



VERITEK

Gas Meter Owner Audit Report

For

Powerco Limited



Prepared by: Tara Gannon – Veritek Ltd

Date of Audit: 16 - 17/10/2017

Date Audit Report Complete: 20/01/2018

Executive Summary

This Performance Audit was conducted at the request of the Gas Industry Company (GIC) in accordance with Rule 88 of the Gas (Switching Arrangements) Rules 2008 (GSAR) and rule 65 of the Gas (Downstream Reconciliation) Rules (GDRR), both in effect from 14 September 2015.

The purpose of this audit is to assess the systems, processes and performance of **Powerco Ltd (Powerco)** in terms of compliance with these rules.

The audit was conducted in accordance with terms of reference prepared by GIC.

The summary of report findings in the table below shows that Powerco's control environment is "effective" for three of the areas evaluated, "adequate" for two areas and "not adequate" for one area.

Three of the seven areas evaluated were found to be compliant. Three breach allegations are made in relation to the remaining areas. They are summarised as follows:

- Powerco's telephone number is out of date in the registry participant information. All other details are correct.
- Some metering information was not updated on the registry within two business days of the meter being installed.
- A small number of inaccuracies in meter event dates, locations, pressures, digits and multipliers were identified. Some of these issues were identified and corrected by Powerco prior to the audit.

The matters raised are shown in the tables below.

I agree with Powerco's plans to expand their registry validation to include a comparison between status and metering information for consistency, and continue with their project to cleanse and update meter locations.

In addition, the monthly check should be expanded to identify data that may have been entered incorrectly, including

- Any meter with a multiplier greater than 1 in the registry
- Any meter with digits less than 4 in the registry or CWMS
- A check between network and meter pressure in CWMS for meters operating at network pressure.

I also recommend spot checks of data entered by contractors against paperwork, with any issues found discussed with the contractor to reduce the likelihood of recurrence.

I identified two issues within the rules, for investigation by the GIC:

- I recommend the GIC consider revising the timeframe for TOU meter installation set out in rule 29.1 of the GDRR, in consultation with meter owners.
- I recommend the GIC consider setting clear timeframes for population of metering data on the registry within the GSAR.

Summary of Report Findings

Issue	Section	Control Rating (Refer to Appendix 1 for definitions)	Compliance Rating	Comments
General obligations	2	Adequate	Not compliant	<p>Powerco's telephone number in the registry participant register is out of date. All other information is correct.</p> <p>Based on the information provided, Powerco has met their obligations to act reasonably and use registry software competently.</p>
Accuracy of meter information	3	Effective	Compliant	<p>Based on the information provided, Powerco's processes for faults, maintenance and testing are robust and compliant.</p> <p>The TOU processes ensure that incomplete or inaccurate information is identified, and acted upon promptly.</p>
New connections	4	Not adequate	Not compliant	<p>A large proportion of meter details for new connections were not updated on the registry within two business days of the meter being installed.</p>
Registry information management	5	Adequate	Not compliant	<p>Powerco's processes ensure that CWMS and the registry data match closely for all fields validated.</p> <p>A small number of data discrepancies were identified when the data recorded in CWMS was matched to the meter paperwork.</p>

Issue	Section	Control Rating (Refer to Appendix 1 for definitions)	Compliance Rating	Comments
Metering price codes	6	Effective	Compliant	Powerco's processes for metering price codes are compliant.
Disclosure on applications	7	Effective	Compliant	Powerco's processes for disclosure on application are compliant.

Persons Involved in This Audit

Auditor:

Tara Gannon
Veritek Limited

Powerco personnel assisting in this audit were.

Name	Title
Ana Zangirolami	Billing & Reconciliation Manager
Bruce Monk	Principal Engineer (Gas)
Emma Gibson	Gas Account Manager
Gavin Ward	Gas Field Services Coordinator – Hawkes Bay
Kacey Graham	Customer Team Manager - Kaiwhakahaere tima kiritaki
Karly Johnson	Network Connection and Data Team Leader
Leah Harlen	Commercial Sales Manager
Luke Shervey	Gas Defects and Minor Works Coordinator
Michael Binney	Gas Revenue and Pricing Manager
Michael Grace	Gas Customer and Market Analyst
Nikos Fairburn	Performance, Quality and Compliance Coordinator

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1. Pre-Audit and Operational Infrastructure Information

