

ELECTRICITY INDUSTRY PARTICIPATION CODE
RECONCILIATION PARTICIPANT AUDIT REPORT



For

MERIDIAN ENERGY LIMITED
(NZBN: 9429037696863)

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EXECUTIVE SUMMARY

Meridian Energy Ltd (Meridian) intends to add half hour (HHR) and solely unmetered load capability to the Flux system currently used for NHH. There will be no change to processes and submission for AV-090 (HHR volumes) or AV-140 (HHR aggregates), these will continue to be managed by EMS as Meridian's agent. These files will be produced by the Flux Core application when reconciliation processes are run but MERX will not be validating or submitting these. The data collection and validation processes will remain unchanged and will continue to be managed by EMS as Meridian's agent. There are some validation processes which occur outside of the system, which will continue to operate as they currently do for MERI and will be extended to MERX.

The main areas of change included in this audit are half hour new connections, decommissioning, upgrades and downgrades.

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.

Meridian is taking an iterative approach to the migration of its customers from Velocity to Flux. Customers/ICPs will be migrated via the Registry switching process (MERI – MERX) in a number of "waves". For C&I migration of HHR ICPs will be triggered part way through each month, after the invoice for the previous month has been prepared in Velocity and backdated to the 1st of that month.

The number of ICPs in each migration wave is dependent on the completion of development and successful testing of system features to support those ICPs throughout their lifecycle as well as (for HHR ICPs) successful completion of historical bill comparisons between Velocity and the Flux test system.

This iteration of the report supports the next wave of ICPs, which is all ICPs except four HHR ICPs which also have unmetered load. The sections updated are as follows.

Section	Update
6.7	Test results confirmed compliance is not achieved for NHH to HHR upgrades, however the functionality is efficient and accurate. HHR to NHH downgrades are compliant.
2.9, 2.10, 2.11, 2.13, 3.1 and 3.2	Test results confirmed compliance of the HHR new connection functionality.
3.9	Test results confirmed compliance of the HHR change to inactive functionality.

A further iteration of the report will be submitted prior to migration of HHR ICPs with associated unmetered load.

Meridian's next audit is due by 18 October 2022 and this material change audit should not alter that audit date because no additional risks were identified.

AUDIT SUMMARY

NON-COMPLIANCES

Subject	Section	Clause	Non-Compliance	Controls	Audit Risk Rating	Breach Risk Rating	Remedial Action
NHH meter reading application	6.7	Clause 6 Schedule 15.2	NHH readings applied to the end of the previous day for NHH to HHR upgrades.	Strong	Low	1	
Future Risk Rating						1	

RECOMMENDATIONS

Subject	Section	Description	Status

ISSUES

Subject	Section	Description	Issue
		Nil	

1. ADMINISTRATIVE

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

Code reference

Section 11 of Electricity Industry Act 2010.

Code related audit information

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

Audit observation

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

Audit commentary

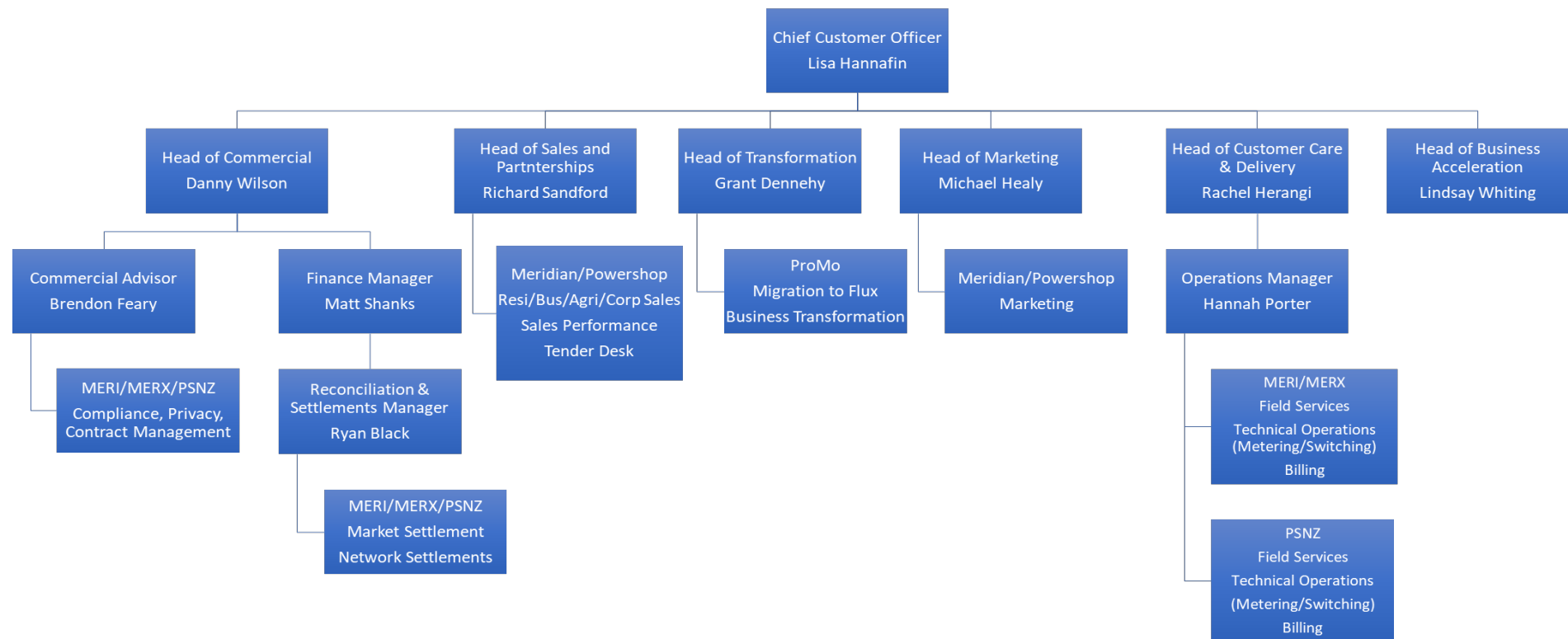
Exemption 245 allows Meridian to use subtraction to determine submission information for ICP 0009805800AL991. The exemption is in place from 23 December 2016 until the earlier of:

- 30 June 2025,
- the date Accucal ceases to be the MEP,
- the date Meridian ceases to be the trader for the ICP, or
- when embedded generation is injected through any one of the four meters currently used in the calculation of submission information by subtraction.

None of the above events have occurred so the exemption remains in place.

This exemption is not relevant to the material change audit.

1.2. Structure of Organisation



1.3. Persons involved in this audit

Auditor:

Name	Company	Role
Steve Woods	Veritek Limited	Auditor

Personnel assisting in this audit were:

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

Audit observation

This area is not affected by the material change.

