RECONCILIATION AUDIT
SWITCH UTILITIES LTD

Date of audit: 12 to 27 June 2017

Report completed: 23 August 2017

Under the Gas (Downstream Reconciliation) Rules 2008 the Gas Industry Company commissioned Langford Consulting to undertake a performance audit of Switch Utilities Ltd. The purpose of the audit is to assess compliance with the rules and the systems and processes put in place to enable compliance.

Auditor Julie Langford

Executive Summary

This performance audit was conducted at the request of the Gas Industry Company (GIC) in accordance with rule 65 of the 2015 Amendment Version of the Gas (Downstream Reconciliation) Rules 2008 effective from September 2015.

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

The audit was conducted in accordance with terms of reference prepared by the GIC, and in accordance with the "Guideline note for rules 65 to 75 and 80: the commissioning and carrying out of performance audits and event audits, V3.0" which was published by the GIC in June 2013.

The summary of report findings in the table below shows that SULG's control environment is "effective" for ten of the areas evaluated, "adequate" for two areas and "not adequate" for two areas. Three areas were found to be not applicable.

Ten of the seventeen areas evaluated were found to be compliant, four not compliant and three areas were not applicable. Four new breach allegations are made in relation to the non-compliant areas. Breaches have already been raised by the Allocation Agent with respect to the accuracy of initial submission files (rule 37.2). The new breaches are summarised as follows:

- A newly connected ICP was not included in the initial or interim submission files.
- The energy calculation for 1 ICP was inaccurate due to the wrong altitude factor.
- Accuracy level falls outside the standard required by NZS5259 when converting volume to energy because of inaccurate temperature factors that have not been recently reviewed.
- Incorrect GAS080s were submitted due to an incorrect SQL query.

Summary of Report Findings

Issue	Section	Control Rating (Refer to Appendix 1 for definitions)	Compliance Rating	Comments
ICP set up information	2.1	Adequate	Not Compliant	Energy calculation for 1 ICP inaccurate due to the wrong altitude factor. 1 new connection not included in the initial or interim submission files.
Metering set up information	2.2	Effective	Compliant	No issues were found when comparing the data in SULG's systems against the registry but it is recommended that a routine check between these systems be established to ensure accuracy is maintained.
Billing factors	2.3	Not adequate	Not compliant	Accuracy level falls outside the standard required by NZS5259 when converting volume to energy because of inaccurate temperature factors that have not been recently reviewed
Archiving of reading data	3.1	Effective	Compliant	SULG doesn't yet have any data that is over 30 months old but the system for storing data will make it available after 30 months.
Meter interrogation requirements	3.2	Effective	Compliant	Validation occurs to ensure allocation groups are correct.
Meter reading targets	3.3	Not adequate	Not compliant	Incorrect GAS080s submitted due to an incorrect SQL query

Non TOU validation	3.4	Effective	Compliant	Validation processes appear robust.
Non TOU error correction	3.5	Not applicable	Not applicable	As yet SULG has had no need to perform any error corrections.
TOU validation	3.6	Not applicable	Not applicable	SULG doesn't have any TOU meters.
Energy consumption calculation	4	Effective	Compliant	Processes were reviewed and found to be accurate.
TOU estimation and correction	5.1	Not applicable	Not applicable	SULG doesn't have any TOU meters
Provision of retailer consumption information	5.2	Effective	Compliant	SULG excludes INACT sites from its submission files, but does not change a site to INACT until after the meter is removed.
Initial submission accuracy	5.3	Adequate	Not compliant	1 Alleged breach has been made for initial allocations not being within 10% of the final allocation figures.
Historic estimates	5.4	Effective	Compliant	Compliance was achieved for all relevant scenarios
Proportion of HE	5.5	Effective	Compliant	The correct proportion of HE is being reported.
Forward Estimates	5.6	Effective	Compliant	No forward estimate data remains at the final allocation stage
Billed vs consumption comparison	5.7	Effective	Compliant	No issues were found with the submitted data although it was found that SULG were underbilling their customers.

