

Electricity Industry Participation Code Metering Equipment Provider Audit Report

for



Prepared by Ewa Glowacka

Date of Audit: 4/5 July 2017

Date Audit Report Complete: 28 August 2017

TEG & Associates Ltd

Executive summary

This participant audit was performed at the request of Northpower to encompass the Authority's request for an audit, as required by clause 10.20, of Part 10, of the Electricity Industry Participation Code.

The relevant clauses were audited as required by the Guidelines for Metering Equipment Provider v.2.0 issued by the Electricity Authority.

At the time of the audit the number of active (Registry Status Code 002) ICPs for which Northpower is recorded as being the MEP was 12,046. Northpower's meters are being steadily replaced by meter assets managed by other MEPs on request of traders.

While 8 non-compliances have been made during the audit, in our view, these matters have not resulted in material reconciliation issues.

We would like to thank Northpower for its complete and thorough cooperation in this audit. We also identified 1 issue, the same as last year, which we would like to bring to the attention of the Authority.

Audit summary

Non-compliances

Subject	Section	Clause	Non Compliance	Controls	Audit Risk Rating	Breach Risk Rating	Remedial Action
Participant to provide accurate information	2.1	11.2 and 10.6	Information in registry are missing for VTs and CTs. Date of expired metering certification is not updated.	Weak	Low	3	
Changes to registry information	4.10	3 of Schedule 11.4	34% updates entries in registry are uploaded later than 10BD	Moderate	Low	2	
Provision of registry information	6.2	7(1) of Schedule 11.4	For ICP 0000523418NR21 information not correct, for 0000100001NR87B no CTs information	None	Low	5	

			and for 10 ICPs no VTs information uploaded into the registry				
Correction of errors in the registry	6.3	6 of Schedule 11.4	No correction of error conducted according to process specified by clause 6 of Schedule 11.4	Weak	Low	3	
Cancellation of certification	6.4	20(2) of Schedule 10.7	10 installations did not have inspections; registry records of expired certification date were not updated.	None	Low	5	
Registry metering records	6.5	11.8A	Not all metering records loaded to the registry as per Table 1 of Schedule 11.4	None	Low	5	
Certification of installations	7.1	10.38(a)	Certification expired for 706 installations, 697 installations category 1 and 9 higher categories	None	Low	5	
Category 2 to 5 inspections	8.2	46(1) of Schedule 10.	No inspection conducted for 1 ICP category 5 and 9 installations category 3	None	Low	5	
Future Risk Rating						33	

Based on Table 1 of the Guidelines for Reconciliation Participant audit, the next audit should happen within next 12 months.

Recommendations

Subject	Section	Recommendation	Description
		Nil	

Issues

Subject	Section	Issue	Description
Metering records	5.1	Northpower does not hold full records of metering equipment which belong to other asset owners due to Northpower metering assets being replaced by a third party and the registry not being updated in a timely manner by a trader and a new MEP	

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1. Administrative

1.1 Summary of previous audit

The previous audit was conducted by Ewa Glowacka of TEG & Associates Ltd on 22/23 November 2016. The findings of this audit are shown below:

Subject	Section	Clause	Non compliance	Cleared
Update of registry records	4.10	3 of Schedule 11.4	Some registry metering records updates were backdated (70%)	On-going
MEP to provide metering information to registry	6.2	7 of Schedule 11.4	Information, in the registry, for 5 ICPs is not correct or missing	On-going
Correction of errors in registry	6.3	6 of Schedule 11.4	No correction of error conducted as specified by clause 6 of Schedule 11.4	On-going
Requirements to provide complete and accurate information		11.2 of Part 11	Some information provided to the registry was not complete or was inaccurate	On-going
MEP to provide registry records to registry	6.5	11.8A of Part 11	Not all metering records loaded into registry as per Table 1	On-going
Certification of metering installations	7.1	10.38(a) of Part 10	Certification expired for 291 installations	On-going, the number increased to 706
Interim certified metering installations	7.18	18 of Schedule 10.7	1,553 metering installation interim certified	N/A, interim installation as such don't exist any more
Inspections for installations category 2 and higher	8.2	46(1) of Schedule 10.7	No inspection conducted for ICP 0000545312NR81F (cat 5) and 5 installations category 3	Installation was certified

Subject	Section	Clause	Issue	Cleared
MEP record keeping and documentation	5.1	4(1)(b) of Schedule 10.6	Northpower does not hold full records of metering equipment which belong to other asset owners due to Northpower metering assets being replaced by a third party and the registry not being updated in a timely manner by a trader and a new MEP	On-going
Cancellation of certification	6.4	20(1)(g) of Schedule 10.7	No option in the registry to mark an installation for which there is insufficient load for full certification	No action

1.2 Scope of audit

This participant audit was performed at the request of Northpower to encompass the Authority's request for an audit as required by clause 10.20, of Part 10, of the Electricity Industry Participation Code.

The audit was carried out on the Northpower premises at 28 Mount Pleasant Road, in Whangarei, on the 4/5th July 2017.

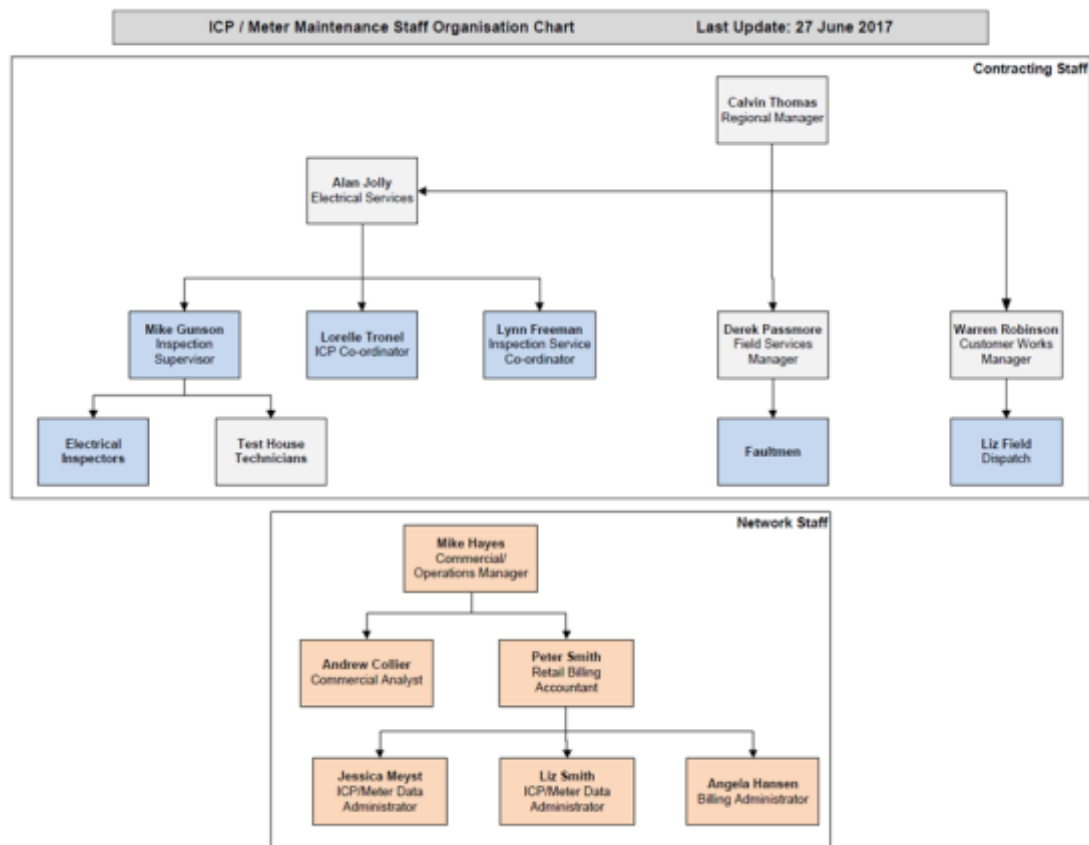
The audit covered the following functions:

- Process for changing a MEP
- Installation and modification of metering installations
- Metering records
- Maintenance of registry information
- Certification of metering installations
- Inspection of metering installations
- Process of handling faulty metering installations
- Access to and provision of raw meter data and metering installations

Northpower adopted the four-letter code of NPOW for a participant as a MEP. In this document Northpower and NPOW will be used interchangeably. Northpower is both a Distributor and MEP under the Code with the participant code NPOW being used for both functions.

1.3 Structure of organisation

Northpower has provided an organisation chart of their structure which is shown below:



1.4 Persons involved in this audit

Name	Title	Company
Peter Smith	Retail Billing Accountant	Northpower Ltd
Elizabeth Smith	Network Administrator	Northpower Ltd
Mike Hayes	Network Commercial and Operations Manager	Northpower Ltd
Ewa Glowacka	Electricity Authority Approved Auditor	TEG & Associates Ltd

1.5 Software

Gentrack Velocity is still the main software application used for the MEP functions (ICP and meter asset management). Gentrack handles the registry interface and the updating of ICP information in the registry. There are also a number of databases (Access 2010) used for the registry data discrepancy management.

1.6 Use of agents (clause 10.3)

Northpower does not use agents for the functions covered by this audit.

1.7 Breaches and breach allegations

No breaches or alleged breaches were lodged in the last 12 months.

1.8 Exemption from obligation to comply with the Code (section 11 of Electricity Industry Act 2012)

No exemptions were granted to Northpower.

1.9 Authorisation received

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

1.10 ICP list

Northpower provided a list of all ICPs, where Northpower was the MEP, as of the 28th June 2017. The total number of ICPs in the registry was 16,757.

Status	Number of ICPs (2017)	Number of ICPs (Nov 2016)	Number of ICPs (Nov 2015)	Number of ICPs (Feb 2015)	ICP status reason
1	822	793	793	825	de-energised vacant
	14	15	15	7	ready for decommissioning
	18	4	2	10	new connection in progress
	1	1	0	0	De-energised remotely by AMI meter
	2	1	0	0	De-energised at pole fuse
	5	4	3	0	De-energised due to meter disconnected
2	12,046	14,549	25,707	34,973	
3	3,849	3,815	3,723	3,637	

The ICPs of “inactive” and “active” had the following metering categories assigned:

Highest metering category	Number of ICPs (2017)	Number of ICPs (Nov 2016)	Number of ICPs (Nov 2015)	Number of ICPs (Feb 2015)
1	12,693	15,104	26,196	35,475
2	178	206	276	303
3	23	24	24	24
4	1	1	1	1
5	6	6	6	6
9	7	7	2	6

2. Operational infrastructure

2.1 Participant to provide accurate information (clause 11.2 and clause 10.6)

The MEP must take all practicable steps to ensure that information that the MEP is required to provide to any person under Parts 10 and 11 is complete and accurate, not misleading or deceptive and not likely to mislead or deceive.

If the MEP becomes aware that in providing information under Parts 10 and 11, the MEP has not complied with that obligation, the MEP must, as soon as practicable, provide such further information as is necessary to ensure that the MEP does comply.

Northpower endeavours to provide correct information. If it became aware that any information was incorrect or probably incorrect, it would be updated. A lot of work has been undertaken to provide accurate and complete information for metering installations for which Northpower provides the MEP services. Recently an additional resource has been employed (commencement date is end of August) to this part of the business.

In some sections it was identified that some information in the registry, provided by Northpower, is not complete or is inaccurate. Incorrect or not complete information in registry such as no VTs information, certification expire date not updated for installations which did not have inspections conducted

Our assessment of strength of controls to remedy non-compliance in Weak.

Non-compliance identified.

Non-compliance	Description		
Audit Ref: 2.1 With: 11.2 and 10.6 From: 01-Nov-16 To: 26-Jun-17	Information in registry are missing for VTs and CTs. Date of expired metering certification is not updated. Potential impact: Low Actual impact: Low Audit history: Three time previously Controls: Weak Breach risk rating: 3		
Audit risk rating	Rationale for audit risk rating		
Low	Majority of information which are inaccurate in registry are related to low category metering installations. Northpower has on-going project to clean data in the registry		
Actions taken to resolve the issue		Completion date	Remedial action status
Northpower is investigating and correcting any data errors in the Registry as time and staff resources permit. A new staff member is commencing employment late August which, once she is trained, will give additional resource to clean up the CT and VT Registry data.		31/12/2017	Identified
Preventative actions taken to ensure no further issues will occur		Completion date	
Once all data is in Gentrack (currently not all VT data is held in Gentrack) comparison between the Registry and Gentrack can be made to identify missing or error data.		31/12/2017	

2.2 The MEP responsibility for service access interface [clause 10.9(2)]

The Metering Equipment Provider is responsible for providing and maintaining the services access interface.

Northpower provide the MEP services for metering installations of category 1 to 5. All category 1 and 2 installations are manually read (register reads) by meter reading companies employed by traders.

Category 3, 4, and 5 metering installations and category 2 ICP's with TOU meters (53), are read remotely by third parties via landline or cellular network.

If reported, any malfunctioning of this communication channel with the meters is investigated promptly by Northpower and appropriate action taken. A service request is issued and a technician is sent on site to investigate. It is the same process which is used when a participant advice of a stopped or faulty meter. Examples will be shown in the relevant section.

Northpower owns half-hour meters at some ICPs, these are read weekly via MV90 by Northpower except the Marsden Point Refinery meters which are read daily. HHR data downloaded is only used for Northpower's internal purposes. The fact that Northpower reads some HHR meters themselves allows them to identify any communication problems if they occur and address them.

