

# Electricity Industry Participation Code Audit Report

**For**

**Genesis Energy Limited**



**Far North District Council  
Distributed Unmetered Load**

**Prepared by Rebecca Elliot – Veritek Ltd**

**Date of Audit: 15/02/18**

**Date Audit Report Complete: 02/05/18**

## Executive Summary

This audit of the Far North District Council (FNDC) DUML database and processes was conducted at the request of Genesis Energy (Genesis), 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. This database switched to Genesis in January 2018.

A RAMM database is held by FNDC, who is Genesis' customer. This database is hosted by RAMM Software Limited. FNDC engages McKay Ltd as their fieldwork and asset data capture service provider.

As detailed in **section 1.1**, the RAMM database extract provided was not complete. Approximately 600 items of load appear to have been missed out of the data extract provided, but this was not discovered until the submission information was provided at the end of the audit process. The field audit of the data provided found some inaccurate data within the database used to calculate submissions.

This audit found four non-compliances and one recommendation was made. The future risk rating of 14 indicates that the next audit be completed in 12 months. The matters raised are detailed below:

### Table of Non-Compliance

Subject	Section	Clause	Non-compliance	Controls	Audit Risk Rating	Breach Risk Rating	Remedial Action
Deriving submission	2.1	11(1) of Schedule 15.3	Accuracy ratio is 93.6% indicating over submission of 19,400 kWh per annum.  8 items of load with the incorrect ballast applied indicating an estimated over submission of 1,775.55kWh per annum.  Combined estimated over submission of 21,175.55kWh.	Moderate	Medium	4	Identified
All load recorded in the database	2.5	11(2A) of Schedule 15.3	Additional items of load in the field.	Moderate	Low	2	Identified

Subject	Section	Clause	Non-compliance	Controls	Audit Risk Rating	Breach Risk Rating	Remedial Action
Database accuracy	3.1	15.2 & 15.37(b)	Accuracy ratio is 93.6% indicating over submission of 19,400 kWh per annum.  8 items of load with the incorrect ballast applied indicating an estimated over submission of 1,775.55kWh per annum.  Combined estimated over submission of 21,175.55kWh.	Moderate	Medium	4	Identified
Volume information accuracy	3.2	15.2 & 15.37(c)	DUML load not recorded in RAMM for ICP 0000910900TEA5D.  Accuracy ratio is 93.6% indicating over submission of 19,400 kWh per annum.  8 items of load with the incorrect ballast applied indicating an estimated over submission of 1,775.55kWh per annum.  Combined estimated over submission of 21,175.55kWh.	Moderate	Medium	4	Identified
<b>Future Risk Rating</b>						<b>14</b>	
<b>Indicative Audit Frequency</b>						<b>12 months</b>	

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

## Table of Recommendations

Subject	Section	Recommendation	Description
Tracking of load changes	2.6	Clause 11(3) of schedule 15.3	Field check that the light type provided in the "as built" is what is installed in the field.

## Persons Involved in This Audit:

Auditor:

Name	Company	Role
Rebecca Elliot	Veritek Limited	Lead Auditor
Brett Piskulic	Veritek Limited	Supporting Auditor

Other personnel assisting in this audit were:

Name	Title	Company
Aaron Reilly	Lighting Technician	FNDC
Craig Young	Excellence Leader - Reconciliation	Genesis Energy
Grace Hawken	Technical Specialist - Reconciliations Team	Genesis Energy

