VERITEK

Electricity Industry Participation Code Audit Report

For

Genesis Energy Limited

Whangarei District Council Unmetered Streetlights Distributed Unmetered Load

Prepared by Rebecca Elliot – Veritek Ltd

Date of Audit: 13/03/18

Date Audit Report Complete: 23/05/18

Executive Summary

This audit of the Whangarei District Council Unmetered Streetlights (WDC) 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, which became effective on 1 June 2017.

The audit found four non-compliances and makes three recommendations.

This DUML load comprises of 13 ICPs. For 11 ICPs Genesis reconciles this load using the unmetered load details recorded on the registry by the distributor Northpower. It is unclear if these ICPs are standard unmetered load (single circuit connections) or are distributed unmetered load ICPs (multiple items of load connected across multiple circuits). Additionally, I was unable to determine which kWh figure is the correct figure as there is no database provided for these ICPs. I recommend Genesis liaise with Northpower to resolve this.

ICPs 0000545284NRF73 and 0000545289NR028 are reconciled using the streetlight database held by Northpower (this is indicated by the use of the NST profile). This is maintained for the purpose of billing line charges and not for submission purposes. The field audit of 310 items of load found 94 differences resulting in the field survey wattage being 75.2% of the database wattage resulting in an estimated over submission of 714,900 kWh per annum kWh per annum. This was due to the replacement of existing fittings with new LED fittings, but the replacements have not been updated in the database as there is no process to update Northpower of changes in the field. In addition to this, examination of the database found there is also a discrepancy in the gear wattage for 2,722 items of load. This is resulting in an estimated over submission of 149,555.47 kWh per annum. The combined over submission is 864,455 kWh per annum.

I repeat the recommendation from the last audit that Whangarei District Council's RAMM database be investigated to be used for submission as this is more likely to be accurate and up to date.

The future risk rating of 44 indicates that the next audit be completed in three months. I have considered this result in conjunction with Genesis's responses and I agree with this recommendation as it will provide a check of the quality of the RAMM data now being used for submission.

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 information	2.1	Clause 11.1 of schedule 15.3	Accuracy ratio is 75.2% indicating over submission of 714,900 kWh per annum. 2,722 items of load with the incorrect ballast applied indicating under submission of 149,555.5 kWh per annum. Combined value of 864,456 kWh under submitted per annum.	None	High	12	Investigating
Tracking of Load Changes	2.6	Clause 11(3) of Schedule 15.3	Tracking of load change not carried out, there is no direct mechanism for updates to be recorded.	None	Medium	8	Investigating
Database Accuracy	3.1	Clause 15.2 & 15.37(b)	Accuracy ratio is 75.2% indicating over submission of 714,900 kWh per annum. 2,722 items of load with the incorrect ballast applied indicating under submission of 149,555.5 kWh per annum. Combined value of 864,456 kWh under submitted per annum.	None	High	12	Investigating
Volume Information Accuracy	3.2	Clause 15.2 & 15.37(c)	2722 items of permanent load have the incorrect ballast applied indicating over submission of 149555.5 kWh per annum.	None	High	12	Investigating
					Future Risk Rating	44	
					Indicative Audit Frequency	3 months	

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

Table of Recommendations

Subject	Section	Recommendation	Description
Deriving submission information	2.1	Clause 11(1) of schedule 15.3	Liaise with Northpower to determine if the UNM reconciled ICPs are standard UNM load and confirm the correct daily kWh figure.
			Investigate using WDC RAMM database to derive submission from.

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
Craig Young	Excellence Leader - Reconciliation	Genesis
Grace Hawken	Technical Specialist - Reconciliation Team	Genesis
Peter Smith	Retail Billing Accountant	Northpower

Contents

1. Administrative

1.1 List of ICPs

The following ICPs are relevant to the scope of this audit:

