# ELECTRICITY INDUSTRY PARTICIPATION CODE
# DISTRIBUTED UNMETERED LOAD AUDIT REPORT

VERITEK

For

# ROTORUA LAKES DISTRICT COUNCIL AND MERCURY NZ LTD

Prepared by: Rebecca Elliot

Date audit commenced: 1 February 2018

Date audit report completed: 17 May 2018

Audit report due date: 01-Jun-18

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## EXECUTIVE SUMMARY

This audit of the Rotorua Lakes District Council Unmetered Streetlights (**RLDC**) DUML database and processes was conducted at the request of Mercury Energy Limited (**Mercury**), 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, which became effective on 1 June 2017.

The RLDC DUML volume is reconciled as HHR following the approval by the Electricity Authority of Exemption 233. The installations consist of an approved and certified data logger (to record on and off times) and a database from which the volume is derived.

I found that the ICPs for RLDC have been set up by council department and all map to one GXP. The RLDC street light load is across at least two GXPs and possibly three. Therefore, some of the load is being not being reconciled against the correct GXP. This is an historic issue and I recommend that Mercury liaise with Unison to resolve this. Three of the non-compliances relate to data missing from RAMM. The field audit found a variance resulting in over submission of 79,600 kWh per annum.

This audit found five non-compliances and makes two recommendations. The future risk rating of 21 indicates that the next audit be completed in six months. 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 | The database accuracy is assessed to be 97.4% indicating an estimated over submission of 79,600 kWh per annum (excluding ballast).<br>Incorrect profile recorded on the registry for ICP 0001264717UNC3A. | Moderate | High | 6 | Disputed |
| ICP identifier and items of load | 2.2 | 11(2)(a) and (aa) of Schedule 15.3 | 2,806 items of load with no ICP recorded. | Moderate | Low | 2 | Cleared |
| Description and capacity of load | 2.4 | 11(2)(c) and (d) of Schedule 15.3 | Ballast is not recorded in the database. | Strong | Low | 1 | Identified |
| Database accuracy | 3.1 | 15.2 and 15.37B(b) | The database accuracy is assessed to be 97.4% indicating an estimated over submission of 79,600 kWh per annum (excluding ballast).<br>The database is not complete as ballasts are not recorded in the RAMM database. | Moderate | High | 6 | Identified |
| Volume information accuracy | 3.2 | 15.2 and 15.37B(c) | The database accuracy is assessed to be 97.4% indicating an estimated over submission of 79,600 kWh per annum (excluding ballast).<br>Incorrect profile recorded on the registry for ICP 0001264717UNC3A.<br>Some of the load not recorded against the correct NSP. | Moderate | High | 6 | Identified |
| Future Risk Rating | | | | | | 21 | |

| | | | | | | |
|---|---|---|---|---|---|---|
| **Future risk rating** | 1-3 | 4-6 | 7-8 | 9-17 | 18-26 | 27+ |
| **Indicative audit frequency** | 36 months | 24 months | 18 months | 12 months | 6 months | 3 months |

## RECOMMENDATIONS

| Subject | Section | Description | Action |
|---|---|---|---|
| Tracking of load change | 2.6 | Review new streetlight electrical connection process with Unison. | |
| Volume information accuracy | 3.2 | Liaise with Unison to create ICP/s to correctly reconcile the DUML load against the correct GXP. | |

