

**ELECTRICITY INDUSTRY PARTICIPATION CODE
DISTRIBUTED UNMETERED LOAD AUDIT REPORT**

For

NZTA NAPIER AND MERIDIAN ENERGY

Prepared by: Rebecca Elliot

Date audit commenced: 19 May 2020

Date audit report completed: 20 July 2020

Audit report due date: 1 August 2020

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EXECUTIVE SUMMARY

This audit of the NZTA Napier (NZTA) DUML database and processes was conducted at the request of Meridian Energy (Meridian) 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.

This RAMM database is managed by Power Solutions. New connection, fault and maintenance work is completed by Pope Electrical. Monthly reports are received by Meridian.

This audit found that the volumes submitted do not match the volumes recorded in the database against the NZTA ICP. This is due to 25 items of load that have the NZTA ICP incorrectly allocated to them. PSL are working with Napier City Council and NZTA to resolve this. The incorrect ICPs can lead to significant submission errors and non-compliance because the submission total does not match the database.

Database accuracy is described as follows:

Result	Percentage	Comments
The point estimate of R	94.8	Wattage from survey is lower than the database wattage by 5.2%
R _L	91.8	With a 95% level of confidence it can be concluded that the error could be between -8.2% and zero
R _H	100.0	

The variability of the sample results across the strata means that the true wattage (installed in the field) could be between 8.2% lower and the same as the wattage recorded in the DUML database. This is greater than the +/-5% allowable threshold and indicates an estimated annual over submission of 2,200 kWh.

This audit found four non-compliances and no recommendations were made. The future risk rating of 21 indicates that the next audit be completed in three months' time. This appears to be an increase in non-compliance from the last audit but in fact there hasn't been a significant decline in the data quality. The increased audit frequency score is due to the database just falling outside of the allowable +/- 5% compared to the last audit where it was just within the threshold. I have considered this in conjunction with Meridian's response and the size of the database and recommend that the next audit be in 11 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	<p>25 items of load with the incorrect ICP recorded against them. Submission information appears correct, but it doesn't match the database volume.</p> <p>The database accuracy is assessed to be 94.8% of the database for the sample checked indicating a potential over submission of approximately 22,200 kWh per annum.</p> <p>The monthly database extract provided does not track changes at a daily basis and is provided as a snapshot.</p>	Weak	Medium	6	Identified
ICP identifier and items of load	2.2	11(2)(a) and (aa) of Schedule 15.3	Items of load recorded against incorrect ICPs in the database.	Weak	Low	3	Identified
Database accuracy	3.1	15.2 and 15.37B(b)	<p>The database accuracy is assessed to be 94.8% of the database for the sample checked indicating a potential over submission of approximately 22,200 kWh per annum.</p> <p>3 items of load have with the incorrect ballast applied.</p> <p>25 items of load with the incorrect ICP recorded against them - submission is correct.</p>	Weak	Medium	6	Identified

Subject	Section	Clause	Non-Compliance	Controls	Audit Risk Rating	Breach Risk Rating	Remedial Action
Volume information accuracy	3.2	15.2 and 15.37B(c)	<p>25 items of load with the incorrect ICP recorded against them. Submission information appears correct, but it doesn't match the database volume.</p> <p>The database accuracy is assessed to be 94.8% of the database for the sample checked indicating a potential over submission of approximately 22,200 kWh per annum.</p> <p>The monthly database extract provided does not track changes at a daily basis and is provided as a snapshot.</p>	Weak	Medium	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	Recommendation
		Nil	

ISSUES

Subject	Section	Description	Issue
		Nil	

1. ADMINISTRATIVE

1.1. Exemptions from Obligations to Comply with Code

Code reference

Section 11 of Electricity Industry Act 2010.

