

ELECTRICITY INDUSTRY PARTICIPATION CODE
DISTRIBUTED UNMETERED LOAD AUDIT REPORT

VERITEK

For

GORE DISTRICT COUNCIL AND MERIDIAN
ENERGY

Prepared by: Rebecca Elliot

Date audit commenced: 22 March 2019

Date audit report completed: 10 May 2019

Audit report due date: 08-Jun-19

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EXECUTIVE SUMMARY

This audit of the Gore District Council (GDC) DUML database and processes was conducted at the request of Meridian Energy Limited (Meridian), in accordance with clause 15.37B. The purpose of this audit is to verify that the volume information is being calculated accurately, and that profiles have been correctly applied.

The audit was conducted in accordance with the audit guidelines for DUML audits version 1.1.

GDC is considered Meridian's customer for all the GDC lights. Due to historical pricing arrangements, Meridian bills the Power Company Ltd for the former Gore Borough Council (Gore township) lighting at commercial rates, and the Power Company Ltd on charges GDC at the agreed historic rate. For all other lights in the district Meridian directly bills GDC.

Meridian moved to using the GDC RAMM database for reconciliation in April 2019. This audit found a much higher level of accuracy. The database includes the under verandah and amenity lighting.

The field audit was undertaken of a statistical sample of 228 items of load on 5th April 2019. This identified that the under verandah lights have been uploaded with the incorrect wattages. The database accuracy fell outside of the allowable +/-5% variance threshold. I recommend that the under verandah fluorescent lights be audited to correct the wattages. This will greatly improve the database accuracy.

The GDC RAMM database includes the NZTA lights. These are billed to GDC and then recompensed by NZTA to GDC. These are not included in the historic penny per unit arrangement with PowerNet but have been recorded on the same ICP. PowerNet is creating a new ICP for these items of load to be recorded against to address this. This has no material impact on the scope of this audit.

GDC have completed the roll out of LED lights. No central management system has been installed and is not planned.

The field work continues to be conducted by PowerNet as a contractor.

The audit found four non-compliances and makes two recommendations. The future risk rating of 26 (reduced from 38 in the last audit) indicates that the next audit be completed in three months. I have considered this in conjunction with Meridian's comments and recommend that the next audit be undertaken in nine months' time.

The matters raised are detailed below:

AUDIT SUMMARY

NON-COMPLIANCES

Subject	Section	Clause	Non-Compliance	Controls	Audit Risk Rating	Breach Risk Rating	Remedial Action
Deriving submission information	2.1	11(1) of Schedule 15.3	<p>The database accuracy is assessed to be 90.1% of the database for the sample checked indicating a potential over submission of approximately 46,600 kWh per annum.</p> <p>Festive lighting and decorative lighting in the park beside Medway Road not recorded in RAMM and therefore not reconciled.</p> <p>Estimated potential under submission of 41,786 kWh per annum due to incorrect lamp wattage and ballasts being used.</p>	Moderate	High	6	Identified
All load recorded in the database	2.5	11(2A) of Schedule 15.3	<p>Four additional lights found in the field.</p> <p>Festive lighting and decorative lighting in the park beside Medway Road not recorded in RAMM.</p>	Moderate	Low	2	Identified
Database accuracy	3.1	15.2 and 15.37B(b)	<p>The database accuracy is assessed to be 90.1% of the database for the sample checked indicating a potential over submission of approximately 46,600 kWh per annum.</p> <p>Festive lighting and decorative lighting in the park beside Medway Road not recorded in RAMM.</p> <p>Estimated potential under submission of 41,786 kWh per annum due to incorrect lamp wattage and ballasts being used.</p>	Moderate	High	6	Identified

Subject	Section	Clause	Non-Compliance	Controls	Audit Risk Rating	Breach Risk Rating	Remedial Action
Volume information accuracy	3.2	15.2 and 15.37B(c)	<p>The database accuracy is assessed to be 90.1% of the database for the sample checked indicating a potential over submission of approximately 46,600 kWh per annum.</p> <p>Festive lighting and decorative lighting in the park beside Medway Road not recorded in RAMM and therefore not reconciled.</p> <p>Estimated potential under submission of 41,786 kWh per annum due to incorrect lamp wattage and ballasts being used.</p>	Moderate	High	6	Identified
Future Risk Rating						26	

Future risk rating	0	1-4	5-8	9-15	16-18	19+
Indicative audit frequency	36 months	24 months	18 months	12 months	6 months	3 months

RECOMMENDATIONS

Subject	Section	Recommendation
Tracking of load change	2.6	Meridian to liaise with GDC and PowerNet to review the electrical connection of streetlights.
Database accuracy	3.1	Audit all under verandah lighting to confirm the correct fluorescent lamp values are recorded in RAMM.

