ELECTRICITY INDUSTRY PARTICIPATION CODE
DISTRIBUTED UNMETERED LOAD AUDIT REPORT

For

SOUTH TARANAKI DISTRICT COUNCIL AND GENESIS ENERGY LIMITED

NZBN: 9429037706609

Prepared by: Steve Woods

Date audit commenced: 3 May 2022

Date audit report completed: 27 May 2022

Audit report due date: 14 June 2022

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EXECUTIVE SUMMARY

This audit of the **South Taranaki District Council (STDC)** 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.

The database is remotely hosted by thinkproject New Zealand Ltd and is managed by STDC, who is Genesis's customer. The fieldwork and asset data capture are conducted by NPE Tech, using Pocket RAMM in the field.

Genesis submits the DUML load as NHH using the NST profile. On hours are derived using data logger information for all four ICPs.

A monthly report from the database is provided to Genesis and used to calculate submissions. I checked the March 2022 submission data for all four ICPs, and compliance is confirmed.

The field audit was undertaken of a statistical sample of 220 items of load on 16th May 2022. The field audit confirmed that the database accuracy is within the allowable +/-5% threshold.

Six non-compliances were identified, and no recommendations are made. The future risk rating of 10 indicates that the next audit be completed in 12 months. I have considered this in conjunction with Genesis' comments and recommend that the next audit be in 12 months.

The matters raised are detailed below:

AUDIT SUMMARY

NON-COMPLIANCES

Subject	Section	Clause	Non-Compliance	Controls	Audit Risk Rating	Breach Risk Rating	Remedial Action
Deriving submission information	2.1	11(1) of Schedule 15.3)	158 items of load do not have a gear wattage recorded in the database. Adjusted wattages (including the correct gear wattage) are applied to the monthly extract to RAMM prior to submission. 23 items of load have the incorrect wattage applied in the DUML database which would result in the minor under submission of 231 kWh per annum. The data used for submission does not track changes at a daily basis and is provided as a snapshot.	Moderate	Low	2	Identified
ICP identifier and items of load	2.2	11(2) (a) & (aa) of Schedule 15.3	One item of load with an incorrect ICP recorded.	Strong	Low	1	Identified
Description and capacity of load	2.4	11(2)(c) and (d) of Schedule 15.3	Light model is not recorded for 14 lamps. Light model is recorded as 'Unknown' for 17 lamps. Two lamps are recorded as GL 500, wattage indicates should be LED. 158 items of load do not have a gear wattage recorded in the database. Adjusted wattages (including the correct gear wattage) are applied to the monthly extract to RAMM prior to submission.	Moderate	Low	2	Identified

Subject	Section	Clause	Non-Compliance	Controls	Audit Risk Rating	Breach Risk Rating	Remedial Action
All load recorded in database	2.5	11(2A) of Schedule 15.3	Two additional items of load found in the field of 220 items of load sampled.	Strong	Low	1	Identified
Database accuracy	3.1	15.2 and 15.37B(b)	23 items of load have the incorrect wattage applied in the DUML database which would result in the minor under submission of 231 kWh per annum.	Moderate	Low	2	Identified
Volume information accuracy	3.2	15.2 and 15.37B(c)	158 items of load do not have a gear wattage recorded in the database. Adjusted wattages (including the correct gear wattage) are applied to the monthly extract to RAMM prior to submission. 23 items of load have the incorrect wattage applied in the DUML database which would result in the minor under submission of 231 kWh per annum. The data used for submission does not track changes at a daily basis and is provided as a snapshot.	Moderate	Low	2	Identified
Future Risk Rating						10	

