ELECTRICITY INDUSTRY PARTICIPATION CODE
DISTRIBUTED UNMETERED LOAD AUDIT REPORT

VERITEK

For

THAMES COROMANDEL DISTRICT COUNCIL AND MERCURY NZ LIMITED

Prepared by: Rebecca Elliot

Date audit commenced: 17 October 2018

Date audit report completed: 23 November 2018

Audit report due date: 01-Dec-18

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EXECUTIVE SUMMARY

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

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

TCDC has switched retailers from Genesis Energy to Mercury NZ Limited on 1/07/2018.

TCDC's LED rollout is largely complete. The full field audit being undertaken by Power Solutions that was originally expected to be completed in August is still in progress but is about 75% complete. The field audit found database inaccuracies in both existing and new work being carried out. The existing field contractor has agreed to continue until March 2019 by which time TCDC expect to have completed the tender process to engage a new field contractor.

Power Solutions continue to manage the database on behalf of the TCDC. I repeat the recommendation that the new connection process is reviewed in conjunction with the council and Powerco as it appears that the process to notify of new connections is not working. This is evident with the Whitianga town centre redevelopment lights, which whilst not selected in the field audit, have not been updated in the database.

TCDC advised Mercury in November effective for the month of October, that they will no longer be paying for the NZTA lights, therefore not all of the DUML load is being reconciled. This resulted in under submission of 22,534 kWh for the month of October. Annualised this will result in an estimated 282,745 kWh of under submission.

This audit found five non-compliances and makes one recommendation. The future risk rating of 21 indicates that the next audit be completed in three months but I recommend six months to allow sufficient time for the issues raised to be resolved. 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	NZTA lighting volume excluded from submission resulting in an estimated under submission of 282,745 kWh per annum. The database accuracy is assessed to be 96.3% indicating potential over submission of 32,300 kWh per annum.	Moderate	High	6	Identified
Description and capacity of load	2.4	11(2)(c) & d) of Schedule 15.3	Four items of load with missing lamp details.	Strong	Low	1	Investigating
All load recorded in the database	2.5	11(2A) of Schedule 15.3	Items of load are missing from the database.	Moderate	Medium	4	Identified
Database accuracy	3.1	15.2 and 15.37B(b)	The database accuracy is assessed to be 96.3% indicating potential over submission of 32,300 kWh per annum. The ballasts are not recorded correctly in the RAMM database.	Moderate	Medium	4	Identified
Volume information accuracy	3.2	15.2 and 15.37B(c)	The database accuracy is assessed to be 96.3% indicating potential over submission of 32,300 kWh per annum.	Moderate	High	6	Identified
Future Risk Rating						21	

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	Description	Action
Tracking of load change	2.6	Review new streetlight electrical connection process with council and Powerco.	