# Contents

Executive Summary	2
Table of Non-Compliance	2
Table of Recommendations	3
Persons Involved in This Audit:	4
Contents	5
<b>1. Administrative</b>	<b>6</b>
1.1 List of ICPs	6
1.2 Exemptions from Obligations to Comply with Code (Section 11 of Electricity Industry Act 2010)	6
1.3 Supplier List	6
1.4 Hardware and Software	7
1.5 Breaches or Breach Allegations	7
1.6 Distributed Unmetered Load Audits (Clauses 16A.26 & 17.295F)	7
1.7 Separate Distributed Unmetered Load Audit (Clause 16A.8(4))	8
1.8 Summary of Previous Audit	8
Table of Non-Compliance	8
Table of Recommendations	9
1.9 Scope of Audit	10
1.10 Data Transmission (Clause 20 of Schedule 15.2)	11
<b>2. DUML database requirements</b>	<b>11</b>
2.1 Deriving Submission Information (Clause 11(1) of Schedule 15.3)	11
2.2 ICP Identifier (Clause 11(2)(a) of Schedule 15.3)	12
2.3 Location of Each Item of Load (Clause 11(2)(b) of Schedule 15.3)	13
2.4 Description of Load Type (Clause 11(2)(c) & (d) of Schedule 15.3)	13
2.5 All load recorded in database (Clause 11(2A) of Schedule 15.3)	14
2.6 Tracking of Load Changes (Clause 11(3) of Schedule 15.3)	17
2.7 Audit Trail (Clause 11(4) of Schedule 15.3)	18
<b>3. Accuracy of DUML database</b>	<b>19</b>
3.1 Database Accuracy (Clause 15.2 & 15.37(b))	19
3.2 Volume Information Accuracy (Clause 15.2 & 15.37(c))	21
<b>4. Conclusions</b>	<b>23</b>
<b>5. Genesis Comments</b>	<b>24</b>

## 1. Administrative

### 1.1 List of ICPs

The following ICP is relevant to the scope of this audit:

ICP	Description	NSP	No. of items of load
0000910300TE057	STREET LIGHTS KAWAKAWA-KAIKHOE-KERIKERI	KOE1101	685
0000910200TE953	STREET LIGHTS KAITAI-AHIPARA-AWANUI-MONGONU-PAIHIA-KOHUKOHU	KOE1101	389
0000911000TE2F4	STREET LIGHTS KAITAI-AHIPARA-AWANUI-MONGONU-PAIHIA-KOHUKOHU	KOE1101	103
0000911400TEEF5	STREET LIGHTS KAITAI-AHIPARA-AWANUI-MONGONU-PAIHIA-KOHUKOHU	KOE1101	245
0000003757TEC88	COMMERCE STREET (KAITAIA) (3137) STREET LIGHTING DECORATIVE LIGHTING NTH	KOE1101	4
0000003758TE356	COMMERCE STREET (KAITAIA) (3137) STREET LIGHTING	KOE1101	2
0000003545TECA7	STREETLIGHTING KERIKERI	KOE1101	14
0000003546TE067	KERIKERI ROAD AND MEMORIAL AVE	KOE1101	1
0000003756TE0CD	UNMETERED DECORATIVE LIGHTING	KOE1101	No data provided in data extract
0000910800TE359	SOUTHERN UNMETERED GROUP LIGHTING	KOE1101	No data provided in data extract
0000910900TEA5D	NORTHERN UNMETERED GROUP LIGHTING	KOE1101	No data provided in data extract
TOTAL items of load			1,478

I note that there was no data provided for three ICPs above. These appear to have been missed out of the data extract provided, but this was not discovered until the submission information was provided at the end of the audit process. This is discussed in further in the report.

### 1.2 Exemptions from Obligations to Comply with Code (Section 11 of Electricity Industry Act 2010)

*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.*

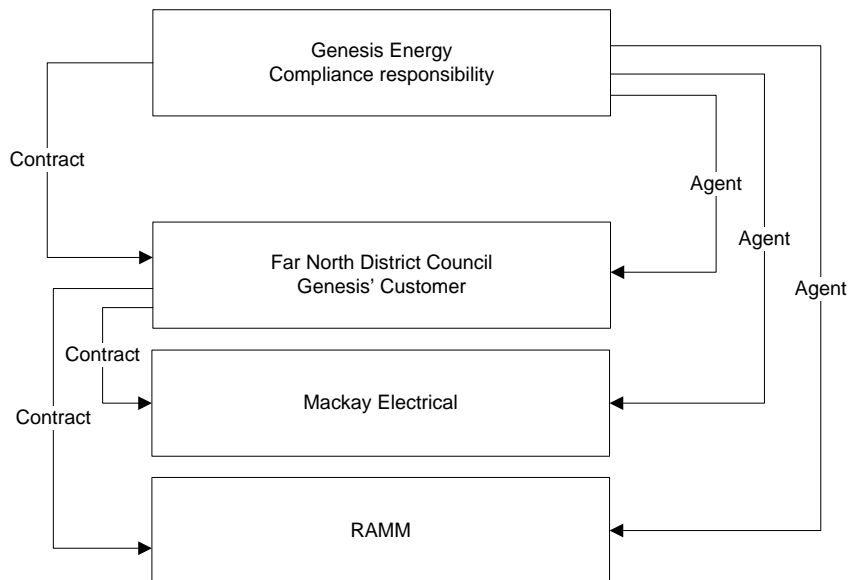
Genesis confirms there are no exemptions in place relevant to the scope of this audit.