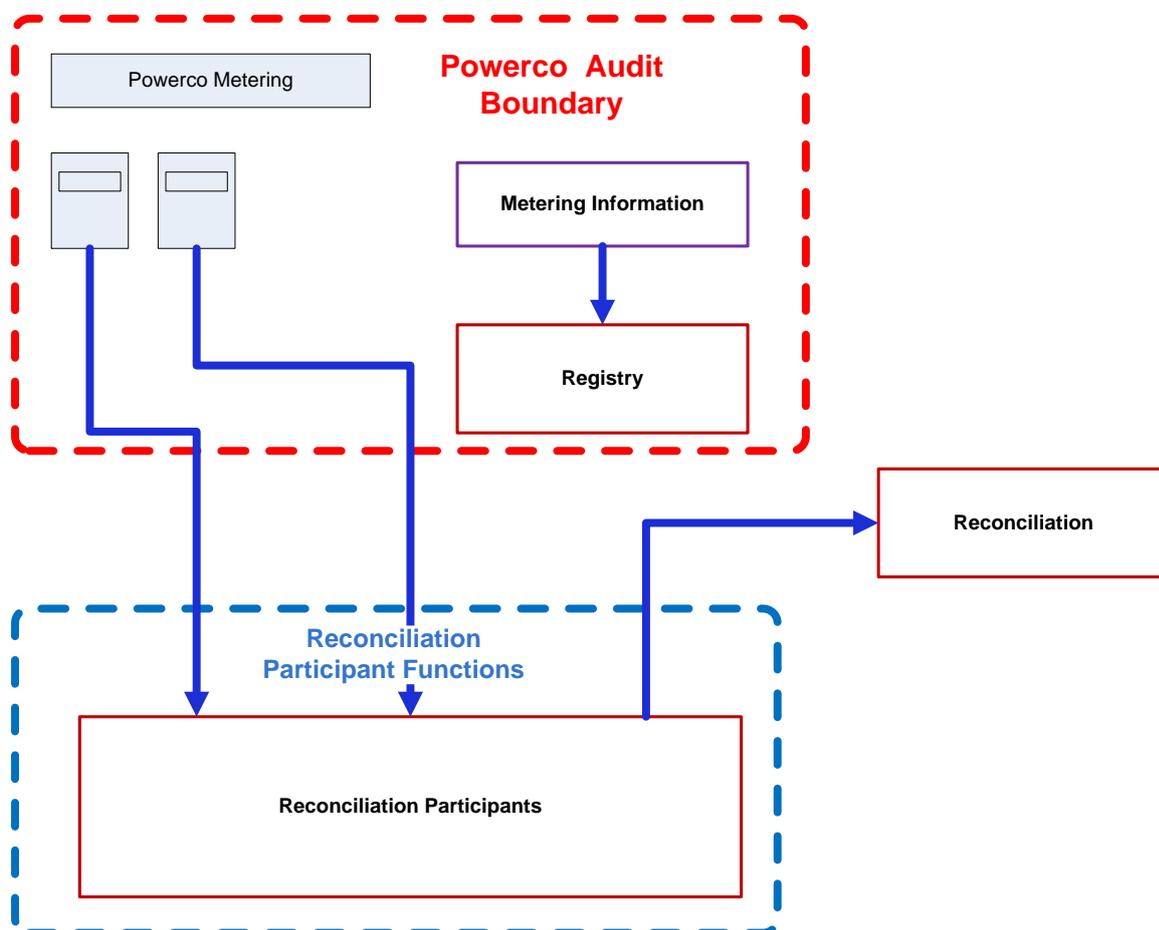
1.1 Scope of Audit

The purpose of this audit is to assess the systems, processes and performance of Powerco in terms of compliance with these rules.

The audit was conducted using a guideline prepared by Veritek.

The audit was carried out on 16 and 17 October 2017 at Powerco's office in Wellington.

The scope of the audit includes the meter owner responsibilities only, as shown in the diagram below.



1.2 Audit Approach

As mentioned in Section 1.1 the purpose of this audit is to assess the performance of Powerco in terms of compliance with the rules, and the systems and processes that have been put in place to enable compliance with the rules.

This audit has examined the effectiveness of the controls Powerco has in place to achieve compliance, and where it has been considered appropriate sampling has been undertaken to determine compliance.

Where sampling has occurred, this has been conducted using the Auditing Standard 506 (AS-506) which was published by the Institute of Chartered Accountants of New Zealand. I have used my professional judgement to determine the audit method and to select sample sizes, with an objective of ensuring that the results are statistically significant.¹

Where compliance is reliant on manual processes, manual data entry for example, the sample size has been increased to a magnitude that, in my judgement, ensures the result has statistical significance.

Where errors have been found or processes found not to be compliant the materiality of the error or non conformance has been evaluated.

1.3 General Compliance

The Market Administrator confirmed that no alleged breaches have been recorded for Powerco in the last two years.

1.4 Provision of Information to the Auditor (GSAR r91)

In conducting this audit, the auditor may request any information from Powerco, and any registry participant or operator.

Information was provided by Powerco in a timely manner in accordance with this rule. I consider that Powerco have complied with the requirements of this rule.

Information was not required from any other participant in relation to this audit.

¹ In statistics, a result is considered statistically significant if it is unlikely to have occurred by chance. (Wikipedia)

1.5 Breach allegations

As noted in the Summary of Report Findings, this audit has found three areas of non conformance. The following breach allegations are made in relation to these matters.