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

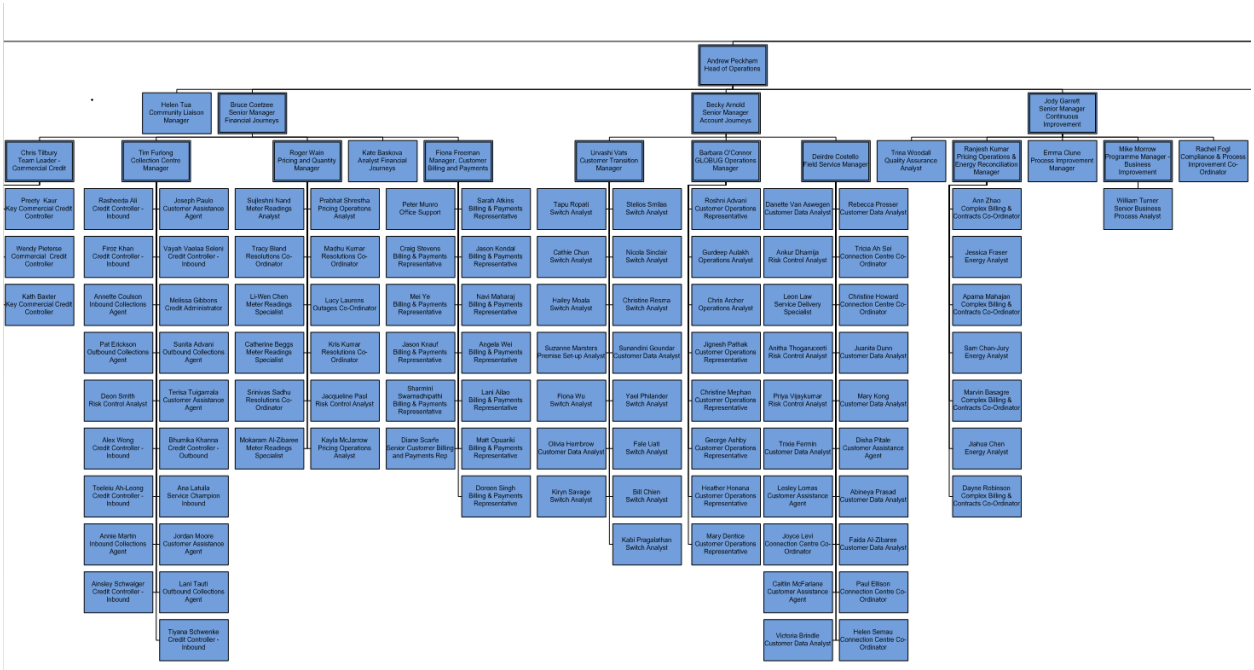
Section 11 of the Electricity Industry Act provides for the Electricity Authority to exempt any participant from compliance with all or any of the clauses.

Audit commentary

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

1.2. Structure of Organisation

Mercury provided the relevant organisational structure:



1.3. Persons involved in this audit

Auditor:

Rebecca Elliot

Veritek Limited

Electricity Authority Approved Auditor

Other personnel assisting in this audit were:

Name	Title	Company
Andrew Robertson	Regulatory and Compliance Strategist	Mercury Energy
Jon Stevens	Projects Engineer	Power Solutions

1.4. Hardware and Software

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

Power Solutions confirmed that the database back-up is in accordance with standard industry procedures. Access to the database is secure by way of password protection

1.5. Breaches or Breach Allegations

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

1.6. ICP Data

ICP Number	Description	NSP	Profile	Number of items of load	Database wattage (watts)
0001425630UNEF3	Thames Coromandel District Council	KPU0661	HHR	3553	202,740

1.7. Authorisation Received

All information was provided directly by Mercury or Power Solutions.

