

ELECTRICITY INDUSTRY PARTICIPATION CODE
DISTRIBUTED UNMETERED LOAD AUDIT REPORT



For

BURNHAM MILITARY CAMP
AND MERIDIAN ENERGY LIMITED
NZBN: 9429037696863

Prepared by: Brett Piskulic

Date audit commenced: 25 January 2024

Date audit report completed: 30 April 2024

Audit report due date: 01-Jun-24

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EXECUTIVE SUMMARY

This audit of the **Burnham Military Camp (Burnham)** Unmetered Streetlights DUML database and processes was conducted at the request of **Meridian Energy Limited (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.

The Burnham Military Camp is on the Orion Network. Orion manage their database for Burnham and monthly reporting is supplied to Meridian.

New connection, fault and maintenance work is managed by Downer at Burnham.

The field audit was undertaken of the entire Burnham Military Camp DUML database, consisting of 84 items of load on 26 March 2024. The field audit confirmed the database was accurate.

Meridian reconciles this DUML load using the DST profile. I compared the database provided to the capacity information Meridian supplied to EMS for the month of February 2024 and found it matched.

The database accuracy is assessed to be 100% indicating no submission issues. Overall, Orion have robust controls and management in place.

The audit identified two non-compliances in relation to use of a database snapshot rather than tracking load change at a daily basis. This database has very few changes and accounts for only a small number of lights. The audit risk rating indicates that the next audit be in 24 months. I have considered this in conjunction with Meridians comments and I recommend that the next audit be in 36 months.

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	The data used for submission does not track changes at a daily basis and is provided as a snapshot.	Moderate	Low	2	Identified
Volume information accuracy	3.2	15.2 and 15.37B(c)	The data used for submission does not track changes at a daily basis and is provided as a snapshot.	Moderate	Low	2	Identified
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	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.

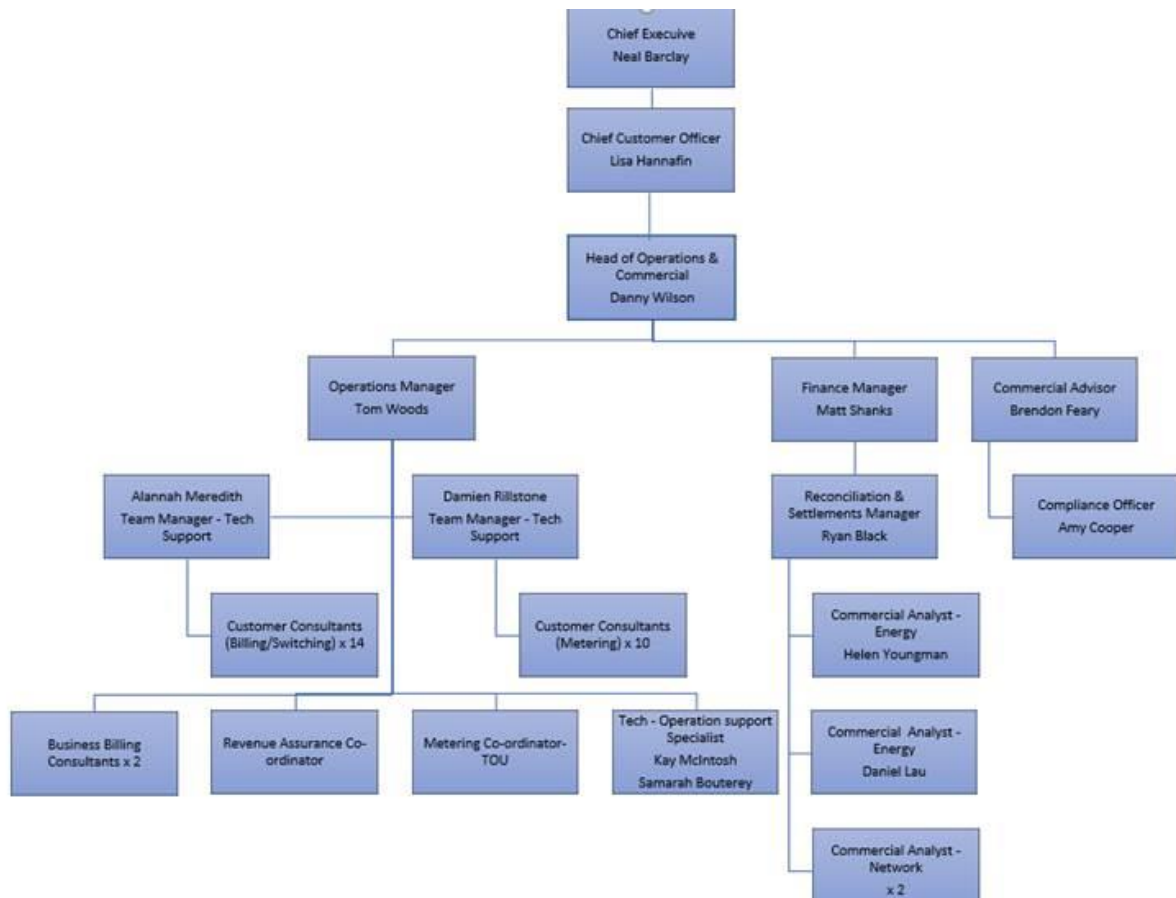
There are no exemptions in place relevant to the scope of this audit.