Breach Allegation	Rules	Section in this report
Powerco's telephone number is out of date in the registry participant information. All other details are correct.	GSAR r7 and 10	2.1
Some metering information was not updated on the registry within two business days of the meter being installed.	GSAR r56	4
A small number of inaccuracies in meter event dates, locations, pressures, digits and multipliers were identified. Some of these issues were identified and corrected by Powerco prior to the audit.	GDRR r26.5	5

1.6 Draft Audit Report Comments

A draft audit report was provided to the industry body (GIC), the allocation agent, and allocation participants that I considered had an interest in the report. In accordance with rule 92 of the 2015 Amendment Version of the Gas (Switching Arrangements) Rules 2008, those parties were given an opportunity to comment on the draft audit report and indicate whether they would like their comments attached as an appendix to the final audit report. The following response was received.

Party	Response	Comments provided	Attached as appendix
Powerco	Yes	Yes	Included in the audited party comments box for each non conformance and recommendation.

The comments received were considered in accordance with rule 93.1, prior to preparing the final audit report. The following changes to the report were made after considering the comments:

Report section	Requested by	Change
Executive summary	Powerco	Clarification of whether each additional check should be of CWMS data or registry data.
5.15 Recommendation	Powerco	Clarification of whether each additional check should be of CWMS data or registry data.
Recommendations	Powerco	Clarification of whether each additional check should be of CWMS data or registry data.
Appendix 2 – Powerco comments	Powerco	General comments provided by Powerco.

2. General obligations

2.1 Participant registration information (GSAR r7 and 10)

All registry participants must supply registration information to the registry operator. Registration information consists of:

- The name of the registry participant; and
- The registry participant's telephone number, physical address, facsimile number, email address, and postal address; and
- Identification as to which class, or classes, of registry participant (retailer, distributor or meter owner) that the registry participant belongs.
- Registration information must be given in the form and manner required by the registry operator as approved by the industry body. Every person who is a registry participant at the commencement date must supply the registration information within 20 business days of the commencement date. A person who becomes a registry participant after the commencement date must supply the registration information within 20 business days of becoming a registry participant.

Powerco's participant registration information was confirmed to be valid, apart from the telephone number. Non conformance is recorded below.

Non Conformance	Description	Audited party comment
Regarding: 7 and 10 Control Rating: Adequate	Powerco's telephone number is out of date in the registry participant information. All other details are correct.	Response: Powerco has now updated the registry information phone number. Comments: <ul style="list-style-type: none">• Powerco has set up a scheduled 6 monthly review of contact details held in registry.

2.2 Obligation to act reasonably (GSAR r34)

Every registry participant must act reasonably in relation to its dealings with the registry and, in doing so, must use its reasonable endeavours to co-operate with other registry participants.

Processes for managing queries and complaints about registry information were reviewed. No examples of Powerco acting unreasonably were found.

Compliance is confirmed.

2.3 Obligation to use registry software competently (GSAR r35)

Each registry participant must ensure that any software for the registry is used in a proper manner by competent employees or by persons under the supervision of those employees.

No registry participant may request, permit, or authorise anyone other than the registry operator to provide support services in respect of any software for the registry.

Each registry participant must appoint a nominated manager to be responsible for all that registry participant's communications with the registry.

No examples of Powerco using registry software incompetently were found. Access to modify registry information is restricted and staff are appropriately trained. Powerco only uses Jade for registry support services.

Compliance is confirmed.

3. Accuracy of meter information

3.1 TOU downloads (GDRR r26.5)

TOU meter downloads provided to retailers should be complete, accurate and converted to energy in accordance to NZS5259:2015 (if applicable).

Powerco have 66 ICPs with correctors fitted; all are temperature and gauge pressure corrected. 49 of the correctors are downloaded by Powerco monthly and volume data is provided to the retailer via email. For the other 17 ICPs, telemetry is installed, and the retailer downloads the corrector data directly.

Powerco does not convert the raw volumes to energy; compliance with the NZS5259:2015 gas conversion process was not assessed.

Powerco's field service coordinators check for alarms recorded by the corrector at the time of download, and advise Powerco TOU so that the retailer can be informed, and site investigation carried out as necessary. I saw evidence of this process in action during the audit.

I reviewed Powerco's download process and found it includes checks for:

- Missing data
- Unexpected values
- A graphical check against historic volumes to identify any unusual consumption patterns; and
- Checks for any meter faults or issues.

Where data anomalies or issues are found they are referred to Powerco's Gas Account Manager for investigation and the retailer is notified. I saw examples of this process in action, including an instance of zero consumption which was checked with the customer and the meter was subsequently

replaced due to a fault; and a battery failure where Powerco promptly actioned a replacement and advised the customer.

Compliance is confirmed.