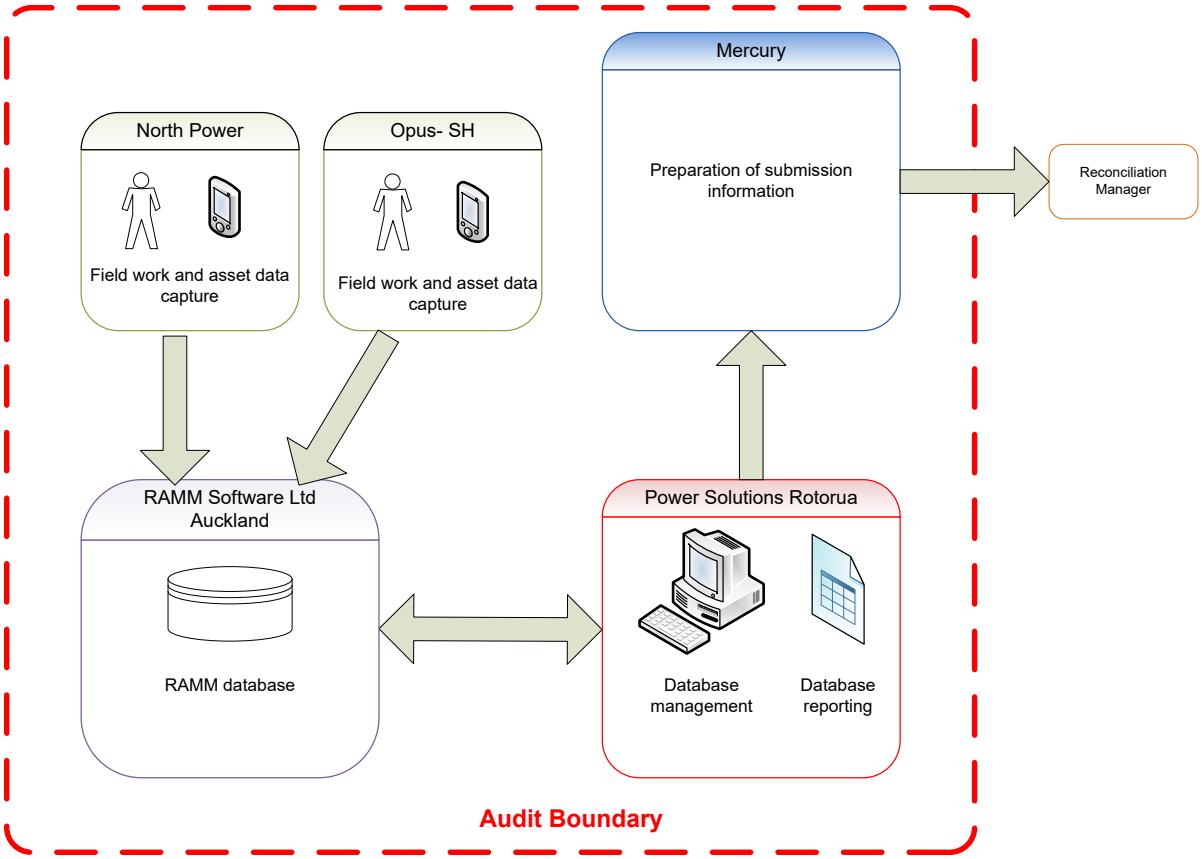
1.8. Scope of Audit

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

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

The database is remotely hosted by RAMM Software Ltd and is managed by PSL, on behalf of TCDC, who is Mercury' customer. The fieldwork and asset data capture are conducted by Northpower (a contractor to TCDC) for the council street lights. Some NZTA lights are recorded in the TCDC database for roads below 80km. TCSC advised Mercury that they are no longer responsible for these items of load and they have been excluded from submission. They were provided as part of the database extract and are associated with the TCDC ICP, therefore they have been included in this audit. Northpower have agreed to continue until March 2019 until TCDC have completed the tender process to select a new field contractor as Northpower have advised they do not wish to continue.

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 field audit was undertaken of a statistical sample of 357 items of load on 2nd November 2018.

1.9. Summary of previous audit

The last audit report was undertaken by Rebecca Elliot of Veritek Limited in May 2018. The current status of those audit's findings are detailed below:

Table of Non-Compliance

Subject	Section	Clause	Non-compliance	Status
Deriving submission information	2.1	11(1) of Schedule 15.3	The database accuracy is assessed to be 94.6% indicating an estimated over submission of 66,300 kWh per annum. Incorrect wattages use for submission resulting in an estimated over submission of 123.86 kWh. The combined estimated over submission is 66,176.14 kWh per annum.	Still existing Cleared
All load recorded in the database	2.5	11(2A) of Schedule 15.3	Items of load are missing from the database.	Still existing
Tracking of Load Change	2.6	11(3) of schedule 15.3	Tracking of load change not capturing all changes made in the field.	Cleared
Database accuracy	3.1	15.2 and 15.37B(b)	The database accuracy is assessed to be 94.6% indicating an estimated over submission of 66,300 kWh per annum.	Still existing
Volume information accuracy	3.2	15.2 and 15.37B(c)	The database accuracy is assessed to be 94.6% indicating an estimated over submission of 66,300 kWh per annum. Incorrect wattages use for submission resulting in an estimated over submission of 123.86 kWh. The combined estimated over submission is 66,176.14 kWh per annum.	Still existing Cleared

