with the fuel type recorded on the registry and applied for reconciliation. See sections 6.1 and 12.7.</p>
Profile recorded on the registry is inconsistent with the submission type.	2	-	-	Two ICPs with HHR submission type and HHR meters are recorded on the registry with RPS profile due to a system defect. Both are correctly submitted as HHR with HHR profile.

Audit outcome

Non-compliant

Non-compliance	Description		
Audit Ref: 2.1 With: Clause 10.6, 11.2, 15.2 From: 01-Jul-17 To: 01-May-18	Some incorrect registry information. Potential impact: Low Actual impact: Low Audit history: Multiple times Controls: Moderate Breach risk rating: 2		
Audit risk rating	Rationale for audit risk rating		
Low	The controls are rated as moderate because there are some improvements that can be made to them. Also, whilst identification of issues is sound, there are some delays in resolving them. The audit risk rating is low, because the impact on submission information and other participants is minor.		
Actions taken to resolve the issue		Completion date	Remedial action status

<p><u>Active date variance with Initial Energisation Date</u></p> <p>Contact is been improving its reporting capabilities and accuracy around the IED, Status (active) date, and Orb completion date to actively monitor and resolve mismatches between the various systems involve in the new connection process. This can be seen by the further reduction in exceptions during 2018</p>	Ongoing	Identified
<p><u>ANZSIC code discrepancies</u></p> <p>Contact has raised a system enhancement to eliminate the 'T9' series ANZSIC codes from being populated within our systems as part of a switch gain, to avoid these codes being applied in the future. We are awaiting prioritization of this enhancement.</p> <p>Contact has also implemented reporting and a process to identify all ICP's which has an ANZSIC code miss-match or a 'T9' series ANZSIC code applied at time of switch gain and these are being corrected via a manual correction process.</p>	Ongoing	
<p><u>UNM non-compliances</u></p> <p>Contact has made steady progress in reducing the UNM mismatches between Distributors and its systems. There were only seven exceptions identified in this audit that largely relate to human error due to new personnel learning this task. Additional training has been provided to reinforce the calculation of UNM load from the information provided on the registry.</p>	Resolved	
<p><u>Submission against the RPS profile where the registry has a controlled profile.</u></p> <p>This audit identified only 2 ICPs in their investigations where the MEP has not acknowledged that the load control device is not certified as part of the metering installation certification meaning in most cases the metering event in the registry is incorrect.</p> <p>Contact ensures its submission information is compliant by using the RPS profile code in these instances and contact continues to regularly engage with the respective MEPs to update their registry records to correct reflect the certified status of the load control device</p>	Ongoing	
<p><u>Active ICPs with a combination of NHH and HHR profiles recorded on the registry.</u></p> <p>A system defect is causing some incorrect profile code population on the registry. Contact has implemented a monthly reconciliation to identify these exceptions to allow a manual correction of these in the interim until the system defect can be resolved.</p>	May 2019	
<p><u>Incorrect generation profiles recorded on the registry.</u></p>	Resolved	

<p>Further reporting is in the process of being created to ascertain incorrect Generation Profiles recorded in the Electricity Registry. This report will be run on a monthly basis, with the output being worked by Contact Energy's Generation team.</p> <p><u>Profile recorded on the registry is inconsistent with the submission type.</u></p> <p>Further reporting is in the process of being created to ascertain differences in Profiles and Submission Types. This report will be run on a monthly basis, with the output being worked by Contact Energy's IDM team.</p>	Resolved	
Preventative actions taken to ensure no further issues will occur	Completion date	
<p><u>Incorrect generation profiles recorded on the registry.</u></p> <p>Further reporting is in the process of being created to ascertain incorrect Generation Profiles recorded in the Electricity Registry. This report will be run on a monthly basis, with the output being worked by Contact Energy's Generation team.</p>	Dec 2018	
<p><u>Profile recorded on the registry is inconsistent with the submission type.</u></p> <p>Further reporting is in the process of being created to ascertain differences in Profiles and Submission Types. This report will be run on a monthly basis, with the output being worked by Contact Energy's IDM team.</p>	Dec 2018	

2.2. Provision of information (Clause 15.35)

Code reference

Clause 15.35

Code related audit information

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

Audit observation

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

Audit commentary

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

Audit outcome

Compliant

2.3. Data transmission (Clause 20 Schedule 15.2)

Code reference

Clause 20 Schedule 15.2

Code related audit information

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

Audit observation

NHH read data is transferred via SFTP.

HHR volume data is transferred via Contact's portal by EDMI, and using TIBCO Virtual FTP by AMS.

Generation data is automatically imported into SAP.

To confirm the process:

- I traced reads from the source files to SAP for a diverse sample of 37 NHH ICPs, the sample included all reading providers
- I traced a sample of volumes for ten ICPs from the source to HDM and SAP
- for generation data, a sample of import validations were reviewed to confirm the transfer method.

Audit commentary

The data transfer method varies depending on the MEP or agent, and type of data being transferred.

NHH

All NHH data is provided by SFTP. The accuracy of the data transfer was confirmed for the sample of reads checked.

HHR

EDMI provides HHR data via Contact's portal and AMS provides data using TIBCO Virtual FTP. Data was checked from the source to SAP for ten ICPs. The accuracy of the data transfer was confirmed for the sample checked.

Generation

Generation data is imported into SAP via MV90.

Audit outcome

Compliant

2.4. Audit trails (Clause 21 Schedule 15.2)

Code reference

Clause 21 Schedule 15.2

Code related audit information

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

The audit trail must include details of information:

- *provided to and received from the registry manager*

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

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

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

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

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

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

Audit observation

A complete audit trail was checked for all data gathering, validation and processing functions. I reviewed audit trails for a small sample of events. Large samples were not necessary because audit trail fields are expected to be the same for every transaction of the same type.

Audit commentary

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

Audit outcome

Compliant

2.5. Retailer responsibility for electricity conveyed - participant obligations (Clause 10.4)

Code reference

Clause 10.4

Code related audit information

If a participant must obtain a consumer's consent, approval, or authorisation, the participant must ensure it:

- *extends to the full term of the arrangement*
- *covers any participants who may need to rely on that consent.*

Audit observation

I reviewed Contact's current terms and conditions.

Audit commentary

Contact's terms and conditions include arrangements for meter access and shutdowns and these clauses extend to Contact's agents and are mirrored in agreements with MEPS.

Audit outcome

Compliant

2.6. Retailer responsibility for electricity conveyed - access to metering installations (Clause 10.7(2),(4),(5) and (6))

Code reference

Clause 10.7(2),(4),(5) and (6)

Code related audit information

The responsible reconciliation participant must, if requested, arrange access for the metering installation to the following parties:

- *the Authority*
- *an ATH*
- *an auditor*
- *an MEP*
- *a gaining metering equipment provider.*

The trader must use its best endeavours to provide access:

- *in accordance with any agreements in place*
- *in a manner and timeframe which is appropriate in the circumstances.*

If the trader has a consumer, the trader must obtain authorisation from the customer for access to the metering installation, otherwise it must arrange access to the metering installation.

The reconciliation participant must provide any necessary facilities, codes, keys or other means to enable the party to obtain access to the metering installation by the most practicable means.

Audit observation

I reviewed Contact's current terms and conditions, and discussed compliance with these clauses.

Audit commentary

Contact's contract with their customers includes consent to access for authorised parties for the duration of the contract. Contact confirmed that they have been able to arrange access for other parties when requested. This was observed with the meter reading process and with the field services process.

Audit outcome

Compliant

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

Code reference

Clause 10.35(1)&(2)

Code related audit information

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

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

- a) *if practical in the circumstances, ensure that the metering installation is located at a point of connection; or*

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

Audit observation

A discussion was held regarding knowledge of any ICPs with loss compensation present. The presence of loss compensation factors was also checked with the HHR data team.

Audit commentary

Contact is not responsible for any metering installations with loss compensation factors.

Audit outcome

Compliant

2.8. Trader contracts to permit assignment by the Authority (Clause 11.15B)

Code reference

Clause 11.15B

Code related audit information

A trader must at all times ensure that the terms of each contract between a customer and a trader permit:

- *the Authority to assign the rights and obligations of the trader under the contract to another trader if the trader commits an event of default under paragraph (a) or (b) or (f) or (h) of clause 14.41 (clause 11.15B(1)(a)); and*
- *the terms of the assigned contract to be amended on such an assignment to—*
- *the standard terms that the recipient trader would normally have offered to the customer immediately before the event of default occurred (clause 11.15B(1)(b)(i)); or*
- *such other terms that are more advantageous to the customer than the standard terms, as the recipient trader and the Authority agree (clause 11.15B(1)(b)(ii); and*
- *the terms of the assigned contract to be amended on such an assignment to include a minimum term in respect of which the customer must pay an amount for cancelling the contract before the expiry of the minimum term (clause 11.15B(1)(c)); and*
- *the trader to provide information about the customer to the Authority and for the Authority to provide the information to another trader if required under Schedule 11.5 (clause 11.15B(1)(d)); and*
- *the trader to assign the rights and obligations of the trader to another trader (clause 11.15B(1)(e)).*

The terms specified in subclause (1) must be expressed to be for the benefit of the Authority for the purposes of the Contracts (Privacy) Act 1982, and not be able to be amended without the consent of the Authority (clause 11.15B(2)).

Audit observation

I reviewed Contact's current terms and conditions.

Audit commentary

Contact's terms and conditions contain the appropriate clauses to achieve compliance with this requirement

Audit outcome

Compliant

2.9. Connection of an ICP (Clause 10.32)

Code reference

Clause 10.32

Code related audit information

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

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

Audit observation

The new connection process was examined in detail to evaluate the strength of controls. The registry list as at 22 May 2018, and event detail report for 1 January 2018 to 31 March 2018 were analysed to confirm process compliance and that controls are functioning as expected.

Audit commentary

The new connection process is compliant and contains a step for Contact to accept responsibility. I checked 50 NHH and ten HHR new connections and in all cases, Contact had accepted responsibility. Late updates to active for new connections are discussed in **section 3.5**.

Contact has arrangements in place with all MEPs, either a signed contract or an exchange of emails confirming an “arrangement” to provide services while the contract is being finalised.

The list file contained 32 ICPs where the metering category was “9” indicating meters removed but where unmetered load was not present. I checked 13 NHH ICPs and all four HHR ICPs and found the following:

- two HHR ICPs now have metering populated
- one HHR ICP is now ready for decommissioning
- one HHR ICP needed the HHR MEP to reverse their “meter removed” date so the NHH MEP could load their metering for the date it was installed
- eight NHH ICPs appear to have the correct MEP nominated but the metering details have not been loaded
- ICPs 0000600737MPA1B and 0000722230WP859 should have had LMGL nominated when meters were sold to them, ICP 0000722230WP859 is now resolved
- ICP 0057644612LC529 is possibly electrically disconnected with metering removed but it shows as Active
- ICPs 0188839798LC36F and 0223893048LC8E4 have Metrix nominated but Metrix is having difficulty with physically locating the metering installations.

Contact had nominated the incorrect MEP for two ICPs. The incorrect nomination issue is raised as non-compliance in **section 3.4**. Whilst the nomination is incorrect, arrangements were still in place for all relevant MEPs.

I also checked 14 of 97 ICPs where the MEP field was blank. By the time of the audit three ICPs had been updated on the registry but 11 ICPs still had a blank MEP field. Contact’s records showed the correct MEP had been nominated in all 14 cases.

Audit outcome

Compliant

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

Code reference

Clause 10.33(1)

Code related audit information

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

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

Audit observation

The new connection process was examined in detail. The list file as at 22 May 2018, and event detail report for 1 January 2018 to 31 March 2018 were analysed to confirm process compliance and that controls are functioning as expected.

Audit commentary

Review of the list and event detail reports did not identify any instances where ICPs had been temporarily electrically connected.

Audit outcome

Compliant

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

Code reference

Clause 10.33A(1)

Code related audit information

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

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

Audit observation

The new connection process was examined in detail. The list file as at 22 May 2018, and event detail report for 1 January 2018 to 31 March 2018 were analysed to confirm process compliance and that controls are functioning as expected.

The metering installation details report was matched to the status changes to active on the event detail report to confirm whether ICPs that became active had final metering certification.

Audit commentary

Contact had accepted responsibility for all newly energised ICPs. The analysis showed that four ICPs were not certified within five business days of energisation.

ICP	Electrical connection date	Certification date	Comments
0000041583HB253	12/03/2018	27/03/2018	HHR data confirmed the electrical connection date.
0000680127WT5D4	7/03/2018	23/03/2018	HHR data confirmed the electrical connection date.
1002036438LC8CE	9/01/2018	31/01/2018	HHR data confirmed the electrical connection date.
1002040055UN109	11/10/2017	10/01/2018	It appears the customer may have electrically connected this ICP without notification to Contact.

Status changes to active for both new connections and reconnections were matched to certification details on the metering installation details report. 1,385 of the new connections and 2,353 of the reconnections had a record in the metering install table from the PR255 report. All new connections had final metering certification. 54 of the reconnections had interim metering certification and 2299 had final metering certification. Contact does not have a process in place to ensure metering installations are certified within five business days of a reconnection.

Audit outcome

Non-compliant

Non-compliance	Description
Audit Ref: 2.11 With: Clause 10.33A From: 01-Jul-17 To: 06-Jun-18	4 ICPs were not certified within five business days of becoming active. 54 ICPs were reconnected without having metering certification in place. Potential impact: Medium Actual impact: Low Audit history: Multiple times Controls: Moderate Breach risk rating: 2
Audit risk rating	Rationale for audit risk rating
Low	The controls are rated as strong for new connections because the process has good reporting in place to identify anomalies. There is no process in place to ensure reconnected ICPs have their metering installations certified. There was no impact on settlement because the certification tests confirmed the 4 new connection installations were recording accurately. The audit risk rating is low.

Actions taken to resolve the issue	Completion date	Remedial action status
<p>Contact has had a number of discussions with the MEP's concerned and is also working with its ATH and Field Service Providers to ensure that ICP's are certified within 5 business days of the ICP being Livened</p> <p>The scenario of reconnecting metering installations with previous interim certification is more complex than a simple case of not arranging for a MEP to certify the metering installation post reconnection.</p> <p>For the majority of ICPs identified by the auditor, Contact and the respective MEP have made multiple attempts to install compliant metering over the past number of years. There have been various reasons why this effort has been unsuccessful such as access issues, proximity of gas metering, wiring / switchboard issues, asbestos present.</p> <p>Where a customer requests a reconnection, Contact has a responsibility to complete this request as efficiently as possible and cannot delay this task in order to negotiate meter access or arrange metering certification to also occur at the same time.</p> <p>Contact is investigating an appropriate process to inform MEP whenever an interim certified ICP has been reconnected and to also request another attempt to certify this metering installation by the MEP.</p>	Ongoing	Identified
Preventative actions taken to ensure no further issues will occur	Completion date	

2.12. Arrangements for line function services (Clause 11.16)

Code reference

Clause 11.16

Code related audit information

Before providing the registry manager with any information in accordance with clause 11.7(2) or clause 11.18(4), a trader must ensure that it, or its customer, has made any necessary arrangements for the provision of line function services in relation to the relevant ICP

Before providing the registry manager with any information in accordance with clause 11.7(2) or clause 11.18(4), a trader must have entered into an arrangement with an MEP for each metering installation at the ICP.

Audit observation

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

Audit commentary

Contact demonstrated the existence of either a UoSA or other trading arrangement for all relevant networks.

Audit outcome

Compliant

2.13. Arrangements for metering equipment provision (Clause 10.36)

Code reference

Clause 10.36

Code related audit information

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

Audit observation

The process to ensure an arrangement is in place with the metering equipment provider before an ICP can be created or switched in was checked and a check of controls within SAP.

Audit commentary

Contact has an arrangement in place with all MEPs that manage metering in relation to their customer base. The new connection process also contains a step that requires nomination of an MEP. MEP MN rejections are monitored to ensure correction occurs if the incorrect MEP is nominated. There were two incorrect nominations during the audit period that were subsequently corrected. Compliance is confirmed.

Audit outcome

Compliant

3. MAINTAINING REGISTRY INFORMATION

3.1. Obtaining ICP identifiers (Clause 11.3)

Code reference

Clause 11.3

Code related audit information

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

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

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

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

Audit observation

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

Audit commentary

A walkthrough of the process confirmed that this requirement is well understood and managed by Contact. There were no connections to networks identified without ICPs.

Audit outcome

Compliant

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

Code reference

Clause 11.7(2)

Code related audit information

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

Audit observation

The new connection process was examined in detail. The registry list as at 22 May 2018 was analysed in conjunction with the event detail report for the period 1 January 2018 to 31 March 2018 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 are 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.

Audit outcome

Compliant

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

Code reference

Clause 10 Schedule 11.1

Code related audit information

If information provided by a trader to the registry manager about an ICP changes, the trader must provide written notice to the registry manager of the change no later than 5 business days after the change.

Audit observation

The event detail report was analysed for the period of 1 January 2018 to 31 March 2018 to identify late registry updates for status changes and MEP nominations.

An extreme case sample of the latest active changes of each type were evaluated.

Audit commentary

The tables below show the level of compliance for changes to active, inactive and inactive – ready for decommissioning.

Event	Year	Total ICPs	ICPs Notified Within 5 Days	ICPs Notified Greater Than 5 Days	Average Notification Days	Percentage Compliant
Change to active - Reconnections	2014	84	60	24	14.4	71%
	2015	2,447	1,991	456	8.7	81%
	2016	3,249	2,760	489	7.6	85%
	2017	4,134	3,578	556	12.7	91%
	2018	3,141	2,707	434	10.2	86%
Change to de-energised – all statuses except new connection in progress and ready for decommissioning	2014	9	4	5	170.0	44%
	2015	956	889	67	3.9	93%
	2016	4,138	3,978	160	9.6	96%
	2017	4,993	4,915	78	1.2	98%

Event	Year	Total ICPs	ICPs Notified Within 5 Days	ICPs Notified Greater Than 5 Days	Average Notification Days	Percentage Compliant
	2018	4,243	3,982	262	4.0	94%
Change to de-energised ready for decommissioning	2014	36	2	34	14.7	6%
	2015	1050	323	727	58.1	31%
	2016	483	181	302	90	38%
	2017	515	269	246	34.8	52%
	2018	485	286	199	41.0	59%

I checked a sample of late registry notifications and the findings are summarised below:

- I checked 20 reconnection examples and found that 11 related to consumption on electrically disconnected ICPs, three were corrections to dates and six were due to backdated events.
- I checked 24 disconnection examples and found that eight related to Contact's practice of changing all ICPs to Active at the time of switch in, when some may not be electrically connected. Four examples were found during validation. 12 examples were due to the discovery of incorrect status by processes other than registry validation, mostly disconnection by other parties.
- I checked 14 ready for decommissioning examples and found that 12 related to notification by the Distributor that ICPs had been decommissioned. Two were found to be ready for decommissioning by other field processes.

The table below shows the timeliness of MEP nominations. The nomination date was compared to the metering event effective date to identify any ICPs that were not nominated within five business days and found 49 ICPs (1.7%) were not sent within five days of the meter certification. The 12 latest backdated events were checked and I found three corrections to the MEP nomination and nine where Metrix had a meter removal date populated, preventing the nomination of a new MEP for the date the meter was installed. Many of these were backdated by several years.

Event	Year	Total ICPs	ICPs Notified Within 5 Days	ICPs Notified Greater Than 5 Days	Average Notification Days	Percentage Compliant
MEP nomination	2018	3,949	3,274	675	11.4	83%

Audit outcome

Non-compliant

Non-compliance	Description		
<p>Audit Ref: 3.3</p> <p>With: Clause 10 Schedule 11.1</p> <p>From: 01-Jan-18</p> <p>To: 31-Mar-18</p>	<p>Registry information not provided within 5 business days of change.</p> <p>Potential impact: Medium</p> <p>Actual impact: Low</p> <p>Audit history: Multiple times</p> <p>Controls: Moderate</p> <p>Breach risk rating: 2</p>		
Audit risk rating	Rationale for audit risk rating		
<p>Low</p>	<p>Status changes can have a minor impact on settlement outcomes if consumption information is provided based on the registry status and then needs to be corrected.</p> <p>Market participants can be affected if a switch out occurs for an ICP with the incorrect status.</p> <p>Customers can be affected if invoicing is based on the incorrect ICP status.</p>		
Actions taken to resolve the issue		Completion date	Remedial action status

<p>The ICP list of discrepancies are sent to the IDM Team and worked through. The issues relating to human error are fed back and extra training provided in an attempt to reduce errors. Any late notifications from Contractors and Networks are dealt with through contractor performance</p> <p>Contact completes a monthly reconciliation to identify ICP's where the connection status loaded within the Electricity Registry does not match the connection status within SAP. This reconciliation is to identify ICP's which have been disconnected or connected physically at site however the applicable Registry status event has not been created and sent to the Electricity Registry.</p> <p>Contact's system also identifies all ICP's which have been disconnected or connected physically at site, where the status event created and sent to the Electricity Registry has been returned with a negative acknowledgment. SAP raises an exception (BPEM - Business Process Exception Management) for all negative acknowledgements, these BPEMs are investigated daily based on priority (submission impacts and compliance), and corrections are made accordingly.</p> <p>Contact still has a small number of data cleanse tasks to complete, and has undertaken some root cause analysis of the issues that result in late notifications being sent to the Electricity Registry. I.e. Receiving late notification of connection state changing from contractors and Networks, as well as internal data issues. This root cause analysis will allow Contact to undertake discussions with the relevant parties to seek an improvement in these processes.</p> <p>Contact investigates exceptions identified on an individual ICP basis, determining the root cause, so the appropriate conversations with the relevant areas can be undertaken, including additional individual training where necessary, to prevent a further non-compliance from occurring.</p> <p>Where this issue relates to paperwork delays from the field – these instances are addressed via our contractor performance provisions within our respective agreements.</p>	Ongoing	Identified
Preventative actions taken to ensure no further issues will occur	Completion date	

3.4. Trader responsibility for an ICP (Clause 11.18)

Code reference

Clause 11.18

Code related audit information

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

A trader ceases to be responsible for an ICP if:

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

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

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

Audit observation

Retailers Responsibility to Nominate and Record MEP in the Registry

The new connection process was discussed and the registry list as at 22 May 2018 was examined to identify that all active ICPs have an MEP recorded. This analysis found 97 active ICPs that do not have an MEP recorded in the registry. A sample of 15 using the typical case sampling methodology were checked.

ICP Decommissioning

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

Audit commentary

Retailers Responsibility to Nominate and Record MEP in the Registry

15 of the 97 ICPs with no MEP recorded in the registry were examined, which confirmed that all ICPs had an MEP nominated. There is only one where the MEP has rejected the nomination, but Contact's records show their nomination is correct.

Contact use BPEMs (Business Process Exception Management) generated in SAP to manage any MEP rejections. There were two rejections identified in the event detail report and both were later re-requested to the correct MEP and accepted. There were two other incorrect MEP nominations recorded in **section 2.9**.

