ELECTRICITY INDUSTRY PARTICIPATION CODE
DISTRIBUTED UNMETERED LOAD AUDIT REPORT

VERITEK

For

INVERCARGILL CITY COUNCIL AND TRUSTPOWER LIMITED

Prepared by: Rebecca Elliot

Date audit commenced: 16 January 2020

Date audit report completed: 24 January 2020

Audit report due date: 11-Feb-20

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EXECUTIVE SUMMARY

This audit of the Invercargill City Council (**ICC**) Unmetered Streetlights DUML database and processes was conducted at the request of Trustpower Limited (**Trustpower**) 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.

Trustpower use data from the ICC RAMM database to reconcile this load. ICC provide a monthly report to Trustpower of this database.

The field audit was undertaken of a statistical sample of 348 items of load on 16th January 2020.

In the previous audit it was recommended that a 100% field audit be completed to correct inaccuracies resulting from poor data capture during the LED rollout. ICC advised that the 100% field audit has been completed. The field audit saw a significant improvement in the accuracy of the database, but the potential error is still greater than +/-5.0% acceptable threshold. The indicated impact of the errors on submission is estimated to be a very minor 900 kWh.

The majority of the non-compliant items have been addressed since the last audit. The processes for data capture have been reviewed and the data accuracy requirements have been reiterated to the field contractor. I am confident that the database accuracy will continue to improve as a result of these actions.

The audit found five non-compliances and makes no recommendations. The future risk rating of 10 indicates that the next audit be completed in 12 months. I have considered this in conjunction with Trustpower's responses and recommend that the next audit be in 18 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	Database is not confirmed as accurate with a 95% level of confidence resulting in a minor potential under submission of 900kWh per annum as recorded in **section 3.**1.	Moderate	Low	2	Identified
Location of each item of load	2.3	11(2)(b) of Schedule 15.3	Two items of load with insufficient details to locate them.	Moderate	Low	2	Investigating
All load recorded in database	2.5	11(2A) of Schedule 15.3	Nine additional lights were found in the field.	Moderate	Low	2	Identified
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 900 kWh higher than the DUML database indicates.	Moderate	Low	2	Identified
Volume information accuracy	3.2	15.2 and 15.37B(c)	Database is not confirmed as accurate with a 95% level of confidence as recorded in **section 3.**1.	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	Description	Action
		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

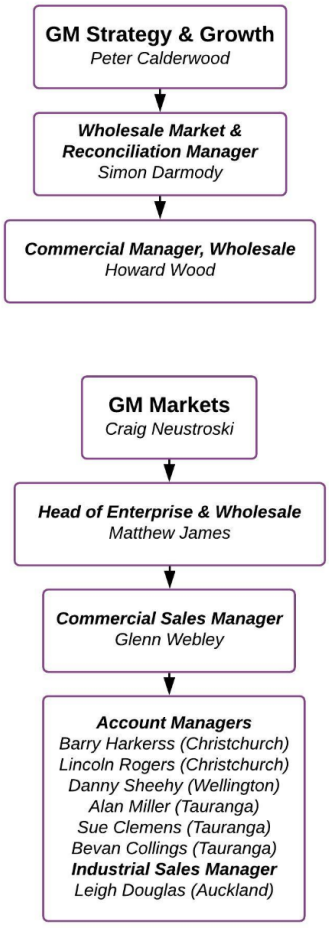
Section 11 of the Electricity Industry Act provides for the Electricity Authority to exempt any participant from compliance with all or any of the clauses.

Audit commentary

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

1.2. Structure of Organisation

Trustpower provided a copy of their organisational structure:



1.3. Persons involved in this audit

Auditors:

Name	Title	Company
Rebecca Elliot	Auditor	Veritek
Brett Piskulic	Supporting Auditor	Veritek

Other personnel assisting in this audit were:

Name	Title	Company
Russell Pearson	Roading Manager	Invercargill City Council
David McCormick	Engineering Services	Invercargill City Council
Robbie Diederen	Reconciliation Analyst	Trustpower

1.4. Hardware and Software

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

ICC 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	Number of items of load	Database wattage (watts)
0008801003TPFE8	ICC LIGHTS – TPC URBAN	INV0331	1,210	101,075
0008801013TP545	ICC LIGHTS - TPC RURAL	INV0331	185	30,552
0008803002NV4BD	ICC LIGHTS - EIL INVERCARGILL	INV0331	5034	383,510
0008803012NVE10	ICC LIGHTS - EIL INVERCARGILL	INV0331	383	39,172
Total			**6,812**	**554,309**

As previously noted, the database has 1,194 items of load where the ICP is recorded as "PRIVATE". Powernet have confirmed that these are as recorded as standard or shared unmetered load against the relevant ICP and are therefore excluded from submission and the scope of this audit.