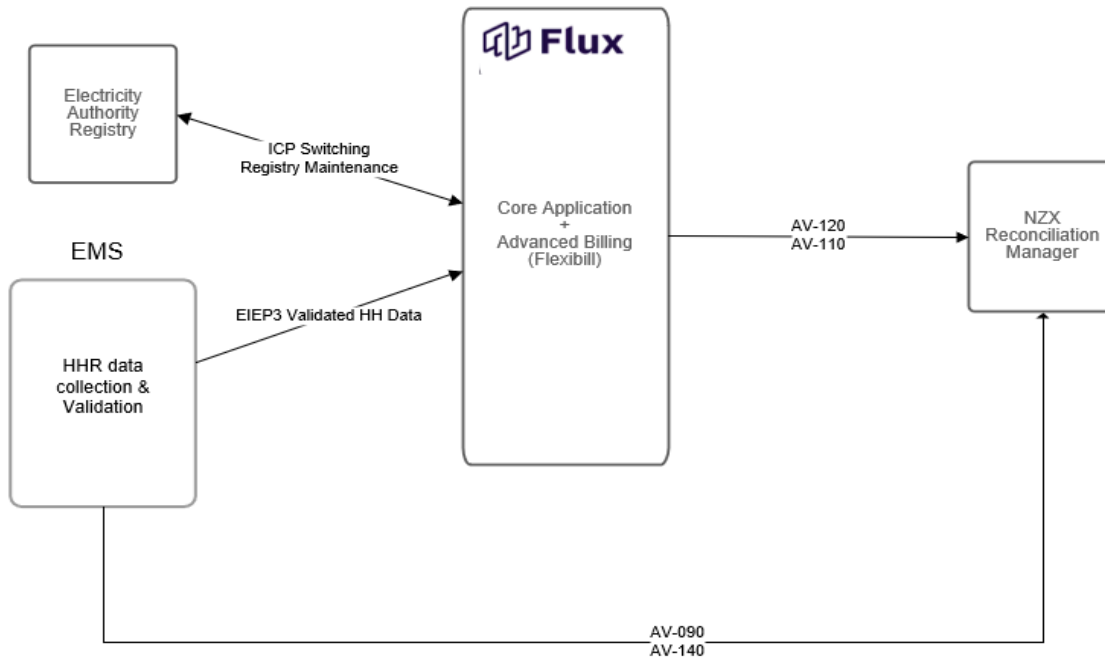
Audit commentary

This area is not affected by the material change.

1.5. Hardware and Software

The Flux system is used for registry management, switching, and reconciliation and is provided and maintained by Flux Federation. Flux Federation operates an Information Security Management System (ISMS), supporting the design, development, provision, operation, and maintenance of the Flux system, that has been certified as compliant with the requirements of ISO/IEC 27001:2013.

System changes have been made to support HHR switching, and market reconciliation activities and a new advanced billing feature (Flexibill) has been developed to support billing of more complex tariff structures. The diagram below shows the relevant interfaces with the market for HHR.



1.6. Breaches or Breach Allegations

Meridian had no breach allegations relevant to the scope of this audit during the audit period.

1.7. ICP Data

The quantity of HHR and unmetered ICPs transferred to Flux will vary with each “wave” and will be recorded in **section 1.9** as required.

1.8. Authorisation Received

No letter of authorisation was required.

1.9. Scope of Audit

Meridian intends to add half hour (HHR) and solely unmetered load capability to the Flux system.

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.

Meridian is taking an iterative approach to the migration of its customers from Velocity to Flux. Customers/ICPs will be migrated via the Registry switching process (MERI – MERX) in a number of “waves”. For C&I migration of HHR ICPs will be triggered part way through each month, after the invoice for the previous month has been prepared in Velocity and backdated to the 1st of that month.

The number of ICPs in each migration wave is dependent on the completion of development and successful testing of system features to support those ICPs throughout their lifecycle as well as (for HHR ICPs) successful completion of historical bill comparisons between Velocity and the Flux test system.

This iteration of the report supports the next wave of ICPs, which is all ICPs except four HHR ICPs which also have unmetered load. The sections updated are as follows.

Section	Update
6.7	Test results confirmed compliance is not achieved for NHH to HHR upgrades, however the functionality is efficient and accurate. HHR to NHH downgrades are compliant.
2.9, 2.10, 2.11, 2.13	Test results confirmed compliance of the HHR new connection functionality.
3.9	Test results confirmed compliance of the HHR change to inactive functionality.

A further iteration of the report will be submitted prior to migration of HHR ICPs with associated unmetered load.

1.10. Summary of previous audit

Meridian provided a copy of their previous audit report completed in October 2021 by Steve Woods (lead auditor) Tara Gannon and Rebecca Elliot of Veritek Limited. None of the previous findings are relevant because this audit is checking new functionality.

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 changes are likely to cause non-compliance with these clauses.

I conducted a walkthrough of the process changes to determine compliance, and I viewed results.

Audit commentary

The test results confirmed that compliance will be achieved with the requirement to provide complete and accurate information in accordance with this clause.

The registry discrepancy process used in the Flux core app to manage Registry discrepancies and updates for NHH connections will also be used for C&I connections. This process is run daily and has been audited as part of Meridian's previous audits.

This functionality has been modified to include ICP connection type, so discrepancies and updates can be filtered and managed by users as appropriate to the connection type. The screenshot shows the "Time of Use" connection type selected.

The screenshot displays a web interface titled "Registry and Retailer Discrepancies". It features a vertical list of three steps: "Step 1: Run discrepancy check", "Step 2: Update registry", and "Step 3: Generate registry event file". Below these steps, there are several input fields: "Test date" with dropdowns for "2018", "November", and "1"; "to" with dropdowns for "2021", "September", and "1"; "Event type" with a dropdown menu set to "All"; and "Connection type" with a dropdown menu set to "Time of Use". At the bottom of the form, there are two buttons: "Apply" and "Download CSV".

Changes to relevant fields in the Core application or the registry are identified via the discrepancy process (as per existing functionality) and either amended in the Core application (manually) or an RA-010 file created by the app to update the Registry. I checked an example where the test registry contained the RPS profile, and the app had HHR. The exception appeared in a list of discrepancies and when it was resolved a screenshot of an RA-010 showed a change to HHR being sent to the registry.

I checked the test results for MEP nominations, including a change of MEP, reversal of an MEP nomination and rejection of an MEP nomination. The information in Flux matched that in the registry. When an MEP nomination is rejected, the rejection file is imported into Flux and must be acknowledged. This ensures

action is taken when MEP nominations are rejected. When an MEP has been nominated, a new nomination cannot be made for the same event date.

The previous iteration of the report stated that in the unlikely event status changes are required for the first wave of ICPs, the changes will be conducted manually until testing of the automated process is complete. This testing is now complete. I checked test results showing status mismatches being identified and RA-010 files being sent to update statuses and correct discrepancies.

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 process is not affected by the material change.

Audit commentary

This process is not affected by the material change.

Audit outcome

Not applicable

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 process is not affected by the material change.

Audit commentary

This process is not affected by the material change.