ISSUES

Subject	Section	Description	Issue
		Nil	

1. ADMINISTRATIVE

1.1. Exemptions from Obligations to Comply with Code

Code reference

Section 11 of Electricity Industry Act 2010.

Code related audit information

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

Audit observation

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

Audit commentary

There are no exemptions in place relevant to the scope of this audit.

1.2. Persons involved in this audit

Auditor:

Rebecca Elliot

Veritek Limited

Electricity Authority Approved Auditor

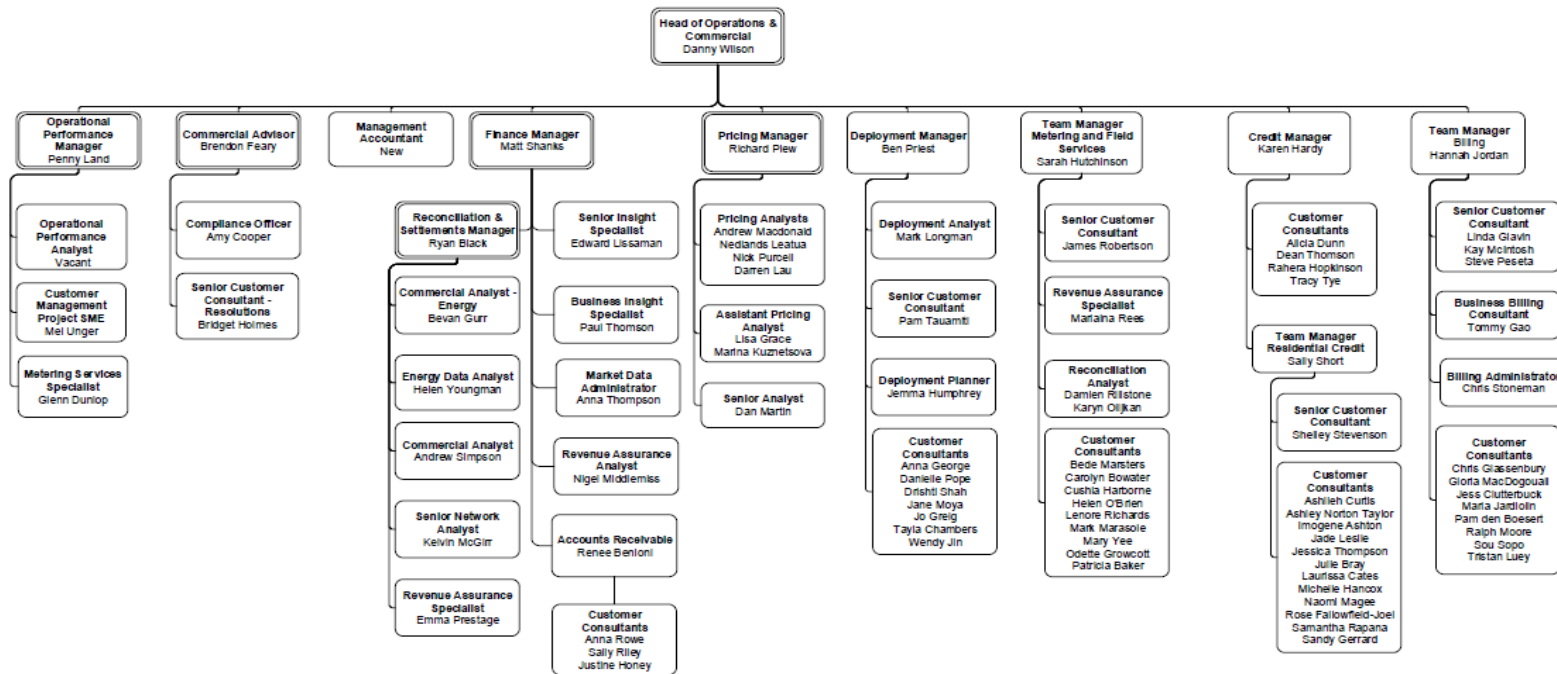
Other personnel assisting in this audit were:

Name	Title	Company
Peter Standring	Transportation Manager	Gore District Council
Amy Cooper	Compliance Officer	Meridian Energy
Helen Youngman	Energy Data Analyst	Meridian Energy

1.3. Structure of Organisation

Meridian provided a copy of their organisational structure:

Operations and Commercial



1.4. Hardware and Software

The SQL database used for the management of DUMML is remotely hosted by RAMM Software Ltd. The database is commonly known as “RAMM” which stands for “Roading Asset and Maintenance Management”.