ICP	Description	Profile	NSP	No. of items of load
0000545284NRF73	Streetlights; Whangarei D C; BRB0331 RAMA ROAD, MARSDEN POINT, RUAKAKA 0116	NST	BRB0331	735
0000545289NR028	STREETLIGHTS; Whangarei D C; MPE1101 PUKEATUA ROAD, MAUNGATAPERE 0170	NST	MPE1101	4,650
0000500171NRD9D	TOILET LIGHTS; WAIPU TOWNSHIP, THE CENTRE, WAIPU	UNM	BRB0331	Not detailed in the database extract provided
0000546964NR427	Pay & Display Parking Machine	UNM	MPE1101	Not detailed in the database extract provided
0000565137NRBCF	PAY & DISPLAY PARKING MACHINE, CAMERON STREET, WHANGAREI 0110	UNM	MPE1101	Not detailed in the database extract provided
0000565136NR78A	BRIDGE CONTROL SIGN, PORT END, PORT ROAD, WHANGAREI 0110	UNM	MPE1101	Not detailed in the database extract provided
0000565135NRB4A	BRIDGE CONTROL SIGN, ONERAHI END, RIVERSIDE DRIVE, RIVERSIDE, WHANGAREI	UNM	MPE1101	Not detailed in the database extract provided
0000565134NR70F	BRIDGE CONTROL SIGN, OKARA DRIVE, WHANGAREI 0110	UNM	MPE1101	Not detailed in the database extract provided
0000565133NRAC5	BRIDGE CONTROL SIGN; TOWN END, RIVERSIDE DRIVE, RIVERSIDE, WHANGAREI 0112	UNM	MPE1101	Not detailed in the database extract provided
0000551755NR510	WESTERN HILLS DRIVE, KENSINGTON, WHANGAREI 0112	UNM	MPE1101	Not detailed in the database extract provided
0000546110NR07D	6 CAR PARK PAY & DISPLAY MACHINE 100W EACH, ROBERT STREET, WHANGAREI 0110	UNM	MPE1101	Not detailed in the database extract provided
0000546111NRC38	CAR PARK PAY & DISPLAY MACHINE 100W TOTAL, VINE STREET, WHANGAREI 0110	UNM	MPE1101	Not detailed in the database extract provided

ICP	Description	Profile	NSP	No. of items of load
0000546112NR0F8	CARPARK PAY & DISPLAY MACHINES 100W TOTAL, BANK STREET, WHANGAREI 0110	UNM	MPE1101	Not detailed in the database extract provided
			TOTAL items of load	5399

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

Northpower is considered an agent, Genesis clearly understands that the use of agents does not release them from their compliance obligations.

1.4 Hardware and Software

The registry is used to determine the unmetered load for 11 of the 13 ICPs. For the remaining two ICPs the kW volume is derived from the streetlight data held in Northpower's SQL database which has an Access interface.

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 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 lighting audit.

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

Audit outcome
Compliant

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 street lighting audit.

Audit Commentary
The audit report for this DUML database is separate from other audit reports.

Audit outcome
Compliant

1.8 Summary of Previous Audit

Genesis provided a copy of the last audit report undertaken by Rebecca Elliot of Veritek Limited in May 2017 as part of Genesis' 2017 reconciliation participant audit. This audit wasn't submitted due to the audit regime change that occurred on June 1st however 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	Submission information too high by approx. 238,593 kWh per annum.	Still existing
Location of Each Item of Load	2.2.2	11(2)(b) of Schedule 15.3	Incorrect location details for lights in Totara Parklands.	Cleared
Capacity of load	2.2.4	11(2)(d) of schedule 15.3	Gear wattage not in the database and incorrect figures are used in the report to Genesis.	Still Existing
Tracking of load changes	2.3	11(3) of schedule 15.	25 database errors found affecting submission accuracy.	Still Existing

Table of Recommendations

Subject	Section	Clause	Recommendation for improvement	Status
Data Transmission	1.9	20 of schedule 15.2	Add password protection to wattage report.	Still Existing

Subject	Section	Clause	Recommendation for improvement	Status
Database Contents	2.2	11(2) of schedule 15.3	Investigate using WDC RAMM database for submission purposes.	Still Existing
Tracking of Load Change	2.3	11(3) of schedule 15.	Check the management of load change processes in place when investigating using the WDC RAMM database for submission purposes.	Still Existing