ICP Decommissioning

Contact continues with their obligations under this clause. ICPs that are vacant and active, or inactive are still maintained in SAP.

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. Contact 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. Actual readings were obtained for all ten ICPs. Compliance is confirmed.

Audit outcome

Non-compliant

Non-compliance	Description		
Audit Ref: 3.4 With: Clause 11.18 From: 20-Jul-16 To: 30-Jun-18	Four incorrect MEP nominations. Potential impact: Low Actual impact: Low Audit history: Multiple times Controls: Moderate Breach risk rating: 2		
Audit risk rating	Rationale for audit risk rating		
Low	The controls are rated as moderate, because some of the ICPs without an MEP have been present for several years. There is no actual impact on settlement because billing and submission is still occurring, so the audit risk rating is low.		
Actions taken to resolve the issue		Completion date	Remedial action status
The four incorrect MEP nominations were as a result of human error or where the service provider has selected the incorrect MEP in our service request / workflow management system Contact regularly works with its MEPs to identify errors such as this so that corrections can be made.		Ongoing	Identified
Preventative actions taken to ensure no further issues will occur		Completion date	

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

Code reference

Clause 9 Schedule 11.1

Code related audit information

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

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

- except if the ICP exists for the purposes of reconciling an embedded network or the ICP has distributor status, the trader must provide the relevant business classification code applicable to the customer (clause 9(1)(k)).

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

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

Audit observation

The new connection process was examined in detail. The registry list as at 22 May 2018 was analysed in conjunction with the event detail report for the period from 1 January 2018 to 31 March 2018 to evaluate the updating of the registry in relation to new connections. The 20 latest updates were checked.

I checked a sample using the typical case methodology of ten ICPs with a variance between the active date and the initial energisation date and meter certification.

I checked 12 late MEP nominations using the typical case methodology.

I checked all ten HHR new connections.

I checked all registry records for possible discrepancies, using a standard set of queries.

Audit commentary

New Connections

Half Hour

Half hour connections are managed by the HDM team in Contact. The new connection process was examined, and I found that in some cases, the Sales team were not completing the 'move in' process in a timely manner therefore SAP did not send a notification to the registry. The new connection process in SAP requires a customer to be moved in before it will trigger a registry update.

I checked ten new connections to ensure the dates were correct and that the registry was updated within five business days. The results are shown in the table below, indicating that seven of ten updates were late. Four initial electrical connection dates are not populated.

ICP	Energisation date	Updated on the Registry	Business Days count	Comments
0003360052MLB3B	05/03/18	29/03/18	18	Active date is correct. Delay in moving in customer.
0007184181RN41F	21/02/18	22/02/18	1	Active date is correct.
0007184201RN256	08/02/18	12/02/18	2	Active date is correct.
0007184405RN55A	15/02/18	16/02/18	1	Active date is correct.
0000054656NTA1B	23/04/18	10/05/18	12	Active date is correct. Delay in moving in customer.
0000157866CK791	14/11/17	23/03/18	88	IECD not populated. Active date is correct. Delay due to distributor not making ICP ready for correct date.

ICP	Energisation date	Updated on the Registry	Business Days count	Comments
1000569083PCA6E	06/09/17	21/09/17	11	Active date is correct. Delay in moving in customer.
1000573683PCAC9	03/04/18	14/05/18	28	Active date is correct. Processing issue caused delay.
1002040038LCBB6	16/10/17	01/11/17	11	Active date is correct. Delay in moving in customer. IECD not populated.
1002043664LC446	06/03/18	10/04/18	23	Active date is correct. Processing issue caused delay. IECD not populated.

The HDM team continue to work with the sales team ensuring that they are aware of the timeframe that Contact have to update the registry. They actively monitor any ICPs at “Ready” that have an initial energisation date populated by the Distributor. As Contact does not use the “New connection in progress” status, the nomination of the MEP will be late for any ICPs not updated within the required timeframe.

Non-half hour

Contact does not use the status “new connection in progress” (1,12); they claim ICPs from the “ready”: status and change them to active once energisation has occurred.

The table below shows that the registry was updated within five business days for 84% of new connections. This is lower than the previous year and the average days is longer.

Event	Year	Total ICPs	ICPs Notified Within 5 Days	ICPs Notified Greater Than 5 Days	Average Notification Days	Percentage Compliant
Change to active - New connections	2014	63	40	23	6.9	63%
	2015	1,587	1,077	510	9.7	68%
	2016	1,252	985	267	5.6	79%
	2017	1,275	1,138	137	3.1	89%
	2018	1,472	1,239	233	6.0	84%

A sample of the 20 latest updates backdated greater than 20 days was checked and I found the following reasons:

- five examples of late field notification
- five examples of incorrect Ready dates preventing loading of Active date
- five examples of incorrect information returned from the field
- five examples of incorrect processing.

The active date for new connections was matched to the initial energisation date and meter certification date.

- Initial energisation dates were populated for 1,111 ICPs. For 55 ICPs, the initial energisation date did not match the active date.

- Meter certification details were available on the metering installation details report for 1,385 ICPs. For 64 ICPs, the certification date did not match the active date. I note that the code requires certification within five business days of energisation and these dates are not always expected to match.

I checked 10 ICPs where the active date was different to the initial energisation date or the certification date. I found the following issues:

- Contact's active date was incorrect for seven of ten examples
- the initial energisation date is incorrect for three ICPs
- the certification date is correct for all ten.

The table below shows the ICPs checked.

ICP	Initial Energisation	Certification	Active	Comments
0007183122RN4A0	30/10/2017	30/10/2017	2/11/2017	Registry active date was corrected to 30/10/17 prior to the audit.
1002037577LCD11	12/10/2017	12/10/2017	16/10/2017	Not yet corrected
0007184000RN414	25/01/2018	25/01/2018	29/01/2018	Not yet corrected
0000990262LN12E	12/02/2018	12/02/2018	5/02/2018	Found during validation and now corrected.
0110010797EL3E3	22/03/2018	16/03/2018	16/03/2018	Active date is correct
0000041051HBA91	24/03/2018	24/03/2018	20/03/2018	Not yet corrected
0007105354WAAE7	22/01/2018	18/01/2018	18/01/2018	Active date is correct
0000507079CE04D	13/02/2018	27/02/2018	27/02/2018	Active date is correct
0007184224RN24C	7/02/2018	07/02/2018	7/03/2018	Registry active date was corrected to 07/02/18 prior to the audit.
0005482652AL9A1	29/08/2017	29/08/2017	29/08/2018	Registry active date was corrected to 29/08/17 prior to the audit.

Contact is monitoring the difference between the initial energisation date and the active date.

MEP nomination

As Contact does not use the "New connection in progress" status, the nomination of the MEP will be late for any ICPs not updated within the required timeframe. The records for 20 late MEP nominations were examined with the following findings:

- late notification from the field for three ICPs
- processing delays or errors caused seven late MEP nominations
- incorrect Ready dates caused five late nominations
- incorrect details from the field caused five late nominations.

Audit outcome

Non-compliant

Non-compliance	Description		
<p>Audit Ref: 3.5</p> <p>With: Clause 9 Schedule 11.1</p> <p>From: 01-Jan-18</p> <p>To: 31-Mar-18</p>	<p>Some late changes to Active.</p> <p>Some late MEP notifications.</p> <p>Some incorrect Active dates.</p> <p>Potential impact: Low</p> <p>Actual impact: Low</p> <p>Audit history: Multiple times</p> <p>Controls: Moderate</p> <p>Breach risk rating: 2</p>		
Audit risk rating	Rationale for audit risk rating		
Low	<p>The controls are rated as moderate because there are some improvements that can be made to them, e.g. monitoring of Active date accuracy. Also, whilst identification of issues is sound, there are some delays in resolving them.</p> <p>The audit risk rating is low, because the impact on submission information is low. Late changes to Active can mean submission information is not provided at the earliest opportunity. Billing will also be delayed for some ICPs.</p>		
Actions taken to resolve the issue		Completion date	Remedial action status
<p><u>Late changes to Active / late MEP notifications</u></p> <p>Contact continues to refine its processes and also provide additional training to its personnel to reduce delays in completing its new connection set ups and registry notification. Additionally Contact escalates instance of incorrect or late information from our service providers as part of contractor performance discussions.</p> <p><u>Incorrect Active dates</u></p> <p>Contact is been improving its reporting capabilities and accuracy around the IED, Status (active) date, and Orb completion date to actively monitor and resolve mismatches between the various systems involve in the new connection process. This can be seen by the further reduction in exceptions during 2018</p> <p>Many of the exceptions identified by the auditor relate to metering installations where the meter has been fitted to the distribution board prior to energisation date where energisation is performed by another party – Contact is investigating changes to its service request / workflow management system to allow this differentiation to be better identified as an exception so that these differences can be investigated and resolved in a more timely manner.</p>		Ongoing	Identified
Preventative actions taken to ensure no further issues will occur		Completion date	

Contact is currently bringing in house the initiation tasks relating to new connections. We believe this centralisation of tasks will improve our interactions with distributors around consistency of energisation dates both parties use.	Dec 2018	
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3.6. ANZSIC codes (Clause 9 (1(k) of Schedule 11.1)

Code reference

Clause 9 (1(k) of Schedule 11.1

Code related audit information

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

Audit observation

The process to capture and manage ANZSIC codes was examined. The registry list as at 22 May 2018 was reviewed to check ANZSIC codes including checking for all ICPs with an undefined ANZSIC code within the T99 series. I checked all 213 against google streetview and against Contact's records.

I selected a sample of 40 active ICPs across five different ANZSIC codes using the diverse characteristic methodology and 60 residential coded ICPs using the typical case methodology to confirm the validity of the codes applied.

Audit commentary

Following the last audit, Contact implemented weekly and monthly reporting to identify any ICPs with an ANZSIC code within the T99 series or mismatch between business class and ANZSIC, and/or the registry and SAP. Any exceptions are manually investigated and corrected.

There has been a significant reduction in the number of unknown and incorrect ANZSIC codes since the 2017 audit.

Issue	2018	2017	2016
Active ICPs with blank ANZSIC codes	0	0	0
Active ICPs with ANZSIC "T994" or "T994000" don't know	183	524	448
Active ICPs with ANZSIC "T997 "response unidentifiable	0	0	1
Active ICPs with ANZSIC "T998 "response outside of scope	0	1	0
Active ICPs with ANZSIC "T99", "T999" or "T999999" not stated	30	161	54
Active ICPs with metering category 3 or above with a residential ANZSIC code	0	1	2

I checked google street view for 213 ICPs and I could determine the potential ANZSIC code for all 213. I provided this detail to Contact, and all ICPs were updated, but not based on the audit findings, the updates occurred based on details in SAP. I checked 25 of the changes and 13 appear to have been updated correctly but 12 appear to have been updated with incorrect ANZSIC codes.

I checked 100 ANZSIC codes to confirm they were correct compared to google streetview. I was unable to determine the potential code for 26 records and 13 of the remaining 74 appeared to be incorrect.

Active ICPs with the incorrect ANZSIC code is recorded as non-compliance below.

Audit outcome

Non-compliant

Non-compliance	Description		
Audit Ref: 3.6 With: Clause 9 (1(k) of Schedule 11.1 From: 22-May-18 To: 22-May-18	Some incorrect ANZSIC codes for active ICPs. Potential impact: Low Actual impact: Low Audit history: Multiple times Controls: Moderate Breach risk rating: 2		
Audit risk rating	Rationale for audit risk rating		
Low	There is sound reporting in place but it doesn't appear that the discrepancies are being resolved as soon as practicable, and some of the changes do not appear to be correct. There is no impact on settlement outcomes from incorrect ANZSIC codes but there is a low impact on the Electricity's reporting accuracy, therefore the audit risk rating is low.		
Actions taken to resolve the issue		Completion date	Remedial action status
Contact has raised a system enhancement to eliminate the 'T9' series ANZSIC codes from being populated within our systems as part of a switch gain, to avoid these codes being applied in the future. We are awaiting prioritization of this enhancement. Contact has also implemented reporting and a process to identify all ICP's which has an ANZSIC code miss-match or a 'T9' series ANZSIC code applied at time of switch gain and these are being corrected via a manual correction process. Contact uses its customer information and also the companies register to assist in identifying the correct ANZSIC code as part of its manual correction process rather than Google streetview due to the snapshot nature of the Google information.		Ongoing	Identified
Preventative actions taken to ensure no further issues will occur		Completion date	

3.7. Changes to unmetered load (Clause 9(1)(f) of Schedule 11.1)

Code reference

Clause 9(1)(f) of Schedule 11.1

Code related audit information

If a settlement type of UNM is assigned to that ICP, the trader must populate:

the code ENG - if the load is profiled through an engineering profile in accordance with profile class 2.1 (clause 9(1)(f)(i)); or

the daily average kWh of unmetered load at the ICP - in all other cases (clause 9(1)(f)(ii)).

Audit observation

The process to manage unmetered load was examined. The registry list as at 22 May 2018 was examined to identify any ICPs where:

- Unmetered load is identified by the Distributor, but none is recorded by Contact.
- Contact'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 0.1 kWh per day. 0.1 kWh per day was chosen as a sample only; this does not indicate compliance is achieved if an error is found that is less than 0.1 kWh per day.

Audit commentary

All unmetered load new connections or capacity changes require an application to Contact, which then follows the "new connections" process. This includes a verification process, which includes the step of questioning whether the ICP can be metered, and if not then the appropriate information is collected to ensure the daily kWh is correct. There is also a check to ensure any unmetered new connections have an annual consumption less than 3,000 kWh per annum, or between 3,000 and 6,000 kWh for approved load types.

Contact has reporting in place to identify when a distributor makes changes to their unmetered field or where there is distributor information, but SAP does not have the unmetered field populated.

There are 17 ICPs where the distributor has unmetered load recorded and Contact does not. Two ICPs were correct in SAP but the registry notification had failed. One was incorrect in SAP and the registry because the registry field was removed when an MEP was nominated. One was incorrect because the previous retailer was incorrect, and it was identified some time later during validation. The remaining 13 are where the distributor's information is incorrect.

Contact has 1,492 ICPs with standard unmetered load. I conducted a manual calculation from the distributors' information where this was possible (355 out of 1,492 ICPs) and found a difference greater than 0.1 kWh per day for the following ICPs:

ICP	Unmetered load details - Distributor	Recalculation	Retailer Daily Unmetered kWh	Difference	Comments
0000890230WPB6A	0.03kW;24;Broadcasting Translator	0.72	7.2	-6.5	Data entry error
0079192775WEB81	0008;11.5; 1 light	0.092	1	-0.9	Data entry error
0007301438NV5A6	0176;12.0;2 x 80W Mercury Under Veranda Lights	2.112	1.92	0.2	Data entry error
0007301443NVE2F	0176;12.0;2 x 80W Mercury Under Veranda Lights	2.112	1.92	0.2	Data entry error
0007182449RN121	0192;08.0;Builders temporary supply	1.536	1	0.5	Data entry error
0000714305NVD59	0440;12.0;5 x 80W Mercury Under Veranda Lights	5.28	1.056	4.2	Data entry error
0008509956NVC54	0440;12.0;5 x 80W Mercury Under Veranda Lights	5.28		5.3	Record removed during MEP nomination
Total daily difference (kWh)				3.0	
Total annual difference (kWh)				1,095	

Standard unmetered load corrections occur from the point of the change, revisions are not conducted. In total the under submission is 3.0 kWh per day or 1,095 kWh per annum.

Audit outcome

Non-compliant

Non-compliance	Description
Audit Ref: 3.7 With: Clause 9(1)(f) of Schedule 11.1 From: 22-May-18 To: 22-May-18	Daily unmetered kWh values are blank or incorrect for some ICPs. Potential impact: Low Actual impact: Low Audit history: Multiple times Controls: Moderate Breach risk rating: 2
Audit risk rating	Rationale for audit risk rating

Low	<p>The controls are rated as moderate because there are some improvements that can be made to them, e.g. monthly validation of outstanding discrepancies. Also, whilst identification of issues is sound, there are some delays in resolving them.</p> <p>The audit risk rating is low, because the impact on submission information is minor as only a small number of ICPs are affected.</p>		
Actions taken to resolve the issue		Completion date	Remedial action status
Contact has made steady progress in reducing the UNM mismatches between Distributors and its systems. There were only seven exceptions identified in this audit that largely relate to human error due to new personnel learning this task. Additional training has been provided to reinforce the calculation of UNM load from the information provided on the registry.		Resolved	Cleared
Preventative actions taken to ensure no further issues will occur		Completion date	
Contact will increase its exception reporting frequency to monthly to reduce the delays in resolving exceptions identified.		Sept 2018	

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

Code reference

Clause 17 Schedule 11.1

Code related audit information

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

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

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

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

Audit observation

The new connection process was examined in detail as discussed in **sections 2.9** and **3.5** above. The registry list as at 22 May 2018 was examined to identify any ICPs still at the status “Inactive - new connection in progress” with an initial energisation date populated.

The process for the management of ICP reconnection was examined. The event detail report for 1 January 2018 to 31 March 2018 was analysed and the findings in relation to the timeliness of updates to registry is recorded in **section 3.3**.

Audit commentary

The status of an ICP is only changed to “Active” once confirmation has been received by a contractor. Submission information is provided for all “Active” ICPs.

Before being given an “Active” status the trader 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 Authority approved method of calculation. SAP 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.

Analysis of the registry list identified that 0000008937TEA93 had “new connection in progress” status with an initial energisation date populated. This ICP switched in with that status and was changed to Active by Contact.

As mentioned in **section 3.5**, Contact’s active date was incorrect for seven of ten examples where the initial energisation date was different to the active date.

Audit outcome

Non-compliant

Non-compliance	Description		
Audit Ref: 3.8 With: Clause 17 Schedule 11.1 From: 01-Jan-18 To: 31-Mar-18	Some incorrect Active dates. Potential impact: Low Actual impact: Low Audit history: Multiple times Controls: Moderate Breach risk rating: 2		
Audit risk rating	Rationale for audit risk rating		
Low	The controls are rated as moderate because there are some improvements that can be made to them, e.g. monitoring of Active date accuracy. Also, whilst identification of issues is sound, there are some delays in resolving them. The audit risk rating is low, because there is either no impact on submission information or a minor impact on submission information related to consumption being apportioned to the incorrect month as a result of incorrect start dates.		
Actions taken to resolve the issue		Completion date	Remedial action status
Contact is been improving its reporting capabilities and accuracy around the IED, Status (active) date, and Orb completion date to actively monitor and resolve mismatches between the various systems involve in the new connection process. This can be seen by the further reduction in exceptions during 2018 Many of the exceptions identified by the auditor relate to metering installations where the meter has been fitted to the distribution board prior to energisation date where energisation is performed by another party – Contact is investigating changes to its service request / workflow management system to allow this differentiation to be better identified as an exception so that these differences can be investigated and resolved in a more timely manner.		Ongoing	Identified
Preventative actions taken to ensure no further issues will occur		Completion date	

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

Code reference

Clause 19 Schedule 11.1

Code related audit information

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

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

Audit observation

The event detail report for 1 January 2018 to 31 March 2018 was reviewed, to identify all changes to inactive during that period.

The inactive status of “new connections in progress” was examined for new connections. The registry list as at 22 May 2018 was examined to identify any ICPs that had been at “Inactive - new connection in progress” for greater than 24 months; none were identified.

The process to manage ICPs at the other inactive statuses was examined by conducting a walk-through of the process. The findings in relation to the timeliness of updates to registry are recorded in **section 3.3**.

Audit commentary

The status of “Inactive” is only used once a Contact approved contractor has confirmed that the ICP has been disconnected. Contact continues to read all de-energised ICPs to identify unauthorised reconnections and incorrect statuses. Contact provided reporting of inactive ICPs with consumption recorded. Strong controls are in place for new ICPs appearing in this report. There are some historic ICPs still being resolved and all consumption is being reconciled within the 14-month window. The historic report contains 472 ICPs and 124,345 kWh.

Consumption for all vacant, “Active” ICPs where consumption is recorded is included in the relevant submission files.

Credit disconnections are now correctly recorded in the registry.

Audit outcome

Non-compliant

Non-compliance	Description		
Audit Ref: 3.9 With: Clause 19 of schedule 11.1 From: 01-Jul-17 To: 30-Jun-18	Incorrect de-energised status for some ICPs. Potential impact: High Actual impact: Low Audit history: Multiple times Controls: Strong Breach risk rating: 1		
Audit risk rating	Rationale for audit risk rating		
Low	Strong controls are in place for the identification and management of discrepancies and the historic issues regarding consumption on inactive ICPs are being steadily resolved. There is an impact on the timeliness of settlement, but submission will occur during the revision cycles for all consumption, therefore the audit risk rating is low.		
Actions taken to resolve the issue		Completion date	Remedial action status
Contact has completed an extensive data cleansing activity identify and ensuring all consumption has been submitted for ICPs incorrectly flagged as inactive. Reporting is in place to identify instances where incorrect status has occurred in order to data correction to occur. Additional training material has been delivered to support personnel in managing the disconnection and reconnection processes. It is expected that the timeliness of correction will improve with these corrective measures in place		Dec 2018	Identified
Preventative actions taken to ensure no further issues will occur		Completion date	

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

Code reference

Clause 15 Schedule 11.1

Code related audit information

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

Audit observation

Whilst this is a Distributor's code obligation, I investigated whether any queries had been received from Distributors in relation to ICPs at the "New" or "Ready" status for more than 24 months and what process is in place to manage and respond to such requests.

Audit commentary

Contact have not received any requests of this nature. Any requests received from Distributors are actioned. I also checked any open job requests for new connections and none were found to be open for 24 months or more.

Audit outcome

Compliant

4. PERFORMING CUSTOMER AND EMBEDDED GENERATOR SWITCHING

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

Code reference

Clause 2 Schedule 11.3

Code related audit information

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

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

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

Audit observation

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

Audit commentary

Contact's processes are compliant with the requirements of Section 36M of the Fair Trading Act 1986. NT files are sent as soon as all pre-conditions are met, and the withdrawal process is used if the customer changes their mind. The ICPs checked and confirmed all were sent within two days of all conditions being met.

Audit outcome

Compliant

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

Code reference

Clauses 3 and 4 Schedule 11.3

Code related audit information

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

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

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

Audit observation

An event detail report for 1 January to 31 March 2018 was reviewed, to identify AN files issued by Contact during the audit period. A sample of two ANs per response code were reviewed to determine whether the codes had been correctly applied.

The switch breach detail report was examined for the audit period.

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

Audit commentary

The switching process was examined in relation to Contact as the “losing trader” for a sample of NHH ICPs, and in all cases, the correct codes were used.

SAP will not allow an event date of greater than ten days to be entered. The event detail report was reviewed for 2,472 transfer switches:

- 2470 (99.9%) had an event date within five business days of receipt of the NT
- 100% had an event date within ten business days of receipt of the NT.