GDC confirmed that the database back-up is in accordance with standard industry procedures. Access to the database is secure by way of password protection.

1.5. Breaches or Breach Allegations

There are no breach allegations relevant to the scope of this audit.

1.6. ICP Data

ICP Number	Description	NSP	Number of items of load	Database wattage (watts)
0008801020TPE7D	GDC LIGHTS - RURAL	GOR0331	46	4,473
0008801002TP3AD	GDC LIGHTS - URBAN	GOR0331	277	24,402
0008801007TPEE2	GDC LIGHTS - URBAN	GOR0331	1,296	69,792
Total			1,619	98,637

1.7. Authorisation Received

All information was provided directly by Meridian and GDC.

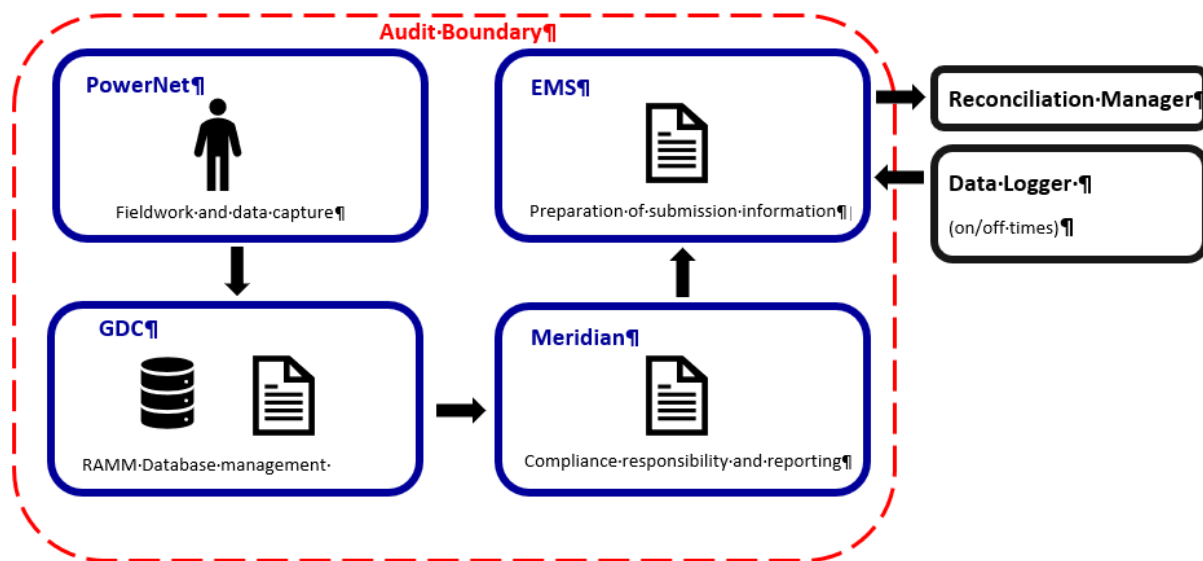
1.8. Scope of Audit

GDC is considered Meridian’s customer for all the GDC lights. Due to historical pricing arrangements, Meridian bills the Power Company Ltd for the former Gore Borough Council (Gore township) lighting at commercial rates, and the Power Company Ltd on charges GDC at the agreed historic rate. For all other lights in the district Meridian directly bills GDC.

The database used for submission from April 2019 is the GDC RAMM database. This database includes NZTA lighting, under verandah and amenity lighting. The NZTA lights are excluded from the historic arrangement in place for the GDC township lights. PowerNet is creating a new ICP for these items of load to be recorded against to address this.

Field work is conducted by PowerNet as a contractor.

The scope of the audit encompasses the collection, security and accuracy of the data, including the preparation of submission information based on the database reporting. The diagram below shows the audit boundary for clarity.



The audit was conducted in accordance with the audit guidelines for DUML audits version 1.1.

The field audit was undertaken of a statistical sample of 228 items of load on 5th April 2019.

1.9. Summary of previous audit

The previous audit was completed in October 2018 by Rebecca Elliot of Veritek Limited. Five non-compliances were identified, and no recommendations were made. The current status of the non-compliances recorded are detailed below.