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

RECOMMENDATIONS

Subject	Section	Recommendation
		Nil

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

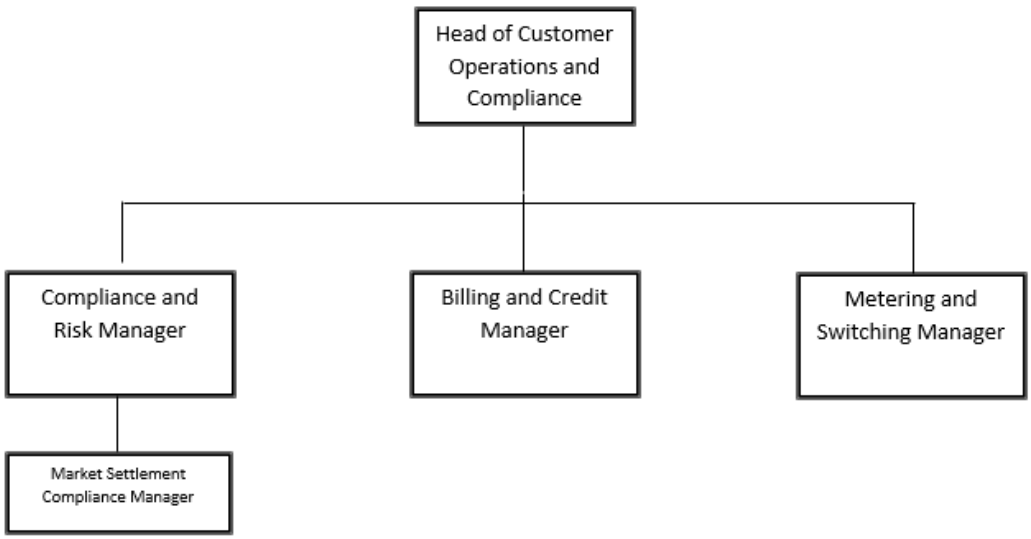
The Electricity Authority's website was reviewed to identify any exemptions relevant to the scope of this audit.

Audit commentary

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

1.2. Structure of Organisation

Genesis provided a copy of their organisational structure:



1.3. Persons involved in this audit

Auditors:

Name	Company	Role
Steve Woods	Veritek Limited	Lead Auditor
Claire Stanley	Veritek Limited	Supporting Auditor

Other personnel assisting in this audit were:

Name	Title	Company
Vincent Lim	Roading Manager	South Taranaki District Council
Julia Jones	Technical Specialist - Reconciliation Team	Genesis Energy

1.4. Hardware and Software

The SQL database used for the management of DUML is remotely hosted by thinkproject New Zealand Limited. The database is commonly known as "RAMM" which stands for "Road Assessment and Maintenance Management". The specific data used for DUML is held in the Streetlight tables. thinkproject New Zealand Limited backs up the database and assists with disaster recovery as part of their hosting service.

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

ICP Number	Description	NSP	Profile	Number of items of load	Database wattage (watts)
1000543527PC1F3	South Taranaki District Council NZTA (HAW)	HWA0331	NST	1,312	35,196
1000543529PC268	South Taranaki District Council Streetlights (NPL)	CST0331	NST	303	7,797
1000543528PCE2D	South Taranaki District Council Streetlights (SFD)	SFD0331	NST	316	8,473
1000543526PCDB6	South Taranaki District Council Streetlights (WVY)	WVY0111	NST	364	8,438
			Total	**2,295**	**59,904**

1.7. Authorisation Received

All information was provided directly by Genesis and STDC.

1.8. Scope of Audit

This audit of the STDC 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.