The problems are usually caused by modem issues or poor cell phone coverage. Landlines used for reading meters are owned either by customers or the trader. A Metering Installation Certification Report issued by AccuCal specifies strengths of signal at the time of installation certification.

As mentioned in last years report, from time to time there is a problem obtaining meter readings at ICP 0000553499NR1A2 (a rural quarry) because the main supply is turned off when the site is not in operation.

Compliance is confirmed.

2.3 Dispute resolution [clause 10.50(1) to (3)]

Dispute resolution:

- *Participants must in good faith use its best endeavours to resolve any disputes related to Part 10 of the Code.*
- *Disputes that are unable to be resolved may be referred to the Authority for determination.*
- *Complaints that are not resolved by the parties or the Authority may be referred to the Rulings Panel by the Authority or participant.*

There were a number of "disputes" between participants related to the population of meter data in the registry, especially for the reversal of meter data in the registry due to late MEP nominations or new MEPs not populating their meter data into the registry. This relates mainly to ICPs where Northpower's meters were replaced by AMS owned meter assets. All "disputes" were resolved amiably via email.

Northpower has a process in place for dispute resolution because it is also a distributor. If the need arises the same process is adopted for MEP related disputes.

Utilities Disputes Limited is another avenue, which can be used to resolve customers' complaints.

2.4 MEP identifier [clause 7(1) of Schedule 10.6]

The registry LIS file dated 28/6/17 was analysed and we confirm the 4-letter code of NPOW is used as a participant identifier for those ICPs where Northpower has accepted the MEP responsibilities. It is the same 4-letter code which is used by a distributor. Compliance is confirmed.

2.5 Communication equipment compatibility (clause 40 of Schedule 10.7)

The MEP must ensure that the use of its communication equipment complies with the compatibility and connection requirements of any communication network operator the MEP has equipment connected to.

Northpower provides the MEP services for number of HHR metering installations. They are read via GSM module or via landlines by third parties employed by traders. If any incompatibility was discovered between a communication network operator and equipment installed on site, it would be addressed promptly. Northpower reads the HHR sites for their own use therefore they are well aware of any problems that arise.

Compliance confirmed.

3. Process for a change of MEP

3.1 Change of MEP (clause 10.22)

The MEP for a metering installation may change only if the responsible participant enters into an arrangement with another person to become the MEP for the metering installation, and if certain notification requirements are met (in relation to the registry and the reconciliation manager).

The gaining MEP must pay the losing MEP a proportion of the costs within 20 business days of assuming responsibility.

The costs are those directly and solely attributable to the certification and calibration tests of the metering installation or its components from the date of switch until the end of the current certification period.

Northpower's policy is to be the MEP only for those ICPs where Northpower owned metering assets are installed.

The on-going displacement of Northpower's meters, mainly by AMS and Metrix on the Northpower network, has created a situation where Northpower is still listed as the MEP in the registry but their metering assets have been removed by a third party without notification to Northpower. Traders can be slow to nominate an MEP and once nominated a new MEP may take time to update the registry. The result is that Northpower is still listed in the registry as the MEP even though their metering assets have been displaced.

Northpower has not exercised this clause yet although there is on-going displacement of Northpower's meters at category 1 metering sites, where smart meters are being installed.

Compliance confirmed.

3.2 Registry notification of metering records (clause 2 of Schedule 11.4)

The gaining MEP must advise the registry of the registry metering records for the metering installation within 15 days of becoming the MEP for the metering installation.

Northpower provided the Event Listing file (EDA) for the period covering 01/11/16 – 26/6/17 and a PR-255 file for 28/6/17 for compliance analyses.

The number of ICPs for which Northpower provides MEP services is slowly decreasing.

The company's policy is to provide the MEP function only for installations where their own metering assets are installed. Any MEP nominations for installations where third party owned meters are installed are rejected. Part of the daily process is to check MEP nominations and to decide whether they are to be accepted or not.

Northpower always accepts a MEP nomination for a new installation (registry status: "Disconnected – New Connection in Progress"). There are currently 4 different processes followed by Northpower's Contracting Division for installing meters for new connections as shown below:

- Meridian – BTS (AMS meter assets) – Permanent connection (AMS meter assets). Northpower will not be the MEP.
- GENE – BTS (NPOW meter assets) – Permanent connection (AMS meter assets). Northpower will be the MEP only for the builders supply prior to the move to a permanent connection. This arrangement will cease on 5/8/17 when Genesis will move to the same process as Meridian (AMS metering from ICP livening). It will mean that Northpower will be nominated as the MEP for even less new connections
- MEEN/CTCT – BTS (NPOW meter assets) – Permanent connection (NPOW meter assets) which are subsequently replaced by AMS meter assets. Northpower will be the MEP for the period where Northpower owned meter assets are installed at the ICP.
- TRUS – uses Northpower meter assets for both BTS and permanent connection.

This clause covers the situation where, for an existing installation, a trader decides to change the MEP. Some customers are not prepared to have smart meters installed in their houses therefore Northpower is asked to install "vanilla" meters and become the MEP. Northpower accepted 209 MEP nominations since November last year; 8 nominations were for existing installations (change of MEP). We "walked" through all of them to assess compliance; we confirm that the MEP nominations were accepted the same day or following day of the MEP nomination being received. Metering information was usually downloaded the same business day or following, which meets compliance with clause 2 of Schedule 11.4.

The table below shows some examples of Northpower being nominated as the MEP, replacing an existing MEP. There are not many such nominations as Northpower is mainly asked to become the MEP for new connections (BTS).

ICP	MEP nomination Effective Date	Trader MEP nomination Input Date	MN	Effective date Metering	Input Date Metering	Trader
0000504691NREA5	24/05/17	02/06/17	06/06/17 (Queens Birthday Weekend)	24/05/17	06/06/17	CTCT
0000507562NR391	10/03/17	16/03/17	17/03/17	10/03/17	17/03/17	GENE
0000509684NR367	30/05/17	8/6/17	9/06/17	30/05/17	09/06/17	CTCT
0000532708NR2FB	15/02/17	20/02/17	21/02/17	15/02/17	21/02/17	MERI
0000533663NRB7B	11/04/17	26/04/17	27/04/17	11/04/17	27/04/17	CTCT
0000537083NR147	02/06/17	07/06/17	08/06/17	02/06/17	08/06/17	CTCT
0000541922NR36D	07/04/17	03/05/17	04/05/17	07/04/17	04/05/17	CTCT
0000567365NRA05	14/03/17	16/03/17	17/03/17	14/03/17	17/03/17	MEEN

Compliance confirmed based on analysis of the EDA file.

3.3 Provision of metering records to gaining MEP (clause 5 of Schedule 10.6)

During an MEP switch a gaining MEP may request access to the losing MEP's metering records. On receipt of a request the losing MEP has 10 business days to provide the gaining MEP with the metering records or the facilities to enable the gaining MEP to access the metering records.

No MEP's have asked Northpower for metering records since November last year. The current market situation is that Northpower's metering assets are being replaced by smart meters owned other MEPs rather than a case of a new MEP taking over responsibility for existing Northpower owned assets.

Compliance confirmed based on analyses of the LIS file showing a decreasing number of ICPs and a conversation with the company.

3.4 Termination of MEP responsibility [clause 10.23(2)]

Even if the MEP ceases to be responsible for an installation, the MEP must either:

- *comply with any continuing obligations, including records keeping obligations; or*
- *before its continuing obligations terminate under subclause (1), enter into an arrangement with a participant to assume described in above paragraph obligations*

Metering records are kept either in Gentrack or in the Document Management System (electronic version). These records are kept indefinitely and are not purged after any set period. There is easy access to all documents via Gentrack and the Document Management System, which is very convenient for the purposes of audit as it is so easy to follow chosen ICPs.

Compliance confirmed.

4. Installation and modification of metering installations

4.1 Design reports for metering installations (clause 2 of Schedule 10.7)

The MEP must obtain a design report for each proposed new metering installation or a modification to an existing metering installation, before it installs the new metering installation or before the modification commences.

This report must be prepared by a person with the appropriate level of skills, expertise, experience and qualifications.

Northpower is an approved Class B Test House. There is a set of wiring diagrams for typical NHH installations published on the Northpower website (<https://northpower.com/about/disclosures/meter-wiring-diagrams>)

These drawings are updated, when the need arises, by the Northpower ATH. Northpower provided meter wiring diagrams for the installation of AMI metering at ICPs on the Northpower network to AMS to assist its AMI meter roll-out projects.

The configuration of HHR metered installations of category 2 and above are designed individually. Once a decision is made to modify an existing category 3 HV or higher installation, a conceptual design is prepared by Northpower's staff, which is forwarded mainly to AccuCal or on some occasions Electrix for consultation.

The Metering Installation Certification Report used for category 1 installations has a field for the reference to the appropriate ATH wiring drawing. 24 reports were sighted and we confirm that a relevant meter diagram was referenced.

Northpower (MEP) installs meters for some cat 1 BTS and permanent connections while other ICPs have AMS, Metrix, or another MEP instead of Northpower.

The company stated that there were no modifications to any installation cat 2 and above. Compliance confirmed.

4.2 Contracting with ATH (clause 9 of Schedule 10.6)

The MEP must, when contracting with an ATH in relation to the certification of a metering installation, ensure that the ATH has the appropriate scope of approval for the required certification activities.

Northpower uses three Test Houses: Northpower (Class B) for metering installations of category 1, 2 and 3 LV, for installations of category 3 HV and higher AccuCal and on some occasions Electrix. Northpowers' certification as an ATH will expire in October 2018 and the

company is not planning to renew it. If Northpower remains an MEP they will contract with another Test House to carry out the required category 1, 2, and 3 LV inspection and certification work.

AccuCal and Electrix are approved as Test House, Class A as listed on the Electricity Authority website.

Compliance confirmed.

4.3 Metering installation design & accuracy [clause 4(1) of Schedule 10.7]

The MEP must ensure that:

- *the sum of the measured error and uncertainty does not exceed the maximum permitted error set out in Table 1 of Schedule 10.1 for the category of the metering installation.*
- *the design of the installation (including data storage device and interrogation system) will ensure the sum of the measured error and the smallest possible increment of the energy value of the raw meter data does not exceed the maximum permitted error set out in Table 1 of Schedule 10.1 for the category of installation.*
- *the metering installation complies with the design report and the requirements of Part 10.*

All installations for which Northpower provides the MEP functions are certified by approved test houses (NPOW, ACCL, and ELTX).

Northpower uses the selective component metering method to certify metering installations of category 1, 2 and 3 LV. The accuracy tolerance of category 1 installations is determined by the meter. The metering component is the only component of an installation. Northpower installs meters' class 1 as 1PH or class 1 or 2 as 3PH and CTs class 0.5S. The category 2 LV installation requirements under this method require meters to be class 2 or higher. Table 1 of Schedule 10.1 requires them to have meters class 2 installed for both cat 1 and 2 when using the selective component metering method. To certify metering installations of category 1, 2, for cat 3LV, the meter must be class 1.

Part of the certification for metering installations of category 3 HV and higher is to ensure that the maximum permitted error and uncertainty set out in Table 1 of Schedule 10.1 is not exceeded. The tests are conducted by AccuCal or Electrix. The Certification of Compliance specifies testing and results for each installation.

The process was discussed with Northpower and the EA Installation Certification and each component for Fonterra Maungaturoto 11 kV was provided as an example of documentation provided by AccuCal.

Compliance was confirmed.

4.4 Subtractive metering [clause 4(2)(a) of Schedule 10.7]

For metering installations for ICPs that are not also NSPs, the MEP must ensure that the metering installation does not use subtraction to determine submission information used for the purposes of Part 15.

No installations for which Northpower is responsible use subtraction to determine submission information. Compliance is confirmed.

4.5 HHR metering [clause 4(2)(b) of Schedule 10.7]

For metering installations for ICPs that are not also NSPs, the MEP must ensure that all category 3 or higher metering installations must be half-hour metering installations.

The LIS file dated 28/6/17 was analysed and we confirm that all category 3 and higher installations where Northpower is the MEP have half-hour metering installed (31 ICPs). Compliance confirmed.

4.6 NSP metering [clause 4(3) of Schedule 10.7]

The MEP must ensure that the metering installation for each NSP that is not connected to the grid:

- *does not use subtraction to determine submission information used for the purposes of Part 15:*
- *is a half-hour metering installation*

Northpower is not responsible for any metering installation for a NSP.

4.7 Responsibility for metering installations [clause 10.26(10)]

The MEP must ensure that each point of connection to the grid for which there is a metering installation for which it is responsible has a half hour metering installation.

Northpower is not responsible for any metering installation for a point of connection to the grid.

4.8 Suitability of metering installations [clause 4(4) of Schedule 10.7]

The MEP must, for each metering installation for which it is responsible, ensure that it is appropriate having regard to the physical and electrical characteristics of the point of connection.

Northpower is a distributor and a MEP, and a certified class B Test House. The Test House and Distributor functions are audited regularly by the Authority's approved auditor.

Northpower provides the MEP services mainly for category 1 installations (98.1% of ICPs on the Northpower network). For installations of category 1 there are wiring diagrams available on the Northpower web site (<http://northpower.com/about/disclosures/meter-wiring-diagrams>) covering each of the typical installation types. Any installations for which a standard wiring drawing can't be used are discussed with staff from Northpower's ATH. The number of installations, across all categories, for which Northpower is responsible is slowly decreasing.