Table of Recommendations

Subject	Section	Recommendation for Improvement	Status
Tracking of Load Change	2.6	Review new streetlight electrical connection process with council and Powerco.	Still existing

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

Code reference

Clause 16A.26 and 17.295F

Code related audit information

Retailers must ensure that DUML database audits are completed:

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

Audit observation

Mercury have requested Veritek to undertake this streetlight audit.

Audit commentary

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

2. DUML DATABASE REQUIREMENTS

2.1. Deriving submission information (Clause 11(1) of Schedule 15.3)

Code reference

Clause 11(1) of Schedule 15.3

Code related audit information

The retailer must ensure the:

- *DUML database is up to date*
- *methodology for deriving submission information complies with Schedule 15.5.*

Audit observation

The process for calculation of consumption was examined and the application of profiles was checked. The database was checked for accuracy.

Audit commentary

Mercury reconciles this DUML load using the HHR profile.

The total volume submitted to the Reconciliation Manager is based on a monthly database report from RAMM and the "burn time" which is sourced from a data logger installed on the Powerco network. I checked the accuracy of the submission information by multiplying the total kW from the database by the total "on" time from the data logger file and the figures matched for the month of October 2018. I note that volumes for NZTA which were present in the database extract have been excluded from the submission volumes. TCDC have advised Mercury that they are no longer paying for this load, therefore not all of the DUML load is being reconciled. This resulted in under submission of 22,534 kWh for the month of October. Annualised this will result in an estimated 282,745 kWh of under submission.

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

Audit outcome

Non-compliant

Non-compliance	Description
Audit Ref: 2.1 With: Clause 11(1) of Schedule 15.3 From: 01-Jun-17 To: 19-Nov-18	NZTA lighting volume excluded from submission resulting in an estimated under submission of 282,745 kWh per annum. The database accuracy is assessed to be 96.3% indicating potential over submission of 32,300 kWh per annum. Potential impact: High Actual impact: High Audit history: Twice Controls: Moderate Breach risk rating: 6
Audit risk rating	**Rationale for audit risk rating**
High	The controls are rated as moderate, because they are sufficient to ensure that lamp information is correctly recorded most of the time. The impact is assessed to be high, based on the kWh differences described in **section 3.1**.

Actions taken to resolve the issue	Completion date	Remedial action status
NZTA lights are in the process of being allocated a separate ICP and will not form part of the TCDC DUML audit moving forward.	June 2019	Identified
Preventative actions taken to ensure no further issues will occur	**Completion date**	
As above		

2.2. ICP identifier and items of load (Clause 11(2)(a) and (aa) of Schedule 15.3)

Code reference

Clause 11(2)(a) and (aa) of Schedule 15.3

Code related audit information

The DUML database must contain:

- *each ICP identifier for which the retailer is responsible for the DUML*
- *the items of load associated with the ICP identifier.*

Audit observation

The database was checked to confirm the correct ICP was recorded against each item of load.

Audit commentary

An ICP is recorded for each item of load.

Audit outcome

Compliant

2.3. Location of each item of load (Clause 11(2)(b) of Schedule 15.3)

Code reference

Clause 11(2)(b) of Schedule 15.3

Code related audit information

The DUML database must contain the location of each DUML item.

Audit observation

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

Audit commentary

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

Audit outcome

Compliant

2.4. Description and capacity of load (Clause 11(2)(c) and (d) of Schedule 15.3)

Code reference

Clause 11(2)(c) and (d) of Schedule 15.3

Code related audit information

The DUML database must contain:

- *a description of load type for each item of load and any assumptions regarding the capacity*
- *the capacity of each item in watts.*

Audit observation

The database was checked to confirm that it contained a field for lamp type and wattage capacity and included any ballast or gear wattage and that each item of load had a value recorded in these fields.

