ELECTRICITY INDUSTRY PARTICIPATION CODE
DISTRIBUTED UNMETERED LOAD AUDIT REPORT

VERITEK

For

DUNEDIN CITY COUNCIL AND MERCURY ENERGY LIMITED (MEEN)
NZBN: 9429037705305

Prepared by: Steve Woods

Date audit commenced: 1 December 2022

Date audit report completed: 17 January 2023

Audit report due date: 1 February 2023

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EXECUTIVE SUMMARY

This audit of the **Dunedin City Council (DCC)** 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.

DCC was switched to the MEEN code 1st October 2022. This audit examines submission since it switched to the MEEN participant code.

During the previous audit, the only database used was a RAMM database. There are now two databases; the existing database, RAMM, for non-controlled lights and a "Central Management System" called Planet. The outputs of RAMM and Planet are added together to calculate the submission information for each month.

Mercury reconciles the DCC DUML load using the HHR profile in accordance with exemption 233. Wattages for the RAMM database are derived from a RAMM database extract. On and off times are derived from a data logger. The output of Planet is kWh because each light has a meter chip and the difference between the meter reading at the start of the month and the meter reading at the end of the month is used as the kWh for each light for the month.

Both databases are managed by DCC, who is Mercury's customer. Fault, maintenance, new connection and upgrade work is completed by Ventia. Ventia's staff update RAMM using pocket RAMM in the field, or RAMM in the office. Planet is updated by DCC.

I compared the two DCC databases provided, to the submission information provided by Mercury, for the month of November 2022 and found it matched. The difference between the meter start and meter end watt hour readings are used for the month's submission. Approximately 89.5% of the DCC lights are dimmed, which began on 24 December 2021.

The field audit was undertaken of a statistical sample of 470 items of load on 8th December 2022 and confirmed that the database accuracy is within the allowable +/-5% threshold.

Festive lights are recorded in an Excel spreadsheet and reported to Mercury Energy with connection and disconnection dates for the months that they are connected.

This audit found two non-compliances, and one recommendation was made. The future risk rating indicates that the next audit be due in 24 months. I have considered this in conjunction with the comments provided by Mercury and I recommend the next audit is conducted in 24 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	43 lights not included in the monthly report to Mercury.	Moderate	Low	2	Investigating
Volume information accuracy	3.2	15.2 and 15.37B (c)	43 lights not included in the monthly report to Mercury.	Moderate	Low	2	Investigating
Future Risk Rating						4	

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
Deriving submission information	2.1	Seek clarification from DCC regarding: • start and end dates not being November 1st or November 30th, and • energy used being different to the difference between start and end meter readings.

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

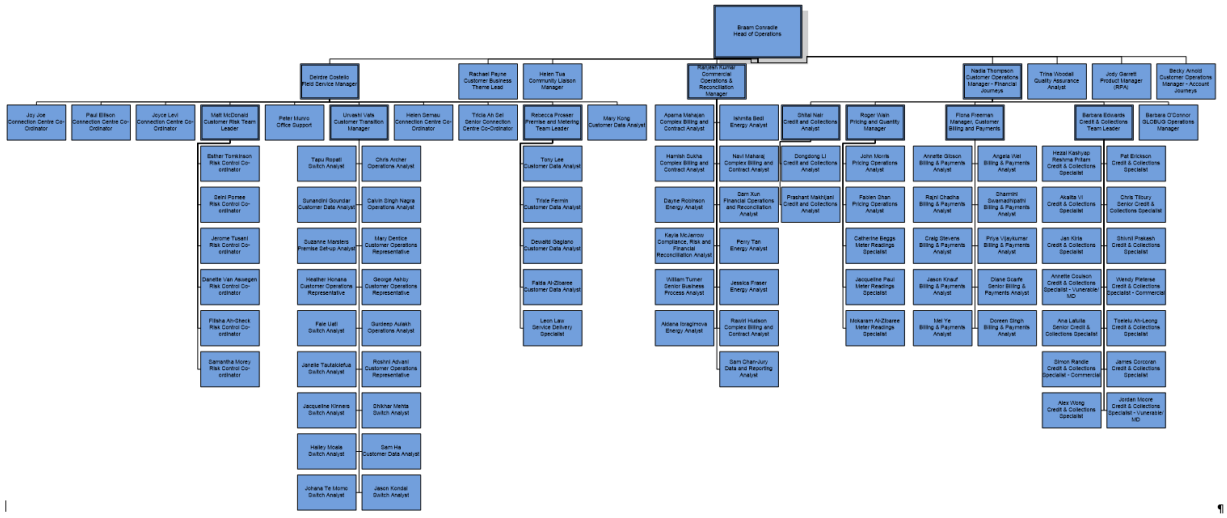
Current code exemptions were reviewed on the Electricity Authority website.