Audit outcome

Not applicable

2.4. Audit trails (Clause 21 Schedule 15.2)

Code reference

Clause 21 Schedule 15.2

Code related audit information

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

The audit trail must include details of information:

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

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

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

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

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

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

Audit observation

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

Audit commentary

The Flux system contains a complete and compliant audit trail.

Audit outcome

Not applicable

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 process is not affected by the material change.

Audit commentary

This process is not affected by the material change.

Audit outcome

Not applicable

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 process is not affected by the material change.

Audit commentary

This process is not affected by the material change.

Audit outcome

Not applicable

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 process is not affected by the material change.

Audit commentary

This process is not affected by the material change.

Audit outcome

Not applicable

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

Code reference

Clause 11.15B

Code related audit information

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

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

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

Audit observation

This process is not affected by the material change.

Audit commentary

This process is not affected by the material change.

Audit outcome

Not applicable

2.9. Connection of an ICP (Clause 10.32)

Code reference

Clause 10.32

Code related audit information

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

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

Audit observation

I checked test results to confirm compliance of the HHR new connection functionality.

Audit commentary

The NHH new connection capability has been changed to allow HHR connection types to be selected. Following completion of the service order form in Flux, a file is automatically triggered to claim the ICP on the Registry and update the relevant fields (status, profile, reconciliation method and proposed MEP). The service order is sent to the service provider for completion.

Once field work has been completed and the ICP is electrically connected the completed service order is returned to Meridian. The ICP commissioning process is then completed (manually) in Flux using the same workflow as NHH – this includes adding metering information and updating the ICP status to active.

Test results demonstrated compliance.

Audit outcome

Compliant

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

Code reference

Clause 10.33(1)

Code related audit information

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

- *for a point of connection to the grid – the grid owner has approved the connection*
- *for an NSP that is not a point of connection to the grid - the relevant distributor has approved the connection.*
- *for a point of connection that is an ICP, but is not as NSP:*
- *the reconciliation participant is recorded in the registry as the trader responsible for the ICP*
- *if the ICP has metered load, 1 or more certified metering installations are in place*
- *if the ICP has not previously been electrically connected, the relevant distributor has given written approval of the temporary electrical connection.*

Audit observation

I checked test results to confirm compliance of the HHR new connection functionality.

Audit commentary

The process and system functionality for temporary electrical connection will be the same as that recorded in **section 2.9**. The approval from the distributor will be obtained manually.

Audit outcome

Compliant

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

Code reference

Clause 10.33A(1)

Code related audit information

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

- *for a point of connection to the grid – the grid owner has approved the connection*
- *for an NSP that is not a point of connection to the grid - the relevant distributor has approved the connection.*
- *for a point of connection that is an ICP, but is not as NSP:*
 - *the reconciliation participant is recorded in the registry as the trader responsible for the ICP*
 - *if the ICP has metered load, 1 or more certified metering installations are in place*
 - *if the ICP has not previously been electrically connected, the relevant distributor has given written approval of the temporary electrical connection.*

Audit observation

I checked test results to confirm compliance of the HHR new connection functionality.

Audit commentary

The NHH new connection capability has been changed to allow HHR connection types to be selected. Following completion of the service order form in Flux, a file is automatically triggered to claim the ICP on the Registry and update the relevant fields (status, profile, reconciliation method and proposed MEP). The service order is sent to the service provider for completion.

Once field work has been completed and the ICP is electrically connected the completed service order is returned to Meridian. The ICP commissioning process is then completed (manually) in Flux using the same workflow as NHH – this includes adding metering information and updating the ICP status to active.

Test results demonstrated compliance.

Audit outcome

Compliant

2.12. Arrangements for line function services (Clause 11.16)

Code reference

Clause 11.16

Code related audit information

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

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

Audit observation

This process is not affected by the material change.

Audit commentary

This process is not affected by the material change.

Audit outcome

Not applicable

2.13. Arrangements for metering equipment provision (Clause 10.36)

Code reference

Clause 10.36

Code related audit information

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

Audit observation

I checked test results to confirm compliance of the HHR new connection functionality.

Audit commentary

The set-up process in Flux includes the selection of an MEP and the MEP nomination is automated.

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

I checked test results to confirm compliance of the HHR new connection functionality.

Audit commentary

The NHH new connection capability has been changed to allow HHR connection types to be selected. Following completion of the service order form in Flux, a file is automatically triggered to claim the ICP on the Registry and update the relevant fields (status, profile, reconciliation method and proposed MEP). The service order is sent to the service provider for completion.

Once field work has been completed and the ICP is electrically connected the completed service order is returned to Meridian. The ICP commissioning process is then completed (manually) in Flux using the same workflow as NHH – this includes adding metering information and updating the ICP status to active.

Test results demonstrated compliance.

Audit outcome

Compliant

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

Code reference

Clause 11.7(2)

Code related audit information

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

Audit observation

I checked test results to confirm compliance of the HHR new connection functionality.

Audit commentary

The NHH new connection capability has been changed to allow HHR connection types to be selected. Following completion of the service order form in Flux, a file is automatically triggered to claim the ICP on the Registry and update the relevant fields (status, profile, reconciliation method and proposed MEP). The service order is sent to the service provider for completion.

Once field work has been completed and the ICP is electrically connected the completed service order is returned to Meridian. The ICP commissioning process is then completed (manually) in Flux using the same workflow as NHH – this includes adding metering information and updating the ICP status to active.

Test results demonstrated compliance.

Audit outcome

Compliant

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

Code reference

Clause 10 Schedule 11.1

Code related audit information

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

Audit observation

As recorded in **section 2.1**, I checked an example of a registry update to confirm compliance.

Audit commentary

I checked an example where the test registry contained the RPS profile, and the app had HHR. The exception appeared in a list of discrepancies and when it was resolved a screenshot of an RA-010 showed a change to HHR being sent to the registry.

I checked the test results for MEP nominations, including a change of MEP, reversal of an MEP nomination and rejection of an MEP nomination. The information in Flux matched that in the registry. When an MEP nomination is rejected, the rejection file is imported into Flux and must be acknowledged. This ensures action is taken when MEP nominations are rejected. When an MEP has been nominated, a new nomination cannot be made for the same event date.

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

The existing registry validation reports include confirmation that an MEP is recorded.

Audit commentary

The existing registry validation reports include confirmation that an MEP is recorded.

Audit outcome

Compliant

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

Code reference

Clause 9 Schedule 11.1

Code related audit information

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

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

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

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

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

Audit observation

As recorded in **sections 2.1** and **3.4**, registry validation is in place to ensure registry fields are complete and accurate. Additional processes, such as review of the AC-020 reporting, are in place to ensure compliance.

Audit commentary

As recorded in **sections 2.1** and **3.4**, registry validation is in place to ensure registry fields are complete and accurate. Additional processes, such as review of the AC-020 reporting, are in place to ensure compliance.