### 1.3 Supplier List

Far North DC, McKay Electrical and RAMM are considered agents under this clause, and Genesis clearly understands that the use of agents does not release them from their compliance obligations.

A contractual relationship exists between Genesis and Far North DC as part of the sales contract, however there is no direct contractual relationship between Genesis and McKay Electrical and RAMM for the provision of services in relation to DUML. This is not seen as an issue, if the processes for updating the database are robust and have appropriate validation controls in place.

The diagram below shows the relationships from a compliance and contractual perspective.



## 1.4 Hardware and Software

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

Far North DC confirmed that the database back-up is in accordance with standard industry procedures. The database is password protected.

## 1.5 Breaches or Breach Allegations

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

## 1.6 Distributed Unmetered Load Audits (Clauses 16A.26 & 17.295F)

*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

Genesis has 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.

## 1.7 Separate Distributed Unmetered Load Audit (Clause 16A.8(4))

*Retailers must ensure that DUML audits are reported in a separate audit report.*

### Audit Observation

Genesis has requested Veritek to undertake this streetlight audit.

### Audit Commentary

The audit report for this DUML database is separate from other audit reports. Compliance is confirmed.

## 1.8 Summary of Previous Audit

Genesis provided a copy of the last audit report undertaken by Rebecca Elliot of Veritek in 2016. The findings from that audit are set out below with the current statuses.

### Table of Non-Compliance

Subject	Section	Clause	Non compliance	Status
Deriving Submission Information	2.1 now 3.1	11(1) of schedule 15.3	Inaccuracies found in the database causing inaccurate submission.	Still existing
Capacity of load	2.2.4 now 2.4	11(2)(d) of schedule 15.3	Some incorrect historic wattages and ballasts as indicated in the table above.	Still existing
Tracking of Load Change	2.3 now 2.5	11(3) of schedule 15.3	Some database inaccuracies found during field audit.	Still existing



## Table of Recommendations

Subject	Section	Clause	Recommendation for improvement	Status
Data transmission	1.9	7(1)(b) of schedule 11.1 & 8(a) of schedule 15.3	Review ICPs to see if they can be reduced to one ICP per NSP as required by the code.	Still existing – Council has requested ICPs be retained.
Tracking of load changes	2.3	11(1) of schedule 15.3	Confirm what load is recorded under ICP 0000913600TE7B2 with Top Energy and whether it is already being submitted for under ICP 0000911400TEEF5. Action based on findings.	Cleared - load is recorded against NZTA by Genesis under ICP#7B2