Table of Non-Compliance

Subject	Section	Clause	Non-Compliance	Status
Deriving submission information	2.1	11(1) of Schedule 15.3	Under submission of 56,804 kWh per annum has occurred due to the exclusion of under verandah lights. The volume of under submission for parks and amenity lighting is unknown. The database accuracy is assessed to be 27.6% of the database for the sample checked indicating a potential over submission of approximately 540,100 kWh per annum.	Cleared Cleared Still existing but greatly reduced
Location of each item of load	2.3	11(2)(b) of Schedule 15.3	18 items of load do not have a street address recorded.	Cleared
All load recorded in the database	2.5	11(2A) of Schedule 15.3	Park, amenity, and under verandah lights are excluded from the database.	Still existing but for a small volume of lights

Subject	Section	Clause	Non-Compliance	Status
Database accuracy	3.1	15.2 and 15.37B(b)	The database accuracy is assessed to be 27.6% of the database for the sample checked indicating a potential over submission of approximately 540,100 kWh per annum.	Still existing
			Under submission of 56,804 kWh per annum has occurred due to the exclusion of under verandah lights.	Cleared
			The volume of under submission for parks and amenity lighting is unknown.	Cleared
Volume information accuracy	3.2	15.2 and 15.37B(c)	The database accuracy is assessed to be 27.6% of the database for the sample checked indicating a potential over submission of approximately 540,100 kWh per annum.	Still existing
			Under submission of 56,804 kWh per annum has occurred due to the exclusion of under verandah lights.	Cleared
			The volume of under submission for parks and amenity lighting is unknown.	Cleared

1.10. Distributed unmetered load audits (Clause 16A.26 and 17.295F)

Code reference

Clause 16A.26 and 17.295F

Code related audit information

Retailers must ensure that DUML database audits are completed:

1. by 1 June 2018 (for DUML that existed prior to 1 June 2017)
2. within three months of submission to the reconciliation manager (for new DUML)
3. within the timeframe specified by the Authority for DUML that has been audited since 1 June 2017.

Audit observation

Meridian have requested Veritek to undertake this streetlight audit.

Audit commentary

This audit report confirms that the requirement to conduct an audit has been met for this database within the required timeframe.

Audit outcome

Compliant

2. DUML DATABASE REQUIREMENTS

2.1. Deriving submission information (Clause 11(1) of Schedule 15.3)

Code reference

Clause 11(1) of Schedule 15.3

Code related audit information

The retailer must ensure the:

- *DUML database is up to date*
- *methodology for deriving submission information complies with Schedule 15.5.*

Audit observation

The process for calculation of consumption was examined and the application of profiles was checked. The database was checked for accuracy.

Audit commentary

Meridian reconciles this DUML load using the DST profile. Meridian is using the GDC RAMM database for reconciliation from March 2019. This database includes the under verandah and amenity lighting. The on and off times are derived from a data logger read by EMS and are used to create a shape file. Meridian supplies EMS with the capacity information and EMS calculates the kWh figure for each ICP and includes this in the relevant AV080 file. This process was audited during Meridian's reconciliation participant audit and EMS' agent audit. Compliance was confirmed for both parties.

I compared the RAMM database provided to the capacity information Meridian supplied to EMS for the month of April 2019 and found it matched.

There is some inaccurate data within the RAMM database which is used to provide capacity information to Meridian.

Issue	Potential volume information impact (annual kWh)
Potential over submission due to database inaccuracy	46,600 kWh over submission
Some decorative LED and seasonal festive LED lighting not recorded in RAMM.	Unknown but the anticipated volume associated is expected to be small.
147 x Fluorescent lamps – no lamp type recorded. All recorded as 15W +10W ballast. Field audit indicated 2x36W tubes with a total wattage of 92W.	42,065 kWh under submission
5x 150W HPS with 250W HPS ballast of 28W applied	214 kWh over submission
1x 70W HPS with 250W HPS ballast of 28W applied	65 kWh over submission

This is recorded as non-compliance and discussed in **sections 2.5, 3.1 and 3.2.**