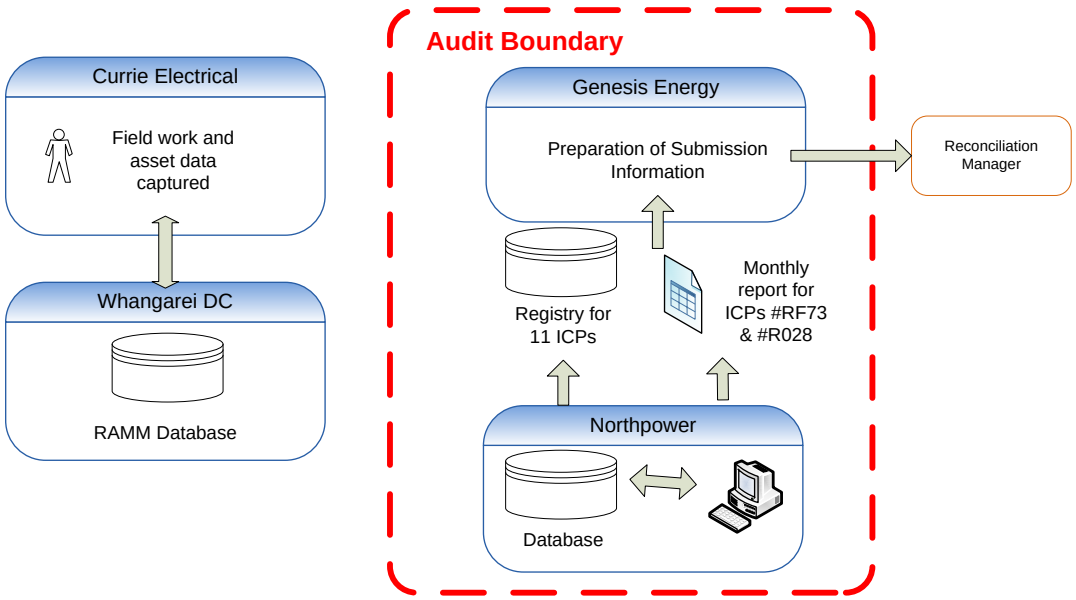
1.9 Scope of Audit

This audit of the Whangarei District Council Unmetered Streetlights DUML database and processes was conducted at the request of 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.

Whangarei District Council Unmetered Streetlights are located on the Northpower network. Genesis reconciles this load using the unmetered load details recorded on the registry by the distributor Northpower for all but two ICPs. ICPs 0000545284NRF73 and 0000545289NR028 are reconciled using the streetlight database held by Northpower (this is indicated by the use of the NST profile). This is maintained for the purpose of billing line charges and not for submission purposes. Northpower provide a monthly report for the two ICPs indicated above.

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 of 310 lights using the statistical sampling methodology on 13/3/18. The field selection included five population groups:

- urban
- rural
- amenity
- toilet blocks
- new.

1.10 Data Transmission (Clause 20 of Schedule 15.2)

The reporting from Northpower to Genesis for the two ICPs is by way of email attachment of a summary report.

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 and the application of profiles was checked. The database was checked for accuracy.

Audit Commentary
Genesis reconciles this load using the unmetered load details recorded on the registry by the distributor Northpower for all but two ICPs. The figures submitted for the month of January 2018 were checked against the registry figure for those reconciled using the registry data. The table below details the findings of the 11 ICPs reconciled using the registry data:

ICP	Distributor UML Registry Description	Distributor registry calculated daily kWh	Genesis daily kWh January 2018	Daily difference	Annualised difference
0000500171NRD9D	Registry data - 2.10kW:ENG:Security Light	?	2.2	Unable to calculate	
0000546964NR427	Registry data - 1.30kW:24: Monitoring Equ	31.2	1.4	29.8	10,877
0000565137NRBCF	Registry data - 0.08kW; 24 hour; Bridge Sign	1.92	1.92	0	0
0000565136NR78A	Registry data - 0.08kW; 24 hour; Bridge Sign	1.92	1.92	0	0
0000565135NRB4A	Registry data - 1.92kW:24: Warning Device	46.08	1.92	44.16	16,118.4
0000565134NR70F	Registry data - 0.08kW; 24 hour; Bridge Sign	1.92	1.92	0	0
0000565133NRAC5	Registry data - 1.92kW:24: Warning Device	46.08	1.92	44.16	16,118.4
0000551755NR510	Registry data - 0.079kW: 24 hour: Monitoring Equipment	1.9	1.9	0	0
0000546110NR07D	Registry data - 15.80kW:24: Monitoring Equ	379.2	15.8	363.4	132,641
0000546111NRC38	Registry data - 2.60kW:24: Monitoring Equ	62.4	2.7	59.7	21,790.5
0000546112NR0F8	Registry data - 2.60kW:24: Monitoring Equ	62.4	2.7	59.7	21,790.5
	Total annualised kWh variance				219,335.8