1.7. Authorisation Received

All information was provided directly by Trustpower and ICC.

1.8. Scope of Audit

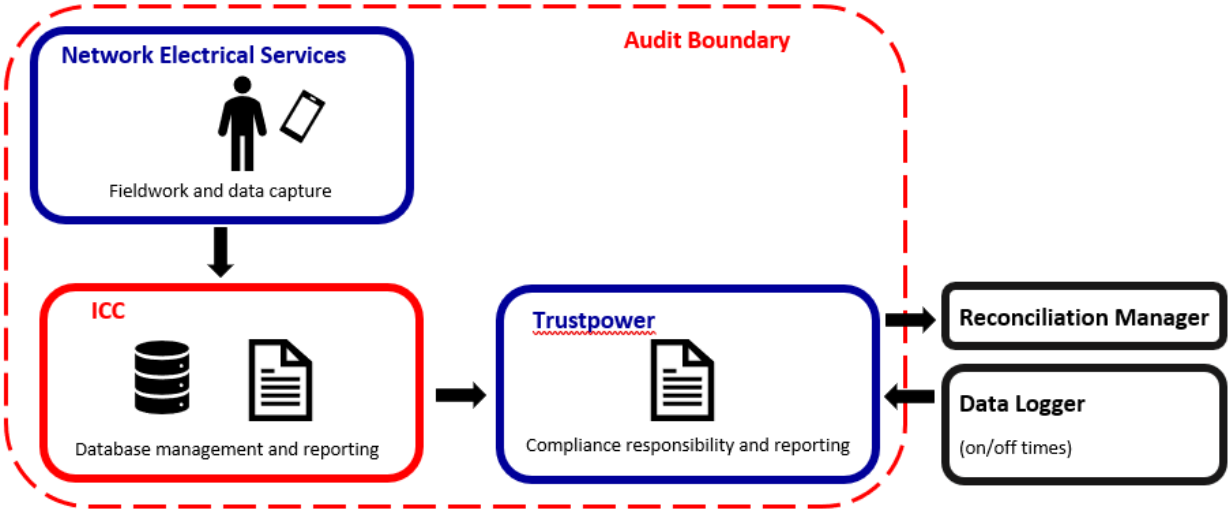
This audit of the ICC DUML database and processes was conducted at the request of Trustpower, in accordance with clause 15.37B. The purpose of this audit is to verify that the volume information is being calculated accurately, and that profiles have been correctly applied.

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

Trustpower use ICC's RAMM database for submission. ICC provide a monthly report to Trustpower of this database.

ICC's contractor for streetlight installation and maintenance is Network Electrical Servicing.

The scope of the audit encompasses the collection, security and accuracy of the data, including the preparation of submission information based on the database reporting. The diagram below shows the audit boundary for clarity.



The audit was carried out at ICC's premises and a field audit of 348 items of load was undertaken in Invercargill on the 16th January 2020.

1.9. Summary of previous audit

The previous audit was undertaken by Rebecca Elliot of Veritek Limited in October 2019. Five non-compliances were identified, and one recommendation was made. The status of the non-compliances and recommendation are described below.

Table of Non-Compliance

Subject	Section	Clause	Non-Compliance	Status
Deriving submission information	2.1	11(1) of Schedule 15.3	Database is not confirmed as accurate with a 95% level of confidence as recorded in **section 3.**1. 19 items of load with either an incorrect lamp description or wattage or ballast applied resulting in an estimated 974kWh under submission. Festive lights connected to unmetered circuits not tracked in the database resulting in an estimated minor volume of load not being reconciled. The monthly database extract provided does not track changes at a daily basis and is provided as a snapshot.	Still existing Cleared Cleared Cleared
Location of each item of load	2.3	11(2)(b) of Schedule 15.3	Two items of load with insufficient details to locate them.	Still existing
All load recorded in database	2.5	11(2A) of Schedule 15.3	Six additional lights were found in the field.	Still existing