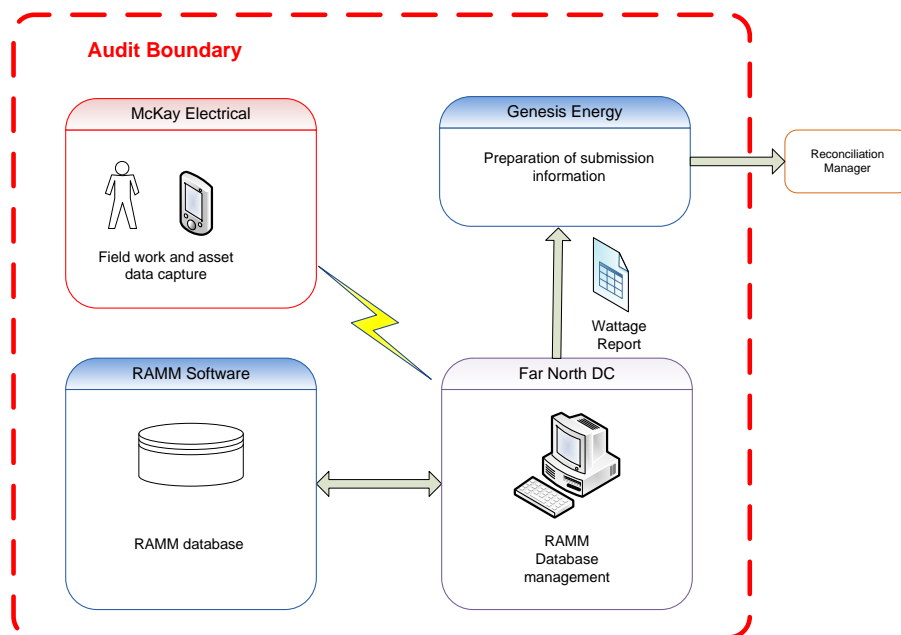
## 1.9 Scope of Audit

This audit of the Far North District Council (FNDC) DUML database and processes was conducted at the request of Genesis Limited (Genesis), 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.

FNDC is located on the Top Energy network. McKay Electrical is engaged as the streetlighting maintenance contractor and FNDC maintain the RAMM database, which is used by Genesis to calculate submission information. FNDC provides reporting to Genesis 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 monthly reporting. The diagram below shows the flow of information and the audit boundary for clarity.



The field audit was undertaken on 26/04/2018 of 160 lights using the statistical sampling methodology. The field selection included three population groups:

- Urban
- Rural
- Amenity

## 1.10 Data Transmission (Clause 20 of Schedule 15.2)

The reporting from FNDC to Genesis is by way of a spreadsheet attached to an email. This is password protected. Compliance is confirmed.

## 2. DUML database requirements

### 2.1 Deriving Submission Information (Clause 11(1) of Schedule 15.3)

*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.

#### Audit Commentary

Genesis reconciles this DUML load using the NST profile. Genesis derives the hours of operation information using a data logger. As detailed in **section 1.1**, the RAMM database extract provided was not complete. Approximately 600 items of load appear to have been missed out of the data extract provided but this was not discovered until the submission information was provided at the end of the audit process. Therefore, I was unable to confirm submission accuracy against the database extract, but I reviewed the monthly wattage report provided to Genesis and confirmed correct methodology was used to derive submission.

As discussed in **sections 3.1** and **3.2**, the database and associated processes to derive submission were found to contain some inaccuracies and missing data. This is recorded as non-compliance below.

Non-compliance	Description		
Audit Ref: 2.1 With: 11(1) of Schedule 15.3  From: entire audit period	Accuracy ratio is 93.6% indicating over submission of 19,400 kWh per annum. 8 items of load with the incorrect ballast applied indicating an estimated over submission of 1,775.55kWh per annum. Combined estimated over submission of 21,175.55kWh. Potential impact: Medium Actual impact: Medium Audit history: None Controls: Moderate Breach risk rating: 4		
Audit risk rating	Rationale for audit risk rating		
Medium	Controls are rated as moderate, as they are sufficient to mitigate the risk most of the time but there is room for improvement. The combined variance of 21,175.55kWh, is considered medium therefore the audit risk rating is medium.		
Actions taken to resolve the issue		Completion date	Remedial action status
Genesis will request that the assets be accurately reported and administered in the RAMM database		12/2018	Identified
Preventative actions taken to ensure no further issues will occur		Completion date	
Genesis will work with FNDC to help gain efficiencies in the RAMM database as required.		12/2018	

## 2.2 ICP Identifier (Clause 11(2)(a) of Schedule 15.3)

*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

The analysis found that all items of load had the correct ICP recorded against them for those provided in the database extract and I note compliance was recorded in relation to this in the previous audit. Compliance is confirmed.

## 2.3 Location of Each Item of Load (Clause 11(2)(b) of Schedule 15.3)

*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. Compliance is confirmed.

## 2.4 Description of Load Type (Clause 11(2)(c) & (d) of Schedule 15.3)

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

### Audit Commentary

The database contains a field for lamp type and this is populated appropriately for all items of load except 23 items of load recorded with an "Unknown" light type. These all had an LED wattage value assigned. This is recorded as non-compliance.