Audit commentary

Mercury has been granted exemption No. 233. This allows them to provide half-hour ("HHR") submission information instead of non-half-hour ("NHH") submission information for distributed unmetered load ("DUML"). This exemption expires on 31 October 2023.

1.2. Structure of Organisation

Mercury Energy provided a copy of their organisational structure.



1.3. Persons involved in this audit

Auditor:

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
Chris Posa	Compliance Reconciliation Analyst	Mercury Energy
Cynthia Wilson	Systems and Information Officer – TL	DCC
Jiss Thomas	Systems and Information Officer	DCC

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.

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

Festive lights are recorded in an Excel spreadsheet which is stored in a network area that can be accessed by all transport staff and some staff from other departments who require access to files in the directory. Backup and restoration procedures are in place for all files saved on the network, and access to the network is restricted using logins and passwords.

Systems used by Mercury to calculate submissions are assessed as part of their reconciliation participant audit.

1.5. Breaches or Breach Allegations

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

ICP Data

ICP Number	Description	NSP	Profile	Number of items of load	Database wattage (watts)
0000201300DE692	SDN GXP street lighting	SDN0331	HHR	4,618	321,206
0000203111DE93D	HWB GXP street lighting	HWB0331	HHR	10,277	652,921
0001982460TGA89	DCC STREETLIGHTS ROLLINSONS ROAD	HWB0331	HHR	404	21,702
0001982461TG6CC	DCC STREETLIGHTS SWAMPY RIDGE TRACK	NSY0331	HHR	69	3,972
Total				15,368	999,801

1.6. Authorisation Received

All information was provided directly by Mercury and DCC.

1.7. Scope of Audit

This audit of the DCC DUML databases and processes was conducted at the request of 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.

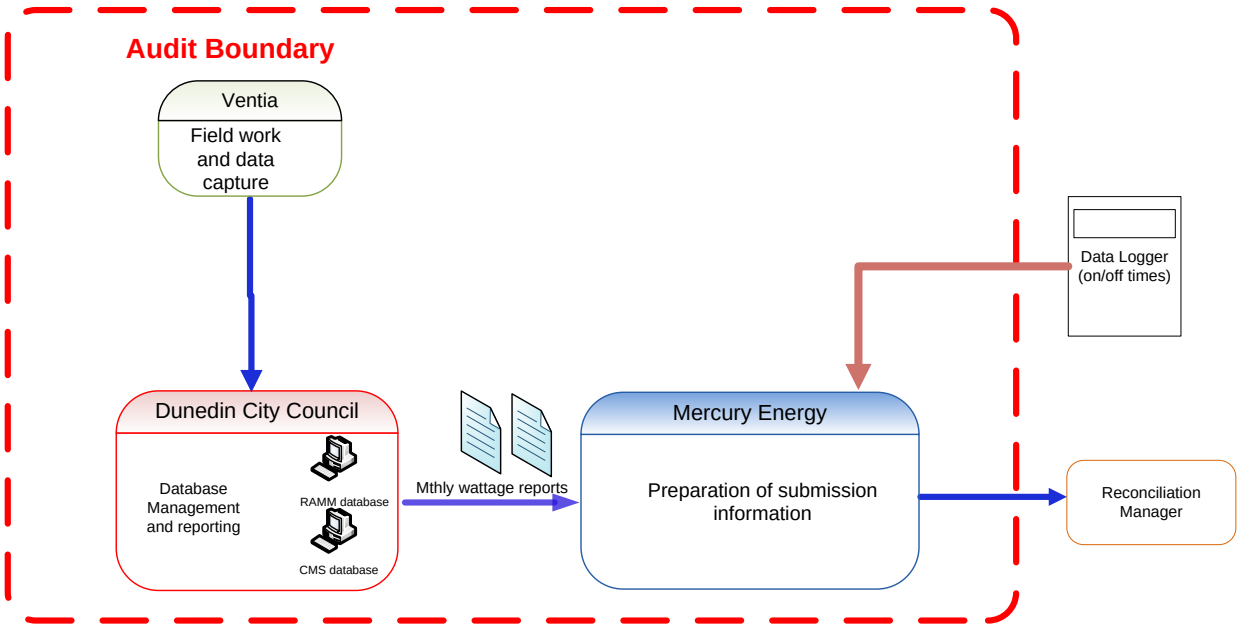
During the previous audit, the only database used was a RAMM database. There are now two databases; the existing database, RAMM, for non-controlled lights and a “Central Management System” called Planet. The outputs of RAMM and Planet are added together to calculate the submission information for each month.