Contents

1. Pre-Audit and Operational Infrastructure Information

1.1 Scope of Audit

This performance audit was conducted at the request of the Gas Industry Company (GIC) in accordance with rule 65 of the 2015 Amendment Version of the Gas (Downstream Reconciliation) Rules 2008 effective from September 2015.

65. Industry body to commission performance audits

65.1 The industry body must arrange at regular intervals performance audits of the allocation agent and allocation participants.

65.2 The purpose of a performance audit under this rule is to assess in relation to the allocation agent or an allocation participant, as the case may be, -

65.2.1 The performance of the allocation agent or that allocation participant in terms of compliance with these rules; and

65.2.2 The systems and processes of the allocation agent or that allocation participant that have been put in place to enable compliance with these rules.

The audit was conducted in accordance with terms of reference prepared by the GIC, and in accordance with the "Guideline note for rules 65 to 75 and 80: the commissioning and carrying out of performance audits and event audits, V3.0" which was published by the GIC in June 2013.

The audit was carried out on 12 to 16 June 2017 at the offices of SULG's agent OnGas Ltd in Wellington.

The scope of the audit includes "downstream reconciliation" only. Switching and registry management functions were audited in conjunction with this audit but are included in a separate report.

The audit included an on-site visit to the OnGas offices in Wellington, as well as a visit to the Vector Data Services team in New Plymouth where the Flow2E system and its associated processes are managed.

1.2 General Compliance

1.2.1 Summary of Previous Audit

SULG has been an allocation participant since May 2015 and this is their first performance audit.

1.2.2 Breach Allegations

SULG has 1 alleged breach recorded by the Market Administrator in the period May 2015 to May 2017, representing 1 underlying breach. It was alleged by EMS under rule 37.2 which relates to initial v final allocation variances more than the allowable threshold. This topic is covered in section 5.3.

This audit raises the following additional breach allegations.

Breach Allegation	Rule(s)	Section in this report
A newly connected ICP was not included in the initial or interim submission file due to issues gaining access to read the meter.	28.3	2.1.1
Energy calculation for 1 ICP inaccurate due to the wrong altitude factor.	28.2	2.1.2
Accuracy level falls outside the standard required by NZS5259 when converting volume to energy because of inaccurate temperature factors that have not been recently reviewed	28.2	2.3.1
Incorrect GAS080s submitted due to an incorrect SQL query	26.2.1	3.3

1.3 Provision of Information to the Auditor (rule 69)

In conducting this audit, the auditor may request any information from SULG, the allocation agent and any allocation participant.

Information was provided by SULG and its agent OnGas in a timely manner in accordance with this rule.

We consider that all parties have complied with the requirements of this rule.

1.4 Transmission Methodology and Audit Trails (rule 28.4.1)

A complete audit trail was viewed for all data gathering, validation and processing functions. Compliance is confirmed with this rule.

2. Set-up and Maintenance of Information in Systems (rule 28.2)

Every retailer must ensure the conversion of measured volume to volume at standard conditions and the conversion of volume at standard conditions to energy complies with NZS 5259:2015, for metering equipment installed at each consumer installation, for which the retailer is the responsible retailer.

Compliance with this rule has been examined in relation to the set-up of ICP, metering and billing information. The "Gas (Downstream Reconciliation) Rules 2008 Billing factors guideline note, V2.0" (Billing Factors Guideline) published by GIC on 30/11/15 was also considered when examining the set up and maintenance of information.

2.1 ICP Set Up Information

2.1.1 New Connections Process

The process was examined for the connection and activation of new ICPs.

The switching and registry management audit that was completed alongside this audit, reports on the analysis of the new connections process with respect to the Gas (Switching Arrangements) Rules 2008 (the switching rules) and this is therefore not repeated here in full.

The audit found SULG had obtained 3 new connections from 1 January 2016. These were checked for correct inclusion in consumption submission files. It was found that one new connection had not been included in the initial or interim file, but had been correctly included in the final submission file. It is understood that this was due to significant issues with gaining access to the site to get meter readings. It is suggested that SULG consider using estimates in such a scenario in future. This omission will have contributed to the difference between initial and final submission figures discussed in section 5.3.