The database contains two records for wattage, firstly the lamp wattage and secondly the total wattage including any gear wattage, which represents ballast losses. All had a value populated.

Non-compliance	Description		
Audit Ref: 2.4 With: 11(2) (c) of Schedule 15.3  From: entire audit period	23 items of load with an unknown light type.  Potential impact: None Actual impact: Low Audit history: None Controls: Moderate Breach risk rating: 2		
Audit risk rating	Rationale for audit risk rating		
Low	Controls are rated as moderate, as they are sufficient to mitigate the risk most of the time but there is room for improvement.  The audit risk rating is low to none as all of the lights had a wattage value recorded.		
Actions taken to resolve the issue		Completion date	Remedial action status
Genesis will request that the assets be accurately reported and administered in the RAMM database		12/2018	Identified
Preventative actions taken to ensure no further issues will occur		Completion date	
Genesis will work with FNDC to help gain efficiencies in the RAMM database as required.		12/2018	

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

*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 160 lights using the statistical sampling methodology against the database extract provided.

### Audit Commentary

The field audit findings are detailed in the table below and found a small number of discrepancies.

Street	Database count	Field count	Light count differences	Wattage recorded incorrectly	Comments
<b>FNDC Urban</b>					
BISSET ROAD	5	5	-	-	
DICKESON STREET	3	3	-	-	
HEKE STREET	7	7	-	-	2 x lamps recorded as unknown are LED.
KAURI PLACE	1	1	-	-	
PENNEY CRESCENT (KAIKOHE)	4	4	-	-	

Street	Database count	Field count	Light count differences	Wattage recorded incorrectly	Comments
PURDY STREET	7	7	-	1	1 x 70W HPS replaced by LED.
RIPI STREET	2	2	-	1	1 x 70W HPS replaced by LED.
ROWSSELL HEIGHTS	1	1	-	-	
CHURCH ROAD (KAITAIA)	5	5	-	-	
DAVIS STREET (KAITAIA)	4	3	-1-		Database records 3 x unknown and 1 x LED, there are 3 LEDs.
DOMINION ROAD	3	3	-	-	
DONALDS ROAD (EAST)	8	8	-	-	1 x lamp recorded as unknown is LED.
EMPIRE STREET	1	1	-	-	
FARRIMOND PLACE	1	1	-	-	
HESTER STREET	1	1	-	-	
NORTH ROAD (KAITAIA)	8	8	-	-	
SYDANN PLACE	1	1	-	-	
TERRY CRESCENT	4	4	-	-	
BARRETT PLACE	2	2	-	-	
BASKA VODA DRIVE	1	1	-	-	
KEMP ROAD	5	5	-	2	1 x 70W MH and 1 x 70W SHPS have been replaced by LEDs
MARSDEN PLACE (KERIKERI)	2	2	-	-	
OAKRIDGE DRIVE	3	3	-	2	2 x 70W HPS replaced with LEDs.
RANUI AVENUE	6	7	1	-	1 x extra LED.
ST ANDREWS PLACE	1	1	-	-	
WENDYWOOD LANE	2	3	1	-	1 x extra LED.
JOYCES ROAD	3	3	-	-	
MARSDEN ROAD (SH11 PAIHIA)	1	1	-	-	
TOHITAPU ROAD	1	1	-	-	
BAKER STREET	2	2	-	-	
POMARE ROAD	1	1	-	1	1 x 70W HPS replaced with LED.
<b>FNDC Amenity</b>					
COBHAM ROAD	5	12	7	-	12 lights in toilet block.
<b>FNDC- Rural</b>					
COLLARD STREET	2	2	-	-	
DUKE STREET	1	1	-	-	
LONG STREET (AWANUI)	1	1	-	-	
BAYSIDE DRIVE	7	7	-	-	
BERGHAN ROAD	3	3	-	-	
HIBISCUS AVENUE	2	2	-	-	
MARCHANT ROAD	1	1	-	-	
GILLIES STREET (WEST)	1	1	-	-	
HOSPITAL ROAD (KAWAKAWA)	3	3	-	-	
JOHNSTON ROAD (KAWAKAWA)	5	5	-	-	
CHURCH STREET (KOHUKOHU)	1	1	-	-	
ALEXANDER STREET	1	1	-	-	
FACTORY ROAD	1	1	-	-	
MASSEY STREET	3	3	-	-	
BEECHEY STREET	6	6	-	-	