Both databases are managed by DCC, who is Mercury’s customer. Fault, maintenance, new connection and upgrade work is completed by Ventia. Ventia’s staff update RAMM using pocket RAMM in the field, or RAMM in the office. Planet is updated by DCC.

Festive lights are recorded in an Excel spreadsheet and reported to Mercury with connection and disconnection dates for the months that they are connected.

Mercury reconciles the DCC DUML load using the HHR profile in accordance with exemption 233. Wattages for the RAMM database are derived from a RAMM database extract. On and off times are derived from a data logger. The output of Planet is kWh because each light has a meter chip and the difference between the meter reading at the start of the month and the meter reading at the end of the month is used as the kWh for each light for the month.

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 boundaries for clarity.



A field audit of a statistical sample of 470 items of load recorded in the database was undertaken on the 8th December 2022.

1.8. Summary of previous audit

The last audit report completed by Rebecca Elliot of Veritek Limited in December 2021 was reviewed. Six non-compliances were identified, and one recommendation was made. The statuses of the non-compliances are described below.

Table of Non-compliance

Subject	Section	Clause	Non-compliance	Status
Deriving submission information	2.1	11(1) of Schedule 15.3	Investigation and correction to the submission data differences, as recorded in the last audit have not been adjusted resulting in a potential under submission of 41,957.40 kWh per annum. 22 items of load have incorrect gear wattages recorded resulting in an estimated very minor over submission of 598 kWh.	Switched to new trader November 2022. Cleared

Subject	Section	Clause	Non-compliance	Status
Description and capacity of load	2.4	11(2) (c) &(d)of Schedule 15.3	One item of load with no lamp model or wattage recorded.	Cleared
All load recorded in database	2.5	11(2A) of Schedule 15.3	Two additional lights found in the field not added to database.	Cleared
Audit trail	2.7	11(4) of Schedule 15.3	Festive lights are recorded in an Excel spreadsheet, which does not have an audit trail.	Cleared
Database accuracy	3.1	15.2 and 15.37B(c)	One item of load with no lamp model or wattage recorded. 22 items of load have incorrect gear wattages recorded.	Cleared
Volume information accuracy	3.2	15.2 and 15.37B(c)	Investigation and correction to the submission data differences, as recorded in the last audit have not been adjusted resulting in a potential under submission of 41,957.40 kWh per annum. 22 items of load have incorrect gear wattages recorded resulting in an estimated very minor over submission of 598 kWh.	Switched to new trader November 2022. Cleared

Recommendations

Recommendation	Section	Description	Status
Deriving submission information	2.1	Recommend investigation to identify why there is a lighting volume difference between the monthly report and the database.	Switched to new trader November 2022.

1.9. 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.

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

DCC was switched to the MEEN code 1st October 2022. The data for submission is recorded in two databases that DCC manage, one records the CMS output and the other (for non-dimmed) is RAMM. All of the lights, including the lights recorded in CMS are also recorded in RAMM for asset management. Mercury reconciles the DCC DUML load using the HHR profile in accordance with exemption 233. Wattages for the RAMM database are derived from a RAMM database extract. On and off times are derived from a data logger. The output of Planet is kWh because each light has a meter chip and the difference between the meter reading at the start of the month and the meter reading at the end of the month is used as the kWh for each light for the month. Changes are tracked on a daily basis within the database.

I considered whether Mercury required a separate profile to cater for the dimming but concluded that Clause 2 of Schedule 15.3 allows unmetered load quantities to be derived from " the distributed unmetered load database or other sources of relevant information." Planet can be considered as "other sources of information" as long as Mercury has an exemption in place. The Electricity Authority confirmed that this interpretation was correct.