Subject	Section	Clause	Non-Compliance	Status
Database accuracy	3.1	15.2 and 15.37B(b)	Database is not confirmed as accurate with a 95% level of confidence. 19 items of load with either an incorrect lamp description or wattage or ballast applied resulting in an estimated 974kWh under submission. Festive lights connected to unmetered circuits not tracked in the database resulting in an estimated minor volume of load not being reconciled.	Still existing Cleared Cleared
Volume information accuracy	3.2	15.2 and 15.37B(c)	Database is not confirmed as accurate with a 95% level of confidence as recorded in **section 3.**1. 19 items of load with either an incorrect lamp description or wattage or ballast applied resulting in an estimated 974kWh under submission. Festive lights connected to unmetered circuits not tracked in the database resulting in an estimated minor volume of load not being reconciled. The monthly database extract provided does not track changes at a daily basis and is provided as a snapshot.	Still existing Cleared Cleared Cleared

Table of Recommendations

Subject	Section	Recommendation for Improvement	Status
Database Accuracy	3.1	LED light specifications to be provided for next audit to confirm the correct wattage is recorded in the database.	Cleared
		100% field audit is undertaken to ensure database accuracy thresholds are met.	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

Trustpower have requested Veritek to undertake this streetlight audit.

Audit commentary

This audit report confirms that the requirement to conduct an audit has been met for this database.

Audit outcome

Compliant

2. DUML DATABASE REQUIREMENTS

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

Code reference

Clause 11(1) of Schedule 15.3

Code related audit information

The retailer must ensure the:

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

Audit observation

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

Audit commentary

Trustpower reconciles this DUML load using the STL profile. The on and off times are derived from data logger information. Changes are tracked on a daily basis within the database. Database outputs were provided. This is then multiplied by the logger hours to produce the kWh value. I confirmed the calculation for November was correct.

The database used to calculate submission does not meet the accuracy threshold required by the code. This is detailed in in **section 3.1** and recorded as non-compliance below.

Audit outcome

Non-compliant

Non-compliance	Description
Audit Ref: 2.1 With: Clause 11(1) of Schedule 15.3 From: 01-Apr-19 To: 30-Sep-19	Database is not confirmed as accurate with a 95% level of confidence resulting in a minor potential under submission of 900kWh per annum as recorded in **section 3.**1. Potential impact: Low Actual impact: Low Audit history: Multiple 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 database accuracy detailed in **section 3.1.** .

Actions taken to resolve the issue	Completion date	Remedial action status
In the near future ICC will have completed :LED upgrading and will not expect many data records to change to minimise risks	April 2020	Identified
Preventative actions taken to ensure no further issues will occur	**Completion date**	
In the near future ICC will have completed :LED upgrading and will not expect many data records to change to minimise risks	April 2020	

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

There are 1,194 items of load recorded as 'PRIVATE'. These have been confirmed as private lights with Powernet and are recorded as either shared or standard unmetered load against the relevant ICP. These are therefore excluded from this audit.

All other items of load have an ICP recorded against them.

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 fields for road name, house address, location (displacement), pole number and GPS coordinates to assist with location.

As recorded in the last audit, all but two items of load have sufficient details to locate them. I have included the pole ID's 119546 and 120225 for reference. They have the road name recorded but no GPS co-ordinates, metres from the end of the road or road number. This is recorded as non-compliance.

Audit outcome

Non-compliant

Non-compliance	Description
Audit Ref: 2.3 With: Clause 11(2)(b) of Schedule 15.3 From: 01-Oct-19 To: 30-Nov-19	Two items of load with insufficient details to locate them. Potential impact: None Actual impact: None Audit history: Once Controls: Moderate Breach risk rating: 2
Audit risk rating	**Rationale for audit risk rating**
Low	The controls are rated as moderate as location details are captured using GPS co-ordinates to ensure items of are locatable, but this has been missed in two instances and not corrected since the last audit. The impact is assessed to be none as only two lights were affected but this is recorded as low as none is not an available option.

Actions taken to resolve the issue	Completion date	Remedial action status
Minor information missing. All data has a road location and the missing information is minor and relates to Christmas decorate lighting which will now be better monitored and noted clearer in the DB.	Feb 2020	Investigating
Preventative actions taken to ensure no further issues will occur	**Completion date**	
Better descriptions as we are now aware of the specific information required for discrete assets	Feb 2020	

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 extract provided has fields for lamp make and lamp model as well as lamp wattage, gear wattage and total wattage and all were populated.

The accuracy of the lamp description, capacity and ballasts recorded is discussed in **section 3.1**.

