

ELECTRICITY INDUSTRY PARTICIPATION CODE
RECONCILIATION PARTICIPANT AUDIT REPORT



For

TRANSPOWER NEW ZEALAND LIMITED

Prepared by: Steve Woods

Date audit commenced: 26 February 2019

Date audit report completed: 28 February 2019

Audit report due date: 01 March 2019

TABLE OF CONTENTS

Executive summary	6
Audit summary	7
Non-compliances	7
Recommendations	7
Issues 7	
1. Administrative	8
1.1. Exemptions from Obligations to Comply with Code (Section 11)	8
1.2. Structure of Organisation	8
1.3. Persons involved in this audit.....	9
1.4. Use of Agents (Clause 15.34).....	9
1.5. Hardware and Software	9
1.6. Breaches or Breach Allegations.....	10
1.7. ICP Data	10
1.8. Authorisation Received	10
1.9. Scope of Audit	11
1.10. Summary of previous audit	12
Non-compliances	12
Recommendations	12
2. Operational Infrastructure	13
2.1. Relevant information (Clause 10.6, 11.2, 15.2).....	13
2.2. Provision of information (Clause 15.35).....	13
2.3. Data transmission (Clause 20 Schedule 15.2)	14
2.4. Audit trails (Clause 21 Schedule 15.2).....	14
2.5. Retailer responsibility for electricity conveyed - participant obligations (Clause 10.4)..	15
2.6. Retailer responsibility for electricity conveyed - access to metering installations (Clause 10.7(2),(4),(5) and (6))	15
2.7. Physical location of metering installations (Clause 10.35(1)&(2))	16
2.8. Trader contracts to permit assignment by the Authority (Clause 11.15B)	17
2.9. Connection of an ICP (Clause 10.32)	17
2.10. Temporary Electrical Connection of an ICP (Clause 10.33(1)).....	18
2.11. Electrical Connection of Point of Connection (Clause 10.33A)	19
2.12. Arrangements for line function services (Clause 11.16)	19
2.13. Arrangements for metering equipment provision (Clause 10.36)	20
3. Maintaining registry information.....	21
3.1. Obtaining ICP identifiers (Clause 11.3).....	21
3.2. Providing registry information (Clause 11.7(2))	22
3.3. Changes to registry information (Clause 10 Schedule 11.1)	22
3.4. Trader responsibility for an ICP (Clause 11.18)	22
3.5. Provision of information to the registry manager (Clause 9 Schedule 11.1)	23
3.6. ANZSIC codes (Clause 9 (1(k) of Schedule 11.1)	24
3.7. Changes to unmetered load (Clause 9(1)(f) of Schedule 11.1)	24
3.8. Management of “active” status (Clause 17 Schedule 11.1)	24
3.9. Management of “inactive” status (Clause 19 Schedule 11.1)	25
3.10. ICPs at new or ready status for 24 months (Clause 15 Schedule 11.1).....	26
4. Performing customer and embedded generator switching.....	27

4.1.	Inform registry of switch request for ICPs - standard switch (Clause 2 Schedule 11.3)..	27
4.2.	Losing trader response to switch request and event dates - standard switch (Clauses 3 and 4 Schedule 11.3)	27
4.3.	Losing trader must provide final information - standard switch (Clause 5 Schedule 11.3)	28
4.4.	Retailers must use same reading - standard switch (Clause 6(1) and 6A Schedule 11.3)	28
4.5.	Non-half hour switch event meter reading - standard switch (Clause 6(2) and (3) Schedule 11.3)	29
4.6.	Disputes - standard switch (Clause 7 Schedule 11.3).....	29
4.7.	Gaining trader informs registry of switch request - switch move (Clause 9 Schedule 11.3)	30
4.8.	Losing trader provides information - switch move (Clause 10(1) Schedule 11.3)	30
4.9.	Losing trader determines a different date - switch move (Clause 10(2) Schedule 11.3)	31
4.10.	Losing trader must provide final information - switch move (Clause 11 Schedule 11.3)	31
4.11.	Gaining trader changes to switch meter reading - switch move (Clause 12 Schedule 11.3)	32
4.12.	Gaining trader informs registry of switch request - gaining trader switch (Clause 14 Schedule 11.3)	33
4.13.	Losing trader provision of information - gaining trader switch (Clause 15 Schedule 11.3)	33
4.14.	Gaining trader to advise the registry manager - gaining trader switch (Clause 16 Schedule 11.3)	34
4.15.	Withdrawal of switch requests (Clauses 17 and 18 Schedule 11.3).....	34
4.16.	Metering information (Clause 21 Schedule 11.3)	35
4.17.	Switch saving protection (Clause 11.15AA to 11.15AB).....	36
5.	Maintenance of unmetered load	37
5.1.	Maintaining shared unmetered load (Clause 11.14).....	37
5.2.	Unmetered threshold (Clause 10.14 (2)(b))	37
5.3.	Unmetered threshold exceeded (Clause 10.14 (5))	38
5.4.	Distributed unmetered load (Clause 11 Schedule 15.3, Clause 15.37B).....	38
6.	Gathering raw meter data	40
6.1.	Electricity conveyed & notification by embedded generators (Clause 10.13, Clause 10.24 and 15.13)	40
6.2.	Responsibility for metering at GXP (Clause 10.26 (6), (7) and (8)).....	40
6.3.	Certification of control devices (Clause 33 Schedule 10.7 and clause 2(2) Schedule 15.3)	41
6.4.	Reporting of defective metering installations (Clause 10.43(2) and (3))	42
6.5.	Collection of information by certified reconciliation participant (Clause 2 Schedule 15.2)	43
6.6.	Derivation of meter readings (Clause 3(1), 3(2) and 5 Schedule 15.2)	44
6.7.	NHH meter reading application (Clause 6 Schedule 15.2)	45
6.8.	Interrogate meters once (Clause 7(1) and (2) Schedule 15.2)	45
6.9.	NHH meters interrogated annually (Clause 8(1) and (2) Schedule 15.2).....	46
6.10.	NHH meters 90% read rate (Clause 9(1) and (2) Schedule 15.2)	46
6.11.	NHH meter interrogation log (Clause 10 Schedule 15.2)	47
6.12.	HHR data collection (Clause 11(1) Schedule 15.2)	47
6.13.	HHR interrogation data requirement (Clause 11(2) Schedule 15.2)	47
6.14.	HHR interrogation log requirements (Clause 11(3) Schedule 15.2).....	48
7.	Storing raw meter data	49
7.1.	Trading period duration (Clause 13 Schedule 15.2)	49
7.2.	Archiving and storage of raw meter data (Clause 18 Schedule 15.2)	50
7.3.	Non-metering information collected / archived (Clause 21(5) Schedule 15.2)	50