# 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

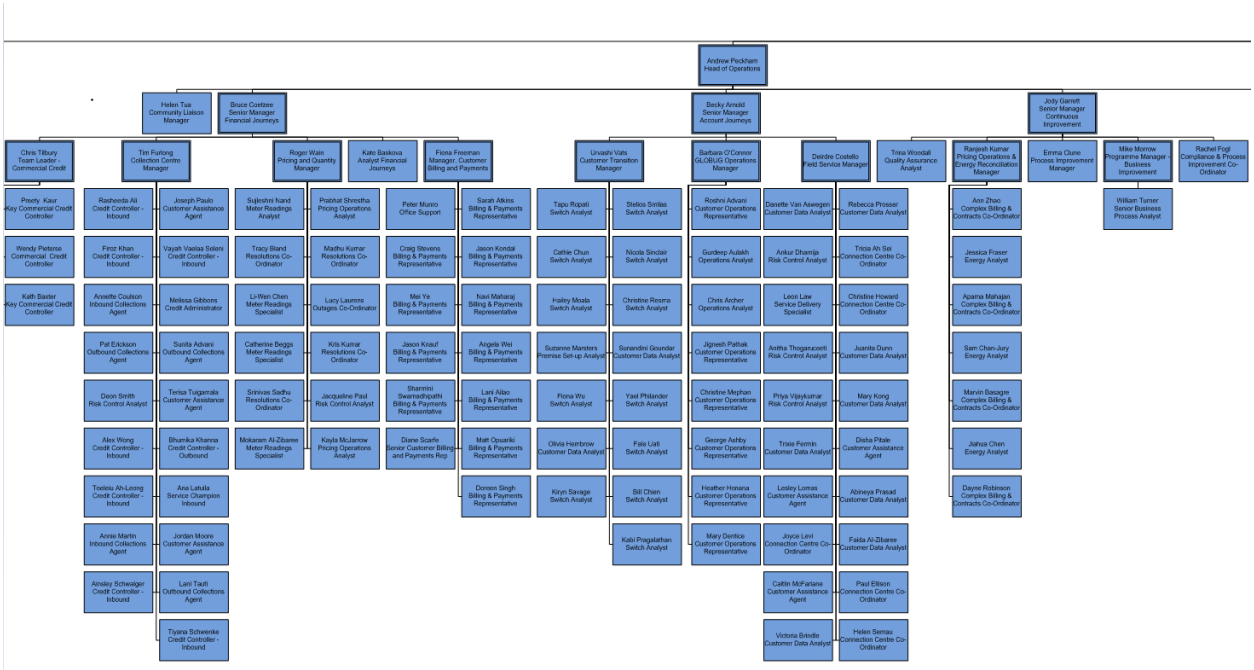
Section 11 of the Electricity Industry Act provides for the Electricity Authority to exempt any participant from compliance with all or any of the clauses.

### Audit commentary

Exemption 233 has been granted to allow Mercury to submit HHR data for DUML to the Reconciliation Manager.

## 1.2. Structure of Organisation

Mercury provided their current organisational structure:




## 1.3. Persons involved in this audit

Auditor:

**Rebecca Elliot**

**Veritek Limited**

**Electricity Authority Approved Auditor**

Other personnel assisting in this audit were:

| Name | Title | Company |
|---|---|---|
| Andrew Robertson | Regulatory and Compliance Strategist | Mercury Energy |
| Darryl Robson | Operations Engineer | Rotorua Lakes District Council |
| Edwin de Beun | Projects Engineer | Power Solutions |

## 1.4. Hardware and Software

**Section 1.8** records that Roading Asset and Maintenance Management database, commonly known as RAMM continues to be used the management of DUML. This is remotely hosted by RAMM Software Ltd. The specific module used for DUML is called "SLIMM" which stands for "Streetlighting Inventory Maintenance Management".

Power Solutions 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 | Profile | Number of items of load | Database wattage (watts) |
|---|---|---|---|---|---|
| 0001264717UNC3A | Rotorua District Council | ROT0111 | HHR | 2,495 | 22,066 |
| 0001264718UN3E4 | Parks and Amenities | ROT0111 | HHR | 861 | 6,110 |
| 0001264719UNFA1 | NZTA (formerly Transit) | ROT0111 | HHR | 919 | 1,606 |

I note that the database has 2,806 items of load with no ICP recorded against them and the ballast is added outside of the RAMM database, therefore the database wattages recorded above are not reflective of the actual load. This is discussed further in **sections 2.1,2.2,3.1** & **3.2**.