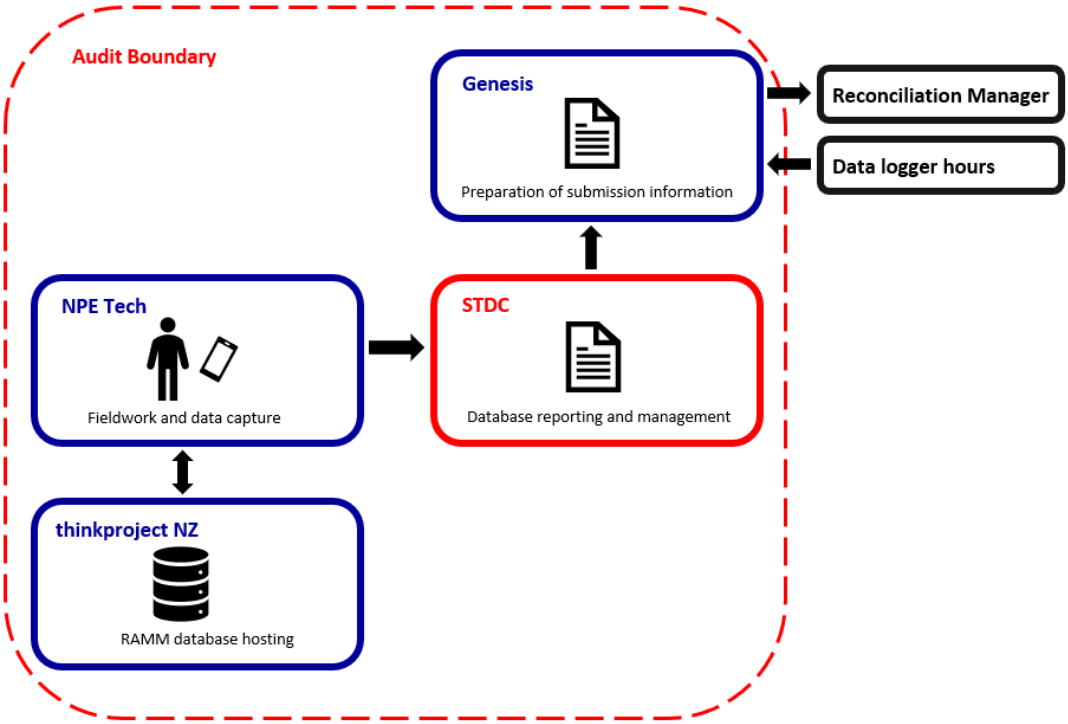
The audit was conducted in accordance with the audit guidelines for DUML audits version 1.1.

The database is remotely hosted by thinkproject New Zealand Ltd and is managed by STDC, who is Genesis's customer. The fieldwork and asset data capture are conducted by NPE Tech, using Pocket RAMM in the field. 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.

A monthly report from the database is provided to Genesis and used to calculate submissions. Genesis submits the DUML load as NHH using the NST profile. On hours are derived using data loggers.

The scope of the audit encompasses the collection, security and accuracy of the data, including the preparation of submission information based on the spreadsheet reporting from RAMM.

The diagram below shows the flow of information and the audit boundary for clarity.



The field audit was undertaken of a statistical sample of 220 items of load on 16th May 2022.

1.9. Summary of previous audit

The previous audit was completed in June 2021 by Rebecca Elliot of Veritek Limited. Four non-compliances were identified. The statuses of the non-compliances and recommendation are described below.

Table of Non-compliance

Subject	Section	Clause	Non-compliance	Status
Distributed unmetered load audits	1.10	16A.26	Audit not completed within the required timeframe.	Cleared
Deriving submission information	2.1	11(1) of Schedule 15.3)	Database is not confirmed as accurate with a 95% level of confidence. In absolute terms, total annual consumption is estimated to be 8,700 kWh higher than the DUML database indicates. 537 items of load do not have a gear wattage recorded in the database. Adjusted wattages (including the correct gear wattage) are applied to the monthly extract to RAMM prior to submission. The data used for submission does not track changes at a daily basis and is provided as a snapshot.	Cleared Still existing for some items of load Still existing
ICP identifier and items of load	2.2	11(2) (a) & (aa) of Schedule 15.3	Two lights with no ICP resulting in an estimated under submission of 1,571.73 kWh per annum.	Still existing for some items of load
Description and capacity of load	2.4	11(2)(c) and (d) of Schedule 15.3	537 items of load do not have a gear wattage recorded in the database. Adjusted wattages (including the correct gear wattage) are applied to the monthly extract to RAMM prior to submission.	Still existing for some items of load
All load recorded in database	2.5	11(2A) of Schedule 15.3	Seven LED lamps not recorded in the database.	Still existing for some items of load
Database accuracy	3.1	15.2 and 15.37B(b)	Database is not confirmed as accurate with a 95% level of confidence. In absolute terms, total annual consumption is estimated to be 8,700 kWh higher than the DUML database indicates.	Cleared

