

ELECTRICITY INDUSTRY PARTICIPATION CODE  
DISTRIBUTED UNMETERED LOAD AUDIT REPORT



For

NAPIER CITY COUNCIL AND  
GENESIS ENERGY

Prepared by: Steve Woods

Date audit commenced: 8 February 2024

Date audit report completed: 7 March 2024

Audit report due date: 10-Mar-24

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## EXECUTIVE SUMMARY

This audit of the **Napier City Council Unmetered Streetlights (NCC)** DUML database and processes was conducted at the request of **Genesis Energy 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.

A RAMM database is managed by NCC, and monthly reporting is provided to Genesis. The database is remotely hosted by thinkproject New Zealand Ltd. The database management is completed by NCC.

As was recorded in the last four audits, changes made in the field are not always being updated in the database, including discrepancies from the last audit. The last audit identified 28 discrepancies, but only 13 have been corrected. The 13 corrections were where the database recorded 24.1 watts but the label on the light recorded 24.

The database accuracy level is similar to the last audit and in absolute terms, total annual consumption is estimated to be 87,900 kWh lower than the DUML database indicates. This is outside the allowable +/- 5% variance threshold and is recorded as non-compliance.

As detailed in **section 2.2**, there are 157 items of load where the owner is recorded as private (this is an increase of one which was mistakenly excluded from the last report). 42 of these have an NCC ICP identifier assigned. All lights with a private owner are excluded from reconciliation. I have reviewed the last findings from the Unison Distributor audit report against the NCC private light list and found:

Volume of lights	Findings	Estimated kWh impact per annum
111	Confirmed as private or are part of a connection downstream of the Unison network	With EA or Unison to resolve
36	Council lights with an ICP recorded. Previously removed from reporting but now reinstated	16,294
10	NCC council lighting incorrectly recorded as private	4,109
<b>TOTAL</b>		<b>20,403</b>

The last audits noted four main issues. I have updated the status of these in the table below:

Issue	2024 Findings
The load for two ICPs is only on for half of the night (turned off at midnight), but submission occurs using the NST profile, which is a full night profile, therefore the load is spread over the whole night when it should not be.	Cleared, the DST profile is now being used for the half night lights.
ICP identifiers are linked to pole information not light information in RAMM, therefore PSL makes an adjustment in the monthly report to correct the ICP. Manual manipulation of the database output can lead to errors, and I strongly recommend the database is corrected and manual manipulation ceases as soon as possible.	Still existing for most of the audit period, but NCC is now sending the raw data which is not manipulated.

Issue	2024 Findings
Submission is not occurring for 157 private lights recorded in the database, 42 have NCC ICP identifiers.	Still existing for most of the audit period, but NCC is now sending the raw data which is not manipulated. Revisions will be required to correct the submissions to include the lights with NCC ICPs.
Discrepancies found in previous field audits not corrected in the database.	Still existing - I have repeated the last audit's recommendation for Genesis to engage with the council to review the change management process to ensure all additions or removals are captured from the correct date.

This audit found five non-compliance and makes two recommendations. The future risk rating of 33 indicates that the next audit be completed in three months. I have considered this in conjunction with Genesis' comments, and I recommend the next audit be completed in six months. This reflects that the ICPs have switched, and the new trader will need time to develop a plan to address the issues in this report.

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	In absolute terms, total annual consumption is estimated to be 87,900 kWh lower than the DUML database indicates resulting in over submission to the market.  46 lights incorrectly recorded as "PRIVATE" and excluded from submission resulting in a potential estimated under submission of 20,403 kWh.	Weak	High	9	Identified

Subject	Section	Clause	Non-Compliance	Controls	Audit Risk Rating	Breach Risk Rating	Remedial Action
ICP identifier and items of load	2.2	11(2)(a) and (aa) of Schedule 15.3	Ten items of load without an ICP which appear to be Council lights.  Six items of load with an ICP which appear to be private.	Weak	Low	3	Identified
All load recorded in database	2.5	11(2A) of Schedule 15.3	Errors are still present from previous audits.  Four additional lights were found in the field of 400 items of load sampled.	Weak	Low	3	Identified
Database accuracy	3.1	15.2 and 15.37B(b)	In absolute terms, total annual consumption is estimated to be 87,900 kWh lower than the DUML database indicates resulting in over submission to the market.  Incorrect ICP identifiers because they are against the pole not the light.  No ICPs for the WTU0331 NSP.  46 lights incorrectly recorded as "PRIVATE" and excluded from submission resulting in a potential estimated under submission of 20,403 kWh.  16 items of load with the incorrect ICP identifier recorded.	Weak	High	9	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)	In absolute terms, total annual consumption is estimated to be 87,900 kWh lower than the DUML database indicates resulting in over submission to the market.  46 lights incorrectly recorded as "PRIVATE" and excluded from submission resulting in a potential estimated under submission of 20,403 kWh.	Weak	High	9	Identified
Future Risk Rating						33	

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

## RECOMMENDATIONS

Subject	Section	Description
Revisions	2.2	Conduct revisions for the previous 14 months for the private lights which had the ICP removed from the database extract by Power Solutions.
Database accuracy	3.1	Review the change management process to ensure that all changes are recorded in RAMM for the correct date.