I compared the DCC databases provided to the submission information provided by Mercury for the month of November 2022 and found it matched. The difference between the meter start and meter end watt hour readings are used for the month's submission. DCC undertakes dimming of approximately 89.5% of the lamps on the network, this began on 24 December 2021.

Festive lights are maintained separately in an Excel spreadsheet, and connection dates are provided to Mercury so that they can be included in submissions when connected and excluded when disconnected.

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

Clarification has been sought from DCC in relation to some of the Planet functionality. The information is still being gathered by DCC at the time this report was finalised, however I still recommend the information is prepared so it can be evaluated during the next audit. The information required is as follows:

- With reference to the "EnergyLog - November 2022" spreadsheet from the CMS:
  - Columns G and H show that not all of the start dates are November 1st and not all of the end dates are November 30th. Clarification is required.
  - Clarification is required as to why there is a difference between the meter start/end difference and the energy used columns (L and K).

Recommendation	Description	Audited party comment	Remedial action
Regarding clause 11(1) of schedule 15.3	Seek clarification from DCC regarding: • start and end dates not being November 1st or November 30th, and • energy used being different to the difference between start and end meter readings.	Dunedin CC have advised that they are investigating with their software owners, they believe that the issue is due to a bug in the software, this has been raised with the developers and they are awaiting a resolution	Investigating

It was identified that there were 117 lights missing from the monthly report from DCC to Mercury for November 2022. DCC investigated and found that some were disconnected with no consumption, but there were 43 that should have been reported. This could lead to under submission of approx. 1,000 kWh per month.

Audit outcome

Non-compliant

Non-compliance	Description
Audit Ref: 2.1 Clause 11(1) of Schedule 15.3 From: 01-Oct-22 To: 30-Nov-22	43 lights not included in the monthly report to Mercury. Potential impact: Medium Actual impact: Low Audit history: Multiple times Controls: Moderate Breach risk rating: 2
Audit risk rating	**Rationale for audit risk rating**
Low	The controls are rated as moderate because there is scope to incorporate checks for missing data. The impact is assessed to be low, based on the kWh differences described above.

Actions taken to resolve the issue	Completion date	Remedial action status
Dunedin CC have advised that they missed these lights because they were unconnected with no energy consumption recorded in their Planet 'Central Management System' and a few got replaced. They are investigating and will make the appropriate updates to have these lights added to Planet.	March 2023	Investigating
Preventative actions taken to ensure no further issues will occur	**Completion date**	
Dunedin CC is aware of the importance of keeping their information accurate and this issue has been taken as a reminder.	Ongoing	

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 and festive lights spreadsheet were checked to confirm whether an ICP is recorded for each item of load.

Audit commentary

All items of load in RAMM and the festive lights spreadsheet have an ICP number recorded.

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 and festive lights spreadsheet were checked to confirm the location is recorded for all items of load.

Audit commentary

Street addresses and GPS coordinates are recorded for all 15,368 items of load in RAMM and all 5,700 items of load in the festive light's spreadsheet.

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 and festive lights spreadsheet were checked to confirm they contained a field for lamp type and wattage capacity and included any ballast or gear wattage.

Audit commentary

All lamps in RAMM and the festive lights spreadsheet have a light model, lamp wattage and gear wattage recorded.

The accuracy of the recorded wattage information 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

A field audit of a statistical sample of 470 items of load recorded in the database was undertaken on the 8th December 2022.

Audit commentary

The field audit discrepancies are detailed in the table below:

Address	Database Count	Field Count	Count differences	Wattage differences	Comments
Glenbrook Dr (MSI)	6	6		3	3 x 70W HPS recorded in the database but 3 x 44W LED located in the field.
Total	15,368	**15,368**	**0**	**3**	

No additional items of load found in the field of the 470 items of load sampled. The database accuracy is discussed in **section 3.1.**

Audit outcome

Compliant

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 and festive lights spreadsheet were examined.

Audit commentary

The RAMM database functionality achieves compliance with the code.

The management of festive lights is still done in an Excel spreadsheet. Each year, the transport team confirms any additions, deletions or changes to the lights with the events team, and the connection and disconnection dates. A page to track any changes has been added to the Festive lights' spreadsheet. The spreadsheet is saved as a new version and updated, then sent to Mercury.