Audit outcome

Compliant

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

Code reference

Clause 11(2A) of Schedule 15.3

Code related audit information

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

Audit observation

The field audit was undertaken of 348 lights using the statistical sampling methodology. The population was divided into the following strata:

- Urban Local Authority A-G
- Urban Local Authority H-P
- Urban Local Authority Q-Z
- NZTA A-M
- NZTA N-Z.

Audit commentary

The field audit findings for the sample of lamps was accurate with the exception of the streets detailed in the table below:

Location	Database Count	Field Count	Count differences	Wattage differences	Comments
ISLINGTON ST	21	18	-3	-	1x 70W MH missing in the field. 1x 50W HPS missing in the field. 1x77W LED missing in the field.
NEVILL PL	2	4	+2	2	2x 70W HPS found in the field not 21.4W LED. 2x extra 70W HPS found in the field.
WILTON ST	18	25	+7	-	7x extra 21.4W LEDs found in the field.
GRAND TOTAL	**348**	**354**	**12**	**2**	

The field audit found nine additional lights in the field. This is recorded as non-compliance below.

The accuracy of the database is discussed in **section 3.1**.

Audit outcome

Non-compliant

Non-compliance	Description
Audit Ref: 2.5 With: Clause 11(2A) of Schedule 15.3 From: To: 30-Nov-19	Nine additional lights were found in the field. Potential impact: Low Actual impact: Low Audit history: Three times previously Controls: Moderate Breach risk rating: 2
Audit risk rating	**Rationale for audit risk rating**
Low	The controls are rated as moderate, as the processes to track changes have been strengthened since the last audit but some errors are still evident. The impact is assessed to be low based on kWh variances detailed in **section 3.1**.

Actions taken to resolve the issue	Completion date	Remedial action status
For Wilton Street, data existed in spreadsheet but under another ICP which was the actual error not that they were missing from RAMM.	March 2020	Identified
Preventative actions taken to ensure no further issues will occur	**Completion date**	
More care in procedures for adding or amending data	March 2020	

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. The change management process and the compliance of the database reporting provided to Trustpower is detailed in **sections 3.1** and **3.2**.

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 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	Invercargill City Council region
Strata	The database contains items of load in Invercargill City Council area. The processes for the management of ICC items of load are the same, but I decided to place the items of load into five strata, as follows: 1. Urban Local Authority A-G 2. Urban Local Authority H-P 3. Urban Local Authority Q-Z 4. NZTA A-M 5. NZTA N-Z.
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 27 sub-units or 5% of the total database wattage.
Total items of load	348 items of load were checked.

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

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

Audit commentary

A statistical sample of 348 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	100.8%	Wattage from survey is higher than the database wattage by 0.8%
R_L	97.8%	With a 95% level of confidence it can be concluded that the error could be between -2.2% and +8%
R_H	108%	

These results were categorised in accordance with the "Distributed Unmetered Load Statistical Sampling Audit Guideline", effective from 01/02/19 and the table below shows that Scenario B (detailed below) applies.

The conclusion from Scenario B is that in statistical terms, the inaccuracy is statistically significant at the 95% level. The sample results across the strata means that the true wattage (installed in the field) could be between 2.2% lower and 8% higher than the wattage recorded in the DUML database. Non-compliance is recorded because the potential error is greater than +/-5.0%.

In absolute terms the installed capacity is estimated to be equal to what the database indicates.

There is a 95% level of confidence that the installed capacity is between 1 kW lower and 2 kW higher than the database.

In absolute terms, total annual consumption is estimated to be 900 kWh higher than the DUML database indicates.

There is a 95% level of confidence that the annual consumption is between 2,700 kWh p.a. lower and 9,900 kWh p.a. higher than the database indicates.

Overall this is a significant improvement from the last audit findings reflective of the 100% field audit that has been undertaken.

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 %

Lamp description and capacity accuracy

Wattages for all items of load were checked against the published standardised wattage table produced by the Electricity Authority. No discrepancies were found.

In the previous audit it was recommended that LED light specifications are provided to confirm the correct wattage is recorded in the database. This information has been provided and the correct wattages have been applied.

Change management process findings

The processes were reviewed for new lamp connections and the tracking of load changes due to faults and maintenance. Fault, maintenance and LED upgrade work is completed by Network Electrical Services.

New subdivisions require a proposed plan to be provided and an “as built” plan once the development is complete. New streetlights are only electrically connected once they have been vested. When the lights are vested to the council they are added to the database.