8.	Creating and managing (including validating, estimating, storing, correcting and archiving) volume information.....	51
8.1.	Correction of NHH meter readings (Clause 19(1) Schedule 15.2).....	51
8.2.	Correction of HHR metering information (Clause 19(2) Schedule 15.2).....	51
8.3.	Error and loss compensation arrangements (Clause 19(3) Schedule 15.2).....	52
8.4.	Correction of HHR and NHH raw meter data (Clause 22(1) and (2) Schedule 15.2).....	52
9.	Estimating and validating volume information.....	54
9.1.	Identification of readings (Clause 3(3) Schedule 15.2).....	54
9.2.	Derivation of volume information (Clause 3(4) Schedule 15.2).....	54
9.3.	Meter data used to derive volume information (Clause 3(5) Schedule 15.2).....	55
9.4.	Half hour estimates (Clause 15 Schedule 15.2).....	55
9.5.	NHH metering information data validation (Clause 16 Schedule 15.2).....	56
9.6.	Electronic meter readings and estimated readings (Clause 17 Schedule 15.2).....	56
10.	Provision of metering information to the Grid owner in accordance with subpart 4 of Part 13 (clause 15.38(1)(f)).....	58
10.1.	Generators to provide HHR metering information (Clause 13.136).....	58
10.2.	Unoffered & intermittent generation provision of metering information (Clause 13.137).....	58
10.3.	Loss adjustment of HHR metering information (Clause 13.138).....	59
10.4.	Notification of the provision of HHR metering information (Clause 13.140).....	59
10.5.	Calculation of Actual Demand Over the Trading Period (Clause 13.141(1)(b)(iii) of Part 13).....	60
11.	Provision of submission information for reconciliation.....	60
11.1.	Buying and selling notifications (Clause 15.3).....	60
11.2.	Calculation of ICP days (Clause 15.6).....	61
11.3.	Electricity supplied information provision to the reconciliation manager (Clause 15.7).....	61
11.4.	HHR aggregates information provision to the reconciliation manager (Clause 15.8).....	62
12.	Submission computation.....	63
12.1.	Daylight saving adjustment (Clause 15.36).....	63
12.2.	Creation of submission information (Clause 15.4).....	63
12.3.	Allocation of submission information (Clause 15.5).....	64
12.4.	Grid owner volumes information (Clause 15.9).....	64
12.5.	Provision of NSP submission information (Clause 15.10).....	65
12.6.	Grid connected generation (Clause 15.11).....	65
12.7.	Accuracy of submission information (Clause 15.12).....	66
12.8.	Permanence of meter readings for reconciliation (Clause 4 Schedule 15.2).....	66
12.9.	Reconciliation participants to prepare information (Clause 2 Schedule 15.3).....	67
12.10.	Historical estimates and forward estimates (Clause 3 Schedule 15.3).....	67
12.11.	Historical estimate process (Clause 4 and 5 Schedule 15.3).....	68
12.12.	Forward estimate process (Clause 6 Schedule 15.3).....	68
12.13.	Compulsory meter reading after profile change (Clause 7 Schedule 15.3).....	69
13.	Submission format and timing.....	70
13.1.	Provision of submission information to the RM (Clause 8 Schedule 15.3).....	70
13.2.	Reporting resolution (Clause 9 Schedule 15.3).....	70
13.3.	Historical estimate reporting to RM (Clause 10 Schedule 15.3).....	71
14.	Changes to the Grid (Clause 15.14 of Part 15).....	71

15. Notification of Points of Connection Subject to Outages or Alternative Supply (Clause 15.15 of Part 15) 72

Conclusion 73

Participant response 73

EXECUTIVE SUMMARY

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

The audit was conducted in accordance with the Guideline for Reconciliation Participant Audits version 7.2.

Transpower in their capacity as grid owner have the following responsibilities:

- To deliver submission information to the reconciliation manager in accordance with clause 15.9 of part 15
- Responsibility for Metering Installations at Points of Connection to the Grid in accordance with clause 10.26 of part 10
- Provision of information to the Pricing Manager in accordance with clause 13.141 of part 13
- Notification responsibilities under clause 15.14 of part 15.

EMS, a division of Transpower, conducts many of the activities included in the scope of this audit. They use the same systems and similar processes to those used for the provision of HHR agency services to other reconciliation participants. Reliance was placed on the EMS report, with some additional checks because the EMS report is just over seven months old.