All HHR installations are individually designed taking into consideration the physical and electrical characteristics of the proposed installation.

Compliance confirmed.

4.9 Installation & modification of metering installations [clause 10.34(2)(2A)(3)]

If a metering installation is proposed to be installed or modified at a POC, other than a POC to the grid, the MEP must consult with and use its best endeavours to agree with the distributor and the trader for that POC, before the design is finalised, on the metering installations

Northpower is a distributor and a MEP with a Contracting Division. The Contracting Division installs meters for several MEPs including Northpower (NPOW), AMS, and MTRX.

Staff from all Northpower divisions are located on the same premises in Whangarei therefore a consultation and coordination process between these entities is easily achieved. Any metering installed is requested by traders by issuing SRs. All documents are scanned and

available electronically to staff involved in the distributor and MEP functions. Some Northpower personnel “work” for both the distributor and MEP areas in the organisation, it is not like two separate entities working under the name of Northpower.

Compliance confirmed.

4.10 Changes to registry records (clause 3 of Schedule 11.4)

The MEP must advise the registry of the registry metering records or any change to the registry metering records for a metering installation for which it is responsible, no later than 10 business days following:

- (a) the electrical connection of an ICP that is not also an NSP*
- (b) any subsequent change in any matter covered by the metering records.*

The EDA file for period 01/08/16 to 26/6/17 was analysed to assess compliance. Northpower is mainly nominated as the MEP for new ICP connections. Traders mostly ask Northpower to install legacy meters for those ICPs requiring a BTS connection. Northpower received around 310 MEP nominations for new ICP connections.

MEP nominations for new connections from the major traders seem to have two scenarios:

- GENE/TRUS – MEP nomination before a meter is installed (Registry Status: “Disconnected – New Connection In Progress”)
- CTCT/MEEN – they wait until a meter is installed than nominate a MEP (registry Status: “Active”)

The process of accepting a MEP nomination is as follows: every morning registry files are checked and evaluated; MEP nominations are accepted or rejected. If metering data is available due to the ICP being livened prior to the MEP nomination, it is uploaded to the registry overnight once the MEP nomination is accepted by Northpower. We randomly chose 20 new connections and “walked” through the process. Compliance is confirmed, metering data was uploaded no later than 10BD.

The table below show a few examples of new connections.

ICP	MEP nomination Effective Date	Trader MEP nomination Input Date	MN	Effective date Metering	Input Date Metering	Trader
0000567789NRFA0	25/08/16	31/08/16	1/09/16	10/11/16	11/11/16	GENE
0000568585NRFD9	28/4/17	8/5/17	9/5/17	28/4/17	10/05/17	MEEN
0000568566NR9A3	3/4/17	7/4/17	10/4/17	3/4/17	10/04/17	MEEN
0000568551NR391	31/03/17	6/4/17	7/4/17	31/03/17	7/4/17	TRUS
0000568540NR579	31/3/17	04/04/17	5/4/17	31/03/17	5/4/17	CTCT
0000568612NREF7	10/05/17	15/5/17	16/5/17	10/05/17	16/05/17	CTCT
0000568522NRA0C	10/4/17	18/4/17	19/4/17	10/4/17	19/4/17	PUNZ
0000568526NRB06	11/05/17	19/5/17	22/05/17	11/05/17	22/05/17	PUNZ
0000568491NRD7A	17/3/17	22/03/17	23/03/17	17/3/17	23/3/17	MEEN
0000568622NR90F	2/5/17	8/5/17	9/5/17	2/5/17	9/5/17	MEEN

Many Northpower meter assets are replaced on request of traders. It has been happening for at least the last 3 years. Northpower, the current MEP, does not have any knowledge of where these meter changes are occurring until they are notified by a trader or via the registry NMR file. In the meantime, Northpower is still the MEP in the registry, until the new MEP populates their meter data into the registry. Northpower's ICP and meter management software (Gentrack) will continue to update metering information into the registry even if they are not Northpower meter assets as Northpower still shows as the MEP in the registry; the Code requires the MEP to update any meter changes within 10 business days without any differentiation regarding meter asset ownership.

When Northpower owned meters are replaced by meter assets owned by another MEP, the meter replacement is processed in Gentrack due to the way Northpower has set-up Gentrack. As a result of this meter change occurring, Gentrack will often create a Registry meter event for the Northpower meter asset being removed which is updated to the Registry effective the day prior to the new MEP's metering event.

As a result of third parties replacing Northpower assets, the company receives many requests from traders or other MEPs to reverse meter events that Northpower has populated into the registry. These Registry data reversals are required so a new MEP can either be nominated by a trader or the new MEP can update their meter data into the registry. Northpower decided to be proactive and introduced a process whereby as soon as Gentrack uploads data for a non-Northpower meter asset, the entry in the MM-010 file is manually reversed the next day. The process is documented in great detail.

Northpower uploaded 3,213 registry metering information updates. 1,436 were reversals of previous entries which were uploaded automatically by Gentrack as meter related data was changed. Most of the reversals are due to Gentrack uploading data for non Northpower meter assets when Northpower still shows as the MEP in the Registry. 90 entries were replacement entries for prepayment meter installations because Gentrack can't mark the "prepay control unit" (held as a relay asset in Gentrack) as prepayment, therefore Northpower had to find a manual work around until Meridian Energy has replaced all their prepayment sites.

There are 2 types of reversal:

- Clean up – Gentrack updates when AMS or other non-Northpower owned meter assets are installed
- Gentrack rubbish – entries where Gentrack sends meter data entries going back to 2013 (Part 10 go-live) which have not been flagged by Gentrack as having previously been sent to the Registry. This group of entries is occurring due to the manual (outside Gentrack) process used to populate the Registry on when Part 10 went live.

1,687 entries were active, 576 (34%) were outside of 10 business days. The date range is from 11 BD to even up to back to November 2001.

As a result of the circumstances described above, many of the data correction or reversal entries are occurring outside the 10 business day period allowed in the Code.

Non-compliance identified.

Northpower has a policy that it will always replace a registry entry, where this is found to be inaccurate, with the correct data as per the requirements in clause 11.2 of Part 11. Our assessment of strength of controls to remedy non-compliance in Moderate. Process is well managed.

Non-compliance	Description		
Audit Ref: 4.10 With: 3 Schedule 11.4 From: 01-Nov-16 To: 26-Jun-17	34% updates entries in registry are uploaded later than 10BD Potential impact: Low Actual impact: Low Audit history: Three time previously Controls: Moderate Breach risk rating: 2		
Audit risk rating	Rationale for audit risk rating		
Low	Clean-up of data, improve quality of data. No market settlement or customers are affected		
Actions taken to resolve the issue		Completion date	Remedial action status
No action is being taken to change the way the Gentrack software operates when meter data is processed for meters owned by other asset owners. This is the cause of the majority of the Registry reversals and is necessary due to a design flaw with the Registry that does not allow a new MEP to overwrite existing meter data. Eventually this issue will cease to have any impact as Northpower owned meter assets will largely be replaced by advanced meters owned by AMS or Metrix.			Identified
Preventative actions taken to ensure no further issues will occur		Completion date	
No action is being taken. Northpower will continue to reverse entries sent to the Registry by Gentrack in those cases where the meter assets are not owned by Northpower or the entry adds no value to the Registry.			

4.11 Metering infrastructure [clause 10.39(1)]

The MEP must ensure that for each metering installation

- *an appropriately designed metering infrastructure is in place*
- *each metering component is compatible with and will not interfere with any other component in the installation*
- *all components integrate to provide a functioning system*

Northpower MEP only installs non-AMI meters at installations for which it provides the MEP services. Smart meters are installed by other MEPs on request from traders. Northpower has been in the metering business for many years, first as meter owner and for the last 4 years as the MEP. With such vast experience the company does not have any challenges which affect the integrity of the metering infrastructure.

Each installation is tested and the results recorded on the Meter Installation Certification Report by the technician. If any component does not pass the test, an installation is not certified. There were no complaints from customers or traders about components installed in the last 6 months. Compliance confirmed.

4.12 Responsibility for metering installation at ICP to be decommissioned [clause 11.18B (3)]

If an ICP is to be decommissioned, the MEP who is responsible for the ICP must:

- *advise the trader no later than 3 business days prior to decommissioning that the trader must as part of the decommissioning carry out a final interrogation; or*
- *if the MEP is responsible for the interrogation of the metering installation, arrange for a final interrogation to take place.*

The request for decommissioning usually comes from a customer or a trader. Northpower provided a number of examples of decommissioned installations. Whenever possible, Northpower records the final reading by recovering a meter and this reading is sent to the trader but there are cases where it is not possible to obtain a removal reading, such as when an ICP has been destroyed by fire. Meter Reports for 20 ICPs were sighted, the results are shown below:

ICP	Date of decommissioning	Final read
0000503129NR561	2017-03-06	19085
0000504023NRA94	2017-01-18	33699/32153
0000510697NR14B	2017-03-14	014980/041034/030897
0000511322NRA13	2017-03-15	012016
0000511459NRE98	2016-11-29	00002/00002
0000515386NR586	2017-03-13	002552
0000518271NRB7F	2017-01-24	019187/80675/46438/60348
0000523162NR0DD	2016-11-09	010196
0000524221NR9DB	2017-02-16	090245/156658
0000524371NR8D7	2017-05-03	021159
0000524623NR55F	2016-11-07	004875/011555/008043
0000525289NR270	2016-11-17	005181/0433138
0000527842NR201	2017-03-27	29732/11063/06687
0000529397NR9C2	2016-11-25	The house and meter were destroyed by fire
0000529724NRBB1	2016-12-05	00183
0000530461NR319	2017-06-08	28576/77638
0000534381NR021	2017-05-18	9/019191/10006/20601
0000554408NR660	2016-11-23	005556
0000566410NRCB5	2016-11-28	11953
0000567225NR1A4	2017-06-14	023533

When ICPs are decommissioned meter data is not removed from the registry even though the meters have been physically removed from the ICP. The removal date and the final read are not updated to the registry as Gentrack does not provide this functionality (removing meter data or updating removal reads) due to the Part 10 Registry functional specification marking this as “optional” data for update to the Registry. Once the status in the registry is changed to

“Ready for decommissioning” by the trader, Northpower, as a distributor, changes it to “Decommissioned”.

Compliance confirmed.

4.13 Measuring transformer burden and compensation requirements [clause 31(4)(5) of Schedule 10.7]

The MEP must, before approving the addition of or change to the burden or compensation factor of a measuring transformer in a metering installation, consult with the ATH who certified the metering installation.

CTs installed within installations for which Northpower is responsible are used for metering purposes only as described in other sections of this report.

Northpower confirmed that there are no changes made to a CTs burden or compensation factor unless the site is recertified.

Whenever Northpower plans to add or change the burden or compensation factor of VTs in a metering installation, it is always discussed with the ATH, which certified the installation. Compliance confirmed.

4.14 Changes to software ROM or firmware [clause 39(1)(2) of Schedule 10.7]

The MEP must, if it proposes to change the software, ROM or firmware of a data storage device installed in a metering installation, ensure that, before the change is carried out, an approved test laboratory:

- *tests and confirms that the integrity of the measurement and logging of the data storage device would be unaffected*
- *documents the methodology and conditions needed to implement the change*
- *advises the ATH that certified the metering installation of any change that might affect the accuracy of the data storage device.*

The MEP must, when implementing a change to the software, ROM or firmware of a data storage device installed in a metering installation:

- *carry out the change in accordance with the methodology and conditions*
- *identified by the approved test laboratory under clause 39(1)(b)*

- *keep a list of the data storage devices that were changed*
- *update the metering records for each installation affected with the details of the change and the methodology used.*

The meters used in metering installations of category 3 and higher have data storage devices integrated with the meter therefore, if there is a need to change the data storage device software, ROM or firmware, an existing meter will be removed and a new meter installed.

In general the standard business process, apart from changes to baud rate or if communications change from landline to cell phone, any HHR meters are not reprogrammed in-situ but are replaced by newly certified meters.

Compliance confirmed.

4.15 Temporary energization [clause 10.28(6)]

An MEP must not request the temporary energisation of a new POC unless authorised to do so by the reconciliation participant responsible for that POC and has an arrangement with that reconciliation participant to provide metering services.

Northpower has very good control of the energisation process because as the nominated MEP it always uses Northpower Contracting staff to connect a new installation to its network. This part of their MEP responsibility is never done by contractors.

Northpower has not been asked for temporary energisation since the last audit.

Compliance confirmed.

5. Metering records

5.1 Accurate and complete records [clause 4(1)(a)(b) of Schedule 10.6 & Table 1, Schedule 11.4]

The MEP must, for each metering installation for which it is responsible (other than an interim certified metering installation), keep accurate and complete records, which include:

Please note in bold font we specify the location of each record kept by Northpower as the MEP. The location of records and how they are stored has not changed since the last audit.