## 1.7. Authorisation Received

All information was provided directly by Mercury or Power Solutions.

## 1.8. Scope of Audit

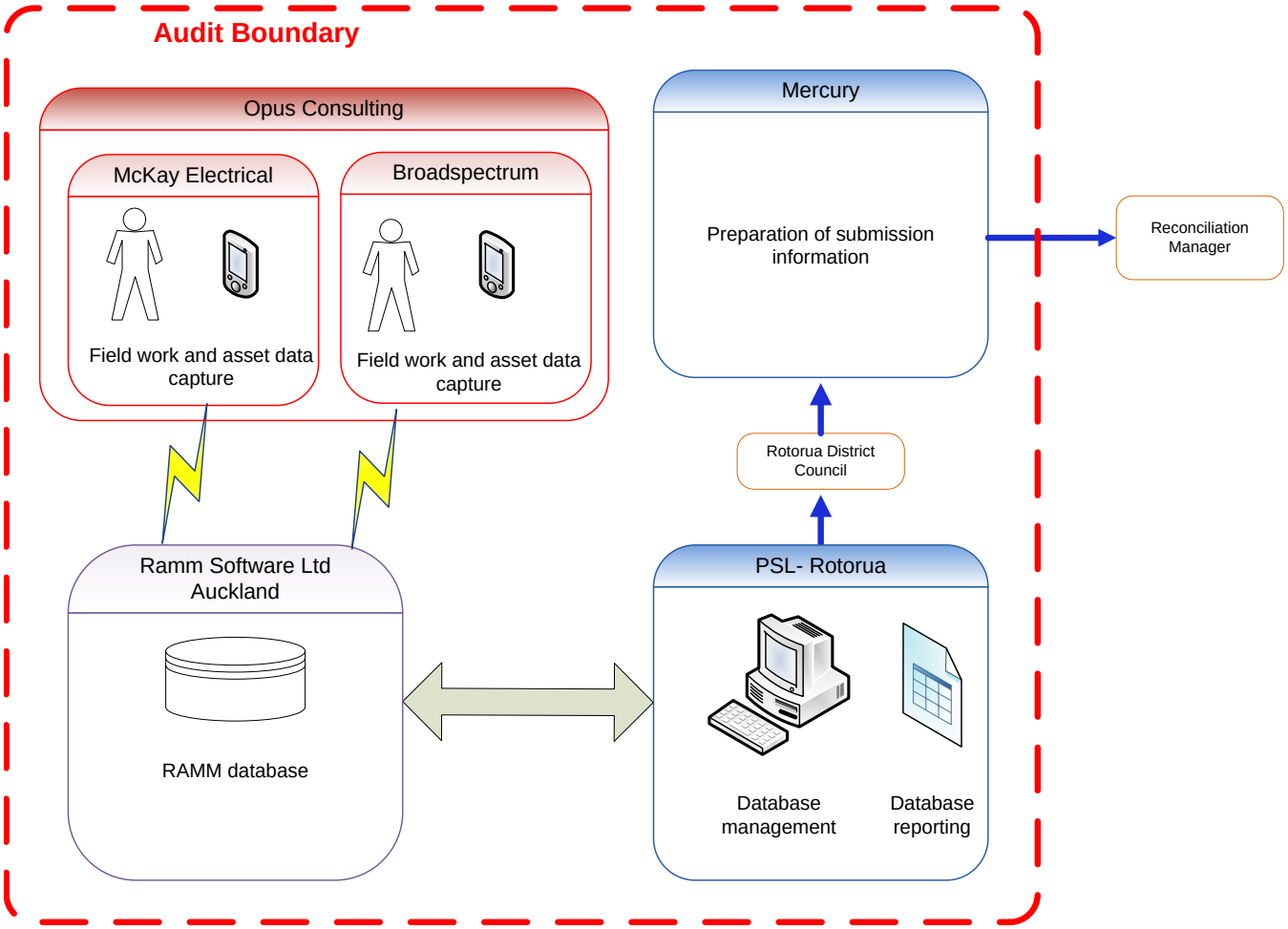
This audit of the Rotorua Lakes District Council Unmetered Streetlights (**RLDC**) DUML database and processes was conducted at the request of Mercury Energy Limited (**Mercury**), in accordance with clause 15.37B. The purpose of this audit is to verify that the volume information is being calculated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