Audit commentary

Compliance is confirmed.

1.2. Structure of Organisation

Meridian Energy provided a copy of their organisational structure.



1.3. Persons involved in this audit

Auditor:

Name	Company	Role
Brett Piskulic	Provera	Auditor

Other personnel assisting in this audit were:

Name	Title	Company
Danial Lau	Energy Data Analyst	Meridian Energy
Melanie Matthews	Quality and Compliance Advisor	Meridian Energy
Penny Lawrence	Operations Services	Orion
Brent Simpson		NZ Defence Force

1.4. Hardware and Software

Orion use a purpose-built Oracle system for the management of the DUML information. Backup and restoration procedures are in accordance with normal industry protocols. Access to the Orion network (including the database) is restricted using logins and passwords.

Systems used by the trader and their agent to calculate submissions are assessed as part of their reconciliation participant audits.

1.5. Breaches or Breach Allegations

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

1.6. ICP Data

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

ICP Number	Description	Profile	Number of items of load	Database wattage (watts)
0006432514RNA15	Orion NZ Army GXP street light ICP	DST	84	1,680

1.7. Authorisation Received

All information was provided directly by Meridian, NZ Defence Force or Orion.

1.8. Scope of Audit

This audit of the Burnham DUML database and processes was conducted at the request of 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.