Transpower is required to maintain certification for the following functions under clause 15.38:

- Clause 15.38(1)(b) – Gathering and storing HHR raw meter data
- Clause 15.38(1)(c)(i) – Creating and managing HHR volume information
- Clause 15.38(1)(e) – Provision of submission information for reconciliation.

This audit found compliance with the Code. Transpower demonstrated strong controls in all areas audited.

The next audit frequency indicator recommends that the next audit be conducted in 36 months, which I believe is an appropriate timeframe.

AUDIT SUMMARY

NON-COMPLIANCES

Subject	Section	Clause	Non-Compliance	Controls	Audit Risk Rating	Breach Risk Rating	Remedial Action
			Nil				
Future Risk Rating						0	
Indicative Audit Frequency						36 months	

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

RECOMMENDATIONS

Subject	Section	Recommendation	Description

ISSUES

Subject	Section	Recommendation	Description

1. ADMINISTRATIVE

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

Code reference

Section 11 of Electricity Industry Act 2010.

Code related audit information

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

Audit observation

I checked exemptions on the Electricity Authority website.

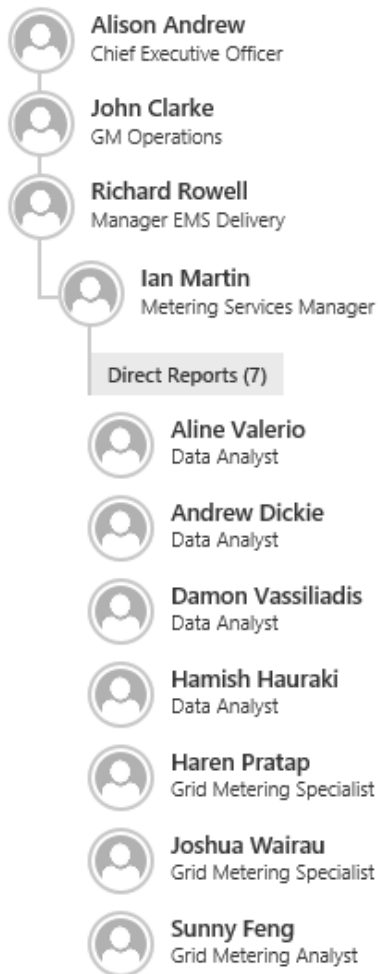
Audit commentary

Transpower does not have any exemptions in place.

1.2. Structure of Organisation

Transpower's organisational structure was sighted and is shown below.

Organization



1.3. Persons involved in this audit

Auditors:

Name	Company	Role
Steve Woods	Veritek Limited	Lead auditor

Personnel assisting in this audit were:

Name	Title
Ian Martin	Metering Services Manager

1.4. Use of Agents (Clause 15.34)

Code reference

Clause 15.34

Code related audit information

A reconciliation participant who uses an agent

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

Audit observation

Use of agents was discussed with Transpower.

Audit commentary

There are no agents that provide services in relation to the functions covered by the scope of this audit

1.5. Hardware and Software

Transpower provided a list of all manufacturers of hardware and software that assist with or are used in the processes to be audited. They are as follows.

Hardware List	Software List
Blade Server hardware	MV 90 interrogation software
	GMMS, which is a bespoke system, and is supported by YouDo.
	The database used is PostgreSQL
	The application server layer is Ruby on Rails

The backup schedule for the systems noted above is as follows:

- Daily back-ups are recycled after a month.

- Monthly back-ups are retained indefinitely.
- Back-ups are restored periodically to check readability.

1.6. Breaches or Breach Allegations

Transpower has had one breach allegation relevant to the scope of this audit recorded by the Electricity Authority during the audit period.

The details are as follows:

The grid owner breached clause 15.2(1) when it failed to take all practicable steps to ensure its submission data for Takanini GXP (TAK0331) was complete and accurate between 5 October 2017 and 1 September 2018. The breach occurred when the grid meter management system was not configured correctly to account for circulating current that occurred during the conversion of its Takanini substation from outdoor to indoor.

A warning was issued by the Authority in relation to this matter.

Transpower's remedial actions were as follows:

- To prevent recurrence the grid owner has created a template specifically designed for outdoor to indoor conversion projects for both pricing and reconciliation datasets.
- The grid owner has made its metering analysts aware of this issue and the need to confirm that all meter outputs are valid.
- The grid owner has submitted washup files to the reconciliation manager, while the clearing manager's washup process will subsequently remove the temporary market impact.

I confirmed during the audit that this issue had not occurred at any other points of connection.

1.7. ICP Data

Transpower is not the responsible party for any ICPs.

1.8. Authorisation Received

A letter of authorisation was not required. All data was provided by Transpower.

1.9. Scope of Audit

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

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

The audit was carried out at Transpower's premises in Wellington, on February 26th, 2019.

Transpower in their capacity as grid owner have the following responsibilities:

- To deliver submission information to the reconciliation manager in accordance with clause 15.9 of part 15
- Responsibility for Metering Installations at Points of Connection to the Grid in accordance with clause 10.26 of part 10
- Provision of information to the Pricing Manager in accordance with clause 13.141 of part 13
- Notification responsibilities under clause 15.14 of part 15.

EMS, a division of Transpower, conducts many of the activities included in the scope of this audit. They use the same systems and similar processes to those used for the provision of HHR agency services to other reconciliation participants.