3.2 Meter accuracy (GDRR r26.5 and 27)

Processes must be in place to ensure meter accuracy, and compliance with NZS5259:2015.

Powerco provided their Gas Operations Standard for Gas Measurement System Part 6 Operations and Maintenance, which supports compliance with NZS5259:2015 and NZS4944 for both new and existing gas measurement systems.

A sample of meter paperwork, fault information, and testing information was reviewed to confirm that the processes in the standard were being followed.

Faults

Where a trader or Powerco staff member identifies a possible meter accuracy issue, a field services job is raised to investigate.

Faults are categorised as red, amber or green depending on the seriousness of the suspected defect. This determines the priority level of the fault.

- Red includes instances where the meter index has failed or cannot be read, gas leaks, meters over 25 SCMH where the meter pressure recorded is outside the maximum permissible errors in NZS5259:2015.
- Amber includes meters under 25 SCMH where the meter pressure recorded is outside the maximum permissible errors in NZS5259:2015, corrosion.
- Green includes minor corrosion or missing meter covers.

I reviewed a sample of 29 red classified faults between 2011 and 2017. Most related to issues with the index, including stopped meters, difficult to read registers, and suspected meter accuracy issues. In all cases the fault was resolved by either repairing or replacing the meter, and the jobs were closed. The target time to resolve a red fault is 10 business days. Job closure times were available for 21 of the 29 faults, and I confirmed that the jobs were closed and issued resolved within 56 days in all cases.

Maintenance and inspection

A maintenance programme sets out how frequently meters should be inspected and maintained, and is compliant with NZS5259:2015. The checks completed include:

- safety
- pressure and control equipment
- general condition, integrity and physical security, including the surrounding environment
- pipework, joints and valves
- pipe supports
- batteries; and

- electrical earthing.

Where defects are found during inspection or maintenance Powerco's defect process is followed.

Corrector field checks are completed every 12 months, and synchronised with TOU meter removal and replacement.

Testing

According to Powerco's Gas Operations Standard acceptance and as found testing is carried out in accordance with NZS5259:2015, and review of a sample of testing information confirmed this.

Acceptance testing is completed before a GMS enters service and when an event that may affect accuracy has occurred.

As found testing is completed for meters and TOU devices removed from service where they have been in service for more than 12 months, the environment or an error may have impacted on the accuracy of the meter, or a request for testing has been received from the retailer. As found testing will not be completed where the meter or TOU device is due to be scrapped, or damage or corrosion makes testing impractical. Removed meters which pass as found testing and meet Powerco's criteria may be redeployed.

Statistical samples chosen according to NZS4944 are used to confirm that meters with a fixed meter pressure factor and meter accuracy are within the maximum permissible errors allowed in NZS5259:2015. The accuracy for the sample of meters tested determines when the next statistical sample is tested, and any action required for that metering population.

I reviewed a sample of tests conducted when meters were installed, removed, or reinstalled and found that the testing process was being followed as expected.

Compliance is confirmed.

3.3 TOU upgrades (GDRR r29.1.1)

If a consumer installation is, or is expected to, consume more than 10 TJ per annum, TOU metering should be installed. Under the GDRR r29.1 the retailer must ensure that a TOU meter is installed as soon as practicable, and no more than 3 months after becoming aware that expected or actual consumption is over 10 TJ.

As part of Powerco's audit, I examined how quickly TOU metering is installed after receiving a request from a retailer.

I found that the three month timeframe is difficult to comply with. Powerco does not normally have correctors in stock, and it normally takes at least 12 weeks for the new corrector to be manufactured, tested and delivered. Where the increase in consumption is due to a change of plant, meter and pressure upgrades may also be necessary.

I examined three TOU upgrades which occurred in 2017. Only one was completed within three months of the request to upgrade because Powerco had a suitable corrector in stock. One upgrade is still in progress (3 months), and the other took six months due to complications with network pressure and scheduling connection with the customer's gasfitter.

These delays do not result in an alleged breach for Powerco, because the retailer is responsible for compliance with this rule. I recommend that the GIC reconsider the timeframes set in rule 29.1.

Rule issue
I recommend the GIC consider revising the timeframe for TOU meter installation set out in r29.1 of the GDRR, in consultation with meter owners.

4. New connections (GSAR r56)

Meter owner information must be provided on the registry within two business days of confirmation that a meter has been installed. If no responsible meter owner is populated, the meter owner who has installed the meter may populate the registry to become the responsible meter owner. If the retailer has populated a different responsible meter owner, Powerco will be unable to update any metering details until the responsible meter owner is changed to Powerco.

When a new installation job is created, Powerco schedules a “schedule update required” task three to four days before the scheduled installation date. When this task becomes due, the connections team checks that a job is scheduled and follows up with the contractors if necessary.