Audit commentary

The database contains two records for wattage, firstly the lamp wattage and secondly the gear wattage, which represents ballast losses. The gear wattage is recorded in the database which meets the requirements of this clause. A check of the database found two items of load with no lamp description, lamp wattage or gear wattage and two items of load with blank gear wattage recorded. The accuracy of the lamp descriptions and wattages applied is discussed in **section 3.1**.

Audit outcome

Non-compliant

Non-compliance	Description
Audit Ref: 2.4 With: Clause 11(2)(c) & (d)of Schedule 15.3 From: 01-Jun-17 To: 19-Nov-18	Four items of load with missing lamp details. Potential impact: Low Actual impact: None Audit history: None Controls: Strong Breach risk rating: 1
Audit risk rating	**Rationale for audit risk rating**
Low	The controls are rated as strong as the controls in place mitigate the risk. The impact is assessed to be low as this only four items of load are affected.

Actions taken to resolve the issue	Completion date	Remedial action status
Mercury continues to work with the TCDC contractor to resolve these issues	Ongoing	Investigating
Preventative actions taken to ensure no further issues will occur	**Completion date**	

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 335 items of load on 2nd November 2018.

Audit commentary

The field audit findings are detailed in the table below:

Street	Database count	Field count	Light count differences	Wattage recorded incorrectly	Comments
Coromandel					
ALBERT ST (COROMANDEL)	2	2			
CHARLES ST	1	1			
EDWARD ST (COROMANDEL)	2	2			
GLOVER ST	2	2			

Street	Database count	Field count	Light count differences	Wattage recorded incorrectly	Comments
GOLDEN SHORE PL	5	5			
GREENHILLS DR	6	6			
HARBOUR VIEW RD (COROMANDEL)	1	1			
HUAROA ST	1	1			
MCQUOID RD	1	1			
Mercury Bay					
ASHLEY PL	1	1			
CAPTAIN WOOD AVE	5	5			
CARINA WAY (NORTHBOUND)	9	9			
CLIPPER PL	3	3			
HARBOUR DR (WEST)	11	11			
HEI ESPLANADE	6	6			
JOAN GASKELL DR (WESTBOUND)	18	18		4	4x LED found in the field. Recorded as HPS in database.
OCEAN CL (SOUTHBOUND)	3	3			
OHUKA PL	1	1			
OSCAR PL	1	1			
RANGIORA CRES	4	4			
SCOTT DR	8	8			
SOUTH HIGHWAY (EAST)	30	30			
TANGIORA AVE EXTN (RP988 RHS)	1	1			
VANITA DR/LEEWARD DR RAB	8	9	1		1x extra 67W LED found in the field.
WELLS PL	6	6			
YANKEE LANE	1	1			
NZTA					

Street	Database count	Field count	Light count differences	Wattage recorded incorrectly	Comments
BANKS ST (THAMES)	2	2			
BONGARD RD	1	1			
DEBENHAM DR ACCESS	1	1			
JOAN GASKELL DR (WESTBOUND)	2	2			
OCEAN BEACH RD	1	1			
RACECOURSE RD	1	1			
SH 25 (TAIRUA SOUTH)	25	25		2	2 x incorrect wattages found in the field.
SH 26 (HIKUTAIA)	5	5			
SH 26 (KOPU)	4	4			
Tairua					
BAGNALL PL	1	1			
CLAXTON AVE EXTN (RP163 LHS)	1	1			
DUNLOP DR LOOP (RP207 LHS)	1	1			
GALLAGHER DR	3	3			
GLEN NEAVES	1	1			
HAPENUI RD	1	1			
HIKUAI SETTLEMENT RD (WESTBOUND)	12	11	-1	1	1x 150W HPS not found in the field. 1x LED found in the field recorded as HPS in the database.
HIKUAI SETTLEMENT RD SLIP (RP10140)	1	1			
LOWE PARK LANE	4	4			
MOTU HEI	6	6		6	6x LED found in the field. Recorded as HPS in the database.
OCEAN BEACH RD LLA (#61-#75)	2	2			

