

ELECTRICITY INDUSTRY PARTICIPATION CODE
RECONCILIATION PARTICIPANT AUDIT REPORT



For

MERIDIAN ENERGY LIMITED

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TABLE OF CONTENTS

Executive summary	5
Audit summary	5
Non-compliances	5
Recommendations	6
Issues 6	
1. Administrative	7
1.1. Exemptions from Obligations to Comply with Code (Section 11)	7
1.2. Structure of Organisation	8
1.3. Persons involved in this audit	9
1.4. Use of Agents (Clause 15.34)	10
1.5. Hardware and Software	10
1.6. Breaches or Breach Allegations	10
1.7. ICP Data	10
1.8. Authorisation Received	10
1.9. Scope of Audit	10
1.10. Summary of previous audit	11
2. Operational Infrastructure	12
2.1. Relevant information (Clause 10.6, 11.2, 15.2)	12
2.2. Provision of information (Clause 15.35)	12
2.3. Data transmission (Clause 20 Schedule 15.2)	13
2.4. Audit trails (Clause 21 Schedule 15.2)	13
2.5. Retailer responsibility for electricity conveyed - participant obligations (Clause 10.4) ..	14
2.6. Retailer responsibility for electricity conveyed - access to metering installations (Clause 10.7(2),(4),(5) and (6))	14
2.7. Physical location of metering installations (Clause 10.35(1)&(2))	15
2.8. Trader contracts to permit assignment by the Authority (Clause 11.15B)	15
2.9. Electrical connection of an ICP (Clause 10.32)	16
2.10. Metering certification (Clause 10.33(2))	17
2.11. Arrangements for line function services (Clause 11.16)	17
2.12. Arrangements for metering equipment provision (Clause 10.36)	17
3. Maintaining registry information	19
3.1. Obtaining ICP identifiers (Clause 11.3)	19
3.2. Providing registry information (Clause 11.7(2))	20
3.3. Changes to registry information (Clause 10 Schedule 11.1)	20
3.4. Trader responsibility for an ICP (Clause 11.18)	21
3.5. Provision of information to the registry (Clause 9 Schedule 11.1)	21
3.6. ANZSIC codes (Clause 9 (1(k) of Schedule 11.1)	22
3.7. Changes to unmetered load (Clause 9(1)(f) of Schedule 11.1)	22
3.8. Management of “active” status (Clause 17 Schedule 11.1)	23
3.9. Management of “inactive” status (Clause 19 Schedule 11.1)	24
3.10. ICPs at new or ready status for 24 months (Clause 15 Schedule 11.1)	24
3.11. Change of MEP (Clause 10.22(1)(a)(i))	25
4. Performing customer and embedded generator switching	26
4.1. Inform registry of switch request for ICPs - standard switch (Clause 2 Schedule 11.3) ..	26

4.2.	Losing trader response to switch request and event dates - standard switch (Clauses 3 and 4 Schedule 11.3)	26
4.3.	Losing trader must provide final information - standard switch (Clause 5 Schedule 11.3)27	
4.4.	Retailers must use same reading - standard switch (Clause 6(1) and 6A Schedule 11.3)28	
4.5.	Non-half hour switch event meter reading - standard switch (Clause 6(2) and (3) Schedule 11.3)	29
4.6.	Disputes - standard switch (Clause 7 Schedule 11.3).....	29
4.7.	Gaining trader informs registry of switch request - switch move (Clause 9 Schedule 11.3)	30
4.8.	Losing trader provides information - switch move (Clause 10(1) Schedule 11.3)	30
4.9.	Losing trader determines a different date - switch move (Clause 10(2) Schedule 11.3 (2))	31
4.10.	Losing trader must provide final information - switch move (Clause 11 Schedule 11.3)32	
4.11.	Gaining trader changes to switch meter reading - switch move (Clause 12 Schedule 11.3)	32
4.12.	Gaining trader informs registry of switch request - gaining trader switch (Clause 14 Schedule 11.3)	33
4.13.	Losing trader provision of information - gaining trader switch (Clause 15 Schedule 11.3)34	
4.14.	Gaining trader to notify registry - gaining trader switch (Clause 16 Schedule 11.3)	35
4.15.	Withdrawal of switch requests (Clauses 17 and 18 Schedule 11.3).....	35
4.16.	Metering information (Clause 21 Schedule 11.3)	36
4.17.	Switch saving protection (Clause 11.15AA to 11.15AB).....	37
5.	Maintenance of unmetered load	38
5.1.	Maintaining shared unmetered load (Clause 11.14).....	38
5.2.	Unmetered threshold (Clause 10.14 (2)(b))	39
5.3.	Unmetered threshold exceeded (Clause 10.14 (5))	39
5.4.	Distributed unmetered load (Clause 11 Schedule 15.3, Clause 15.37B).....	40
6.	Gathering raw meter data	41
6.1.	Electricity conveyed & notification by embedded generators (Clause 10.13, Clause 10.24 and 15.13)	41
6.2.	Responsibility for metering at GIP (Clause 10.26 (6), (7) and (8)).....	41
6.3.	Certification of control devices (Clause 33 Schedule 10.7 and clause 2(2) Schedule 15.3)42	
6.4.	Reporting of defective metering installations (Clause 10.43(2) and (3)).....	42
6.5.	Collection of information by certified reconciliation participant (Clause 2 Schedule 15.2)43	
6.6.	Derivation of meter readings (Clause 3(1), 3(2) and 5 Schedule 15.2)	44
6.7.	NHH meter reading application (Clause 6 Schedule 15.2)	45
6.8.	Interrogate meters once (Clause 7(1) and (2) Schedule 15.2)	46
6.9.	NHH meters interrogated annually (Clause 8(1) and (2) Schedule 15.2).....	47
6.10.	NHH meters 90% read rate (Clause 9(1) and (2) Schedule 15.2)	47
6.11.	NHH meter interrogation log (Clause 10 Schedule 15.2)	48
6.12.	HHR data collection (Clause 11(1) Schedule 15.2)	48
6.13.	HHR interrogation data requirement (Clause 11(2) Schedule 15.2)	49
6.14.	HHR interrogation log requirements (Clause 11(3) Schedule 15.2).....	49
7.	Storing raw meter data	51
7.1.	Trading period duration (Clause 13 Schedule 15.2)	51
7.2.	Archiving and storage of raw meter data (Clause 18 Schedule 15.2)	51
7.3.	Non-metering information collected / archived (Clause 21(5) Schedule 15.2)	51
7.4.	Data Storage Device Clock Synchronisation (Clause 2(5)&(6) of Schedule 15.2).....	52