The switch breach report for the audit period recorded was examined. All AN files were sent on time.

Audit outcome

Compliant

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

Code reference

Clause 5 Schedule 11.3

Code related audit information

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

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

Audit observation

An event detail report for 1 January to 31 March 2018 was reviewed, to identify CS files issued by Contact 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).

I checked a further 10 ICPs where the average daily consumption was zero and all three ICPs where the average daily consumption was over 300 kWh.

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

Audit commentary

The accuracy of the content of CS files was confirmed by checking a sample, including for the 13 ICPs where average daily consumption was evaluated. One issue was identified with the content of CS files. When an ICP switches in and out in a short period the daily consumption figure in SAP has not always refreshed and therefore zero consumption is recorded when there is actually consumption.

The switch breach report contained 341 late CS files. The switch breach report is inaccurate, so I manually checked a sample of 52 and found three late files, two by one day and one by four days.

Audit outcome

Non-compliant

Non-compliance	Description
Audit Ref: 4.3 With: Clause 5 Schedule 11.3 From: 18-Oct-17 To: 27-Feb-18	3 late CS files. Incorrect daily consumption of zero when ICPs switch in and out in a short period. Potential impact: Medium Actual impact: Low Audit history: Multiple times Controls: Strong Breach risk rating: 1
Audit risk rating	Rationale for audit risk rating
Low	The controls are recorded as strong because they mitigate risk to an acceptable level. The impact on settlement and participants is minor; therefore, the audit risk rating is low.
Actions taken to resolve the issue	
Completion date	
Remedial action status	

<u>3 late CS files</u> Contact has further improved our processes around timeliness of CS files. Additional training has also been provided to team members to deal with the exceptions. The reason for the three late CS files were due to unexpectedly large spike in exceptions in Jan 2018 due to large numbers of customers undergoing product changes at same time as switches were occurring. We believe this is a one-off event.	Ongoing	Identified
<u>Incorrect daily consumption of zero when ICPs switch in and out in a short period</u> Contact ICT team is investigating issue with incorrect daily consumption where CTCT has supplied the site for very short period of time.	March 2019	
Preventative actions taken to ensure no further issues will occur	Completion date	

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

Code reference

Clause 6(1) and 6A Schedule 11.3

Code related audit information

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

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

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

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

Audit observation

The process for the management of read requests was examined.

The event detail report for 1 January to 31 March 2018 was analysed to identify all read change requests and acknowledgements during the audit period. A sample of five read change requests from the event detail report was selected using the diverse sample methodology.

Contact rejected five RR files for transfer switches and I checked all of these, along with all RR files rejected by other traders. The content of a diverse sample of ten RR files was examined.

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

Audit commentary

In cases where Contact is the gaining trader and they dispute the switch meter reading because the validated meter reading or permanent estimate provided by the losing trader differs by 200 kWh or more, they attempt to provide to the losing trader a changed switch meter reading supported by two validated meter readings within four calendar months of the actual event date as required by this clause.

Contact rejected five RR files and in all cases there was a genuine reason for the rejection. Contact's read was confirmed as correct.

All three examples of Contact's RR files being rejected were examined. In all cases there was a genuine reason for Contact's RR and in all cases the readings were changed following negotiation.

The switch breach history report showed 35 RR files for transfer switches were sent late. Of those:

Days late	1-15 days	16-30 days	31-50 days	51-100 days late	101-181 days late
Quantity	10	8	7	5	5

An extreme case sample of all updates over 100 days late were examined. The most common cause for late RR files is lack of meter readings following the switch. The content of RR files is compliant.

Audit outcome

Non-compliant

Non-compliance	Description	
Audit Ref: 4.4 With: Clause 6(1) and 6A Schedule 11. From: 01-May-18 To: 30-Apr-18	35 late RR files. 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 the main issue leading to late files is lack of meter readings, which is a different process. The impact on settlement is minor because the number of ICPs is low; therefore, the audit risk rating is low.	
Actions taken to resolve the issue		Completion date
The primary reason for late RR files was access issues where Contact wasn't able to access the meter for a recently switched ICP to gain the required validated read. CTCT is investigating ways to improve this process.		Identified

Preventative actions taken to ensure no further issues will occur	Completion date	
Contact continues to at how to improve the read attainment for newly switch sites to ensure switch read change requests are undertaken in a timelier manner	Ongoing	

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

Code reference

Clause 6(2) and (3) Schedule 11.3

Code related audit information

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

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

Audit observation

The process for the management of read requests was examined. The event detail report for 1 January to 31 March 2018 was analysed. There were six RR files sent by HHR traders and I examined all of these.

Audit commentary

Of the six RR files sent by HHR only traders, five were rejected and one was accepted.

The rejected files for 5207009000CHE47 and 0000004064ENEDD were sent within five business days of the switch being completed. Contact rejected the read requests because the switches were in the process of being withdrawn and the reads were not used in the switch process.

Audit outcome

Compliant

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

Code reference

Clause 7 Schedule 11.3

Code related audit information

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

Audit observation

I confirmed with Contact whether any disputes have needed to be resolved in accordance with this clause.

Audit commentary

Contact confirmed that no disputes have needed to be resolved in accordance with this clause.

Audit outcome

Compliant

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

Code reference

Clause 9 Schedule 11.3

Code related audit information

The switch move process applies where a gaining trader has an arrangement with a customer or embedded generator to trade electricity at an ICP using non half-hour metering or an unmetered ICP, or to assume responsibility for such an ICP, and no other trader has an agreement to trade electricity at that ICP, this is referred to as a switch move and the following provisions apply:

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

In the event of a switch move, the gaining trader must advise the registry manager of a switch and the proposed event date no later than two business days after the arrangement comes into effect.

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

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

Audit observation

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

Audit commentary

Contact’s processes are compliant with the requirements of Section 36M of the Fair Trading Act 1986. NT files are sent as soon as all pre-conditions are met, and the withdrawal process is used if the customer changes their mind. The ICPs checked and confirmed all were sent within two days of all conditions being met.

Audit outcome

Compliant

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

Code reference

Clause 10(1) Schedule 11.3

Code related audit information

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

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

Audit observation

An event detail report for 1 January to 31 March 2018 was reviewed to identify AN files issued by Contact during the audit period. A sample of two ANs per response code were reviewed to determine whether the codes had been correctly applied.

The switch breach detail report was examined for the audit period.

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

Audit commentary

The switching process was examined in relation to Contact as the “losing trader” for a sample of NHH ICPs, and in all cases, the correct codes were used.

SAP will not allow an event date of greater than ten days to be entered. 700 switch move requests were identified on the event detail report. These were analysed and found:

- 100% had an event date within ten business days of receipt of the NT
- Contact’s proposed event date was the same as or later than the gaining traders proposed event date for all switches.

The switch breach report for the audit period recorded was examined. All AN files were sent on time.

Audit outcome

Compliant

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

Code reference

Clause 10(2) Schedule 11.3

Code related audit information

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

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

Audit observation

The setting of event dates for switch moves was examined. The event detail report for 1 January to 31 March 2018 was examined comparing the NT requested event date with the AN event date sent by Contact for any switches dated earlier than the NT requested date.

The report was also checked to for any event dates that were set greater than ten days from the NT receipt date.

Audit commentary

44 event dates were set earlier than the requested date, in all cases the proposed event date was the same as gaining trader's proposed date if an AN was provided.

No event dates were set later than ten business days.

Audit outcome

Compliant

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

Code reference

Clause 11 Schedule 11.3

Code related audit information

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

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

Audit observation

An event detail report for 1 January to 31 March 2018 was reviewed to identify CS files issued by Contact 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).

I checked a further 10 ICPs where the average daily consumption was zero. No switch moves had average daily consumption over 300 kWh.

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

Audit commentary

The accuracy of the content of CS files was confirmed by checking a sample, including for the 10 ICPs where average daily consumption was evaluated. One issue was identified with the content of CS files. When an ICP switches in and out in a short period the daily consumption figure in SAP has not always refreshed and therefore zero consumption is recorded when there is actually consumption.

The switch breach report contained 2,178 late CS files. The switch breach report is inaccurate, so I manually checked a sample of 53 and found one file was late by two days.

Audit outcome

Non-compliant

Non-compliance	Description		
Audit Ref: 4.10 With: Clause 11 Schedule 11.3 From: 12-Mar-18 To: 14-Mar-18	1 late CS file. Incorrect daily consumption of zero when ICPs switch in and out in a short period. Potential impact: Medium Actual impact: Low Audit history: None Controls: Strong Breach risk rating: 1		
Audit risk rating	Rationale for audit risk rating		
Low	The controls are recorded as strong because they mitigate risk to an acceptable level. The impact on settlement and participants is minor; therefore, the audit risk rating is low.		
Actions taken to resolve the issue		Completion date	Remedial action status
<u>1 late CS file.</u> In this instance Contact was waiting for an AMI midnight read to be delivered rather than completing the switch on an estimate read as this tends to cause more accuracy and compliance issues later from incorrect customer billing to incorrect settlement. <u>Incorrect daily consumption of zero when ICPs switch in and out in a short period</u> Contact ICT team is investigating issue with incorrect daily consumption where CTCT has supplied the site for very short period of time		Ongoing Mar 2019	Identified
Preventative actions taken to ensure no further issues will occur		Completion date	

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

Code reference

Clause 12 Schedule 11.3

Code related audit information

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

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

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

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

Audit observation

The process for the management of read requests was examined.

The event detail report for 1 January to 31 March 2018 was analysed to identify all read change requests and acknowledgements during the audit period. A sample of five read change requests from the event detail report was selected using the diverse sample methodology.

Contact did not reject any RR files for switch moves. I checked a sample of ten RR files rejected by other traders.

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

Audit commentary

The content of RR files is compliant.

Ten examples of Contact's RR files being rejected were examined. In all cases there was a genuine reason for Contact's RR and in all cases the readings were changed following negotiation.

The switch breach history report showed 150 RR files for switch moves were sent late. Of those:

Days late	1-15 days	16-30 days	31-50 days	51-100 days late	101-312 days late
Quantity	48	25	29	32	16

An extreme case sample of all updates over 100 days late were examined. I found that there were three main issues. Backdated switches, meter reading delays and negotiation of reads with the other traders taking a long time.

Audit outcome

Non-compliant

Non-compliance	Description		
<p>Audit Ref: 4.11</p> <p>With: Clause 12 of Schedule 11.3</p> <p>From: 01-May-17</p> <p>To: 30-Apr-18</p>	<p>150 late RR files.</p> <p>Potential impact: Low</p> <p>Actual impact: Low</p> <p>Audit history: Multiple times</p> <p>Controls: Strong</p> <p>Breach risk rating: 1</p>		
Audit risk rating	Rationale for audit risk rating		
Low	<p>The controls are strong and the main issue leading to late files is lack of meter readings, which is a different process. The impact on settlement is minor because the number of ICPs is low; therefore, the audit risk rating is low.</p>		
Actions taken to resolve the issue		Completion date	Remedial action status
<p>As auditor has noted this non-compliance is due to range of issues relating to backdated switch requests, meter reading delays and negotiation of reads between participants taking a long time to complete.</p> <p>Contact is looking at how we can improve the process with delayed reading which is mainly due to customer access issues.</p> <p>With switches backdated more than 4 months, retailers already miss the RR timeframe due to time period calculated from switch event date rather than switch completion date.</p> <p>Contact believes code should to be amended for the RR timeframe to be calculated from switch completion date in the registry rather than switch event date, or at least recognise the back date switch event dates when considering compliance of this clause.</p> <p>Contact's preference is to maintain accuracy of the Registry switch read process rather than be compliant with switch timeframes which may deliver an adverse outcome for the customer concerned wherever possible</p>		Ongoing	Identified

Preventative actions taken to ensure no further issues will occur	Completion date	
Contact is reviewing its meter reading set up and attainment processes for recently switched ICPs with known access issues to investigate what improvements can be done to improve reading attainment	Ongoing	

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

Code reference

Clause 13 Schedule 11.3

Code related audit information

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

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

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

A gaining trader must advise the registry manager of the switch and expected event date no later than three business days after the arrangement comes into effect.

14(2) The gaining trader must include in its advice to the registry manager:

- a) a proposed event date; and*
- b) that the switch type is HH.*

14(3) The proposed event date must be a date that is after the date on which the gaining trader advises the registry manager, unless clause 14(4) applies.

14(4) The proposed event date is a date before the date on which the gaining trader advised the registry manager, if:

14(4)(a) – the proposed event date is in the same month as the date on which the gaining trader advised the registry manager; or

14(4)(b) – the proposed event date is no more than 90 days before the date on which the gaining trader advises the registry manager and this date is agreed between the losing and gaining traders.

Audit observation

The event detail report for 1 January to 31 March 2018 was analysed to identify all HH switches during the audit period.

The HHR switch process was examined and a sample of ten ICPs using the typical sampling methodology were checked to confirm that these were notified to the registry within three business days.

Audit commentary

The NT files for HH switches contained the information required by this clause.

ICP 0001116686MLBA6 was sent later than three days after the pre-conditions were met.

Audit outcome

Non-compliant

Non-compliance	Description		
Audit Ref: 4.12 With: Clause 14 of Schedule 11.3 From: 01-May-18 To: 30-Apr-18	1 late NT file. 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, and it was an isolated processing issue leading to one late NT file. The impact on settlement is minor because only one ICP was involved; therefore, the audit risk rating is low.		
Actions taken to resolve the issue		Completion date	Remedial action status
This single instance of a late NT was due to human error in that Contact has implemented a quality assurance step in the initiating switch process. The team member involved was not available to complete this step prior to the switch starting which caused this delay. Additional personnel have been trained in this QA process to ensure this type of delay is avoided in the future		Resolved	Cleared
Preventative actions taken to ensure no further issues will occur		Completion date	

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

Code reference

Clause 15 Schedule 11.3

Code related audit information

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

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

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

Audit observation

The event detail report for 1 January to 31 March 2018 was analysed to identify all HH switches during the audit period.

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

Audit commentary

Contact was the losing trader for two HH switches on the event detail report.

The switch breach report was examined and there were no late AN files recorded.

Audit outcome

Compliant

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

Code reference

Clause 16 Schedule 11.3

Code related audit information

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

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

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

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

Audit observation

The HH switching process was examined.

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

Audit commentary

One late CS files was identified on the switch breach report.

Audit outcome

Non-compliant

Non-compliance	Description		
Audit Ref: 4.14 With: Clause 16 Schedule 11.3 From: Oct 2017 and April 2018	One late CS file. Potential impact: Low Actual impact: Low Audit history: Once Controls: Strong Breach risk rating: 1		
Audit risk rating	Rationale for audit risk rating		
Low	The controls are strong, and it was an isolated processing issue leading to one late CS file. The impact on settlement is minor because only one ICP was involved; therefore, the audit risk rating is low.		
Actions taken to resolve the issue		Completion date	Remedial action status
At the time of this late CS file the HDM team were under resourced due to a number of staff absences. Staffing levels have returned to normal. Only one late CS file occurred in this period and due to the site being a HH settled and billed ICP there was no actual market or customer impact to the month end settlement and billing processes.		Resolved	Cleared
Preventative actions taken to ensure no further issues will occur		Completion date	

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

Code reference

Clauses 17 and 18 Schedule 11.3

Code related audit information

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

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

- *for each ICP, the trader withdrawing the switch request must provide the registry manager with (clause 18(c)):*
 - o *the participant identifier of the trader making the withdrawal request (clause 18(c)(i)); and*
 - o *the withdrawal advisory code published by the Authority. (clause 18(c)(ii))*
- *within five business days after receiving notice from the registry manager of a switch, the trader receiving the withdrawal must advise the registry manager that the switch withdrawal request is accepted or rejected. A switch withdrawal request must not become effective until accepted by the trader who received the withdrawal (clause 18(d))*

- on receipt of a rejection notice from the registry manager, in accordance with clause 18(d), a trader may re-submit the switch withdrawal request for an ICP in accordance with clause 18(c). All switch withdrawal requests must be resolved within 10 business days after the date of the initial switch withdrawal request (clause 18(e))
- if the trader requests that a switch request be withdrawn, and the resolution of that switch withdrawal request results in the switch proceeding, within two business days after receiving notice from the registry manager in accordance with clause 22(b), the losing trader must comply with clauses 3,5,10 and 11 (whichever is appropriate) and the gaining trader must comply with clause 16 (clause 18(f)).

Audit observation

The switch withdrawal process was examined.

The content of a sample of two ICPs from the event detail report for each withdrawal code (or all if less than two were available) were checked using the typical sampling methodology.

A sample of ten switch rejections were checked using the typical sample methodology.

The event detail report was also analysed to confirm timeliness of switch requests, as this is not currently being identified in the switch breach report.

The switch breach report was checked for any late switch withdrawal acknowledgements and found eight were recorded.

Audit commentary

The content of 15 NW files was compared to details in SAP, and in all cases, the withdrawal reasons provided by Contact were accurate.

All NW rejections by Contact were based on sound information supported by good notes in SAP.

For the NW rejections by other traders, Contact had good reasons, supported by notes in SAP at the time of sending the NW.

Analysis of the event detail report found 68 NWs issued more than two calendar months after the switch date. 39 of these withdrawals used the code for wrong premises, and I note that this issue often does not become apparent for an extended period after a switch completes. A sample of the ten latest files were reviewed and in most cases, there was a complex set of circumstances leading to the delayed withdrawals.

The switch breach report was examined and there were no valid late AW files.

Audit outcome

Non-compliant

Non-compliance	Description
Audit Ref: 4.15 With: Clauses 17 and 18 Schedule 11.3 From: 01-Jul-17 To: 30-Apr-18	68 late NW files. Potential impact: Low Actual impact: Low Audit history: Once previously Controls: Strong Breach risk rating: 1
Audit risk rating	Rationale for audit risk rating

Low	<p>The controls are strong for the management of withdrawals. Whilst the files were late most relate to wrong properties, which often only become clear after billing has occurred and then an investigation is completed.</p> <p>There was a minor impact on settlement due to the correction of consumption information. There was also a minor impact on the customer; therefore, the audit risk rating is low.</p>		
Actions taken to resolve the issue		Completion date	Remedial action status
<p>As auditor has noted most of these withdrawals were due to wrong premises which normally comes to light after billing has occurred and can also involves lengthy complex investigation.</p> <p>Contact believe we have robust process in place for withdrawals and some of these late withdrawals are difficult to avoid.</p>		Ongoing	Identified
Preventative actions taken to ensure no further issues will occur		Completion date	

4.16. Metering information (Clause 21 Schedule 11.3)

Code reference

Clause 21 Schedule 11.3

Code related audit information

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

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

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

Audit observation

The meter reading process in relation to meter reads for switching purposes was examined. 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 process is discussed further in **section 4.3**.

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

Audit outcome

Compliant

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

Code reference

Clause 11.15AA to 11.15AB

Code related audit information

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

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

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

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

Audit observation

The Electricity Registry switch save protected retailer list was examined to confirm that Contact is not a save protected retailer.

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

I checked the event detail report for 1 January to 31 March 2018 to identify all withdrawn with a CX code applied prior to the switch completion date in relation to any switch save protected retailers.

Audit commentary

There was one CX withdrawal made prior to the switch completion date, and the other retailer was not switch save protected at the time.

Audit outcome

Compliant

5. MAINTENANCE OF UNMETERED LOAD

5.1. Maintaining shared unmetered load (Clause 11.14)

Code reference

Clause 11.14

Code related audit information

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

11.14(2) - The distributor must give written notice to the traders responsible for the ICPs across which the unmetered load is shared, of the ICP identifiers of the ICPs.

11.14(3) - A trader who receives such a notification from a distributor must give written notice to the distributor if it wishes to add or omit any ICP from the ICPs across which unmetered load is to be shared.

11.14(4) - A distributor who receives such a notification of changes from the trader under (3) must give written notice to the registry manager and each trader responsible for any of the ICPs across which the unmetered load is shared.

11.14(5) - If a distributor becomes aware of any change to the capacity of a shared unmetered load ICP or if a shared unmetered load ICP is decommissioned, it must give written notice to all traders affected by that change as soon as practicable after that change or decommissioning.

11.14(6) - Each trader who receives such a notification must, as soon as practicable after receiving the notification, adjust the unmetered load information for each ICP in the list for which it is responsible to ensure that the entire shared unmetered load is shared equally across each ICP.

11.14(7) - A trader must take responsibility for shared unmetered load assigned to an ICP for which the trader becomes responsible as a result of a switch in accordance with Part 11.

11.14(8) - A trader must not relinquish responsibility for shared unmetered load assigned to an ICP if there would then be no ICPs left across which that load could be shared.

11.14(9) - A trader can change the status of an ICP across which the unmetered load is shared to inactive status, as referred to in clause 19 of Schedule 11.1. In that case, the trader is not required to give written notice to the distributor of the change. The amount of electricity attributable to that ICP becomes UFE.

Audit observation

The registry list as at 22 May 2018 was reviewed and found Contact has 235 ICPs with shared unmetered load.

I reviewed processes to identify shared unmetered load and I checked the accuracy of the daily unmetered figure and registry population for 229 of the 235 ICPs.

Audit commentary

I conducted a manual calculation from the distributors' information where this was possible (229 out of 235 ICPs) and found a difference greater than 0.1 kWh per day for the two ICPs in the table below. These are both now resolved.

ICP	Unmetered load details - Distributor	Recalculation	Retailer Daily Unmetered kWh	Difference
0000020055CP6FF	0008;12.0;1 - 10th share of 83w	0.096	0.9	-0.8
0005467560RN1DD	0028;11.7;1/2 of 55W Street light 15A Knowles St	0.1638	blank	0.2
Total daily difference (kWh)				-0.6
Total annual difference (kWh)				-219

Audit outcome

Non-compliant

Non-compliance	Description		
Audit Ref: 5.1 With: Clause 11.14 From: 22-May-18 To: 22-Jun-18	One ICP with incorrect shared unmetered load and one ICP with missing shared unmetered load. 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 rated as strong because they mitigate risk to an acceptable level The impact on settlement is only 0.6 kWh per day (under submission), which I consider to be minor, therefore the audit risk rating is low.		
Actions taken to resolve the issue		Completion date	Remedial action status
Contact has made steady progress in reducing the UNM mismatches between Distributors and its systems. There was only one exception identified in this audit that was due to human error due to new personnel learning this task. Additional training has been provided to reinforce the calculation of UNM load from the information provided on the registry.		Resolved	Cleared
Preventative actions taken to ensure no further issues will occur		Completion date	
Contact will increase its exception reporting frequency to monthly to reduce the delays in resolving exceptions identified.		Sept 2018	

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

Code reference

Clause 10.14 (2)(b)

Code related audit information

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

Audit observation

Examination of the registry list as at 22 May 2018 found four active ICPs with unmetered load greater than 6,000 kWh per annum which do not have DUML databases. There are 25 records with consumption between 3,000 and 6,000 kWh per annum. These were all examined.