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 and festive lights spreadsheet were checked for audit trails.

Audit commentary

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

The management of festive lights is still done in an Excel spreadsheet. Each year, the transport team confirms any additions, deletions or changes to the lights with the events team, and the connection and disconnection dates. A page to track any changes has been added to the Festive lights' spreadsheet. The spreadsheet is saved as a new version and updated, then sent to Mercury.

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	Dunedin City Council region
Strata	The database contains items of load in the Dunedin area. The processes for the management of all DDC items of load are the same, and I decided to create five strata: • Crown, • Parks & Amenities, • Street lighting (street name A-F), • Street lighting (street names G-M), and • Street lighting (street names N-Z).
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 48 sub-units.
Total items of load	470 items of load were checked.

Wattages were checked for alignment with the published standardised wattage table produced by the Electricity Authority against the database or in the case of LED lights against the LED light specification.

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

Audit commentary

Database accuracy based on the field audit

A field audit was conducted of a statistical sample of 470 items of load. The "database auditing tool" was used to analyse the results, which are shown in the table below.

Result	Percentage	Comments
The point estimate of R	99.5	Wattage from survey is lower than the database wattage by 0.5%
R_L	97.3	With a 95% level of confidence, it can be concluded that the error could be -2.7%.
R_H	100.0	

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, and the best available estimate indicates that the database is accurate within ± 5.0%.

- In absolute terms the installed capacity is estimated to be 5 kW lower than the database indicates.
- There is a 95% level of confidence that the installed capacity is 27 kW lower to lower than the database.
- In absolute terms, total annual consumption is estimated to be 23,400 kWh lower than the DUML database indicates.
- There is a 95% level of confidence that the annual consumption is between 117,000 kWh p.a. lower to 200 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 %

Lamp description and capacity accuracy

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

As reported in the previous audits, specifications could not be located to verify the lamp and gear wattages applied for the following lamp types. DCC advised that these are historic values and are believed to be correct. The details are included below for reference:

Model	Lamp wattage recorded (W)	Gear wattage recorded (W)	Quantity	Comment
Compact Fluorescent	52	38	6	Confirmed lamp wattage but not gear
Compact Fluorescent	72	5	1	Confirmed lamp wattage but not gear
High Pressure Sodium	1000	120	7	Confirmed lamp wattage but not gear

Private lights

285 private lights are recorded in the database. DCC passes electricity charges to affected customers as part of their rates. If new private lights are identified, DCC collects the light information and updates the database. The lights are associated to a DCC ICP.

Change management process findings

Processes to track changes to the database were reviewed.

For all new connections, an "as built" is required to be submitted to council before connection can occur, the connection maybe done by Delta. Ventia will also install lights. These are added to RAMM once the lights have been confirmed as connected by the Dunedin CC Engineers, the database is updated using pocket RAMM in the DCC office.

Outage patrols are conducted on a monthly cycle, with a particular focus on highways. Dunedin CC now have visibility on 'Planet' and is able to identify any light outages that require resolving, Ventia will be given a job to fix the lamp, which is managed in RAMM.

Fault, maintenance, new connection and upgrade work is completed by Ventia. These are updated in the RAMM using pocket RAMM in the DCC office.

The LED roll-out is now complete, there are a small number of heritage lights that will be changed when a suitable replacement can be identified.

Audit outcome

Compliant

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

DCC was switched to the MEEN code 1st October 2022. The data for submission is recorded in two databases that DCC manage, one records the CMS output and the other (for non-dimmed) is RAMM. All of the lights, including the lights recorded in CMS are also recorded in RAMM for asset management. Mercury reconciles the DCC DUML load using the HHR profile in accordance with exemption 233. Wattages for the RAMM database are derived from a RAMM database extract. On and off times are derived from a data logger. The output of Planet is kWh because each light has a meter chip and the difference between the meter reading at the start of the month and the meter reading at the end of the month is used as the kWh for each light for the month. Changes are tracked on a daily basis within the database.

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Festive lights are maintained separately in an Excel spreadsheet, and connection dates are provided to Mercury so that they can be included in submissions when connected and excluded when disconnected.