Transpower is required to maintain certification for the following functions under clause 15.38:

- Clause 15.38(1)(b) – Gathering and storing HHR raw meter data
- Clause 15.38(1)(c)(i) – Creating and managing HHR volume information
- Clause 15.38(1)(e) – Provision of submission information for reconciliation.

1.10. Summary of previous audit

Transpower provided a copy of their previous audit report conducted in February 2017 by Steve Woods of Veritek Limited. The summary table below shows there was one non-compliance.

NON-COMPLIANCES

Subject	Section	Clause	Non-compliance	Status
Metering certification notification to RM	1.11	10.26(7) of part 10	RM not notified within 10 business days of certification expiry date for 2 GXPs	Cleared

RECOMMENDATIONS

Subject	Section	Clause	Recommendation	Status
			nil	

2. OPERATIONAL INFRASTRUCTURE

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

Code reference

Clause 10.6, 11.2, 15.2

Code related audit information

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

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

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

Audit observation

The process to find and correct incorrect information was examined.

Audit commentary

There are robust controls in place to ensure information is complete and accurate.

There were no examples identified where information was not corrected as soon as practicable.

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

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

Audit commentary

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

Audit outcome

Compliant

2.3. Data transmission (Clause 20 Schedule 15.2)

Code reference

Clause 20 Schedule 15.2

Code related audit information

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

Audit observation

The data transmission method and security were examined for all data sources to Transpower.

Audit commentary

All data is transmitted using the File Transfer Protocol (S/FTP) technique.

Audit outcome

Compliant

2.4. Audit trails (Clause 21 Schedule 15.2)

Code reference

Clause 21 Schedule 15.2

Code related audit information

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

The audit trail must include details of information:

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

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

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

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

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

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

Audit observation

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

Audit commentary

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

Audit outcome

Compliant

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

Code reference

Clause 10.4

Code related audit information

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

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

Audit observation

I checked whether Transpower has any responsibilities under this clause.

Audit commentary

Transpower does not have responsibilities in relation to consent, approval or authorisation.

Audit outcome

Compliant

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

Code reference

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

Code related audit information

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

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

The trader must use its best endeavours to provide access:

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

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

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

Audit observation

Transpower's contract terms and conditions were reviewed.

Audit commentary

Transpower's agreement with ATHs includes clauses related to access to metering installations. Transpower arranges access as required to ensure certification, inspection and maintenance activities are conducted.

Audit outcome

Compliant

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

Code reference

Clause 10.35(1)&(2)

Code related audit information

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

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

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

Audit observation

This point was discussed with Transpower.

Audit commentary

Not all metering is located at the POC. Transpower has a robust methodology for calculating losses and these are programmed into the meter for all metering installations. I checked an example, including the information in the design report and programmed into the meter. The inputs correctly cater for transformer and line losses.

Audit outcome

Compliant

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

Code reference

Clause 11.15B

Code related audit information

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

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

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

Audit observation

Transpower does not have any customers.

Audit commentary

Transpower does not have any customers.

Audit outcome

Compliant

2.9. Connection of an ICP (Clause 10.32)

Code reference

Clause 10.32

Code related audit information

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

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

Audit observation

This clause relates to “points of connection” in general and not specifically ICPs. Transpower has connected four points of connection during the audit period and they are the MEP for them all.

Audit commentary

In all cases, Transpower accepted responsibility and they were also the MEP.

Audit outcome

Compliant

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

Code reference

Clause 10.33(1)

Code related audit information

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

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

Audit observation

This clause only relates to ICPs and Transpower is not responsible for any ICPs.

Audit commentary

This clause only relates to ICPs and Transpower is not responsible for any ICPs.

Audit outcome

Not applicable

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

Code reference

Clause 10.33A(1)

Code related audit information

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

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

Audit observation

This clause only relates to ICPs and Transpower is not responsible for any ICPs.

Audit commentary

This clause only relates to ICPs and Transpower is not responsible for any ICPs.

Audit outcome

Not applicable

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

Transpower is not a trader and is not required to have arrangements with distributors.

Audit commentary

Transpower is not a trader and is not required to have arrangements with distributors.

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 whether Transpower has arrangements with MEPs for all relevant points of connection.

Audit commentary

Transpower has arrangements with MEPs for all relevant points of connection. In most cases the MEP is also Transpower.

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

Transpower is not responsible for any ICPs.

Audit commentary

Transpower is not responsible for any ICPs.

Audit outcome

Not applicable

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

Transpower is not responsible for any ICPs.

Audit commentary

Transpower is not responsible for any ICPs.

Audit outcome

Not applicable

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

Code reference

Clause 10 Schedule 11.1

Code related audit information

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

Audit observation

Transpower is not responsible for any ICPs.

Audit commentary

Transpower is not responsible for any ICPs.

Audit outcome

Not applicable

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

Transpower is not responsible for any ICPs.

Audit commentary

Transpower is not responsible for any ICPs.

Audit outcome

Not applicable

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

Transpower is not responsible for any ICPs.

Audit commentary

Transpower is not responsible for any ICPs.

Audit outcome

Not applicable

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

Transpower is not responsible for any ICPs.

Audit commentary

Transpower is not responsible for any ICPs.

Audit outcome

Not applicable

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

Transpower is not responsible for any ICPs.

Audit commentary

Transpower is not responsible for any ICPs.

Audit outcome

Not applicable

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

Code reference

Clause 17 Schedule 11.1

Code related audit information

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

- *the associated electrical installations are electrically connected (clause 17(1)(a))*

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

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

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

Audit observation

Transpower is not responsible for any ICPs.