Audit commentary

The four ICPs with consumption over 6,000 kWh per annum are shown in the table below.

ICP	Daily kWh	Annual kWh	Retailer Field	Comments
1001239371LC14B	90.2	32,923	7.6Kw;11.87: 29 X 250W HPS	AIAL ICP, investigation into solutions underway.
0080354599WE303	74.75	27,283.75	6.5kw;11.5 Park Row Lights Memorial Drive	Checking whether these items of load are included in the HCC DUML database.
0005872540AL7D8	36	13,140	36kw;24;TDC Chlorinator	The Council intends to have this metered within a short timeframe.
0000025161EA29D	16.55	6,040.75	1400w;11.8: 2x125w MV; 3x250w sb-MV; 1x400wsb-MV	Checking the possibility of an exemption request.

Two ICPs recorded as standard unmetered with load over 6,000 kWh have been resolved since the last audit:

- ICP 0900262060LC870 now has a DUML database
- ICP 0016100062EL8BD has been confirmed to be metered.

There are 25 ICPs with annual consumption between 3,000 and 6,000 kWh per annum and these are all approved load types.

Audit outcome

Non-compliant

Non-compliance	Description		
Audit Ref: 5.2 With: Clause 10.14 (2)(b) From: 31-Jul-17 To: 30-Jun-18	Four standard unmetered ICPs have estimated annual consumption over 6,000 kWh per annum. 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 with regard to identifying and attempting to resolve the issues associated with these ICPs. Resolution actions have been underway for some time. There is no suggestion that settlement is inaccurate, therefore the impact is considered minor and the audit risk rating is low.		
Actions taken to resolve the issue		Completion date	Remedial action status
ICP 0005872540AL7D8 – with the installation of a new more efficient pump the annual KWH for this ICP has been assessed at 3,854 kwh allowing this ICP to remain as UNM. Contact is continuing to engage this the relevant customers for the remaining 3 ICPs		Jun 2019	Identified
Preventative actions taken to ensure no further issues will occur		Completion date	
There is a monthly report that is run to identify these sites which is reviewed and actioned appropriately		Ongoing	

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

Code reference

Clause 10.14 (5)

Code related audit information

If the unmetered load limit is exceeded the retailer must:

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

Audit observation

Examination of the registry list as at 22 May 2018 found 11 active ICPs with unmetered load greater than 6,000 kWh per annum. These were all examined.

Audit commentary

Corrective measures commenced within 20 business days but the corrective measures were not complete within a subsequent 20 business days. No other participants are affected so no notification is required.

Audit outcome

Non-compliant

Non-compliance	Description		
Audit Ref: 5.2 With: Clause 10.14 (5) From: 22-May-18 To: 22-May-18	11 standard unmetered ICPs have estimated annual consumption over 6,000 kWh per annum and were not resolved within 20 business days. Potential impact: Low Actual impact: Low Audit history: Multiple times Controls: Strong Breach risk rating: 1		
Audit risk rating	Rationale for audit risk rating		
Low	The controls are strong with regard to identifying and attempting to resolve the issues associated with these ICPs. Resolution actions have been underway for some time but were not completed within 20 business days. There is no suggestion that settlement is inaccurate, therefore the impact is considered minor and the audit risk rating is low.		
Actions taken to resolve the issue		Completion date	Remedial action status
Contact continues to work with these customers to validate the UML details and also to look at what options are available to the customer in order to achieve compliance		Ongoing	Identified
Preventative actions taken to ensure no further issues will occur		Completion date	

5.4. Distributed unmetered load (Clause 11 Schedule 15.3, Clause 15.37B)

Code reference

Clause 11 Schedule 15.3, Clause 15.37B

Code related audit information

An up-to-date database must be maintained for each type of distributed unmetered load for which the retailer is responsible. The information in the database must be maintained in a manner that the resulting submission information meets the accuracy requirements of clause 15.2.

A separate audit is required for distributed unmetered load data bases.

The database must satisfy the requirements of Schedule 15.5 with regard to the methodology for deriving submission information.

Audit observation

Contact has responsibility for a large number of distributed unmetered load databases. The audit findings are detailed in the table at the end of this section.

Audit commentary

The following exemptions are in place for DUML:

Exemption No. 177: Exemption to clause 8(g) of schedule 15.3 of the Electricity Industry Participation Code 2010 in respect of providing half-hour (“HHR”) submission information instead of non half-hour (“NHH”) submission information for distributed unmetered load (“DUML”). This exemption expires at the close of 31 October 2023.

Exemption No. 185: Exemption to clause 11 of schedule 15.3 of the Electricity Industry Participation Code 2010 in respect of creating DUML databases for the following ICPs. This exemption expires on the date on which Contact no longer has responsibility as the trader for these ICPs on the registry. One of the affected ICPs is still supplied by Contact, therefore the exemption is still valid.

ICP identifier	Comments
0001183605HB0B0	Contact still has responsibility for this ICP; under veranda lights with load of 3.7 kWh per day are connected.

DUML audits for databases were conducted by Veritek. The process for converting DUML database reports into submission volume was checked and found to be accurate.

The table below shows the DUML issues identified during the previous audit in relation to submission accuracy.

Database	2017 Issue	2017 Submission Impact	2018 Submission impact	2018 Status
Napier NZTA	Under submission due to incorrect ballast	-1,305 kWh PA Revision was not conducted	-11,500 kWh PA	Under submission still present
Wellington CC	Some lamps with a blank wattage field in the database	-3,000 kWh PA Revision was not conducted	+805,000 kWh PA	Additional issues present
Upper Hutt CC	Some incorrect wattages	-700 kWh PA Revision was not conducted	-2,554 kWh PA	Still existing
Tararua DC	Reporting not provided, therefore LED replacements not identified.	+576,400 kWh for 14 month period Revision was not conducted	+101,000 kWh PA	Reporting has been provided from April 2018 but the field audit found inaccuracies
Palmerston North CC	Incorrect gear wattage	-17.112 kWh PA	N/A	Switched to Meridian.

Database	2017 Issue	2017 Submission Impact	2018 Submission impact	2018 Status
		Revision was conducted		
Russell wharf lights 0000910450TE75D	Database inaccuracies	-4,100 kWh PA		No audit undertaken under new regime

The table below shows the main submission related issues from the current audit period.

Database	Main issues	kWh impact (per annum)
Auckland Transport	Over submission because dimming is not accounted for	Unknown
	Adjustment of data outside of RAMM	Under submission of 1,169,418 kWh
	Database inaccuracy found by field audit	Over submission of 213,200 kWh
	Incorrect ballast wattages	Over submission of 546,518.44 kWh
Tararua DC	Inaccurate and out of date database	Over submission of 101,000 kWh
Wellington CC	Inaccurate database largely due to late LED updates	Over submission of 807,622 kWh
Waitaki DC	Data used for submission not from RAMM database	Net over submission of 65,566 kWh
	Incorrect lamp and wattage values	
	Database inaccuracy compared to the field	

The table below shows the additional items from the current DUML audit reports, which affect submission information:

Database	DUML Audit completed 16A.26 and 17.295F	Deriving submission information 11(1) of schedule 15.3	ICP identifier 11(2)(a) of schedule 15.3	Location of items of load 11(2)(b) of schedule 15.3	Description of load 11(2)(c)&(d) of schedule 15.3	All load recorded in database 11(2A) of schedule 15.3	Tracking of load changes 11(3) of schedule 15.3	Audit trail 11(4) of schedule 15.3	Database accuracy 15.2 and 15.37B(b)	Volume information accuracy 15.2 and 15.37B(c)
Timaru DC	28/05/18	No	No	Yes	No	No	Yes	Yes	No	No
Mackenzie DC	27/05/18	No	Yes	Yes	No	No	No	Yes	No	No
Napier NZTA	22/05/18	No	Yes	Yes	Yes	No	Yes	Yes	No	No
Kapiti Coast DC	26/03/18	No	No		No	No	Yes	Yes	No	No
Queenstown Lakes DC	22/05/18	No	Yes	Yes	No	No	No	Yes	No	No
Tasman DC & NZTA	30/04/18	No	Yes	Yes	Yes	Yes	Yes	Yes	No	No
Mainpower NZTA	30/04/18	No	Yes	No	Yes	Yes	Yes	Yes	No	No
Wellington CC	30/04/18	No	Yes	Yes	No	No	No	Yes	No	No
Upper Hutt CC	15/04/18	No	Yes	Yes	No	Yes	Yes	Yes	No	No
Tararua DC	14/05/18	No	No	Yes	No	No	No	Yes	No	No
Waitaki DC	26/05/18	No	No	Yes	No	Yes	Yes	Yes	No	No
Dunedin CC	28/05/18	No	Yes	Yes	No	No	Yes	Yes	No	No
Masterton DC	25/09/17	No	Yes	Yes	Yes	Yes	Yes	Yes	No	No
South Wairarapa DC	25/09/17	No	No	Yes	Yes	No	Yes	Yes	No	No
Carterton DC	25/09/17	No	Yes	Yes	Yes	Yes	Yes	Yes	No	No
Waimea Village	23/04/18	No	No	No	No	No	No	No	No	No

Database	DUML Audit completed 16A.26 and 17.295F	Deriving submission information 11(1) of schedule 15.3	ICP identifier 11(2)(a) of schedule 15.3	Location of items of load 11(2)(b) of schedule 15.3	Description of load 11(2)(c)&(d) of schedule 15.3	All load recorded in database 11(2A) of schedule 15.3	Tracking of load changes 11(3) of schedule 15.3	Audit trail 11(4) of schedule 15.3	Database accuracy 15.2 and 15.37B(b)	Volume information accuracy 15.2 and 15.37B(c)
0000036536NT7 F0										
Russell wharf lights 0000910450TE7 5D	31/05/17	No	Yes	Yes	No	Yes	No	Yes	No	No
Kapiti Retirement Trust 0015768900ELB 35	29/03/18	No	Yes	Yes	No	Yes	Yes	No	No	No
Auckland Transport	28/05/18	No	No	No	No	No	No	No	No	No
Burnham Military Camp 0006432514RNA 15	25/05/18	No	Yes	Yes	No	Yes	Yes	Yes	Yes	Yes
NZDF Woodbourne 0004450017ML9 D6	09/03/18	No	No	No	Yes	Yes	Yes	Yes	No	No
Manawatu DC	30/04/18	No	Yes	Yes	No	Yes	Yes	Yes	No	No
Hutt CC	30/04/18	No	Yes	Yes	No	Yes	Yes	Yes	No	No
Christchurch CC	25/05/18	No	Yes	Yes	No	Yes	Yes	Yes	No	No
CIAL	11/05/18	No	Yes	Yes	No	Yes	Yes	Yes	No	No

This clause requires that:

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.

Several databases do not meet the accuracy requirements of Clause 15.2.

Audit outcome

Non-compliant

Non-compliance	Description		
Audit Ref: 5.4 With: Clause 11 of schedule 15.3 From: 01-Jul-17 To: 31-May-18	Inaccurate submission information for several databases. Potential impact: High Actual impact: High Audit history: Multiple times Controls: Moderate Breach risk rating: 6		
Audit risk rating	Rationale for audit risk rating		
High	The controls in place mitigate risk most of the time, but errors still occur, therefore the control rating is moderate. There is a major impact on settlement outcomes because there are examples of over submission and under submission; therefore, the audit risk rating is high.		
Actions taken to resolve the issue		Completion date	Remedial action status
Contact continues to commit a significant amount of time and effort to engage with our DUMML customers to address these non-compliances. Under the new audit regime Contact cannot undertake a large proportion of these audits ourselves as we have performed historically. The impact is that we have not been able to develop further relationships at an operational level that has previously assisted in the resolution of some longstanding non-compliances Contact is actively engaging with the DUMML database owners on a regular schedule to address and resolve the non-compliances and where required perform market wash ups to limit the market impact which can be seen by the reduction in assessed submission impact identified by the auditor.		Ongoing	Identified
Preventative actions taken to ensure no further issues will occur		Completion date	
Contact Energy is working with each council to correct their database, so submission corrections can be applied where possible. New audit schedules have been prepared for a lot of these DUMML owners and audits will continue to happen in a timely manner whilst Contact energy works with these DUMML owners.		Ongoing	

6. GATHERING RAW METER DATA

6.1. Electricity conveyed & notification by embedded generators (Clause 10.13, Clause 10.24 and 15.13)

Code reference

Clause 10.13, Clause 10.24 and Clause 15.13

Code related audit information

A participant must use the quantity of electricity measured by a metering installation as the raw meter data for the quantity of electricity conveyed through the point of connection.

This does not apply if data is estimated or gifted in the case of embedded generation under clause 15.13.

A trader must, for each electrically connected ICP that is not also an NSP, and for which it is recorded in the registry as being responsible, ensure that:

- *there is one or more metering installations*
- *all electricity conveyed is quantified in accordance with the Code*
- *it does not use subtraction to determine submission information for the purposes of Part 15.*

An embedded generator must give notification to the reconciliation manager for an embedded generating station, if the intention is that the embedded generator will not be receiving payment from the clearing manager or any other person through the point of connection to which the notification relates.

Audit observation

Processes to ensure metering is installed and unmetered load is quantified were examined.

The process to manage distributed generation was examined. The registry list as at 22 May 2018 was analysed to identify all ICPs where the Distributor had indicated distributed generation. 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.

Contact's records showed 235 remotely disconnected ICPs where meters had been bridged as a means of reconnecting between 1 July 2017 and 29 March 2018.

Audit commentary

Metering installations installed

Contact's new connection process includes a check that metering is installed before energisation occurs, or that any unmetered load is quantified.

Subtraction is used to determine submission information for three ICPs, and current exemptions are in place:

- **Exemption No. 223:** Exemption to clause 10.24(c) of the Electricity Industry Participation Code 2010 to allow subtraction to determine submission information for ICP 0000840407WE388
- **Exemption No. 203:** Exemption to clause 10.24(c) of the Electricity Industry Participation Code 2010 to allow subtraction to determine submission information for ICP 0000880392WEA92
- **Exemption No. 191:** Exemption to clause 10.24(c) of the Electricity Industry Participation Code 2010 to allow subtraction to determine submission information for ICP 0000032431HR99C.

Distributed Generation

Contact has a process in place to identify ICPs where distributed generation possibly exists. They monitor changes to the registry by distributors and then conduct outbound communication inviting the customer to apply to Contact for approval to supply their generated quantities.

Contact's list file was examined in relation to ICPs with generation listed by the Distributor. 4,620 active ICPs with generation listed by the distributor were identified. 67 of those did not have a generation profile recorded on the registry at the time of the initial analysis, raising a question about whether the generation volume is being recorded. A sample of 38 were checked:

- six ICPs were confirmed not to have generation installed; the RPS profile recorded on the registry and used for submission is correct
- four ICPs were updated to PV1 profile after the registry list was run and are submitted correctly
- 28 ICPs have their injection consumption manually changed to the PV1 profile prior to submission but are recorded as RPS on the registry; the reconciliation team have logged a request for the installation data management team to update the profile on the registry for these ICPs. The incorrect recording of profiles for these ICPs on the registry is recorded as non-compliance in **section 2.1**.

Five ICPs with import/export metering and a profile that did not indicate generation were identified. I confirmed that Contact's reconciliation process automatically changes the profile for injection registers to PV1 for submission if there is an open trading notification for PV1 profile at the GXP and the registry shows RPS. The incorrect recording of profiles for these ICPs on the registry is recorded as non-compliance in **section 2.1**.

For three active ICPs without distributor generation details, Contact has recorded an installation type of both. All three were checked, two were confirmed to have generation metering installed and the other was not. All three had the correct profiles used for submission and recorded on the registry.

12 active ICPs have wind or fresh water generation fuel type, but a profile code of PV1. The incorrect profile is recorded on the registry and used for submission, and is recorded as non-compliance below and in **section 2.1**.

ICP	Fuel Type	Profile
0000205520TPB87	wind	RPS PV1
0000934525NV5D1	wind	RPS PV1
0000009083CE7D8	fresh water	RPS PV1
0000020969CE397	fresh water	RPS PV1
0000024684TR935	wind	RPS PV1
0000140136TR4B4	wind	RPS PV1
0000558632NR28E	wind	RPS PV1
0001801902TG95D	wind	RPS PV1
0008813269ML991	fresh water	RPS PV1
0009061810CN08E	wind	RPS PV1
0031602529PC982	fresh water	RPS PV1
0068194003WR135	fresh water	RPS PV1

Bridged meters

Meters are only bridged where an urgent reconnection is required, and a soft reconnection cannot be arranged.

Contact's records showed 235 remotely disconnected ICPs where meters had been bridged as a means of reconnecting between 1 July 2017 and 29 March 2018. The existence of bridged meters is recorded as non-compliance below.

Corrections to capture the bridged consumption are discussed further in **section 8.1**.

Audit outcome

Non-compliant

Non-compliance	Description	
Audit Ref: 6.1 With: Clause 10.13 From: 01-Jul-17 To: 20-Jun-18	While meters were bridged, energy was not metered and quantified according to the code. 12 ICPs with generation have an incorrect profile used for submission and recorded on the registry. Potential impact: Low Actual impact: Low Audit history: Multiple times Controls: Moderate Breach risk rating: 2	
Audit risk rating	Rationale for audit risk rating	
Low	Controls are rated as moderate as they are sufficient to reduce the risk most of the time. The audit risk rating is low: <ul style="list-style-type: none">• Bridging only occurs where a soft reconnection cannot be performed after hours and the customer urgently requires their energy supply for health and safety reasons. Corrections are usually processed as discussed in section 8.1.• Correct profiles are applied for reconciliation submissions in most cases.	
Actions taken to resolve the issue		Completion date
The issue of bypassing smart meters is a wider issue than those sites identified and resolved by Contact. In order to reduce the number of remotely disconnected meters being bypassed from occurring Contact has incorporated outside business hours arrangements with smart meter providers. Contact has update the generation profile code for the 12 ICPs identified in the audit as being incorrect. Contact has reporting in place to identify these exceptions.		Ongoing
		Resolved
Preventative actions taken to ensure no further issues will occur		Completion date

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

Code reference

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

Code related audit information

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

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

The participant responsible for the metering installation must:

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

Audit observation

The NSP table was reviewed to confirm the GIPs which Contact is responsible for, and the certification expiry date for those GIPs.

Changes to the NSP table were reviewed to determine whether they had been processed accurately.

Audit commentary

Contact is responsible for the GIPs shown in the table below.

Responsible party	Description	NSP	MEP	Certification expiry date (NSP table)
CTCT	CLYDE	CYD2201CTCTG	ACCM	8/07/2018
CTCT	OHAAKI	OKI2201CTCTG	ACCM	27/11/2018
CTCT	POIHIPI	PPI2201CTCTG	ACCM	23/11/2019
CTCT	ROXBURGH	ROX1101CTCTG	ACCM	15/07/2018
CTCT	ROXBURGH	ROX2201CTCTG	ACCM	16/07/2018
CTCT	STRATFORD	SFD2201CTCTG	CTCT	21/01/2020
CTCT	TE MIHI	THI2201CTCTG	ACCM	30/09/2018
CTCT	WHIRINAKI	WHI2201CTCTG	ACCM	19/10/2019

CTCT	WAIRAKEI	WRK2201CTCTG	ACCM	23/02/2020
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All grid connection points Contact is responsible for have current certification recorded on the network supply point (NSP) table.

Contact has not made any new connections to the grid during the audit period.

All changes to certification dates were reviewed and found to have been updated within 20 business days of certification. Accucal updates meter certification changes directly, and Electrix provides certification information to Contact so that they can update the NSP table.

Audit outcome

Compliant

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

Code reference

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

Code related audit information

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

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

Audit observation

A registry list as at 22 May 2018 was reviewed for the audit period to confirm the profiles used by Contact.

The registry list was matched with the event detail report for 1 January 2018 to 31 March 2018, to confirm whether AMI or HHR metering was present or control devices (if present) were certified if required by the profile. All 34 exceptions were reviewed.

Audit commentary

The registry list showed 56,431 ICPs with profiles which require AMI or HHR metering, or a certified control device.

Of those, 1,471 ICPs were also recorded in the event detail report provided. I found:

Metering status	Count	Met profile requirements
AMI or HHR meter	1,031	Yes
No AMI or HHR meter, but has a certified control device	378	Yes
No AMI or HHR and no certified control device	62	No

All of the 34 ICPs without certified control devices or AMI or HHR metering are reported for reconciliation submissions with RPS profile. Contact's reconciliation process applies RPS if a profile requiring a certified control device is recorded on the registry and the ICP does not meet the metering or certification requirements for that profile to be applied. For 24 of the 34 ICPs, the MEP has confirmed that the load control device is certified and has populated the registry. Ten ICPs have expired certification or the control device is not certified,

Compliance is recorded in this section, because where profiles requiring AMI or HHR metering or certified control devices are applied for reconciliation, the ICPs were found to meet the profile requirements.

The incorrect recording of profiles on the registry for some ICPs is recorded as non-compliance in **section 2.1**.

Audit outcome

Compliant

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

Code reference

Clause 10.43(2) and (3)

Code related audit information

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

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

Audit observation

Processes relating to defective metering were examined.

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

Audit commentary

Defective meters are typically identified through the meter reading validation process, or from information provided by the meter reader, agent, the MEP, or the customer. Upon identifying a possible defective meter, a field services job is raised to investigate and resolve the defect and a consumption correction is processed if necessary.

I reviewed 21 examples of potential defective meters, including 16 bridged meters and five stopped meters. There were no corrections for incorrect multipliers. In all cases a field services job was raised, and the MEP was advised.

Corrections are discussed in **sections 8.1 and 8.2**.

Audit outcome

Compliant

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

Code reference

Clause 2 Schedule 15.2

Code related audit information

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

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

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

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

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

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

2(6) – The interrogation systems must record:

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

Audit observation

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

Clock synchronisation processes for agents were reviewed as part of their agent audits. Agents are to advise Contact of clock synchronisation discrepancies and adjustments. I reviewed the May 2018 notifications received from EDM I and AMS, to confirm that they are received and actioned by Contact.

Contact's own data collection processes for generation data were reviewed.

Audit commentary

All information used to determine volume is collected by Contact, or one of their agents.

A sample of five readings each for AMS (HHR and AMI), EDM I, Smartco, Metrix and Arc, were traced from the source reading files to Contact's systems.

HHR

Agents monitor clock synchronisation, this is covered as part of their audits.

Clock synchronisation events are provided to Contact by AMS and EDM I. The reports are reviewed, and corrective action is taken as required.

ICP 0000555694NR13E is a Northpower HHR meter with data provided by AMS. The meter showed a 25,538 second (approximately 7 hour) clock synchronisation error on the 28 May 2018 time synchronisation report. Contact has followed up this error with the MEP. This time difference is recorded as a submission accuracy issue in **section 12.7**.