- i. the certification expiry date of each metering installation – **Gentrack (Northpower MEP)**
- ii. all equipment used in relation to the metering installation, including serial numbers – **Gentrack (Northpower MEP)**, *all equipment is owned by Northpower (meters, load control relays, CTs, some VTs) where Northpower is the MEP. If a meter does not belong to Northpower but the CTs are owned by Northpower, a new MEP is asked to buy the existing CTs or install their own. Northpower is not interested in leasing CTs to other parties. Northpower's policy as a distributor is to request that their Load Control Devices are always left on a metering installation regardless of what type of meter is installed.*
- iii. the manufacturer's or (if different) most recent test certificate for each metering component in the metering installation - **Northpower ATH**
- iv. the metering installation category and any metering installations certified at a lower category – **Gentrack (Northpower MEP)** *(1 ICP certified at a lower category, section 7.6)*
- v. all certification reports and calibration reports showing dates tested, tests carried out, and test results for all metering components in the metering installation – **records are held by Northpower ATH**
- vi. the contractor who installed each metering component in the metering installation – **scanned Metering Reports (Northpower Document Management System)**
- vii. the certification sticker, or equivalent details, for each metering component that is certified under Schedule 10.8 in the metering installation: **Gentrack (Northpower MEP)** **- only the metering installation certification details and some details such as the serial number of meter for cat 1, for cat2 and higher also CT's details**
- viii. any variations or use of the 'alternate certification' process – **alternate certification process is not used**

- ix. seal identification information – use pliers, each installer has own number - **Northpower Test House**
- x. any applicable compensation factors – **Gentrack (Northpower MEP)**
- xi. the owner of each metering component within the metering installation – **Gentrack (Northpower MEP)**
- xii. any applications installed within each metering component -
- xiii. the signed inspection report confirming that the metering installation complies with the requirements of Part 10. – **scanned copies accessible via Document Management System**

Northpower's policy has not changed. As a MEP, Northpower provides the MEP functions at ICPs only where its own metering assets are installed. For any new installations or recertification after 29/8/2013, all types of records noted above are kept and will be kept for the required period under the Code.

Gentrack is Northpower's ICP and metering equipment database and this holds the data on which meters are installed at ICPs. Northpower holds scanned copies of paperwork relating to an ICP and it's metering on a separate server as this document store is not part of Gentrack. This scanned paperwork includes emails, site visit photos, new connection application forms, physical disconnection/reconnection site visits, and metering related site visits. Meter information relating to meter tests and calibration is also held by the Northpower Class B ATH.

Northpower has not purchased any new meters since the last audit. Many of Northpowers meters have been removed as a result of the roll-out of AMI meters. Removed meters are retested individually at the Northpower Test House for re-use when required. Northpower provides services for BTS for some traders and permanent connections for Trustpower. There are a number of customers, who do not wish to have smart meters installed. In such a scenario, Northpower is requested to install a "legacy" meter and provide the MEP service.

An issue described in previous audit reports, is that Northpower while still the MEP in the Registry does not hold full records of metering equipment which belongs to other asset owners due to Northpower metering assets being replaced by a third party without Northpower's knowledge. In these cases, the registry is often not being updated in a timely manner by a trader and a new MEP. Although reducing, this issue is not going away; it will remain until the AMI roll-out by various traders is complete. Luckily both traders and MEPs seems to be slowly getting more organized. A new MEP is more quickly nominated by a trader and new metering records are uploaded to the registry quicker. The result is that Northpower is not in a possession of full records of equipment installed by other meter asset owners. It is equipment which is not owned by Northpower.

It would be of significant cost to the market if Northpower decided to pursue other MEPs to provide to them full records of metering components installed.

Compliance is confirmed

Issue	Description	Remedial action
Metering records	Northpower does not hold full records of metering equipment which belong to other asset owners due to Northpower metering assets being replaced by a third party and the registry not being updated in a timely manner by a trader and a new MEP	

5.2 Inspection reports [clause 4(2) of Schedule 10.6]

The MEP must, within 10 business days of receiving a request from a participant for a signed inspection report prepared under clause 44 of Schedule 10.7 make a copy of the report available to the participant.

If Northpower is requested to provide a signed inspection report it will provide this to a participant as a scanned copy of the field report prepared by the Northpower inspector. Northpower always provides this type of report when requested by a trader. Since last year's audit, no trader has asked for an inspection report.

Compliance confirmed based on a review of the business process used by Northpower.

5.3 Retention of metering records [clause 4(3) of Schedule 10.6]

The MEP must keep metering installation records for 48 months after any metering component is removed or any metering installation is decommissioned.

Northpower holds historic metering records in an electronic format by scanning the original paper records. For any new installations or recertification all documents are scanned. All scanned records will be kept indefinitely.

Compliance confirmed on observation and by viewing records for 5 ICPs for which Northpower is no longer the MEP

5.4 Provision of metering records when ATH (clause 6 of Schedule 10.6)

If the MEP contracts with an ATH to recertify a metering installation and the ATH did not previously certify the metering installation, the MEP must provide the ATH with a copy of all relevant metering records not later than 10 business days after the contract comes into effect.

If Northpower decides to use an alternative test house all relevant metering records will be provided to the new Test House. For metering installations of category 3 HV and above mostly AccuCal is used.

Compliance is confirmed.

6. Maintenance of registry information

6.1 MEP response to switch notification [clause 1(1) of Schedule 11.4]

Within 10 business days of being advised by the registry that it is the gaining MEP for the metering installation for the ICP, the MEP must enter into an arrangement with the trader and advise the registry it accepts responsibility for the ICP and of the proposed date on which it will assume responsibility.

The company's policy is to provide the MEP function only for installations where their own metering assets are installed. Any nominations for installations where third party owned meter assets are installed are rejected. Part of the daily process is to check MEP nominations and to decide whether they are to be accepted or not.

Northpower always accepts a MEP nomination for a new installation (registry status: "Disconnected – New Connection in Progress"). Since the last audit, Northpower received 209 MEP nominations. 198 of them were for new connections and 9 for existing connections.

The Event Listing file (EDA) dated for the period 01/11/15 to 31/10/16 was analysed to validate compliance with the above clause.

We checked input dates of trader files, MN files and Metering files (MM-010) for a randomly chosen 50 ICPs and we confirm that the MEP nominations were accepted by Northpower the same or following business day of the MEP nomination being received by Northpower from the registry. Metering information was usually sent to the Registry on the same business day or following business day to the MEP nomination being accepted, where the metering had been installed at the ICP prior to the MEP nomination.

The longest backdated MEP nomination for ICP 0000567609NR3EE was 36 business days by Genesis. It is a vast improvement in comparison with the previous audit, when we identified backdating of MEP nominations up to 595 BD. It appears that at last, traders are getting more organized. The majority of MEP nominations are within 4 and 5 BD.

We confirm Northpower's compliance based on the analysis of the EDA file.

6.2 Provision of registry information [clause 7(1)(2)(3) of Schedule 11.4]

The MEP must provide the information indicated as being 'required' in Table 1 of clause 7 of Schedule 11.4 to the registry.

The LIS and PR255 files dated 28/6/17 provided by Northpower were analysed to assess compliance. For this analysis we used the Registry Data Analysis database provided by the

Authority to assist the auditors in the assessment of compliance with clause 7 of Schedule 11.4. The results are shown below:

Cat 2 with multiplier over 100	1 ICP(0000523418NR214) – Category 3 ICP certified as category 2 as noted elsewhere in section 7.6
Cat 3 and above without HHR profile or HHR meter or HHR installation	no ICPs
Cat 1 over 15 years Cat 2 over 10 years or over 15 if cert before 29/8/2013 Cat 3 over 10 years Cat 4 over 5 years Cat 5 over 3 years	ICP 0000511295NRC6F certified on 20/01/17, certification expires on 20/01/31. Incorrect information was input into Gentrack which then updated the Registry. Paperwork says that installation was certified for 14 years No ICPs Ditto ditto
Invalid certification date	no ICPs
Cert Expiry date > Today	706 installations expired certification. The breakdown is below: Cat 1 – 697 ICPs Cat 2 - 2 ICP Cat 3 – 5 ICPs Cat 4 – 1 ICP Cat 5 – 1 ICPs (291 ICPs reported in the last MEP audit report)
Compensation factor on Cat 1 Installation	44 ICPs. Correct as Northpower has a number of installations with a single-phase meter on a 3PH supply so a multiplier of 3 applies. Some of these installations will be upgraded when an advanced meter is installed where the service main configuration allows but the remaining installations cannot be changed to a conventional metering configuration. (47 ICPs reported in the last MEP audit report)
CT on Cat 1 Check component type of “C” on Cat 1	No ICPs
Export ICPs (load type of generation or both) Check that the registry has an “I” channel	4 ICPs
HHR profile and submission type and meter or installation type is not HHR	no ICPs

ICP in LIS File but not in PR255	no ICPs
Any compensation factor that is not: 20,30,40,50,60,80,100,120,160,200,240,400	76 ICPs. A single-phase meter on a three-phase supply at a Category 1 installation will have a multiplier of "3". Category 4 and 5 metering installations will generally have compensation factors exceeding 400.
Over Cat 1 with No CTs	1 ICP (0000100001NR87B) Wairua Power Station. When Northpower tried to add the CT information for this ICP into the Registry it was discovered that the CT serial numbers matched those of another ICP. Gentrack will not allow duplicated serial numbers, and this is unlikely to occur in the "real world" so a site check will need to be made to confirm the correct CT serial numbers.
Control device not populated. All CN, NC, D, N should have control device unless they are AMI	196 ICPs. By definition, an installation with a "loaded pilot" does not have a control device at the ICP because the pilot-wire supplies the entire load on the controlled supply. Loaded pilots are being progressively eliminated in conjunction with meter upgrades (217 ICPs reported in the last MEP audit report).
Profile analysis Check period of availability and register content: CN without any other tariff	92 ICPs. It is quite possible within Northpower's price plan options to have a controlled load meter with no uncontrolled meter. This is commonly used for non-urgent supplies such as irrigation or flood pumps.
Profile analysis Check period of availability and register content: Day and night = 24	61 ICPs. Valid. ICPs on price plan ND5 (Controlled Day/Night) where the total availability in any 24-hour period is 22 hours – Northpower can control up to 2 hours in any 24-hour period. (69 ICPs reported in the last MEP audit report)
Profile analysis Check period of availability and register content: Day without Night	no ICPs
Profile analysis Check period of availability and register content: IN Register cannot be 24 or 0	no ICPs
Control device not populated - All "IN" register content should have control device	The only ICPs with an "IN" register content is on the "closed" DM4 price plan. Many of these ICPs use a "loaded pilot" for hot water control. By definition, an installation with a "loaded pilot" does not have a control device at the ICP because the pilot-wire supplies the entire load on the controlled supply. Loaded pilots are being progressively eliminated in conjunction with meter upgrades.

Profile analysis Check period of availability and register content: Night without Day	no ICPs
Profile analysis Check period of availability and register content: UN Register not 24	no ICPs

Non-compliance identified. For ICP 0000100001NR87B there is no CT information in the Registry. Northpower attempted to load the CT information into Gentrack (and then to the Registry) however it was found that the CT serial numbers on the AccuCal certification report were duplicates of the CT serial numbers at another ICP. Gentrack will not allow duplicate serial numbers, and this situation is unlikely to occur in the real world, so we suspect the AccuCal certification report for one of the ICPs has an error. Northpower will need to carry out site checks to find the correct CT serial numbers. In section 7.5 we identified that for 10 ICPs, VT information was not recorded in the registry.

Northpower is aware about missing information in the registry, the company have the records. There is an issue with Gentrack which is not designed to hold such information because the main purpose of Gentrack. Northpower is working with Gentrack to find a way to address it.

Our assessment of strength of controls to remedy non-compliance in None.

Non-compliance	Description		
Audit Ref: 6.2 With: 7(1) of Schedule 11.4 From: 01-Nov-16 To: 26-Jun-17	For ICP 0000100001NR87B no CTs information and for 10 ICPs no VTs information uploaded into the registry Potential impact: Low Actual impact: Low Audit history: Three time previously Controls: None Breach risk rating: 5		
Audit risk rating	Rationale for audit risk rating		
Low	Low audit rating is assigned based on the fact that missing VTs information for 10 ICPs, incorrect information for 1 ICP and missing CTs information for 1 ICP does not have an impact on the market settlement outcome		
Actions taken to resolve the issue		Completion date	Remedial action status
Northpower is investigating and correcting any data errors in the Registry as time and staff resources permit. A new staff member is commencing employment late August which, once she is trained, will give additional resource to clean up this area of Registry data		31/12/2017	Identified
Preventative actions taken to ensure no further issues will occur		Completion date	
Once all data is in Gentrack (currently not all VT data is held in Gentrack) comparison between the Registry and Gentrack can be made to identify missing or error data.		31/12/2017	

6.3 Correction of errors in registry (clause 6 of Schedule 11.4)

By 0900 hours on the 13th business day of each reconciliation period, the MEP must obtain from the registry a list of ICPs and the registry metering records for the ICPs for the metering installations the MEP is responsible for.

No later than 5 business days following collection of data from the registry, the MEP must compare the information obtained from the registry with the MEP's own records.

Within 5 business days of becoming aware of any discrepancy between the MEP's records and the information obtained from the registry, the MEP must correct the records that are in error and advise the registry of any necessary changes to the registry metering records.

Northpower has a database application which allows the comparison of registry information against their own records held in Gentrack. This database uses the PR-255 and LIS files so

that a structured comparison with registry data to Northpower held data is performed. It can be used to meet the obligation described in clause 6 of Schedule 11.4

Due to a lack of staff resources the database was not used since that last audit however it does not mean that Northpower does not compare Gentrack data with the registry data at all. The company simply does not follow the process described in this clause. A lot of work is done during each month to monitor the correctness of registry records discovered by their own analysis or in conjunction with traders. If any differences are identified they are corrected straight away.