Code related audit information

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

Audit observation

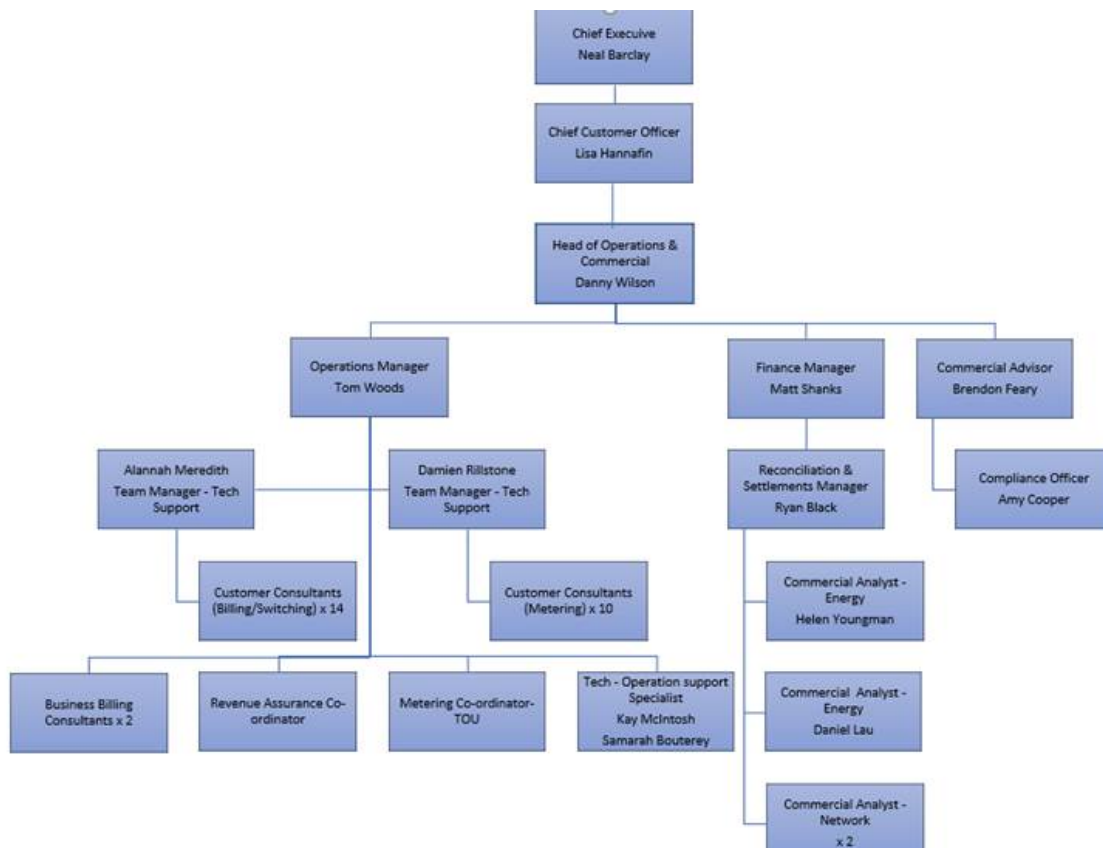
The Electricity Authority's website was reviewed to identify any exemptions relevant to the scope of this audit.

Audit commentary

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

1.2. Structure of Organisation

Meridian Energy provided a copy of their 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
Amy Cooper	Compliance Officer	Meridian Energy
Helen Youngman	Energy Data Analyst	Meridian Energy
Jon Stevens	Projects Engineer	Power Solutions

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”. The specific module used for DUML is called RAMM Contractor.