> ALLEGED BREACH: SULG was the responsible retailer for the following newly connected ICP, but did not include it in their initial or interim submission file due to issues gaining access to read the meter. (r28.3)
>
> 1000557069PG384

2.1.2 Altitude Information

It is a distributor responsibility to populate the registry with correct altitude information to support compliance with NZS 5259:2015, and it is a retailer responsibility to comply with NZS 5259:2015 for the conversion of volume to energy.

NZS 5259 contains the following points, which affect the way altitude information should be managed:

1. The maximum permissible error is ± 1.0% where the meter pressure is below 100kPa and ±0.5% where the meter pressure is greater than 100kPa.
2. The following note is also included "To minimise uncertainty due to altitude factor the aim should be to determine the altitude to within 10m where practicable."
3. The altitude factor can be assumed to be 1 where meters are situated at an elevation less than 50m above sea level.

SULG provided a registry list file which was reviewed for obvious outliers. A random sample of ICPs was also checked against "google earth" data. The "google earth" data is based on the "Shuttle Radar Topography Mission" (SRTM) results and a number of recent studies indicate an accuracy of ± 10m for altitude. An evaluation against this data is considered an appropriate test for "reasonableness". Altitude figures that are within approximately 90m of the actual altitude will ensure an accuracy of ± 1.0%. Point 2 above recommends altitude figures are determined to within 10m where practicable. An evaluation of altitude data on the registry was conducted to check whether this recommendation had been met. As noted above, the margin of error of the "google earth" data appears to be approximately ± 10m, therefore, to allow for this margin, the registry data was checked to within 20m of "google earth" data.

The altitude data on the registry appears to be very accurate. No altitudes were found to be incorrect by +/- 20m among the outliers or from the sample check. No ICPs had a blank or zero entry for altitude on the registry.

A sample check was done between SULG's systems and the registry. One domestic ICP in Taupo was found to have an altitude of zero, whereas in the registry it was 380metres. This difference is sufficient to affect the accuracy of the energy calculation.

- ALLEGED BREACH Energy calculation for ICP 0001021487NG280 inaccurate due to the wrong altitude factor r28.2

2.2 Metering Set-up Information

A sample of the SULG records in OnGas' system was compared against the information in the registry for gas gate; meter pressure; dials and multiplier. No discrepancies were found.

2.3 Billing Factors

2.3.1 Temperature Information

For ICPs where the actual temperature is not measured NZS 5259:2015 states that temperature may be estimated and four methodologies are provided. These are listed below in order of decreasing preference.

a) Temperature records of the station under flowing conditions. Historical records can be used if similarity is preserved.

b) Records of actual gas temperature in similar installations over similar periods at similar locations may serve to estimate the value of gas temperature in the installation.

c) For compact installations directly connected to short risers and well shaded from direct sunlight, where the temperature of the gas is in the vicinity of ground temperature, the temperature may be estimated from the average ground temperature at 300mm depth. NOTE – Reliable and relevant climatic temperature data may be used as a basis for

estimating average 300mm ground temperatures. This may include published data. For installations with seasonal use only, the data for the relevant season or seasons should be used.

d) For installations where the inlet pipes are exposed to ambient air conditions the temperature may be estimated from the mean temperature obtained at reliable and relevant weather recording stations. For installations with seasonal use only, the data for the relevant season or season should be used. The installation should be shielded from direct sunlight.

OnGas (as SULG's agent) uses option (c) for its process and uses a temperature data table that was provided to the auditor. This table provides a monthly temperature for each gas gate. A sample of data points was reviewed against data available from NIWA in the tables below.