There will be a large amount of “unmatched” meter data between Gentrack (Northpower’s ICP and meter management software) and the Registry due to meter changes entered into Gentrack while Northpower is still the MEP in the registry but their physical meter assets have been displaced. As mentioned elsewhere in this report, Northpower manually reverses any Registry entries each day to allow a new MEP to be nominated or for the new MEP to update their meter data into the Registry which creates the data mismatch.

Northpower invests a lot of time to have “clean” data in the registry but the timing of correcting data in the registry does not strictly adhere to the requirements of clause 6 of Schedule 11.4. The outcome is achieved but the timing is off. Northpower recently employed a new staff member, due to start late August, who will assist in the reconciliation work to be fully compliant with this clause.

Non-compliance identified.

Our assessment of strength of controls to remedy non-compliance in Weak.

Non-compliance	Description		
Audit Ref: 6.3 With: 6 of Schedule 11.4 From: 01-Nov-16 To: 26-Jun-17	No correction of error conducted according to process specified by clause 6 of Schedule 11.4 Potential impact: Low Actual impact: Low Audit history: Three time previously Controls: Weak Breach risk rating: 3		
Audit risk rating	Rationale for audit risk rating		
Low	Northpower does not follow a timeline of correcting errors in the registry as this clause requires but a lot of works is done during each month to monitor the correctness of registry records discovered by their own analysis or in conjunction with traders. Identified errors are corrected straight away.		
Actions taken to resolve the issue		Completion date	Remedial action status
A new staff member is commencing employment late August which, once she is trained, will give additional resource to help with regular reconciliation of Registry data.		31/12/2017	Identified
Preventative actions taken to ensure no further issues will occur		Completion date	
Priority will be given to identifying missing Registry data (e.g. VT information) and populating the Registry. Reconciliation between the Registry and Gentrack will target areas where the most gain can be made as opposed to investigating data differences where other MEPs are slow to update the Registry.		31/12/2017	

6.4 Cancellation of certification [clause 20 of Schedule 10.7]

The certification of a metering installation is automatically cancelled on the date on which one of the following events takes place:

- a) the metering installation is modified otherwise than under sub clause 19(3) or 19(6)*
- b) the metering installation is classed as outside the applicable accuracy tolerances set out in Table 1 of Schedule 10.1, defective or not fit for purpose under this Part or any audit*
- c) an ATH advises the metering equipment provider responsible for the metering installation of a reference standard or working standard used to certify the metering installation not being compliant with this Part at the time it was used to certify the metering installation, or the failure of a group of meters in the statistical sampling recertification process for the metering installation, or the failure of a certification test for the metering installation*

- d) *the manufacturer of a metering component in the metering installation determines that the metering component does not comply with the standards to which the metering component was tested*
- e) *an inspection of the metering installation, that is required under this Part, is not carried out in accordance with the relevant clauses of this Part*
- f) *if the metering installation has been determined to be a lower category under clause 6 and the maximum current conveyed through the metering installation at any time exceeds the current rating of its metering installation category as set out in Table 1 of Schedule 10.1*
- g) *the metering installation is certified under clause 14 and sufficient load is available for full certification testing and has not been retested under clause 14(4)*
- h) *a control device in the metering installation certification is, and remains for a period of at least 10 business days, bridged out under clause 35(1)*
- i) *the metering equipment provider responsible for the metering installation is advised by an ATH under clause 48(6)(b) that a seal has been removed or broken and the accuracy and continued integrity of the metering installation has been affected.*

A metering equipment provider must, within 10 business days of becoming aware that one of the events above has occurred in relation to a metering installation for which it is responsible, update the metering installation's certification expiry date in the registry.

The issue described in the clause 20 of Schedule 10.7 when the certification of an installation is cancelled, is complex. The reasons for the certification cancellation can be put into two groups.

The first group of reasons consists of situations where Northpower has no influence at all, e.g. a group of meters fail statistical sampling, and the manufacturer determines that the metering component does not comply with the standards to which it was tested. In a case like that, Northpower can only rely on advice given by responsible parties and act accordingly.

Clause 20(1) of Schedule 10.7 covers the list of events which, if they take a place, will cause the cancellation of certification. We discussed each such event again with Mike Hayes (Network Commercial and Operations Manager) and we listed references to the appropriate sections in this report below:

- (a) Installation modification – this was discussed with Mike Hayes and is covered in section 4.1 – no installations were modified to his knowledge
- (b) Accuracy tolerance – this is covered in section 4.3 – Northpower uses the selective component metering method to certify metering installations of category 1, 2 and 3 LV. Higher category metering installations are certified by AccuCal. Business practise is that

if the accuracy tolerance during installation testing is not met, an installation is not certified. If necessary not up to standard equipment will be replaced.

(e) Lack of inspection 9 Installations of category 3 and 1 installation of category 5 did not have an inspection was identified and is described in detail in section 8.2. The registry records were not updated

(f) Certification to a lower category – one ICP is discussed in section 7.6

(g) Insufficient load for full certification – this is discussed in section 7.8, no sufficient load, no certification

(h) Bridged out load control device – the process is described in section 7.117.11. The majority of after-hours faultmen and all day faultmen carry spare relays in their vehicles. On rare occasions ripple relays are bridged out by a faultman after hours when the customer has no hot water. During the day, the faultman always carry spare ripple relays. An internal company SR is issued the next day and the faulty load control device is replaced if it was bridged out.

(i) Seal broken – the process is discussed in section 8.4. When discovered, SR is issued and a meter re-sealed.

There were no occurrences requiring Northpower to cancel certification of any metering installation except when a certification was not renewed in time due to customer access constraints.

Non-compliance identified because 10 installations did not have inspections and registry records of expired certification date were not updated.

Non-compliance	Description		
Audit Ref: 6.4 With: 20(2) of Schedule 10.7 From: 01-Nov-16 To: 26-Jun-17	10 installations did not have inspections; registry records of expired certification date were not updated. Potential impact: Low Actual impact: Low Audit history: None Controls: None Breach risk rating: 6		
Audit risk rating	Rationale for audit risk rating		
Low	We assign low audit risk because small number of installation is affected.		
Actions taken to resolve the issue		Completion date	Remedial action status
Northpower will implement a process to manage those category 3 and above ICPs for which Northpower is the MEP. A report (spreadsheet) will be provided to AccuCal annually of the ICPs. AccuCal can assess which ICPs require inspection or re-certification and schedule this into their work program. Northpower staff will regularly follow-up with AccuCal to ensure the scheduled inspections or re-certification work is completed and supporting documentation is supplied to Northpower.		31/3/2018	Identified
Preventative actions taken to ensure no further issues will occur		Completion date	
As above		31/3/2018	

Our assessment of strength of controls to remedy non-compliance in None because there is no process in place to monitor the implication of missing inspections on registry records.

6.5 Registry metering records (clause 11.8A)

For each metering installation it is responsible for the MEP must provide the required metering information to the registry, and update the registry metering records in accordance with Schedule 11.4.

Northpower provides the required metering information to the registry to the best of their knowledge. The information is provided in the prescribed form (registry will reject any files which do not meet the registry specification) and the registry records were uploaded as per Schedule 11.4.

There is a daily process in place to check to see if uploaded files have been accepted by the registry and any rejected files or rejected individual entries are dealt with and a new updated file is sent. A part of the daily process is also a review of MEP nominations to decide which ones to accept and which ones to reject as Northpower is not prepared to be the MEP for ICPs where meter assets are not owned by Northpower.

It was noted that VTs for only 2 ICPs are recorded in the Registry (0000547283NR1F9 and 0000545312NR81F), there remains a low number (less than 10) ICPs where VT information is not recorded in the registry along with CT information for 1 ICP (cat 5) 0000100001NR87B

Our assessment of strength of controls to remedy non-compliance is None.

Non-compliance identified.

Non-compliance	Description		
Audit Ref: 6.5 With: 11.8A From: 01-Nov-16 To: 26-Jun-17	Not all metering records loaded to the registry as per Table 1 of Schedule 11.4 Potential impact: Low Actual impact: Low Audit history: three times previously Controls: None Breach risk rating: 5		
Audit risk rating	Rationale for audit risk rating		
Low	A very small number of ICPs for which ICP information is not recorded in the registry. Information is not always readily available for VTs. No impact on market settlement outcome		
Actions taken to resolve the issue		Completion date	Remedial action status
Northpower is investigating and correcting any data errors in the Registry as time and staff resources permit. A new staff member is commencing employment late August which, once she is trained, will give additional resource to clean up this area of Registry data.		31/12/2017	Identified
Preventative actions taken to ensure no further issues will occur		Completion date	
Once all data is in Gentrack (currently not all VT data is held in Gentrack) comparison between the Registry and Gentrack can be made to identify missing or error data.		31/12/2017	

7. Certification of metering installations

7.1 Certification and maintenance [clause 10.38(a), clause 1 and clause 15 of Schedule 10.7]

The MEP must obtain and maintain certification for all installations and metering components for which it is responsible. The MEP must ensure it:

- performs regular maintenance, battery replacement, repair/replacement of components of the metering installations,*
- updates the metering records at the time of the maintenance.*
- has a recertification programme that will ensure that all installations recertified prior to expiry.*

Northpower is a certified Class B Test House and maintains certification of metering installations (category 1,2, and 3 LV) for which it is responsible as a MEP. Northpowers ATH expires next year and it won't be renewed. The company is in the process of evaluating different proposals to outsource the work currently carried out by the Northpower Class B Test House.

After certification of an installation is finalised, metering records are updated into Gentrack and the Registry. The ICP meter installation certification records are kept as scanned copies.

Metering installation categories 3 HV to 5 are certified by Electrix or AccuCal, mostly by AccuCal. There is a re-certification program in place for installations of category 2 and higher which, looking at the results, does not give the best results.

Maintenance is carried out as required for battery replacement or communications faults on half-hourly metered ICP meter installations. For category 1 certification sites Northpower prefers that all legacy meters are replaced by smart meters as none of the big retailers were interested in signing up Northpower as the MEP for the long term.

All new installations for which Northpower is responsible as the MEP are certified upon livening; the number of such installations is decreasing steadily. BTS are still certified for one year only; before their certification expires an inspector should go on site to check if the connection is still used as BTS. If it is found to be unsafe, the customer is contacted and requested to bring the connection up to standard. If during inspection it was noted that the connection is not being used as BTS but as a permanent connection instead, the installation is certified once it has been brought up to permanent connection standard. It is a good process but we are not sure how it is monitored.

According to the PR-255 file there were 706 installations for which certification had expired. It is a significant increase since the last audit when we identified 291 installations with expired certification. 697 ICPs are category 1 installations, the rest of them (9) are category 2-5. The table below shows the details.

The main reason for such an increase is that on 30/3/2017 certification expired for 337 installations. They are installations which were previously interim certified, Northpower used the statistical sampling method to extend their “life” by 2 years expecting that within that 2-year period all of them would be replaced by smart meters. Unfortunately, this did not happen. Northpower’s management is in contact with companies such as GENE (2,167 Northpower legacy metered ICPs), MEEN (2,978 Northpower legacy metered ICPs), MERI (3,322 Northpower legacy metered ICPs) to get an update on their advanced meter roll-out projects. Meridian confirmed that their advanced meter deployment program is still going ahead and they expect this to finish at the end of 2017.

Below are details of the ICPs of cat 2,3, 4 and 5 for which certification has expired, all of them but 2 were identified in the previous audit:

ICP	Meter category	Cert Expire date
0000529180NR4A2	2	16/01/2017
0000545301NRE72	2	21/05/2016
0000530364NR154	3	27/01/2016
0000545317NR550	3	31/05/2017
0000549009NR4E5	3	28/06/2013
0000553499NR1A2	3	20/03/2016
0000500092NR2E3	3	13/06/2017
0000553396NR17E	4	01/08/2015
0000546038NR638	5	21/05/2016

The original Northpower plan, call it Plan A, was to have their metering assets replaced by other MEPs, before their certification expired. Plan A did not deliver the expected results. It appears that Northpower does not have a Plan B.

Northpower is in the process of contacting all traders who supply ICPs with Northpower legacy meters to get an update on their plans, and progress, for advanced meter roll-out on the Northpower network. Where the trader has an advanced meter roll-out project in progress Northpower will again be stressing the importance of targeting the uncertified or expired certification meters as a priority.

Where a trader is not planning to install advanced meters Northpower will liaise with the trader to carry out the work necessary, including replacement of meters, at those ICPs with uncertified or expired certification meter installations.

From our point of view Northpowers has no controls in place to monitor the compliance with the above clause.

Non-compliance identified.

Non-compliance	Description		
Audit Ref: 7.1 With: 10.38(a) From: 01-Nov-16 To: 26-Jun-17	Certification expired for 706 installations, 697 installations category 1 and 9 higher categories Potential impact: Low Actual impact: Low Audit history: twice previously Controls: None Breach risk rating: 5		
Audit risk rating	Rationale for audit risk rating		
Low	The number of non-certified installations doubled since last year up to 706. Northpowers plan is to wait for traders to replace their legacy meters with smart meters. Concern is that even non- certified installations identified in the last audit are still not certified. There are almost all installations category 1		
Actions taken to resolve the issue		Completion date	Remedial action status
<p>Category 3 HV, 4 & 5 ICP's are assigned to an external Class A Test House for recertification. In cases where the HV CT's and VT's need to be recertified, the job has to be coordinated with a shutdown arranged by the customer. A new process to manage this outlined in other sections of this report will be implemented.</p> <p>Metering at BTS's is now certified for 12 months on the basis that a BTS must be replaced by a permanent supply within 12 months. Delays in customers completing their building projects can result in the certification expiring. A new process, similar to that being introduced for category 3 HV, 4, & 5 ICPs will be introduced for the BTS ICPs so that Northpower Contracting can program this work into their schedule.</p> <p>Uncertified and expired certification category 1 ICPs will be the subject of the arrangement with traders outlined above. Those ICPs with a trader who is not undertaking an advanced meter roll-out project will be dealt with by Northpower.</p>		31/3/2018	Identified
Preventative actions taken to ensure no further issues will occur		Completion date	
A more formal process for reviewing the meter certification tasks passed to Northpower Contracting or the external Class A Test House will be introduced.		31/3/2018	

7.2 Certification tests [clause 10.38(b) and clause 9 of Schedule 10.6]

The MEP must ensure that an ATH performs the appropriate certification and recertification tests and that the ATH has the appropriate scope of approval to certify and recertify the metering installation.