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

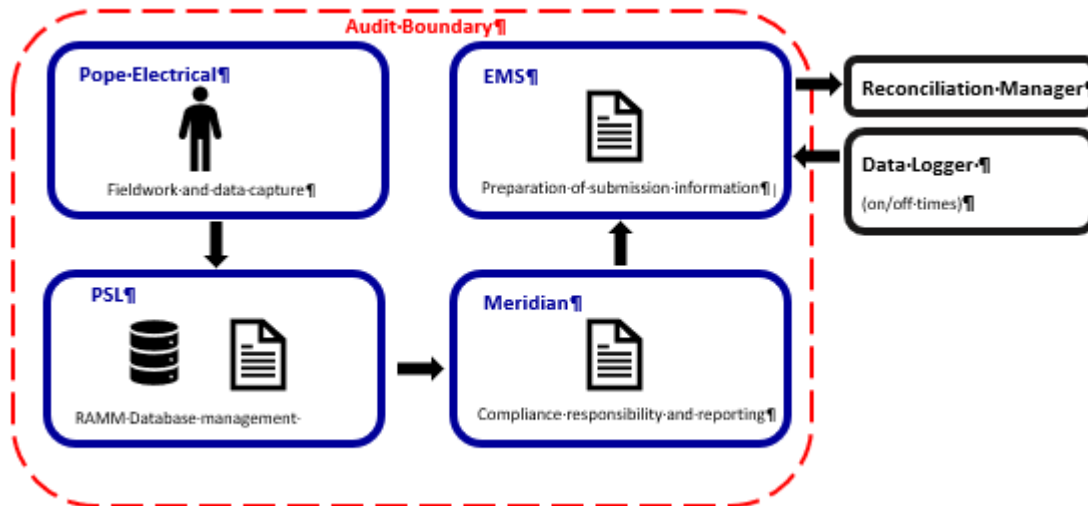
ICP Number	Description	NSP	Profile	Number of items of load	Database wattage (watts)
0000939905HB23E	TRANSIT STREET LIGHTS	FHL0331	DST	573	100,202

1.7. Authorisation Received

All information was provided directly by Meridian and Power Solutions.

1.8. Scope of Audit

The database is remotely hosted by RAMM Software Ltd and is managed by Power Solutions Limited (PSL), on behalf of Napier NZTA, who is Meridian’s customer. Reporting is provided by PSL to Meridian on a monthly basis. The fieldwork and asset data capture are conducted by Pope Electrical. 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 conducted in accordance with the audit guidelines for DUML audits version 1.1. The field audit was undertaken of a statistical sample of 126 items of load in June 2020.

1.9. Summary of previous audit

The previous audit was completed in May 2019 by Steve Woods of Veritek Limited. The table below shows the findings.

Table of Non-Compliance

Subject	Section	Clause	Non-compliance	Status
Deriving submission information	2.1	11(1) of Schedule 15.3	Process to derive submission information includes manipulation of the data by PSL to select by lamp owner not by ICP. Submission information appears correct, but it doesn't match the data base.	Still existing
			Gear wattage not derived from the database.	Cleared
ICP identifier and items of load	2.2	11(2)(a) and (aa) of Schedule 15.3	Items of load against incorrect ICPs in the database.	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

Meridian 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.

Audit commentary

Meridian reconciles this DUML load using the DST profile. The on and off times are derived from a data logger read by EMS and are used to create a shape file. Meridian supplies EMS with the capacity information and EMS calculates the kWh figure for each ICP and includes this in the relevant AV080 file. This process was audited during EMS's agent audit, and its accuracy and compliance was confirmed.

I compared the database output file to the capacity information Meridian supplied to EMS in April 2020 and found the same issue identified in the last audit. PSL uses the "Light Owner" field rather than the ICP field when they prepare the monthly report. When I filtered by ICP, the result included 25 records (5,149 kW) that were not related to NZTA. 21 are related to Napier CC and four are recorded as private. All should have a different ICP. The incorrect ICPs can lead to significant submission errors and non-compliance because the submission total does not match the database. Meridian used 95.053 kW for May 2020, but the database contains 100.202 kW for ICP 0000939905HB23E. This is recorded as non-compliance. PSL are working to resolve the ICP discrepancies with Napier City Council and NZTA. This is recorded as non-compliance below and in **sections 2.2, 3.1 and 3.2.**

The database does not fall within the database accuracy threshold resulting in an estimated annual over submission of 22,200 kWh. This is detailed in **section 3.1.**