Audit commentary

Transpower is not responsible for any ICPs.

Audit outcome

Not applicable

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

Transpower is not responsible for any ICPs.

Audit commentary

Transpower is not responsible for any ICPs.

Audit outcome

Not applicable

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

Transpower is not responsible for any ICPs.

Audit commentary

Transpower is not responsible for any ICPs.

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

Transpower is not responsible for any ICPs.

Audit commentary

Transpower is not responsible for any ICPs.

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 5 business days after the date of notification. The losing trader must then:

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

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

Audit observation

Transpower is not responsible for any ICPs.

Audit commentary

Transpower is not responsible for any ICPs.

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

Transpower is not responsible for any ICPs.

Audit commentary

Transpower is not responsible for any ICPs.

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 actual event date, provide to the losing trader a changed switch event meter reading supported by two validated meter readings.

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

Audit observation

Transpower is not responsible for any ICPs.

Audit commentary

Transpower is not responsible for any ICPs.

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 5 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

Transpower is not responsible for any ICPs.

Audit commentary

Transpower is not responsible for any ICPs.

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

Transpower is not responsible for any ICPs.

Audit commentary

Transpower is not responsible for any ICPs.

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

Transpower is not responsible for any ICPs.

Audit commentary

Transpower is not responsible for any ICPs.

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**

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

Audit observation

Transpower is not responsible for any ICPs.

Audit commentary

Transpower is not responsible for any ICPs.

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

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

Audit observation

Transpower is not responsible for any ICPs.

Audit commentary

Transpower is not responsible for any ICPs.

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

Transpower is not responsible for any ICPs.

Audit commentary

Transpower is not responsible for any ICPs.

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 actual event date, must provide to the losing trader a changed validated meter reading or a permanent estimate supported by 2 validated meter readings and the losing trader must either (clause 12(2)(b) and clause 12(3)):*
- *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

Transpower is not responsible for any ICPs.

Audit commentary

Transpower is not responsible for any ICPs.

Audit outcome

Not applicable

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

Code reference

Clause 13 Schedule 11.3

Code related audit information

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

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

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

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

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

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

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

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

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

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

Audit observation

Transpower is not responsible for any ICPs.

Audit commentary

Transpower is not responsible for any ICPs.

Audit outcome

Not applicable

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

Code reference

Clause 15 Schedule 11.3

Code related audit information

Within three business days after the losing trader is informed about the switch by the registry 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

Transpower is not responsible for any ICPs.

Audit commentary

Transpower is not responsible for any ICPs.

Audit outcome

Not applicable

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

Transpower is not responsible for any ICPs.

Audit commentary

Transpower is not responsible for any ICPs.

Audit outcome

Not applicable

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

Code reference

Clauses 17 and 18 Schedule 11.3

Code related audit information

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

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

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

Audit observation

Transpower is not responsible for any ICPs.

Audit commentary

Transpower is not responsible for any ICPs.

Audit outcome

Not applicable

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

Transpower is not responsible for any ICPs.

Audit commentary

Transpower is not responsible for any ICPs.

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

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

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

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

Audit observation

Transpower is not responsible for any ICPs.

Audit commentary

Transpower is not responsible for any ICPs.

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

Transpower is not responsible for any ICPs.

Audit commentary

Transpower is not responsible for any ICPs.

Audit outcome

Not applicable

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

Transpower is not responsible for any ICPs.

Audit commentary

Transpower is not responsible for any ICPs.

Audit outcome

Not applicable

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

Code reference

Clause 10.14 (5)

Code related audit information

If the unmetered load limit is exceeded the retailer must:

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

Audit observation

Transpower is not responsible for any ICPs.

Audit commentary

Transpower is not responsible for any ICPs.

Audit outcome

Not applicable

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

Transpower is not responsible for any ICPs.

Audit commentary

Transpower is not responsible for any ICPs.

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

I conducted a walkthrough of the processes in place to ensure raw meter data obtained from metering installations was used.

Transpower does not have responsibility for any ICPs or embedded generation.

Audit commentary

All points of connection have metering installations and the raw data from these installations is used to determine the quantity of electricity conveyed.

Audit outcome

Compliant

6.2. Responsibility for metering at GXP (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

Clauses 6 and 8 do not apply because Transpower is the grid owner. Clause 7 applies and requires the following:

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.*

I checked all four new points of connection during the audit period and I checked the records for five points of connection recertified during the audit period to determine compliance.

Audit commentary

One metering installation at Temuka shows as having expired certification, but notification was supplied in a compliant manner to the RM. The RM has now updated the table.

All updates were provided on time.

Audit outcome

Compliant

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

Code reference

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

Code related audit information

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

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

Audit observation

Transpower is not responsible for any ICPs.

Audit commentary

Transpower is not responsible for any ICPs.

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

Examples of defective metering installations were requested from Transpower.

Audit commentary

Three examples were provided, as follows:

Point of connection	Issue	Date identified	Statement of Situation date	Notification date
Maungatapere	Low voltage after changeover relay	06/02/17	10/02/17	10/02/17
Penrose	Phase failure and faulty VT switching relay	14/12/18	15/12/18	19/12/18
Te Awamutu	Faulty VT switching relay	28/12/18	29/12/18	07/01/19

All investigations and notifications occurred within compliant timeframes.

Audit outcome

Compliant

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

Code reference

Clause 2 Schedule 15.2

Code related audit information

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

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

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

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

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

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

2(6) – The interrogation systems must record:

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

Audit observation

The data collection process was examined by way of a demonstration, including the preparation of files for submission.