Northpower uses the Test Houses Electrix and AccuCal for installations of category 3 HV and above. Both Test Houses, according to the Electricity Authority's website, hold the certification of Test House, class A, which is sufficient to certify metering installations of category 3 and higher. Northpower itself holds the accreditation of Test House class B for installations of category 1, 2 and 3 LV.

Compliance confirmed.

7.3 Active and reactive capability [clause 10.37(1)(2)(a)]

For any category 2 or higher HHR metering installation that is certified after 29th August 2013, the MEP must ensure that installation have active and reactive measuring and recording capabilities.

Consumption installations must measure and separately record:

- I. Import active energy*
- II. Import reactive energy*
- III. Export reactive energy*

All other installations must measure and separately record:

- I. Import active energy*
- II. Export active energy*
- III. Import reactive energy*
- IV. Export reactive energy*

Northpower ATH confirmed that they changed the meters' programming regime for HHR installations to meet the requirements of clause 10.37(1).

7.4 Local services metering [clause 10.37(2)(b)]

The accuracy of each local service metering installation in grid substations must be within the tolerances set out in Table 1 of Schedule 10.1.

Northpower does not provide the MEP functionality to local services metering installations in grid substations.

7.5 Measuring transformer burden [clause 30(1) & 31(2) of Schedule 10.7]

The MEP must not permit a measuring transformer to be connected to equipment used for a purpose other than metering, except in certain limited circumstances.

The MEP must ensure that a change to, or addition of, a measuring transformer burden or a compensation factor related to a measuring transformer is carried out only by:

- i. the ATH who most recently certified the metering installation;*
- ii. for a POC to the grid, by a suitably qualified person approved by both the MEP and the ATH who most recently certified the metering installation.*

Current transformers (CTs) used for revenue metering at ICP's, for which Northpower is the MEP, are used only for metering. Voltage transformers are commonly shared in big installations between metering and protection circuits as it is not practical to use separate VTs for metering and protection purposes. Clause 30(1) of Schedule 10.7 makes provision for this multi-use of VTs.

The protection relay change, if need arises, is done by Northpower's staff, but they will consult with the ATH who certified the metering installation. The change is always like for like; so the impact is negligible. At the time of the next recertification of the metering installation, the measuring of the transformer burden is recalculated by the ATH. Northpower confirmed that since the last audit no protection relays were changed.

There are 10 ICP's for which Northpower is the MEP with VT's used for metering (Cat 3 HV, 4, and 5). In some cases, the VT's are part of the switchgear and it is not practical to have separate VT's solely for metering. In other cases, the VT's are exclusively for metering. The following table summarises the situation at each site, this list has not changed since the last year.

Site	Type of VT's	Comments
BRB0331 (Oil Refinery and Carter Holt LVL Plant) - 2 ICP's	Substation VT's	The substation VT's are used for metering and protection. An ATH is involved when changes are made to the revenue metering.
MPE1101 (Golden Bay Cement)	Separate Metering Units containing CT's and VT's	Metering units were installed 10 years ago to remove the revenue metering from the station VT's.
Wairua Power Station	Separate Metering Unit containing CT's and VT's	Metering units were installed 10 years ago.
Fonterra Kauri	Substation VT's in indoor 33kV switchgear	Customer-owned switchgear so no control over what the site-owner does; installation is certified by ATH
Fonterra Maungaturoto	VT's in indoor 11kV switchgear	Customer-owned switchgear so no control over what the site-owner does; installation is certified by ATH
Balance Agri-Nutrients Fertiliser works - 2 ICP's	VT's in indoor 3.3kV and 11kV switchgear	Customer-owned switchgear so no control over what the site-owner does; installation is certified by ATH
Northland Polytech	VT's in indoor 11kV switchgear	Exclusive to metering.
CHH Sawmill HV	VT's in indoor 11kV switchgear	Exclusive to metering.
Marusumi Wood Chip Mill	VT's in indoor 11kV switchgear	Customer-owned switchgear so no control over what the site-owner does but unlikely that more equipment would be added; installation is certified by ATH
Northport Deep Water Port	VT's in indoor 11kV switchgear	Customer-owned switchgear so no control over what the site-owner does but unlikely that more equipment would be added. Currently uncertified by ATH due to problems arranging a shutdown as mentioned elsewhere in the report

7.6 Certification as a lower category [clause 6(1)(b)(d) and 6(2)(b) of Schedule 10.7]

A category 2 or higher metering installation may be certified at a lower category than would be indicated solely on the primary rating of the current if:

- the MEP, based on historical metering data, reasonably believes that the maximum current will at all times during the intended certification period be lower than the*

current setting of the protection device for the category for which the metering installation is certified, or is required to be certified by the Code; or

- the MEP, based on historical metering data, reasonably believes that the metering installation will use less than 0.5 GWh in any 12-month period.*

If a metering installation is categorised under clause 6(1)(b), the ATH may, if it considers appropriate, at the MEP's request, determine the metering installation's category according to the metering installation's expected maximum current.

If a meter is certified in this manner:

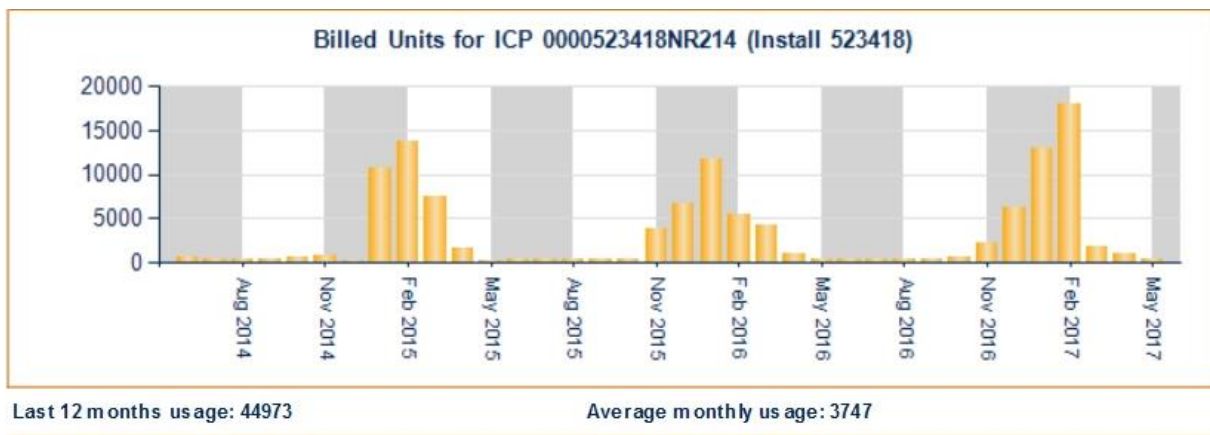
- the MEP must, each month, obtain a report from the participant interrogating the metering installation, which details the maximum current from raw meter data from the metering installation by either calculation from the kVA by trading period, if available, or from a maximum current indicator if fitted in the metering installation conveyed through the point of connection for the prior month; and*
- if the MEP does not receive a report, or the report demonstrates that the maximum current conveyed through the POC was higher than permitted for the metering installation category it is certified for, then the certification for the metering installation is automatically cancelled.*

The company does not allow paper downgrades according to their policy. Customers who request downgrades for the purpose of seeking lower line and electricity charges are required to have existing CT's replaced by CT's in the appropriate range (e.g. 500/5 or lower for cat 2) or conversion to whole-current metering by removal of the CTs for less than a 100A load requirement. At the same time, in conjunction with the conversion to whole-current metering, Northpower requires that supply fuses are downgraded to 100A or lower.

There is still one metering installation of category 3, where legacy metering is installed which is certified as category 2. This ICP is an irrigation pump used occasionally (ICP 0000523418NR214). In the registry this ICP is listed as category 2 with a 160 compensation factor (800/5 CT)

The customer does not wish to have half-hour metering because of the cost. According to Northpower the supply is probably not limited to 500 amps by fuse or circuit breaker and the reason for allowing the downgrade to category 2 was due to the intermittent use at full load. On the 10/03/15 Mercury nominated Metrix as the new MEP with the nomination being accepted the same day by Metrix. However, Mercury reversed this MEP nomination on the 27/6/2016 so in the registry Northpower is still listed as the MEP.

Northpower does not receive a special report from Mercury for the ICP but the consumption data supplied to Northpower (the distributor) for line charge billing purposes can be used for the purposes of this section. This consumption data is graphed on Northpower Intranet Premise Enquiries page for the ICP – the graph for this particular ICP is shown below. Consumption continues to be very low and well below 0.5 GWh pa.



Compliance confirmed.

7.7 Insufficient load for certification tests [clause 14(3)(4) of Schedule 10.7]

If there is insufficient electricity conveyed through a POC to allow the ATH to complete a prevailing load test for a metering installation that is being certified as a half hour meter and the ATH certifies the metering installation the MEP must:

- *obtain and monitor raw meter data from the metering installation at least once each calendar month to determine if load during the month is*
- *sufficient for a prevailing load test to be completed:*
- *if there is sufficient load, arrange for an ATH to complete the tests (within 20 business days)*

If such situation occurs the process is as follows:

The consumption for HHR installations, with Northpower owned metering, is monitored from the Northpower office via MV90 so it can be reviewed regularly and there is also a reminder set-up in Gentrack. Since the last audit in November there were no metering installations for which there was insufficient load for certification tests where Northpower was the MEP. For installations of category 1 and 2, installers use a portable load to certify the installation if no actual load is present.

Compliance confirmed.

7.8 Insufficient load for certification – cancellation of certification [clause 14(6) of Schedule 10.7]

If the tests conducted under clause 14(4) of Schedule 10.7 demonstrate that the metering installation is not within the relevant maximum permitted error:

- *the metering installation certification is automatically revoked:*
- *the MEP must follow the procedure for handling faulty metering installations (10.43 - 10.48).*

If the test conducted under clause 14(4) demonstrates that the metering installation is not within the relevant maximum permitted error, the cause of the problem will be investigated. Northpower's policy is not to allow such sites to be certified until the problem is resolved.

Compliance confirmed.

7.9 Alternative certification requirements [clause 32(2)(3)(4) of Schedule 10.7]

If an ATH cannot comply with the requirements to certify a metering installation due to measuring transformer access issues, and therefore certifies the metering installation in accordance with clause 32(1) of Schedule 10.7, the MEP must:

To advise the market administrator, by no later than 10 business days after the date of certification of the metering installation, of the details in clause 32(2)(a) of Schedule 10.7

- ii. respond, within 5 business days, to any requests from the market administrator for additional information*
- iii. ensure that all of the details are recorded in the metering installation certification report*
- iv. take all steps to ensure that the metering installation is certified before the certification expiry date.*

If the market administrator determines the ATH could have obtained access the metering installation is deemed to be defective and the MEP must follow the process of handling faults metering installations in clauses 10.43 to 10.48.

There is still 1 ICP for which re-certification is delayed because of an access issue by the customer who will not allow the site to be shut down. It is the same ICP which was noted in the last two audits.

ICP	Owner	Name of property	Expire date
0000549009NR4E5	Northport Ltd	Deep Water Port at Marsden Point (11kV)	28/06/13

7.10 Time keeping requirements (clause 23 of Schedule 10.7)

If a time keeping device that is not remotely monitored and corrected controls the switching of a meter register in a metering installation, the MEP must ensure that the time keeping device:

- i. has a time keeping error of not greater than an average of 2 seconds per day over a period of 12 months*
- ii. is monitored and corrected at least once every 12 months.*

This clause is not applicable because Northpower does not have any meters which have the functionality to switch a meter register.

7.11 Control device bridged out (clause 35 of Schedule 10.7)

The MEP must, within 10 business days of bridging out a control device or becoming aware of a control device being bridged out, notify the following parties:

- the relevant reconciliation participant*
- the relevant metering equipment provider*

A metering installation incorporating a control device is defective for the purpose of clause 10.43 if it is used for the purpose of providing information for the purpose of Part 15.

The majority of after-hours faultmen and all day faultmen carry spare relays in their vehicles. On rare occasions ripple relays are bridged out by a faultman after hours when the customer has no hot water. During the day, the faultman always carry spare ripple relays.

The process used by Northpower is as follows:

1. The office is notified that a ripple relay was bridged out at night
2. An internal Service Request is issued for the faulty relay to be replaced.

If it is identified that the customer's hot water cylinder is faulty, not the Northpower owned equipment, the customer pays a "call-out" fee.