The audit was conducted in accordance with the audit guidelines for DUML audits version 1.1, which became effective on 1 June 2017.

The RLDC DUML volume is reconciled as HHR following the approval by the Electricity Authority of Exemption 233. The installations consist of an approved and certified data logger (to record on and off times) and a database from which the volume is derived.

The database is remotely hosted by RAMM Software Ltd. The field contracts are managed by Opus Consulting. McKay Electrical carry out the maintenance field work. RLDC have an LED roll out underway and Broadspectrum are undertaking this work. The field work in both instances is captured using Pocket RAMM. Power Solutions manage the database reporting on behalf of the RLDC and they provide reporting to Mercury on a monthly basis.

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 at the time of the site audit.




The field audit was undertaken of a statistical sample of 270 items of load on 5th February 2018.

## 1.9. Summary of previous audit

Mercury provided a copy of the last audit report undertaken by Rebecca Elliot of Veritek Limited in May 2017 which was undertaken for Mercury as part of their 2017 reconciliation participant audit. This audit wasn't submitted due to the audit regime change that occurred on June 1st 2017 . For completeness I have included the findings for reference below:

## Table of Non-Compliance

| Subject | Section | Clause | Non compliance | Status |
|---|---|---|---|---|
| Deriving Submission Information | 2.1 | 11(1) of schedule 15.3 | 2 ICPs with the incorrect submission flag on the registry. | Still existing |
| | | | Over submission in relation to new lights not yet energised being included in reporting. | No occurrence during audit period but process has not been reviewed therefore this is still existing. |
| ICP Identifier | 2.2.1 | 11(2)(a) of schedule 15.3 | 2,785 items of load with no ICP allocated. | Still existing |
| Tracking of Load Changes | 2.3 | 11(3) of schedule 15.3 | Correct date of new streetlight energisation not captured. | No occurrence during audit period but process has not been reviewed therefore this is still existing. |

## Table of Recommendations

| Subject | Section | Clause | Recommendation for improvement | Status |
|---|---|---|---|---|
| Deriving Submission Information | 2.1 | 11(1) of schedule 15.3 | Liaise with Unison to confirm if the RLDC load is fed by more than one GXP and action accordingly dependant on findings. | Still existing |
| Capacity of each item of load | 2.2.4 | 11(2)(d of schedule 15.3 | Record ballast in RAMM. | Still existing |

### 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**

Mercury 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. Compliance is confirmed

## 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**

This clause requires that the distributed unmetered load database must satisfy the requirements of schedule 15.5 concerning the methodology for deriving submission information. Mercury reconciles the RLDC load using the HHR profile. The last audit found that ICP 0001264717UNC3A had a HHR profile but with the NHH submission flag recorded on the registry. This is still the case and is recorded as a non-compliance below.

As reported in the last audit, the RAMM database contains 2,806 items of load with no ICP. This is recorded as non-compliance in **section 2.2**. Whilst these items of load have no ICP recorded the total number of lights match between the RAMM data extract and the monthly wattage report. The wattage report uses the light owner field rather than the ICP field, and it this field that is used to construct the monthly report to Mercury Energy for submission.

| Description | Lamp quantity - RLDC December 2017 Report | Lamp Quantity – RAMM database extract | Total kW |
|---|---|---|---|
| Rotorua District Council (ICP0001264717UNC3A) | 5,010 | 5,010 | 509.7505 |
| Parks and Amenities (0001264718UN3E4) | 902 | 902 | 83.3555 |
| NZTA (0001264719UNFA1) | 1,169 | 1,169 | 217.375 |

As detailed in **section 2.4**, the ballast capacities are not recorded in RAMM but are added in the monthly report. This is recorded as non-compliance.