Audit outcome

Non-compliant

Non-compliance	Description		
Audit Ref: 2.1 With: Clause 11(1) of Schedule 15.3 From: 01-Sep-18 To: 01-Apr-19	The database accuracy is assessed to be 90.1% of the database for the sample checked indicating a potential over submission of approximately 46,600 kWh per annum. Festive lighting and decorative lighting in the park beside Medway Road not recorded in RAMM and therefore not reconciled. Estimated potential under submission of 41,786 kWh per annum due to incorrect lamp wattage and ballasts being used. Potential impact: High Actual impact: High Audit history: Multiple times Controls: Moderate Breach risk rating: 6		
Audit risk rating	Rationale for audit risk rating		
High	The controls are rated as moderate as the GDC RAMM database is being used for reconciliation and there are good controls in place to ensure that the database is kept up to date and accurate, but errors can still occur. The impact is assessed to be high, based on the kWh differences described above.		
Actions taken to resolve the issue		Completion date	Remedial action status
All under verandah lighting has now been inspected and correct wattages are in the process of being updated in RAMM		31 July 2019	Identified
Festive and decorative lighting will be confirmed and added to the database		31 July 2019	
Incorrect wattages and ballasts identified have been passed to GDC for correction.		31 July 2019	
Preventative actions taken to ensure no further issues will occur		Completion date	

2.2. ICP identifier and items of load (Clause 11(2)(a) and (aa) of Schedule 15.3)

Code reference

Clause 11(2)(a) and (aa) of Schedule 15.3

Code related audit information

The DUMML database must contain:

- each ICP identifier for which the retailer is responsible for the DUMML
- the items of load associated with the ICP identifier.

Audit observation

The database was checked to confirm the correct ICP was recorded against each item of load.

Audit commentary

The database contains an ICP reference and all items of load had an ICP recorded. I note in the executive summary that PowerNet are creating an ICP to reconcile the NZTA lights to. The creation of a new ICP is to exclude the NZTA lights from the historic billing arrangement where PowerNet pays for the GDC township lights. This has no impact on this audit as the load has been correctly reconciled to the correct NSP therefore I have recorded compliance.

Audit outcome

Compliant

2.3. Location of each item of load (Clause 11(2)(b) of Schedule 15.3)

Code reference

Clause 11(2)(b) of Schedule 15.3

Code related audit information

The DUMML database must contain the location of each DUMML item.

Audit observation

The database was checked to confirm the location is recorded for all items of load.

Audit commentary

The database contains fields for the street address and GPS co-ordinates, and all were populated.

Audit outcome

Compliant

2.4. Description and capacity of load (Clause 11(2)(c) and (d) of Schedule 15.3)

Code reference

Clause 11(2)(c) and (d) of Schedule 15.3

Code related audit information

The DUMML database must contain:

- *a description of load type for each item of load and any assumptions regarding the capacity*
- *the capacity of each item in watts.*

Audit observation

The database was checked to confirm that it contained a field for lamp type and wattage capacity and included any ballast or gear wattage and that each item of load had a value recorded in these fields.

Audit commentary

A lamp type, lamp rating, and input wattage (including gear or ballast) is included for all items of load.

Audit outcome

Compliant

2.5. All load recorded in database (Clause 11(2A) of Schedule 15.3)

Code reference

Clause 11(2A) of Schedule 15.3

Code related audit information

The retailer must ensure that each item of DUML for which it is responsible is recorded in this database.

Audit observation

The field audit was undertaken of a statistical sample of 228 items of load on 5th April 2019.

Audit commentary

The field audit findings are detailed in the table below:

Street/Area	Database Count	Field Count	Lamp no. difference	No of incorrect lamp wattage	Comments
CHARLTON LN	6	6		1	1x incorrect LED wattage recorded as 24W LED but older model found in the field
CRAWFORD RD	5	5		1	1x incorrect LED wattage recorded as 24W LED but older model found in the field
IRWELL ST - WEST	8	8		3	3x incorrect fluorescent wattages recorded as 25W but double 36W tubes found in the field which should be recorded as 92W
LYNE ST - EAST	5	4	-1		1x 250W HPS not found in the field
MAIN ST	5	6	+1		1x extra 24W LED found in the field
MCQUEEN AVE	5	4	-1		1x 10W LED not found in the field
MEDWAY ST	14	14		9	9x incorrect fluorescent wattages recorded as 25W but double 36W tubes found in the field which should be recorded as 92W
MERSEY ST - EAST	6	5	-1	1	1x 24W LED not found in the field 1x incorrect wattage recorded as 24W LED but older 62W LED found in the field
ROCK ST	2	4	+2		2x extra incandescent lights fixed to pole outside 7 Rock Street
SCOTT ST	4	4		1	1x incorrect wattage recorded as 24W LED but older 82W LED found in the field
SWORD ST	6	7	+1		1x extra 24W LED found in the field
GRAND TOTAL	228	232	7	16	

The field audit found four additional lights in the field. This is recorded as non-compliance below.