Powerco’s contractors enter new metering information into CWMS, which then flows through to the registry. Powerco has controls in place to ensure that new connection information is entered correctly:

- CWMS contains mandatory fields including meter make and model, serial number, initial reading, digits, install date, meter pressure, location, regulator type, corrector, and logger.
- CWMS only allows one active instance of each meter serial number.
- If the metering information provided is inconsistent with what is expected, a work flow is created, and the data is reviewed by the Powerco metering team before being released. Most data is not independently checked against the docket.

A registry event detail report was reviewed for September 2012 to September 2017. 7893 new connections had meters installed during that period. Of those, 2158 (27.3%) were updated within two business days of metering being installed. The median update time was 6 business days, and the average update took 11 business days. 395 (5.0%) took more than 30 business days to be updated.

I reviewed a sample of 20 late updates for new connections and found:

- Two were late due to a known registry synchronisation issue, which is in the process of being resolved. When some metering details are updated, CWMS sends one correct record to the registry, and another backdated record with a mix of old and new metering information. These backdated records appeared to be late registry updates.
- 15 were backdated corrections; 11 related to meter numbers, three related to pricing, and one related to a telemetry flag. It is preferable to have an accurate backdated record, to a timely incorrect record.
- Three were late primarily due to late return of paperwork.

The late update of meter information on the registry is recorded as non-conformance below.

Non Conformance	Description	Audited party comment
<p>Regarding: 56</p> <p>Control Rating: Not adequate</p>	<p>Some metering information was not updated on the registry within two business days of the meter being installed for ICPs 1000566226PG474, 1000542155PG1A7, and 1000563735PG03C</p>	<p>Response: Powerco agrees with the finding</p> <p>Comments:</p> <ul style="list-style-type: none"> Powerco, along with all other distributors will always be susceptible to this breach as long as there is reliance on service providers and manual processes to complete and send Works Completion Notices. Powerco has taken mitigating steps with revised service level agreements contained within a recent update of service provider contracts.

5. Registry information management (GDRR r26.5 and GSAR r58)

The meter owner must use its reasonable endeavours to maintain current and accurate information in the registry in relation to the ICPs and the ICP parameters for which it has responsibility.

New connection information is managed using the CWMS gas workflow. The customer or their agent logs a request, which is scoped, priced, and accepted or declined. If accepted, a job is created for the contractor who enters the work completion notice into CWMS. This notice includes mandatory fields required to update the registry as discussed in **section 4**. A registry update is sent overnight, and the registry synch process receives data from the registry and updates the CWMS static ICP data.

Other jobs completed by Powerco’s contractors, including meter changes, meter removals, pressure upgrades and downgrades are also updated through the CWMS workflow. Whenever a change to a field held on the registry occurs, a file is created and sent to the registry overnight.

Each morning Powerco works through the acknowledgement files from the registry, and makes corrections as required so that the registry will be updated the following night. If a change is required more urgently by another participant, Powerco will update the registry manually so the change occurs immediately. Any issues that cannot be promptly resolved because another party must update information first are monitored to ensure that Powerco updates the registry as quickly as possible.

A summary of findings for registry information management is set out below. Each of the meter owner parameters is discussed individually in **sections 5.1 to 5.14**.

Accuracy of registry information

To test the accuracy of Powerco’s registry information management, I checked the following registry event data against the source records, including meter dockets and testing paperwork where available.

- An upgrade to TOU
- All meters with multipliers greater than one

- 20 meter installations for new connections
- 20 meters which had been in service for more than 10 years
- 30 meter changes
- 10 meter reinstallations
- 15 removed meters
- 14 meter pressure upgrades or downgrades; and
- 50 mismatches between Powerco's CWMS data and the registry.

In general, I found that Powerco's CWMS data and the registry matched closely. There are robust processes to ensure that the registry is updated, and to validate and correct registry information which are discussed in **section 5.15**. A sample of 50 mismatches between CWMS and the registry were checked; all were timing differences which have now been resolved. Backdated updates are discussed below.

Comparison of meter paperwork to the registry did show a small number of discrepancies including:

- Seven incorrect event dates. Four of these were caused by a registry synchronisation issue, where CWMS sent a second record dated 23/02/2009 to the registry when certain metering records are updated. Powerco is currently developing a fix to prevent this issue from occurring in the future, and identifying all affected records so that they can be corrected on the registry. The other three differences relate to small differences between the date recorded on the paperwork and the event date on the registry.
- Five locations inconsistent with the paperwork, discussed in **section 5.2**.
- Six meter pressures inconsistent with the paperwork, discussed in **section 5.3**.
- One meter where the digits and multiplier were temporarily transposed, discussed in **section 5.6**.

These data discrepancies are recorded as non conformance below.