I checked the accuracy of the submission information by multiplying the total kW from the database by the total "on" time from the data logger file and the figures matched.

There is some inaccurate data within the database used to calculate submissions. This is recorded as non-compliance and discussed in **section 3.1** and **3.2**.

**Audit outcome**

Non-compliant

| Non-compliance | Description |
|---|---|
| Audit Ref: 2.1<br>With: Clause 11(1) of Schedule 15.3<br><br>From: entire audit period | The database accuracy is assessed to be 97.4% indicating an estimated over submission of 79,600 kWh per annum (excluding ballast) as detailed in **section 3.1**.<br>Incorrect profile recorded on the registry for ICP 0001264717UNC3A.<br>Potential impact: High<br>Actual impact: High<br>Audit history: Twice<br>Controls: Moderate<br>Breach risk rating: 6 |
| **Audit risk rating** | **Rationale for audit risk rating** |
| **High** | The controls are rated as moderate, because they are sufficient to ensure that lamp information is correctly recorded most of the time.<br>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 |
|---|---|---|
| (HHR profile but with the NHH submission flag recorded on the registry}<br>The 2 emails provided to Veritek between MEEN and Ron Beatty contradict the auditors position that no action has been taken. (page 11)<br>For 3 other ICP's, the Registry has allowed it to be updated and after specified numbers of registry changes have been exceeded, it doesn't allow further changes. Mercury should not be penalised for this if it is an issue with a change in the registry. Perhaps this needs to be recorded as an issue.<br>Ballast –MEEN will work with RLDC to add the ballast factors in the database. (This has again been captured in 2.4)<br>We still don't agree with the non-compliance stated here as it is linked.<br>Based on the audit commentary above it doesn't state anywhere about the over submission of 79,000kwh<br>In addition, the breach rating of 6 is not reflective of the materiality of the issue. | N/A | Disputed |
| **Preventative actions taken to ensure no further issues will occur** | **Completion date** | |
| N/A | N/A | |

## 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 DUML database must contain:*

- *each ICP identifier for which the retailer is responsible for the DUML*
- *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

As noted in **section 2.1**, RAMM contains 2,806 items of load with no ICP. This has since been corrected in the database, therefore this non-compliance has been cleared.

### Audit outcome

Non-compliant

| Non-compliance | Description |
|---|---|
| Audit Ref: 2.2<br>With: 11(2)(a) and (aa) of Schedule 15.3<br><br>From: entire audit period | 2,806 items of load with no ICP recorded.<br>Potential impact: Low<br>Actual impact: None<br>Audit history: Twice<br>Controls: Moderate<br>Breach risk rating: 2 |
| **Audit risk rating** | **Rationale for audit risk rating** |
| **Low** | The control rating is moderate as this is an historic issue and the light owner is recorded for each item of load.<br>The audit risk rating is low as the volumes being submitted per ICP were correct. |

| Actions taken to resolve the issue | Completion date | Remedial action status |
|---|---|---|
| Mercury is working with the customer to request the ICP is correctly matched to the items of load and ballast factors be added to the database. | June 2018 | Cleared |
| **Preventative actions taken to ensure no further issues will occur** | **Completion date** | |
| Follow up with customer to see if there are issues with this change and decide on next course of action. | October 2018 | |

## 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 DUML database must contain the location of each DUML item.*

**Audit observation**

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

**Audit commentary**

The database contains the nearest street address, pole numbers and Global Positioning System (GPS) coordinates for each item of load and users in the office and field can view these locations on a mapping system.