Street	Database count	Field count	Light count differences	Wattage recorded incorrectly	Comments
PAUANUI BLVD (NORTHBOUND)	3	3			
PETLEY PDE	2	2			
WILTON SMITH AVE	1	1			
Thames					
BENNETT RD	2	2			
COOK ST	1	1			
HEALE ST	7	7			
KOROKORO CRES	5	5			
MARAMARAHI RD	4	4			
MARY ST SERVICE LANE #7 (RP203 LHS)	3	3			
PARAWAI RD	32	32			
RICHMOND ST SERVICE LANE #3 (RP332 LHS)	4	4			
TAPU COROGLEN RD	5	5			
THE BOOMS AVE	11	11			
TOTARA CL	3	3			
WAIMARIE WAY	4	4			
WHARF RD (TAPU)	2	2			
WHANGAMATA					
ABERDEEN PL	2	2			
AVALON PL	2	2			
BAMBURY PL	1	1			
CHARTWELL AVE (SOUTHBOUND)	6	8	2	1	2x extra LED found in the field. 1x LED found in the field recorded as MV in the database.
ESPLANADE DR	8	8			
FERNLEIGH GL	1	1			

Street	Database count	Field count	Light count differences	Wattage recorded incorrectly	Comments
HARBOUR VIEW RD (EASTBOUND)	3	3			
MAYFAIR AVE	11	11			
NGATIPU PL	1	1			
ONEMANA DR (WESTBOUND)	2	1	-1		1x 19W LED not found in the field.
PATUWAI DR/KOTUKU ST RAB	2	2			
TE PAMAHUE DR	6	6			
TE TUTU ST	5	8	3		3 x extra LED found in the field.
TUCK RD	3	3			
Grand Total	354	358	6 extra lamps	14	

I found six more lamps in the field than were recorded in the database. The differences found in the field and the database accuracy are recorded as non-compliance in **section 3.1**. I note that the full field audit being undertaken by TCDC is still underway. The items missing from the RAMM database are recorded as non-compliance.

Audit outcome

Non-compliant

Non-compliance	Description
Audit Ref: 2.5 With: Clause 11(2A) of Schedule 15.3 From: 01-Jun-17 To: 19-Nov-18	Items of load are missing from the database. Potential impact: Low Actual impact: Low Audit history: Once previously Controls: Moderate Breach risk rating: 4
Audit risk rating	**Rationale for audit risk rating**
Medium	The controls are rated as moderate as the full field audit is underway to correct the historic issues. The impact is assessed to be high, based on the kWh differences detailed in **section 3.1**.

Actions taken to resolve the issue	Completion date	Remedial action status
As indicated by the auditor a field audit is underway. There is a statistically low indication of non-compliance against the sampled installations.	June 19	Identified
Preventative actions taken to ensure no further issues will occur	**Completion date**	

2.6. Tracking of load changes (Clause 11(3) of Schedule 15.3)

Code reference

Clause 11(3) of Schedule 15.3

Code related audit information

The DUML database must track additions and removals in a manner that allows the total load (in kW) to be retrospectively derived for any given day.

Audit observation

The process for tracking of changes in the database was examined.

Audit commentary

Any changes that are made during any given month take effect from the beginning of that month. The information is available which would allow for the total load in kW to be retrospectively derived for any day. On 20th September 2012, the Authority sent a memo to Retailers and auditors advising that tracking of load changes at a daily level was not required as long as the database contained an audit trail. I have interpreted this to mean that the production of a monthly "snapshot" report is sufficient to achieve compliance.