Subject	Section	Clause	Non-compliance	Status
Volume information accuracy	3.2	15.2 and 15.37B(c)	Database is not confirmed as accurate with a 95% level of confidence. In absolute terms, total annual consumption is estimated to be 8,700 kWh higher than the DUML database indicates. 537 items of load do not have a gear wattage recorded in the database. Adjusted wattages (including the correct gear wattage) are applied to the monthly extract to RAMM prior to submission. The data used for submission does not track changes at a daily basis and is provided as a snapshot.	Cleared Still existing for some items of load Still existing

Subject	Section	Recommendation	Status
Database Accuracy	3.1	Conduct further investigation to establish the actual input wattage for the Orange Tek Terraled Mini 18 LEDs used by STDC.	Cleared

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

Code reference

Clause 16A.26 and 17.295F

Code related audit information

Retailers must ensure that DUML database audits are completed:

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

Audit observation

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.

Audit commentary

Genesis submits the DUML load as NHH using the NST profile. On hours are derived using data logger information for all four ICPs.

A monthly report from the database is provided to Genesis and used to calculate submissions. I checked the March 2022 submission data for all four ICPs, and compliance is confirmed.

The field audit confirmed that the database accuracy is within the allowable +/-5% threshold.

Review of the database content in **section 2.4** found 158 items of load do not have a gear wattage recorded in the database. Adjusted wattages are applied to the database extract prior to it being sent to Genesis to use for submission. Non-compliance is recorded below because gear wattages are not recorded within RAMM.

23 items of load have the incorrect wattage applied in the DUML database resulting in an estimated minor under submission of 231 kWh per annum. This is detailed in **section 3.1**.

On 18 June 2019, the Electricity Authority issued a memo confirming that the code requirement to calculate the correct monthly load must:

- take into account when each item of load was physically installed or removed, and
- wash up volumes must take into account where historical corrections have been made to the DUML load and volumes.

The current data used is a snapshot and this practice is non-compliant.

Audit outcome

Non-compliant

Non-compliance	Description
Audit Ref: 2.1 With: Clause 11(1) of Schedule 15.3 From: 13-May-21 To: 03-May-22	158 items of load do not have a gear wattage recorded in the database. Adjusted wattages (including the correct gear wattage) are applied to the monthly extract to RAMM prior to submission. 23 items of load have the incorrect wattage applied in the DUML database which would result in the minor under submission of 231 kWh per annum. The data used for submission does not track changes at a daily basis and is provided as a snapshot. Potential impact: Low Actual impact: Low Audit history: Twice 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 impact is assessed to be low due to the kWh volumes.

Actions taken to resolve the issue	Completion date	Remedial action status
Genesis has discussed the audit findings with the council with the intent that council makes every effort to ensure the exceptions are rectified. Genesis continues to work with the council in regard to the tracking of change.	01/10/2022	Identified
Preventative actions taken to ensure no further issues will occur	**Completion date**	
Genesis continues to work with the council to raise database accuracy levels	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 was recorded against each item of load.

Audit commentary

An ICP is recorded for all items of load.

One item of load has ICP recorded 1000543527PC1F4. STDC have confirmed the correct ICP is 1000543527PC1F3 and have advised they will correct this in the database.

Audit outcome

Non-compliant

Non-compliance	Description
Audit Ref: 2.2 With: Clause 11(2)(a) and (aa) of Schedule 15.3 From: 13-May-21 To: 03-May-22	One item of load with an incorrect ICP recorded. Potential impact: Low Actual impact: Low Audit history: None Controls: Strong Breach risk rating: 1
Audit risk rating	**Rationale for audit risk rating**
Low	The controls are recorded as strong because they mitigate risk to an acceptable level. The impact on settlement and participants is minor; therefore, the audit risk rating is low.

Actions taken to resolve the issue	Completion date	Remedial action status
Genesis has discussed the audit findings with the council with the intent that council makes every effort to ensure the exceptions are rectified.	01/10/2022	Identified
Preventative actions taken to ensure no further issues will occur	**Completion date**	
Genesis continues to work with the council to raise database accuracy levels	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 street names and location numbers for each item of load.