Non Conformance	Description	Audited party comment
<p>Regarding: 26.5 and 58</p> <p>Control Rating: Not adequate</p>	<p>A small number of data inaccuracies were identified, including:</p> <ul style="list-style-type: none"> • meter event dates (ICPs 1000529627PG6C5, 0001021770PG026, 0011004680PG553, 0004209453NG68F, 0002246411QTF05, 0004226838NGB0A, 0001361520PG508, and 0004209877NG6DC) • locations (ICPs 0004209877NG6DC, 0004205831NGE76, 001341060PGB65, 0001135642PG452, and 0046106400PGCB5) • pressures with differences outside the maximum permissible error specified in NZS5259:2015 (ICPs 1000509935PGA2F and 0004227634NGFBF); and • digits and multipliers (ICP 0002321001QTbfd). <p>Some of these issues were identified and corrected by Powerco prior to the audit.</p>	<p>Response: Powerco agrees with the auditor's findings and will continue to refine the discrepancy reporting already in place. Powerco has made a concerted effort to resolve the remaining inaccuracies identified during the audit. Powerco anticipates having the system issue with sending incorrect historic registry events resolved in early 2018.</p> <p>Comments:</p> <ul style="list-style-type: none"> • Powerco agrees with auditors rule issue regarding clear timeframes for registry population.

Timeliness of registry information

Timeliness of updates for new connections is discussed in **section 4**.

The event detail report from 01/02/2012 to 31/08/2017 was examined to determine the timeliness of registry updates of metering information. The rules do not specify a clear timeframe for update of metering information not related to new connections.

I reviewed a sample of 21 backdated updates to metering information of between 13 and 3,283 business days to determine the reasons for the backdated updates.

- Seven of the late updates were caused by the registry synchronisation issue, where a second backdated event was sent to the registry in error. Powerco is currently developing a fix to prevent this issue from occurring in the future, and identifying all affected records so that they can be corrected on the registry.
- Ten late updates relating to historic data corrections for pressure, meter numbers and pricing.

- Three late updates were due to late notification of meters being removed.
- A meter installation for ICP 1000529627PG6C5 was delayed because the meter change was not processed correctly, and Powerco's system service provider needed to correct the records.

It is preferable to have a late update and correct information recorded on the registry, to having no late updates with incorrect information recorded on the registry.

Rule issue
I recommend the GIC consider setting clear timeframes for population of metering data on the registry within the GSAR.

5.1 Meter Identifier

Meter number discrepancies are reviewed and resolved monthly, as discussed in **section 5.15**. The October 2017 reconciliation showed seven ICP number discrepancies, all had been investigated and related to timing differences.

No meter number discrepancies were identified through review of metering paperwork. I did see some examples of meter number corrections, where meter numbers had been verified through photos or site visits. These were promptly investigated and updated on the registry.

5.2 Meter Location Code

Meter location discrepancies are identified monthly, but not investigated and resolved. A project is underway to consolidate, and review location codes used by Powerco. This is discussed further in **section 5.15**.

Five meter locations inconsistent with the paperwork were identified, and are set out in the table below.

ICP	Paperwork Location	Registry Location	Comments
0004209877NG6DC	LH Side	LFWL	Powerco is investigating.
0004205831NGE76	RH Side	UNKN	Corrected to RTWL on registry 18/10/2017.
0001341060PGB65	R.H. Side	UNKN	Corrected to RTWL on registry 18/10/2017.
0001135642PG452	LHS house	FRWL	Corrected to LFWL on registry 18/10/2017.
0046106400PGCB5	Back	UNKN	Back is not available as a location option in CWMS, Powerco is investigating.

The differences in meter locations are recorded as non conformance in **section 5**.

5.3 Meter Pressure

Meter pressure discrepancies are reviewed and resolved monthly, as discussed in **section 5.15**. It is noted that the pressure discrepancies identified through these checks related to timing differences.

Six meter pressures inconsistent with the paperwork were identified, and are set out in the table below.

ICP	Paperwork Pressure in kPa	Registry Pressure in kPa	Difference in kPa	Percentage difference in pressure factor	Comments
0079000512PG55E	35	34	-1.00	0.7%	Within the maximum permissible error; pressure has now been corrected.
0001760310PGCE9	1.5	1.51	+0.01	0.0%	Within the maximum permissible error.
0001790250PG2D4	1.52	1.5	-0.02	0.0%	Within the maximum permissible error. Pressure was rounded at the retailer's request to match their system.
0005962230PG305	101	101.5	+0.50	-0.2%	Within the maximum permissible error.
1000509935PGA2F	101	315	+214.00	-105.8%	Powerco identified the error and corrected the pressure to 101 effective 8/9/15 on 26/08/16. Pressure is incorrect on the registry from 27/01/15 to 07/09/15.
0004227634NGFBF	100	42.5	-57.5	28.6%	This error occurred due to a meter change occurring around the time meter information was added to the registry. The pressure was corrected effective 24/09/15 on 24/09/15. Pressure is incorrect on the registry from 07/09/15 to 23/09/15.