8.	Creating and managing (including validating, estimating, storing, correcting and archiving) volume information.....	53
8.1.	Correction of NHH meter readings (Clause 19(1) Schedule 15.2).....	53
8.2.	Correction of HHR metering information (Clause 19(2) Schedule 15.2).....	53
8.3.	Error and loss compensation arrangements (Clause 19(3) Schedule 15.2)	54
8.4.	Correction of HHR and NHH raw meter data (Clause 22(1) and (2) Schedule 15.2).....	54
9.	Estimating and validating volume information.....	55
9.1.	Identification of readings (Clause 3(3) Schedule 15.2).....	55
9.2.	Derivation of volume information (Clause 3(4) Schedule 15.2).....	55
9.3.	Meter data used to derive volume information (Clause 3(5) Schedule 15.2).....	56
9.4.	Half hour estimates (Clause 15 Schedule 15.2).....	56
9.5.	NHH metering information data validation (Clause 16 Schedule 15.2)	57
9.6.	Electronic meter readings and estimated readings (Clause 17 Schedule 15.2)	58
10.	Provision of metering information to the pricing manager in accordance with subpart 4 of Part 13 (clause 15.38(1)(f))	59
10.1.	Generators to provide HHR metering information (Clause 13.136)	59
10.2.	Unoffered & intermittent generation provision of metering information (Clause 13.137).....	59
10.3.	Loss adjustment of HHR metering information (Clause 13.138).....	60
10.4.	Notification of the provision of HHR metering information (Clause 13.140)	60
11.	Provision of submission information for reconciliation.....	61
11.1.	Buying and selling notifications (Clause 15.3).....	61
11.2.	Calculation of ICP days (Clause 15.6)	61
11.3.	Electricity supplied information provision to the reconciliation manager (Clause 15.7).....	62
11.4.	HHR aggregates information provision to the reconciliation manager (Clause 15.8)	62
12.	Submission computation	63
12.1.	Daylight saving adjustment (Clause 15.36)	63
12.2.	Creation of submission information (Clause 15.4).....	63
12.3.	Allocation of submission information (Clause 15.5)	64
12.4.	Grid owner volumes information (Clause 15.9)	64
12.5.	Provision of NSP submission information (Clause 15.10)	65
12.6.	Grid connected generation (Clause 15.11).....	65
12.7.	Accuracy of submission information (Clause 15.12)	66
12.8.	Permanence of meter readings for reconciliation (Clause 4 Schedule 15.2).....	66
12.9.	Reconciliation participants to prepare information (Clause 2 Schedule 15.3)	67
12.10.	Historical estimates and forward estimates (Clause 3 Schedule 15.3).....	68
12.11.	Historical estimate process (Clause 4 and 5 Schedule 15.3)	69
12.12.	Forward estimate process (Clause 6 Schedule 15.3)	70
12.13.	Compulsory meter reading after profile change (Clause 7 Schedule 15.3).....	71
13.	Submission format and timing.....	72
13.1.	Market Administrator Meter Reading Reports (Clauses 8 & 9 of Schedule 15.2)	72
13.2.	Provision of submission information to the RM (Clause 8 Schedule 15.3)	72
13.3.	Reporting resolution (Clause 9 Schedule 15.3)	73
13.4.	Historical estimate reporting to RM (Clause 10 Schedule 15.3)	73
	Conclusion	74
	Participant response	75

EXECUTIVE SUMMARY

Meridian Energy Ltd (Meridian) intends to implement a new system and progressively transition ICPs from their current system. The new system is called “Flux” and is the same system as that used by Powershop.

Clause 16A.11 of Part 16 requires that if a participant intends to make a “material” change to any system or process then the changes must be subject to an audit prior to the change taking place. This audit was therefore performed at the request of Meridian so that it can be supplied to the Electricity Authority to satisfy the requirements of Clause 16A.11(1).

The audit was conducted in accordance with the Guideline for Reconciliation Participant Audits version 7.2, which was produced by the Electricity Authority.

The audit scope includes NHH only. HHR systems and processes will remain the same in the medium term. ICPs will move to Flux through the switching process and will have a new participant code. There will not be a “data migration” exercise. Because the system is the same as that used by Powershop, the audit approach was to rely on Powershop’s audit report for areas where compliance was confirmed. For some areas, specific testing was conducted based on scenarios provided by Veritek.

The Flux system requires a small number of changes to be fully compliant. Two issues will be present at “go-live”. Not all meter readings are correctly applied because Flux calculates estimates out to the end of the day, rather than “applying” the meter reading to the end of the day. In some scenarios, historic estimates are conducted but are labelled as forward estimates.

Four recommendations are made, and these will need to be adopted to avoid future non-compliance.

Registry management and validation processes were confirmed as compliant during Powershop’s audit. For the initial small group of ICPs, registry validation is likely to be limited and will be conducted manually where necessary. More comprehensive registry validation and discrepancy reporting processes will be implemented prior to the migration of further ICP groups.

I recommend the next audit date for Meridian remains the same.

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
Meter reading application	6.7	6 of Schedule 15.2	Not all meter readings are correctly applied	Moderate	Low	2	Identified
HE and FE	12.10	3 of schedule 15.3	Incorrect labelling of HE as FE	Moderate	Low	2	Identified
Future Risk Rating						4	
Next indicative audit frequency						18 months	

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

RECOMMENDATIONS

Subject	Section	Recommendation	Description
Average daily consumption	4.3	Regarding Clause 5 Schedule 11.3	I recommend Meridian considers changing the way the average daily consumption figure is derived, to provide a more meaningful figure for a reasonable period where the ICP was active prior to switching.
Derivation of meter readings	6.6	Regarding Clause 5 Schedule 15.2	Ensure all meter condition notes are loaded and actioned from the Wells file, whether a reading is obtained or not.
Permanence of meter readings	12.8	Regarding Clause 4 Schedule 15.2	Ensure Flux has the capability to label estimates as permanent in time for the first 14-month revision.
Inactive consumption	12.9	Regarding Clause 2 Schedule 15.3	Ensure reporting is in place to identify and manage consumption on inactive ICPs