## 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

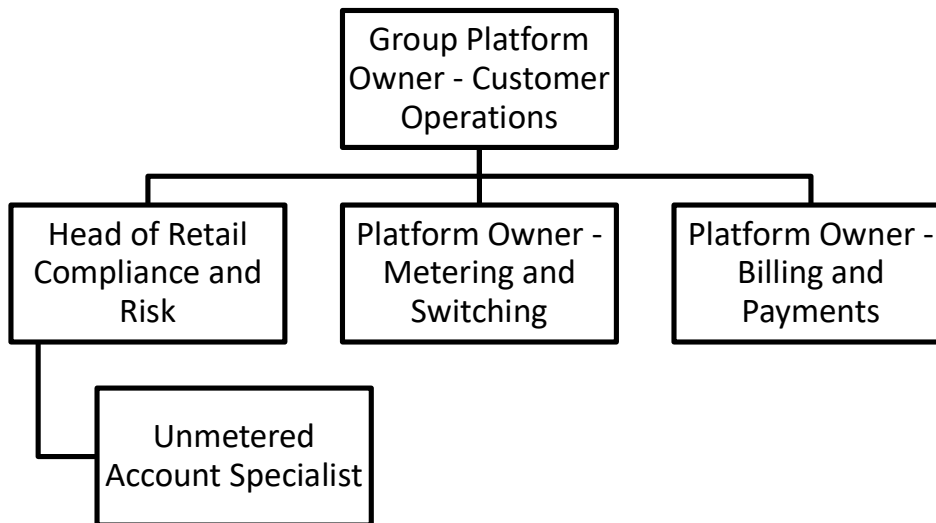
Section 11 of the Electricity Industry Act provides for the Electricity Authority to exempt any participant from compliance with all or any of the clauses.

#### Audit commentary

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

### 1.2. Structure of Organisation

Genesis provided the relevant organisational structure:



### 1.3. Persons involved in this audit

Auditor:

Name	Title
Steve Woods	Auditor

Other personnel assisting in this audit were:

Name	Title	Company
Alysha Majury	Unmetered Account Specialist	Genesis Energy
Ronan Galvin		Pope Electrical

### 1.4. Hardware and Software

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

Access to the database is secure by way of password protection.

Systems used by the trader to calculate submissions are assessed as part of their reconciliation participant audits.

### 1.5. Breaches or Breach Allegations

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

### 1.6. ICP Data

The table below shows the ICP details for November 2023.

ICP Number	Description	NSP	Profile	Number of items of load	Database wattage (watts)
0000939920HB224	Marine Parade Lighting	RDF0331	NST	19	1,840
0000939921HBE61	Carriageway Lighting	RDF0331	DST	162	14,317
0000939923HBEE4	Amenity Lighting	RDF0331	DST	84	4,862
0000939906HBEFE	Road Lighting	RDF0331	NST	7,558	404,007
0000939908HBD65	Amenity Lighting	RDF0331	NST	1,157	90,740
Total				8,980	515,766

All ICPs have RDF0331 as the NSP, but there should be ICPs for WTU0331 as well. This is recorded as non-compliance in **section 3.1**.



As reported in the last audit report there are 157 lights where the ICP is reported as “private”. 42 of these had one of the NCC unmetered load ICPs recorded, but the ICP identifier was being removed by Power Solutions prior to the database extract being provided to Genesis. This is discussed in **section 2.2**.