It is unclear if the above 11 ICPs are standard unmetered load (single circuit connections) or are distributed unmetered load ICPs (multiple items of load connected across multiple circuits). Additionally, I am unable to determine which kWh figure is the correct figure as there is no database provided for these ICPs. I recommend Genesis liaise with Northpower to resolve this. As I am unable to determine the correct load for these ICPs I cannot confirm compliance in relation to these ICPs.

Recommendation	Description	Audited party comment	Remedial action
Regarding: Clause 11(1) of schedule 15.3	Liaise with Northpower to determine if the UNM reconciled ICPs are standard UNM load and confirm the correct daily kWh figure.	Genesis Energy are changing Data sources	Investigating

ICPs 0000545284NRF73 and 0000545289NR028 are reconciled under the NST profile using the monthly report provided by Northpower. This is maintained for the purpose of billing line charges and not for submission purposes. I recommend that WDC's RAMM database be investigated to be used for submission, as this is more likely to be accurate and up to date.

Recommendation	Description	Audited party comment	Remedial action
Regarding: Clause 11(1) of schedule 15.3	Investigate using WDC RAMM database to derive submission from.	Initial dataset from Ramm has been received. Monthly reporting has been requested, but not yet supplied.	Investigating

The report from Northpwoer presents the light values as kWh figures and this is used for submission. I checked the volumes submitted for January and confirmed them to be correct.

As detailed in **section 3.1,** the DUML database auditing tool provided a result indicating the field data was 75.2% of the database data. This will result in an estimated over submission by 714,900 kWh per annum.

As detailed in **section 3.1**, analysis of the database identified 2,722 items of load with the incorrect ballast applied. The incorrect capacities will result in an estimated over submission of 149,555.5 kWh per (based on annual burn hours of 4,271 as is detailed in the DUML database auditing tool).

Audit outcome

Non-compliant

Non-compliance	Description
Audit Ref: 2.1 With: 11.1 of schedule 15.3 From: entire audit period	Accuracy ratio is 75.2% indicating over submission of 714,900 kWh per annum. 2,722 items of load with the incorrect ballast applied indicating under submission of 149,555.5 kWh per annum. Combined value of 864,456 kWh under submitted per annum. Potential impact: High Actual impact: High Audit history: None Controls: None Breach risk rating: 12
Audit risk rating	**Rationale for audit risk rating**
High	Controls are rated as none, as the database being used for submission is not intended to be used for submission and there is no process to update changes made in the field. The audit risk rating is high due to the volume of over submission occurring.

Actions taken to resolve the issue	Completion date	Remedial action status
Genesis have been communicating with the database manger which have started supplying the RAMM information. Genesis are reviewing its completeness	10/2018	Investigating
Preventative actions taken to ensure no further issues will occur	**Completion date**	
Genesis will liaise with database manager to mitigate database errors	10/2018	

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 the two ICPs recorded in the database.

As discussed in **section 2.1**, It is unclear if the 11 ICPs are standard unmetered load (single circuit connections) or are distributed unmetered load ICPs (multiple items of load connected across multiple circuits). For this reason, I am unable to determine compliance in relation to this clause.

Audit outcome
Unable to determine

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
For the two ICPs recorded in the database, all items of load have the nearest street recorded.

As discussed in **section 2.1**, It is unclear if the 11 ICPs are standard unmetered load (single circuit connections) or are distributed unmetered load ICPs (multiple items of load connected across multiple circuits and I recommend this is investigated. For this reason, I am unable to determine compliance in relation to this clause.

Audit outcome
Unable to determine

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.