The database tracks additions and removals as required by this clause.

TCDC have largely completed the LED rollout. Pocket RAMM is not used. All changes made in the field (both maintenance and LED roll out) are tracked by paper and loaded into RAMM once these are returned from the field. Northpower has agreed to continue until March 2019 by which time TCDC expect to have completed the tender work to engage a new field contractor.

The process for new connections was reviewed. As-built plans are provided to PSL. PSL then conduct a field check to ensure the database has been populated accurately. PSL are reliant on Northpower or TCDC to advise of the connection dates for new or replaced items of load. As reported in the last audit, it appears that these updates are not always reaching PSL to be included in the database. This is evident in with the Whitianga town centre redevelopment not having been updated in the database. I repeat the last audit's recommendation that the new connection process be reviewed with the council and Powerco to ensure all changes are captured in a timely fashion.

Description	Recommendation	Audited party comment	Remedial action
Tracking of load change	Review new streetlight electrical connection process with council and Powerco.	[participant comment]	[auditor comment]

Monthly "outage patrols" are conducted by the field contractor. These are to check for lights out, not to confirm the accuracy of the database.

There are no festive lights used in the TCDC area.

Audit outcome

Compliant

2.7. Audit trail (Clause 11(4) of Schedule 15.3)

Code reference

Clause 11(4) of Schedule 15.3

Code related audit information

The DUML database must incorporate an audit trail of all additions and changes that identify:

- *the before and after values for changes*
- *the date and time of the change or addition*
- *the person who made the addition or change to the database.*

Audit observation

The database was checked for audit trails.

Audit commentary

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

Audit outcome

Compliant

3. ACCURACY OF DUML DATABASE

3.1. Database accuracy (Clause 15.2 and 15.37B(b))

Code reference

Clause 15.2 and 15.37B(b)

Code related audit information

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

Audit observation

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

Plan Item	Comments
Area of interest	Thames Coromandel region
Strata	The database contains items of load in Thames Coromandel peninsular. The area has three distinct sub groups. Urban, Rural and NZTA. The processes for the management of TCDC items of load are the same, but I decided to place the items of load into six strata, as follows: 1. Coromandel 2. Mercury Bay 3. NZTA 4. Tairua 5. Thames 6. Whangamata.
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 76 sub-units.
Total items of load	357 items of load were checked.

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

Audit commentary

A statistical sample of 357 items of load found that the field data was 96.3% of the database data for the sample checked. This is not within the required database accuracy of 2.5%+/-. The statistical sampling tool reported with 95% confidence the precision of the sample was 9.4% and the true load in the field will be between 91.0% to 100.4% of the load recorded in the database. The sample is not sufficiently precise to be able to determine the database accuracy but indicates that the database is likely to be over submitting largely due to incorrect wattages being recorded in the field.

The tool indicated that there is potentially 32,200 kWh per annum (based on annual burn hours of 4,271 as detailed in the DUML database auditing tool) of over submission. The statistical sampling tool reported with 95% confidence that there is a potential estimated submission variance range of between 77,500 kWh over submission and 3,600 under submission. This is recorded as non-compliance.

The ballast in RAMM is not correct and is not used for submission. The correct ballasts need to be in the database. This is recorded as non-compliance below. The correct ballast wattages are added in the monthly report.

Audit outcome

Non-compliant

Non-compliance	Description
Audit Ref: 3.1 With: Clause 15.2 and 15.37B(b) From: 01-Jun-17 To: 19-Nov-18	The database accuracy is assessed to be 96.3% indicating potential over submission of 32,300 kWh per annum. The ballasts are not recorded correctly in the RAMM database. Potential impact: Medium Actual impact: Medium Audit history: Once previously Controls: Moderate Breach risk rating: 4
Audit risk rating	**Rationale for audit risk rating**
Medium	The controls are rated as moderate as the full field audit is underway to correct the historic issues. The impact is assessed to be medium, based on the kWh differences described above.