Audit commentary

Transpower collects data with their own MV90 system from the services access interface.

Data is collected daily, which achieves compliance with the requirement to interrogate within the maximum interrogation cycle.

Clock errors are monitored and corrected. I checked the most recent report, which contained seven records where clock errors were between six and nine seconds.

Audit outcome

Compliant

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

Code reference

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

Code related audit information

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

All validated meter readings must be derived from meter readings.

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

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

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

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

Audit observation

Transpower does not conduct manual meter reading.

Audit commentary

Transpower does not conduct manual meter reading.

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

Transpower does not conduct NHH meter reading.

Audit commentary

Transpower does not conduct NHH meter reading.

Audit outcome

Not applicable

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

Transpower does not conduct NHH meter reading.

Audit commentary

Transpower does not conduct NHH meter reading.

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

Transpower does not conduct NHH meter reading.

Audit commentary

Transpower does not conduct NHH meter reading.

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

Transpower does not conduct NHH meter reading.

Audit commentary

Transpower does not conduct NHH meter reading.

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

Transpower does not conduct NHH meter reading.

Audit commentary

Transpower does not conduct NHH meter reading.

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

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

Audit commentary

Transpower interrogates half hour interval meters with their MV90 system. Data is collected from the services access interface.

Audit outcome

Compliant

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

Code reference

Clause 11(2) Schedule 15.2

Code related audit information

The following information is collected during each interrogation:

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

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

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

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

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

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

Audit observation

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

Audit commentary

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

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

The event information contained is more than that required by this clause.

Audit outcome

Compliant

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

Code reference

Clause 11(3) Schedule 15.2

Code related audit information

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

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

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

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

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

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

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

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

Audit observation

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

Audit commentary

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

- Date of interrogation
- Time of commencement of interrogation
- Operator identification (this records which machine made the interrogation request and whether it was a manual or scheduled task)
- Unique identifier of the meter or data storage device
- Clock errors outside the range specified in clause 12(4) of schedule 15.2
- Method of interrogation (there is only one method used by Transpower, but manually collected data from the field can be loaded as “imported” or “portable reader”) Itron’s MVL software is used for manual collection in emergency situations and the data is in HHF format. This data cannot be edited and is secure in accordance with clause 20 of schedule 15.2.
- Identifier of the reading device used for interrogation (manually read files would not include which device was used to do the download but would note that the data was collected manually.)

Audit outcome

Compliant

7. STORING RAW METER DATA

7.1. Trading period duration (Clause 13 Schedule 15.2)

Code reference

Clause 13 Schedule 15.2

Code related audit information

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

Audit observation

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

Audit commentary

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

Audit outcome

Compliant

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

Code reference

Clause 18 Schedule 15.2

Code related audit information

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

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

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

Audit observation

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

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

Audit commentary

All data is archived in accordance with these clauses for a period well in excess of 48 months. This was confirmed by viewing raw meter data from a period prior to 2013. Password protection is in place to ensure unauthorised personnel cannot access raw meter data. Raw data in the MV90 system cannot be edited.

Audit outcome

Compliant

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

Code reference

Clause 21(5) Schedule 15.2

Code related audit information

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

Audit observation

Transpower does not collect any non-metering information used for reconciliation.

Audit commentary

Transpower does not collect any non-metering information used for reconciliation.

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

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

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

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

Audit observation

Transpower does not deal with any NHH data.

Audit commentary

Transpower does not deal with any NHH data.

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

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

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

Audit observation

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

Audit commentary

All three corrections occurred due to the failure of VT changeover relays. SCADA data was used as the basis for the correction. I checked the results, including the audit trail, confirming that the process is robust and appropriate records are kept.

Audit outcome

Compliant

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

Code reference

Clause 19(3) Schedule 15.2

Code related audit information

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

Audit observation

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

Audit commentary

The consideration of compensation arrangements is a feature of the design process for all metering installations and their accuracy is confirmed during the initial site configuration.

Audit outcome

Compliant

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

Code reference

Clause 22(1) and (2) Schedule 15.2

Code related audit information

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

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

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

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

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

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

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

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

Audit observation

Raw meter data is not overwritten in any situation.

Audit commentary

Raw meter data is not overwritten in any situation.

Audit outcome

Compliant

9. ESTIMATING AND VALIDATING VOLUME INFORMATION

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

Code reference

Clause 3(3) Schedule 15.2

Code related audit information

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

Audit observation

I checked whether there were any examples of estimation during the audit period.

Audit commentary

There were some corrections, but no estimations were conducted.

Audit outcome

Compliant

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

Code reference

Clause 3(4) Schedule 15.2

Code related audit information

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

3(4)(a) - validated meter readings

3(4)(b) - estimated readings

3(4)(c) - permanent estimates.

Audit observation

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

Audit commentary

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

Audit outcome

Compliant

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

Code reference

Clause 3(5) Schedule 15.2

Code related audit information

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

Audit observation

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

Audit commentary

All data is rounded to two decimal places.

Audit outcome

Compliant

9.4. Half hour estimates (Clause 15 Schedule 15.2)

Code reference

Clause 15 Schedule 15.2

Code related audit information

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

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

Audit observation

I checked whether there were any examples of estimation during the audit period.

Audit commentary

There were some corrections, but no estimations were conducted.

Audit outcome

Compliant

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

Code reference

Clause 16 Schedule 15.2

Code related audit information

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

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

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

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

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

Audit observation

Transpower does not deal with any NHH data.

Audit commentary

Transpower does not deal with any NHH data.