Festive lighting is used over the Christmas period, but this is not recorded in the RAMM database. GDC intend to get this added.

There is some permanent decorative lighting installed in the park beside Medway Road around the large trout sculpture and surrounding trees. This also needs to be added to the database

Three lights were recorded in the database but not found in the field and 16 wattage discrepancies were found. The database accuracy is discussed in **section 3.1**.

Audit outcome

Non-compliant

Non-compliance	Description		
Audit Ref: 2.5 With: Clause 11(2A) of Schedule 15.3 From: 01-Sep-18 To: 01-Apr-19	Four additional lights found in the field. Festive lighting and decorative lighting in the park beside Medway Road not recorded in RAMM. Potential impact: Low Actual impact: Low Audit history: Multiple times Controls: Moderate Breach risk rating: 2		
Audit risk rating	Rationale for audit risk rating		
Low	The controls are rated as moderate as the GDC RAMM database is being used for reconciliation and there are good controls in place to ensure that the database is kept up to date and accurate, but errors can still occur. The impact is assessed to be low as the volume of additional lights found in the field as a percentage of the overall sample checked is small and the database is relatively static.		
Actions taken to resolve the issue		Completion date	Remedial action status
Festive and decorative lighting will be confirmed and added to the database Discrepancies identified during the field audit have been passed to GDC for correction.		31 July 2019 31 July 2019	Identified
Preventative actions taken to ensure no further issues will occur		Completion date	

2.6. Tracking of load changes (Clause 11(3) of Schedule 15.3)

Code reference

Clause 11(3) of Schedule 15.3

Code related audit information

The DUML database must track additions and removals in a manner that allows the total load (in kW) to be retrospectively derived for any given day.

Audit observation

The process for tracking of changes in the database was examined.

Audit commentary

Any changes that are made during any given month take effect from the beginning of that month. The information is available which would allow for the total load in kW to be retrospectively derived for any day. On 20th September 2012, the Authority sent a memo to Retailers and auditors advising that tracking of load changes at a daily level was not required as long as the database contained an audit trail. I have interpreted this to mean that the production of a monthly “snapshot” report is sufficient to achieve compliance.

The database tracks additions and removals as required by this clause.

The processes were reviewed for new lamp connections and the tracking of load changes due to faults and maintenance.

GDC have no new subdivisions in progress so new street light connections are few and far between. The NES McNab dairy factory has resulted in some new streetlights being connected during the audit period. GDC were not advised by PowerNet of these and GDC sought the details from the contractor carrying out the work to ensure these lights were added to the database. I recommend that Meridian liaise with GDC and PowerNet to review this process.

Recommendation	Description	Audited party comment	Remedial action
Tracking of load change	Meridian to liaise with GDC and PowerNet to review the electrical connection of streetlights.	We will clarify with the parties the process that will be followed where new streetlights are connected.	Identified

For reference, it is the distributor’s responsibility to gain permission from a trader prior to such connections being made as detailed in the code reference below:

Clause 10.33A(4)

No participant may electrically connect a point of connection or authorise the electrical connection of a point of connection, other than a reconciliation participant.

Fault and maintenance work continue to be undertaken by PowerNet contracting division via a long-standing memorandum of understanding. PowerNet provide GDC with details of all changes made in the field and these are updated in RAMM.

The arrangement in place does not include outage patrols. GDC have completed their LED roll out and due to the low failure rate of LED lights, outage patrols are no longer considered necessary.

Festive lighting is discussed in **section 2.5**.

No private lights have been identified in the GDC database.

Audit outcome

Compliant

2.7. Audit trail (Clause 11(4) of Schedule 15.3)

Code reference

Clause 11(4) of Schedule 15.3

Code related audit information

The DUML database must incorporate an audit trail of all additions and changes that identify:

- *the before and after values for changes*
- *the date and time of the change or addition*
- *the person who made the addition or change to the database.*

Audit observation

The RAMM database was checked for audit trails.

Audit commentary

The RAMM database contain a complete audit trail of all additions and changes including the identifier of person who makes any changes.

Audit outcome

Compliant

3. ACCURACY OF DUMML DATABASE

3.1. Database accuracy (Clause 15.2 and 15.37B(b))

Code reference

Clause 15.2 and 15.37B(b)

Code related audit information

Audit must verify that the information recorded in the retailer's DUMML database is complete and accurate.