GPS coordinates are recorded for 1,880 (82%) of the 2,295 items of load. The remaining 415 items of load have street name, location number, and pole number information which allows them 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 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

Light model, light make, lamp wattage are recorded in the database.

The gear wattage field in RAMM is not used by STDC. To ensure that correct gear wattage values are applied, STDC maintains a separate table of adjusted wattages including gear wattages. These adjusted wattages are applied to the RAMM report prior to it being sent to Genesis each month.

I compared the database extract, the extract provided to Genesis, and submission data created by Genesis for March 2022, this confirmed that this process is working as intended and the correct adjusted wattages are sent to Genesis and applied for submission.

All items of load have a lamp make, lamp wattage and adjusted wattage including gear wattage recorded in the extract provided to Genesis. The accuracy of the recorded lamp and gear wattages is discussed in **section 3.1**.

The database contains fields to record the lamp make and model. Analysis of the database found a small number of errors, as follows:

Quantity	Finding
17	'Unknown' Light Model
14	Blank Light Model
2	Recorded as GL 500, wattage indicates should be LED

Audit outcome

Non-compliant

Non-compliance	Description
Audit Ref: 2.4 With: Clause 11(2)(c) and (d) of Schedule 15.3 From: 13-May-21 To: 03-May-22	Light model is not recorded for 14 lamps. Light model is recorded as 'Unknown' for 17 lamps. Two lamps are recorded as GL 500, wattage indicates should be LED. 158 items of load do not have a gear wattage recorded in the database. Adjusted wattages (including the correct gear wattage) are applied to the monthly extract to RAMM prior to submission. Potential impact: Low Actual impact: Low Audit history: Twice Controls: Moderate Breach risk rating: 2
Audit risk rating	**Rationale for audit risk rating**
Low	The controls are rated as moderate. Although gear wattages are maintained in a separate table and applied prior to sending the database extract to Genesis, they are not recorded in the database itself. The impact on settlement and participants is minor; therefore, the audit risk rating is low.

Actions taken to resolve the issue	Completion date	Remedial action status
Genesis has discussed the audit findings with the council with the intent that council makes every effort to ensure the exceptions are rectified.	01/10/2022	Identified
Preventative actions taken to ensure no further issues will occur	**Completion date**	
Genesis continues to work with the council to raise database accuracy levels	Continuous improvement	

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

Code reference

Clause 11(2A) of Schedule 15.3

Code related audit information

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

Audit observation

The field audit was undertaken of a statistical sample of 220 items of load on 16th May 2022.

Audit commentary

The following differences were identified during the field audit.

Address	Database Count	Field Count	Count differences	Wattage differences	Comments
ALBION STREET	31	31		7	5 x 30W LED recorded in the database but 5 x 24W LED located in the field 2 x 24W LED recorded in the database but 2 x 21W LED located in the field
CONWAY SH3-RAILWAY STREET	9	9		1	1 x 24W LED recorded in the database but 1 x 21W LED located in the field
CORNWALL STREET (PATEA) SOUTH	4	3	-1		1 x 24W LED recorded in the database but not located in the field
GLOAG STREET	8	9	+1	2	2 x 24W LED recorded in the database but 2 x 21W LED located in the field 1 x 21W LED not recorded in the database but located in the field
HUSSEY STREET	2	2		1	1 x 24W LED recorded in the database but 1 x 21W LED located in the field
QUIN CRESCENT	3	3		1	1 x 24W LED recorded in the database but 1 x 21W LED located in the field
STAFFORD STREET	5	6	+1	1	1 x 24W LED recorded in the database but 1 x 21W LED located in the field 1 x 21W LED not recorded in the database but located in the field
Total	**2295**	**2296**	**+1 (-1, +2)**	**13**	

The field audit found two additional items of load found in the field of 220 items of load sampled. This is recorded as non-compliance below.

Audit outcome

Non-compliant

Non-compliance	Description
Audit Ref: 2.5 With: Clause 11(2A) of Schedule 15.3 From: 13-May-21 To: 03-May-22	Two additional items of load found in the field of 220 items of load sampled. Potential impact: Low Actual impact: Low Audit history: Three times previously Controls: Strong Breach risk rating: 1
Audit risk rating	**Rationale for audit risk rating**
Low	The controls are rated as strong as the processes in place will ensure that the data is recorded correctly most of the time. The impact is assessed to be low due to the small number of additional lights found in the field in relation to the overall count of the items of load.