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

I checked the HHR data collection functions by conducting a walk-through of the processes, and I checked the management of events by checking a sample of files.

Audit commentary

Interrogation occurs daily, so there is no risk that data will be overwritten. Most modern devices have a data storage capacity of 100 or more days, which provides an additional level of security in relation to this clause.

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

1. Checks for missing data (files will reject if data is missing)
2. Checks for invalid dates and times (MV90 will reject manually read files if there is an issue)
3. Checks of unexpected zero values (this is conducted within the meter now. If absolute kVA is low then a status flag will be activated. The Meter also knows status of the circuit breaker to accept zeros if the circuit breaker is open.)
4. Comparison with expected or previous flow patterns (these can be viewed graphically in “trend reporting”)
5. Checks that the maximum demand hasn’t exceeded the maximum allowable based on the primary rating of the CTs
6. Low is manually set and the default is 0.1
7. Comparisons with the readings reported by meter and data storage device registers where these are available
8. A review of meter and data storage device event list. Any event that could have affected the integrity of metering is investigated
9. Scada comparison using trend reporting. This is in graphical format and all data sets are checked.

There is a data quality dashboard which sends an email alert to certain personnel if there is a data quality issue that needs attention.

Audit outcome

Compliant

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

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

Audit observation

Transpower does not have responsibilities under this clause.

Audit commentary

Transpower does not have responsibilities under this clause.

Audit outcome

Not applicable

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

Code reference

Clause 13.137

Code related audit information

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

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

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

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

Audit observation

Transpower does not have responsibilities under this clause.

Audit commentary

Transpower does not have responsibilities under this clause.

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

Transpower does not have responsibilities under this clause.

Audit commentary

Transpower does not have responsibilities under this clause.

Audit outcome

Not applicable

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

Code reference

Clause 13.140

Code related audit information

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

Audit observation

Transpower does not have responsibilities under this clause.

Audit commentary

Transpower does not have responsibilities under this clause.

Audit outcome

Not applicable

10.5. Calculation of Actual Demand Over the Trading Period (Clause 13.141(1)(b)(iii) of Part 13)

Code reference

Clause 13.141(1)(b)(iii) of Part 13

Code related audit information

each grid owner must, using an approved system, provide the half-hour metering information to the pricing manager required under this clause in accordance with Part 15 for the collection of that grid owner's volume information

Audit observation

This clause details the calculation formula for the actual demand over the trading period and stipulates that the grid owner is responsible for providing the Pricing Manager with the HHR data required under this clause. Transpower loads this information into the "Schedule Pricing and Dispatch" (SPD) system by 0730 in accordance with this clause and clause 13.141(2) of part 13.

Audit commentary

Transpower conducts this process in a compliant manner and the 0730 timeframe is met.

Estimates are always created seven days in advance, and these are overwritten when actual data is available. This ensures estimates are always available in the event that actual data is not available.

Audit outcome

Compliant

11. PROVISION OF SUBMISSION INFORMATION FOR RECONCILIATION

11.1. Buying and selling notifications (Clause 15.3)

Code reference

Clause 15.3

Code related audit information

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

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

Audit observation

Transpower does not have responsibilities under this clause.

Audit commentary

Transpower does not have responsibilities under this clause.

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

Transpower does not have responsibilities under this clause.

Audit commentary

Transpower does not have responsibilities under this clause.

Audit outcome

Not applicable

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

Transpower does not have responsibilities under this clause.

Audit commentary

Transpower does not have responsibilities under this clause.

Audit outcome

Not applicable

11.4. HHR aggregates information provision to the reconciliation manager (Clause 15.8)

Code reference

Clause 15.8

Code related audit information

A retailer or direct purchaser (excluding direct consumers) must deliver to the reconciliation manager its total monthly quantity of electricity supplied for each half hourly metered ICP for which it has provided submission information to the reconciliation manager, including:

15.8(a) - submission information for the immediately preceding consumption period, by 1600 hours on the 4th business day of each reconciliation period

15.8(b) - revised submission information provided in accordance with clause 15.4(2), by 1600 hours on the 13th business day of each reconciliation period.

Audit observation

Transpower does not have responsibilities under this clause.

Audit commentary

Transpower does not have responsibilities under this clause.

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

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

Audit commentary

Transpower uses the “trading period run on” technique. The files for the start and end of daylight savings were correct

Audit outcome

Compliant

12.2. Creation of submission information (Clause 15.4)

Code reference

Clause 15.4

Code related audit information

By 1600 hours on the 4th business day of each reconciliation period, the reconciliation participant must deliver submission information to the reconciliation manager for all NSPs for which the reconciliation participant is recorded in the registry as having traded electricity during the consumption period immediately before that reconciliation period (in accordance with Schedule 15.3).

By 1600 hours on the 13th business day of each reconciliation period, the reconciliation participant must deliver submission information to the reconciliation manager for all points of connection for which the reconciliation participant is recorded in the registry as having traded electricity during any consumption period being reconciled in accordance with clauses 15.27 and 15.28, and in respect of which it has obtained revised submission information (in accordance with Schedule 15.3).

Audit observation

Transpower does not have responsibilities under this clause.

Audit commentary

Transpower does not have responsibilities under this clause.

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

Transpower does not have responsibilities under this clause.

Audit commentary

Transpower does not have responsibilities under this clause.

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

I checked the file preparation process and systems to confirm compliance.

Audit commentary

The grid owner is required to provide submission information and revised submission information to the reconciliation manager for each point of connection for all GXPs in accordance with clause 15.9 of part 15. Compliance has been demonstrated with this requirement. Revision files are seldom required but the issue recorded in Section 1.6, where a correction was required, resulted in a revision file. I checked this to confirm compliance.