### 1.7. Authorisation Received

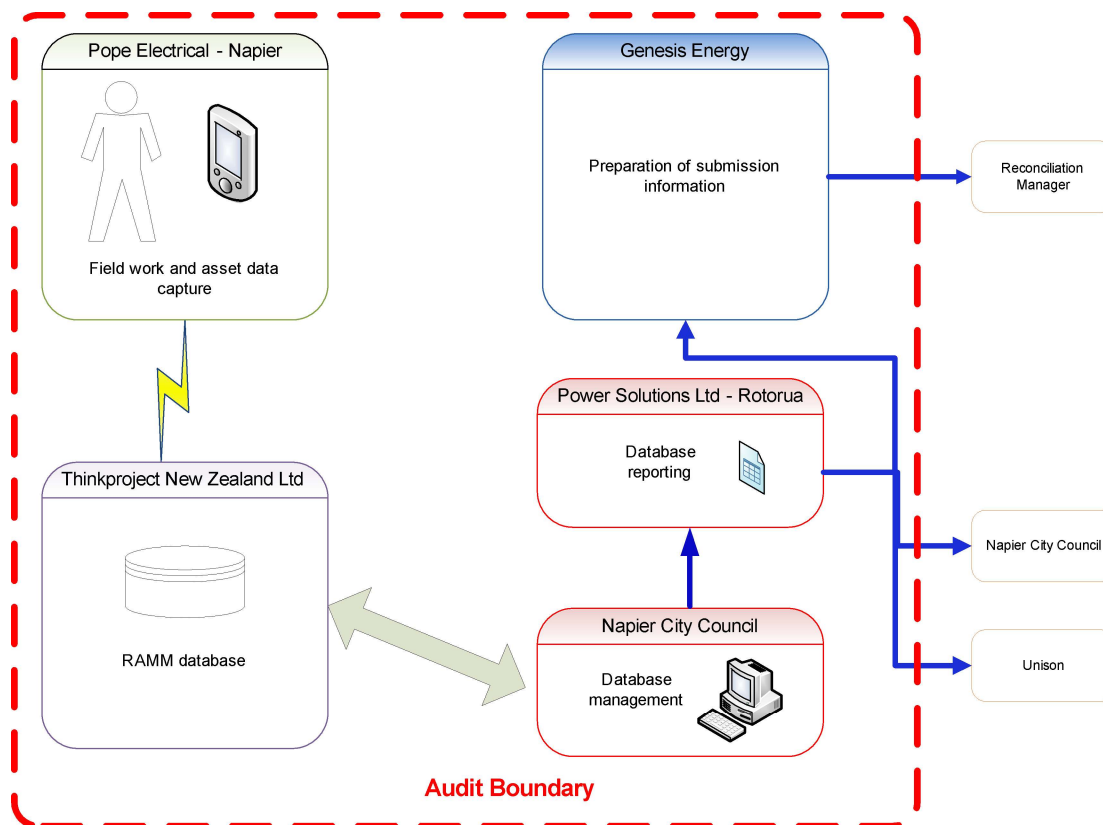
All information was provided directly by Genesis.

### 1.8. Scope of Audit

This audit of the Napier City Council Unmetered Streetlights (NCC) DUMML database and processes was conducted at the request of Genesis Energy 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 DUMML audits version 1.1.

The database is remotely hosted by thinkproject New Zealand Ltd. The fieldwork and asset data capture is conducted by Pope Electrical. NCC manage the database. Power Solutions was producing the monthly report, which was provided to NCC, Unison and Genesis. NCC is now providing the report directly to Genesis and Power Solutions are no longer preparing the report. I have left the diagram below the same because it is correct for most of the audit period. 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 carried out in Napier on 15<sup>th</sup> February 2024. A field audit was conducted of 400 items of load on 14<sup>th</sup> February 2024.

## 1.9. Summary of previous audit

I reviewed that last audit report undertaken by Steve Woods of Veritek Limited in March 2023. The current statuses of that audit's findings are shown in the tables below.

### Table of Non-Compliance

Subject	Section	Clause	Non-Compliance	Status
Deriving submission information	2.1	11(1) of Schedule 15.3	NST profile used for ICPs 0000939921HBE61 and 0000939923HBEE4 which are turned off at midnight.	Cleared
			In absolute terms, total annual consumption is estimated to be 137,000 kWh lower than the DUML database indicates resulting in over submission to the market.	Still existing
			12 items of load with the incorrect ballast recorded resulting in an estimated very minor estimated under submission of 198 kWh.	Still existing
			46 lights incorrectly recorded as "PRIVATE" and excluded from submission resulting in a potential estimated under submission of 20,403 kWh.	Still existing
ICP identifier and items of load	2.2	11(2)(a) and (aa) of Schedule 15.3	Nine items of load with no ICP and incorrectly recorded as "PRIVATE".	Still existing
All load recorded in database	2.5	11(2A) of Schedule 15.3	Errors are still present from previous audits. Three additional lights were found in the field of 372 items of load sampled.	Still existing
Database accuracy	3.1	15.2 and 15.37B(b)	In absolute terms, total annual consumption is estimated to be 137,000 kWh lower than the DUML database indicates resulting in over submission to the market.	Still existing
			Incorrect ICP identifiers because they are against the pole not the light.	Still existing
			46 lights incorrectly recorded as "PRIVATE" and excluded from submission resulting in a potential estimated under submission of 20,403 kWh.	Still existing
			12 items of load with the incorrect ballast recorded resulting in an estimated very minor estimated under submission of 198 kWh.	Still existing
			17 items of load with the incorrect ICP identifier recorded.	Still existing