I checked the test results for MEP nominations, including a change of MEP, reversal of an MEP nomination and rejection of an MEP nomination. The information in Flux matched that in the registry. When an MEP nomination is rejected, the rejection file is imported into Flux and must be acknowledged. This ensures action is taken when MEP nominations are rejected. When an MEP has been nominated, a new nomination cannot be made for the same event date.

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

I checked test results to confirm compliance.

Audit commentary

Test results confirmed compliance for the registry updates and validation of ANZSIC codes.

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

I checked functionality in Flux and test results to confirm compliance.

Audit commentary

I confirmed that the registry details are loaded to the Flux app at the time of switch in for MI and TR switches. The screenshot of the “property details” screen in the Flux app confirmed that the correct details were loaded from the registry.

I checked test results showing the identification of ANZSIC code mismatches between Flux and the registry, including the updating of the registry with the correct code.

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 managed by the relevant trader and indicates that:

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

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

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

Audit observation

As mentioned in **section 2.1**, the registry discrepancy process used in the Flux core app to manage Registry discrepancies and updates for NHH connections will also be used for C&I connections.

In the unlikely event status changes are required for the first wave of ICPs, the changes will be conducted manually until testing of the automated process is complete.

Audit commentary

As mentioned in **section 2.1**, the registry discrepancy process used in the Flux core app to manage Registry discrepancies and updates for NHH connections will also be used for C&I connections.

The previous iteration of the report stated that in the unlikely event status changes are required for the first wave of ICPs, the changes will be conducted manually until testing of the automated process is complete. This testing is now complete. I checked test results showing status mismatches being identified and RA-010 files being sent to update statuses and correct discrepancies.

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

As mentioned in **section 2.1**, the registry discrepancy process used in the Flux core app to manage Registry discrepancies and updates for NHH connections will also be used for C&I connections.

In the unlikely event status changes are required for the first wave of ICPs, the changes will be conducted manually until testing of the automated process is complete.

I checked the test results for decommissioning ICPs to confirm compliance.

Audit commentary

As mentioned in **section 2.1**, the registry discrepancy process used in the Flux core app to manage Registry discrepancies and updates for NHH connections will also be used for C&I connections.

The previous iteration of the report stated that in the unlikely event status changes are required for the first wave of ICPs, the changes will be conducted manually until testing of the automated process is complete. This testing is now complete. I checked test results showing status mismatches being identified and RA-010 files being sent to update statuses and correct discrepancies.

When a HHR ICP is to be decommissioned, the meter will be removed in Flux the day following the meter removal to ensure all HHR data is applied to an active ICP. The status is changed manually in the registry the day following the meter change to ensure a complete HHR day in the registry.

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 process is not affected by the material change.

Audit commentary

This process is not affected by the material change.

Audit outcome

Not applicable

4. PERFORMING CUSTOMER AND EMBEDDED GENERATOR SWITCHING

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

Code reference

Clause 2 Schedule 11.3

Code related audit information

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

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

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

Audit observation

This process is not affected by the material change.

Audit commentary

This process is not affected by the material change.

Audit outcome

Not applicable

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

Code reference

Clauses 3 and 4 Schedule 11.3

Code related audit information

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

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

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

Audit observation

This process is not affected by the material change.

Audit commentary

This process is not affected by the material change.

Audit outcome

Not applicable

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

Code reference

Clause 5 Schedule 11.3

Code related audit information

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

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

Audit observation

This process is not affected by the material change.

Audit commentary

This process is not affected by the material change.

Audit outcome

Not applicable

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

Code reference

Clause 6(1) and 6A Schedule 11.3

Code related audit information

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

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

If the gaining trader disputes a switch meter reading because the switch event meter reading provided by the losing trader differs by 200 kWh or more, the gaining trader must, within four calendar months of

the registry manager giving the gaining trader written notice of having received information about the switch completion, provide to the losing trader a changed switch event meter reading supported by two validated meter readings.

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

Audit observation

This process is not affected by the material change.

Audit commentary

This process is not affected by the material change.

Audit outcome

Not applicable

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

Code reference

Clause 6(2) and (3) Schedule 11.3

Code related audit information

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

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

Audit observation

This process is not affected by the material change.

Audit commentary

This process is not affected by the material change.

Audit outcome

Not applicable

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

Code reference

Clause 7 Schedule 11.3

Code related audit information

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

Audit observation

This process is not affected by the material change.

Audit commentary

This process is not affected by the material change.

Audit outcome

Not applicable

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

Code reference

Clause 9 Schedule 11.3

Code related audit information

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

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

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

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

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

Audit observation

This process is not affected by the material change.

Audit commentary

This process is not affected by the material change.

Audit outcome

Not applicable

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

Code reference

Clause 10(1) Schedule 11.3

Code related audit information

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

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

Audit observation

This process is not affected by the material change.

Audit commentary

This process is not affected by the material change.

Audit outcome

Not applicable

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

Code reference

Clause 10(2) Schedule 11.3

Code related audit information

If the losing trader determines a different date, then within 10 business days of receiving notice the losing trader must also complete the switch by providing to the registry manager as described in 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

This process is not affected by the material change.

Audit commentary

This process is not affected by the material change.

Audit outcome

Not applicable

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

Code reference

Clause 11 Schedule 11.3

Code related audit information

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

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

Audit observation

This process is not affected by the material change.

Audit commentary

This process is not affected by the material change.

Audit outcome

Not applicable

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

Code reference

Clause 12 Schedule 11.3

Code related audit information

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

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

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

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

Audit observation

This process is not affected by the material change.

Audit commentary

This process is not affected by the material change.

Audit outcome

Not applicable

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

Code reference

Clause 14 Schedule 11.3

Code related audit information

The gaining trader switch process applies when a trader has an arrangement with a customer or embedded generator to trade electricity at an ICP at which the losing trader trades electricity with the customer or embedded generator, and one of the following applies at the ICP:

- *the gaining trader will trade electricity through a half hour metering installation that is a category 3 or higher metering installation; or*
- *the gaining trader will trade electricity through a non-AMI half hour metering installation and the losing trader trades electricity through a non-AMI non half hour metering installation; or*
- *the gaining trader will trade electricity through a non-AMI non half hour metering installation and the losing trader trades electricity through a non-AMI half hour metering installation*

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

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

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

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

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

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

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

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

Audit observation

I checked functionality in Flux and test results to confirm compliance.

Audit commentary

Category 3,4 or 5

The HH switching process is automated in the Flux app. Registry discovery occurs on sign up of an ICP, prior to switching, and based on meter category of 3, 4, 5 an NT file for an HH switch is sent. I checked the Flux app and the test registry for a Metering Category 4 ICP switching to MERX. The screen shots confirmed NT and CS file formats are accurate and the process operated as expected.