Non-compliance	Description		
<p>Audit Ref: 2.1 With: Clause 11(1) of Schedule 15.3</p> <p>From: 01-May-18 To: 31-May-20</p>	<p>25 items of load with the incorrect ICP recorded against them. Submission information appears correct, but it doesn't match the data base volume.</p> <p>The database accuracy is assessed to be 94.8% of the database for the sample checked indicating a potential over submission of approximately 22,200 kWh per annum.</p> <p>The monthly database extract provided does not track changes at a daily basis and is provided as a snapshot.</p> <p>Potential impact: Medium Actual impact: Medium Audit history: Twice Controls: Weak Breach risk rating: 6</p>		
Audit risk rating	Rationale for audit risk rating		
Medium	<p>The controls are rated as weak, because they don't adequately manage the risk of future incorrect submission.</p> <p>The actual impact is assessed to be medium due to the estimated volume of over submission.</p>		
Actions taken to resolve the issue		Completion date	Remedial action status
<p>The incorrect assigning of ICPs in the database has been raised again for resolution with NZTA and PSL.</p> <p>As reported, this does not appear to have impacted accuracy of submission which is based on reporting at light owner level however, we do understand the lack of controls in this area is of concern.</p> <p>Field audit findings and 3 incorrect ballasts have been provided to NZTA and PSL to resolve.</p>		31 Oct 2020	Identified
		31 Oct 2020	
Preventative actions taken to ensure no further issues will occur		Completion date	

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

Code reference

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

Code related audit information

The DUML database must contain:

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

Audit observation

The database was checked to confirm an ICP is recorded for each item of load.

Audit commentary

An ICP is recorded for each item of load but there are errors as recorded in **section 2.1**. 25 items of load are recorded against the NZTA ICP, 21 of these belong to Napier CC and four are recorded as private lights.

Audit outcome

Non-compliant

Non-compliance	Description		
Audit Ref: 2.2 With: Clause 11(2)(a) and (aa) of Schedule 15.3 From: 01-May-18 To: 31-May-20	Items of load recorded against incorrect ICPs in the database. Potential impact: Medium Actual impact: Low Audit history: Twice Controls: Weak Breach risk rating: 3		
Audit risk rating	Rationale for audit risk rating		
Low	The controls are rated as weak, because they don't adequately manage the risk of future incorrect submission. The actual impact is assessed to be low, because submission appears to be accurate.		
Actions taken to resolve the issue		Completion date	Remedial action status
The incorrect assigning of ICPs in the database has been raised again for resolution with NZTA and PSL. As reported, this does not appear to have impacted accuracy of submission which is based on reporting at light owner level however, we do understand the lack of controls in this area is of concern.		31 Oct 2020	Identified
Preventative actions taken to ensure no further issues will occur		Completion date	

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 DUMML database must contain the location of each DUMML 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.

Audit commentary

Lamp make, lamp model, lamp wattage and ballast wattage are included in the database and all were populated which meets the requirements of this clause, and this is used to calculate the monthly kW value.

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 a statistical sample of 126 items of load.

Audit commentary

The field audit discrepancies are detailed in the table below.

Street	Database count	Field count	Light count differences	Wattage recorded incorrectly	Comments
BURNESS UNDERPASS	3	multiple	-3		3x 36W fluorescents have been replaced with an LED wall panel that runs 24 hours a day and is thought to be connected to the pump metered supply.
MEEANEE QUAY EX SH2	5	4	-1	1	1x 250W HPS missing in the field. 1x 126W LED recorded in the database as 250W HPS.

The field audit found some errors. The database accuracy is detailed in **section 3.1**.

No examples were found of additional lights in the field therefore compliance is confirmed for this clause.

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 DUMML 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 Meridian 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

PSL demonstrated 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	NZTA Napier region
Strata	The database contains items of load in Napier urban area. The processes for the management of all NZTA items of load are the same, and I decided to place the items of load into five strata, as follows: <ol style="list-style-type: none"> 1. City 2. North 3. South 4. West 5. Port
Area units	I created a pivot table of the roads and I used a random number generator in a spreadsheet to select a total of 21 sub-units.
Total items of load	126 items of load or 26% of the total database 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

A field audit was conducted of a statistical sample of 126 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	94.8	Wattage from survey is lower than the database wattage by 5.2%
R _L	91.8	With a 95% level of confidence it can be concluded that the error could be between -8.2% and zero
R _H	100.0	

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 C (detailed below) applies.

The conclusion from Scenario C is that the variability of the sample results across the strata means that the true wattage (installed in the field) could be between 8.2% lower and the same as 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 5 kW lower than the database indicates.