Subject	Section	Clause	Non-Compliance	Status
Volume information accuracy	3.2	15.2 and 15.37B(c)	NST profile used for ICPs 0000939921HBE61 and 0000939923HBEE4 which are turned off at midnight.	Cleared
			In absolute terms, total annual consumption is estimated to be 137,000 kWh lower than the DUML database indicates resulting in over submission to the market.	Still existing
			12 items of load with the incorrect ballast recorded resulting in an estimated very minor estimated under submission of 198 kWh.	Still existing
			46 lights incorrectly recorded as "PRIVATE" and excluded from submission resulting in a potential estimated under submission of 20,403 kWh.	Still existing

## Table of Recommendations

Subject	Section	Recommendation	Status
Deriving submission information	2.1	Apply for profile to address the incorrect allocation of volume associated with the "half night" lights.	Cleared
Database accuracy	3.1	Review the change management process to ensure that all changes are recorded in RAMM for the correct date.	Not adopted

### 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

Genesis 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.

#### 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

Genesis reconciles this DUML load using the NST profile for lights on all night and the DST profile for lights on for part of the night. The use of the DST profile clears the previous non-compliance for using the “full night” on/off times rather than the actual on/off times. I checked the submissions for both profiles and confirm they match the database kW multiplied by the relevant “on” hours.

As was recorded in the last four audits, changes made in the field are not always being updated in the database, including discrepancies from the last audit. The last audit identified 28 discrepancies, but only 13 have been corrected. The 13 corrections were where the database recorded 24.1 watts but the label on the light recorded 24.

The database accuracy level is similar to the last audit and in absolute terms, total annual consumption is estimated to be 87,900 kWh lower than the DUML database indicates. This is outside the allowable +/- 5% variance threshold and is recorded as non-compliance below.

As detailed in **section 2.2**, there are 157 items of load where the owner is recorded as private (this is an increase of one which was mistakenly excluded from the last report). 42 of these have an NCC ICP identifier assigned. All lights with a private owner are excluded from reconciliation. I have reviewed the last findings from the Unison Distributor audit report against the NCC private light list and found:

Volume of lights	Findings	Estimated kWh impact per annum
111	Confirmed as private or are part of a connection downstream of the Unison network	With EA or Unison to resolve
36	Council lights with an ICP recorded. Previously removed from reporting but now reinstated	16,294
10	NCC council lighting incorrectly recorded as private	4,109
	<b>TOTAL</b>	<b>20,403</b>

These findings have been passed to Genesis to work with NCC to resolve. The potential estimated under submission is recorded as non-compliance in **sections 2.1, 3.1** and **3.2**.

Database reporting is provided and includes changes made at a daily level and therefore meets compliance with this code requirement.

## Audit outcome

Non-compliant

Non-compliance	Description		
<p>Audit Ref: 2.1</p> <p>With: Clause 11(1) of Schedule 15.3</p> <p>From: 01-Apr-23</p> <p>To: 16-Feb-24</p>	<p>In absolute terms, total annual consumption is estimated to be 87,900 kWh lower than the DUML database indicates resulting in over submission to the market.</p> <p>46 lights incorrectly recorded as "PRIVATE" and excluded from submission resulting in a potential estimated under submission of 20,403 kWh.</p> <p>Potential impact: High</p> <p>Actual impact: High</p> <p>Audit history: Multiple times</p> <p>Controls: Weak</p> <p>Breach risk rating: 9</p>		
Audit risk rating	Rationale for audit risk rating		
High	<p>The controls are rated as weak as the field findings indicate that the database management processes have not improved during the audit period.</p> <p>The impact is assessed to high due to the potential impact on settlement accuracy.</p>		
Actions taken to resolve the issue		Completion date	Remedial action status
<p>A recent change in providing data extracts has recently taken place (December 2023) and Genesis has started working with POPE who have been made aware of the accuracy issues and changes not updated.</p> <p>Genesis will continue to work with POPE to increase the accuracy of the database.</p>		Continuous improvement	Identified
Preventative actions taken to ensure no further issues will occur		Completion date	
<p>A recent change in providing data extracts has recently taken place (December 2023) and Genesis has started working with POPE who have been made aware of the accuracy issues and changes not updated.</p> <p>Genesis will continue to work with POPE to increase the accuracy of the database.</p>		Continuous improvement	

## 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 an ICP is recorded against each item of load.

All ICPs have RDF0331 as the NSP, but there should be ICPs for WTU0331 as well. This is recorded as non-compliance in **section 3.1**.