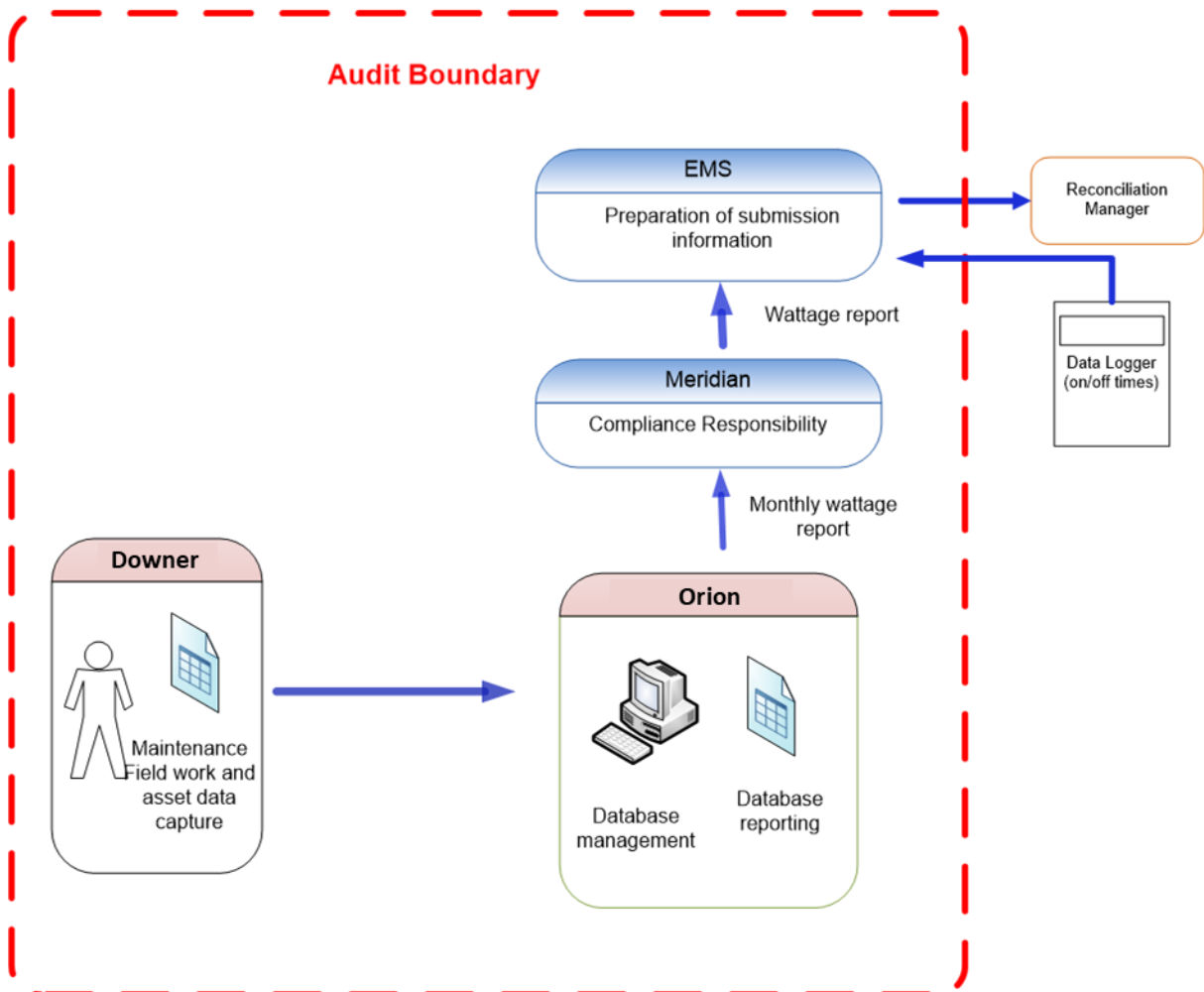
The audit was conducted in accordance with the audit guidelines for DUML audits version 1.1, which became effective on 1 June 2017.

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 Burnham Military Camp is on the Orion Network. Orion manage their database for Burnham and monthly reporting is supplied to Meridian.

Downer is responsible for the network maintenance at Burnham, and they engage contractors to undertake the maintenance.

The diagram below shows the audit boundary for clarity.



The field audit was undertaken of the entire database of 84 items of load on 26 March 2024.

1.9. Summary of previous audit

The previous audit was conducted for Meridian in June 2021 by Rebecca Elliot of Veritek Ltd. The findings are shown in the table below.

Subject	Section	Clause	Non-Compliance	Status
Deriving submission information	2.1	11(1) of Schedule 15.3	The data used for submission does not track changes on a daily basis and is provided as a snapshot.	Still existing
Volume information accuracy	3.2	15.2 and 15.37B(c)	The data used for submission does not track changes on a daily basis and is provided as a snapshot.	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 3 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 Provera to undertake this streetlight audit.

Audit commentary

This audit report confirms that the requirement to conduct an audit has been met for the Orion 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

Submission process and accuracy

Meridian reconciles this DUML load using the DST profile. I compared the database provided to the capacity information Meridian supplied to EMS for the month of February 2024 and found it matched.

A monthly wattage report from the database is provided to Meridian by Orion. 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 Meridian's reconciliation participant audit and the EMS agent audit. Compliance was confirmed for both parties.

On 18 June 2019, the Electricity Authority issued a memo confirming that 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.

Database accuracy

The field audit confirmed that the database is up to date.