Actions taken to resolve the issue	Completion date	Remedial action status
Genesis has discussed the audit findings with the council with the intent that council makes every effort to ensure the exceptions are rectified.	01/10/2022	Identified
Preventative actions taken to ensure no further issues will occur	**Completion date**	
Genesis continues to work with the council to raise database accuracy levels	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 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 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 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

RAMM records audit trail information of changes made.

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	Streetlights in the South Taranaki region
Strata	The database contains 2,295 items of load located in the South Taranaki region. The management process is the same for all lights. I created three strata by road name: • Road A – G, • Road GL – M, and • Road MU – Y.
Area units	I created a pivot table of the roads in each stratum, and I used a random number generator in a spreadsheet to select a total of 42 sub-units (roads).
Total items of load	220 items of load were checked.

Wattages for all items of load were checked against the published standardised wattage tables produced by the Electricity Authority, and the manufacturer's specifications.

Audit commentary

Field audit findings

A statistical sample of 220 items of load found that the field data was 100.8% of the database data for the sample checked.

Result	Percentage	Comments
The point estimate of R	99.4%	Wattage from survey is lower than the database wattage by 0.6%
R_L	97.7%	With a 95% level of confidence, it can be concluded that the error could be between -2.3% and +1.1%
R_H	101.1	

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 A (detailed below) applies.

These results were categorised in accordance with the "Distributed Unmetered Load Statistical Sampling Audit Guideline", effective from 1 February 2019. The table below shows that Scenario A (detailed below) applies, and the best available estimate indicates that the database is accurate within ± 5.0%.

There is a 95% level of confidence that the installed capacity is between 1kW lower to 1kW higher than the database.

In absolute terms, total annual consumption is estimated to be 1,500 kWh lower than the DUML database indicates.

There is a 95% level of confidence that the annual consumption is between 5,900 p.a. kWh lower and 2,900 kWh p.a. higher than the database indicates.

Scenario	Description
A - **Good accuracy, good precision**	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 - **Poor accuracy, demonstrated with statistical significance**	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
C - **Poor precision**	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 %

Wattage accuracy

The RAMM report containing adjusted wattages was checked against the published standardised wattage table, and manufacturer's specifications where available. My assessment was based on models recorded in the light model field, which determines the wattages recorded and the RAMM extract data provided to Genesis.

The following lamp wattage or gear wattage discrepancies were identified.

Lamp Type	Database Total Lamp Wattage	EA Standardised Total Wattage	Variance	Database Quantity
100w	150	100	50	1
TerraLED 21W 4000k	24	21	3	10
TerraLED 21W 4000k	30	21	9	2
TerraLED 24W 4000K	21	24	3	4
TerraLED 24W 4000K	30	24	6	2
TerraLED 30W	21	30	9	1
TerraLED 30W	24	30	6	2
100w	168	114	54	1

The incorrect capacities will be resulting in an estimated over submission of 230.63 kWh per annum (based on annual burn hours of 4,271 as is detailed in the DUML database auditing tool).

Change management process findings

Fault, maintenance and upgrade work is completed by NPE Tech. Pocket RAMM is used for fieldwork and asset data capture by NPE Tech.

The STDC streetlight team works with the planning team to identify new subdivisions that will have streetlighting and progress with them. NPE Tech are Powerco approved contractors and will normally be responsible for connecting any new streetlighting. The lights are entered into RAMM by STDC.

Outage patrols are completed by NPE Tech on a monthly cycle. Outages are also reported by residents within the STDC region and work orders are raised with NPE Tech as required.

STDC's LED upgrade is complete.

STDC manage the repair work for NZTA lights, the lights are included in the STDC database for this purpose only. The lights are excluded from the monthly report provided to Genesis and were not provided for this audit.

Festive Lights

All known private lights are metered, and all festive lighting is connected to metered under veranda lights and excluded from the database.