**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 DUML 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**

The database contains two fields for wattage, firstly the manufacturers rated wattage and secondly the "ballast wattage". The ballast wattage is expected to be a calculated figure which accounts for any variation from the input wattage and includes losses associated with ballasts. Analysis of the RAMM database found 5,171 items of load with no ballast recorded for lights that are expected to have a ballast recorded. The ballast information is recorded separately to the RAMM database. Power Solutions applies the wattage figure as part of the reporting process to Mercury. The correct wattage and ballasts are applied but this needs to be in the database, hence this is recorded as non-compliance.

Analysis of the database found one item of load with a zero wattage. RLDC are investigating this light to determine the correct wattage. A nominal wattage of 100W is being added to the monthly report until this can be resolved.

**Audit outcome**

Non-compliant

| Non-compliance | Description | | |
|---|---|---|---|
| Audit Ref: 2.4<br>With: 11(2)(c) and (d) of Schedule 15.3<br><br>From: entire audit period | Ballast is not recorded in the database.<br>1 item of load recorded with zero wattage.<br>Potential impact: Low<br>Actual impact: None<br>Audit history: None<br>Controls: Strong<br>Breach risk rating: 1 | | |
| **Audit risk rating** | **Rationale for audit risk rating** | | |
| **Low** | The controls are rated as strong as the correct ballasts are applied in the monthly wattage report but are not recorded in RAMM as is required by this clause.<br>The audit risk rating is low as the correct ballasts are being applied and therefore reconciliation is accurate. | | |
| **Actions taken to resolve the issue** | | **Completion date** | **Remedial action status** |
| MEEN will work with RLDC to ensure all the changes are captured and recorded into the database are complete and accurate. | | July 2018 | Identified |
| **Preventative actions taken to ensure no further issues will occur** | | **Completion date** | |
| MEEN is documenting a consistent process for all DUMLS to increase compliance. | | June 19 | |

### 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 270 items of load on 5th February 2018.

**Audit commentary**

The field audit findings are detailed in the table below:

| Street | Database count | Field count | Light count differences | Wattage recorded incorrectly | Comments |
|---|---|---|---|---|---|
| **RDC** | | | | | |
| AMBER PL | 1 | 1 | | | |
| BENNETTS RD | 8 | 8 | | | |
| CHERRYWOOD PL | 2 | 2 | | | |
| CORBETT RD | 2 | 2 | | | |
| GEDDES RD EXTENSION | 3 | 3 | | | |
| ISOBEL ST | 6 | 6 | | | |
| KAHAROA RD | 7 | 7 | | | |
| KAHU ST | 6 | 6 | | | |
| KORIMAKO ST | 4 | 4 | | | |
| LYTTON ST | 21 | 21 | | | |
| MIRO ST | 3 | 3 | | | |
| NEIL RD (SOUTH) | 7 | 7 | | | |
| PAEROA ST (#29 - #37) | 1 | 1 | | | |
| SHIRLEY ST | 9 | 9 | | | |
| TAWHERO ST (EAST) | 1 | 1 | | | |
| TE HUAKI CRES | 10 | 10 | | | |
| TORU ST | 2 | 2 | | | |
| UMUROA ST | 12 | 12 | | | |
| UTUHINA RD | 14 | 14 | | | |
| WALLACE CRES | 9 | 9 | | | |
| WINGROVE RD | 9 | 9 | | | |
| **RDC PARKS** | | | | | |
| ARAWA ST | 10 | 9 | -1 | | 1x 70W HPS not found |
| HATUPATU DR | 18 | 18 | | | |
| HAUPAPA ST CARPARK | 3 | 3 | | | |
| KUIRAU D FOOTPATH | 1 | 1 | | | |