There is a 95% level of confidence that the installed capacity is between 8 kW lower to the same as the database.

In absolute terms, total annual consumption is estimated to be 22,200 kWh lower than the DUML database indicates.

There is a 95% level of confidence that the annual consumption is between 35,000kWh p.a. lower to the same as the database indicates.

Scenario	Description
<p>A - Good accuracy, good precision</p>	<p>This scenario applies if:</p> <ul style="list-style-type: none"> (a) R_H is less than 1.05; and (b) R_L is greater than 0.95 <p>The conclusion from this scenario is that:</p> <ul style="list-style-type: none"> (a) the best available estimate indicates that the database is accurate within +/- 5 %; and (b) this is the best outcome.
<p>B - Poor accuracy, demonstrated with statistical significance</p>	<p>This scenario applies if:</p> <ul style="list-style-type: none"> (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. <p>There is evidence to support this finding. In statistical terms, the inaccuracy is statistically significant at the 95% level.</p>
<p>C - Poor precision</p>	<p>This scenario applies if:</p> <ul style="list-style-type: none"> (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 <p>The conclusion from this scenario is that the best available estimate is not precise enough to conclude that the database is accurate within +/- 5 %.</p>

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 the manufacturer's specifications and found all were correct with the exception of three items of load where the 150W HPS ballast has been applied to 250W lamps:

Make	Ballast applied	Correct ballast	No. of lights	Wattage difference
250W HP Sodium	18	28	3	30

These have been passed to PSL to correct.

Location accuracy

The field audit did not identify any location discrepancies.

ICP number and owner accuracy

25 items of load are recorded against the NZTA ICP, 21 of these belong to Napier CC and four are recorded as private lights. This is recorded as non-compliance below and in **sections 2.1, 2.2 and 3.2**.

Change management process findings

The processes were reviewed for new lamp connections and the tracking of load changes due to faults and maintenance. All fault and maintenance work is controlled by PSL and conducted by Pope Electrical through "RAMM Contractor". Once each job is completed the database is updated via field PDA's. Paperwork is also provided to note materials used, and this is compared with the data in the database for each job. The monthly outage patrols also involve a check of database accuracy.

Audit outcome

Non-compliant

Non-compliance	Description		
<p>Audit Ref: 3.1 With: Clause 15.2 and 15.37B(b)</p> <p>From: 01-Jun-19 To: 31-May-20</p>	<p>The database accuracy is assessed to be 94.8% of the database for the sample checked indicating a potential over submission of approximately 22,200 kWh per annum.</p> <p>3 items of load have with the incorrect ballast applied.</p> <p>25 items of load with the incorrect ICP recorded against them - submission is correct.</p> <p>Potential impact: Medium Actual impact: Medium Audit history: None Controls: Weak Breach risk rating: 6</p>		
Audit risk rating	Rationale for audit risk rating		
<p>Medium</p>	<p>The controls are rated as weak, because they don't adequately manage the risk of future incorrect submission.</p> <p>The impact is assessed to be medium due to the estimated volume of over submission.</p>		
Actions taken to resolve the issue		Completion date	Remedial action status
<p>The incorrect assigning of ICPs in the database has been raised again for resolution with NZTA and PSL.</p> <p>As reported, this does not appear to have impacted accuracy of submission which is based on reporting at light owner level however, we do understand the lack of controls in this area is of concern.</p> <p>Field audit findings and 3 incorrect ballasts have been provided to NZTA and PSL to resolve.</p>		<p>31 Oct 2020</p> <p>31 Oct 2020</p>	<p>Identified</p>
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 all ICPs have the correct profile and submission flag, and
- checking the database extract combined with the burn hours against the submitted figure to confirm accuracy.

Audit commentary

Meridian reconciles this DUML load using the DST profile. The on and off times are derived from a data logger read by EMS and are used to create a shape file. Meridian supplies EMS with the capacity information and EMS calculates the kWh figure for each ICP and includes this in the relevant AV080 file. This process was audited during EMS's agent audit, and its accuracy and compliance was confirmed.