Audit outcome

Non-compliant

Non-compliance	Description		
Audit Ref: 2.1 With: Clause 11(1) of Schedule 15.3 From: 01-Aug-20 To: 26-Mar-24	The data used for submission does not track changes at a daily basis and is provided as a snapshot. Potential impact: Low Actual impact: Low Audit history: Once Controls: Moderate Breach risk rating: 2		
Audit risk rating	Rationale for audit risk rating		
Low	Controls are rated as moderate as the processes overall are robust, but any changes are not tracked at a daily level. The impact is assessed to be low as there are very few changes made to this database and the field audit confirmed the database to be accurate based on the estimated database errors found.		
Actions taken to resolve the issue		Completion date	Remedial action status
			Identified
Preventative actions taken to ensure no further issues will occur		Completion date	
We have assessed our processes and tools to account for historic lamp installations and changes to the database at a daily level. There are checks in place comparing month to month data to identify any material changes and confirm details for these. These are accounted for in monthly submission.		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 DUMML database must contain:

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

Audit observation

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

Audit commentary

All Orion 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 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 Orion database contains fields for the street address and GPS coordinates for each item of load.

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 DUMML 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 light type and wattage are recorded in the Orion database in the lamp type and wattage fields. All items of load have a lamp type and wattage recorded. All lights are LED so there is no gear wattage applicable.

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 DUMML for which it is responsible is recorded in this database.

Audit observation

The field audit was undertaken of the entire database of 84 items of load on 26 March 2024.

Audit commentary

I found no lamp type or wattage differences and no missing or additional lights were found in the field audit.

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 Orion database functionality achieves compliance with the code.

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 DUMML 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

Orion 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	Burnham Military Camp
Strata	The database contains 84 items of load for the Burnham Military Camp. The processes for the management of all items of load is the same.
Area units	I completed a field audit of the entire database.
Total items of load	All 84 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 and Lamp accuracy

A field audit of all 84 items of load was conducted on 26 March 2024 and found no discrepancies.

All the items of load are LED lights and the wattages recorded in the database are in line with the manufacturers specifications for the light type.

Change Management

The process was reviewed for new lamp connections and the tracking of load changes due to faults and maintenance. Downer is responsible for the network maintenance at Burnham, and they engage contractors to undertake the maintenance. Outage patrols are conducted on a regular basis. Lamp outages are notified to Downer at Burnham and passed to contractors.

The population and infrastructure are fairly static at Burnham resulting in very infrequent changes to the network. If a load change were made, Orion would be advised.

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

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

Submission process and accuracy

Meridian reconciles this DUML load using the DST profile. I compared the database provided to the capacity information Meridian supplied to EMS for the month of February 2024 and found it matched.

A monthly wattage report from the database is provided to Meridian by Orion. 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 Meridian's reconciliation participant audit and the EMS agent audit. Compliance was confirmed for both parties.

On 18 June 2019, the Electricity Authority issued a memo confirming that 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.

Database accuracy

The field audit confirmed that the database is up to date.

Audit outcome

Non-compliant

Non-compliance	Description		
Audit Ref: 3.2 With: Clause 15.2 and 15.37B(c) From: 01-Aug-20 To: 26-Mar-24	The data used for submission does not track changes at a daily basis and is provided as a snapshot. Potential impact: Low Actual impact: Low Audit history: Once Controls: Moderate Breach risk rating: 2		
Audit risk rating	Rationale for audit risk rating		
Low	Controls are rated as moderate as the processes overall are robust, but any changes are not tracked at a daily level. The impact is assessed to be low as there are very few changes made to this database and the field audit confirmed the database to be accurate based on the estimated database errors found.		
Actions taken to resolve the issue		Completion date	Remedial action status
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We have assessed our processes and tools to account for historic lamp installations and changes to the database at a daily level. There are checks in place comparing month to month data to identify any material changes and confirm details for these. These are accounted for in monthly submission.		Ongoing	

CONCLUSION

The Burnham Military Camp is on the Orion Network. Orion manage their database for Burnham and monthly reporting is supplied to Meridian.

New connection, fault and maintenance work is managed by Downer at Burnham.

The field audit was undertaken of the entire Burnham Military Camp DUML database, consisting of 84 items of load on 26 March 2024. The field audit confirmed the database was accurate.

Meridian reconciles this DUML load using the DST profile. I compared the database provided to the capacity information Meridian supplied to EMS for the month of February 2024 and found it matched.

The database accuracy is assessed to be 100% indicating no submission issues. Overall, Orion have robust controls and management in place.

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PARTICIPANT RESPONSE

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