Four of the differences are within the maximum permissible errors set out in NZS5259:2015. The differences for ICPs 1000509935PGA2F and 0004227634NGFBF exceeded the maximum permissible errors temporarily. This is recorded as non conformance in **section 5**.

ICP 0079000491PG5D0 has mains inlet pressure and 35kPa outlet pressure. The meter is correctly recorded on the registry with the meter operating at network pressure, but CWMS records the meter inlet pressure as 35kPa. Powerco intends to correct the pressure within CWMS.

5.4 Register Multiplier

Powerco does not have any ICPs with multipliers, and this is not reviewed as part of Powerco's registry validations.

For ICP 0002321001QTBFD, the meter digits and multiplier were transposed between 24/02/09 and 09/02/2016. Powerco identified the error and updated the registry effective from 10/02/2016. This correction should have been backdated to the meter install date of 24/02/2009. This is recorded as non conformance in **section 5**.

5.5 Meter Pressure Operating at Network Pressure Flag

Meter operating at network pressure is recorded in CWMS, and populated for ICPs where the meter and network pressure are the same. This field is not reviewed as part of the monthly registry validation checks.

I verified that the meters recorded with meter pressure operating at network pressure were valid based on a comparison between CWMS pressure values and the registry.

5.6 Register Reading Digits

Meter reading digit discrepancies are reviewed and resolved monthly, as discussed in **section 5.15**. The October 2017 reconciliation showed one dials discrepancy, which was a timing difference for a meter installation.

One discrepancy in meter reading digits was identified and corrected by Powerco prior to the audit. This is discussed in **section 5.4** and recorded as non conformance in **section 5**.

5.7 Standard Meter

Consistency of meter flags on the registry is checked monthly, as discussed in **section 5.15**.

All Powerco meters are standard meters. The standard meter flag is not recorded in CWMS and all meter event files record Y for this field if a meter is present.

5.8 Prepay meter

Consistency of meter flags on the registry is checked monthly, as discussed in **section 5.15**.

Powerco does not supply any ICPs with prepay meters. The prepay flag is not recorded in CWMS and all meter event files record N for this field.

5.9 Advanced Meter & Advanced Meter Owner

Advanced meter and owner discrepancies are reviewed and resolved monthly, as discussed in **section 5.15**. The October 2017 reconciliation showed no advanced meter discrepancies.

Powerco's registry list showed 16 ICPs with advanced meters.

5.10 TOU Meter

Consistency of meter flags is checked monthly, as discussed in **section 5.15**.

TOU metering details are stored in CWMS, and if a meter is TOU, the flag is set to Y in the registry.

5.11 Logger Owner

Powerco does not own any data loggers. Logger owner is recorded in CWMS and discrepancies are reviewed and resolved monthly, as discussed in **section 5.15**. The October 2017 reconciliation showed no logger owner discrepancies.

5.12 Corrector Owner

Only individually priced ICPs have correctors installed. Corrector owner is recorded in CWMS and discrepancies are reviewed and resolved monthly, as discussed in **section 5.15**. The October 2017 reconciliation showed no corrector owner discrepancies.

5.13 Telemetry Owner

Telemetry owner is recorded in CWMS and discrepancies are reviewed and resolved monthly, as discussed in **section 5.15**. The October 2017 reconciliation showed no telemetry owner discrepancies.

5.14 Metering Price Category

Metering price category discrepancies are reviewed and resolved monthly, as discussed in **section 5.15**.

Metering price category is set based upon the meter type installed. In some cases where a larger meter is installed but the load connected is less than the meter's capacity, the commercial team may elect to apply a pricing category that reflects the maximum load the customer can use, rather than the maximum capacity of the meter.

5.15 Registry validation and correction (GSAR r61.1, 61.2 and 62)

If the meter owner becomes aware that registry information is incorrect or requires updating, the responsible meter owner must update or correct the registry as soon as practicable.

The meter owner registry report should be reviewed, and any corrections required should be entered on the registry by 4pm on the 15th business day of the month.

Powerco has robust controls in place to deal with failed registry updates and resolve exceptions daily.

Powerco carries out a monthly validation, which compares the meter owner registry report to data held in CWMS, as well as checking for consistency between fields. The validation includes:

- Status match
- ICPs with inactive permanent status and meters still installed
- Meter owner mismatch
- Meter serial mismatch
- Meter location mismatch
- Meter digits mismatch
- Meter pressure mismatch
- Meter charges check for active ICPs
- Logger owner mismatch
- Telemetry owner mismatch
- Telemetry for standard ICPs
- Pricing check for individually priced ICPs, including checks of corrector details
- Meter type flag consistency (including advanced, standard, prepay, TOU)

I reviewed historic monthly validations and noted that action had been taken to investigate and correct registry discrepancies. The only exception was meter location information. Powerco is undertaking a project to review and standardise the codes used. It is intended that existing codes will be updated to the preferred codes, and staff will work through the ICPs with meter location codes of unknown or other and confirm their locations through paperwork wherever possible.

