VERITEK

Electricity Industry Participation Code Audit Report

For

Contact Energy Limited

RNZAF Woodbourne
Distributed Unmetered Load

Prepared by Rebecca Elliot – Veritek Ltd

Date of Audit: 17/08/17

Date Audit Report Complete: 9/03/18

Executive Summary

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

The audit was conducted in accordance with the audit guidelines for DUML audits version 1.1, which became effective on 1 June 2107.

Marlborough Lines manages the installation, maintenance and database management of the RNZAF Woodbourne DUML load on their network.

This audit found five non-compliances and makes no recommendations. The main issue identified (relating to two non-compliances) was that the ICP was set up incorrectly in SAP as a metered supply, and therefore the unmetered load volumes were not being submitted. Contact are correcting this and will be correcting volumes through the wash up process. The other four non-compliances have little or no effect on submission and should not be difficult to correct.

The indicative audit frequency recommends the next audit is in 12 months. I have considered this result in conjunction with Contact's responses and I agree with this recommendation.

Table of Non-Compliance

Subject	Section	Clause	Non-compliance	Controls	Audit Risk Rating	Breach Risk Rating	Remedial Action
Deriving Submission	2.1	11(1) of Schedule 15.3	Incorrect methodology being used to derive submission.	Weak	Low	3	Identified
ICP Identifier	2.2	11(2)(a) of Schedule 15.3	ICP identifier not recorded against each item of load in the database.	Moderate	Low	2	Identified
Location of Load	2.3	11(2)(b) of Schedule 15.3	Three items of load with insufficient location details recorded.	Strong	Low	1	Identified
Database accuracy	3.1	15.2 & 15.37B(b)	45 Incorrect lamp capacities.	Moderate	Low	2	Identified
Volume Accuracy	3.2	15.2 & 15.37B(c)	Incorrect values used to derive submission.	Weak	Low	3	Identified
Future Risk Rating						11	

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

Table of Recommendations

Subject	Section	Recommendation	Description
		Nil	

Persons Involved in This Audit:

Auditor:

Rebecca Elliot
Veritek Limited
Electricity Authority Approved Auditor

Other personnel assisting in this audit were.

Name	Title	Company
Aaron Wall	HDM Team Leader	Contact Energy
Allie Jones	HDM Team Analyst	Contact Energy
Jason Null	Contracts Manager	Marlborough Lines
Sally-Ann King	Asset Records Clerk	Marlborough Lines

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1. Administrative

1.1 List of ICPs

The following ICPs are relevant to the scope of this audit.

ICP	Description	NSP	No. of items of load
0004450017ML9D6	STREET LIGHTS UNMETERED STREETLIGHTING	BLN0331	48

1.2 Exemptions from Obligations to Comply with Code (Section 11 of Electricity Industry Act 2010)

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.

Contact confirms that is an exemption is in place relevant to the scope of this audit:

- Exemption No. 177. Exemption to clause 8(g) of schedule 15.3 of the Electricity Industry Participation Code 2010 ("Code") in respect of providing half-hour ("HHR") submission information instead of non half-hour ("NHH") submission information for distributed unmetered load ("DUML"). This exemption expires at the close of 31 October 2023.

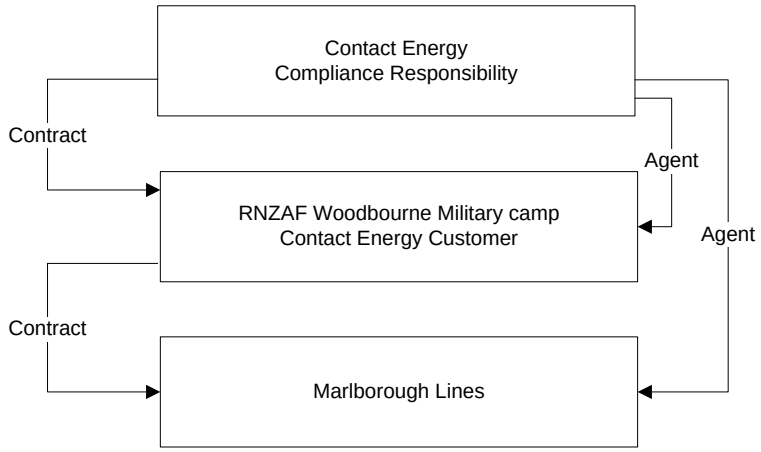
This DUML load is reconciled using the RPS profile, therefore the above exemption is not applicable to this audit.