Audit Commentary

For the two ICPs recorded in the database, all items of load contain a field for lamp type and this is populated appropriately. The database contains three fields for wattage for each address, firstly the lamp wattage, secondly the gear wattage and the third contains the total wattage. All had a value populated.

As discussed in **section 2.1**, It is unclear if the 11 ICPs are standard unmetered load (single circuit connections) or are distributed unmetered load ICPs (multiple items of load connected across multiple circuits and I recommend this is investigated. For this reason, I am unable to determine compliance in relation to this clause.

Audit outcome
Unable to determine

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 310 lights using the statistical sampling methodology.

Audit Commentary

The field audit findings are detailed in the table below.

Street	Database count	Field count	Light count differences	Wattage recorded incorrectly	Comments
Whangarei Urban					
Amber Drive	11	11	-	10	Fittings replaced with LED
Arcus St	6	6	-	-	-
Beauzami Place	1	1	-	1	Fitting replaced with LED
Bellbird Ave	7	7	-	7	Fittings replaced with LED
Bloomfield Pl	3	3	-	3	Fittings replaced with LED
Bluegum Pl	2	2	-	2	Fittings replaced with LED
Bougainville St	3	3	-	-	-
Cambridge St	2	2	-	1	Fitting replaced with LED
Carr St	6	6	-	-	-
Cartwright Rd	13	13	-	13	Fittings replaced with LED
Church St	24	24	-	13	Fittings replaced with LED
Corns st	3	3	-	-	-
Domain Rd	1	1	-	1	Fitting replaced with LED
Grey St	3	3	-	-	-
Hailes Rd	3	3	-	1	Fitting replaced with LED
Hall Ave	3	3	-	-	-
Hunt St	4	4	-	-	-
Kamo Bypass	18	18	-	-	-
Madison Pl	4	4	-	-	-
Manapouri St	6	6	-	-	-
Moody Ave	1	1	-	1	Fitting replaced with LED
Noone Cl	1	1	-	1	Fitting replaced with LED
Old Onerahi Rd	20	20	-	20	Fittings replaced with LED
Pohutukawa Pl	3	3	-	2	Fittings replaced with LED
Raewyn St	8	8	-	-	-
Railway Rd	23	23	-	-	-
Sierra Ave	2	2	-	-	-
Tauroa St	14	14	-	14	Fittings replaced with LED
Warwick Pl	4	4	-	-	-
Wessex St	2	2	-	-	-
Whareora Rd	9	9	-	2	Fittings replaced with LED
Woodhill Cl	2	2	-	-	-
Other Urban					
Ata-Mahina Way	15	15	-	-	
Endeavour Pl	3	3	-	-	
Karoro Rd	10	10	-	-	
Rama Rd	6	6	-	-	
Seacrest Blvd	5	5	-	-	
Takutai Pl	1	1	-	-	
Clark St	4	4	-	2	Fittings replaced with LED
Kakariki Rd	1	1	-	-	
Tongatu Rd	1	1	-	-	
Rural					
Neptune Dr	10	10	-	-	
Rapata Rd	4	4	-	-	
Te Kapua St	4	4	-	-	
Tropicana Dr	2	2	-	-	

Street	Database count	Field count	Light count differences	Wattage recorded incorrectly	Comments
Ammenity					
Butter Factory Ln	2	2	-	-	
Carr St	1	1	-	-	
Church St	1	1	-	-	
James St	5	5	-	-	
Paramount Pde	1	1	-	-	
Robert St	10	10	-	-	
Rurumoki St	1	1	-	-	
The Centre	4	4	-	-	
Toilet Blocks					
Central Ave	4	4	-	-	
New					
Breton Ave	3	3	-	-	
Total	310	310	-	94	

All load checked was recorded in the database. The lamp discrepancies are recorded as non-compliance in **section 3.1**.

Audit outcome
Compliant

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

The streetlight database held by Northpower is maintained for the purpose of billing line charges and not for submission purposes. When new installations are completed or changes are made there is not a direct mechanism for updated information to be provided from the contractors who complete the installations to Northpower. Therefore, changes are gathered in a haphazard manner as Northpower comes across changes in the course of their management of the network. This was evident with the field audit which identified 94 load changes that were not updated.