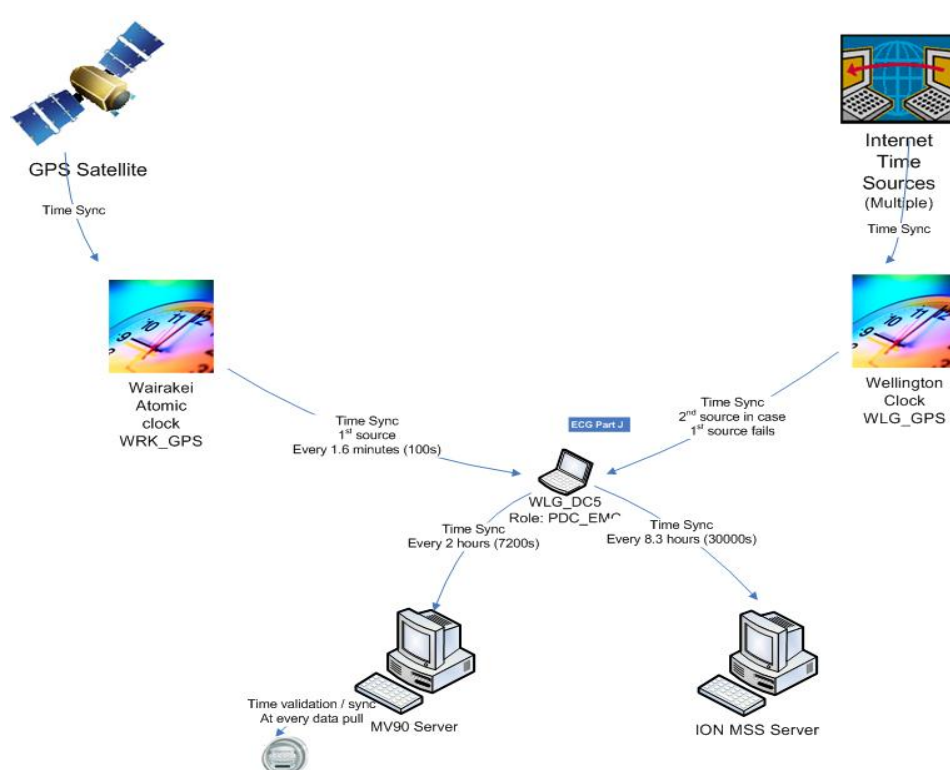
AMI

MEPs monitor clock synchronisation, this is covered as part of their audits.

MEPs email information on clock synchronisation to the field services team for review. Data is received from AMS and Smartco at least weekly, and by other MEPs on an ad hoc basis when issues occur. No examples requiring action by Contact were identified.

Generation

The generation clock synchronisation process has not changed during the audit period. The diagram below shows Contact's timekeeping process for generation metering.



As shown above the MV90 server is synchronised every two hours and prior to the commencement of any interrogation. WLG-DC5 time is manually checked on a periodic basis and this event is recorded.

During interrogation, a comparison occurs between data logger and MV90 clocks. MV90 is set to automatically synchronise all data logger clocks where time errors are less than or equal to five seconds. Where time errors exist, which are greater than five seconds, but less than or equal to 60 seconds, the error is recorded in the events log and this event is noted as a failed task. A time synchronisation is still performed automatically, and the data is accepted as it is considered by Contact that the data has not been affected by the time error. If the time error is greater than 60 seconds, then the data is downloaded; however, the time is not synchronised and the data is deemed invalid. An investigation then occurs which may result in data correction.

I viewed an example of a clock synchronisation event outside the threshold (-6 seconds), and observed the process to investigate, validate, and release the data. This is discussed further in **section 7.1**.

Audit outcome

Compliant

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

Code reference

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

Code related audit information

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

All validated meter readings must be derived from meter readings.

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

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

- a) obtain the meter register*
- b) ensure seals are present and intact*
- c) check for phase failure (if supported by the meter)*
- d) check for signs of tampering and damage*
- e) check for electrically unsafe situations.*

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

Audit observation

The data collection process was examined. A sample of 37 NHH meter readings were checked from the read file to SAP using the typical case sample methodology.

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

Processes for customer and photo reads were reviewed.

Audit commentary

A sample of at least five reads received from each agent and MEP were compared with records contained in SAP, including manual and AMI readings. In all cases, the readings matched and were labelled correctly.

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

Datacol and Wells also check the condition of the meters, to identify issues that could affect meter accuracy or safety. If an issue is identified, the appropriate condition code is entered into the hand-held device along with any notes. Wells sends condition information with their read files, and also sends a monthly file of missing or broken seals and email Contact with information about suspect theft soon after it is found. Datacol also sends the meter condition information to Contact, including monthly summary reports.

The meter condition information is recorded in SAP and used to create BP EM (Billing Process Exception Management) events, which are directed to work queues in SAP for investigation and action.

During the audit I saw examples received from Wells for:

- meter register mismatch, which typically occurs where a read has been taken soon after a meter change and Contact has not received and processed the meter change paperwork
- missing or broken seals
- signs of tampering or damage, including suspected theft.

No examples of phase failure or electrically unsafe installations for Contact ICPs were identified during Datacol or Wells' audits. Wells' audit confirmed that there were processes in place to identify and report these conditions.

No meter condition issues have occurred for meters read by Datacol since 2014. This was confirmed by reviewing historic BPEM data and the monthly meter condition reports provided by Wells for March to May 2018. Datacol's 2018 audit found that no checks for phase failure were completed.

Customer reads are provided in the meter reader notes fields by Wells and Datacol and treated as a "no read". An estimate read is entered by Contact.

Audit outcome

Non-compliant

Non-compliance	Description		
Audit Ref: 6.6 With: Clause 3(1), 3(2) and 5 Schedule 15.2 From: 01-Jul-17 To: 20-Jun-18	Datacol does not conduct checks for phase failure. Potential impact: Low Actual impact: Low Audit history: Once Controls: Moderate Breach risk rating: 2		
Audit risk rating	Rationale for audit risk rating		
Low	The controls are rated as moderate because most manually read ICPs are read by Wells, who do check for phase failure. The impact is assessed to be low; approximately 400 ICPs are read by Datacol and most of those are expected to be non-AMI and phase failure will not be able to be detected by the meter reader.		
Actions taken to resolve the issue		Completion date	Remedial action status
Contact has initiated discussions with Datacol regarding including phase failure on 3 phase CT metering installations as part of the on site checks performed by manual meter readers and any exception identified is reported via a meter condition code to Contact for investigation and resolution by way of a metering site visit		TBA	Investigating
Preventative actions taken to ensure no further issues will occur		Completion date	

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

Code reference

Clause 6 Schedule 15.2

Code related audit information

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

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

Audit observation

The process of the application of meter readings was examined.

Audit commentary

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

I traced a sample of 37 NHH meter readings were checked from the read file to SAP using the typical case sample methodology. Where read times were recorded in the files they were indicated to have occurred at the end of the day.

I checked the process for NHH to HHR meter changes in relation to this clause. Contact's process is to "remove" the NHH meter from the registry and from relevant databases on the day before the meter change, and then the ICP becomes HHR all day on the day of the meter change, with the trading periods up until the meter change being populated with zeros. Whilst this process achieves accuracy, non-compliance exists because the NHH meter reading is not applied at 2400 on the day of the reading.

Audit outcome

Non-compliant

Non-compliance	Description
Audit Ref: 6.7 With: Clause 6 Schedule 15.2 From: 01-Jul-17 To: 30-Jun-18	NHH meter readings not applied at 2400 on the day of the meter reading for NHH to HHR upgrades Potential impact: None Actual impact: None Audit history: None Controls: Strong Breach risk rating: 1
Audit risk rating	Rationale for audit risk rating
Low	The controls are recorded as strong because the process achieves accuracy. There is no impact on settlement or other participants.

Actions taken to resolve the issue	Completion date	Remedial action status
<p>Contact energy's systems like other retailers and also the Registry apply meter installations and removals as at the beginning and end of a day – while this view may be appropriate for NHH settled ICPs it does not accurately reflect HH metering and interval data encompassing the true meter change dates and times.</p> <p>Contact approach to managing meter changes around NHH to HHR, while not fully compliant with the rules is what we believe is the most accurate way to ensure all consumption volumes are included in the settlement process. We agree with the auditor's observation that this noncompliance has no impact to other participants. Contact is willing to work with the authority and other participants to find a robust solution to meter changes that also result in settlement methodology changes that is compliant with the code.</p>	Ongoing	Investigating
Preventative actions taken to ensure no further issues will occur	Completion date	

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

Code reference

Clause 7(1) and (2) Schedule 15.2

Code related audit information

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

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

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

Audit observation

The process to manage missed reads was examined. The Automated Meter Reading Compliance (MRC) Process documentation was reviewed.

Contact provided a list of ICPs not read during the period of supply, where the period of supply had ended during the audit period. The extreme case sampling method was used to select ten unread ICPs with a period of supply of more than three months.

Audit commentary

The process to manage missed reads was examined.

AMI reads are managed in the SmartReads Management Console. The SmartReads Management Console records the percentage of reads attained in each file. If the percentage is less than 100%, the file is held

for three days prior to being imported, in case further reads are recovered on subsequent interrogations. After three days or when 100% of reads are obtained, whichever is sooner, the file is imported into SAP and any missing reads are estimated. If a whole file is missing, the field services team receives an email notification so that it can be followed up.

For all NHH non-AMI reads, the Automated Meter Reading Compliance (MRC) Process applies. Documentation on the Automated Meter Reading Compliance (MRC) Process was provided. The process is:

- process initiation occurs on the day an estimated reading is entered
- letter 1 is sent if the process is still active after 130 days
- letter 2 is sent if the process is still active 70 days after letter 1 was issued
- letter 3 is sent to advise that there are charges if a high priority read is requested
- request a high priority (out of cycle) meter reading if the process is still active 70 days after letter 2 is issued
- a Business Progress Exception Management event (BPEM) is raised if the process is still active 60 days after the high priority read is requested, manual intervention is required to attempt to gain a read and enter a permanent estimate if an actual reading cannot be obtained.

The MRC process is terminated when the customer switches out, is disconnected, an actual reading is received, or they are added to a meter reader exclusion list (due to a health and safety issue or not being allocated to an active meter reading route). I confirmed that the MRC process continues after customer reads are received by checking examples of ICPs with customer reads.

The process begins 130 days after an estimated read is entered, so ICPs supplied for shorter periods do not usually have any action taken, and the best endeavours requirement is unlikely to be achieved.

Contact provided a list of 2,158 ICPs not read during the period of supply as at April 2018. This list included ICPs which were still within their period of supply, and further analysis found 184 ICPs without a read during the period of supply where the period of supply had ended. I reviewed a sample of ten ICPs unread during the period of supply, where the period of supply was more than three months. I found:

- two ICPs were vacant, and exceptional circumstances existed
- seven ICPs were unread due to access issues, and the best endeavours requirement was not met
- one ICP had an AMI meter, and the MRC process did not apply, the best endeavours requirement was not met.

Non-compliance is recorded below for the eight ICPs where exceptional circumstances did not apply, and the best endeavours requirements were not met.

The report of ICPs unread during the period of supply appears to have some data accuracy issues, and I recommend this is investigated.

Description	Recommendation	Audited party comment	Remedial action
Accuracy of unread during period of supply report	<p>The POS report includes ICPs within the period of supply, as well as ICPs where the period of supply has ended.</p> <p>The start and end dates for the report are incorrect in some cases. Some ICPs which have end dates of 31Dec9999 indicating they are still active with Contact, despite switching out more than six months before the report was generated.</p>	Contact has initiated an IT request to get the requirement of this report updated to produce accurate results.	Identified

Audit outcome

Non-compliant

Non-compliance	Description		
Audit Ref: 6.8 With: Clause 7(1) and (2) Schedule 15.2 From: 01-Jul-17 To: 20-May-18	For eight ICPs unread during the period of supply, exceptional circumstances did not exist, and the best endeavours requirement was not met. Potential impact: Low Actual impact: Low Audit history: Multiple times Controls: Weak Breach risk rating: 3		
Audit risk rating	Rationale for audit risk rating		
Low	Controls are rated as weak as they are not sufficient to ensure the best endeavours requirement is met where the period of supply is less than nine months. The audit risk rating is low, as most of the ICPs without a read during the period of supply appear to have been supplied for a short period.		
Actions taken to resolve the issue		Completion date	Remedial action status

<p>Contact has identified a validation as at the time of a switch gain that can identify timeframes since the last actual read from the CS file received that can assist with identifying potential access issues for newly acquired customers.</p> <p>We intend to use this validation to then trigger an OBC/Text/Email to discuss concerns with the customer that may have been historic with the previous retailer.</p> <p>Contact will also reapply the switching H reads had been stopped, based off audit advice, for sites that were in the 365-day meter read compliance process. This could assist these sites with having a 3rd attempt to retrieve an actual read prior to the switch.</p>	Ongoing	Identified
Preventative actions taken to ensure no further issues will occur	Completion date	

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

Code reference

Clause 8(1) and (2) Schedule 15.2

Code related audit information

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

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

Audit observation

The meter reading process was examined. Monthly reports for the months of September 2017 to March 2018 were provided.

The reports were reviewed to confirm that they met the meter reading frequency report requirements, and were submitted on time.

A sample of ten ICPs not read in the previous 12 months were reviewed to determine whether exceptional circumstances existed and if Contact had used their best endeavours to obtain readings.

Audit commentary

The monthly meter reading reports provided were reviewed.

Month	Total NSPs where ICPs were supplied > 12 months	NSPs <100% read	ICPs unread for 12 months	Overall percentage read
Sep 2017	297	147	1658	99.53%
Oct 2017	299	145	1641	99.52%
Nov 2017	298	144	1603	99.46%

Month	Total NSPs where ICPs were supplied > 12 months	NSPs <100% read	ICPs unread for 12 months	Overall percentage read
Dec 2017	296	142	1581	99.40%
Jan 2018	297	147	1636	99.38%
Feb 2018	298	148	1696	99.35%
Mar 2018	297	147	1656	99.36%

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

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

- two ICPs were not continuously supplied for 12 months, and were not required to meet the 12-month requirement
- for seven ICPs the full MRC process was followed, and the best endeavours requirement was met
- for one ICP the MRC process terminated early because a permanent estimate read was entered as actual which terminated the process, and then later changed to a permanent estimate.

The 2017 audit identified some accuracy issues within the ICP level read attainment reporting. These issues are still present:

- The read compliance reports appear to be based on the actual reads received, rather than the actual reads loaded in SAP. Each read must be entered against a valid read request. Where an estimated read is entered against the request prior to the actual being received, the actual read is not entered unless it is sufficiently different to require the invoice to be reversed and rebilled.
- Where an ICP switches out and back in, the report is including the switched out period in the period of supply.
- Prepay meters are not included in the report.

There appear to be some report accuracy issues for the aggregated meter read frequency reporting, including:

- the read rate percentage appears to be consistently rounded up
- the count of reads required to reach target appears to be calculated based on the percentage and consistently rounded down.

Last year's recommendation to investigate and resolve these issues is repeated:

Description	Recommendation	Audited party comment	Remedial action
Accuracy of meter read frequency reporting	<p>Review and update the meter read frequency reports, including:</p> <ul style="list-style-type: none"> • check the accuracy of the read attainment rates and the reads required to reach targets • check that the report is based only on the reads used to generate reconciliation consumption • check that only continuous periods of supply are considered • check that pre-pay meters are included. 	Contact has initiated an IT request to get the requirement of this report updated to produce accurate results.	Identified

Copies of the meter reading frequency reports to the Electricity Authority for November 2017 to March 2018 were provided during the audit. I viewed emails to confirm that the reports were sent earlier than 20 business days after the end of the month.

Audit outcome

Non-compliant

Non-compliance	Description
<p>Audit Ref: 6.9</p> <p>With: Clause 8(1) and (2) Schedule 15.2</p> <p>From: 01-Jul-17</p> <p>To: 20-May-18</p>	<p>For one ICP supplied for over one year, exceptional circumstances did not exist and the best endeavours requirement was not met.</p> <p>Some report accuracy issues were identified and require further investigation.</p> <p>Potential impact: Low</p> <p>Actual impact: Low</p> <p>Audit history: Multiple times</p> <p>Controls: Strong</p> <p>Breach risk rating: 1</p>
Audit risk rating	Rationale for audit risk rating
Low	<p>Controls are rated as strong because the MRC process is usually sufficient to ensure that the best endeavours requirement is met within one year.</p> <p>The audit risk rating is low, because the process was terminated early for one ICP due to a user error. The read type error was promptly corrected, but as soon as the actual read was entered the process terminated.</p>

Actions taken to resolve the issue	Completion date	Remedial action status
ICT request has been raised to get the GXP report criteria adjusted to remove the false positives from being included in this report	May 2019	Identified
Preventative actions taken to ensure no further issues will occur	Completion date	

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

Code reference

Clause 9(1) and (2) Schedule 15.2

Code related audit information

In relation to each NSP, each reconciliation participant must ensure that for each NHH ICP at which the reconciliation participant trades continuously for each 4 months, for which consumption information is required to be reported into the reconciliation process. A validated meter reading is obtained at least once every four months for 90% of the non half hour metered ICPs.

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

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

Audit observation

The meter reading process was examined. Monthly reports for the months of September 2017 to March 2018 were provided.

The reports were reviewed to confirm that they met the meter reading frequency report requirements and were submitted on time.

A sample of ten ICPs not read in the previous four months were reviewed to determine whether exceptional circumstances existed and if Contact had used their best endeavours to obtain readings.

Audit commentary

The monthly meter reading reports provided were reviewed.

Month	Total NSPs where ICPs were supplied > 4 months	NSPs <90% read	ICPs unread for 4 months	Overall percentage read
Sep 2017	304	10	5951	98.50%
Oct 2017	306	11	5916	98.47%
Nov 2017	306	13	5571	98.34%
Dec 2017	305	14	5390	98.18%
Jan 2018	309	18	5410	98.17%

Month	Total NSPs where ICPs were supplied > 4 months	NSPs <90% read	ICPs unread for 4 months	Overall percentage read
Feb 2018	311	15	5255	98.23%
Mar 2018	313	16	5118	98.27%

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

I reviewed ten ICPs not read in the previous four months to determine whether exceptional circumstances exist, and if Contact had used their best endeavours to obtain readings:

- one ICP was not continuously supplied for four months, and was not required to meet the four-month requirement
- two ICPs were not genuinely unread for four months, there were intermittent access issues and reads were attained at least once in the four months
- one ICP was vacant, and exceptional circumstances existed
- for the other six ICPs the MRC process was followed, and the best endeavours requirement was met.

Audit outcome

Compliant

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

Code reference

Clause 10 Schedule 15.2

Code related audit information

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

10(a) - the means to establish the identity of the individual meter reader

10(b) - the ICP identifier of the ICP, and the meter and register identification

10(c) - the method being used for the interrogation and the device ID of equipment being used for interrogation of the meter.

10(d) - the date and time of the meter interrogation.

Audit observation

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

Audit commentary

Compliance with this clause has been demonstrated by Contact's agents and MEPs as part of their own audits.

Audit outcome

Compliant

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

Code reference

Clause 11(1) Schedule 15.2

Code related audit information

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

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

Audit observation

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

Generation data is collected by Contact. Processes to provide HHR generation information were reviewed. I traced volumes through Oracle, MV90 and SAP for one meter. This process is automated so a small sample is considered appropriate.

Audit commentary

HHR data

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

Generation data

Contact collects generation data via the services access interface. Back-up meters are installed at every generation installation, which eliminates the requirement for manual data interrogation, and processes have therefore not been established for this activity. The backup meters are off the same measuring transformers. There are also backup Scada installations with separate CTs, VTs and meters.

Audit outcome

Compliant

6.13. HHR interrogation data requirement (Clause 11(2) Schedule 15.2)

Code reference

Clause 11(2) Schedule 15.2

Code related audit information

The following information is collected during each interrogation:

11(2)(a) - the unique identifier of the data storage device

11(2)(b) - the time from the data storage device at the commencement of the download unless the time is within specification and the interrogation log automatically records the time of interrogation

11(2)(c) - the metering information, which represents the quantity of electricity conveyed at the point of connection, including the date and time stamp or index marker for each half hour period. This may be limited to the metering information accumulated since the last interrogation

11(2)(d) - the event log, which may be limited to the events information accumulated since the last interrogation

11(2)(e) - an interrogation log generated by the interrogation software to record details of all interrogations.

The interrogation log must be examined by the reconciliation participant responsible for collecting the data and appropriate action must be taken if problems are apparent or an automated software function flags exceptions.

Audit observation

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

Generation data is collected by Contact. Interrogation logs for generation station metering were viewed.

Audit commentary

HHR data

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

Generation data

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

- the unique identifier (Serial no) 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 list of events is recorded in the revenue and power management system and includes the following:

- hardware errors
- firmware errors
- ROM and RAM memory errors
- power supply events
- programming events
- programming errors
- EEPROM and cartridge messages
- status input monitoring
- control relay states
- time and clock messages
- interval value monitoring.

Event log information is provided to the appropriate generation station for review. If any actions are required, the instruction will be provided by generation engineers as required.

Audit outcome

Compliant

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

Code reference

Clause 11(3) Schedule 15.2

Code related audit information

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

11(3)(a)- the date of interrogation

11(3)(b)- the time of commencement of interrogation

11(3)(c)- the operator identification (if available)

11(3)(d)- the unique identifier of the meter or data storage device

11(3)(e)- the clock errors outside the range specified in Table 1 of clause 2

11(3)(f)- the method of interrogation

11(3)(g)- the identifier of the reading device used for interrogation (if applicable).

Audit observation

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

Generation data is collected by Contact. Interrogation logs for generation station metering were reviewed.

Audit commentary

HHR data

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

Generation Data

For generation metering an interrogation log is generated to record details of all interrogations and the audit confirmed that appropriate action is taken where problems are apparent.

The interrogation log contains the following information:

- the date of interrogation
- the time of commencement of interrogation
- the operator identification (for non-scheduled data collection)
- the unique identifier of the meter or data logger
- the clock errors outside the range specified in clause 12
- the method of interrogation.

Audit outcome

Compliant

7. STORING RAW METER DATA

7.1. Trading period duration (Clause 13 Schedule 15.2)

Code reference

Clause 13 Schedule 15.2

Code related audit information

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

Audit observation

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

Contact's clock synchronisation process ensures that trading period duration for generation meters is normally 30 minutes within ± 2 seconds. A sample of clock synchronisation events were reviewed.

Audit commentary

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

Contact's clock synchronisation process for generation meters is discussed in **section 6.5**. I viewed one example of a time difference of -6 seconds for a trading period, which was appropriately resolved according to Contact's clock synchronisation process.

Audit outcome

Compliant

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

Code reference

Clause 18 Schedule 15.2

Code related audit information

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

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

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

Audit observation

Processes to archive and store raw meter data were reviewed.

Audit commentary

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

HHR data

HHR data received from Contact's agents is imported into HDM. Access to HDM is restricted using a login and password.