Category 1 or 2

During the ICP inbound process a connection type of "TOU" is assigned to the ICP in the Flux app. When Registry discovery completes and the ICP is identified as having CAT 1 or 2 metering the app generates an NT file with the HHR profile and allows acceptance of a CS file and completion of the switch in the Flux app without register readings. I checked the Flux app and the test registry for a Metering Category 1 ICP switching to MERX. The screen shots confirmed the NT file format is accurate and the process operated as expected. The Flux app accepted a CS file from the losing trader without register readings.

Audit outcome

Compliant

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

Code reference

Clause 15 Schedule 11.3

Code related audit information

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

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

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

Audit observation

I checked functionality in Flux and test results to confirm compliance.

Audit commentary

The HH switch loss process is partially automated in the Flux app. Manual intervention is required on receipt of an NT file to trigger the AN file from Flux – this is to ensure the ICP is not under contract for the switch date before accepting the switch.

The process to manually review and trigger the AN file is managed in Flux in the switching exception lists. On receipt of an NT file for an HH switch, an exception is generated for review. These lists are reviewed daily by the switching team. Exceptions are able to be filtered by switch type.

In addition, the daily breach report from the Registry is used to monitor ICPs in the switching process and identify ICPs that may require attention to ensure switching timeframes are met.

I checked screenshots from the registry and the Flux app to confirm the file formats, file content and audit trails were compliant.

Audit outcome

Compliant

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

Code reference

Clause 16 Schedule 11.3

Code related audit information

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

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

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

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

Audit observation

I checked functionality in Flux and test results to confirm compliance.

Audit commentary

Category 3,4 or 5

The HH switching process is automated in Flux app. Registry discovery occurs on sign up of an ICP, prior to switching, and based on meter category of 3, 4, 5 an NT file for an HH switch is sent. I checked the Flux app and the test registry for a Metering Category 4 ICP switching to MERX. The screen shots confirmed NT and CS file formats are accurate and the process operated as expected.

C&I switch exception management is within the Flux app as it is for NHH. Exception lists can be filtered by connection type to allowing management of exceptions for C&I ICPs to be viewed separately from NHH if needed. Daily Registry Switch Breach reports will also continue to be used to identify ICPs may require review to avoid breaching switching timeframes.

Category 1 or 2

During the ICP inbound process a connection type of "TOU" is assigned to the ICP in the Flux app. When Registry discovery completes and the ICP is identified as having CAT 1 or 2 metering the app generates an NT file with the HHR profile and allows acceptance of a CS file and completion of the switch in the Flux app without register readings. I checked the Flux app and the test registry for a Metering Category 1 ICP switching to MERX. The screen shots confirmed the NT file format is accurate and the process operated as expected. The Flux app accepted a CS file from the losing trader without register readings.

Audit outcome

Compliant

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

Code reference

Clauses 17 and 18 Schedule 11.3

Code related audit information

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

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

- *for each ICP, the trader withdrawing the switch request must provide the registry manager with (clause 18(c)):*
 - o *the participant identifier of the trader making the withdrawal request (clause 18(c)(i)); and*
 - o *the withdrawal advisory code published by the Authority (clause 18(c)(ii))*
- *within five business days after receiving notice from the registry manager of a switch, the trader receiving the withdrawal must advise the registry manager that the switch withdrawal request is accepted or rejected. A switch withdrawal request must not become effective until accepted by the trader who received the withdrawal (clause 18(d))*
- *on receipt of a rejection notice from the registry manager, in accordance with clause 18(d), a trader may re-submit the switch withdrawal request for an ICP in accordance with clause 18(c). All switch withdrawal requests must be resolved within 10 business days after the date of the initial switch withdrawal request (clause 18(e))*
- *if the trader requests that a switch request be withdrawn, and the resolution of that switch withdrawal request results in the switch proceeding, within 2 business days after receiving notice from the registry manager in accordance with clause 22(b), the losing trader must comply with clauses 3,5,10 and 11 (whichever is appropriate) and the gaining trader must comply with clause 16 (clause 18(f)).*

Audit observation

I checked functionality in Flux and test results to confirm compliance.

Audit commentary

Withdrawal process for C&I will be managed in Flux app using the same functionality as for NHH. I checked the Flux app and the test registry for seven scenarios, as follows:

1. A withdrawal generated by MERX after the CS was sent.
2. A withdrawal received by MERX after a switch gain.
3. A withdrawal generated by MERX after the NT, which was rejected by the losing trader.
4. A withdrawal received by MERX after the NT, which was rejected.
5. A withdrawal during the switch loss process. NW sent from FLUX after NT received and before AN sent.
6. Withdrawal rejected by gaining Trader - Switch Loss continues in Flux - waiting to send AN.
7. Switch Withdrawn after switch loss completion

The screen shots confirmed the file formats are accurate and the process operated as expected.

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 process is not affected by the material change.

Audit commentary

This process is not affected by the material change.

Audit outcome

Not applicable

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

Code reference

Clause 11.15AA to 11.15AB

Code related audit information

A losing retailer (including any party acting on behalf of the retailer) must not initiate contact to save or win back any customer who is switching away or has switched away for 180 days from the date of the switch.

The losing retailer may contact the customer for certain administrative reasons and may make a counteroffer only if the customer initiated contact with the losing retailer and invited the losing retailer to make a counteroffer.

The losing retailer must not use the customer contact details to enable any other retailer (other than the gaining retailer) to contact the customer.

Audit observation

This process is not affected by the material change.

Audit commentary

This process is not affected by the material change.

Audit outcome

Not applicable

5. MAINTENANCE OF UNMETERED LOAD

5.1. Maintaining shared unmetered load (Clause 11.14)

Code reference

Clause 11.14

Code related audit information

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

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

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

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

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

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

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

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

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

Audit observation

I checked functionality in Flux and test results to confirm compliance.

Audit commentary

I confirmed that the registry details are loaded to the Flux app at the time of switch in for MI and TR switches. The screenshot of the “property details” screen in the Flux app confirmed that the correct details were loaded from the registry.

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

I checked that the Flux app has appropriate validation to identify ICPs with unmetered load above the threshold.

Audit commentary

The Flux app has a validation exception that occurs prior to sending the NT file where it detects unmetered load that is close to the threshold – currently set to anything over 8.21kWh per day. A process will be put in place to alert the relevant teams to begin investigation and follow up where this validation occurs.

A screenshot was provided showing an “Active Hold” for “High Unmetered Load”.

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

Audit observation

I checked that the Flux app has appropriate validation to identify ICPs with unmetered load above the threshold.

Audit commentary

The Flux app has a validation exception that occurs prior to sending the NT file where it detects unmetered load that is close to the threshold – currently set to anything over 8.21kWh per day. A process will be put in place to alert the relevant teams to begin investigation and follow up where this validation occurs.

A screenshot was provided showing an “Active Hold” for “High Unmetered Load”.

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 process is not affected by the material change.

Audit commentary

This process is not affected by the material change.

Audit outcome

Not applicable

6. GATHERING RAW METER DATA

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

Code reference

Clause 10.13, Clause 10.24 and Clause 15.13

Code related audit information

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

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

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

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

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

Audit observation

This process is not affected by the material change.