Audit outcome
Non-compliant

Non-compliance	Description
Audit Ref: 2.6 With: Clause 11(3) of Schedule 15.3 From: Entire audit period	Tracking of load change not carried out, there is no direct mechanism for updates to be recorded. The field audit identified 94 load changes which were not updated related to fittings being replaced with LED fittings. Potential impact: Medium Actual impact: Medium Audit history: Once Controls: None Breach risk rating: 8
Audit risk rating	**Rationale for audit risk rating**
Medium	Controls are rated as none, as there is no systematic process to manage the tracking of load change. The field audit identified 94 load changes which were not updated therefore the audit risk rating is medium.

Actions taken to resolve the issue	Completion date	Remedial action status
Genesis have been communicating with the database manger which have started supplying the RAMM information. Genesis are reviewing its completeness	10/2018	Investigating
Preventative actions taken to ensure no further issues will occur	**Completion date**	
Genesis will liaise with database manager to mitigate database errors	10/2018	

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 Northpower database has an 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 & 15.37(b))

The 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	Whangarei DC region
Strata	The database contains items of load in Whangarei area. The area has two distinct sub regions of Whangarei urban and rural. The processes for the management of Whangarei DC items of load are the same, but I decided to place the items of load into five strata, as follows: 1. Urban 2. Rural 3. Amenity. 4. Toilet blocks 5. New
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 54 subunits.
Total items of load	310 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 75.2% of the database data. This will result in an estimated over submission by 714,900 kWh per annum.

I checked the ballasts being applied and found that 2,722 items had a discrepancy when compared to the standardised wattage table. This is detailed in the table below:

Lamp Type	Database Total Wattage	EA Standardised Wattage	Variance	Database Quantity	Estimated Annual kWh effect on consumption
100W HP Sodium	120.1	114	6.1	126	3,282.69
100W MH	114.4	114	0.4	41	70.04
125w MV Lamp	151.5	136	15.5	468	30,981.83
150w HPSV Lamp	180.1	168	12.1	1150	59,430.97
150W MH	180.1	168	12.1	12	620.15
150W SPOT	180.1	150	3.01	21	2,699.70
18w LPSV Lamp	20	24.5	-4.5	4	- 76.88
250W MH	294.5	278	16.5	18	1,268.49
250w HPSV Lamp	294.5	278	16.5	222	15,644.67
250w MV Lamp	294.5	270	24.5	15	1,569.59
250W SBMV	294.5	250	44.5	1	190.06
30w * 2 Fluor	68.6	77	8.4	5	- 179.38
400w MH	457.4	438	19.4	5	414.29
50W HPSV	65.8	61	4.8	16	328.01
50w MV Lamp	71.5	59	12.5	25	1,334.69
70w MH Lamp	91.5	83	8.5	37	1,343.23
80w MV Lamp	102.9	90	12.9	556	30,633.32
Total estimated annual effect on submission					149,555.47

The incorrect capacities will be resulting in an estimated over submission of 149,555.47 kWh per annum (based on annual burn hours of 4,271 as is detailed in the DUML database auditing tool).

The combined estimated over submission for WDC is 864,455.47 kWh per annum.

Audit outcome

Non-compliant

Non-compliance	Description
Audit Ref: 3.1 With: 15.2 & 15.37(b) From: entire audit period	Accuracy ratio is 75.2% indicating over submission of 714,900 kWh per annum. 2,722 items of load with the incorrect ballast applied indicating under submission of 149,555.5 kWh per annum. Combined value of 864,456 kWh under submitted per annum. Potential impact: High Actual impact: High Audit history: None Controls: None Breach risk rating: 12
Audit risk rating	**Rationale for audit risk rating**
High	Controls are rated as none, as the database being used for submission is not intended to be used for submission and there is no process to update changes made in the field. The audit risk rating is high due to the volume of over submission occurring.