### Audit commentary

As reported for many years now, there are 157 items of load where the owner is recorded as private. 42 of these have an NCC ICP identifier assigned but this was being removed by Power Solutions prior to the database extract being provided to Genesis. NCC has been providing the report directly to Genesis since December 2023, and the ICP identifiers are correctly assigned for these 42 lights. I recommend Genesis conducts revisions for the previous 14 months. The total under submission has been approximately 22,500 kWh per annum.

Description	Recommendation	Audited party comment	Remedial action
Private lights	Conduct revisions for the previous 14 months for the private lights which had the ICP removed from the database extract by Power Solutions.	Genesis is investigating the discrepancies and are working on correcting the previous 14-month submissions.	Investigating

All lights with a private owner are excluded from reconciliation. I have repeated the findings from the previous audit, where I had reviewed the last findings from the Unison Distributor audit report against the lights provided and found:

Volume of lights	Findings	Estimated kWh impact per annum
111	Confirmed as private or are part of a connection downstream of the Unison network	With EA or Unison to resolve
36	Suspected to have been originally requested by council and subsequently changed to "private"	16,294
10	NCC council lighting incorrectly recorded as private	4,109
<b>TOTAL</b>		<b>20,403</b>

These findings were provided to Genesis during the previous two audits, but most of the necessary corrections were not made. The potential estimated under submission is recorded as non-compliance in **sections 2.1, 3.1 and 3.2**.

In addition to the 42 items of load where the ICP was being removed by Power Solutions, there are ten items of load without an ICP which appear to be Council lights, not private. There are also six items of load with an ICP which appear to be private and should not have an ICP.

The accuracy of the ICPs allocated is discussed in **section 3.1**.

### Audit outcome

Non-compliant

Non-compliance	Description		
Audit Ref: 2.2 With: Clause 11(2)(a) and (aa) of Schedule 15.3 From: 01-Jan-23 To: 08-Feb-24	Ten items of load without an ICP which appear to be Council lights. Six items of load with an ICP which appear to be private. Potential impact: Low Actual impact: Low Audit history: Multiple times Controls: Weak Breach risk rating: 3		
Audit risk rating	Rationale for audit risk rating		
<b>Low</b>	The controls are rated as weak because these issues have been present for several years. The audit risk rating is low because there are only 16 items of load with incorrect ICPs. It was previously thought many more did not have ICPs, but it's now evident the ICP identifiers were being removed as part of the reporting process.		
Actions taken to resolve the issue		Completion date	Remedial action status
A recent change in providing data extracts has recently taken place (December 2023) and Genesis has started working with POPE who have been made aware of the accuracy issues and changes not updated. Genesis will continue to work with POPE to increase the accuracy of the database.		Continuous improvement	Identified
Preventative actions taken to ensure no further issues will occur		Completion date	
A recent change in providing data extracts has recently taken place (December 2023) and Genesis has started working with POPE who have been made aware of the accuracy issues and changes not updated. Genesis will continue to work with POPE to increase the accuracy of the database.		Continuous improvement	

### 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, displacement value and pole numbers and Global Positioning System (GPS) coordinates for the majority of items of load, and users in the office and field can view these locations on a mapping system.

There are 191 items of load that do not have GPS co-ordinates, but all have a road name and displacement value which enable these to be located.

#### **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**

The database contains two records for wattage, firstly the lamp wattage and secondly the gear wattage, which represents ballast losses. Analysis of the database found no blank records and no discrepancies.

#### **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 DUMML for which it is responsible is recorded in this database.*

#### **Audit observation**

A field audit was undertaken of 400 items of load on 14<sup>th</sup> February 2024. The discrepancies found in the field are summarised below. A detailed report has been provided to Genesis and Pope Electrical.

#### **Audit commentary**

Field discrepancies identified were:

<b>Discrepancy</b>	<b>Quantity</b>
Lights in the field not in the database	4
Lights in the database not in the field	3



Incorrect wattage	17
-------------------	----

Four additional lights were found in the field. This is recorded as non-compliance.

The accuracy of the database is detailed 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-Apr-23 To: 16-Feb-24	Four additional lights were found in the field of 400 items of load sampled. Errors are still present from previous audits. Potential impact: Medium Actual impact: Low Audit history: Multiple times previously Controls: Weak Breach risk rating: 3		
Audit risk rating	Rationale for audit risk rating		
<b>Low</b>	The controls are recorded as weak as the processes in place do not ensure that the changes in the database are updated. The impact is assessed to be low based on number of additional lights found in the field in comparison to the overall number of lights checked.		
Actions taken to resolve the issue		Completion date	Remedial action status
A recent change in providing data extracts has recently taken place (December 2023) and Genesis has started working with POPE who have been made aware of the accuracy issues and changes not updated. Genesis will continue to work with POPE to increase the accuracy of the database.		Continuous improvement	Identified
Preventative actions taken to ensure no further issues will occur		Completion date	
A recent change in providing data extracts has recently taken place (December 2023) and Genesis has started working with POPE who have been made aware of the accuracy issues and changes not updated. Genesis will continue to work with POPE to increase the accuracy of the database.		Continuous improvement	

## 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 DUMML 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

The RAMM database functionality achieves compliance with the code.