ISSUES

Subject	Section	Clause	Description

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

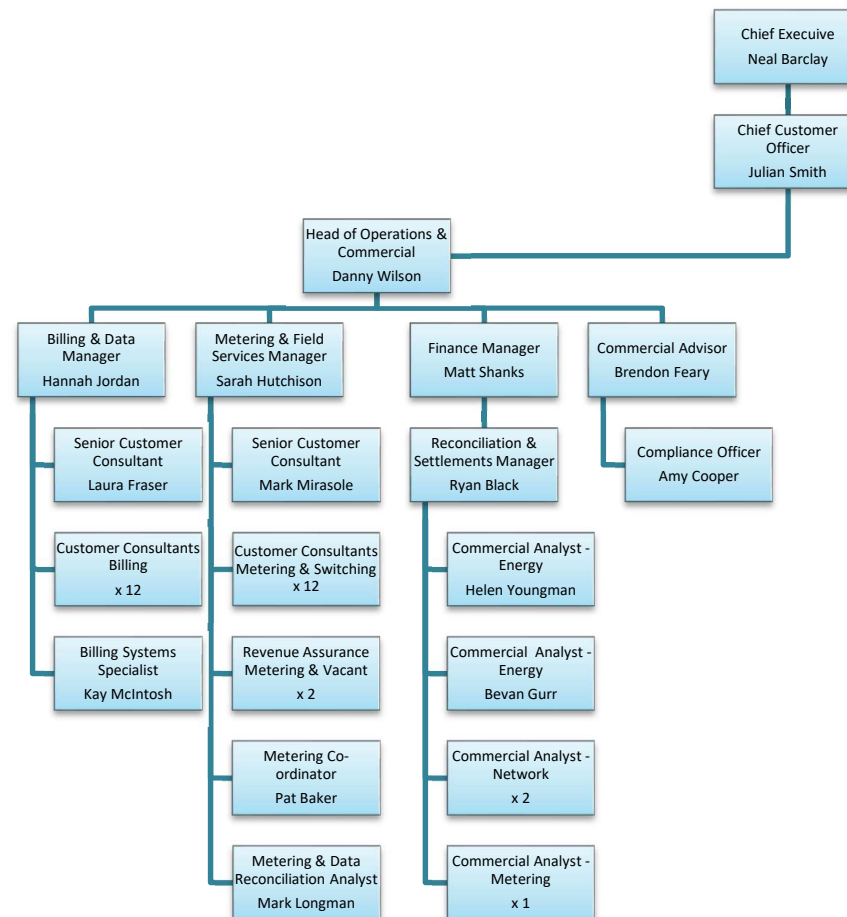
The Electricity Authority website was checked to confirm any exemptions currently in place for Meridian.

Audit commentary

Exemption 245 allows Meridian to use subtraction to determine submission information for ICP 0009805800AL991. This exemption is not relevant to the scope of this audit.

1.2. Structure of Organisation

Meridian provided their current organisation structure:



1.3. Persons involved in this audit

Auditor:

Name	Company
Steve Woods	Veritek Limited

Meridian personnel assisting with this audit:

Name	Title
Amy Cooper	Compliance Officer

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 contractors fulfillment of the participants 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

This area will not change with the implementation of the Flux system.

Audit commentary

This area will not change with the implementation of the Flux system.

1.5. Hardware and Software

The Flux system is a MySQL database. Backup is in accordance with standard industry protocols.

1.6. Breaches or Breach Allegations

There are no breach allegations relevant to this audit.

1.7. ICP Data

Meridian intends to progressively switch ICPs to the Flux platform, starting with a small pilot group then over time, all ICPs will be moved across.

1.8. Authorisation Received

No letter of authorisation was required.

1.9. Scope of Audit

Meridian intends to implement a new system and progressively transition ICPs from their current system. The new system is called “Flux” and is the same system as that used by Powershop.

Clause 16A.11 of Part 16 requires that if a participant intends to make a “material” change to any system or process then the changes must be subject to an audit prior to the change taking place. This audit was therefore performed at the request of Meridian so that it can be supplied to the Electricity Authority to satisfy the requirements of Clause 16A.11(1).

The audit was conducted in accordance with the Guideline for Reconciliation Participant Audits version 7.2, which was produced by the Electricity Authority.

The audit scope includes NHH metered and unmetered only. HHR systems and processes will remain the same in the medium term. ICPs will move to Flux through the switching process and will have a new participant code. There will not be a “data migration” exercise. Because the system is the same as that used by Powershop, the audit approach was to rely on Powershop’s audit report for areas where

compliance was confirmed. For some areas, specific testing was conducted based on scenarios provided by Veritek.

1.10. Summary of previous audit

The previous audit findings are not relevant to this audit because all systems and processes will be subject to change.

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

I checked whether the system or any processes resulted in non-compliance with this clause.

Audit commentary

I did not identify any examples of non-compliance with this clause.

Audit outcome

Compliant

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

This area will not change with the implementation of the Flux system.

Audit commentary

This area will not change with the implementation of the Flux system.

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

This area will not change with the implementation of the Flux system.

Audit commentary

This area will not change with the implementation of the Flux system.

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*
- *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

The Flux system contains a complete and compliant audit trail. This was confirmed during the Powershop audit.

Audit commentary

The Flux system contains a complete and compliant audit trail. This was confirmed during the Powershop audit.

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

This area will not change with the implementation of the Flux system.

Audit commentary

This area will not change with the implementation of the Flux system.

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

This area will not change with the implementation of the Flux system.

Audit commentary

This area will not change with the implementation of the Flux system.

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

This area will not change with the implementation of the Flux system.

Audit commentary

This area will not change with the implementation of the Flux system.

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 sub-clause (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

This area will not change with the implementation of the Flux system.

Audit commentary

This area will not change with the implementation of the Flux system.

Audit outcome

Compliant

2.9. Electrical connection of an ICP (Clause 10.32)

Code reference

Clause 10.32

Code related audit information

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

- *accept responsibility for the ICP and the obligations under Parts 10 and 11, and, under Part 15; and*
- *have an arrangement with an MEP to provide metering at the point of connection under Part 15.*

Audit observation

This area will not change with the implementation of the Flux system.

Audit commentary

This area will not change with the implementation of the Flux system.

Audit outcome

Compliant

2.10. Metering certification (Clause 10.33(2))

Code reference

Clause 10.33(2)

Code related audit information

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

Audit observation

This area will not change with the implementation of the Flux system.

Audit commentary

This area will not change with the implementation of the Flux system.

Audit outcome

Compliant

2.11. Arrangements for line function services (Clause 11.16)

Code reference

Clause 11.16

Code related audit information

Before notifying the registry of 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 notifying the registry of 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

This area will not change with the implementation of the Flux system.

Audit commentary

This area will not change with the implementation of the Flux system.

Audit outcome

Compliant

2.12. 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

This area will not change with the implementation of the Flux system.

Audit commentary

This area will not change with the implementation of the Flux system.

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

This area will not change with the implementation of the Flux system.

Audit commentary

This area will not change with the implementation of the Flux system.

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 about each ICP at which it trades electricity in accordance with Schedule 11.1.

Audit observation

The registry interface is the same as that used by Powershop, which was confirmed as compliant in their recent audit.

The accuracy of registry data is reliant on data entry processes, which will not change with the implementation of Flux.

Audit commentary

The registry interface is the same as that used by Powershop, which was confirmed as compliant in their recent audit.

The accuracy of registry data is reliant on data entry processes, which will not change with the implementation of Flux.

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 about an ICP changes, the trader must notify the registry of the change no later than five business days after the change.

Audit observation

The timeliness of registry updates is reliant on field and data entry processes, which will not change with the implementation of Flux.

The registry interface has no compliance issues, as determined during Powershop's recent audit.

Audit commentary

The timeliness of registry updates is reliant on field and data entry processes, which will not change with the implementation of Flux.