1.3 Supplier List

Marlborough Lines are considered an agent under this clause and Contact clearly understands that the use of agents does not release them from their compliance obligations.

There is no direct contractual relationship between Contact and Marlborough Lines for the provision of DUML services. This is not seen as an issue if the processes for updating the database are robust and have appropriate validation controls in place. This is discussed further in **section 1.9**.

The diagram below shows the relationships from a compliance and contractual perspective.



1.4 Hardware and Software

The database used by Marlborough Lines is commonly known as “Info EAM”. This has been used since October 2015.

Marlborough Lines confirmed that the database back-up is in accordance with standard industry procedures, which includes servers at two locations with backup tapes rotated between the different premises. 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 Distributed unmetered load audits (Clauses 16A.26 & 17.295F)

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
Contact 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 particular database within the required timeframe.

Audit outcome
Compliant

1.7 Separate distributed unmetered load audit (Clause 16A.8(4))

Retailers must ensure that DUML audits are reported in a separate audit report.

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

Audit Commentary
Compliant

Audit outcome
Compliant

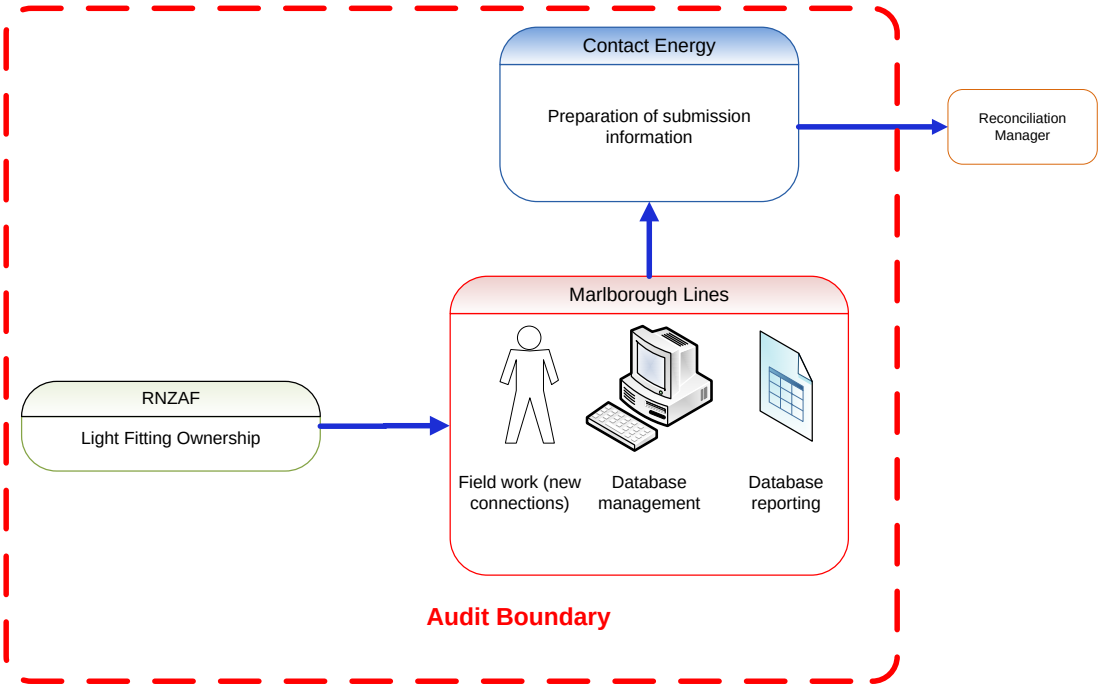
1.8 Summary of Previous Audit

This is the first separate audit report completed of the Woodbourne DUML load.

1.9 Scope of Audit

Marlborough Lines manages the installation, maintenance and database management of all DUML on their network. This includes the RNZAF Woodbourne streetlights.

Reporting is provided to Contact on a monthly basis. 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 all the lighting in the Woodbourne Military Camp. They are all streetlights and therefore treated as one population group.

1.10 Data Transmission (Clause 20 of Schedule 15.2)

A database report is sent to Contact Energy when there are any changes to the database. This is sent to Contact by way of email attachment that is password protected.