Month	NIWA area	NIWA average	NIWA factor	gas gate	GNGC Tem	GNGC factor	Diffce %
Aug-16	Te Puke 30cm	10.22	1.016868405	Mt Maunganui	9.4	1.01982	-0.29516
Aug-16	Hamilton Ruakura 20cm	9.61	1.019062102	Hamilton	9.1	1.02093	-0.18679
Aug-16	Auckland Motat 20cm	11.46	1.012438073	Westfield	11.5	1.012296	0.014207
Aug-16	Whangerei 20cm	12.45	1.008928571	Whangarei	10.9	1.014434	-0.55054
Aug-16	Rotorua 20cm	8.9	1.021627371	Rotorua	7.9	1.025262	-0.36346
Aug-16	Gisborne 10cm	10.67	1.015256148	Gisborne	9.9	1.018018	-0.27619
Aug-16	Wellington 20cm	8.95	1.021446296	Waitangirua	8.8	1.02199	-0.05437
Aug-16	Upper Hutt 20cm	8.34	1.02365981	Tawa A	8.8	1.02199	0.166981
Aug-16	Paraparaumu	9.19	1.020578026	Paraparaumu	9.3	1.020181	0.039703
Feb-16	Te Puke 30cm	23.04	0.972855262	Mt Maunganui	18.1	0.989356	-1.65007
Feb-16	Hamilton Ruakura 20cm	22.7	0.973973297	Hamilton	17.8	0.990376	-1.64027
Feb-16	Auckland Motat 20cm	23.92	0.969973407	Westfield	18.7	0.987322	-1.73486
Feb-16	Whangerei 20cm	25.39	0.965197293	Whangarei	18.7	0.987322	-2.21247
Feb-16	Rotorua 20cm	20.08	0.982675715	Rotorua	16.6	0.994478	-1.18023
Feb-16	Gisborne 10cm	23.16	0.972461274	Gisborne	18.5	0.987999	-1.55377
Feb-16	Wellington 20cm	20.28	0.98200593	Waitangirua	18.8	0.986984	-0.49781
Feb-16	Upper Hutt 20cm	22.68	0.974039144	Tawa A	18.8	0.986984	-1.29449
Feb-16	Paraparaumu	21.7	0.977276581	Paraparaumu	17.1	0.992765	-1.54884

It is acknowledged that the NIWA data that OnGas' temperature data was compared against is not an average over several years, but for a specific month. However, it helps demonstrate how much variance in the factor to be applied in the energy conversion that can come about depending on the source data used.

The difference between the temperature values being used by OnGas for February were significantly lower than the NIWA values leading to a factor difference of greater than one percent for all the gates reviewed except for Waitangirua.

The Billing Factors Guideline contains the following expectations:

- *Retailers select weather stations relevant to the area supplied by each gas gate at which they are trading. Weather stations should have at least five years of historical ground temperature data at 300 mm depth.*
- *Retailers obtain daily or monthly average temperature data based on the previous five years of weather records for each chosen weather station.*

- *Retailers use daily or monthly average temperature data to construct average temperatures for billing and reconciliation purposes.*
- *Retailers refresh temperature data on a regular basis, at least every five years.*

OnGas acknowledge that the temperature data they use in the conversion to energy of SULG's metering volumes has been used in their systems since 1994. Therefore, this audit concludes that the temperature data is significantly lower than might be expected and the error is such that it will be affecting the accuracy of the energy data beyond the acceptable accuracy level for compliance with NZS5259. It is recommended that OnGas (as SULG's agent) revise their temperature data to improve energy conversion accuracy.

- ALLEGED BREACH SULG has failed to comply with NZS5259 when converting volume to energy because of inaccurate temperature factors which have not been recently reviewed (rule 28.2)

2.3.2 Calorific Values

Gas composition data is sourced from the Open Access Transmission Information System (OATIS) and loaded into the Flow2E system by the Data Services team in New Plymouth. The process for uploading this data was observed during the New Plymouth on-site visit. Also, a sample check of the gas gate used for particular ICPs was done and the specific calorific value, CO2, N2, and SG used for energy conversion was conducted. No issues arose.

3. Meter Reading and Validation

3.1 Archiving of Register Reading Data (rule 28.4.2)

Retailers are required to keep register reading data for a period of 30 months. SULG hasn't yet been operating for 30 months but it was confirmed that the same archiving process is being used for SULG as is used by their agent OnGas. OnGas was recently audited and were found to be storing meter reads for more than 30 months so the SULG process is confirmed as compliant on that basis.