| Street | Database count | Field count | Light count differences | Wattage recorded incorrectly | Comments |
|---|---|---|---|---|---|
| LAKEFRONT RD | 46 | 46 | | | |
| ROTORUA LIBRARY | 5 | 5 | | | |
| **NZTA (formerly Transit)** | | | | | |
| COCHRANE ST | 1 | 1 | | | |
| DALBETH RD | 1 | 1 | | | |
| HAMURANA RD | 5 | 5 | | | |
| HAMURANA RD (SH 36) | 15 | 10 | -5 | | 3x 100W HPS, 1x 80W & 1x 250W HPS not found |
| KONENE ST | 1 | 1 | | | |
| LAKE RD | 1 | 1 | | | |
| LEE RD | 1 | 1 | | | |
| MANUKA CRES | 1 | 1 | | | |
| SH 33 (SH 30 - DISTRICT BOUNDARY) | 20 | 19 | -1 | | No light on pole |
| SHAMBLES THEATRE | 1 | 1 | | | |
| TE PUAKANGA RD | 2 | 2 | | | |
| WAIWHERO ST | 1 | 1 | | | |
| **TOTAL** | 270 | 263 | -7 | | |

I found seven less lamps in the field than were recorded in the database. These differences and the database accuracy are recorded as non-compliance in **section 3.1**. I did not identify any load missing from the database.

### Audit outcome

Compliant

## 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 September 20th 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.

New lamp connections are captured in RAMM as soon as the as-builts are received by the council. RLDC liaises with Unison to liven the lights. I noted in the last audit that once they are entered into RAMM they are included in the monthly submission. This is regardless of whether they are connected or not. The council in these instances is therefore paying for new street lights before they have been electrically connected. There have been no new developments during the audit period but there are some in progress now and I recommend that the new connection process be reviewed with Unison to ensure that the items of load are added to the database when electrical connection occurs.

| Description | Recommendation | Audited party comment | Remedial action |
|---|---|---|---|
| Tracking of load change | Review new streetlight electrical connection process with Unison. | Mercury will consult with Unison about their current process and if changes are able to be made if required. | Investigating |

Outage patrols occur on a rolling basis and part of this process is to check the accuracy of the database. This is effectively a "rolling" database audit.

The processes were reviewed for ensuring that changes in the field are notified through to Power Solutions. All field data is entered directly into a PDA that then automatically populates the database. Opus Consulting carry out a 10% spot audit to confirm claims for work done are correctly carried out and all the relevant information is captured.

RLDC do not connect any festive lighting into the unmetered streetlight circuits.

### 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 database was checked for audit trails.

### Audit commentary

The RAMM database has a complete audit trail of all additions and changes to the database information.

### Audit outcome

Compliant

## 3. ACCURACY OF DUML 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 DUML database is complete and accurate.*

**Audit observation**

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

| Plan Item | Comments |
|---|---|
| Area of interest | Rotorua Lakes region |
| Strata | The database contains items of load in Rotorua Lakes area.<br>The area has three distinct sub groups. This is reflective of light owner. There were no new developments identified.<br>The processes for the management of RLDC items of load are the same, but I decided to place the items of load into three strata, as follows:<br>1. Council owned<br>2. Parks and amenities<br>3. NZTA |
| 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 39 subunits. |
| Total items of load | 270 items of load were checked. |

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

**Audit commentary**

The DUML database auditing tool provided a result indicating the field data was 97.4% of the database data. This will result in an estimated over submission by 79,600 kWh per annum. I note that this calculation does not include ballast as it is not included in the database therefore the total over submission is not able to be calculated but will be higher.

I checked the wattages and ballasts being applied and found these were added correctly to the monthly report provided to Mercury for submission calculation but as detailed in **section 2.4**, these are not recorded in RAMM and therefore the database is not complete and accurate as required by this clause.