Northpower provided 11 examples of "Record of change of equipment for a relay fault" for the following ICPs:

0000539775NR71D

0000502699NR971
0000502435NR877
0000502431NR97D
0000502430NR538
0000502414NR967
0000502427NR25F
0000502439NRB69
0000502417NR5A7
0000517781NR70D
0000500496NRFE8

For all these installations Northpower is not the MEP but owns the ripple receiver therefore the registry was not updated by Northpower.

Compliance confirmed.

7.12 Control device reliability requirements [clause 34(5) of Schedule 10.7]

If the MEP is advised by an ATH that the likelihood of a control device not receiving signals would affect the accuracy or completeness of the information for the purposes of Part 15, the MEP must, within 3 business days after being advised, advise the following parties of the ATH's determination (including all relevant details):

- *the reconciliation participant for the POC for the metering installation*
- *the control signal provider.*

No traders notified Northpower of any installations where a control device could affect the accuracy or completeness of volumes for the purpose of Part 15. Compliance confirmed.

7.13 Statistical sampling [clause 16(1)(5) of Schedule 10.7]

The MEP may arrange for an ATH to recertify a group of category 1 metering installations for which the MEP is responsible using a statistical sampling process.

The MEP must update the registry in accordance with Part 11 on the advice of an ATH as to whether the group meets the recertification requirements.

In October 2015, Northpower completed its statistical sampling programme of meter models at Category 1 metering installations which were previously interim certified. The remaining interim certified meter installations need the meter assets to be replaced as they are part of the “red” group or have meter models which failed the sample testing.

As work progresses Northpower updates the registry information in accordance with Part 11. Compliance confirmed.

7.14 Compensation factors [clause 24(3) of Schedule 10.7]

If a compensation factor must be applied to a metering installation that is an NSP, the MEP must advise the reconciliation participant responsible for the metering installation of the compensation factor within 10 days of certification of the installation. In all other cases the MEP must advise the registry of the compensation factor

Northpower does not have such installations.

7.15 Metering installations incorporating a meter [clause 26(1) of Schedule 10.7]

The MEP must ensure that each meter in a metering installation it is responsible for is certified.

All NHH meters installed at installations where Northpower is the MEP since the last audit have been Northpower-owned meters returned from the third party AMI meter installers on traders' request. The Northpower ATH tests and certifies recovered electronic single-phase and three-phase meters individually. No new meters were purchased. Certificates of meters installed as a part of metering on installations of category 1 and 2 are held by Northpower ATH. Meters for category 3 and above are individually tested by AccuCal as a part of certification.

Compliance confirmed.

7.16 Metering installation incorporating measuring transformer [clause 28(1) of Schedule 10.7]

The MEP must ensure that each measuring transformer in a metering installation it is responsible for is certified.

We confirm that each measuring transformer installed on installations for which Northpower is the MEP are certified. CTs for cat 3 and above are individually tested by AccuCal as a part of certification. CTs certification for cat3 and 3LV are held by Northpower ATH. The documentation was sighted. Compliance confirmed.

7.17 Metering installation incorporating data storage device [clause 36(1) of Schedule 10.7]

The MEP must ensure that each data storage device in a metering installation it is responsible for is certified.

There is still one PSI data logger left, which is certified, but when this installation is due for re-certification it will be replaced by a meter which has integrated data recorders.

The PSI logger is installed at the northern end of the Wiri Oil Terminal pipeline (ICP: 0000545550NRC39). This site is relatively “sensitive” (highly flammable environment) due to it being part of the Refining NZ complex

7.18 Interim certification (clause 18 of Schedule 10.7)

The MEP must ensure that each interim certified metering installation on 28 August 2013 is certified by 1 April 2015.

As was described in section 7.13, Northpower implemented a statistical sampling programme to fully certify category 1 metering installations that were previously interim certified.

On the 20th May 2015 the Authority alleged a breach of clause 18 of Schedule 10.7. against Northpower. In the letter dated 3rd July 2015 addressed to the CEO of Northpower, the Compliance Committee decided to take no further action on the breaches under regulation 11(1) of the Electricity Industry (Enforcement) Regulation 2010, but it also decided to monitor

Northpower's progress on achieving compliance and requested regular compliance updates. Northpower's obligation is to send updates every 3 months to the Electricity Authority Compliance Committee. The table below is the extract from the letter addressed to the Compliance Committee, dated 18/4/2017.

Retailer	Uncertified Category 1 ICP's					
	Oct-15	Mar-16	Jul-16	Jan-17	Feb-17	Apr-17
Meridian Energy	1534	1034	840	680	665	629
Genesis and Energy Online	499	173	136	122	120	120
Mercury and Globug	619	488	434	291	279	262
Contact Energy	332	273	178	157	158	155
Pulse (Just Energy)	134	76	62	55	52	52
Nova Energy	112	128	55	58	60	61
TrustPower	35	32	33	31	31	29
Simply Energy	0	0	0	0	0	0
Prime Energy				1	1	1
PowerShop				2	2	2
Switch Utilities						1
Opunake Hydro	0	3	3	3	3	3
Ecotricity	0	0	0	1	0	0
Total	3265	2207	1741	1401	1371	1315

7.19 Notification of ATH approval [clause 7(3) of Schedule 10.3]

If the MEP is notified by the Authority that an ATH's approval has expired, been cancelled or been revised, the MEP must treat all metering installations certified by the ATH during the period where they were not approved to perform the activities as being defective and follow the procedures set out in 10.43 to 10.48.

Northpower understands clause 7 and, if it occurs, will take appropriate action.

8. Inspection of metering installations

8.1 Category 1 inspections [clause 45 of Schedule 10.7]

The MEP must ensure that category 1 metering installations (other than interim certified metering installations) :

- *have been inspected by an ATH within 120 months from the date of the metering installation's most recent certification or*
- *for each 12 month period, commencing 1 January and ending 31 December, a sample of the category 1 metering installations selected under clause 45(2) of Schedule 10.7 has been inspected by an ATH.*

Before a sample inspection process can be carried out, the MEP must submit a documented process for selecting the sample to the Electricity Authority, at least 2 months prior to first date on which the inspections are to be carried out, for approval (and promptly provide any other information the Authority may request).

The MEP must not inspect a sample unless the Authority has approved the documented process.

The MEP must, for each inspection conducted under clause 45(1)(b), keep records detailing:

- *any defects identified that have affected the accuracy or integrity of the raw meter data recorded by the metering installation*
- *any discrepancies identified under clause 44(5)(b)*
- *relevant characteristics, sufficient to enable reporting of correlations or relationships between inaccuracy and characteristics*
- *the procedure used, and the lists generated, to select the sample under clause 45(2).*

The MEP must, if it believes a metering installation that has been inspected is or could be inaccurate, defective or not fit for purpose:

- *comply with clause 10.43*
- *arrange for an ATH to recertify the metering installation if the metering is found to be inaccurate under Table 1 of Schedule 10.1, or defective or not fit for purpose.*

The MEP must by 1 April in each year, provide the Authority with a report that states whether the MEP has, for the previous 1 January to 31 December period, arranged for an ATH to inspect each category 1 metering installation for which it is responsible under clause 45(1)(a) or 45(1)(b).

This report must include the matters specified in clauses 45(8)(a) and (b).

If the MEP is advised by the Authority that the tests do not meet the requirements under clause 45(9) of Schedule 10.7, the MEP must select the additional sample under that clause, carry out the required inspections, and report to the Authority, within 40 business days of being advised by the Authority.

Northpower has in place a statistical sampling inspection regime for category 1 metering installations as per the Code requirements.

The documentation for a sample inspection process was submitted to the Authority on 30th March 2015 and approved on 15 April 2015 under clause 45(4) of Schedule 10.7. The process had been overseen by Mike Hayes (Network Commercial & Operations Manager). The previous audit was conducted in December'16.

Every year the Inspection Service Coordinator supplies a standard "Inspectors Report" to inspectors, giving details of each metering installation and a blank "Category 1 Metering Installations Inspection Report". Once the inspections are complete the inspectors return the forms to the Northpower office for processing in Gentrack and recording of the inspection outcome. All metering installations of category 1 inspection reports are scanned and archived for future references.

In the year 2016, 228 ICPs were selected, 202 of them were inspected. After inspections are finished, Northpower MEP analyses the results of the inspections in accordance with the requirements of clauses 45(8)(ii) and clause 45(8)(b)(ii) of Schedule 10.7. The summary of findings is shown in the table below:

Count of ICPs	Description of Non-compliance:
2	Damaged meter station potentially compromising meter integrity
1	Meters not sealed
1	Meters were replaced when the meter board was relocated after the time when the sample was selected for inspections
2	Site certification sticker no longer attached or could not be located
1	Incorrect site certification number
1	Certification was not updated when prepay unit added
81	Expiry date on site certification sticker had faded due to sunlight but the pre-printed sequential number was readable, allowing cross-referencing to the expiry date in the ICP database

26 ICPs were not inspected, which were chosen in the sample

Count of ICPs	Reason for not inspecting
11	Northpower-owned meters had been displaced by AMI meters owned by other MEP's.
15	No access available and/or unable to contact the customer.

The report for the 2016 year was submitted by Northpower to the Electricity Authority as required by the Code.

2 potentially faulty meters were replaced and the metering installation recertified. The faulty meters are returned to Northpower ATH for examination.

Compliance confirmed on sighting the inspection reports.

8.2 Category 2 to 5 inspections [clause 46(1) of Schedule 10.7]

The MEP must ensure that each category 2 or higher category of metering installation is inspected by an ATH at least once within the applicable period, which is 120 months for Category 2, 60 months for Category 3, 30 months for category 4, and 18 months for Category 5 starting from the date of the metering installation's most recent certification.

Installations of category 2 are not inspected; instead they are re-certified every 120 months. Using the PR255 files we calculated a date of inspection for installations category 3 and above.

Not all metering installations of category 3 and higher were inspected as per the Code requirement. The table below shows a summary:

ICP	Category	Certification date	Certification expire	Inspection due	Inspection	Site
0000527385NRB2A	3	27/02/12	7/04/21	27/02/17	Inspection pending in conjunction with comms check	Kaihu Valley Sawmill
0000541335NRE00	3	27/07/10	9/09/18	27/07/15	Not inspected since recertification is due soon	WDC Sewerage Pump Station Okara
0000541377NRC20	3	30/06/10	19/08/18	30/06/15	Not inspected since recertification is due soon	Nth Events Okara Stadium Field Lighting
0000545312NR81F	5	21/04/15	1/12/17	21/10/16	Recently recertified by Class A ATH - paperwork being processed	Font MTO – certified 21/6/17 now updated in Gentrack & Registry

0000545341NRCD7	3	14/02/12	6/07/21	12/02/17	Inspection to be arranged by Northpower ATH	WDC Cutforths Water Supply Pump
0000546127NRA4F	5	4/02/16	16/12/17	4/02/17	Inspection by Class A ATH when supplies 3 + 4 are revert in next maintenance period	NZ Refinery
0000548351NRC5A	3	3/05/12	7/02/22	3/05/17	Inspection to be arranged by Northpower ATH	Atlas Quarry Brynderwyn
0000548751NR05B	3	1/03/12	22/06/20	1/03/17	Inspection to be arranged by Northpower ATH	CHH Sawmill Supply 3
0000549265NR20C	3	7/05/12	7/02/22	2/06/17	15/05/2015 in conjunction with comms fault	Winstone Otaika Quarry
0000557260NRF62	3	20/02/09	20/02/19	20/02/14	Inspection to be arranged by Northpower ATH	NZ Police (Whangarei Station)
0000557601NR0D6	3	18/02/09	25/11/19	18/02/14	Not inspected since recertification is due soon	Whangarei Courthouse

9 Installations of category 3 and 1 installation of category 5 did not have an inspection. We discussed with Northpower how they monitor dates for inspections. Their comment was “for category 3 and higher, it is a very manual process because our meter database was configured around certifications rather than inspections. For the HV sites, the Class A test house is proactive for sites such as Fonterra where site access is generally only available in the winter period. For LV sites, we take opportunities of site-visits, such as when investigating communication problems, to undertake a metering inspection.

This is the second audit that this non-compliance has been identified. Our impression is that Northpowers’ preference is to combine inspection with other activities on site. Although a good idea from a financial point of view, unfortunately for some installations this makes Northpower non-compliant. Additionally, if there is one year left before the certification expired and no inspection was conducted in the past, the company strategy is to not conduct an inspection at all.

Northpower’s current strategy does not give very good results. The last audit identified 5 category 3 non inspected installations, this time the number has increased to 8.

In our assessment the strength of controls to monitor compliance are None because the same installations keep appearing on the list.

Non-compliance was identified.

Non-compliance	Description		
Audit Ref: 8.2 With: 46(1) of Schedule 10.7 From: 01-Nov-16 To: 26-Jun-17	No inspection conducted for 1 ICP category 5 and 9 installations category 3 Potential impact: Low Actual impact: Low Audit history: Once previously Controls: None Breach risk rating: 5		
Audit risk rating	Rationale for audit risk rating		
Low	We assess the audit risk rating as low because the level of non-compliance is not improving and installation category 3 and 5 are of concern but a small number of installations are affected		
Actions taken to resolve the issue		Completion date	Remedial action status
Northpower will implement a process to manage those category 3 and above ICPs for which Northpower is the MEP. A report (spreadsheet) will be provided to AccuCal annually of the ICPs. AccuCal can assess which ICPs require inspection or re-certification and schedule this into their work program. Northpower staff will regularly follow-up with AccuCal to ensure the scheduled inspections or re-certification work is completed and supporting documentation is supplied to Northpower.		31/3/2018	Identified
Preventative actions taken to ensure no further issues will occur		Completion date	
As above.		31/3/2018	

8.3 Inspection reports [clause 44(5) of Schedule 10.7]

The MEP must, within 20 business days of receiving an inspection report from an ATH:

- *undertake a comparison of the information received with its own records*
- *investigate and correct any discrepancies*
- *update the metering records in the registry.*

The process has not changed since the last audit. When the inspections are conducted by AccuCal and Electrix for installations of category 3 HV and higher on Northpower's request, Northpower will compare the information on the report supplied with its own records and the registry is updated as required. Unfortunately there is often quite a delay between the completion of the inspection and the supply of the report to Northpower. However the supplied

report is compared to the existing metering information in Gentrack as soon as the report is received.