### 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 DUMML 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	Napier City Council streetlights
Strata	The database contains items of load in the Napier City Council area. The processes for the management of items of load are the same, but I decided to place the items of load into four strata, as follows: <ul style="list-style-type: none"> <li>• A-EI,</li> <li>• Em-La,</li> <li>• Le-Pa, and</li> <li>• Pe-Y.</li> </ul>
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 57 sub-units.
Total items of load	400 items of load were checked.

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

The change management process and timeliness of database updates was evaluated.

##### Audit commentary

##### Database accuracy based on the field audit

A field audit was conducted of a statistical sample of 400 items of load. The “database auditing tool” was used to analyse the results, which are shown in the table below.

Result	Percentage	Comments
The point estimate of R	96.0	Wattage from survey is lower than the database wattage by 4.0%
R <sub>L</sub>	89.3	With a 95% level of confidence, it can be concluded that the error could be between- 0.4% and -10.7%
R <sub>H</sub>	99.6	

These results were categorised in accordance with the “Distributed Unmetered Load Statistical Sampling Audit Guideline”, effective from 1 February 2019 and the table below shows that Scenario C (detailed below) applies.

The conclusion from Scenario C is that the variability of the sample results across the strata could mean that the true wattage (installed in the field) could be between 0.4% lower to 10.7% lower than the wattage recorded in the DUMML database. Non-compliance is recorded because the potential error is greater than 5.0%.

In absolute terms the installed capacity is estimated to be 21 kW lower than the database indicates.

There is a 95% level of confidence that the installed capacity is between 2 kW and 55 kW lower than the database.

In absolute terms, total annual consumption is estimated to be 87,900 kWh lower than the DUMML database indicates.

There is a 95% level of confidence that the annual consumption is between 7,900 kWh p.a. and 235,500 kWh p.a. lower than the database indicates.

Scenario	Description
<b>A - Good accuracy, good precision</b>	This scenario applies if: (a) $R_H$ is less than 1.05; and (b) $R_L$ is greater than 0.95  The conclusion from this scenario is that: (a) the best available estimate indicates that the database is accurate within +/- 5 %; and (b) this is the best outcome.
<b>B - Poor accuracy, demonstrated with statistical significance</b>	This scenario applies if: (a) the point estimate of $R$ is less than 0.95 or greater than 1.05 (b) as a result, either $R_L$ is less than 0.95 or $R_H$ is greater than 1.05.  There is evidence to support this finding. In statistical terms, the inaccuracy is statistically significant at the 95% level
<b>C - Poor precision</b>	This scenario applies if: (a) the point estimate of $R$ is between 0.95 and 1.05 (b) $R_L$ is less than 0.95 and/or $R_H$ is greater than 1.05  The conclusion from this scenario is that the best available estimate is not precise enough to conclude that the database is accurate within +/- 5 %

#### ICP Accuracy including private lights

ICP identifiers are still linked to pole information not light information, therefore PSL had been making an adjustment in the monthly report to correct the ICP. This is recorded as non-compliance below, however, the adjustment is no longer occurring now that the database report is being provided directly by NCC.

As reported in the last few audits, there are 157 items of load where the owner is recorded as private. 42 of these have an NCC ICP identifier assigned. All lights with a private owner are excluded from reconciliation regardless of the ICP identifier recorded. I have reviewed the last findings from the Unison Distributor audit report against the lights provided and found:

Volume of lights	Findings	Estimated kWh impact per annum
111	Confirmed as private or are part of a connection downstream of the Unison network	With EA or Unison to resolve
36	Council lights with an ICP recorded. Previously removed from reporting but now reinstated	16,294
10	NCC council lighting incorrectly recorded as private	4,109
<b>TOTAL</b>		<b>20,403</b>

As detailed above, 111 of the lights are in rest homes, council flats or commercial premises and could be the responsibility of the owner of the customer network, depending on how they are connected. If they are connected to a customer network, then there is an issue with how these are recorded as they are not connected to Unison network so cannot be created as unmetered load and do not belong to the council. This will be raised as an issue in Unison’s next audit but is not the responsibility of Genesis in relation to NCC. The remaining 46 lights have been passed to Genesis to work with NCC to resolve. The potential estimated under submission is recorded as non-compliance below and in **sections 2.1** and **3.2**.