HHR information is retained for more than 48 months in HDM, and I viewed data from 2014 during the audit. I viewed audit trails and confirmed that data cannot be modified without an audit trail being created.

Generation data

Generation data is retained for more than 48 months, and I viewed archived MV90 metering data from 2012 and Generation Management System (GMS) days from 2006. I observed the process to enter and correct data and confirmed that data cannot be modified without an audit trail being created.

AMI and meter reader data

A sample of 37 readings received from Contact's agents and MEPs were compared to information contained in SAP, and the readings were the same, confirming the security of this process.

Meter read data is retained for more than 48 months; I viewed data from 2013 during the audit.

I viewed audit trails and confirmed that data cannot be modified without an audit trail being created.

Audit outcome

Compliant

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

Code reference

Clause 21(5) Schedule 15.2

Code related audit information

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

Audit observation

Processes to archive and store non-metering data were reviewed.

Audit commentary

The main non-metering information is on/off time logs for distributed unmetered load and SCADA records supporting on/off times for NHH profiles. This data is received in a password protected email and loaded into SAP to create interval profiles.

The data is stored securely and retained indefinitely; I viewed data from 2014 during the audit.

Audit outcome

Compliant

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

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

Code reference

Clause 19(1) Schedule 15.2

Code related audit information

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

19(1)(a) - confirmation of the original meter reading by carrying out another meter reading

19(1)(b) - replacement of the original meter reading by another meter reading (even if the replacement meter reading may be at a different date)

19(1)(c) - if the original meter reading cannot be confirmed or replaced by a meter reading from another interrogation, then an estimated reading is substituted and the estimated reading is marked as an estimate and it is subsequently replaced in accordance with clause 4(2).

Audit observation

Processes for correction of NHH meter readings were reviewed. A diverse sample of 30 corrections were reviewed. This included checking that updated consumption data flowed through to revision reconciliation submissions.

Audit commentary

Where errors are detected during validation of non-half hour meter readings, a check reading is performed, or AMI data is checked. If an original meter reading cannot be confirmed, then an estimated reading is used and is labelled as an estimate in SAP.

A spreadsheet template is used to estimate consumption in situations where meters are determined to be recording incorrectly or are stopped. The template uses historic consumption where it is available, or future consumption from check reads. This activity is conducted by a limited number of experienced staff in the revenue assurance and reconciliation teams to ensure accuracy and consistency.

The correction is then processed in SAP by either:

1. Reversing the bill, correcting the readings, and rebilling.
2. Adding consumption to an existing reconciliation period record. This allows the change to be independent of billing to the customer if necessary.
3. Where a meter is stopped, faulty, or bridged, Contact can close the meter on an estimated closing read which includes the unrecorded consumption and restart the meter on the correct read.

For each of the correction methods the consumption will flow through to reconciliation submissions.

Correction occurs within the 14-month period if the period affected is longer than 14 months. This ensures all consumption is accounted for.

Defective meters

I checked five examples of suspected stopped or faulty meters. In all cases corrections had been appropriately processed, and the full correction was within the 14-month period.

Incorrect multipliers

Contact confirmed that no examples of incorrect multipliers were identified during the audit period.

Bridged meters

Bridged meters requiring correction are identified by searching for field services jobs with the word or part word “bridge” in the description.

Consumption during the bridged period is estimated based on the daily average consumption while unbridged. For new switch ins this is calculated based on the daily average consumption in the CS file, and for existing customers it is based on the actual daily average consumption before or after the bridged period occurred.

I reviewed ten examples of bridged meters and found:

- for two ICPs, another retailer was responsible for the entire bridged period and no correction was necessary
- for seven ICPs, corrections were appropriately processed based on the daily average in the CS file, the consumption following the meter being unbridged, or AMI readings
- for ICP 0000442007UN246, no correction was processed due to a misunderstanding; because the gain read was low, the consumption between the gain read and next actual read was much larger than expected and was thought to be sufficient to cover the bridged consumption. This is recorded as non-compliance below.

Contact monitors ICPs believed to be bridged fortnightly, and processes corrections. There are sometimes delays in processing corrections, but I did not find any corrections which had not been processed within 14 months.

- I identified three ICPs where meters were unbridged in March 2018, but corrections had not been processed. I found that in all cases, Contact was aware that a correction was required and was awaiting reads, so that the correction could be accurately estimated and added to a new historic estimate reconciliation record.
- A further three ICPs which were indicated to have bridged meters since 2017 were identified. For two ICPs Contact was unable to gain access to the site and was working with the network to resolve the issue. The other was believed not to be bridged.

Addition of missing registers

I reviewed two examples of corrections for missing meter registers.

- For ICP 0000041148NT3EE, the contractor recorded that the meter had been removed, but Contact later confirmed that it was still on site. The correction dated back to 2015, and all consumption was pushed into the last 14 months with the consumption added to the reconciliation period record for April 2018. This record was subsequently overwritten, and the correction was lost. This is recorded as non-compliance below.
- For ICP 0000951147LN727, Contact was advised the meter had one register when the new connection was completed in July 2017 but subsequently discovered there was more than one register. A correction was appropriately processed.

Consumption while inactive

Contact maintains a report of inactive sites with consumption, which is refreshed every month. Each ICP is investigated prior to being corrected to determine whether it has genuine consumption or a meter reading error. Contact has put significant effort into manually processing these corrections, and all exceptions are reviewed and acted upon each month. The reconciliation team is working with ICT to develop a more automated solution.

Depending on the volume of consumption, a correction is processed by either:

1. Correcting the status of the ICP to active for all days where consumption occurred; or
2. Adding additional consumption to an existing reconciliation period record. This allows the change to be independent of billing to the customer.

I reviewed an extreme case sample of the ten ICPs with the highest consumption while disconnected from July 2017 onwards:

- five were corrected by making the ICP active for the period where the consumption occurred
- two were corrected by moving the consumption into an active period - one switched out, so the consumption was moved prior to the switch out date but the other remained with Contact
- three were still being investigated by Revenue Assurance to confirm that the consumption was genuine; once confirmed a correction will be processed.

Whilst the recent examples are being acted upon appropriately, there are still some historic issues where consumption was not submitted, as recorded in **section 3.9**.

Transposed meters

When a meter reading is found to be transposed, Contact corrects the data by moving the readings to be recorded against the correct registers. Three ICPs with transposed readings were reviewed and found to be compliant.

Audit outcome

Non-compliant

Non-compliance	Description
Audit Ref: 8.1 With: Clause 19(1) Schedule 15.2 From: 2015 To: 2018	One correction for addition of a missing register was overwritten. One bridged meter did not have a correction processed. Potential impact: Low Actual impact: Low Audit history: None Controls: Strong Breach risk rating: 1
Audit risk rating	Rationale for audit risk rating
Low	The controls are assessed to be strong: <ul style="list-style-type: none"> • Contact recognised that additions to reconciliation records could be lost where the reconciliation period consumption was recalculated by SAP. A system change to make these corrections permanent was implemented in May 2018, shortly after the affected correction was processed. The non-compliance is not expected to recur. • Most of the corrections for bridged meters reviewed were processed correctly. The correction that was not processed due to a misunderstanding. The audit risk rating is low, because only two ICPs were affected.

Actions taken to resolve the issue	Completion date	Remedial action status
The system defect relating to ICP 0000041148NT3EE where the consumption correction was overwritten has been resolved and the correction has now been reapplied. ICP 0000442007UN246 relates to human error – the correction has now been applied	Resolved	Cleared
Preventative actions taken to ensure no further issues will occur	Completion date	

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

Code reference

Clause 19(2) Schedule 15.2

Code related audit information

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

19(2)(a) - if a check meter or data storage device is installed at the metering installation, data from this source may be substituted

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

Audit observation

Processes for correction of HHR meter readings were reviewed.

Five HHR corrections were reviewed. This included checking that updated consumption data flowed through to revision reconciliation submissions.

Audit commentary

HHR Data

EDMI does not provide any data estimates or corrections. In some circumstances AMS may provide information used to prepare estimates and corrections.

I viewed a diverse sample of five corrections during the audit period, including:

- removal of false load run through the meter for a load check, the correction was prepared by AMS and loaded into HDM by Contact
- addition of unrecorded load that occurred during a meter replacement
- replacement of missing data due to power outages with zeros
- replacement of missing data due to a meter fault.

All corrections were processed accurately, and estimates applied were reasonable. In all cases an appropriate audit trail was created which included:

- date

- time
- operator ID
- data Corrected
- technique used
- reason for alteration.

Following correction, the original data was still available.

Generation data

Where errors are detected during validation of half-hour generation metering information the first course of action is to use data from back-up metering that is installed at all metering installations. In the unlikely event that back-up data is not available, estimation is performed using SCADA data. Corrections are made based on instructions from generation engineers.

In all cases a “Revenue metering error correction journal” is created which notes the following:

- date
- time
- operator ID
- data Corrected
- technique used
- reason for alteration.

I checked three generation data correction examples, and found the corrections were accurate and compliant journals were created. Two corrections related to in situ calibration work and the correction data was provided by generation engineers; the other related to an overlap where the same time period was recorded in two files, and one needed to be removed.

Audit outcome

Compliant

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

Code reference

Clause 19(3) Schedule 15.2

Code related audit information

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

Audit observation

Error and loss compensation was discussed, and processes in place reviewed.

Audit commentary

Contact does not deal with any loss and compensation arrangements. If a compensation arrangement was in place, this would be identified through the load check process employed at the time of certification or recertification.

Audit outcome

Compliant

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

Code reference

Clause 22(1) and (2) Schedule 15.2

Code related audit information

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

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

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

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

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

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

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

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

Audit observation

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

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

Audit commentary

Compliance with this clause has been demonstrated by Contact's MEPs and agents.

I reviewed journals for NHH, HHR, and generation data corrections and noted that they were compliant with the requirements of this clause.

Audit outcome

Compliant

9. ESTIMATING AND VALIDATING VOLUME INFORMATION

9.1. Identification of readings (Clause 3(3) Schedule 15.2)

Code reference

Clause 3(3) Schedule 15.2

Code related audit information

All estimated readings and permanent estimates must be clearly identified as an estimate at source and in any exchange of metering data or volume information between participants.

Audit observation

A sample of reads and volumes were traced from the source files to Contact's systems in **section 2.3**.

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

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

Audit commentary

Readings are clearly identified as required by this clause.

Audit outcome

Compliant

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

Code reference

Clause 3(4) Schedule 15.2

Code related audit information

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

3(4)(a) - validated meter readings

3(4)(b) - estimated readings

3(4)(c) - permanent estimates.

Audit observation

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

Audit commentary

Review of submission data confirmed that it is based on readings as required by this clause.

Audit outcome

Compliant

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

Code reference

Clause 3(5) Schedule 15.2

Code related audit information

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

Audit observation

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

NHH data is collected by MEPs and agents, and HHR data is collected by AMS and EDMI. Compliance was assessed as part of their MEP and agent audits. Readings for a diverse sample of 37 NHH ICPs and 10 HHR ICPs were traced from the source files to Contact's systems to confirm whether data was rounded or truncated on import.

Generation data is collected by Contact.

Audit commentary

NHH and HHR data

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

Manual meter readings do not record decimal places, and are not rounded or truncated on import into SAP. The AMI data checked matched the source data provided.

HHR data is not rounded or truncated on import.

Generation data

For generation data I traced a sample of reads from MV90 to SAP for one day and confirmed that reading data is recorded with eight decimal places in both systems. Generation meter data is not rounded or truncated.

Audit outcome

Compliant

9.4. Half hour estimates (Clause 15 Schedule 15.2)

Code reference

Clause 15 Schedule 15.2

Code related audit information

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

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

Audit observation

The HHR estimate process was examined, and a sample of four estimates were reviewed.

Estimates for generation stations are rare due to the high degree of metering accuracy and use of check metering as described in **section 9.6**. No examples of generation data estimates were identified during the audit period.

Audit commentary

HHR data

Contact's HDM system will automatically create an estimate in situations where data is temporarily not available. This estimate is based on historic data and this process is considered compliant with the requirement to use reasonable endeavours to ensure the estimated data is accurate to within 10%. There is a peer review of all estimates over 1,000 kWh.

I viewed four examples where HHR data was estimated:

- for two, the data was estimated as zero due to a power outage
- for two, the data was appropriately estimated based on historic consumption patterns for a similar period.

Generation data

Estimates are fairly rare for generation metering. The generation engineers provide compensated data from the secondary metering at the station when estimates are required.

No estimates occurred during the audit period.

Audit outcome

Compliant

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

Code reference

Clause 16 Schedule 15.2

Code related audit information

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

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

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

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

16(2)(d) - confirmation that there is no obvious corruption of the data, including unexpected 0 values.

Audit observation

I reviewed and observed the NHH data validation process, including checking a sample of data validations and monitoring to ensure that billing validation issues were resolved in a timely manner.

I reviewed system documentation confirming the meter reading validations configured in SAP.

Audit commentary

Data validation for NHH metering information occurs at multiple levels.

For meters manually interrogated by Datacol and Wells, a validation within their hand held device identifies readings outside specified high/low parameters, and prompts the reader to check the reading. This process is discussed further in the agent audit reports.

Datacol and Wells also check the condition of the meters, to identify issues that could affect meter accuracy or safety. If an issue is identified, the appropriate condition code is entered into the hand held device, and is later provided to Contact. This process is discussed further in **section 6.6**.

For AMI meters, the MEPs have access to meter event and clock synchronisation information that may identify issues with meter accuracy. The process to receive and review this information is discussed in **section 9.6**.

The data is validated once it is received by Contact.

Firstly, the file import process identifies any file errors or corruption and creates an exception.

Once successfully imported, the billing validations identify any consumption outside prescribed limits and creates an exception. Contact revised these limits on 19 June 2018, following a review of their billing exception processes. ICPs are classified as smart (AMI) or standard, and smaller acceptable ranges have been set for standard meters. A summary of the validations and changes from 19 June 2018 are set out below:

Validation type	Change on 19 June 2018
High consumption	Separate limits for AMI and standard meters
Extra high consumption	Separate limits for AMI and standard meters
Low consumption	Separate limits for AMI and standard meters, and different metering categories
Zero consumption	No change
Negative consumption	An out of cycle read is requested automatically if the read is lower than the previous reading
Vacant consumption >0 units	No change
Disconnected consumption >2 units	No change
Short or long bill period	No change

When exceptions are created they are assigned to users through Billing Process Exception Management (BPEM). Each type of exception is assigned to one or two primary users, and in their absence, they are assigned to another user by the Billing Team Leader. This ensures that the user normally dealing with the exception type is very familiar with it, and the team are cross trained to deal with other types of exceptions.

The users investigate each exception, starting with the oldest and highest priority ones and work through them until they are cleared. If an exception is not resolved on the first day because it requires further investigation, the BPEM will remain until it is resolved.

The Billing Team Leader closely monitors the billing BPEMs and reassigns or escalates them as necessary. I observed this process and noted it was well managed.

Consumption on disconnected ICPs is monitored by the reconciliation and revenue assurance teams. The reconciliation team processes corrections to ensure that any disconnected consumption is included in reconciliation submissions. This process is discussed in **section 8.1**.

Long term zero consumption is monitored by the revenue assurance team. Contact has a weekly report containing ICPs with zero consumption. This is filtered to exclude ICPs where zero is expected (season tariffs or holiday homes etc.), then investigations occur for the remainder. Corrections to consumption are conducted in accordance with the process described in **section 8.1**.

Contact provided a report of Pre-Payment ICPs where a “vend” had not occurred for a three-month period. This report is run quarterly and the most recent report for April 2018 contained 267 records. All ICPs had been investigated and remedial actions were underway or complete where required.

Audit outcome

Compliant

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

Code reference

Clause 17 Schedule 15.2

Code related audit information

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

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

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

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

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

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

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

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

Audit observation

I reviewed and observed the HHR, generation, and AMI data validation processes, including checking a sample of data validations and validation setting documentation.

Audit commentary

Electronic data used to determine volume information is provided by MEPs, AMS and EDMI as agents, and by Contact for generation information.

This function was examined as part of the MEP and agent audits and found to be compliant.

Generation data

For generation station metering, interrogation occurs every half hour so there is little risk that data will be overwritten. The installed data loggers have a data storage capacity of at least 30 days, which provides

an additional level of security in relation to this clause. Data is received hourly by the Oracle database and updated in SAP four times daily. I saw evidence of these updates during the audit.

Contact's validation process is unique in that each metering installation contains primary metering and back-up metering, plus SCADA data. The SCADA system generally uses a separate set of CTs and its own VT.

This arrangement reduces the need for an analysis-based data validation process; at the end of each month, Contact conducts a comparison between the primary data in MV90 and the SCADA data in Oracle. I observed this process. If there are any exceptions data from the primary meter, check meter and SCADA are compared to identify where the issue lies. This level of validation, in conjunction with a review of the event list, achieves compliance with the intent of this clause.

MV90 stores all meter event log information, and these logs are checked daily using a report which summarises the information from the event logs to allow more efficient review. I sighted event logs during the audit, and observed the process to review them, and action taken as a result of this review.

HHR data

A HHR load check occurs on switch in. This is discussed further in **section 8.3**.

On business day one of each month, data is received via the portal or TIBCO, and imported into HDM.

A further level of validation occurs when data is uploaded into the HDM system, and exception reports (dataset warnings) are generated. These exceptions are shared between the HDM team, who review and either approve the exception or estimate replacement data if necessary. In some cases, resolution involves contacting the customer or escalating issues to the sales team. The NEO graphing tool is used to chart HDM information to assist with analysis.

I walked through the validation process, including reviewing a sample of exceptions of each type for data provided by AMS and EDM I.

The following checks are performed:

- **File format and file content errors.** This includes instances where data is provided for unexpected channels or meters for the ICP, or the ICP has not been set up because Contact is awaiting paperwork.
- **Consumption averages are inconsistent with the previous three months.** These exceptions are investigated by reviewing historic consumption patterns using the NEO graphing tool and asking the Account Manager to confirm the consumption with the customer. If there is a suspected meter accuracy issue, a field services job will be raised with the MEP.
- **Consecutive zeros.** If the consecutive zeros are consistent with the customer's previous consumption, they will pass validation. If consecutive zeros are unexpected, they will fail validation. I reviewed an example where an ICP suddenly dropped to zero during the month and saw evidence of the Account Manager's correspondence with the customer, confirming that the site was closed, and zero consumption was expected.
- **Data spikes in KVARH or kWh inconsistent with the previous month,** including either two instances where variance is more than 50%; four instances where variance is more than 30%; or seven instances where variance is more than 20%. Spikes are graphed and reviewed against surrounding data and each other to determine whether they are reasonable or further investigation is required.
- **Insufficient data for validation.** This check identifies sites with less than three months of consumption history available for checking. These ICPs are reviewed manually to determine whether consumption appears reasonable.

- **All new connections, switch ins, upgrades, downgrades, meter reprograms, and meter changes** processed are independently checked by the HDM Team Leader or HDM Team Analyst. Sharepoint is used to track this approval and management process, and I saw evidence of the review process.

Overall, the level of validity checking is viewed as being of a high industry standard.

I viewed meter event information provided by AMS and EDM, which is provided at the end of each month. AMS also separately email any events which they believe require action. There is no formal process to review and act upon the HHR meter event information, reliance is placed on the other validation checks. Time synchronisation and meter events are scanned through and any items of concerns are escalated to HDM team management, max kVA events are not reviewed.

Review of the event information provided for May 2018 identified only one event of concern, the large time difference for ICP 0000555694NR13E, discussed in **sections 6.5** and **12.7**.

AMI

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.”

Emails containing information on time synchronisation, faults and possible tampering events are sent by AMS, ARC and Metrix. These event emails are sent to the field services team review and action. I saw examples of these emails from AMS and Metrix relating to voltage frequency issues, load side voltage, phase failure, tampering, and reverse rotation. In all cases checked, the issue was investigated, and corrective action taken where necessary.

Contact has been developing a process to review the full meter event information they receive from MEPs using their COLA database. Analysis has been completed on how the event information could be efficiently used to identify metering issues, including comparison of meter event data to SAP data, the registry, and other events for the same ICP. Queries have been developed to identify issues for investigation and results have been passed to the appropriate teams to test and compare against their own findings. I saw the results of queries identifying reverse rotation, tampering, and phase failure errors for investigation. Eventually Contact hopes to automate these processes, but this automation project is currently on hold while Contact reviews and prioritises its system projects.

AMI data is validated using the NHH validation process described in **section 9.5**.

Audit outcome

Non-compliant

Non-compliance	Description
Audit Ref: 9.6 With: Clause 17 Schedule 15.2 From: 01-Jul-17 To: 20-Jun-18	HHR meter event information is not formally reviewed and acted upon. Full NHH meter event information is not reviewed, but events emailed by the MEPs are reviewed and acted upon. Potential impact: Low Actual impact: Low Audit history: Multiple times Controls: Moderate Breach risk rating: 2

Audit risk rating	Rationale for audit risk rating		
Low	<p>The controls are moderate because critical events are being monitored.</p> <p>The audit risk rating is low, reliance is placed upon Contact's other validation checks, which are comprehensive.</p>		
Actions taken to resolve the issue		Completion date	Remedial action status
<p>Contact has implemented a manual review of its C&I event log reports to ensure its data collectors are identifying critical issues relating to the integrity of the meters.</p> <p>Contact is also looking to formalise its monitoring of smart meter event logs via exception reporting over the next 6 months</p>		<p>Resolved</p> <p>March 2019</p>	Identified
Preventative actions taken to ensure no further issues will occur		Completion date	

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

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

Code reference

Clause 13.136

Code related audit information

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

- *that injects electricity directly into a local network; or*
- *if the meter configuration is such that the electricity flows into a local network without first passing through a grid injection point or grid exit point metering installation.*

Audit observation

Provision of HHR metering information is provided by EMS. Review of the EMS audit report confirmed that this process is managed in a compliant manner.

Audit commentary

Generation data is sent to EMS directly from SAP, according to a system schedule. EMS monitors to ensure that the data is received on time, and Contact staff also complete monitoring to ensure that all data is released prior to leaving for the day.

Audit outcome

Compliant

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

Code reference

Clause 13.137

Code related audit information

Each generator must provide the pricing manager and the relevant grid owner half-hour metering information for:

- *any unoffered generation from a generating station with a point of connection to the grid 13.137(1)(a)*
- *any electricity supplied from an intermittent generating station with a point of connection to the grid. 13.137(1)(b)*

The generator must provide the pricing manager and the relevant grid owner with the half-hour metering information required under this clause in accordance with the requirements of Part 15 for the collection of that generator's volume information (clause 13.137(2))

If such half-hour metering information is not available, the generator must provide the pricing manager and the relevant grid owner a reasonable estimate of such data (clause 13.137(3)).

Audit observation

This process is managed by EMS on behalf of Contact. Review of the EMS audit report confirmed that this process is managed in a compliant manner.