The registry interface has no compliance issues, as determined during Powershop's recent audit.

Audit outcome

Compliant

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

This area will not change with the implementation of the Flux system.

Audit commentary

This area will not change with the implementation of the Flux system.

Audit outcome

Compliant

3.5. Provision of information to the registry (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 for each ICP for which it is recorded in the registry as having responsibility:

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

- *the type and capacity of any unmetered load at each ICP (clause 9(1)(g))*
- *the status of the ICP, as defined in clauses 12 to 20 (clause 9(1)(j))*
- *except if the ICP exists for the purposes of reconciling an embedded network or the ICP has distributor status, the trader must provide the relevant business classification code applicable to the customer (clause 9(1)(k)).*

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

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

Audit observation

File formats were confirmed as compliant during Powershop's recent audit. The accuracy of information is dependent on field and data entry processes, which will not change with the implementation of Flux.

Audit commentary

File formats were confirmed as compliant during Powershop's recent audit. The accuracy of information is dependent on field and data entry processes, which will not change with the implementation of Flux.

Audit outcome

Compliant

3.6. ANZSIC codes (Clause 9 (1)(k) of Schedule 11.1)

Code reference

Clause 9 (1)(k) of Schedule 11.1

Code related audit information

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

Audit observation

File formats were confirmed as compliant during Powershop's recent audit. The accuracy of information is dependent on field and data entry processes, which will not change with the implementation of Flux.

Audit commentary

File formats were confirmed as compliant during Powershop's recent audit. The accuracy of information is dependent on field and data entry processes, which will not change with the implementation of Flux.

Audit outcome

Compliant

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

Flux has a registry validation capability, which was confirmed as compliant during Powershop's audit. For the initial small group of ICPs, registry validation is likely to be limited and will be conducted manually where necessary. More comprehensive registry validation and discrepancy reporting processes will be implemented prior to the migration of further ICP groups.

Audit commentary

Flux has a registry validation capability, which was confirmed as compliant during Powershop's audit. For the initial small group of ICPs, registry validation is likely to be limited and will be conducted manually where necessary. More comprehensive registry validation and discrepancy reporting processes will be implemented prior to the migration of further ICP groups.

Audit outcome

Compliant

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

Code reference

Clause 17 Schedule 11.1

Code related audit information

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

- *the associated electrical installations are energised (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

Flux has a registry validation capability, which was confirmed as compliant during Powershop's audit. For the initial small group of ICPs, registry validation is likely to be limited and will be conducted manually where necessary. More comprehensive registry validation and discrepancy reporting processes will be implemented prior to the migration of further ICP groups.

Audit commentary

Flux has a registry validation capability, which was confirmed as compliant during Powershop's audit. For the initial small group of ICPs, registry validation is likely to be limited and will be conducted manually where necessary. More comprehensive registry validation and discrepancy reporting processes will be implemented prior to the migration of further ICP groups.

Audit outcome

Compliant

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

Flux has a registry validation capability, which was confirmed as compliant during Powershop’s audit. For the initial small group of ICPs, registry validation is likely to be limited and will be conducted manually where necessary. More comprehensive registry validation and discrepancy reporting processes will be implemented prior to the migration of further ICP groups.

Audit commentary

Flux has a registry validation capability, which was confirmed as compliant during Powershop’s audit. For the initial small group of ICPs, registry validation is likely to be limited and will be conducted manually where necessary. More comprehensive registry validation and discrepancy reporting processes will be implemented prior to the migration of further ICP groups.

Audit outcome

Compliant

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

This area will not change with the implementation of the Flux system.

Audit commentary

This area will not change with the implementation of the Flux system.

Audit outcome

Compliant

3.11. Change of MEP (Clause 10.22(1)(a)(i))

Code reference

Clause 10.22(1)(a)(i)

Code related audit information

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

Audit observation

Flux has a registry validation capability, which was confirmed as compliant during Powershop's audit. For the initial small group of ICPs, registry validation is likely to be limited and will be conducted manually where necessary. More comprehensive registry validation and discrepancy reporting processes will be implemented prior to the migration of further ICP groups.

Audit commentary

Flux has a registry validation capability, which was confirmed as compliant during Powershop's audit. For the initial small group of ICPs, registry validation is likely to be limited and will be conducted manually where necessary. More comprehensive registry validation and discrepancy reporting processes will be implemented prior to the migration of further ICP groups.

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 of a switch no later than 2 business days after the arrangement comes into effect and include in its advice to the registry that the switch type is TR and 1 or more profile codes associated with that ICP.

Audit observation

The timeliness of sending NT files is process related and will not change with the implementation of Flux.

The file format for NT files is compliant, as confirmed by the Powershop audit.

Audit commentary

The timeliness of sending NT files is process related and will not change with the implementation of Flux.

The file format for NT files is compliant, as confirmed by the Powershop audit.

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

- *provide acknowledgement of the switch request by (clause 3(a) of Schedule 11.3):*
- *providing the proposed event date to the registry 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 file content and the setting of event dates is automated and was confirmed as compliant during the Powershop audit.

The timeliness of AN files is reliant on processes and will not change with the implementation of the Flux system.

Audit commentary

AN file content and the setting of event dates is automated and was confirmed as compliant during the Powershop audit.

The timeliness of sending AN files is reliant on processes and will not change with the implementation of the Flux system.

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 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 (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 on the registry with accumulator of C and a settlement indicator of Y (clause 5(b)); and*
- *if a switch event meter reading is not a validated reading, provide the date of the last meter reading (clause 5(c)).*

Audit observation

The timeliness of sending CS files is reliant on processes and will not change with the implementation of the Flux system.

I examined two specific fields in CS files to confirm compliance. The average daily consumption field and the switch event meter reading field to ensure they were both accurate. These fields had known inaccuracy issues.

Audit commentary

The issue with switch event meter readings only relates to SMCO files. Only NGCM and ARCS files will be dealt with initially, therefore compliance will be achieved.

The average daily consumption figure should be for the “last read period” as stipulated in the registry functional specification. If an ICP is disconnected prior to the switch date, flux will populate the CS file with zero daily kWh because there is no consumption for the disconnected period. Neither the Code or the functional specification are clear regarding how this figure should be calculated, however a more

relevant figure would be that for the last read period prior to disconnection. I recommend Meridian considers changing the way the average daily consumption figure is derived, to provide a more meaningful figure for a reasonable period where the ICP was active prior to switching.

Recommendation	Description	Audited party comment	Remedial action
Regarding Clause 5 Schedule 11.3	I recommend Meridian considers changing the way the average daily consumption figure is derived, to provide a more meaningful figure for a reasonable period where the ICP was active prior to switching.	Meridian will consider changing the system methodology as recommended.	Identified

Audit outcome

Compliant

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

File formats are confirmed as accurate.

The process will not change with the implementation of the Flux system.

Audit commentary

File formats are confirmed as accurate.