Sample meter read data was also verified against the data input for the energy calculation to prove the end-to-end process.

3.2 Metering Interrogation Requirements (rule 29)

Rule 29 specifies the type of metering (TOU or non-TOU) that must be installed at a consumer installation, the relevant allocation group that the consumer installation falls within and the interrogation requirements that apply depending on the type of metering and allocation group.

All SULG's submission files are made using a spreadsheet. This includes a tab which checks the ICP is in the correct allocation group. Any potential changes are monitored for three months and discussed with SULG.

No issues were found with the process but at this stage there has been no change to allocation group arising so the process hasn't been fully tested. If a change did arise the change would be made in the Switchboard database and this in turn would generate the file to go to the registry to record the change.

A change to allocation group 4 would make no practical effect as all SULG's ICPs are read monthly.

SULG do not currently monitor allocation groups against load shedding categories for discrepancies.

3.3 Meter Reading Requirements (rules 29.4.3, 29.5 & 40.2)

All consumer installations with non-TOU meters must have register readings recorded at least once every 12 months unless exceptional circumstances prevent such an interrogation (rule 29.4.3), they must ensure a registered reading is obtained at least every 4 months for 90% of installations and compliance with these rules is reported on the GAS080.

Prior to the audit, OnGas as SULG's agent reported that SULG hadn't had any meters for which there were no readings for over 4 months or for over 12 months. However, during the audit it was identified that a site which was switched in on 30/4/16 presented problems for the meter reader and the meter was not read for several months, but the GAS080 was reporting no ICPs over 4 months.

OnGas reviewed their process and identified an SQL query which should have only pulled out the actual reads was pulling out the actual and estimated reads, so the meter reading frequency calculation wasn't being done on the correct dataset. This means incorrect GAS080s have been submitted for SULG.

OnGas reran the report using the correct SQL coding and several ICPs were identified that should have been reported as not having been read for over 4 months. However, the number did not exceed the 90% requirement for the over 4 month reads and no ICPs without reads for over 12 months were found.

A review of a sample of ICPs didn't identify any other sites without meter reads for over 4 or 12 months, so the effect of this problem was an error in reporting the GAS080 only. The process has now been corrected.

- ALLEGED BREACH Incorrect GAS080s submitted due to an incorrect SQL query r26.2.1

3.4 Non TOU Validation

OnGas, as SULG's agent, load the meter reading files from Wells into a spreadsheet and these undergo the first stage of validation before being sent to Flow2E to be converted into energy. The spreadsheet also does BVI checks.

The Flow2E system produces worklists for the Data Services team to review. The team do validations using ranges which are site specific for temperature, pressure and volume. When the file containing energy volumes are returned to OnGas they also send a file reporting on the validation checks.

The energy data returned by Flow2E is uploaded into the spreadsheet where a third stage of validation occurs on the energy values, pressure and CV. Data is graphed for every ICP. This data is then sent on to SULG for billing. The tolerances for validation are reviewed every month and reset, depending on season.

Queries are raised with SULG if the data is unusual.

The sorts of issues that might be picked up are clocked meters, meter change and meter pressure change.

If it is identified there is no meter read, an estimate is done based on previous consumption and the analyst's experience. If meter reads are missed for two months the matter is escalated to the account manager.

No concerns arose from the review of validation processes.

3.5 Non TOU Error Correction

As yet there were no examples of error correction being required for SULG sites.

3.6 TOU Validation

SULG has no TOU sites.

4. Energy Consumption Calculation (rule 28.2)

The SULG data is converted to energy in the Flow2E system managed by the Vector Data Services team in New Plymouth. The audit included an on-site visit to this team.

During the visit one TOU and one non-TOU ICP were selected and the calculation of the conversion factors was replicated to within the degree of accuracy required by NZS5259. Also, each item used in the calculation (e.g. calorific value, altitude etc) was traced back to source.