Audit commentary

This process is managed by EMS on behalf of Contact. Review of the EMS audit report confirmed that this process is managed in a compliant manner.

Audit outcome

Compliant

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

Code reference

Clause 13.138

Code related audit information

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

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

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

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

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

Audit observation

This process is managed by EMS on behalf of Contact. Review of the EMS audit report confirmed that this process is managed in a compliant manner.

Audit commentary

EMS manage this process for Contact, their agent audit report is attached as an appendix.

In most instances, EMS collects the data as an agent for generators. Interrogation begins at midnight and is complete before 0500 on each day. Some data is provided by the generator to EMS and this data was provided by 0430 for a selection of days checked.

Any loss adjustment relative to the grid injection point is normally made within the metering installation at the time of installation and commissioning.

Audit outcome

Compliant

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

Code reference

Clause 13.140

Code related audit information

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

Audit observation

This process is managed by EMS on behalf of Contact. Review of the EMS audit report confirmed that this process is managed in a compliant manner.

Audit commentary

EMS is the agent to the grid owner and they have the data by 0500, therefore notification is not required.

Contact receives an email when data sent to EMS has failed or needs to be estimated, and these are acted upon by Contact.

Audit outcome

Compliant

11. PROVISION OF SUBMISSION INFORMATION FOR RECONCILIATION

11.1. Buying and selling notifications (Clause 15.3)

Code reference

Clause 15.3

Code related audit information

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

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

Audit observation

Processes to create buying and selling notifications were reviewed, and trading notifications for new profiles applied during the audit period were reviewed.

Audit commentary

Over 200 trading notifications were issued in 2017-2018. This is an increase from 70 in the 2016-2017 year, due to an increase in the number of ICPs submitted as HHR.

Checks that valid trading notifications are in place are part of the reconciliation report validation checks, discussed in **section 12.3**. I observed this process and noted that it matched the submission data with open trading notifications and identified any mismatch. The mismatches are reviewed by the reconciliation team, and notifications are provided via the reconciliation portal as needed.

In addition, the reconciliation portal will not accept any submission where a valid trader notification is not in place.

Audit outcome

Compliant

11.2. Calculation of ICP days (Clause 15.6)

Code reference

Clause 15.6

Code related audit information

Each retailer and direct purchaser (excluding direct consumers) must deliver a report to the reconciliation manager detailing the number of ICP days for each NSP for each submission file of submission information in respect of:

15.6(1)(a) - submission information for the immediately preceding consumption period, by 1600 hours on the 4th business day of each reconciliation period

15.6(1)(b) - revised submission information provided in accordance with clause 15.4(2), by 1600 hours on the 13th business day of each reconciliation period.

The ICP days information must be calculated using the data contained in the retailer or direct purchaser's reconciliation system when it aggregates volume information for ICPs into submission information.

Audit observation

The process for the calculation of ICP days was examined by checking five NSPs with a small number of ICPs to confirm the AV110 ICP days calculation was correct.

I reviewed variances for eight months of GR100 reports and found no large discrepancies.

Audit commentary

The process for the calculation of ICP days was examined by checking five NSPs with a small number of ICPs. The ICP days calculation was confirmed to be correct.

The following table shows the ICP days difference between Contact files and the RM return file (GR100) for all available revisions for several months. Negative percentage figures indicate that the Contact ICP days figures are higher than those contained on the registry. The discrepancies are very small and generally stable.

Month	Initial	1-Mth	3-Mth	7-Mth	14-Mth
Oct 2016	0.10%	0.08%	0.02%	-0.02%	-0.02%
Nov 2016	0.06%	0.07%	-0.01%	-0.02%	-0.02%
Dec 2016	0.05%	0.01%	-0.01%	0.04%	-0.02%
Jun 2017	-0.01%	-0.01%	-0.02%	-0.02%	-
Jul 2017	0.00%	-0.01%	-0.02%	-0.02%	-
Sep 2017	-0.01%	-0.01%	-0.02%	-0.03%	-
Oct 2017	0.00%	-0.01%	-0.04%	-	-
Nov 2017	-0.03%	-0.03%	-0.06%	-	-

Audit outcome

Compliant

11.3. Electricity supplied information provision to the reconciliation manager (Clause 15.7)

Code reference

Clause 15.7

Code related audit information

A retailer must deliver to the reconciliation manager its total monthly quantity of electricity supplied for each NSP, aggregated by invoice month, for which it has provided submission information to the reconciliation manager, including revised submission information for that period as non-loss adjusted values in respect of:

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

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

Audit observation

The process for the calculation of electricity supplied was examined by checking five NSPs with a small number of ICPs to confirm the AV120 billed calculation was correct.

GR130 reports for January 2016 onwards were reviewed to confirm whether the relationship between billed and submitted data appears reasonable.

Audit commentary

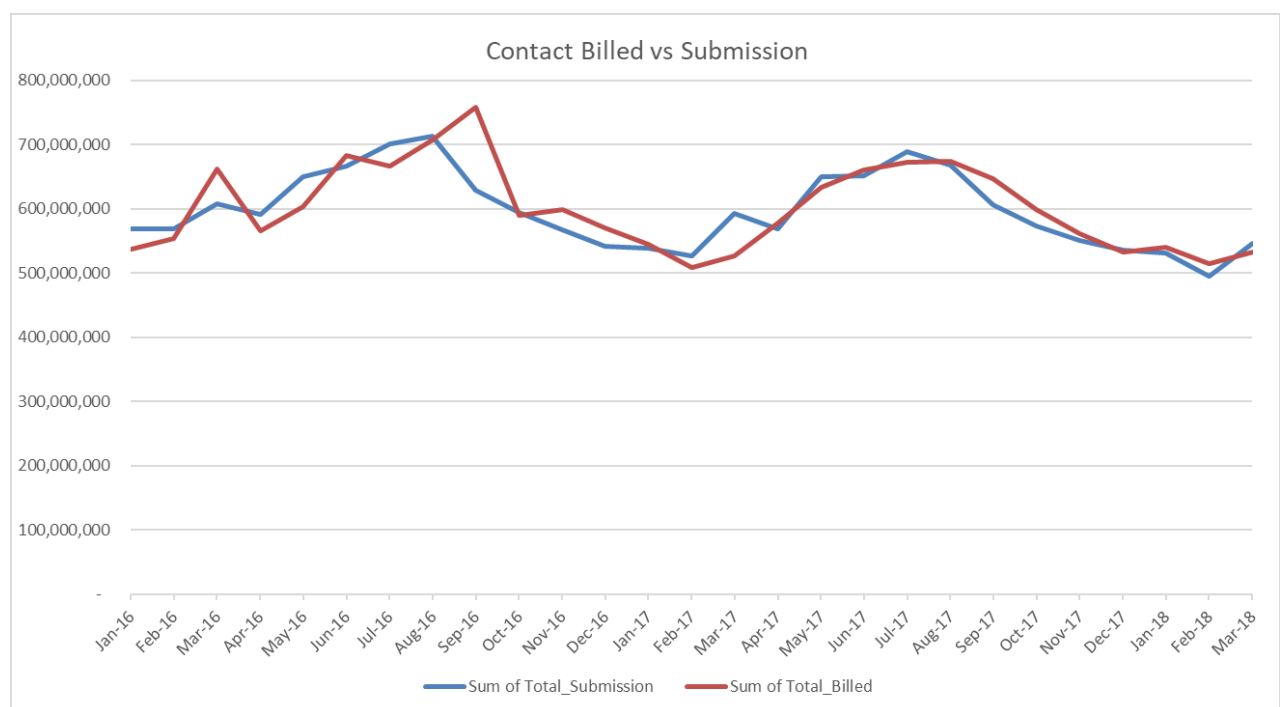
The accuracy of the NHH and HHR electricity supplied information was checked by examining five NSPs with a small volume and against the invoices in SAP. Compliance is confirmed.

The chart below shows a comparison between submissions and electricity supplied information. At an aggregate level, submitted data is 0.6% lower than billed data for the two years ended March 2018 and 1.13% higher than billed data for the year ended March 2018.

Contact monitors the GR130 on a rolling 12-month basis. A one-month offset is applied so that the billing and reconciliation periods are aligned. Contact's most recent GR130 review was completed in June 2018 and showed that for 156 (62%) of balancing areas, billed and submitted data was within $\pm 2\%$. I reviewed the largest differences and found most differences related groups of ICPs switching in on embedded networks, forward estimates, seasonal consumption patterns, and corrections.

AV120 data is also compared to previous AV120 submissions when the reports are created.

Comparison between submitted and billed kWh



Audit outcome

Compliant

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

Code reference

Clause 15.8

Code related audit information

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

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

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

Audit observation

I confirmed that the process for the calculation and aggregation of HHR data is correct, by matching HHR aggregates information with the HHR volumes data for five submissions and reviewing the process to match the volumes recorded in HDM with the volumes recorded in SAP for May 2018.

GR090 ICP Missing files were examined for all revisions for April 2017 to March 2018. An extreme case sample of the ten ICPs missing for the most months were reviewed.

Audit commentary

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

I confirmed that the process for the calculation and aggregation of HHR data. Some differences between the volumes and aggregates information were identified for December 2017, February 2018, and April 2018. The differences were investigated by Contact and found to be caused by:

- Six ICPs which had no loss factor available for aggregation because registry pricing events failed to load in SAP. The volume was excluded from the AV090 (volumes) file and included in the AV140 (aggregates) file. Missing loss factors most commonly occur where a new embedded network has not been fully set up in SAP prior to the registry pricing event being received. This issue was identified by Contact prior to the audit. Reporting is now in place to identify incomplete network and NSP details and update missing loss factors prior to submission. The affected data has been corrected and will be washed up. Contact estimates the impact will be approximately 933 kWh across December 2017 and April 2018.
- Two HHR ICPs were incorrectly assigned the RPS profile. Any register with RPS profile is excluded from the AV090 (volumes) file but is included in the AV140 (aggregates) file and AV110 (ICP days) file as long as submission type is set to HHR. Contact's reconciliation to the registry would normally allow this issue to be identified prior to submission, but the large volume of changes from NHH to HHR resulted in the issue being missed for some submissions. The profiles for the two affected ICPs have been corrected, and the consumption will be washed up. Contact estimates the impact will be approximately 1,400 kWh across the three months.

GR090 ICP Missing files were examined for all revisions for April 2017 to March 2018. An extreme case sample of the ten ICPs missing for the most months were reviewed. I found:

- Three disconnected ICPs were noted as missing from the registry because they were inactive but were correctly included in the aggregates with zero consumption.

- ICP 1000569787PC466 was correctly missing from the aggregates because it was never HHR. The registry incorrectly shows the ICP as HHR, but it is difficult to correct because Contact is no longer the retailer.
- For three ICPs, the settlement flags were incorrectly set due to human error and the ICPs were temporarily missing from the aggregates. In all cases the issue was corrected for revision submissions.
- For three ICPs a system defect reset the submission type from HHR to NHH in SAP, resulting in the ICPs temporarily not appearing in the aggregates submission. In all cases the issue was corrected for revision submissions, and the system defect has now been resolved.

As some AMI ICPs are moving from NHH to HHR settlement, there is an increased volume of ICP missing differences due to timing, which makes it impractical to monitor the ICP missing report. Instead, Contact reviews the ICP days report and compares it to a date ranged registry list to confirm that all ICPs are reported, and the ICP days reflect the submission type applied for each ICP.

Audit outcome

Non-compliant

Non-compliance	Description	
Audit Ref: 11.4 With: Clause 15.8 From: 01-Jul-17 To: 01-May-18	HHR aggregates file does not contain electricity supplied information. Data for eight ICPs was missing from some volumes files, due to inaccurate profiles and missing loss factors. The data has been corrected and will be washed up. Potential impact: Low Actual impact: Low Audit history: Twice previously Controls: Strong Breach risk rating: 1	
Audit risk rating	Rationale for audit risk rating	
Low	The issue relating to content of the aggregates file is an error in the code, Contact is providing submission information as expected. The impact of the missing volumes is low, and Contact has acted to correct the data and prevent recurrence of the issues.	
Actions taken to resolve the issue		Completion date
ICPs missing from AV090 due to system failing to load pricing event – these relate to incomplete embedded network set ups in Contact systems. Pricing events are validated upto upload into Contacts SAP system and where an embedded network is not set up correctly then the pricing event fails validation and is not loaded against the relevant ICP. This means the loss code for the ICP is set		Resolved
		Identified

<p>to null in the AV090 process. Contact has improved its monitoring of embedded network set ups and also it's AV090 to AV140 comparison to improve in AV090 submission accuracy.</p> <p>HHR submitted ICP with RPS profile code – these relate to human error when users install meter manually as a result of the automated workflow process failing to complete the meter installation. Contact has improved its monitoring of its AV090 to AV140 comparison to improve in AV090 submission accuracy and identify these exception before submission occurs</p> <p>Incorrectly set settlement relevant flags - these relate to human error when users install meter manually as a result of the automated workflow process failing to complete the meter installation. Contact has improved its monitoring of its AV090 to AV140 comparison to improve in AV090 submission accuracy and identify these exception before submission occurs</p> <p>Three disconnected ICPs excluded from AV090 but included in AV140 with zero consumption -</p> <p>ICP 1000569787PC466 – Registry has now been correctly updated.</p> <p>System defect reset the submission type from HHR to NHH in SAP - the system defect has now been resolved</p>	Resolved	The issues within Contact's control have all been resolved,
	Resolved	
	Resolved	
	Resolved	
	Resolved	
Preventative actions taken to ensure no further issues will occur	Completion date	

12. SUBMISSION COMPUTATION

12.1. Daylight saving adjustment (Clause 15.36)

Code reference

Clause 15.36

Code related audit information

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

Audit observation

Daylight savings processes for MEPs and agents were reviewed as part of their audits.

Daylight savings processes for generation occur automatically. The Windows Server or Domain Controller Upgrade & Replacement Time Synchronisation and time source testing document was reviewed.

A diverse characteristics sample adjustments to and from daylight savings were reviewed.

Audit commentary

Compliance with this clause has been demonstrated by Contact's agents and MEPs as part of their audits. Contact Energy's processes for generation data are compliant.

All HHR data provided to Contact is daylight savings adjusted using the "trading period run on" technique. This was confirmed by checking the files for the start and end of daylight saving. The correct number of trading periods were recorded in all cases.

An alleged breach of Part 15 clause 15.2 (1) (ref 1710CTCT1) occurred on 19/12/17, because Contact submitted NSP information that was incorrect due to an error made when adjusting for daylight savings. Contact's systems had automatically adjusted the data, but a staff member had processed a manual adjustment in error. The error was identified and resolved promptly, and corrected data was submitted. The breach was closed early with no action taken.

Audit outcome

Compliant

12.2. Creation of submission information (Clause 15.4)

Code reference

Clause 15.4

Code related audit information

By 1600 hours on the 4th business day of each reconciliation period, the reconciliation participant must deliver submission information to the reconciliation manager for all NSPs for which the reconciliation participant is recorded in the registry as having traded electricity during the consumption period immediately before that reconciliation period (in accordance with Schedule 15.3).

By 1600 hours on the 13th business day of each reconciliation period, the reconciliation participant must deliver submission information to the reconciliation manager for all points of connection for which the reconciliation participant is recorded in the registry as having traded electricity during any consumption period being reconciled in accordance with clauses 15.27 and 15.28, and in respect of which it has obtained revised submission information (in accordance with Schedule 15.3).

Audit observation

The process to create submissions was reviewed.

A sample of NHH ICPs were checked to make sure they are handled correctly, including:

- ten ICPs with standard or shared unmetered load
- 38 ICPs with distributed generation
- ten vacant ICPs with consumption; and
- ten inactive ICPs with consumption.

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

Audit commentary

No breaches had been recorded for late provision of submission information.

Data is reviewed prior to submission as discussed in **section 12.3**.

NHH

Contact prepares reconciliation submissions using reconciliation consumption generated by SAP. A sample of NHH ICPs were checked to make sure they are handled correctly:

- an extreme case sample of the ten ICPs with the most vacant consumption were checked and found to be correctly reported
- an extreme case sample of the ten ICPs with the most consumption while disconnected were checked, seven were correctly reported, and three were being investigated to confirm the consumption was genuine prior to a correction being processed
- a typical sample of 38 ICPs with distributed generation were checked and found to be correctly reported
- a sample of 10 ICPs with unmetered volumes were checked, including standard unmetered and shared unmetered, for one ICP there was a minor error in the daily unmetered kWh applied for submission which is recorded as non-compliance in section 12.7. This was due to a calculation error; the submission creation process was functioning as expected and compliance is recorded in this section.

Further information on calculation of historic estimate is recorded in **section 12.11**. The correction process is documented in **section 8.1**, and aggregation of the AV080 report was found to be compliant in **section 12.3**.

HHR

The AV090 and AV140 (half hour volumes and aggregates) submissions are discussed in **section 11.4** and **8.2**.

Generation

Generation submissions are completed by EMS, and compliance was confirmed during their agent audit.

Audit outcome

Compliant

12.3. Allocation of submission information (Clause 15.5)

Code reference

Clause 15.5

Code related audit information

In preparing and submitting submission information, the reconciliation participant must allocate volume information for each ICP to the NSP indicated by the data held in the registry for the relevant consumption period at the time the reconciliation participant assembles the submission information. Volume information must be derived in accordance with Schedule 15.2.

However, if, in relation to a point of connection at which the reconciliation participant trades electricity, a notification given by an embedded generator under clause 15.13 for an embedded generating station is in force, the reconciliation participant is not required to comply with the above in relation to electricity generated by the embedded generating station.

Audit observation

Processes to ensure that information used to aggregate the reconciliation reports is consistent with the registry were reviewed in **section 2.1**.

The processes to ensure that submissions are accurate were discussed and observed, including review of reports used in the process.

The process for aggregating the AV080 was examined by checking five NSPs with a small number of ICPs. The GR170 to AV080 files for five months and revisions were compared, to confirm zeroing occurs.

Audit commentary

NHH submissions

Contact runs the submission through an Access database for review prior to submission. In some cases issues are found with consumption that cannot be corrected in time for submission. In these cases, Contact manually estimates the consumption to ensure the issue does not affect submission accuracy thresholds. The submission file is generated from the reviewed Access database information. Non-compliance is recorded in **section 12.7** for two corrections which were not processed in time for the initial submission due to human error.

I walked through these pre-submission checks for May 2018 and confirmed that they included:

- ICPs using over 10,000 kWh per month are checked against a list of known high consuming ICPs. Any high consuming ICPs not found to be on the list are investigated.
- Identifying distributed generation issues, including invalid flow direction, inconsistency between profile and direction, no contract set up, or contract set up and no data in the report.
- Identifying invalid profiles, such as HHR.
- Identifying invalid loss codes, which are either missing or inconsistent with the network.
- Identifying NSPs with no contract set up. This typically occurs when new embedded networks are created and can be a timing issue between SAP and the registry. Contact will issue a trading notification prior to submission, and amend data as necessary.
- Identifying instances of historic estimate > total estimate. This occurs very rarely, typically only if a correction has not been processed accurately. The data is checked and corrected.
- Identifying missing profiles, to ensure data is reported for each of Contact's expected profiles. This includes processing of the forced profile changes for distributed generation ICPs and ICPs where the metering does not meet the conditions of their profile and consumption is submitted

under RPS. The differences between the profiles used for submission and recorded on the registry are discussed further in section 2.1.

- Identifying ICPs with potential consumption data defects, transposed reads, meter reader errors and AMI reads where unexpected errors are provided. These ICPs are investigated and their consumption is manually estimated to ensure the issues do not affect submission accuracy thresholds.
- Confirming that profile shape files are available for the NSP.

Once reviewed and any data issues have been resolved, a revised AV080 is produced from the database. This is entered into an Excel based AV080 check worksheet for further review. This NSP level check includes:

- initial submission – comparison to the previous month, which flags any variances greater than $\pm 500,000$ kWh and $\pm 5\%$
- revision submissions – comparison to the previous submissions for the month, which flags any variances $\pm 50,000$ kWh and $\pm 5\%$.

Anomalies are investigated at a more detailed level to confirm whether there is an issue that requires further investigation or correction.

Once all checks are complete, the file is saved as csv, run through the file checker and submitted.

GR170 and AV080 files for October 2016 (3 month), November 2016 (3 and 14 month), February 2017 (7 month) and March 2017 (7 month) were compared, and found to contain the same NSPs, confirming that zeroing is occurring as required.

HHR Submissions

HHR submissions are generated using SAP data. HHR submission is accurate and contains a number of validation steps to ensure accuracy.

- SAP and HDM HHR aggregate data is compared prior to submission and anomalies are investigated. Differences typically relate to DUMML streetlight information, switch and switch withdrawal timing, and a generation site which is not billed in SAP.
- For initial AV090 submissions, consumption is graphed at NSP level and checked for reasonableness against the previous month's submission. Consumption per NSP and loss factor is checked to identify changes of more than 10% from the previous month, which is then examined and comments are added to the file. Once this review is complete it is independently checked by the HDM Team Leader.
- For revision AV090 submissions, data is reviewed against the previous submission for the month. Any differences over approximately 15% are reviewed, and an informal materiality limit is applied to approve small kWh differences. Once this review is complete it is independently checked by the HDM Team Leader.

Generation

Generation submissions are completed by EMS, and compliance was confirmed during their agent audit.

Audit outcome

Compliant

12.4. Grid owner volumes information (Clause 15.9)

Code reference

Clause 15.9

Code related audit information

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

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

Audit observation

The registry list and NSP table were reviewed.

Audit commentary

Contact is not a grid owner; compliance was not assessed.

Audit outcome

Not applicable

12.5. Provision of NSP submission information (Clause 15.10)

Code reference

Clause 15.10

Code related audit information

The participant (if a local or embedded network owner) must provide to the reconciliation manager for each NSP for which the participant has given a notification under clause 25(1) Schedule 11.1 (which relates to the creation, decommissioning, and transfer of NSPs) the following:

- *submission information for the immediately preceding consumption period, by 1600 hours on the 4th business day of each reconciliation period (clause 15.10(a))*
- *revised submission information provided in accordance with clause 15.4(2), by 1600 hours on the 13th business day of each reconciliation period (clause 15.10(b)).*

Audit observation

The registry list and NSP table were reviewed.

Audit commentary

Contact is not a local or embedded network owner; compliance was not assessed.

Audit outcome

Not applicable

12.6. Grid connected generation (Clause 15.11)

Code reference

Clause 15.11

Code related audit information

The participant (if a grid connected generator) must deliver to the reconciliation manager for each of its points of connection, the following:

- *submission information for the immediately preceding consumption period, by 1600 hours on the 4th business day of each reconciliation period (clause 15.11(a))*
- *revised submission information provided in accordance with clause 15.4(2), by 1600 hours on the 13th business day of each reconciliation period (clause 15.11(b)).*

Audit observation

This process is managed by EMS as an agent. Data is no longer required to be sent to the Pricing Manager, only the Grid Owner.