Actions taken to resolve the issue	Completion date	Remedial action status
Genesis have been communicating with the database manger which have started supplying the RAMM information. Genesis are reviewing its completeness	10/2018	Investigating
Preventative actions taken to ensure no further issues will occur	**Completion date**	
Genesis will liaise with database manager to mitigate database errors	10/2018	

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

As recorded in **section 2.1**, Genesis reconciles this load using the UNM profile and the unmetered load details recorded on the registry by the distributor Northpower for 11 ICPs. It is unclear if these ICPs are standard unmetered load (single circuit connections) or are distributed unmetered load ICPs (multiple items of load connected across multiple circuits). Additionally, I am unable to determine which kWh figure is the correct figure as there is no database provided for these ICPs and recommend in **section 2.1** that Genesis liaise with Northpower to resolve this. As I am unable to determine the correct load for these ICPs I cannot confirm compliance in relation to these ICPs.

ICPs 0000545284NRF73 and 0000545289NR028 are reconciled under the NST profile using the monthly report provided by Northpower. Genesis derives the hours of operation from Northpower. I checked the calculation for the month of January and confirmed compliance in the volumes were correct.

As detailed in **section 3.1,** the DUML database auditing tool provided a result indicating the field data was auditing tool provided a result indicating the field data was 75.2% of the database data. This will result in an estimated over submission by 714,900 kWh per annum. Analysis of the database identified 2,722 items of load with the incorrect ballast applied. The incorrect capacities will result in an estimated over submission of 149,555.47 kWh per (based on annual burn hours of 4,271 as is detailed in the DUML database auditing tool).

The combined estimated over submission for WDC is 864,455.47 kWh per annum.

Audit outcome

Non-compliant

Non-compliance	Description
Audit Ref: 3.2 With: 15.2 & 15.37(c) From: entire audit period	Accuracy ratio is 75.2% indicating over submission of 714,900 kWh per annum. 2,722 items of load with the incorrect ballast applied indicating under submission of 149,555.5 kWh per annum. Combined value of 864,456 kWh under submitted per annum. Potential impact: High Actual impact: High Audit history: None Controls: None Breach risk rating: 4
Audit risk rating	**Rationale for audit risk rating**
High	Controls are rated as none, as the database being used for submission is not intended to be used for submission and there is no process to update changes made in the field. The audit risk rating is high due to the volume of over submission occurring.

Actions taken to resolve the issue	Completion date	Remedial action status
Genesis have been communicating with the database manger which have started supplying the RAMM information. Genesis are reviewing its completeness	10/2018	Investigating
Preventative actions taken to ensure no further issues will occur	**Completion date**	
Genesis will liaise with database manager to mitigate database errors	10/2018	

4. Conclusions

The audit found four non-compliances and makes three recommendations.

This DUML load comprises of 13 ICPs. For 11 ICPs Genesis reconciles this load using the unmetered load details recorded on the registry by the distributor Northpower. It is unclear if these ICPs are standard unmetered load (single circuit connections) or are distributed unmetered load ICPs (multiple items of load connected across multiple circuits). Additionally, I was unable to determine which kWh figure is the correct figure as there is no database provided for these ICPs. I recommend Genesis liaise with Northpower to resolve this.

ICPs 0000545284NRF73 and 0000545289NR028 are reconciled using the streetlight database held by Northpower (this is indicated by the use of the NST profile). This is maintained for the purpose of billing line charges and not for submission purposes. The field audit of 310 items of load found 94 differences resulting in the survey wattage being 24.8% lower than the database wattage resulting in an estimated over submission of 714,900 kWh per annum kWh per annum. This was due to the replacement of existing fittings with new LED fittings but the replacements have not been updated in the database as there is no process to update Northpower of changes in the field.

Examination of the database found there is also a discrepancy in the gear wattage for 2,722 items of load. This is resulting in an estimated over submission of 149,555.5 kWh per annum. The combined over submission is 864,455 kWh per annum.

I repeat the recommendation from the last audit that Whangarei District Council's RAMM database be investigated to be used for submission as this is more likely to be accurate and up to date.

The future risk rating of 44 indicates that the next audit be completed in three months. I have considered this result in conjunction with Genesis's responses and I agree with this recommendation as it will provide a check of the quality of the RAMM data now being used for submission.

5. Genesis Comments

Genesis has been Mark Seakins from Whangarei who is currently now starting to send monthly detailed information to Genesis. This information is now our source of data for settlements. Genesis will work with WDC to help where possible to maintain database content.