Audit observation

The DUMML Statistical Sampling Guideline was used to determine the database accuracy. The table below shows the survey plan.

Plan Item	Comments
Area of interest	Gore District Council region
Strata	<p>The database contains items of load in Gore district area.</p> <p>The processes for the management of GDC items of load are the same, but I decided to place the items of load alphabetically into four strata of a similar size, as follows:</p> <ol style="list-style-type: none">1. A-Hokonui Dr2. Hope St West-Main St DECR3. Main St INCR-Pearse Rd4. Pioneer Highway- Woolwich St
Area units	I created a pivot table of the roads in each area and I used a random number generator in a spreadsheet to select a total of 49 sub-units or 7.5% of the total wattage in the database.
Total items of load	228 items of load were checked.

Wattages were checked for alignment with the published standardised wattage table produced by the Electricity Authority.

Audit commentary

Meridian are using the GDC RAMM database for reconciliation. A statistical sample of 228 items of load found that the field data was 90.1% of the database data for the sample checked. This is not within the required database accuracy of $\pm 5\%$. This is recorded as non-compliance. The statistical sampling tool reported with 95% confidence the precision of the sample was 23.8% and the true load in the field will be between 77.8% to 101.6% of the load recorded in the database. The sample is not within the 5% sample accuracy range due to the inaccuracy present in the database but indicates that the database is likely to be over submitting.

The tool indicated that there is potentially 46,600 kWh per annum (based on annual burn hours of 4,271 as detailed in the DUMML database auditing tool) of over submission. The statistical sampling tool reported with 95% confidence that there is a potential estimated submission variance range of between 92,400 kWh of over submission and 6,600 kWh per annum of under submission.

Whilst the accuracy of the database does not fall within the required +/- 5% it is an improvement on the PowerNet database previously used for submission. This database includes the under verandah lighting and amenity lighting that was previously omitted. Some of these lights were selected as part of the field audit. The wattages recorded in the RAMM database were found to be incorrect and I expect that database accuracy recorded above will be largely affected by the incorrect fluorescent lamp values. There is a total of 147 fluorescent lights recorded in the database. I recommend that these are all reviewed to ensure the correct wattages are recorded in the database.

Recommendation	Description	Audited party comment	Remedial action
Database accuracy	Audit all under verandah lighting to confirm the correct fluorescent lamp values are recorded in RAMM.	All under verandah lighting has been inspected and correct wattages are in the process of being updated in RAMM	Identified

As detailed in **section 2.5**, festive lighting is used over the Christmas period but this is not recorded in the RAMM database. GDC intend to get this added.

There is some permanent decorative lighting installed in the park beside Medway Road around the large trout sculpture and surrounding trees. This needs to be added to the database.

Wattages for all items of load were checked against the published standardised wattage table produced by the Electricity Authority and found:

Incorrect lamp wattages and ballasts	Potential volume information impact (annual kWh)
147 x Fluorescent lamps – no lamp type recorded. All recorded as 15W +10W ballast. Field audit indicated 2x36W tubes with a total wattage of 92W.	42,065 kWh under submission
5x 150W HPS with 250W HPS ballast of 28W applied	214 kWh over submission
1x 70W HPS with 250W HPS ballast of 28W applied	65 kWh over submission
TOTAL	41,786 kWh under submission

This is recorded as non-compliance below.

Audit outcome

Non-compliant

Non-compliance	Description		
Audit Ref: 3.1 With: Clause 15.2 and 15.37B(b) From: 01-Sep-18 To: 01-Apr-19	The database accuracy is assessed to be 90.1% of the database for the sample checked indicating a potential over submission of approximately 46,600 kWh per annum. Festive lighting and decorative lighting in the park beside Medway Road not recorded in RAMM. Estimated potential under submission of 41,786 kWh per annum due to incorrect lamp wattage and ballasts being used. Potential impact: High Actual impact: High Audit history: Twice Controls: Moderate Breach risk rating: 6		
Audit risk rating	Rationale for audit risk rating		
High	The controls are rated as moderate as the GDC RAMM database is being used for reconciliation and there are good controls in place to ensure that the database is kept up to date and accurate, but errors can still occur. The impact is assessed to be high, based on the kWh differences described above.		
Actions taken to resolve the issue		Completion date	Remedial action status
All under verandah lighting has now been inspected and correct wattages are in the process of being updated in RAMM		31 July 2019	Identified
Festive and decorative lighting will be confirmed and added to the database		31 July 2019	
Incorrect wattages and ballasts identified have been passed to GDC for correction.		31 July 2019	
Preventative actions taken to ensure no further issues will occur		Completion date	

3.2. Volume information accuracy (Clause 15.2 and 15.37B(c))

Code reference

Clause 15.2 and 15.37B(c)

Code related audit information

The audit must verify that:

- volume information for the DUML is being calculated accurately
- profiles for DUML have been correctly applied.