Outage patrols are conducted by ICC for the NZTA lights covering the whole network about every six weeks and fortnightly for pedestrian crossings. There are no outage patrols for the LED lights as the failure rate is so low.

The processes to track changes have been reviewed and the requirement for accurate data capture has been reiterated to the contractors.

In the previous audit it was recommended that a 100% field audit be completed to correct inaccuracies resulting from poor data capture during the LED rollout. ICC advised that the 100% field audit has been completed. My field audit saw an overall improvement in accuracy of the database, but the potential error is still outside than the acceptable +/-5.0% threshold.

Changes are endeavoured to be made to the database by the 25th of the month so they can be included in the monthly report.

Festive lighting has been added to the RAMM database and these items are included when electrically connected in the monthly report to Trustpower.

Private lights are recorded in the database for the council's reference and are the responsibility of PowerNet and are therefore not within the scope of this audit.

Audit outcome

Non-compliant

Non-compliance	Description
Audit Ref: 3.1 With: Clause 15.2 and 15.37B(b) From: 01-Oct-19 To: 30-Nov-19	Database is not confirmed as accurate with a 95% level of confidence. In absolute terms, total annual consumption is estimated to be 900 kWh higher than the DUML database indicates. Potential impact: Low Actual impact: Low Audit history: Three times previously 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
The festive lighting added to database to be compliant resulted in a risk score due to no exact location of lights. Data is now stable as LED do not need changes so risks to changes is now very low.	March 2020	Identified
Preventative actions taken to ensure no further issues will occur	**Completion date**	
Continue to develop procedural checks	Ongoing	

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

Code reference

Clause 15.2 and 15.37B(c)

Code related audit information

The audit must verify that:

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

Audit observation

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

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

Audit commentary

Trustpower reconciles this DUML load using the STL profile. The on and off times are derived from data logger information. Changes are tracked on a daily basis within the database. Database outputs were provided. This is then multiplied by the logger hours to produce the kWh value. I confirmed the calculation for November was correct.

There is some inaccurate data within the ICC's database used to calculate submissions. Overall the database accuracy has improved since the last audit, but some errors are still evident. This is recorded as non-compliance and detailed in **sections 2.1**, **2.5** and **3.1**.

Audit outcome

Non-compliant

Non-compliance	Description
Audit Ref: 3.2 With: Clause 15.2 and 15.37B(c) From: 01-Apr-19 To: 30-Nov-19	Database is not confirmed as accurate with a 95% level of confidence resulting in a minor potential under submission of 900kWh per annum as recorded in **section 3.**1. Potential impact: Low Actual impact: Low Audit history: Multiple 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 database accuracy detailed in **section 3.1.** .

Actions taken to resolve the issue	Completion date	Remedial action status
Need more data input controls for dates in and out. This will need to be manual actions.	April 2020	Identified
Preventative actions taken to ensure no further issues will occur	**Completion date**	
Procedures updated.	April 2020	

CONCLUSION

Trustpower use data from the ICC RAMM database to reconcile this load. ICC provide a monthly report to Trustpower of this database.

The field audit was undertaken of a statistical sample of 348 items of load on 16th January 2020.

In the previous audit it was recommended that a 100% field audit be completed to correct inaccuracies resulting from poor data capture during the LED rollout. ICC advised that the 100% field audit has been completed. The field audit saw a significant improvement in the accuracy of the database, but the potential error is still greater than +/-5.0% acceptable threshold. The indicated impact of the errors on submission is estimated to be a very minor 900 kWh.

The majority of the non-compliant items have been addressed since the last audit. The processes for data capture have been reviewed and the data accuracy requirements have been reiterated to the field contractor. I am confident that the database accuracy will continue to improve as a result of these actions.

The audit found five non-compliances and makes no recommendations. The future risk rating of 10 indicates that the next audit be completed in 12 months. I have considered this in conjunction with Trustpower's responses and recommend that the next audit be in 18 months.

PARTICIPANT RESPONSE

Data has been field checked and the data is now more reliable. The issues found for the festive lights not having location is really minor given the street is actually provided. Wilton Street data is in RAMM but the ICP is incorrect. This is a one off and now corrected.

LED installation of nearly all the lights now mean that the changes of the past due to lamp changes are not going to occur as the renewal of LED are expected in 15 to 20 years so data is now stable. The number of monthly changes will consequently be very low.