The process will not change with the implementation of the Flux system.

Audit outcome

Compliant

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 on 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, 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

File formats are confirmed as accurate.

The process will not change with the implementation of the Flux system.

Audit commentary

File formats are confirmed as accurate.

The process will not change with the implementation of the Flux system.

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 notify the other that it disputes a switch event meter reading, notified under clauses 1 to 6. Such a dispute must be resolved in accordance with clause 15.29 (with all necessary amendments).

Audit observation

This area will not change with the implementation of the Flux system.

Audit commentary

This area will not change with the implementation of the Flux system.

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 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 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 timeliness of sending NT files is process related and will not change with the implementation of Flux. The file format for NT files is compliant, as confirmed by the Powershop audit.

Audit commentary

The timeliness of sending NT files is process related and will not change with the implementation of Flux. The file format for NT files is compliant, as confirmed by the Powershop audit.

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 receipt of notification of the switch move from the registry, 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:

- *confirmation of the switch event date; and*
- *a valid switch response code; and*
- *final information as required under clause 1; 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. Determine an event date that is not earlier than the gaining traders proposed date and that date can be no later than 10 business days after*

the date of the notification. Alternatively, the losing trader may provide a request for a withdrawal of the switch in accordance with clause 17.

Audit observation

AN file content and the setting of event dates is automated and was confirmed as compliant during the Powershop audit.

The timeliness of AN files is reliant on processes and will not change with the implementation of the Flux system.

Audit commentary

AN file content and the setting of event dates is automated and was confirmed as compliant during the Powershop audit.

The timeliness of sending AN files is reliant on processes and will not change with the implementation of the Flux system.

Audit outcome

Compliant

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

Code reference

Clause 10(2) Schedule 11.3 (2)

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 as described in sub-clause (1)(a):

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

Audit observation

AN file content and the setting of event dates is automated and was confirmed as compliant during the Powershop audit.

The timeliness of AN files is reliant on processes and will not change with the implementation of the Flux system.

Audit commentary

AN file content and the setting of event dates is automated and was confirmed as compliant during the Powershop audit.

The timeliness of sending AN files is reliant on processes and will not change with the implementation of the Flux system.

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

If the losing trader has provided information to the registry in accordance with clause 10(a), within three business days after the later of the actual event date or date of receipt of the switch request, the losing trader must:

- *provide the event date (clause 11(a)); and*
- *provide the switch event meter reading as at the event date for each meter or data storage device noted on the registry (clause 11(b)); and*
- *if switch event meter reading is not a validated meter reading, provide the date of the last reading of the meter or storage device (clause (11(c)).*

Audit observation

The timeliness of sending CS files is reliant on processes and will not change with the implementation of the Flux system.

I examined two specific fields in CS files to confirm compliance. The average daily consumption field and the switch event meter reading field to ensure they were both accurate. These fields had known inaccuracy issues.

Audit commentary

The issue with switch event meter readings only relates to SMCO files. Only NGCM and ARCS files will be dealt with initially, therefore compliance will be achieved.

The average daily consumption figure should be for the “last read period” as stipulated in the registry functional specification. If an ICP is disconnected prior to the switch date, flux will populate the CS file with zero daily kWh because there is no consumption for the disconnected period. Neither the Code or the functional specification are clear regarding how this figure should be calculated, however a more relevant figure would be that for the last read period prior to disconnection. As noted in Section 4.3, I recommend Meridian considers changing the way the average daily consumption figure is derived, to provide a more meaningful figure for a reasonable period where the ICP was active prior to switching.

Audit outcome

Compliant

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 notify 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 2 validated meter readings and the losing trader must either (clause 12(2)(b) and clause 12(3)):*
- *notify 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 on the registry,

- *the gaining trader will trade electricity from a meter with a half hour submission type in the registry (clause 12(2A)(b));*
- *the gaining trader no later than 5 business days after receiving final information from the registry, 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

File formats are confirmed as accurate.

The process will not change with the implementation of the Flux system.

Audit commentary

File formats are confirmed as accurate.

The process will not change with the implementation of the Flux system.

Audit outcome

Compliant

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

Code reference

Clause 14 Schedule 11.3

Code related audit information

The gaining trader switch process applies where a trader and a customer or embedded generator enters into an arrangement in which the trader commences trading electricity with the customer or embedded generator to trade electricity through or assume responsibility for:

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

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

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

A gaining trader must advise the registry of the switch and expected event date no later than 3 business days after the arrangement comes into effect.

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

- 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, 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, if:

14(4)(a) – the proposed event date is in the same month as the date on which the gaining trader advised the registry; 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 and this date is agreed between the losing and gaining traders.

Audit observation

HHR switching is not within the audit scope for the initial group of ICPs.

Audit commentary

HHR switching is not within the audit scope for the initial group of ICPs.

Audit outcome

Not applicable

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, the losing trader must:

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

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

Audit observation

HHR switching is not within the audit scope for the initial group of ICPs.

Audit commentary

HHR switching is not within the audit scope for the initial group of ICPs.

Audit outcome

Not applicable

4.14. Gaining trader to notify registry - gaining trader switch (Clause 16 Schedule 11.3)

Code reference

Clause 16 Schedule 11.3

Code related audit information

The gaining trader must complete the switch no later than 3 business days, after receiving the valid switch response code, by advising the registry of the event date.

If the ICP is being de-energised 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 de-energised 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 de-energised or removed, advise the losing trader of the results and metering component numbers for each data channel in the metering installation.

Audit observation

HHR switching is not within the audit scope for the initial group of ICPs.

Audit commentary

HHR switching is not within the audit scope for the initial group of ICPs.

Audit outcome

Not applicable

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 with (clause 18(c)):*
 - *the participant identifier of the trader making the withdrawal request (clause 18(c)(i)); and*
 - *the withdrawal advisory code published by the Authority (clause 18(c)(ii))*
- *within five business days after receiving a notification from the registry of a switch, the trader receiving the withdrawal must notify the registry that the switch withdrawal request is accepted or rejected. A switch withdrawal request must not become effective until accepted by the trader who received the withdrawal (clause 18(d))*
- *on receipt of a rejection notification from the registry, 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 receipt of*

notification from the registry in accordance with clause 22(b), the losing trader must comply with clauses 3,5,10 and 11 (whichever is appropriate) and the gaining trader must comply with clause 16 (clause 18(f)).

Audit observation

Withdrawal file format was confirmed as compliant during the Powershop audit.

The timeliness and content of withdrawal files is dependent on processes and will not change with the implementation of the Flux system.

Audit commentary

Withdrawal file format was confirmed as compliant during the Powershop audit.

The timeliness and content of withdrawal files is dependent on processes and will not change with the implementation of the Flux system.

Audit outcome

Compliant

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

This area will not change with the implementation of the Flux system.

Audit commentary

This area will not change with the implementation of the Flux system.