Actions taken to resolve the issue	Completion date	Remedial action status
As indicated a full field audit is underway	June 2019	Identified
Preventative actions taken to ensure no further issues will occur	**Completion date**	

3.2. Volume information accuracy (Clause 15.2 and 15.37B(c))

Code reference

Clause 15.2 and 15.37B(c)

Code related audit information

The audit must verify that:

- *volume information for the DUML is being calculated accurately*
- *profiles for DUML have been correctly applied.*

Audit observation

The submission was checked for accuracy for the month the database extract was supplied. This included:

- checking the registry to confirm that the ICP has the correct profile and submission flag
- checking the database extract combined with the burn hours against the submitted figure to confirm accuracy.

Audit commentary

Mercury reconciles this DUML load using the HHR profile.

The total volume submitted to the Reconciliation Manager is based on a monthly database report from RAMM and the "burn time" which is sourced from a data logger installed on the Powerco network. I checked the accuracy of the submission information by multiplying the total kW from the database by the total "on" time from the data logger file and the figures matched for the month of October 2018. I note that volumes for NZTA which were present in the database extract have been excluded from the submission volumes. TCDC have advised Mercury that they are no longer paying for this load, therefore not all of the DUML load is being reconciled. This resulted in under submission of 22,534 kWh for the month of October. Annualised this will result in an estimated 282,745 kWh of under submission.

There is some inaccurate data within the database used to calculate submissions. This is recorded as non-compliance and discussed in **section 2.1** and **3.1**.

Audit outcome

Non-compliant

Non-compliance	Description
Audit Ref: 3.2 With: Clause 15.2 and 15.37B(c) From: 01-Jun-17 To: 19-Nov-18	NZTA lighting volume excluded from submission resulting in an estimated under submission of 282,745 kWh per annum. The database accuracy is assessed to be 96.3% indicating potential over submission of 32,300 kWh per annum. Potential impact: High Actual impact: High Audit history: Three times previously Controls: Moderate Breach risk rating: 6
Audit risk rating	**Rationale for audit risk rating**
High	The controls are rated as moderate as the full field audit is underway to correct the historic issues. The impact is assessed to be high, based on the kWh differences described in **section 3.1**.

Actions taken to resolve the issue	Completion date	Remedial action status
As indicated this relates to the transition of NZTA away from the database.	June 2019	Identified
Preventative actions taken to ensure no further issues will occur	**Completion date**	

CONCLUSION

The full field audit being undertaken by Power Solutions that was originally expected to be completed in August is still in progress but is about 75% complete. The field audit found database inaccuracies in both existing and new work being carried out. The existing field contractor has agreed to continue until March 2019 by which time TCDC expect to have completed the tender process to engage a new field contractor.

Power Solutions continue to manage the database on behalf of the TCDC. I repeat the recommendation that the new connection process is reviewed in conjunction with the council and Powerco as it appears that the process to notify of new connections is not working. This is evident with the Whitianga town centre redevelopment lights, which whilst not selected in the field audit, have not been updated in the database.

TCDC advised Mercury in November effective for the month of October, that they will no longer be paying for the NZTA lights, therefore not all of the DUML load is being reconciled. This resulted in under submission of 22,534 kWh for the month of October. Annualised this will result in an estimated 282,745 kWh of under submission.

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

PARTICIPANT RESPONSE

As Veritek has indicated there are a number of changes occurring in the database and as it relates to the contractor the council has engaged for these services. Mercury would request a suitable period of time between audits to allow for:

- the NZTA sites to be removed from the database and taken over by another retailer
- the field audit to be completed, and
- a new contractor to be in place and familiar with the Council sites and processes.

Mercury suggests that a 12-month re-audit period should allow this to occur.