Powerco also intends to add checks for consistency between ICP status and meter configuration, such as checking that all active ICPs have metering installed. Reports are currently being developed and refined.

Most of the data issues found related to incorrect information being entered into CWMS and then transferred to the registry, these errors are not easily identified through reconciliation between the two systems.

Recommendation	Audited party comment
<p>I agree with Powerco's plans to expand their registry validation to include a comparison between status and metering information for consistency, and continue with their project to cleanse and update meter locations.</p> <p>In addition, the monthly check should be expanded to identify data that may have been entered incorrectly, including</p> <ul style="list-style-type: none"> • Any meter with a multiplier greater than 1 in the registry • Any meter with digits less than 4 in the registry or CWMS • A check between network and meter pressure in CWMS for meters operating at network pressure. <p>I also recommend spot checks of data entered by contractors against paperwork, with any issues found discussed with the contractor to reduce the likelihood of recurrence.</p>	<p>Response: Powerco agrees with the audit findings.</p> <p>Comments:</p> <ul style="list-style-type: none"> • Powerco is currently working on improving the discrepancy reporting already in place to include auditor recommendations.

6. Metering Price Codes (GSAR r49)

Each meter owner must determine, publish and maintain a schedule of its meter price categories and the respective network price category codes and, except where the meter owner requires disclosure on application in accordance with rule 50, the charges associated with each of those codes.

There have been no changes to Powerco's network price codes since 2009.

The pricing for each metering price code is adjusted effective from 1 October each year. Retailers are consulted on pricing changes, and final pricing is provided to traders by email by 31 July each year. I reviewed examples of the 2017 emails for eight traders and confirmed that new pricing information and marked up copies showing changes for the previous year were provided, along with pricing for any individually priced ICPs supplied by that trader.

Compliance is confirmed.

7. Disclosure on application (GSAR r50)

Disclosure on application may only be used where the participant does not have a reasonably practicable alternative method of protecting its commercial interest in that information, and to the extent necessary to reasonably protect that interest.

Meter pricing is disclosed on application for ICPs with meter price category MTPOA.

Requests for disclosure on application must be responded to within one business day, to confirm whether the information will be provided. The information must be provided within a further business day.

Requests for information to be disclosed are logged by traders on Powerco's pricing website. Wherever a trader requests meter pricing, Powerco discloses the pricing information even if the pricing code is available on the registry.

I reviewed a sample of 21 requests for meter pricing, and found that Powerco provided acknowledgement, the meter price category code and pricing (where the price was not listed in Powerco's pricing book) within one business day for all the requests.

Compliance is confirmed.

Recommendations

I agree with Powerco's plans to expand their registry validation to include a comparison between status and metering information for consistency, and continue with their project to cleanse and update meter locations.

In addition, the monthly check should be expanded to identify data that may have been entered incorrectly, including

- Any meter with a multiplier greater than 1 in the registry
- Any meter with digits less than 4 in the registry or CWMS
- A check between network and meter pressure in CWMS for meters operating at network pressure.

I also recommend spot checks of data entered by contractors against paperwork, with any issues found discussed with the contractor to reduce the likelihood of recurrence.

Appendix 1 – Control Rating Definitions

Control Rating	Definition
Control environment is not adequate	<p>Operating controls designed to mitigate key risks are not applied, or are ineffective, or do not exist.</p> <p>Controls designed to ensure compliance are not applied, or are ineffective, or do not exist.</p> <p>Efficiency/effectiveness of many key processes requires improvement.</p>
Control environment is adequate	<p>Operating controls designed to mitigate key risks are not consistently applied, or are not fully effective.</p> <p>Controls designed to ensure compliance are not consistently applied, or are not fully effective.</p> <p>Efficiency/effectiveness of some key processes requires improvement.</p>
Control environment is effective	<p>Isolated exceptions identified when testing the effectiveness of operating controls to mitigate key risks.</p> <p>Isolated exceptions identified when testing the effectiveness of controls to ensure compliance.</p> <p>Isolated exceptions where efficiency/effectiveness of key processes could be enhanced.</p>

Appendix 2 – Powerco comments

Powerco is committed to improving our conformance to the GIC rules and has dedicated significant resources to resolve historic data, system issues and will continue to do so over the coming months and years.

We are currently working through the exceptions found in the audit, assessing the impact on the retailer and end user, and making the required changes.

A system change has been developed for the defect with CWMS that is creating erroneous metering events on registry, this is now in the testing phase and we expect to have this in our production system by the end of January.

Powerco seek the guidance of the GIC with an approach to the load shedding categories, and provide specific timeframes for certain events, so the auditors does not have to apply arbitrary counts of days to assess timeframes taken to update registry.

We will continue to develop smarter technologies and processes to assist us in improving the quality of our registry data and timeliness of our updates to registry.