Audit observation

The submission was checked for accuracy for the month the database extract was supplied. This included:

- checking the registry to confirm that the ICP has the correct profile and submission flag; and
- checking the database extract combined with the burn hours against the submitted figure to confirm accuracy.

Audit commentary

Meridian reconciles this DUML load using the DST profile. Meridian moved to using the GDC RAMM database for reconciliation in April 2019. The on and off times are derived from a data logger read by EMS and are used to create a shape file. Meridian supplies EMS with the capacity information and EMS calculates the kWh figure for each ICP and includes this in the relevant AV080 file. This process was audited during Meridian's reconciliation participant audit and EMS' agent audit. Compliance was confirmed for both parties.

I compared the RAMM database provided to the capacity information Meridian supplied to EMS for the month of April 2019 and found it matched.

There is some inaccurate data within the RAMM database which is used to provide capacity information to EMS. This is recorded as non-compliance and discussed in **sections 2.1, 2.5 and 3.1**.

Audit outcome

Non-compliant

Non-compliance	Description		
<p>Audit Ref: 3.2 With: Clause 15.2 and 15.37B(c)</p> <p>From: 20-Mar-18 To: 31-Aug-18</p>	<p>The database accuracy is assessed to be 90.1% of the database for the sample checked indicating a potential over submission of approximately 46,600 kWh per annum.</p> <p>Festive lighting and decorative lighting in the park beside Medway Road not recorded in RAMM and therefore not reconciled.</p> <p>Estimated potential under submission of 41,786 kWh per annum due to incorrect lamp wattage and ballasts being used.</p> <p>Potential impact: High Actual impact: Unknown Audit history: Once Controls: Weak Breach risk rating: 6</p>		
Audit risk rating	Rationale for audit risk rating		
<p>High</p>	<p>The controls are rated as moderate as the GDC RAMM database is being used for reconciliation and there are good controls in place to ensure that the database is kept up to date and accurate, but errors can still occur.</p> <p>The impact is assessed to be high, based on the kWh differences described above.</p>		
Actions taken to resolve the issue		Completion date	Remedial action status
<p>All under verandah lighting has now been inspected and correct wattages are in the process of being updated in RAMM. Historic submission information will be revised once updates are complete.</p> <p>Festive and decorative lighting will be confirmed and added to the database</p> <p>Incorrect wattages and ballasts identified have been passed to GDC for correction.</p>		<p>31 July 2019 31 July 2019 31 July 2019</p>	<p>Identified</p>
Preventative actions taken to ensure no further issues will occur		Completion date	

CONCLUSION

GDC is considered Meridian's customer for all the GDC lights. Due to historical pricing arrangements, Meridian bills the Power Company Ltd for the former Gore Borough Council (Gore township) lighting at commercial rates, and the Power Company Ltd on charges GDC at the agreed historic rate. For all other lights in the district Meridian directly bills GDC.

Meridian moved to using the GDC RAMM database for reconciliation in April 2019. This audit found a much higher level of accuracy. The database includes the under verandah and amenity lighting.

The field audit was undertaken of a statistical sample of 228 items of load on 5th April 2019. This identified that the under verandah lights have been uploaded with the incorrect wattages. The database accuracy fell outside of the allowable +/-5% variance threshold. I recommend that the under verandah fluorescent lights be audited to correct the wattages. This will greatly improve the database accuracy.

The GDC RAMM database includes the NZTA lights. These are billed to GDC and then recompensed by NZTA to GDC. These are not included in the historic penny per unit arrangement with PowerNet but have been recorded on the same ICP. PowerNet is creating a new ICP for these items of load to be recorded against to address this. This has no material impact on the scope of this audit.

GDC have completed the roll out of LED lights. No central management system has been installed and is not planned.

The field work continues to be conducted by PowerNet as a contractor.

The audit found four non-compliances and makes two recommendations. The future risk rating of 26 (reduced from 38 in the last audit) indicates that the next audit be completed in three months. I have considered this in conjunction with Meridian's comments and recommend that the next audit be undertaken in nine months' time.

PARTICIPANT RESPONSE

Meridian have reviewed this report and their comments are recorded in the body of the report.