Audit outcome

Non-compliant

Non-compliance	Description
Audit Ref: 3.1 With: Clause 15.2 and 15.37B(b) From: 13-May-21 To: 03-May-22	23 items of load have the incorrect wattage applied in the DUML database which would result in the minor under submission of 231 kWh per annum. 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. The impact is assessed to be low, based on the kWh difference described above.

Actions taken to resolve the issue	Completion date	Remedial action status
Genesis has discussed the audit findings with the council with the intent that council makes every effort to ensure the exceptions are rectified.	01/10/2022	Identified
Preventative actions taken to ensure no further issues will occur	**Completion date**	
Genesis continues to work with the council to raise database accuracy levels	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

Submission data was checked for accuracy, including:

- checking the registry to confirm that all ICPs have 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

This clause requires that the distributed unmetered load database must satisfy the requirements of schedule 15.5 regarding the methodology for deriving submission information.

A monthly report from the database is provided to Genesis and used to calculate submissions. Genesis submits the DUML load as NHH using the NST profile. On hours are derived using data logger information for all four ICPs.

I checked the March 2022 submission data for all four ICPs, and compliance is confirmed.

The field audit confirmed that the database accuracy is within the allowable +/-5% threshold.

Review of the database content in **section 2.4** found 158 items of load do not have a gear wattage recorded in the database. Adjusted wattages are applied to the database extract prior to it being sent to Genesis to use for submission. Non-compliance is recorded below because gear wattages are not recorded within RAMM.

23 items of load have the incorrect wattage applied in the DUML database resulting in an estimated minor under submission of 231 kWh per annum. This is detailed in **section 3.1**.

On 18 June 2019, the Electricity Authority issued a memo confirming that the code requirement to calculate the correct monthly load must:

- take into account when each item of load was physically installed or removed, and
- wash up volumes must take into account where historical corrections have been made to the DUML load and volumes.

The current data used is a snapshot and this practice is non-compliant.

Audit outcome

Non-compliant

Non-compliance	Description
Audit Ref: 3.2 With: Clause 15.2 and 15.37B(c) From: 13-May-21 To: 03-May-22	158 items of load do not have a gear wattage recorded in the database. Adjusted wattages (including the correct gear wattage) are applied to the monthly extract to RAMM prior to submission. 23 items of load have the incorrect wattage applied in the DUML database which would result in the minor under submission of 231 kWh per annum. The data used for submission does not track changes at a daily basis and is provided as a snapshot. Potential impact: Low Actual impact: Low Audit history: Twice 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 impact is assessed to be low due to the kWh volumes.

Actions taken to resolve the issue	Completion date	Remedial action status
Genesis has discussed the audit findings with the council with the intent that council makes every effort to ensure the exceptions are rectified Genesis continues to work with the council in regard to the tracking of change.	01/10/2022	Identified
Preventative actions taken to ensure no further issues will occur	**Completion date**	
Genesis continues to work with the council to raise database accuracy levels	Continuous improvement	

CONCLUSION

This audit of the **South Taranaki District Council (STDC)** 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.

The database is remotely hosted by thinkproject New Zealand Ltd and is managed by STDC, who is Genesis's customer. The fieldwork and asset data capture are conducted by NPE Tech, using Pocket RAMM in the field.

Genesis submits the DUML load as NHH using the NST profile. On hours are derived using data logger information for all four ICPs.

A monthly report from the database is provided to Genesis and used to calculate submissions. I checked the March 2022 submission data for all four ICPs, and compliance is confirmed.

The field audit was undertaken of a statistical sample of 220 items of load on 16th May 2022. The field audit confirmed that the database accuracy is within the allowable +/-5% threshold.

Six non-compliances were identified, and no recommendations are made. The future risk rating of 10 indicates that the next audit be completed in 12 months. I have considered this in conjunction with Genesis' comments and recommend that the next audit be in 12 months.

PARTICIPANT RESPONSE

Genesis has discussed the audit findings with the council with the intent that council makes every effort to ensure the exceptions are rectified

Genesis continues to work with the council in regard to the tracking of change.