Audit commentary

This process is not affected by the material change.

Audit outcome

Not applicable

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 process is not affected by the material change.

Audit commentary

This process is not affected by the material change.

Audit outcome

Not applicable

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

Code reference

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

Code related audit information

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

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

Audit observation

This process is not affected by the material change.

Audit commentary

This process is not affected by the material change.

Audit outcome

Not applicable

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 process is not affected by the material change.

Audit commentary

This process is not affected by the material change.

Audit outcome

Not applicable

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

Code reference

Clause 2 Schedule 15.2

Code related audit information

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

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

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

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

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

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

2(6) – The interrogation systems must record:

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

Audit observation

This process is not affected by the material change.

Audit commentary

This process is not affected by the material change.

Audit outcome

Not applicable

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

Code reference

Clauses 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 process is not affected by the material change.

Audit commentary

This process is not affected by the material change.

Audit outcome

Not applicable

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

This clause is relevant to NHH to HHR upgrades. I checked test results to confirm compliance.

Audit commentary

Flux is designed to attribute profiles and settlement method (i.e HH or NHH) to whole days. The registry is also designed to only allow one profile per day. The NHH to HHR process has the following steps and business rules:

- the NHH meter is “removed” at 23:59 the day prior to the profile change,
- the day of the profile change is HHR all day,
- the day of the profile change has one “ICP day”,
- profiles in Flux match the registry, and
- submission matches the registry.

This process has been the subject of considerable debate between the industry and the Authority for many years because technically the NHH reading should be applied to the end of the day of the profile change, which means Flux would need the ability to have NHH and HHR consumption on the same day. This would create a mismatch between the registry and Flux, because the registry only deals with whole

days. The Authority clarified in May 2021 that they expect both NHH and HHR submission and a NHH ICP day and a HHR ICP day on the day of the change. The Authority accepts there will be an ICP days mismatch, and they confirmed this mismatch does not constitute non-compliance.

Therefore, whilst the Flux functionality and associated processes are efficient and match those used in the industry by all participants since 2008, non-compliance exists because the NHH reading is not applied to the end of the day of the profile change.

The Authority intends to produce and circulate a memo clarifying their expectations regarding upgrades and downgrades.

For HHR to NHH downgrades, the HHR meter is removed at 23:59 on the day of the change and the NHH meter is installed at 00:00 on the day after the change. The NHH reading is effectively applied to the end of the day of the profile change and compliance is achieved. The day of the profile change is HHR all day. Test results confirm compliance.

Audit outcome

Non-compliant

Non-compliance	Description		
Audit Ref: 6.7 With: Clause 6 Schedule 15.2 From: 03-Feb-22 To: 03-Feb-22	NHH readings applied to the end of the previous day for NHH to HHR upgrades. Potential impact: None Actual impact: None Audit history: None Controls: Strong Breach risk rating: 1		
Audit risk rating	Rationale for audit risk rating		
Low	The controls are recorded as strong because the adopted practice results in accurate submission, accurate ICP days and a match between Flux and the registry. There is no impact on settlement or participants; therefore, the audit risk rating is low.		
Actions taken to resolve the issue		Completion date	Remedial action status
Significant system development and testing is required to meet the Authority’s expectation regarding application of NHH reads when upgrading from NHH to HHR settlement and settlement of NHH and HHR volumes on the same day. We are concerned at the potential operational issues this may cause and believe any change to the status quo would need input from all relevant participants – MEPs included – to avoid unintended consequences.			Choose an item.
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 process is not affected by the material change.

Audit commentary

This process is not affected by the material change.

Audit outcome

Not applicable

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 process is not affected by the material change.

Audit commentary

This process is not affected by the material change.

Audit outcome

Not applicable

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

Code reference

Clause 9(1) and (2) Schedule 15.2

Code related audit information

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

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

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

Audit observation

This process is not affected by the material change.

Audit commentary

This process is not affected by the material change.

Audit outcome

Not applicable

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 process is not affected by the material change.

Audit commentary

This process is not affected by the material change.

Audit outcome

Not applicable

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 process is not affected by the material change.

Audit commentary

This process is not affected by the material change.

Audit outcome

Not applicable

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 process is not affected by the material change.

Audit commentary

This process is not affected by the material change.

Audit outcome

Not applicable

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 process is not affected by the material change.

Audit commentary

This process is not affected by the material change.

Audit outcome

Not applicable

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 process is not affected by the material change.

Audit commentary

This process is not affected by the material change.

Audit outcome

Not applicable

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 process is not affected by the material change.

Audit commentary

This process is not affected by the material change.

Audit outcome

Not applicable

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 process is not affected by the material change.

Audit commentary

This process is not affected by the material change.

Audit outcome

Not applicable

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

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

Code reference

Clause 19(1) Schedule 15.2

Code related audit information

If a reconciliation participant detects errors while validating non-half hour meter readings, the reconciliation participant must:

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

19(1)(b) - replace the original meter reading the second meter reading (even if the second meter reading is at a different date)

19(1A) if a reconciliation participant detects errors while validating non half hour meter readings, but the reconciliation participant cannot confirm the original meter reading or replace it with a meter reading from another interrogation, the reconciliation participant must:

- *substitute the original meter reading with an estimated reading that is marked as an estimate; and*
- *subsequently replace the estimated reading in accordance with clause 4(2)*

Audit observation

This process is not affected by the material change.

Audit commentary

This process is not affected by the material change.

Audit outcome

Not applicable

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

Code reference

Clause 19(2) Schedule 15.2

Code related audit information

If a reconciliation participant detects errors while validating half hour meter readings, the reconciliation participant must correct the meter readings as follows:

19(2)(a) - if the relevant metering installation has a check meter or data storage device, substitute the original meter reading with data from the check meter or data storage device; or

19(2)(b) - if the relevant metering installation does not have a check meter or data storage device, substitute the original meter reading with data from another period provided:

- (i) *The total of all substituted intervals matches the total consumption recorded on a meter, if available; and*
- (ii) *The reconciliation participant considers the pattern of consumption to be materially similar to the period in error*

Audit observation

This process is not affected by the material change. EMS will continue to conduct corrections.

Audit commentary

This process is not affected by the material change. EMS will continue to conduct corrections.

Audit outcome

Not applicable

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

Code reference

Clause 19(3) Schedule 15.2

Code related audit information

A reconciliation participant may use error compensation and loss compensation as part of the process of determining accurate data. Whichever methodology is used, the reconciliation participant must document the compensation process and comply with audit trail requirements set out in the Code.

Audit observation

This process is not affected by the material change.

Audit commentary

This process is not affected by the material change.