I compared the database output file to the capacity information Meridian supplied to EMS in March 2019 and found a significant problem. PSL uses the "Light Owner" field rather than the ICP field when they prepare the monthly report. When I filtered by ICP, the result included 25 records (5,149 kW) that were not related to NZTA but 21 related to Napier CC and four are recorded as private. All should have a different ICP. The incorrect ICPs can lead to significant submission errors and non-compliance because the submission total does not match the database. Meridian 95.053 kW for May 2020, but the database contains 100.202 kW for ICP 0000939905HB23E. This is recorded as non-compliance below and in **sections 2.1, 2.2, and 3.1**.

The database does not fall within the database accuracy threshold resulting in an estimated annual over submission of 22,200 kWh.

On 18 June 2019, the Electricity Authority issued a memo clarifying the memo of 2012 that stated that a monthly snapshot was sufficient to calculate submission from, and confirmed the code requirement to calculate the correct monthly load must:

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

The current monthly report is provided as a snapshot and is non-compliant. Meridian completes revision submissions where corrections are required and confirmed that no corrections have occurred in the last 12 months. Meridian has not yet updated their processes to be consistent with the Authority's memo.

Audit outcome

Non-compliant

Non-compliance	Description		
<p>Audit Ref: 3.2 With: Clause 15.2 and 15.37B(b)</p> <p>From: 01-Jun-19 To: 31-May-20</p>	<p>25 items of load with the incorrect ICP recorded against them. Submission information appears correct, but it doesn't match the data base volume.</p> <p>The database accuracy is assessed to be 94.8% of the database for the sample checked indicating a potential over submission of approximately 22,200 kWh per annum.</p> <p>The monthly database extract provided does not track changes at a daily basis and is provided as a snapshot.</p> <p>Potential impact: Medium Actual impact: Medium Audit history: None</p> <p>Controls: Weak Breach risk rating: 6</p>		
Audit risk rating	Rationale for audit risk rating		
<p>Medium</p>	<p>The controls are rated as weak, because they don't adequately manage the risk of future incorrect submission.</p> <p>The actual impact is assessed to be medium due to the estimated volume of over submission.</p>		
Actions taken to resolve the issue		Completion date	Remedial action status
<p>The incorrect assigning of ICPs in the database has been raised again for resolution with NZTA and PSL.</p> <p>As reported, this does not appear to have impacted accuracy of submission which is based on reporting at light owner level however, we do understand the lack of controls in this area is of concern.</p> <p>Field audit findings and 3 incorrect ballasts have been provided to NZTA and PSL to resolve.</p>		<p>31 Oct 2020</p> <p>31 Oct 2020</p>	<p>Identified</p>
Preventative actions taken to ensure no further issues will occur		Completion date	

CONCLUSION

This audit found that the volumes submitted do not match the volumes recorded in the database against the NZTA ICP. This is due to 25 items of load that have the NZTA ICP incorrectly allocated to them. PSL are working with Napier City Council and NZTA to resolve this. The incorrect ICPs can lead to significant submission errors and non-compliance because the submission total does not match the database.

Database accuracy is described as follows:

Result	Percentage	Comments
The point estimate of R	94.8	Wattage from survey is lower than the database wattage by 5.2%
R _L	91.8	With a 95% level of confidence it can be concluded that the error could be between -8.2% and zero
R _H	100.0	

The variability of the sample results across the strata means that the true wattage (installed in the field) could be between 8.2% lower and the same as the wattage recorded in the DUML database. This is greater than the +/-5% allowable threshold and indicates an estimated annual over submission of 2,200 kWh.

This audit found four non-compliances and no recommendations were made. The future risk rating of 21 indicates that the next audit be completed in three months' time. This appears to be an increase in non-compliance from the last audit but in fact there hasn't been a significant decline in the data quality. The increased audit frequency score is due to the database just falling outside of the allowable +/- 5% compared to the last audit where it was just within the threshold. I have considered this in conjunction with Meridian's response and the size of the database and recommend that the next audit be in 11 months.

PARTICIPANT RESPONSE

Meridian's comments are included in the body of this report.

It is disappointing that the main issues identified in the last audit remain unaddressed. These will be raised again with NZTA and followed up until resolved.