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

This area will not change with the implementation of the Flux system.

Audit commentary

This area will not change with the implementation of the Flux system.

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 notify 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 notify 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 notify the registry 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 notify 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 notify the distributor of the change. The amount of electricity attributable to that ICP becomes UFE.

Audit observation

Flux has a registry validation capability, which was confirmed as compliant during Powershop's audit. For the initial small group of ICPs, registry validation is likely to be limited and will be conducted manually where necessary. More comprehensive registry validation and discrepancy reporting processes will be implemented prior to the migration of further ICP groups.

Audit commentary

Flux has a registry validation capability, which was confirmed as compliant during Powershop's audit. For the initial small group of ICPs, registry validation is likely to be limited and will be conducted manually where necessary. More comprehensive registry validation and discrepancy reporting processes will be implemented prior to the migration of further ICP groups.

Audit outcome

Compliant

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

Code reference

Clause 10.14 (2)(b)

Code related audit information

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

Audit observation

This area will not change with the implementation of the Flux system.

Audit commentary

This area will not change with the implementation of the Flux system.

Audit outcome

Compliant

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

Code reference

Clause 10.14 (5)

Code related audit information

If the unmetered load limit is exceeded the retailer must:

- *within 20 business days, commence corrective measure to ensure it complies with Part 10*
- *within 20 business days of commencing the corrective measure, complete the corrective measures*
- *no later than 10 business days after it becomes aware of the limit having been exceeded, advise each participant who is or would be expected to be affected of:*
 - 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

This area will not change with the implementation of the Flux system.

Audit commentary

This area will not change with the implementation of the Flux system.

Audit outcome

Compliant

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

Code reference

Clause 11 Schedule 15.3, Clause 15.37B

Code related audit information

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

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

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

Audit observation

This area will not change with the implementation of the Flux system.

Audit commentary

This area will not change with the implementation of the Flux system.

Audit outcome

Compliant

6. GATHERING RAW METER DATA

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

Code reference

Clause 10.13, Clause 10.24 and 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 energised 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

This area will not change with the implementation of the Flux system.

Audit commentary

This area will not change with the implementation of the Flux system.

Audit outcome

Compliant

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

This area will not change with the implementation of the Flux system.

Audit commentary

This area will not change with the implementation of the Flux system.

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

This area will not change with the implementation of the Flux system.

Audit commentary

This area will not change with the implementation of the Flux system.

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

This area will not change with the implementation of the Flux system.

Audit commentary

This area will not change with the implementation of the Flux system.

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 on 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

This area will not change with the implementation of the Flux system.

Audit commentary

This area will not change with the implementation of the Flux system.

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

This area was examined as part of the Powershop audit and those findings are relevant to this audit.

Audit commentary

The first group of ICPs will all have AMI metering and manual meter reading processes will not be used, however manual meter reading processes will be used in future.

The meter condition notes from manual meter reading files are not uploaded where there is a reading the notes are only uploaded where a reading is not obtained. I recommend Meridian investigates this further and makes changes if required, because there are some events, such as meter damaged or tamper, where a reading will be obtained but further action is required.

Recommendation	Description	Audited party comment	Remedial action
Regarding Clause 5 Schedule 15.2	Ensure all meter condition notes are loaded and actioned from the Wells file, whether a reading is obtained or not.	A solution for this issue will be identified and implemented before ICPs with manually read meters are transitioned to the Flux system.	Identified

The customer meter reading process is reliant on the meter readings being labelled manually and this labelling is not dependent on Flux capability.

Audit outcome

Compliant

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

Code reference

Clause 6 Schedule 15.2

Code related audit information

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

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

Audit observation

The process of the application of meter readings was examined.

Audit commentary

A walkthrough of the different meter reading scenarios found some minor issues where Meridian will need to make changes to be fully compliant. The scenarios are as follows:

1. AMI reads from NGCM taken at midnight are date stamped with the next day's date but are applied by Flux at 00:00 on that day, so this is compliant because 24:00 on 29/05/18 is the same point in time as 00:00 on 30/05/18.
2. AMI reads from SMCO are date stamped with the midnight date. So, a reading taken at 24:00 on 29/05/18 is date stamped as 29/05/18, but Flux applies this read at 00:00 on 29/05/18, which is not compliant. Flux then estimates for 24 hours to the end of 29/05/18 which incorrectly adds one day of consumption.
3. AMI reads from ARCM are not midnight reads and are estimated to the end of the day by the number of hours left in the day. So, if consumption is 20 kWh per day and a reading is taken at 12:00 on a given day, the system will add 10 kWh to the reading. Whilst this is accurate, it is technically not compliant.
4. NHH manual meter readings are treated the same as ARCM readings and are estimated to the end of the day. Once again, whilst this is accurate, it is technically not compliant.

Non-compliance is recorded because not all meter readings are correctly applied.

Audit outcome

Non-compliant

Non-compliance	Description
Audit Ref: 6.7 With: Clause 6 Schedule 15.2 From: 12-Oct-18 To: 12-Oct-18	Not all meter readings are correctly applied. Potential impact: Low Actual impact: Low Audit history: None Controls: Moderate Breach risk rating: 2
Audit risk rating	Rationale for audit risk rating

Low	<p>The controls are recorded as moderate because they mitigate risk most of the time but there is room for improvement.</p> <p>The impact on settlement and participants is minor, therefore the audit risk rating is low.</p>		
Actions taken to resolve the issue		Completion date	Remedial action status
<p>We understand the issue identified with application of meter readings for SMC0 meters was being caused by a lack of time stamp in the file PSNZ received (which has now been resolved). File formats Meridian intends to use for SMC0 meters do include a timestamp therefore the issue identified is not likely to occur.</p> <p>The system functionality related to Arc meters and manually read NHH meters regarding the use of an estimated read as at the end of the day for switching (rather than an actual read taken part way through the day) is noted as an accurate approach. Meridian has no plans to change this system functionality.</p>		Complete	Identified
		N/A	
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

This area will not change with the implementation of the Flux system.

Audit commentary

This area will not change with the implementation of the Flux system.

Audit outcome

Compliant

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

This area will not change with the implementation of the Flux system.

Audit commentary

This area will not change with the implementation of the Flux system.

Audit outcome

Compliant

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

Code reference

Clause 9(1) and (2) Schedule 15.2

Code related audit information

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

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

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

Audit observation

Meter reading processes will not change with the implementation of the Flux system. The format and content of the market administrator report was confirmed as compliant during Powershop's audit.

Audit commentary

Meter reading processes will not change with the implementation of the Flux system. The format and content of the market administrator report was confirmed as compliant during Powershop's audit.

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

This area will not change with the implementation of the Flux system.

Audit commentary

This area will not change with the implementation of the Flux system.

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

This area will not change with the implementation of the Flux system.

Audit commentary

This area will not change with the implementation of the Flux system.

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

This area will not change with the implementation of the Flux system.