Audit outcome

Not applicable

8.4. Correction of HHR and NHH raw meter data (Clause 19(4) and (5) Schedule 15.2)

Code reference

Clause 19(4) and (5) Schedule 15.2

Code related audit information

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

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

19(5)(a)- the date of the correction or alteration

19(5)(b)- the time of the correction or alteration

19(5)(c)- the operator identifier for the person within the reconciliation participant who made the correction or alteration

19(5)(d)- the half-hour metering data or the non-half hour metering data corrected or altered, and the total difference in volume of such corrected or altered data

19(5)(e)- the technique used to arrive at the corrected data

19(5)(f)- the reason for the correction or alteration.

Audit observation

This process is not affected by the material change. EMS will continue to conduct corrections.

Audit commentary

This process is not affected by the material change. EMS will continue to conduct corrections.

Audit outcome

Not applicable

9. ESTIMATING AND VALIDATING VOLUME INFORMATION

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

Code reference

Clause 3(3) Schedule 15.2

Code related audit information

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

Audit observation

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

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

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

Audit commentary

This process is not affected by the material change.

Audit commentary

This process is not affected by the material change.

Audit outcome

Not applicable

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 process is not affected by the material change.

Audit commentary

This process is not affected by the material change.

Audit outcome

Not applicable

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

Code reference

Clause 3(5) Schedule 15.2

Code related audit information

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

Audit observation

This process is not affected by the material change.

Audit commentary

This process is not affected by the material change.

Audit outcome

Not applicable

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 process is not affected by the material change. HHR estimates continue to be conducted by EMS as Meridian's agent.

Audit commentary

This process is not affected by the material change. HHR estimates continue to be conducted by EMS as Meridian's agent.

Audit outcome

Not applicable

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 zero values.

Audit observation

This process is not affected by the material change.

Audit commentary

This process is not affected by the material change.

Audit outcome

Not applicable

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

Code reference

Clause 17 Schedule 15.2

Code related audit information

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

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

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

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

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

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

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

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

Audit observation

This process is not affected by the material change.

Audit commentary

This process is not affected by the material change.

Audit outcome

Not applicable

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

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

Code reference

Clause 13.136

Code related audit information

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

- *that injects electricity directly into a local network; or*
- *if the meter configuration is such that the electricity flows into a local network without first passing through a grid injection point or grid exit point metering installation.*

Audit observation

This process is not affected by the material change.

Audit commentary

This process is not affected by the material change.

Audit outcome

Not applicable

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

Code reference

Clause 13.137

Code related audit information

Each generator must provide the relevant grid owner half-hour metering information for:

- *any unoffered generation from a generating station with a point of connection to the grid 13.137(1)(a)*
- *any electricity supplied from an intermittent generating station with a point of connection to the grid. 13.137(1)(b)*

The generator must provide the relevant grid owner with the half-hour metering information required under this clause in accordance with the requirements of Part 15 for the collection of that generator's volume information (clause 13.137(2)).

If such half-hour metering information is not available, the generator must provide the pricing manager and the relevant grid owner a reasonable estimate of such data (clause 13.137(3)).

Audit observation

This process is not affected by the material change.

Audit commentary

This process is not affected by the material change.

Audit outcome

Not applicable

10.3. Loss adjustment of HHR metering information (Clause 13.138)

Code reference

Clause 13.138

Code related audit information

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

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

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

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

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

Audit observation

This process is not affected by the material change.

Audit commentary

This process is not affected by the material change.

Audit outcome

Not applicable

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

Code reference

Clause 13.140

Code related audit information

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

Audit observation

This process is not affected by the material change.

Audit commentary

This process is not affected by the material change.

Audit outcome

Not applicable

11. PROVISION OF SUBMISSION INFORMATION FOR RECONCILIATION

11.1. Buying and selling notifications (Clause 15.3)

Code reference

Clause 15.3

Code related audit information

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

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

Audit observation

This process is not affected by the material change.

Audit commentary

This process is not affected by the material change.

Audit outcome

Not applicable

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

HHR ICP days is calculated and included in the AV-110 report for ICPs where reconciliation method is Half Hourly – MERX intends to use existing functionality in the Flux Core Application for calculation of ICPs days that has previously been audited for PSNZ. Testing was still conducted to ensure compliance.

Audit commentary

HHR ICP days is calculated and included in the AV-110 report for ICPs where reconciliation method is Half Hourly – MERX intends to use existing functionality in the Flux Core Application for calculation of ICPs days that has previously been audited for PSNZ.

I checked the test results for the following scenarios:

- HHR ICP days for a full month, and
- ICP days for a full month where the reconciliation method changed from NHH to HHR during the month.

The test results confirmed the correct calculations.

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

I checked the test results to confirm the electricity supplied file was correct.

Audit commentary

I checked an NSP with one ICP, where the consumption period was July 1st to July 31st, and the invoice was provided on September 1st. The AV-120 for September correctly had electricity supplied information. I checked a screenshot of Flexibill, Flux Core app and the AV-120 file to confirm the correct information was present.

I checked the test results for a revision to the AV-120 file for one ICP at one NSP where the invoiced consumption was revised in October 2021 for prior consumption periods. The revision resulted from a “reverse and rebill” and the invoiced consumption in the AV-120 correctly reflected the change.

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 commentary

This process is not affected by the material change. EMS will continue to prepare and submit HHR aggregates files.

Audit commentary

This process is not affected by the material change. EMS will continue to prepare and submit HHR aggregates files.

Audit outcome

Not applicable

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 process is not affected by the material change.

Audit commentary

This process is not affected by the material change.

Audit outcome

Not applicable

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

A list of breaches was obtained from the Electricity Authority. There were no breaches for late provision of submission information.

- HHR submissions are created by EMS, and their processes were reviewed as part of their agent audit. Submissions were checked in **section 11.4**.
- MERI NHH submissions are created using Velocity, and MERX submissions are created using Flux. A sample of NHH ICPs were checked to make sure they are handled correctly, including unmetered load, distributed generation, and vacant ICPs with consumption. Further information on calculation of historic estimate is recorded in **section 12.11**.
- NSP volumes submissions are discussed in **section 12.6**.

Audit commentary

This process is not affected by the material change.

Audit commentary

This process is not affected by the material change.

Audit outcome

Not applicable

12.3. Allocation of submission information (Clause 15.5)

Code reference

Clause 15.5

Code related audit information

In preparing and submitting submission information, the reconciliation participant must allocate volume information for each ICP to the NSP indicated by the data held in the registry for the relevant consumption period at the time the reconciliation participant assembles the submission information. Volume information must be derived in accordance with Schedule 15.2.

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

Audit observation

Submission of HHR information was reviewed as part of EMS' agent audit and found to be compliant.

Processes to ensure that information used to aggregate the reconciliation reports is consistent with the registry were reviewed in **section 2.1**.

The process to ensure that AV080 submissions are accurate was discussed. The process for aggregating the AV080 was examined by checking five NSPs with a small number of ICPs.

The GR170 to AV080 files for eight months were compared, to confirm zeroing occurs.

Audit commentary

This process is not affected by the material change.

Audit commentary

This process is not affected by the material change.

Audit outcome

Not applicable

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

This process is not affected by the material change.

Audit commentary

This process is not affected by the material change.