Audit outcome

Compliant

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

Transpower does not have responsibilities under this clause.

Audit commentary

Transpower does not have responsibilities under this clause.

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

Transpower does not have responsibilities under this clause.

Audit commentary

Transpower does not have responsibilities under this clause.

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

The accuracy of submission information was reviewed, including a review of corrections in **8.2**.

Alleged breaches during the audit period were reviewed to determine whether any reconciliation submissions were late.

Audit commentary

The accuracy of revisions is confirmed. I also checked a file from MV090 through to the submission file to ensure it was correct for each trading period.

Review of alleged breaches confirmed there were no late submissions.

Audit outcome

Compliant

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

Code reference

Clause 4 Schedule 15.2

Code related audit information

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

Volume information created using estimated readings must be subsequently replaced at the earliest opportunity by the reconciliation participant by volume information that has been created using validated meter readings or permanent estimates by, at the latest, the month 14 revision cycle.

A permanent estimate may be used in place of a validated meter reading, but only if, despite having used reasonable endeavours; the reconciliation participant has been unable to obtain a validated meter reading.

Audit observation

The accuracy of submission information was reviewed, including a review of corrections in **8.2**.

Audit commentary

No estimates were created during the audit period, but corrections were conducted. I checked that these were appropriately calculated and identified.

Audit outcome

Compliant

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

Code reference

Clause 2 Schedule 15.3

Code related audit information

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

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

Transpower does not have responsibilities under this clause.

Audit commentary

Transpower does not have responsibilities under this clause.

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

Transpower does not have responsibilities under this clause.

Audit commentary

Transpower does not have responsibilities under this clause.

Audit outcome

Not applicable

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

Code reference

Clause 4 and 5 Schedule 15.3

Code related audit information

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

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

Audit observation

Transpower does not have responsibilities under this clause.

Audit commentary

Transpower does not have responsibilities under this clause.

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

Transpower does not have responsibilities under this clause.

Audit commentary

Transpower does not have responsibilities under this clause.

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

Transpower does not have responsibilities under this clause.

Audit commentary

Transpower does not have responsibilities under this clause.

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

Submission information provided to the reconciliation manager must be aggregated to the following level:

- *NSP code (clause 8(a))*
- *reconciliation type (clause 8(b))*
- *profile (clause 8(c))*
- *loss category code (clause 8(d))*
- *flow direction (clause 8(e))*
- *dedicated NSP (clause 8(f))*
- *trading period for half hour metered ICPs and consumption period or day for all other ICPs (clause 8(g)).*

Audit observation

Transpower does not have responsibilities under this clause.

Audit commentary

Transpower does not have responsibilities under this clause.

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 five, the second digit is rounded up, and if the digit to the right of the second decimal place is less than five, the second digit is unchanged.

Audit observation

I checked the content of submission files to confirm rounding practices are correct.

Audit commentary

Submission information is appropriately rounded to two decimal places.

Audit outcome

Compliant

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

Code reference

Clause 10 Schedule 15.3

Code related audit information

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

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

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

Audit observation

Transpower does not have responsibilities under this clause.

Audit commentary

Transpower does not have responsibilities under this clause.

Audit outcome

Not applicable

14. CHANGES TO THE GRID (CLAUSE 15.14 OF PART 15)

Code reference

Clause 15.14 of Part 15

Code related audit information

Each grid owner must give written notice to the reconciliation manager, in accordance with any procedures or other requirements reasonably specified by the reconciliation manager from time to time, of any changes that the grid owner intends to make to the grid that will affect reconciliation.

The grid owner must give the notice at least 1 month before the effective date of the intended change.

Audit observation

I checked the examples of Oamaru, Waiotahi, Murchison and Kawarau which confirmed compliance with this clause. Transpower has a standard form for all notifications.

Audit commentary

I checked the examples of Oamaru, Waiotahi, Murchison and Kawarau which confirmed compliance with this clause. Transpower has a standard form for all notifications.

Audit outcome

Compliant

15. NOTIFICATION OF POINTS OF CONNECTION SUBJECT TO OUTAGES OR ALTERNATIVE SUPPLY (CLAUSE 15.15 OF PART 15)

Code reference

Clause 15.14 of Part 15

Code related audit information

Each grid owner must notify the reconciliation manager of the following:

(i) each point of connection to the grid that was supplied from an alternative point of connection in the consumption period:

(ii) in relation to each point of connection referred to in subparagraph (i), the trading periods in the consumption period during which the point of connection to the grid was supplied from an alternative point of connection

Audit observation

Outage notification is a responsibility of the system operator, not the grid owner.

Each grid owner must notify the reconciliation manager of the following:

(i) each point of connection to the grid that was supplied from an alternative point of connection in the consumption period:

(ii) in relation to each point of connection referred to in subparagraph (i), the trading periods in the consumption period during which the point of connection to the grid was supplied from an alternative point of connection.

Audit commentary

During the previous audit it was identified that this scenario did occur. There was a Transpower outage at Tokanuu and one GD POC was supplied from The Lines Company's network rather than the Grid. The RM was notified in accordance with this clause at the time. There were no examples during this audit.

Audit outcome

Compliant

CONCLUSION

This audit found compliance with the Code. Transpower demonstrated strong controls in all areas audited.

The next audit frequency indicator recommends that the next audit be conducted in 36 months, which I believe is an appropriate timeframe.

PARTICIPANT RESPONSE