It was noted however that the process was not compensating for the Joule Thomson effect for sites with significant pressure changes, although this wasn't taking the calculation outside of the required degree of accuracy.

No other issues arose from either of these replications.

5. Estimation and Submission Information

5.1 TOU Estimation and Correction (rule 30.3)

SULG has no TOU sites.

5.2 Provision of Retailer Consumption Information (rules 30 to 33)

A GAS040 file for a recent month was examined and compared to the data in the OnGas spreadsheet. It was verified that the two sets of data were the same. The OnGas spreadsheet contains the data that is then sent to SULG to bill its customers. The aggregate figures were also confirmed as being the correct summation of the individual values at an ICP level. This demonstrates that consumption information provided to the Allocation Agent is calculated at the ICP level and then aggregated.

OnGas were asked whether INACT ICPs were still included in the submission files in case there was some gas recorded. OnGas explained their practice was not to mark sites as INACT in the registry until after the meter had been removed. They continued to have meter reads done and to include sites in the data sent to SULG for billing until the meter had been removed. This meant there was no risk of INACT sites with consumption occurring.

The auditor reviewed the registry data to validate this and one SULG ICP was found to be recorded as INACT. This was paired with a code of GMC which means it does still have a meter on site, however OnGas were able to show that the meter had been read and the meter showed zero flow. This means the practice of excluding INACT sites from submission files has not led to any consumption being omitted.

5.3 Initial Submission Accuracy (rule 37.2)

Rule 37.2 requires that the accuracy of consumption information, for allocation groups 3 to 6, for initial allocation must be within a certain percentage of error published by the industry body. The published percentage for the months analysed is 10%.

SULG did not meet this requirement for some gas gates during the 12-month period reviewed. However, the quantities were all immaterial. The results are summarised in the table below. In total over this period there were no instances of a gate exceeding the +/-10% test and exceeding the 200GJ materiality threshold.

Month	Total Gas Gates	Number Within +/- 10%	% Compliant	Within +/- 10% or < 200 GJ	% Compliant or immaterial
July 2015	2	1	50%	2	100%
August 2015	2	1	50%	2	100%
September 2015	3	3	100%	3	100%
October 2015	3	2	67%	3	100%
November 2015	3	3	100%	3	100%

December 2015	6	3	50%	6	100%
January 2016	9	7	78%	9	100%
February 2016	9	9	100%	9	100%

The following table shows the difference between consumption information for initial and final submissions at an aggregated level for all gas gates. This demonstrates non-compliance of the 10% accuracy level in one month.

Month	Initial Submission All Gas Gates (GJ)	Final Submission All Gas Gates (GJ)	Percentage Variation
July 2015	1835.664	2029.877	-9.6%
August 2015	2101.772	2018.769	4.1%
September 2015	1775.047	1833.682	-3.2%
October 2015	1551.394	1448.539	7.1%
November 2015	1264.817	1248.105	1.3%
December 2015	1309.191	1616.795	-19.0%
January 2016	1179.812	1142.875	3.2%
February 2016	1233.801	1218.646	1.2%

Analysis of initial versus final differences for the worst month showed that in December 2015 forward estimates had been done on a straight-line basis for buildings that would have been empty over the holiday period. Also, a spreadsheet formula went wrong calculating the wrong number of days. This was picked up and fixed in the spreadsheet after the December 2015 initials.

Breaches have already been alleged so are not repeated here.

5.4 Historic Estimates (Rules 34 & 35)

To assist with determining compliance of the historic estimate processes, SULG was supplied with a list of scenarios. An example for each relevant scenario was reviewed and all were found to meet the test expectation.