Compliance confirmed.

8.4 Broken or removed seals [clause 48(4)(5) of Schedule 10.7]

If the MEP is advised of a broken or removed seal it must use reasonable endeavours to determine

- *who removed or broke the seal*
- *the reason for the removal or breakage*
and arrange for an ATH to carry out an inspection of the removal or breakage
and determine any work required to remedy the removal or breakage.

The MEP must make the above arrangements within

3 business days, if the metering installation is category 3 or higher

10 business days if the metering installation is category 2

20 business days if the metering installation is category 1

In a situation where Northpower's inspectors find broken seals at category 1 or 2 metering installations they will check the installation for signs of tampering and if none is identified the missing seals are replaced. This task is completed under the authority of the Northpower ATH.

On some occasions metering installations of category 3 or higher sometimes have a broken seal on the CT chamber. In most cases it is due to site electricians needing access to the CT chamber. In such cases Northpower's inspectors will follow the same process as for a faulty installation.

Compliance confirmed.

9. Process of handling faulty metering installations

9.1 Investigation of faulty metering installations [clause 10.43(4)(5)]

If the MEP is advised or becomes aware that a metering installation may be inaccurate, defective, or not fit for purpose, it must investigate and report on the situation to all affected participants as soon as reasonably practicable after becoming aware of the information, but no later than 20 business days for Category 1, 10 business days for Category 2 and 5 business days for Category 3 or higher.

Northpowers' Contracting Division is advised by customers or by traders of all types of faulty installation complaints such as noisy meters, noisy relays, fast meters, and meters not working.

The process is as follows; traders send through a service request (SR) to Northpower Contracting asking for a site visit. Once the SR is received, an inspector makes a site visit to investigate and remedy any issues he may find. The SR is closed, as per the individual trader's agreed process, once the site visit has been completed. The information provided to a trader will include any information relevant to the fault that the inspector discovered. In some cases, the inspector does not discover any fault, a trader is notified that of the inspector's assessment e.g. possible stopped meter is not faulty, a premises is vacant.

In a situation where a customer reports a suspected fault with a meter and it is not a Northpower owned meter, the customer is asked to contact their trader, who then sends a SR to the Northpower Contracting Division usually via the MEP.

Any changes to the meter installation to remedy a fault are updated into Gentrack. Where Northpower is the MEP this changed meter information is updated to the registry overnight.

Compliance is confirmed based on randomly sighted documents (0000511295NRC6F, 0000532117NR18E, 0000552682NRE7C) and a review of the process.

9.2 Testing of faulty metering installations (clause 10.44)

If a report prepared under clause 10.43(4)(c) demonstrates that a metering installation is inaccurate, defective, or not fit for purpose, the MEP must arrange for an ATH to test the metering installation and provide a 'statement of situation'.

If the MEP is advised by a participant under clause 10.44(2)(a) that the participant disagrees with the report that demonstrates that the metering installation is accurate, not defective and fit for purpose, the MEP must arrange for an ATH to:

test the metering installation

provide the MEP with a statement of situation within 5 business days of:

becoming aware that the metering installation may be inaccurate, defective or not fit for purpose; or

reaching an agreement with the participant.

The MEP is responsible for ensuring the ATH carries out testing as soon as practicable and provides a statement of situation.

Once the SR is received from the trader who supplies electricity to the ICP, an inspector makes a site visit to investigate and remedy any issues he may find. The SR is closed, once the site visit has been completed and any relevant information is returned to the trader who raised the service request. The Inspection Report will include any information relevant to the fault that the inspector discovered; a scanned copy of the report along with any photos is passed to a trader. In some situations, Northpower inspectors can remedy the problem, if it is something minor, such as the replacement of seals on the CT chamber or broken seals on a meter.

If an installation of category 3 HV and higher is reported faulty, Northpower asks Electrix or AccuCal to investigate. Once their investigation is complete Northpower is advised of their findings. A formal "statement of situation" will be completed for installations of category 3 and higher by Mike Hayes (Network Commercial and Operations Manager) or one of his team in cooperation with an ATH

Testing of faulty installations category 1, 2 and 3 LV will be carried out by Northpower's ATH. Since the previous audit there were no installations of category 3 and above which were identified as faulty. Compliance confirmed.

9.3 Statement of situation [clause 10.46(2)]

- *Within 3 business days of receiving the statement from the ATH, the MEP must provide copies of the statement to:*
- *the relevant affected participants*
- *the market administrator (for all category 3 and above metering installations and any category 1 and category 2 metering installations) on request.*

Northpower confirmed that there were no instances, since the last audit, where a half-hour installation was faulty and inaccuracies in raw data were discovered as a result. The process if any HHR is reported being faulty is to ask AccuCal to investigate and provide a statement of situation. A statement of situation is provided to a trader. Compliance confirmed.

10. Access to and provision of raw meter data and metering installations

10.1 Access to raw meter data [clause 1 of Schedule 10.6]

The MEP must give authorised parties access to raw meter data within 10 business days of receiving the authorised party making a request.

The MEP must only give access to raw meter data to a trader or person, if that trader or person has entered into a contract to collect, obtain, and use the raw meter data with the end customer.

The MEP must provide the following when giving a party access to information:

- a) the raw meter data; or*
- b) the means (codes, keys etc.) to enable the party to access the raw meter data.*

The MEP must, when providing raw meter data or access to an authorised person use appropriate procedures to ensure that:

- the raw meter data is received only by that authorised person or a contractor to the person*
- the security of the raw meter data and the metering installation is maintained*
- access to the raw meter data is limited to only the specific raw meter data under clause 1(7)(c) of Schedule 10.6.*

Northpower owns the HHR meters at a number of ICPs. They can read these meters using MV90 software. These reads are only used for the internal purposes of reconciliation or direct billing of network charges to the end use customer.

The traders have a contract with meter reading companies such as AMCI and EMS for the provision of HHR data from these meters. For these HHR installations Northpower provides the meter set-up details and access passwords required to read the meter to the companies nominated by the retailer who supplies electricity to a customer at the ICP.

NHH meters (legacy) are read manually by meter reading companies appointed by the traders. Northpower does not have access to raw meter data.

10.2 Restrictions on use of raw meter data (clause 2 of Schedule 10.6)

The MEP must not give an authorised person access to raw meter data if the circumstances in clause 2(1) of Schedule 10.6 apply.

Northpower, as the MEP, does not have access to raw NHH meter data, only traders have access to it or their agents. Northpower reads HHR meters owned by Northpower for their own internal use.

10.3 Access to metering installation [clause 3(1)(3)(4) of Schedule 10.6]

The MEP must within 10 business days of receiving a request from one of the following parties, arrange physical access to each component in a metering installation:

- *a relevant reconciliation participant with whom it has an arrangement (other than a trader)*
- *the Authority*
- *an ATH*
- *an auditor*
- *a gaining MEP*

This access must include all necessary means to enable the party to access the metering components

When providing access, the MEP must ensure that the security of the metering installation is maintained and physical access is limited to only the access required for the purposes of the Code, regulations in connection with the party's administration, audit and testing functions.

Since the last audit, Northpower was not asked by parties listed in this clause to have access to components in metering installation

Northpower will use its best endeavours to arrange access to a metering installation if requested. It will be solely dependent on the customer's availability or health and safety concerns due to the nature of the customer's business that determines if access is granted and within what time frame.

10.4 Urgent access to metering installation [clause 3(5) of Schedule 10.6]

If the party requires urgent physical access the MEP must use its best endeavours to provide physical access.

Northpower confirmed that it will use its best endeavours to provide physical access to an installation if requested. Northpower will provide any codes, keys, or other means to enable another party to obtain physical access to all metering components in a metering installation if it is necessary and Northpower is in a position to do so. The company was not approached with any requests for urgent access to any metering installation during the period covered by the audit.

Compliance confirmed.

10.5 Electronic interrogation of metering installations [clause (8) of Schedule 10.6]

- *When raw meter data can only be obtained from an MEP's back office, the MEP must*
- *ensure that the interrogation cycle does not exceed the maximum interrogation cycle shown in the registry*
- *interrogate the metering installation at least once within each maximum interrogation cycle.*
- *When raw meter data can only be obtained from an MEP's back office, the MEP must ensure that the internal clock is accurate, to within ± 5 seconds of:*
 - *New Zealand standard time; or*
 - *New Zealand daylight time.*
- *When raw meter data can only be obtained from an MEP's back office, the MEP must record in the interrogation and processing system logs, the time, the date, and the extent of any change in the internal clock setting in the metering installation.*
- *When raw meter data can only be obtained from an MEP's back office, the MEP must ensure that a data storage device in a metering installation does not exceed the maximum time error set out in Table 1 of clause 8(5) of Schedule 10.6.*
- *The MEP must compare the time on the internal clock of the data storage device with the time on the interrogation and processing system clock, calculate and correct (if required by this provision) any time error, and advise the affected reconciliation participant.*
- *When raw meter data can only be obtained from an MEP's back office, the MEP must, when interrogating a metering installation, download the event log, check the event log*

for evidence of malfunctioning or tampering, and if this is detected, carry out the appropriate requirements of Part 10.

- *The MEP must ensure that all raw meter data that can only be obtained from the MEPs back office, that is downloaded as part of an interrogation, and that is used for submitting information for the purpose of Part 15 is archived:*
 - *for no less than 48 months after the interrogation date*
 - *in a form that cannot be modified without creating an audit trail*
 - *in a form that is secure and prevents access by any unauthorised person*
- in a form that is accessible to authorised personnel*

Northpower does not read meters via their back office.

10.6 Security of metering data [clause 10.15(2)]

The MEP must take reasonable security measures to prevent loss or unauthorised access, use, modification or disclosure of the metering data.

Gentrack is Northpower's ICP and meter database which holds the information related to equipment installed at ICPs.

Additionally, Northpower holds meter installation photos and scanned paperwork including emails, site visit photos, new connection application forms, disconnection/reconnection site visits, and metering related site visits. Scanned paperwork related to any ICP is easily accessed via the Scanned Documents Management software application.

As a standard business practice, access to the various software applications is password protected and is provided only to those Northpower employees who require access as part of their job description. Compliance confirmed.

10.7 Time errors for metering installations [clause (8)(4) of Schedule 10.6]

When raw meter data can only be obtained from the MEP's back office, the MEP must ensure that a data storage device it interrogates does not exceed the maximum time error set out in Table 1 of clause 8(5) of Schedule 10.6.

This is outside of the scope of this audit because Northpower does not read meters via their back office.

10.8 Event logs [clause (8)(7) of Schedule 10.6]

When raw meter data can only be obtained from the MEP's back office, the MEP must, when interrogating a metering installation:

- *ensure an interrogation log is generated*
- *review the event log and*
 - *take appropriate action*
 - *pass the relevant entries to the reconciliation participant*
- *ensure the log forms part of an audit trail which includes*
 - *the date and time of the interrogation – operator (where available)*
 - *unique ID of the data storage device*
 - *any clock errors outside specified limits – method of interrogation*
 - *identifier of the reading device used (if applicable).*

This is outside of the scope of this audit because Northpower does not read meters via their back office.

10.9 Comparison of HHR data with register data [clause 8(9) of Schedule 10.6]

When raw meter data can only be obtained from the MEP's back office, the MEP must ensure that each electronic interrogation that retrieves half-hour metering information compares the information against the increment of the metering installations accumulating meter registers.

This is outside of the scope of this audit because Northpower does not read meters via their back office.

10.10 Correction of raw meter data (clause 10.48(2)(3))

If the MEP is notified of a question or request for clarification in accordance with clause 10.48(1), the MEP must, within 10 business days:

- *respond in detail to the questions or requests for clarification*
- *advise the reconciliation participant responsible for providing submission information for the POC of the correction factors to apply and period the factors should apply*

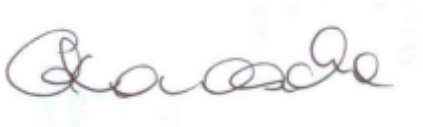
Northpower frequently received questions in relation to metering installations although most of these questions related to non-half hour metered installations. The process is that the company will investigate, reply to the query, and send a Metering report if available. When notified, Northpower replaces faulty equipment and advises a trader. Since the last audit there were no faulty HHR installations which would require application of the correction factors to data.

Compliance confirmed.

Conclusion

Participant response

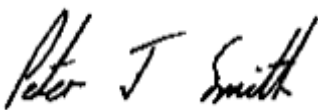
Signed by:

A handwritten signature in purple ink, appearing to read 'Ewa Glowacka'.

Ewa Glowacka

Electricity Authority Rules Approved Auditor

Signed by:

A handwritten signature in black ink, appearing to read 'Peter J. Smith'.

Peter Smith

Retail Billing Accountant