2. DUML database requirements

2.1 Deriving Submission Information (Clause 11(1) of Schedule 15.3)

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

Contact reconciles this DUML load using the RPS profile. The kW and burn hours are taken from the registry information which is updated based by Marlborough Lines based on the Marlborough Lines database.

The submission for the month of August was examined and found that this ICP has been incorrectly recorded as a metered load in SAP and therefore the default daily kWh figure has been applied for submission purposes and not the correct unmetered kWh figure. Contact are correcting this and will be correcting the historical volumes through the wash up process. The calculated load difference is an under submission of 9.56 kWh per day or 3,489 kWh per annum.

Audit outcome

Non-compliant

Non-compliance	Description
Audit Ref: 2.1 With: 11(1) of Schedule 15.3 From: entire audit period	Incorrect methodology being used to derive submission. Potential impact: Low Actual impact: Low Audit history: None Controls: Weak Breach risk rating: 3
Audit risk rating	**Rationale for audit risk rating**
Low	Controls are rated as weak, as this was set up incorrectly but not identified until this audit. The difference in volume is small therefore the impact on reconciliation is low.

Actions taken to resolve the issue	Completion date	Remedial action status
Contact has resolved the settlement methodology issues within its systems	Resolved	Identified
Preventative actions taken to ensure no further issues will occur	**Completion date**	

2.2 ICP Identifier (Clause 11(2)(a) of Schedule 15.3)

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 that the ICP was recorded against each item of load.

Audit Commentary
The Marlborough Lines database only records the ICP for private and metered lights. The owner field is used to identify which ICP for all non-metered items of load but the ICP is not recorded in the database.

Audit outcome
Non-compliant

Non-compliance	Description
Audit Ref: 2.2 With: 11(2)(a) of Schedule 15.3 From: entire audit period	ICP identifier not recorded against each item of load in the database. Potential impact: Low Actual impact: Low Audit history: None Controls: Moderate Breach risk rating: 2
Audit risk rating	**Rationale for audit risk rating**
Low	Controls are rated as moderate as there is only one ICP associated with this load. There is only one ICP associated with this load and the property owner field correctly identifies this, so there is no impact on reconciliation.

Actions taken to resolve the issue	Completion date	Remedial action status
Contact has requested the DUML database owner to populate ICP number into the relevant field in their database	July 2018	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)

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. This can also include GPS co-ordinates.

Audit Commentary

The GPS co-ordinates are not recorded in the database. All items of load with the exception of three items had a locatable address recorded. One item of load in Gartell Street and two items in Woodward Street had no street number or street light vicinity recorded. This detail was previously recorded in a "vicinity" field in the WASP database that was used by Marlborough Lines, but this field was not imported to the new database hence the missing detail for these three items.

Audit outcome

Non-compliant

Non-compliance	Description
Audit Ref: 2.3 With: 11(2)(b) of Schedule 15.3 From: entire audit period	Three items of load with insufficient location details recorded. Potential impact: Low Actual impact: Low Audit history: None Controls: Strong Breach risk rating: 1
Audit risk rating	**Rationale for audit risk rating**
Low	Controls are rated as strong, as all but three items had sufficient location details. The audit risk rating is low as this has no impact on reconciliation.

Actions taken to resolve the issue	Completion date	Remedial action status
Contact has requested the DUML database owner to populate the relevant information into their database which was available in the previous version of their streetlight database	July 2018	Identified
Preventative actions taken to ensure no further issues will occur	**Completion date**	

2.4 Description of Load Type (Clause 11(2)(c) & (d) of Schedule 15.3)

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, that any ballast or gear wattage has been applied correctly, and that it aligns with the published standardised wattage table produced by the Electricity Authority.

Audit Commentary

The database contains a field for lamp type and this is populated appropriately. The database contains two fields for wattage, firstly the manufacturers rated wattage and secondly the "circuit wattage". The "circuit wattage" is expected to be a calculated figure, which accounts for any variation from the rated wattage and includes losses associated with ballasts. All items of load had a description and wattage figure recorded.

Audit outcome

Compliant

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

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 all 48 lights.

Audit Commentary
The field audit confirmed that the database matched the field audit findings.

Audit outcome
Compliant

2.6 Tracking of Load Changes (Clause 11(3) of Schedule 15.3)

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 was examined.