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

This process is not affected by the material change.

Audit commentary

This process is not affected by the material change.

Audit outcome

Not applicable

12.6. Grid connected generation (Clause 15.11)

Code reference

Clause 15.11

Code related audit information

The participant (if a grid connected generator) must deliver to the reconciliation manager for each of its points of connection, the following:

- *submission information for the immediately preceding consumption period, by 1600 hours on the 4th business day of each reconciliation period (clause 15.11(a))*
- *revised submission information provided in accordance with clause 15.4(2), by 1600 hours on the 13th business day of each reconciliation period (clause 15.11(b)).*

Audit observation

This process is not affected by the material change.

Audit commentary

This process is not affected by the material change.

Audit outcome

Not applicable

12.7. Accuracy of submission information (Clause 15.12)

Code reference

Clause 15.12

Code related audit information

If the reconciliation participant has submitted information and then subsequently obtained more accurate information, the participant must provide the most accurate information available to the reconciliation manager or participant, as the case may be, at the next available opportunity for submission (in accordance with clauses 15.20A, 15.27, and 15.28).

Audit observation

This process is not affected by the material change.

Audit commentary

This process is not affected by the material change.

Audit outcome

Not applicable

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

Code reference

Clause 4 Schedule 15.2

Code related audit information

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

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

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

Audit observation

This process is not affected by the material change.

Audit commentary

This process is not affected by the material change.

Audit outcome

Not applicable

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

Code reference

Clause 2 Schedule 15.3

Code related audit information

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

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

Audit observation

This process is not affected by the material change.

Audit commentary

This process is not affected by the material change.

Audit outcome

Not applicable

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 process is not affected by the material change.

Audit commentary

This process is not affected by the material change.

Audit outcome

Not applicable

12.11. Historical estimate process (Clauses 4 and 5 Schedule 15.3)

Code reference

Clauses 4 and 5 Schedule 15.3

Code related audit information

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

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

Audit observation

This process is not affected by the material change.

Audit commentary

This process is not affected by the material change.

Audit outcome

Not applicable

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

This process is not affected by the material change.

Audit commentary

This process is not affected by the material change.

Audit outcome

Not applicable

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 process is not affected by the material change.

Audit commentary

This process is not affected by the material change.

Audit outcome

Not applicable

13. SUBMISSION FORMAT AND TIMING

13.1. Provision of submission information to the RM (Clause 8 Schedule 15.3)

Code reference

Clause 8 Schedule 15.3

Code related audit information

For each category 3 of higher metering installation, a reconciliation participant must provide half hour submission information to the reconciliation manager.

For each category 1 or category 2 metering installation, a reconciliation participant must provide to the reconciliation manager:

- *Half hour submission information; or*
- *Non half hour submission information; or*
- *A combination of half hour submission information and non-half hour submission information*

However, a reconciliation participant may instead use a profile if:

- *The reconciliation participant is using a profile approved in accordance with clause Schedule 15.5; and*
- *The approved profile allows the reconciliation participant to provide half hour submission information from a non-half hour metering installation; and*
- *The reconciliation participant provides submission information that complies with the requirements set out in the approved profile.*

Half hour submission information provided to the reconciliation manager must be aggregated to the following levels:

- *NSP code*
- *reconciliation type*
- *profile*
- *loss category code*
- *flow direction*
- *dedicated NSP*
- *trading period*

The non-half hour submission information that a reconciliation participant submits must be aggregated to the following levels:

- *NSP code*
- *reconciliation type*
- *profile*
- *loss category code*
- *flow direction*
- *dedicated NSP*
- *consumption period or day*

Audit observation

This process is not affected by the material change.

Audit commentary

This process is not affected by the material change.

Audit outcome

Not applicable

13.2. Reporting resolution (Clause 9 Schedule 15.3)

Code reference

Clause 9 Schedule 15.3

Code related audit information

When reporting submission information, the number of decimal places must be rounded to not more than two decimal places.

If the unrounded digit to the right of the second decimal place is greater than or equal to 5, the second digit is rounded up, and

If the digit to the right of the second decimal place is less than 5, the second digit is unchanged.

Audit observation

This process is not affected by the material change.

Audit commentary

This process is not affected by the material change.

Audit outcome

Not applicable

13.3. Historical estimate reporting to RM (Clause 10 Schedule 15.3)

Code reference

Clause 10 Schedule 15.3

Code related audit information

By 1600 hours on the 13th business day of each reconciliation period the reconciliation participant must report to the reconciliation manager the proportion of historical estimates per NSP contained within its non-half hour submission information.

The proportion of submission information per NSP that is comprised of historical estimates must (unless exceptional circumstances exist) be:

- *at least 80% for revised data provided at the month 3 revision (clause 10(3)(a))*
- *at least 90% for revised data provided at the month 7 revision (clause 10(3)(b))*
- *100% for revised data provided at the month 14 revision (clause 10(3)(c))*

Audit observation

This process is not affected by the material change.

Audit commentary

This process is not affected by the material change.

Audit outcome

Not applicable

CONCLUSION

Meridian Energy Ltd (Meridian) intends to add half hour (HHR) and solely unmetered load capability to the Flux system currently used for NHH. There will be no change to processes and submission for AV-090 (HHR volumes) or AV-140 (HHR aggregates), these will continue to be managed by EMS as Meridian's agent. These files will be produced by the Flux Core application when reconciliation processes are run but MERX will not be validating or submitting these. The data collection and validation processes will remain unchanged and will continue to be managed by EMS as Meridian's agent. There are some validation processes which occur outside of the system, which will continue to operate as they currently do for MERI and will be extended to MERX.

The main areas of change included in this audit are half hour new connections, decommissioning, upgrades and downgrades.

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.

Meridian is taking an iterative approach to the migration of its customers from Velocity to Flux. Customers/ICPs will be migrated via the Registry switching process (MERI – MERX) in a number of "waves". For C&I migration of HHR ICPs will be triggered part way through each month, after the invoice for the previous month has been prepared in Velocity and backdated to the 1st of that month.

The number of ICPs in each migration wave is dependent on the completion of development and successful testing of system features to support those ICPs throughout their lifecycle as well as (for HHR ICPs) successful completion of historical bill comparisons between Velocity and the Flux test system.

This iteration of the report supports the next wave of ICPs, which is all ICPs except four HHR ICPs which also have unmetered load. The sections updated are as follows.

Section	Update
6.7	Test results confirmed compliance is not achieved for NHH to HHR upgrades, however the functionality is efficient and accurate. HHR to NHH downgrades are compliant.
2.9, 2.10, 2.11, 2.13, 3.1 and 3.2	Test results confirmed compliance of the HHR new connection functionality.
3.9	Test results confirmed compliance of the HHR change to inactive functionality.

A further iteration of the report will be submitted prior to migration of HHR ICPs with associated unmetered load.

Meridian's next audit is due by 18 October 2022 and this material change audit should not alter that audit date because no additional risks were identified.