In regard to all the items of load expected to be associated with an ICP, I found ten items of load which belong to NCC but where the ICP is recorded as “PRIVATE” and six items of private load with a NCC ICP incorrectly recorded against them. This is recorded as non-compliance below and in **section 2.2**.

All ICPs have RDF0331 as the NSP, but there should be ICPs for WTU0331 as well. This is recorded as non-compliance.

#### **Wattage and ballast accuracy findings**

The database contains two records for wattage, firstly the lamp wattage and secondly the gear wattage, which represents ballast losses. Analysis of the database found no blank records and the discrepancies from the previous audit have been corrected.

#### **Change management process findings**

The database is managed by NCC. Pope Electrical conduct the field work.

As was found in the last two audits, we were unable to meet with the council to discuss how the change management processes are being managed. The field audit results indicate that not all changes/new connections in the field are being updated in the database. I repeat the last audit’s recommendation that the change management process is reviewed to ensure all changes are captured for the correct date.

Description	Recommendation	Audited party comment	Remedial action
Database Accuracy	Review the change management process to ensure that all changes are recorded in RAMM for the correct date.	A recent change in providing data extracts has recently taken place (December 2023) and Genesis has started working with POPE who have been made aware of the accuracy issues and changes not updated.  Genesis will continue to work with POPE to increase the accuracy of the database.	Investigating

**Audit outcome**

Non-compliant

Non-compliance	Description	
<p>Audit Ref: 3.1 With: Clause 15.2 and 15.37B(b)</p> <p>From: 01-Apr-23 To: 16-Feb-24</p>	<p>In absolute terms, total annual consumption is estimated to be 87,900 kWh lower than the DUML database indicates resulting in over submission to the market.</p> <p>Incorrect ICP identifiers because they are against the pole not the light.</p> <p>No ICPs for the WTU0331 NSP.</p> <p>46 lights incorrectly recorded as "PRIVATE" and excluded from submission resulting in a potential estimated under submission of 20,403 kWh.</p> <p>16 items of load with the incorrect ICP identifier recorded.</p> <p>Potential impact: High Actual impact: High Audit history: Three times previously</p> <p>Controls: Weak Breach risk rating: 9</p>	
Audit risk rating	Rationale for audit risk rating	
<b>High</b>	<p>The controls are rated as weak as the field findings indicate that the database management processes do not track changes made in the field especially in relation to the addition of new lights to the database.</p> <p>The impact on settlement and participants is assessed to be high.</p>	
Actions taken to resolve the issue	Completion date	Remedial action status
<p>A recent change in providing data extracts has recently taken place (December 2023) and Genesis has started working with POPE who have been made aware of the accuracy issues and changes not updated.</p> <p>Genesis will continue to work with POPE to increase the accuracy of the database.</p>	Continuous improvement	Identified

Preventative actions taken to ensure no further issues will occur	Completion date
<p>A recent change in providing data extracts has recently taken place (December 2023) and Genesis has started working with POPE who have been made aware of the accuracy issues and changes not updated.</p> <p>Genesis will continue to work with POPE to increase the accuracy of the database.</p>	Continuous improvement

### 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

Genesis reconciles this DUML load using the NST profile for lights on all night and the DST profile for lights on for part of the night. The use of the DST profile clears the previous non-compliance for using the “full night” on/off times rather than the actual on/off times. I checked the submissions for both profiles and confirm they match the database kW multiplied by the relevant “on” hours.

As was recorded in the last four audits, changes made in the field are not always being updated in the database, including discrepancies from the last audit. The last audit identified 28 discrepancies, but only 13 have been corrected. The 13 corrections were where the database recorded 24.1 watts but the label on the light recorded 24.

The database accuracy level is similar to the last audit and in absolute terms, total annual consumption is estimated to be 87,900 kWh lower than the DUML database indicates. This is outside the allowable +/- 5% variance threshold and is recorded as non-compliance below.

As detailed in **section 2.2**, there are 157 items of load where the owner is recorded as private (this is an increase of one which was mistakenly excluded from the last report). 42 of these have an NCC ICP identifier assigned. All lights with a private owner are excluded from reconciliation. I have reviewed the last findings from the Unison Distributor audit report against the NCC private light list and found:

Volume of lights	Findings	Estimated kWh impact per annum
111	Confirmed as private or are part of a connection downstream of the Unison network	With EA or Unison to resolve

36	Council lights with an ICP recorded. Previously removed from reporting but now reinstated	16,294
10	NCC council lighting incorrectly recorded as private	4,109
<b>TOTAL</b>		<b>20,403</b>

These findings have been passed to Genesis to work with NCC to resolve these. The potential estimated under submission is recorded as non-compliance in **sections 2.1, 3.1 and 3.2**.