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

The processes were reviewed for ensuring that changes in the field are notified through to Marlborough Lines. The processes in place are robust. There are few changes occurring for this DUML load. The three new LED lights were added as expected.

Audit outcome
Compliant

2.7 Audit Trail (Clause 11(4) of Schedule 15.3)

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

Any changes made in the database are tracked according to this clause.

Audit outcome

Compliant

3. Accuracy of DUML database

3.1 Database Accuracy (Clause 15.2 & 15.37B(b))

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

Audit Observation

The audit findings were used to determine if the information contained in the database is complete and accurate.

Audit Commentary

The audit found the correct quantity of lights recorded. Analysis of the database found that the calculated "circuit wattage", as detailed in **section 2.4**, does not align with the standardised wattage table. The differences are set out in the table below:

Lamp Type	Marlborough Lines Total Wattage	EA Standardised Wattage	Variance	Database quantity	Annual kWh effect on consumption
High Pressure Sodium 70W	90	83	7	22	29
Mercury Vapour 80W	94	90	4	7	17
2 x 20W Double Fluoro tubes	58	50	8	15	34
2 x 30W Double Fluoro tubes	80	77	3	1	13
Total PA kWh variance					92

The incorrect capacities if used for submission would result in an estimated over submission of 92 kWh per annum (based on 11.5 hours burn hours for 365 days). The incorrect lamp capacities are applied for 45 of the 48 lights therefore it is not accurate and is recorded as non-compliant.

Audit outcome

Non-compliant

Non-compliance	Description
Audit Ref: 3.1 With: 15.2 & 15.37B(b) From: entire audit period	45 Incorrect lamp capacities resulting in an estimated over submission of 92 kWh per annum. Potential impact: Low Actual impact: Low Audit history: None Controls: Moderate Breach risk rating: 2
Audit risk rating	**Rationale for audit risk rating**
Low	Controls are rated as moderate, as the database does record total wattage but is using incorrect values. The incorrect lamp capacities would result in an estimated 92 kWh over submission per annum therefore the audit risk rating is low.

Actions taken to resolve the issue	Completion date	Remedial action status
Contact has requested the database owner to provide any reference information / technical specifications of the installed lights to support their circuit wattage values. Where this information is available then the current values will remain – however if the database owner is unable to provide supporting information then Contact will recommend that the Authority's standardized values be applied	July 2018	Investigating
Preventative actions taken to ensure no further issues will occur	**Completion date**	

3.2 Volume Information Accuracy (Clause 15.2 & 15.37B(c))

The audit must verify that:

• volume information for the DUML is being calculated accurately

• profiles for DUML have been correctly applied.

Audit Observation

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

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

Audit Commentary

Contact Energy reconciles this DUML load using the RPS profile. As discussed in **section 2.1**, the kWh figure was being incorrectly recorded as the daily default value for a metered ICP. Contact are correcting this and will be correcting the historical volumes through the wash up process. The calculated load difference is an under submission of 9.56 kWh per day or 3,489 kWh per annum.

Audit outcome

Non-compliant

Non-compliance	Description
Audit Ref: 3.2 With: 15.2 & 15.37B(c) From: entire audit period	Incorrect values used to derive submission. Potential impact: Low Actual impact: Low Audit history: None Controls: Weak Breach risk rating: 3
Audit risk rating	**Rationale for audit risk rating**
Low	Controls are rated as weak, as this was set up incorrectly, but not identified until this audit. The difference in volume is small (3,489 kWh per annum) therefore the impact on reconciliation is low.

Actions taken to resolve the issue	Completion date	Remedial action status
Contact has resolved the settlement methodology issues within its systems	Resolved	Identified
Preventative actions taken to ensure no further issues will occur	**Completion date**	

4. Conclusions

This audit found five non-compliances and makes no recommendations. The main issue identified (relating to two non-compliances) was that the ICP was set up incorrectly in SAP as a metered supply, and therefore the unmetered load volumes were not being submitted. Contact are correcting this and will be correcting volumes through the wash up process. The other four non-compliances have little or no effect on submission and should not be difficult to correct.

The indicative audit frequency recommends the next audit is in 12 months. I have considered this result in conjunction with Contact's responses and I agree with this recommendation.

Rebecca Elliot
Veritek Limited
Electricity Authority Approved Auditor

5. Contact Energy Comments

Contact have reviewed this report. Their comments are recorded in the body of the report and no further comments were provided.