Audit commentary

This area will not change with the implementation of the Flux system.

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

This area will not change with the implementation of the Flux system.

Audit commentary

This area will not change with the implementation of the Flux system.

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

This area will not change with the implementation of the Flux system.

Audit commentary

This area will not change with the implementation of the Flux system.

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

This area will not change with the implementation of the Flux system.

Audit commentary

This area will not change with the implementation of the Flux system.

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

This area will not change with the implementation of the Flux system.

Audit commentary

This area will not change with the implementation of the Flux system.

Audit outcome

Compliant

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

Code reference

Clause 2(5)&(6) of Schedule 15.2

Code related audit information

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

Audit observation

This area will not change with the implementation of the Flux system.

Audit commentary

This area will not change with the implementation of the Flux system.

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 during the Powershop audit.

Audit commentary

The processes associated with NHH correction will not change. Flux has the necessary capability to allow correction to occur.

Audit outcome

Compliant

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

Code reference

Clause 19(2) Schedule 15.2

Code related audit information

If 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

This area will not change with the implementation of the Flux system.

Audit commentary

This area will not change with the implementation of the Flux system.

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

This area will not change with the implementation of the Flux system.

Audit commentary

This area will not change with the implementation of the Flux system.

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

Flux does not allow raw meter data to be altered.

Audit commentary

Flux does not allow raw meter data to be altered.

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

This area was examined during Powershop's audit.

Audit commentary

Powershop's audit report confirms that 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

This area was examined during Powershop's audit.

Audit commentary

Flux only uses validated meter readings and estimated readings as data sources.

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 for derive volume information must not be rounded or truncated from the stored data from the metering installation.

Audit observation

This area was examined during Powershop's audit.

Audit commentary

Manual meter readings do not record decimal places and are not rounded or truncated on import into Flux. AMI data is rounded at the time submission files are prepared.

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

This area will not change with the implementation of the Flux system.

Audit commentary

This area will not change with the implementation of the Flux system.

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

This area was examined during Powershop's audit.

Audit commentary

There are several steps to validation of NHH data. At source, the handheld data input devices perform a localised validation to ensure that the reading is within expected high-low parameters. Readings outside these parameters have to be re-entered and acknowledged by the data collector. A meter cannot be skipped without reading unless a reason is entered.

A further validation occurs within Flux, this validation checks the following:

- meter and register number match
- missing readings
- invalid dates and times
- consumption more than 500% of that expected
- readings lower than the previous reading
- transposed reads.

Billing validation is also conducted; this includes:

- long billing period
- short billing period
- high consumption
- low consumption.

Reporting is in place for zero consumption. The processes to deal with records in this report will not change.

Audit outcome

Compliant

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

Code reference

Clause 17 Schedule 15.2

Code related audit information

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

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

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

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

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

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

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

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

Audit observation

The checks described in Section 9.5 achieve compliance with points “a” to “d” above. MEPs conduct “sumcheck” validation to achieve compliance with point “e”. MEPs provide event information and the process to review this will not change with the implementation of the Flux system.

Audit commentary

The checks described in Section 9.5 achieve compliance with points “a” to “d” above. MEPs conduct “sumcheck” validation to achieve compliance with point “e”. MEPs provide event information and the process to review this will not change with the implementation of the Flux system.

Audit outcome

Compliant

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

Meridian confirmed that no information is provided to the pricing manager in accordance with this clause.

Audit outcome

Not applicable

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

Code reference

Clause 13.137

Code related audit information

Each generator must provide the 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 area will not change with the implementation of the Flux system.

Audit commentary

This area will not change with the implementation of the Flux system.

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

Meridian confirmed that no information is provided to the pricing manager in accordance with this clause.

Audit outcome

Not applicable

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

Code reference

Clause 13.140

Code related audit information

If the generator provides half-hourly metering information to 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

Meridian confirmed that no information is provided to the pricing manager or grid owner in accordance with this clause.

Audit outcome

Not applicable

11. PROVISION OF SUBMISSION INFORMATION FOR RECONCILIATION

11.1. Buying and selling notifications (Clause 15.3)

Code reference

Clause 15.3

Code related audit information

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

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

Audit observation

This area will not change with the implementation of the Flux system.

Audit commentary

This area will not change with the implementation of the Flux system.

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

This area was evaluated during Powershop's audit.

Audit commentary

Powershop's audit report confirms compliance for the calculation of ICP days.

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

This area was evaluated during Powershop's audit.

Audit commentary

Flux was incorrectly calculating electricity supplied information because invoices for the last day of the month were not included in the totals. This matter has been resolved and the test results were provided to confirm Flux is now calculating correctly.

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

This area will not change with the implementation of the Flux system.

Audit commentary

This area will not change with the implementation of the Flux system.

Audit outcome

Compliant

12. SUBMISSION COMPUTATION

12.1. Daylight saving adjustment (Clause 15.36)

Code reference

Clause 15.36

Code related audit information

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

Audit observation

This area will not change with the implementation of the Flux system.

Audit commentary

This area will not change with the implementation of the Flux system.

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

This area was examined as part of the Powershop audit.

Audit commentary

The Powershop audit report confirms compliance with this clause.

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 by the registry for the relevant consumption period at the time the reconciliation participant assembles the submission information. Volume information must be derived in accordance with Schedule 15.2.

However, if, in relation to a point of connection at which the reconciliation participant trades electricity, a notification given by an embedded generator under clause 15.13 for an embedded generating station is in force, the reconciliation participant is not required to comply with the above in relation to electricity generated by the embedded generating station.

Audit observation

This area was examined as part of the Powershop audit.

Audit commentary

The Powershop audit report confirms compliance with this clause.

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

A registry list with history was reviewed and confirmed that Meridian is not a grid owner.

Audit outcome

Not applicable

12.5. Provision of NSP submission information (Clause 15.10)

Code reference

Clause 15.10

Code related audit information

The participant (if a local or embedded network owner) must provide to the reconciliation manager for each NSP for which the participant has given a notification under clause 25(1) Schedule 11.1 (which relates to the creation, decommissioning, and transfer of NSPs) the following:

- *submission information for the immediately preceding consumption period, by 1600 hours on the 4th business day of each reconciliation period (clause 15.10(a))*
- *revised submission information provided in accordance with clause 15.4(2), by 1600 hours on the 13th business day of each reconciliation period. (clause 15.10(b))*

Audit observation

A registry list was reviewed to confirm that Meridian does not own any local or embedded networks.

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 area will not change with the implementation of the Flux system.

Audit commentary

This area will not change with the implementation of the Flux system.

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

This area will largely not change with the implementation of the Flux system. One relevant point is the use of the most recent shape files for historic estimates. Flux uses the most recent shape file as required.

Audit commentary

This area will largely not change with the implementation of the Flux system. One relevant point is the use of the most recent shape files for historic estimates. Flux uses the most recent shape file as required.