HE Scenarios			
Test	**Scenario**	**Test Expectation**	**Result**
A	ICP becomes Active part way through a month	Consumption is only calculated for the Active portion of the month.	No examples
B	ICP becomes Inactive part way through a month.	Consumption is only calculated for the Active portion of the month.	No examples
C	ICP's become Inactive then Active within a month.	Consumption is only calculated for the Active portion of the month.	No examples
D	ICP switches in part way through a month	Consumption is calculated to include the 1st day of responsibility.	Compliant
E	ICP switches out part way through a month	Consumption is calculated to include the last day of responsibility.	No examples
F	ICP switches out then back in within a month	Consumption is calculated for each day of responsibility.	No examples
G	Continuous ICP with a read during the month	Consumption is calculated assuming the readings are valid until the end of the day	Compliant
H	Continuous ICP without a read during the month	Consumption is calculated assuming the readings are valid until the end of the day	Compliant
I	Rollover Reads	Consumption is calculated correctly in the instance of meter rollovers.	Compliant

A manual calculation was also performed using the relevant seasonal adjustment shape file.

SULG's processes were verified as compliant.

5.5 Proportion of Historic Estimates (rule 40.1)

This rule requires retailers to report to the allocation agent the proportion of historic estimates contained within the consumption information for the previous initial, interim and final allocations. The relevant files were examined and compliance is confirmed.

5.6 Forward Estimates (rules 34 & 36)

The rules do not prescribe how forward estimates are to be calculated.

OnGas as SULG's agent uses a spreadsheet which contains all meter reading information to produce forward estimates of volumes as necessary. These volumes are based on the consumption information available although analysts apply common sense and experience to the estimate where appropriate, if there is limited historical information.

These volumes are then sent with the rest of the volume data to Flow2E to be converted into energy.

An issue had arisen with this process in December 2015 which has already been detailed in section 5.3 as it affected the accuracy of initials for that month.

No other issues arose from this review.

5.7 Billed vs Consumption Comparison (rule 52)

A sample reconciliation of GAS070 data for October 2016 and billing data at an ICP level was completed to prove that the file included data for all the ICPs at the sample gas gate. No issues arose from this check.

The table below shows a comparison between quantities billed and consumption information submitted to the allocation agent for the two years ending February 2017.

Billed vs Consumption				
Year ending	**Billed GJ**	**Submission GJ**	**Difference GJ**	**% Difference**
February 2017	40,733	52,472	-11,739	-22.4%
February 2016	11,967	12,293	-326	-2.7%
Total	52,700	64,765	-12,065	

The largest discrepancy was in the year ending February 2017 for gas gate TWA35610. The relevant extract from the GAR080 is:

Gas Gate	Billed GJ	Submission GJ	Difference GJ
TWA35610	24,467.355	35,076.207	-10,608.852

The auditor queried with SULG why the billed quantity was so much lower than the submitted quantity. SULG investigated further by sampling through ICPs and reported that it appears SULG underbilled their customers. The submission numbers provided to the Allocation Agent are correct and the 'as billed' figures supplied do accurately reflect what was billed to the customer, but the customer was incorrectly billed less than they should have been which is why there is a difference between the 'as billed' and the submission figures. The error appears to be an issue related to the way the SULG billing system handled the conversion to kWh. However, there is no resulting breach under the regulations for this issue as both sets of figures supplied under the regulations are correct.

Other recent retailer audits have included an analysis of billed versus consumption data for group 4 ICPs for the Bay of Plenty gas gates. However, this was not done for SULG as this retailer does not have any ICPs at the relevant gas gates.

6. Conclusion

The audit found that SULG's control environment is "effective" for ten of the areas evaluated, "adequate" for two areas and "not adequate" for two areas. Three areas were found to be not applicable.

Ten of the seventeen areas evaluated were found to be compliant, four not compliant and three areas were not applicable. Four new breach allegations are made in relation to the non-compliant areas. Breaches have already been raised by the Allocation Agent with respect to the accuracy of initial submission files (rule 37.2). The new breaches are summarised as follows:

- A newly connected ICP was not included in the initial or interim submission files.
- The energy calculation for 1 ICP was inaccurate due to the wrong altitude factor.
- Accuracy level falls outside the standard required by NZS5259 when converting volume to energy because of inaccurate temperature factors that have not been recently reviewed.
- Incorrect GAS080s were submitted due to an incorrect SQL query.

Appendix 1 – Control Rating Definitions

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