Street	Database count	Field count	Light count differences	Wattage recorded incorrectly	Comments
JUNIPER LANE	1	1	-	-	
LAMB ROAD	3	3	-	-	
MARMON STREET (EAST)	3	3	-	-	
AO MARAMA PLACE	1	1	-	-	
MAMARU ROAD	3	3	-	-	
BAY HEIGHTS DRIVE	9	9	-	-	
<b>Total</b>	<b>160</b>	<b>168</b>	<b>8</b>	<b>7</b>	

Eight additional items of load found in the field. This is recorded as non-compliance. Database accuracy is discussed in **section 3.1**.

Non-compliance	Description		
Audit Ref: 2.5 With: Clause 11(2A) of Schedule 15.3 From: Entire audit period	Additional items of load in the field. Potential impact: Low Actual impact: Low Audit history: None Controls: Moderate Breach risk rating: 2		
Audit risk rating	Rationale for audit risk rating		
Low	Controls are rated as moderate, as they are sufficient to mitigate the risk most of the time but there is room for improvement. Overall the database accuracy was high hence the audit risk rating of low.		
Actions taken to resolve the issue		Completion date	Remedial action status
Genesis will request that the assets be accurately reported and administered in the RAMM database.		12/2018	Identified
Preventative actions taken to ensure no further issues will occur		Completion date	
Genesis will work with FNDC to help gain efficiencies in the RAMM database as required.		12/2018	



## 2.6 Tracking of Load Changes (Clause 11(3) of Schedule 15.3)

*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 20 September 2012, the Authority sent a memo to Retailers and auditors advising that tracking of load changes at a daily level was not required if 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.

As changes occur McKay Electrical provides the information to FNDC, and this information is then entered into the database. The database is checked for accuracy as part of the lamp replacement process.

For new subdivisions, of which there are few, the lighting information is provided by the developer to FNDC as part of the vesting process. They are added to RAMM prior to livening and will not be livened until the Council has given their approval. It is at this point that they are added to the monthly reporting to Genesis. FNDC accept that the "as built" are what is installed in the field. I recommend that a check in the field is added to confirm that this is correct.

Recommendation	Description	Audited party comment	Remedial action
Regarding: Clause 11(3) of schedule 15.3	Field check that the light type provided in the "as built" is what is installed in the field.	Genesis will raise this as a potential area of improvement	Investigating

Decorative lighting is connected in the FNDC area. These lights are captured in RAMM using the lamp notes field. The lamp notes field indicates the number of lamps which are connected. When a billing report is prepared the number of lamps is multiplied by the lamp wattage to record the actual connected wattage at each pole.

Compliance is confirmed.

## 2.7 Audit Trail (Clause 11(4) of Schedule 15.3)

*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. Compliance is confirmed.

### 3. Accuracy of DUML database

#### 3.1 Database Accuracy (Clause 15.2 & 15.37(b))

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

##### Audit Observation

As detailed in **section 1.1**, the RAMM database extract provided was not complete. Approximately 600 items of load appear to have been missed out of the data extract provided, but this was not discovered until the submission information was provided at the end of the audit process therefore the database accuracy has been assessed against the partial database extract provided.

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	Far North DC region
Strata	The database contains items of load in Far North. The area has three distinct sub regions of Far North urban, Far North rural, Far North amenity.  The processes for the management of Far North DC items of load are the same, but I decided to place the items of load into three strata, as follows: <ol style="list-style-type: none"><li>1. FNDC urban</li><li>2. FNDC rural</li><li>3. FNDC amenity.</li></ol>
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 53 sub-units (roads).
Total items of load	160 items of load were checked.

As discussed in **section 2.4**, the database was examined for light wattage and ballast accuracy.

##### Audit Commentary

The DUML database auditing tool provided a result indicating the field data was 93.6% of the database data. This will result in estimated over submission by 19,400 kWh per annum.