Database reporting is provided and includes changes made at a daily level and therefore meets compliance with this code requirement.

**Audit outcome**

Non-compliant

Non-compliance	Description	
Audit Ref: 3.2 With: Clause 15.2 and 15.37B(c)  From: 01-Apr-23 To: 16-Feb-24	In absolute terms, total annual consumption is estimated to be 87,900 kWh lower than the DUMML database indicates resulting in over submission to the market.  46 lights incorrectly recorded as "PRIVATE" and excluded from submission resulting in a potential estimated under submission of 20,403 kWh.  Potential impact: High  Actual impact: High  Audit history: Multiple times  Controls: Weak  Breach risk rating: 9	
Audit risk rating	Rationale for audit risk rating	
<b>High</b>	The controls are rated as weak as the field findings indicate that the database management processes have not improved during the audit period.  The impact is assessed to high due to the potential impact on settlement accuracy.	
Actions taken to resolve the issue	Completion date	Remedial action status
A recent change in providing data extracts has recently taken place (December 2023) and Genesis has started working with POPE who have been made aware of the accuracy issues and changes not updated.  Genesis will continue to work with POPE to increase the accuracy of the database.	Continuous improvement	Identified
Preventative actions taken to ensure no further issues will occur	Completion date	



<p>A recent change in providing data extracts has recently taken place (December 2023) and Genesis has started working with POPE who have been made aware of the accuracy issues and changes not updated.</p> <p>Genesis will continue to work with POPE to increase the accuracy of the database.</p>	Continuous improvement	
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## CONCLUSION

A RAMM database is managed by NCC, and monthly reporting is provided to Genesis. The database is remotely hosted by thinkproject New Zealand Ltd. The database management is completed by NCC.

As was recorded in the last four audits, changes made in the field are not always being updated in the database, including discrepancies from the last audit. The last audit identified 28 discrepancies, but only 13 have been corrected. The 13 corrections were where the database recorded 24.1 watts but the label on the light recorded 24.

The database accuracy level is similar to the last audit and in absolute terms, total annual consumption is estimated to be 87,900 kWh lower than the DUML database indicates. This is outside the allowable +/- 5% variance threshold and is recorded as non-compliance below.

As detailed in **section 2.2**, there are 157 items of load where the owner is recorded as private (this is an increase of one which was mistakenly excluded from the last report). 42 of these have an NCC ICP identifier assigned. All lights with a private owner are excluded from reconciliation. I have reviewed the last findings from the Unison Distributor audit report against the NCC private light list and found:

Volume of lights	Findings	Estimated kWh impact per annum
111	Confirmed as private or are part of a connection downstream of the Unison network	With EA or Unison to resolve
36	Council lights with an ICP recorded. Previously removed from reporting but now reinstated	16,294
10	NCC council lighting incorrectly recorded as private	4,109
<b>TOTAL</b>		<b>20,403</b>

The last audits noted four main issues. I have updated the status of these in the table below:

Issue	2024 Findings
The load for two ICPs is only on for half of the night (turned off at midnight), but submission occurs using the NST profile, which is a full night profile, therefore the load is spread over the whole night when it should not be.	Cleared, the DST profile is now being used for the half night lights.
ICP identifiers are linked to pole information not light information in RAMM, therefore PSL makes an adjustment in the monthly report to correct the ICP. Manual manipulation of the database output can lead to errors, and I strongly recommend the database is corrected and manual manipulation ceases as soon as possible.	Still existing for most of the audit period, but NCC is now sending the raw data which is not manipulated.
Submission is not occurring for 157 private lights recorded in the database, 42 have NCC ICP identifiers.	Still existing for most of the audit period, but NCC is now sending the raw data which is not manipulated. Revisions will be required to correct the submissions to include the lights with NCC ICPs.

Issue	2024 Findings
Discrepancies found in previous field audits not corrected in the database.	Still existing - I have repeated the last audit's recommendation for Genesis to engage with the council to review the change management process to ensure all additions or removals are captured from the correct date.

This audit found five non-compliance and makes two recommendations. The future risk rating of 33 indicates that the next audit be completed in three months. I have considered this in conjunction with Genesis' comments, and I recommend the next audit be completed in six months. This reflects that the ICPs have switched, and the new trader will need time to develop a plan to address the issues in this report.

## PARTICIPANT RESPONSE

A recent change in providing data extracts has recently taken place (December 2023) and Genesis has started working with POPE who have been made aware of the accuracy issues and changes not updated.

Genesis was working on building its relationship with POPE to increase the accuracy of the database.

The ICP's have now switched out to an alternative retailer however Genesis does agree with the findings.