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

Clarification has been sought from DCC in relation to some of the Planet functionality. The information is still being gathered by DCC at the time this report was finalised, however I still recommend the information is prepared so it can be evaluated during the next audit. The information required is as follows:

- With reference to the "EnergyLog - November 2022" spreadsheet from the CMS:
  - Columns G and H show that not all of the start dates are November 1st and not all of the end dates are November 30th. Clarification is required.
  - Clarification is required as to why there is a difference between the meter start/end difference and the energy used columns (L and K).

Recommendation	Description	Audited party comment	Remedial action
Regarding clause 11(1) of schedule 15.3	Seek clarification from DCC regarding: • start and end dates not being November 1st or November 30th, and • energy used being different to the difference between start and end meter readings.	Dunedin CC have advised that they are investigating with their software owners, they believe that the issue is due to a bug in the software, this has been raised with the developers and they are awaiting a resolution.	Investigating

It was identified that there were 117 lights missing from the monthly report from DCC to Mercury for November 2022. DCC investigated and found that some were disconnected with no consumption, but there were 43 that should have been reported. This could lead to under submission of approx. 1,000 kWh per month.

Audit outcome

Non-compliant

<table>
<tr><th>Non-compliance</th><th colspan="3">Description</th></tr>
<tr><td>Audit Ref: 3.2
Clause 15.2 and 15.37B(c)

From: 01-Oct-22
To: 30-Nov-22</td><td colspan="3">43 lights not included in the monthly report to Mercury.
Potential impact: Medium
Actual impact: Low
Audit history: Multiple times
Controls: Moderate
Breach risk rating: 2</td></tr>
<tr><th>Audit risk rating</th><th colspan="3">Rationale for audit risk rating</th></tr>
<tr><td>Low</td><td colspan="3">The controls are rated as moderate because there is scope to incorporate checks for missing data.
The impact is assessed to be low, based on the kWh differences described above.</td></tr>
<tr><th colspan="2">Actions taken to resolve the issue</th><th>Completion date</th><th>Remedial action status</th></tr>
<tr><td colspan="2">Dunedin CC have advised that they missed these lights because they were unconnected with no energy consumption recorded in their Planet 'Central Management System' and a few got replaced. They are investigating and will make the appropriate updates to have these lights added to Planet.</td><td>March 2023</td><td rowspan="3">Investigating</td></tr>
<tr><th colspan="2">Preventative actions taken to ensure no further issues will occur</th><th>Completion date</th></tr>
<tr><td colspan="2">Dunedin CC is aware of the importance of keeping their information accurate and this issue has been taken as a reminder.</td><td>Ongoing</td></tr>
</table>

CONCLUSION

DCC was switched to the MEEN code 1st October 2022. This audit examines submission since it switched to the MEEN participant code.

During the previous audit, the only database used was a RAMM database. There are now two databases; the existing database, RAMM, for non-controlled lights and a "Central Management System" called Planet. The outputs of RAMM and Planet are added together to calculate the submission information for each month.

Mercury reconciles the DCC DUML load using the HHR profile in accordance with exemption 233. Wattages for the RAMM database are derived from a RAMM database extract. On and off times are derived from a data logger. The output of Planet is kWh because each light has a meter chip and the difference between the meter reading at the start of the month and the meter reading at the end of the month is used as the kWh for each light for the month.

Both databases are managed by DCC, who is Mercury's customer. Fault, maintenance, new connection and upgrade work is completed by Ventia. Ventia's staff update RAMM using pocket RAMM in the field, or RAMM in the office. Planet is updated by DCC.

I compared the two DCC databases provided, to the submission information provided by Mercury, for the month of November 2022 and found it matched. The difference between the meter start and meter end watt hour readings are used for the month's submission. Approximately 89.5% of the DCC lights are dimmed, which began on 24 December 2021.

The field audit was undertaken of a statistical sample of 470 items of load on 8th December 2022 and confirmed that the database accuracy is within the allowable +/-5% threshold.

Festive lights are recorded in an Excel spreadsheet and reported to Mercury Energy with connection and disconnection dates for the months that they are connected.

This audit found two non-compliances, and one recommendation was made. The future risk rating indicates that the next audit be due in 24 months. I have considered this in conjunction with the comments provided by Mercury and I recommend the next audit is conducted in 24 months.

PARTICIPANT RESPONSE

Mercury has reviewed this report and their comments are contained within the report.