Audit outcome

Compliant

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

This was checked during Powershop's audit.

Audit commentary

Flux does not have the capability to deal with "permanent estimates". All ICPs in Flux will be "switched in" because they will have a different participant code, therefore permanent estimates will only be required at the 14-month point after switching in.

I recommend Flux is changed to enable estimates to be labelled as "permanent" in time for the first 14-month revision.

Recommendation	Description	Audited party comment	Remedial action
Regarding Clause 4 Schedule 15.2	Ensure Flux has the capability to label estimates as permanent in time for the first 14-month revision.	We intend to develop and implement a solution for this capability gap before it becomes a compliance issue.	Identified

Audit outcome

Compliant

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

Code reference

Clause 2 Schedule 15.3

Code related audit information

If a reconciliation participant prepares submission information for each NSP for the relevant consumption periods in accordance with the Code, such submission information 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 on the registry; or*
 - b) *the metering installation in which the control device is location has interim certification.*
- *to create submission information for a point of connection the reconciliation participant must apply to the raw meter data (clause 2(3)):*
 - 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

This area was examined during Powershop's audit.

Audit commentary

Flux does not include consumption information from inactive ICPs in submission files. The status needs to be changed to "Active" to enable submission to occur. Whilst this is a process related issue, I recommend Meridian ensures appropriate reporting is in place to ensure consumption for inactive ICPs is identified and actioned.

Recommendation	Description	Audited party comment	Remedial action
Regarding Clause 2 Schedule 15.3	Ensure reporting is in place to identify and manage consumption on inactive ICPs	Reports to support revenue assurance processes have been flagged as deliverables of the project. We will also consider whether the functionality of the system should be changed so that all consumption recorded is submitted regardless of status.	Identified

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

This area was examined during Powershop's audit.

Audit commentary

Flux is not compliant for two specific scenarios resulting in HE being incorrectly labelled as FE. One scenario is where meter removal readings are available, but the consumption is labelled as FSE. The other scenario is where shape files are not available. The consumption is correctly calculated but is labelled as FE instead of HE.

Audit outcome

Non-compliant

Non-compliance	Description
Audit Ref: 12.10 With: Clause 3 of schedule 15.3 From: 12-Oct-18 To: 12-Oct-18	Incorrect labelling of HE as FE. Potential impact: Low Actual impact: Low Audit history: None Controls: Moderate Breach risk rating: 2

Audit risk rating	Rationale for audit risk rating		
Low	<p>The controls are recorded as moderate because they mitigate risk most of the time but there is room for improvement.</p> <p>There is no impact on settlement, therefore the audit risk rating is low.</p>		
Actions taken to resolve the issue		Completion date	Remedial action status
<p>We will investigate system treatment of meter removal reads to determine why these were not treated as actual reads when calculating submission information. If a systemic issue exists this will be resolved.</p> <p>We understand the incorrect labelling of calculated volumes as FE rather than HE where no shape file exists has no impact on the volumes or the market. The issue has been included as a capability gap within the project and will be assessed for a solution.</p>		<p>December 2019</p> <p>December 2019</p>	Investigating
Preventative actions taken to ensure no further issues will occur		Completion date	

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 kWhPx must be prorated as determined by the reconciliation participant using its own methodology or on a flat shape basis using the relevant number of days that are within the consumption period and within the period covered by kWh_{Px}.

Audit observation

To assist with determining compliance of the Historical Estimate (HE) processes, Meridian supplied the following four scenarios where manual calculations were conducted and compared to the results in Flux.

Audit commentary

To assist with determining compliance of the Historical Estimate (HE) processes, Meridian supplied the following four scenarios where manual calculations were conducted and compared to the results in Flux.

Test	Scenario	Test expectation	Compliance
C	ICPs become inactive, then active, then inactive again within a month.	Consumption is only calculated for the Active portion of the month.	Compliant
G	ICP Starts part way through a month.	Consumption is calculated to include the 1st day of responsibility.	Compliant
H	ICP Ends part way through a month.	Consumption is calculated to include the last day of responsibility.	Compliant
I & J	ICP is Lost and Won Back in a month.	Consumption is calculated for each day of responsibility.	Compliant

Audit outcome

Compliant

12.12. Forward estimate process (Clause 6 Schedule 15.3)

Code reference

Clause 6 Schedule 15.3

Code related audit information

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

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

Audit observation

The process to create forward estimates was reviewed during Powershop's audit.

Audit commentary

Flux's forward estimate process is based on a "straight line" forward standard estimate methodology, and where no historical information is available a "forward default" estimate of 25 units per day is used.

The forward standard methodology is based on the following:

- daily consumption from the "admin" field (based on previous validated meter readings)
- daily consumption from the switch in CS file; or
- daily consumption from the customer at the time of registration.

Audit outcome

Compliant

12.13. Compulsory meter reading after profile change (Clause 7 Schedule 15.3)

Code reference

Clause 7 Schedule 15.3

Code related audit information

If the reconciliation participant changes the profile associated with a meter, it must, when determining the volume information for that meter and its respective ICP, use a validated meter reading or permanent estimate on the day on which the profile change is to take effect.

The reconciliation participant must use the volume information from that validated meter reading or permanent estimate in calculating the relevant historical estimates of each profile for that meter.

Audit observation

This area will not change with the implementation of the Flux system.

Audit commentary

This area will not change with the implementation of the Flux system.

Audit outcome

Compliant

13. SUBMISSION FORMAT AND TIMING

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

Code reference

Clauses 8 & 9 of Schedule 15.2

Code related audit information

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

Audit observation

The meter reading reports were reviewed during Powershop's audit.

Audit commentary

The format and content of meter reading reports is compliant.

Audit outcome

Compliant

13.2. 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

This area was checked during Powershop's audit.

Audit commentary

Flux is configured to be compliant with this clause.

Audit outcome

Compliant

13.3. 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 and reports as part of the aggregation checks.

Audit commentary

Review of eight AV080 non half hour volumes reports confirmed that submission data is rounded to two decimal places.

Audit outcome

Compliant

13.4. 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

This area will not change with the implementation of the Flux system.

Audit commentary

This area will not change with the implementation of the Flux system.

Audit outcome

Compliant

CONCLUSION

The Flux system requires a small number of changes to be fully compliant. Two issues will be present at “go-live”. Not all meter readings are correctly applied because Flux calculates estimates out to the end of the day, rather than “applying” the meter reading to the end of the day. In some scenarios, historic estimates are conducted but are labelled as forward estimates.

Four recommendations are made, and these will need to be adopted to avoid future non-compliance.

Registry management and validation processes were confirmed as compliant during Powershop’s audit. For the initial small group of ICPs, registry validation is likely to be limited and will be conducted manually where necessary. More comprehensive registry validation and discrepancy reporting processes will be implemented prior to the migration of further ICP groups.

PARTICIPANT RESPONSE