Audit commentary

Generation submissions are completed by EMS, and compliance was confirmed during their agent audit.

Audit outcome

Compliant

12.7. Accuracy of submission information (Clause 15.12)

Code reference

Clause 15.12

Code related audit information

If the reconciliation participant has submitted information and then subsequently obtained more accurate information, the participant must provide the most accurate information available to the reconciliation manager or participant, as the case may be, at the next available opportunity for submission (in accordance with clauses 15.20A, 15.27, and 15.28).

Audit observation

Alleged breaches during the audit period were reviewed to determine whether any reconciliation submissions were late. Corrections were reviewed in **section 8.1** and **8.2**.

Audit commentary

Review of alleged breaches confirmed that no reconciliation submissions were made late.

Consumption on disconnected ICPs

As recorded in **section 3.9**, there are some historic examples of consumption on disconnected ICPs where submission did not occur.

Corrections

Corrections are discussed in **section 8.1** and **8.2**. A small number of accuracy issues occurred because corrections had not been processed correctly:

- During review of differences between revisions in section 12.12, I found two corrections had not been processed prior to the initial allocation. Both were completed by revision 1. The corrections process is manual, and they were missed due to human error.

- Corrections may be processed as an addition to an existing reconciliation consumption record. Where reads used to calculate that consumption record change, the consumption record is recalculated, and the correction can be lost. This issue is described further in section 8.1 for ICP 0000041148NT3EE. In April 2018, Contact made a system change to allow these corrections to become permanent, so they will remain if the consumption record that they are attached to changes.

Profiles

For some ICPs, the profile recorded on the registry differs to the profile applied for reconciliation submissions.

With the exception of 12 active ICPs that have wind or fresh water generation fuel type and a profile code of PV1, the ICPs with discrepancies had the correct profile code applied for reconciliation submissions and an incorrect code recorded on the registry.

The incorrect registry profile codes are recorded as non-compliance in **section 2.1**. The incorrect profile codes applied for submission for wind and fresh water generation are recorded as non-compliance below and discussed further in **section 6.1**.

Manual daylight savings adjustment in error

Contact Energy's systems correctly handle daylight savings adjustments.

An alleged breach of Part 15 clause 15.2 (1) (ref 1710CTCT1) occurred on 19/12/17, because Contact submitted NSP information that was incorrect due to an error made when adjusting for daylight savings. Contact's systems had automatically adjusted the data, but a staff member had processed a manual adjustment in error. The error was identified and resolved promptly, and corrected data was submitted. The breach was closed early with no action taken.

HHR clock synchronisation issue

ICP 0000555694NR13E is a Northpower HHR meter with data provided by AMS. The meter showed a 25,538 second (approximately 7 hour) clock synchronisation error on the 28 May 2018 time synchronisation report. Contact has followed up this error with the MEP. Until this issue is resolved, part of each day's consumption will be recorded and reported against a different day.

HHR volumes and aggregates

As discussed in **section 11.4**, two ICPs were temporarily missing from the HHR volumes submission due to incorrect profiles, and six were temporarily missing due to loss factors not being populated.

Some ICPs were temporarily missing from the ICP days submissions due to an incorrect submission type being recorded temporarily.

Unmetered

Daily unmetered kWh values are blank or incorrect for seven ICPs, as discussed in **section 3.7**.

For one standard unmetered ICP, the daily unmetered kWh applied for reconciliation was incorrect.

ICP	Unmetered load details - Distributor	Daily Unmetered kWh	May 2018 submission	Submission daily unmetered kWh	Difference in daily kWh
0000009096CP8BD	0023;12.0;1 - 12th share of 270w	0.27	8.06	0.26	0.01

Audit outcome

Non-compliant

Non-compliance	Description		
Audit Ref: 12.7 With: Clause 15.12 From: 01-Jul-17 To: 20-Jul-18	Some submission data was inaccurate. Potential impact: Medium Actual impact: Low Audit history: None Controls: Moderate Breach risk rating: 2		
Audit risk rating	Rationale for audit risk rating		
Low	The controls are rated as moderate, as they are sufficient to ensure that most submission information is accurate. The impact on settlement is rated as low because corrections were made or are in progress to be made during the revision process.		
Actions taken to resolve the issue		Completion date	Remedial action status

<u>Consumption on disconnected ICPs</u> Contact has reporting in place to identify any instance of this occurring and is resolving these at the earliest opportunity. <u>Corrections</u> These have now been resolved <u>Profiles</u> Contact is working with MEP to ensure LCD flags are correctly reflecting that actual certification status of this equipment. Contact has corrected the profile codes for the 12 generation sites where EG1 is the correct code. <u>Manual daylight savings adjustment in error</u> This issue related to human error and Contact has included additional validation check to ensure it does not happen again. <u>HHR clock synchronisation issue</u> The MEP has now synchronised this meter and Contact has adjusted the intervals either side of this time sync. Additionally the MEP is going to change the meter here to try and improve the time accuracy of this metering point. <u>HHR volumes and aggregates</u> Contact has applied additional checks in its AV140 to AV090 to identify these exceptions prior to submission <u>Unmetered</u> Contact has made steady progress in reducing the UNM mismatches between Distributors and its systems. There was only one exception identified in this audit that was due to human error due to new personnel learning this task. Additional training has been provided to reinforce the calculation of UNM load from the information provided on the registry.	Ongoing Resolved Ongoing Resolved Resolved Resolved Ongoing	Identified
Preventative actions taken to ensure no further issues will occur	Completion date	

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

Code reference

Clause 4 Schedule 15.2

Code related audit information

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

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

Three AV080 14-month revisions were reviewed to identify any forward estimate still existing. Documentation on the Automated Meter Reading Compliance (MRC) Process was reviewed.

Audit commentary

Review of three AV080 14-month revisions showed that some forward estimate remained.

Month	Forward estimate in Revision 14 (kWh)
Nov 2016	149,324
Dec 2016	139,050
Jan 2017	120,060
Total	408,434

The meter read compliance process described in **section 6.8** is followed to attempt to obtain an actual read within 12 months. Where an actual read is not obtained, an automated process changes an existing estimate read to become a permanent estimate. These estimates are validated against previous actual readings where available.

Ten NSPs where forward estimate remained at revision 14 were reviewed to determine the reasons for the forward estimate.

- For seven NSPs, the permanent estimate reads were not entered within 12 months of the previous actual read. For three of these, the permanent estimate read was entered after revision 14 was completed, and for the other four no permanent estimate read was entered.
- For the other three NSPs, the affected ICPs were disconnected on an estimate reading, and the meter reading compliance process was terminated. Contact intends to disconnect ICPs on a permanent estimate reading in future, which is expected to prevent recurrence of forward estimate in this situation.

The existence of forward estimate at revision 14 is recorded as non-compliance below.

Audit outcome

Non-compliant

Non-compliance	Description		
Audit Ref: 12.8 With: Clause 4 Schedule 15.2 From: 01-Jul-17 To: 01-May-18	Some estimates were not replaced by revision 14. Potential impact: Medium Actual impact: Unknown Audit history: Multiple times Controls: Moderate Breach risk rating: 2		
Audit risk rating	Rationale for audit risk rating		
Low	<p>The controls are rated as moderate, because there are processes in place to attain readings by revision 14 and enter permanent estimate readings. Contact plans to enter permanent estimates for disconnections and reconnections, which will reduce forward estimate volumes in the future.</p> <p>The potential impact is rated as low. There was 408,434 kWh of forward estimate over three months and the impact is dependent on the accuracy of these estimates. There are sound estimation processes, therefore I have recorded the audit risk rating as low.</p>		
Actions taken to resolve the issue		Completion date	Remedial action status
One scenario that was not included in our 365 no read process relates to disconnection / reconnection estimates where actual reads are unable to be obtained. Contact is working on a system enhancement to apply permanent estimates for disconnections and reconnections where no actual read is returned from this process, which will reduce forward estimate volumes in the future.		May 2019	Identified
Preventative actions taken to ensure no further issues will occur		Completion date	

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

Code reference

Clause 2 Schedule 15.3

Code related audit information

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

- *half hour volume information for each ICP notified in accordance with clause 11.7(2) for which there is a category 3 or higher metering installation (clause 2(1)(a))*
- *for each ICP about which information is provided under clause 11.7(2) for which there is a category 1 or category 2 metering installation (clause 2(1)(b)):*
 - a) *half hour volume information for the ICP; or*
 - b) *non half hour volumes information calculated under clauses 4 to 6 (as applicable).*

- c) *unmetered load quantities for each ICP that has unmetered load associated with it derived from the quantity recorded in the registry against the relevant ICP and the number of days in the period, the distributed unmetered load database, or other sources of relevant information (clause 2(1)(c))*
- *to create non half hour submission information a reconciliation participant must only use information that is dependent on a control device if (clause 2(2)):*
 - a) *the certification of the control device is recorded in the registry; or*
 - b) *the metering installation in which the control device is location has interim certification.*
- *to create submission information for a point of connection the reconciliation participant must apply to the raw meter data (clause 2(3)):*
 - a) *for each ICP, the compensation factor that is recorded in the registry (clause 2(3)(a))*
 - b) *for each NSP the compensation factor that is recorded in the metering installations most recent certification report (clause 2(3)(b)).*

Audit observation

Processes to ensure that information used to aggregate the reconciliation reports is consistent with the registry were reviewed in **section 2.1**.

Aggregation and content of reconciliation submissions was reviewed, and the registry list as at 22 May 2018 was reviewed.

Audit commentary

Compliance with this clause was assessed:

- All active ICPs with meter category 3 or higher have submission type HHR.
- Unmetered load submissions were checked in **section 12.2**.
- Some profiles requiring a certified control device are used. Contact is aware of the metering requirements of the profiles, and compliance was recorded in **section 6.3**. Where the metering is not compliant with the requirements of the profile, Contact applies RPS for submission.
- No loss or compensation arrangements are required.
- Aggregation of the AV080 reports was checked checking five NSPs with a small number of ICPs. NHH volume calculation was confirmed to be correct.

Audit outcome

Compliant

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

Code reference

Clause 3 Schedule 15.3

Code related audit information

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

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

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

Audit observation

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

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

Audit commentary

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

Audit outcome

Compliant

12.11. Historical estimate process (Clause 4 and 5 Schedule 15.3)

Code reference

Clause 4 and 5 Schedule 15.3

Code related audit information

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

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

Audit observation

Contact provided examples of historic estimate calculations, which were reviewed. The check of calculations included confirming that readings and Seasonal Adjusted Shape Values (SASV) were applied correctly. The table below shows that all scenarios tested are compliant.

Audit commentary

The table below shows that all scenarios are compliant. Where the actual scenario had not occurred during the audit period, Contact provided an example from their test system. The check of calculations included confirming that readings and shape files were applied correctly.

The process for managing shape files was examined. There is an automated process where the RM web server is polled for new files. The new files overwrite the old files, and if a new file is not available, the most recent file remains. Manual intervention is only required where a file has failed to upload. Typically failures occur only if a data value in one of the fields is not set up in SAP. The user will enter the data value in SAP's maintenance tables, and then move the file back to the source folder, so that it will be picked up for import.

Test	Scenario	Test expectation	Result
a	ICP becomes Active part way through a month	Consumption is only calculated for the Active portion of the month.	Compliant
b	ICP becomes Inactive part way through a month.	Consumption is only calculated for the Active portion of the month.	Compliant

Test	Scenario	Test expectation	Result
c	ICP become Inactive then Active again within a month.	Consumption is only calculated for the Active portion of the month.	Compliant
d	ICP switches in part way through a month on an estimated switch reading	Consumption is calculated to include the 1st day of responsibility.	Compliant
e	ICP switches out part way through a month on an estimated switch reading	Consumption is calculated to include the last day of responsibility.	Compliant
f	ICP switches out then back in within a month	Consumption is calculated for each day of responsibility.	Compliant
g	Continuous ICP with a read during the month	Consumption is calculated assuming the readings are valid until the end of the day	Compliant
h	Continuous ICP without a read during the month	Consumption is calculated assuming the readings are valid until the end of the day	Compliant
i	Rollover Reads	Consumption is calculated correctly in the instance of meter rollovers.	Compliant
j	Unmetered load for a full month	Consumption is calculating based on daily unmetered kWh for full month.	Compliant
k	Unmetered load for a part month	Consumption is calculating based on daily unmetered kWh for active days of the month.	Compliant
l	Network/GXP/Connection (POC) alters partway through a month.	Consumption is separated and calculated for the separate portions of where it is to be reconciled to.	Compliant
m	ICP with a customer read during the month	Customer reads are not used to calculate historic estimate, unless they have been validated against actual readings from another source.	Compliant
n	ICP with a photo read during the month	Photo reads are not used to calculate historic estimate, unless they have been validated against actual readings from another source.	Compliant
o	ICP has a meter with a multiplier greater than 1	The multiplier is applied correctly	Compliant

The 2017 audit found one example checked under test B had a read used in the reconciliation process that was not present in the live SAP system. I confirmed that this was because the scenario was created in the test system, and the non-compliance is cleared.

Audit outcome

Compliant

12.12. Forward estimate process (Clause 6 Schedule 15.3)

Code reference

Clause 6 Schedule 15.3

Code related audit information

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

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

Audit observation

The process to create forward estimates was reviewed.

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

Audit commentary

Contact's forward estimates are based on either:

- daily average consumption with temperature adjustment from an average at the same time the previous year, or if this isn't available then;
- daily average consumption from the previous read to read period with temperature adjustment, or if this isn't available then;
- the average daily consumption for the particular billing class.

If an ICP is vacant, daily average consumption of zero is applied for forward estimate.

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
Nov 2016	0	0	1	0	221
Feb 2017	1	1	2	-	223
Mar 2017	0	0	0	-	224
Apr 2017	0	2	0	-	224
May 2017	0	1	0	-	225
Jun 2017	0	0	0	-	225
Jul 2017	0	1	1	-	229
Aug 2017	0	0	0	-	231

Month	Revision 1	Revision 3	Revision 7	Revision 14	Total
Sep 2017	0	0	-	-	232
Oct 2017	0	3	-	-	235
Nov 2017	0	1	-	-	237
Dec 2017	0	3	-	-	238

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

Month	Revision 1	Revision 3	Revision 7	Revision 14
Nov 2016	-0.52%	0.06%	0.33%	0.20%
Feb 2017	1.45%	0.41%	0.10%	-
Mar 2017	-3.05%	-3.55%	-3.58%	-
Apr 2017	-0.78%	-0.46%	-0.96%	-
May 2017	-3.76%	-5.47%	-5.34%	-
Jun 2017	0.51%	0.05%	0.05%	-
Jul 2017	1.37%	-1.47%	-1.56%	-
Aug 2017	-1.66%	-1.07%	-1.09%	-
Sep 2017	0.37%	0.34%	-	-
Oct 2017	1.67%	4.49%	-	-
Nov 2017	3.38%	2.71%	-	-
Dec 2017	0.28%	-1.70%	-	-

I checked all differences over the threshold for the months reviewed. The differences related to:

- forward estimate had been too high or low, because insufficient read history was available for estimation
- forward estimate for irrigation sites which started or stopped consuming earlier or later than expected

- profile shapes provided by the NZRM being different to the profiles used to calculate forward estimate for the initial allocation
- two corrections were not applied in time for the initial allocation but were completed by revision 1. This is recorded as non-compliance in **section 12.7**.

Audit outcome

Non-compliant

Non-compliance	Description		
Audit Ref: 12.12 With: Clause 6 Schedule 15.3 From: Feb 17, Apr 17, May 17, Jul 17, Oct 17, Nov 17, Dec 17	The accuracy threshold was not met for all months and revisions. Potential impact: Low Actual impact: Low Audit history: Multiple times Controls: Strong Breach risk rating: 2		
Audit risk rating	Rationale for audit risk rating		
Low	Controls are rated as strong, as they are sufficient to ensure compliance to an acceptable level. Initial data is replaced with revised data and washed up.		
Actions taken to resolve the issue		Completion date	Remedial action status
Contacts overall submission accuracy is very good and where we have not been able to meet the accuracy thresholds the market impact is very low base on the consumptions volumes involved. Contact is continually looking as ways to improve its submission accuracy and we are looking at a system enhancement to improve the accuracy of our initial estimation values we apply to new customers where no historical consumption history exists for the ICP. Additionally Contact continue to improve its meter read performance to reduce the reliance on interim estimations within the settlement process.		May 2018	Identified
Preventative actions taken to ensure no further issues will occur		Completion date	

12.13. Compulsory meter reading after profile change (Clause 7 Schedule 15.3)

Code reference

Clause 7 Schedule 15.3

Code related audit information

If the reconciliation participant changes the profile associated with a meter, it must, when determining the volume information for that meter and its respective ICP, use a validated meter reading or permanent estimate on the day on which the profile change is to take effect.

The reconciliation participant must use the volume information from that validated meter reading or permanent estimate in calculating the relevant historical estimates of each profile for that meter.

Audit observation

The registry list as at 22 May 2018 was examined to identify all ICPs which had a profile change during the audit period. A diverse sample of 17 ICPs with profile changes including NHH to HHR upgrades, HHR to NHH downgrades and other profile changes were reviewed to confirm that there was an actual reading on the day of the profile change.

Audit commentary

All profile changes are conducted using an actual meter reading on the day of and/or the day before the profile change.

Audit outcome

Compliant

13. SUBMISSION FORMAT AND TIMING

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

Code reference

Clause 8 Schedule 15.3

Code related audit information

Submission information provided to the reconciliation manager must be aggregated to the following level:

- *NSP code (clause 8(a))*
- *reconciliation type (clause 8(b))*
- *profile (clause 8(c))*
- *loss category code (clause 8(d))*
- *flow direction (clause 8(e))*
- *dedicated NSP (clause 8(f))*
- *trading period for half hour metered ICPs and consumption period or day for all other ICPs (clause 8(g)).*

Audit observation

The process to ensure that AV080 submissions are accurate was discussed in **section 12.2**.

Processes to ensure that information used to aggregate the reconciliation reports is consistent with the registry were reviewed in **section 2.1**.

Zeroing in the AV080 submission is discussed in **section 12.3** and was found to be compliant.

Audit commentary

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

- NSP code
- reconciliation type
- profile
- loss category code
- flow direction
- dedicated NSP
- consumption period.

Audit outcome

Compliant

13.2. Reporting resolution (Clause 9 Schedule 15.3)

Code reference

Clause 9 Schedule 15.3

Code related audit information

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

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

Audit observation

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

Audit commentary

Review of nine AV080 non half hour volumes reports confirmed that submission data is rounded to zero decimal places.

Review of five AV090 half hour volumes reports confirmed that submission data is rounded to zero decimal places.

Review of five AV140 half hour aggregates reports confirmed that submission data is rounded to two decimal places.

Audit outcome

Compliant

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

Code reference

Clause 10 Schedule 15.3

Code related audit information

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

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

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

Audit observation

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

I reviewed nine AV080 reports to confirm that historic estimate requirements were met.

Audit commentary

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

The overall percentages of historic estimate are high.

Month	Revision 3 80% Met	Revision 7 90% Met	Revision 14 100% Met	Total
Oct 2016	300			310
Nov 2016	299		226	310

Month	Revision 3 80% Met	Revision 7 90% Met	Revision 14 100% Met	Total
Dec 2016	307		228	312
Jan 2017		310	227	312
Feb 2017		311		312
Mar 2017		312		314

The table below shows that the percentage HE at a summary level for all NSPs is well above the required targets for 3 and 7-month revisions, but below the required target for the 14 month revision.

Month	Revision 3 80% Target	Revision 7 90% Target	Revision 14 100% Target
Oct 2016	97.58%	-	-
Nov 2016	97.30%	-	99.94%
Dec 2016	97.28%	-	99.95%
Jan 2017	-	99.41%	99.95%
Feb 2017	-	99.42%	-
Mar 2017	-	99.47%	-

Audit outcome

Non-compliant

Non-compliance	Description
Audit Ref: 13.3 With: Clause 10 of Schedule 15.3 From: Oct 16 (r3), Nov 16 (r3 & r14), Dec 16 (r3 & r14), Jan 17 (r7 & r14), Feb 17 (r7), Mar 17 (r7)	Historic estimate thresholds were not met for some revisions. Potential impact: Low Actual impact: Low Audit history: Multiple times Controls: Moderate Breach risk rating: 2
Audit risk rating	Rationale for audit risk rating

Low	<p>The controls are rated as moderate because in most cases the thresholds were met, and processes are in place to make estimated readings permanent.</p> <p>The audit risk rating is low, because Contact were reasonably close to the target in all cases.</p>		
Actions taken to resolve the issue		Completion date	Remedial action status
<p>One scenario that was not included in our 365 no read process relates to disconnection / reconnection estimates where actual reads are unable to be obtained.</p> <p>Contact is working on a system enhancement to apply permanent estimates for disconnections and reconnections where no actual read is returned from this process, which will reduce forward estimate volumes in the future.</p>		May 2019	Identified
Preventative actions taken to ensure no further issues will occur		Completion date	

CONCLUSION

The audit found 32 non-compliance issues and two recommendations are made.

Improvements have been made in the following areas since the last audit:

- the accuracy of registry information has further improved
- some issues with the meter read attainment process have been resolved, and the process is no longer terminated if a customer read is received
- the timeliness of corrections for consumption while inactive has improved.

The main issues identified during this audit are:

- there are a significant number of ICPs with different profiles used for submission to what is recorded on the registry, I found that in almost all cases with a profile discrepancy the profiles used for submission are correct
- some distributed unmetered load issues are still existing, leading to incorrect submission information
- some historic consumption has not been submitted for some ICPs at the deenergised status, this will all be submitted within the 14-month revision window.

PARTICIPANT RESPONSE

Contact has made steady progress in addressing its non-compliances during this audit assessment period. Our focus is ensuring that where we cannot eliminate the non-compliance that our controls are at a minimum rated as moderate or strong and the risk ratings set at low to ensure we are not adversely impacting other participants. We agree with the auditor's recommendation for the next audit date to be 12 months.

While the number of non-compliances has not reduced noticeably we have again reduced the volume of exceptions identified under each areas of non-compliance through system improvements and process changes. Contact takes its code compliance obligations seriously and we continue to address these issues as soon as practicable.

It is pleasing to see improvements in addressing registry discrepancies and reduced timing for providing notifications around the new connection and status change processes. Also we continue to provide significant investment of resources to DUML management and monitoring. However with the transient nature of DUML customers it is difficult to be able to clearly show our effort and progress in this area.

This audit is the second under the new audit regime which sets out a proposed audit cycle based on the score of future risk rating assessments from the current audit and a set of performance bands determined by the Authority. Contact has ongoing concerns that this approach to determining the next audit date fails to recognise how narrow or wide a reconciliation participant is operating within the code.

Contact looks forward to the implementation of the recommendations from the Switching Technical Group relating to improvements to the switching processes as we believe this will assist all traders in achieving compliance with the code.