I checked the ballasts being applied and found a small number of discrepancies when compared to the standardised wattage table. These are detailed in the table below:

Lamp Type	RAMM Total Wattage	EA Standardised Wattage	Variance	Database Quantity	Estimated Annual effect on consumption kWh
150w High Pressure Sodium	270	168	102	1	428.15
150w High Pressure Sodium	278	168	110	1	461.73
250w Mercury Vapour	136	270	-134	1	-562.47
70w High Pressure Sodium	136	83	53	3	667.4
TerraLED Mini 18	83	21	62	2	780.74
Total estimated annual effect on submission					1,775.55

The incorrect capacities would result in an estimated over submission of 1,775.55 kWh per annum (based on 11.5 hours burn hours for 365 days). This is recorded as non-compliance below. is recorded as non-compliance below.

Non-compliance	Description		
Audit Ref: 3.1 With: 15.2 & 15.37(b)  From: entire audit period	Accuracy ratio is 93.6% indicating over submission of 19,400 kWh per annum. 8 items of load with the incorrect ballast applied indicating an estimated over submission of 1,775.55kWh per annum.  Combined estimated over submission of 21,175.55kWh. Potential impact: Medium Actual impact: Medium Audit history: None Controls: Moderate Breach risk rating: 4		
Audit risk rating	Rationale for audit risk rating		
Medium	Controls are rated as moderate, as they are sufficient to mitigate the risk most of the time, but there is room for improvement.  The combined variance of 21,175.55kWh, is considered medium therefore the audit risk rating is medium.		
Actions taken to resolve the issue		Completion date	Remedial action status
Genesis will request that the assets be accurately reported and administered in the RAMM database.		12/2018	Identified
Preventative actions taken to ensure no further issues will occur		Completion date	
Genesis will work with FNDC to help gain efficiencies in the RAMM database as required.		12/2018	

## 3.2 Volume Information Accuracy (Clause 15.2 & 15.37(c))

*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

Genesis reconciles this DUML load using the NST profile. Genesis derives the hours of operation information using a data logger. As detailed in **section 1.1**, the RAMM database extract provided was not complete. Approximately 600 items of load appear to have been missed out of the data extract provided but this was not discovered until the submission information was provided at the end of the audit process. Therefore, I was unable to confirm submission accuracy against the database extract but reviewed the monthly wattage report provided to Genesis and confirmed correct methodology was used to derive submission.

As discussed in **section 3.1**, the database and associated processes to derive submission were found to contain some inaccuracies and missing data. This is recorded as non-compliance below.

Non-compliance	Description		
Audit Ref: 3.2 With: 15.2 & 15.37(b) From: entire audit period	Accuracy ratio is 93.6% indicating over submission of 19,400 kWh per annum. 8 items of load with the incorrect ballast applied indicating an estimated over submission of 1,775.55kWh per annum. Combined estimated over submission of 21,175.55kWh. Potential impact: Medium Actual impact: Medium Audit history: None Controls: Moderate Breach risk rating: 4		
Audit risk rating	Rationale for audit risk rating		
Medium	Controls are rated as moderate, as they are sufficient to mitigate the risk most of the time but there is room for improvement. The combined variance of 21,175.55kWh, is considered medium therefore the audit risk rating is medium.		
Actions taken to resolve the issue		Completion date	Remedial action status
Genesis will request that the assets be accurately reported and administered in the RAMM database.		12/2018	Identified
Preventative actions taken to ensure no further issues will occur		Completion date	
Genesis will work with FNDC to help gain efficiencies in the RAMM database as required.		12/2018	

## 4. Conclusions

A RAMM database is held by FNDC, who is Genesis' customer. This database is hosted by RAMM Software Limited. FNDC engages McKay Ltd as their fieldwork and asset data capture service provider.

As detailed in **section 1.1**, the RAMM database extract provided was not complete. Approximately 600 items of load appear to have been missed out of the data extract provided but this was not discovered until the submission information was provided at the end of the audit process. The field audit of the data provided found some inaccurate data within the database used to calculate submissions.

This audit found four non-compliances and one recommendation was made. The future risk rating of 14 indicates that the next audit be completed in 12 months.

## 5. Genesis Comments

Genesis has yet to discuss the findings due the timing of the delivery of the audit report. However will work with FNDC/ McKay to help administer the database accurately.