**Audit outcome**

Non-compliant

| Non-compliance | Description |
|---|---|
| Audit Ref: 3.1<br>With: Clause 15.2 and 15.37B(b)<br><br>From: entire audit period | The database accuracy is assessed to be 97.4% indicating an estimated over submission of 79,600 kWh per annum (excluding ballast).<br>The database is not complete as ballasts are not recorded in the RAMM database.<br>Potential impact: High<br>Actual impact: High<br>Audit history: None<br>Controls: Moderate<br>Breach risk rating: 6 |
| **Audit risk rating** | **Rationale for audit risk rating** |
| **High** | The controls are rated as moderate, because they are sufficient to ensure that changes to the database are correctly recorded most of the time.<br>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 |
|---|---|---|
| MEEN will work with RLDC to ensure all the changes are captured and recorded into the database are complete and accurate. | October 2018 | Identified |
| **Preventative actions taken to ensure no further issues will occur** | **Completion date** | |
| MEEN is documenting a consistent process for all DUMLS to increase compliance. | June 2019 | |

## 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
- checking the database extract combined with the burn hours against the submitted figure to confirm accuracy.

### Audit commentary

The last audit found that ICP 0001264717UNC3A had a HHR profile but with the NHH submission flag recorded on the registry. This is still the case and is recorded as non-compliance below.

The ICPs for RLDC have been set up by council department and all map to one GXP. Rotorua is fed by more than one GXP. Therefore, some of the load is being not being reconciled against the correct GXP. I recommend that Mercury liaise with Unison to create ICPs for the correct GXPs.

| Description | Recommendation | Audited party comment | Remedial action |
|---|---|---|---|
| Volume information accuracy | Liaise with Unison to create ICP/s to correctly reconcile the DUML load against the correct GXPs. | Mercury will consult with Unison about their current process and if changes are able to be made if required. | Investigating |

I checked the accuracy of the submission information by multiplying the total kW from the database by the total "on" time from the data logger file and the figures matched for the month of December 2017.

The DUML database auditing tool provided a result indicating the field data was 97.4% of the database data. This will result in an estimated over submission by 79,600 kWh per annum. I note that this calculation does not include ballast as it is not included in the database therefore the total over submission is not able to be calculated but will be higher.

**Audit outcome**

Non-compliant

| Non-compliance | Description |
|---|---|
| Audit Ref: 3.2<br>With: Clause 15.2 and 15.37B(c)<br><br>From: entire audit period | The database accuracy is assessed to be 97.4% indicating an estimated over submission of 79,600 kWh per annum (excluding ballast).<br>Incorrect profile recorded on the registry for ICP 0001264717UNC3A.<br>Some of the load not recorded against the correct NSP.<br>Potential impact: High<br>Actual impact: Unknown<br>Audit history: Twice<br>Controls: Moderate<br>Breach risk rating: 6 |
| **Audit risk rating** | **Rationale for audit risk rating** |
| **High** | The controls are rated as moderate, because the database management and submission calculation controls will mitigate risk most of the time.<br>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 |
|---|---|---|
| MEEN will work with the network and RLDC to capture and submit information at NSP level | October 2019 | Identified |
| **Preventative actions taken to ensure no further issues will occur** | **Completion date** | |
| MEEN is documenting a consistent process for all DUMLS to increase compliance. | 2019 | |

## CONCLUSION

The RLDC DUML volume is reconciled as HHR following the approval by the Electricity Authority of Exemption 233. The installations consist of an approved and certified data logger (to record on and off times) and a database from which the volume is derived.

I found that the ICPs for RLDC have been set up by council department and all map to one GXP. The RLDC street light load is across at least two GXPs and possibly three. Therefore, some of the load is being not being reconciled against the correct GXP. This is an historic issue and I recommend that Mercury liaise with Unison to resolve this. Three of the non-compliances relate to data missing from RAMM. The field audit found a variance resulting in over submission of 79,600 kWh per annum.

This audit found five non-compliances and makes two recommendations. The future risk rating of 21 indicates that the next audit be completed in six months.

PARTICIPANT RESPONSE

Mercury re-iterates it's concerns at the lack of assessment of materiality under the audit regime.