

ELECTRICITY INDUSTRY PARTICIPATION CODE
DISTRIBUTED UNMETERED LOAD AUDIT REPORT



VERITEK

For

BURNHAM MILITARY CAMP
AND CONTACT ENERGY LIMITED

Prepared by: Steve Woods (assisted by Deborah Anderson)

Date audit commenced: 24 April 2018

Date audit report completed: 25 May 2018

Audit report due date: 01-Jun-18

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EXECUTIVE SUMMARY

This audit of the Burnham Military Camp (**Burnham**) DUML database and processes was conducted at the request of Contact Energy Limited (**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 2017.

The audit found two non-compliances and no recommendations have been made.

The field audit count found zero discrepancies. I found one lamp type with incorrect wattage.

The database accuracy is assessed to be 100% indicating no submission issues.

Overall, Orion have robust controls and management in place.

The future risk rating of 3 indicates that the next audit be completed 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	Incorrect profiles are recorded on the registry.	Moderate	Low	2	Identified
Description and capacity of load	2.4	11(2)(c) and (d) of Schedule 15.3	One lamp has incorrect lamp wattage recorded. <ul style="list-style-type: none"> The expected wattage is 77 and expected under reporting is 8.5 kWh per annum. 	Strong	Low	1	Identified
Future Risk Rating						3	

RECOMMENDATIONS

Subject	Section	Description	Recommendation

ISSUES

Subject	Section	Description	Issue

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 is one exemption in place relevant to the scope of this audit:

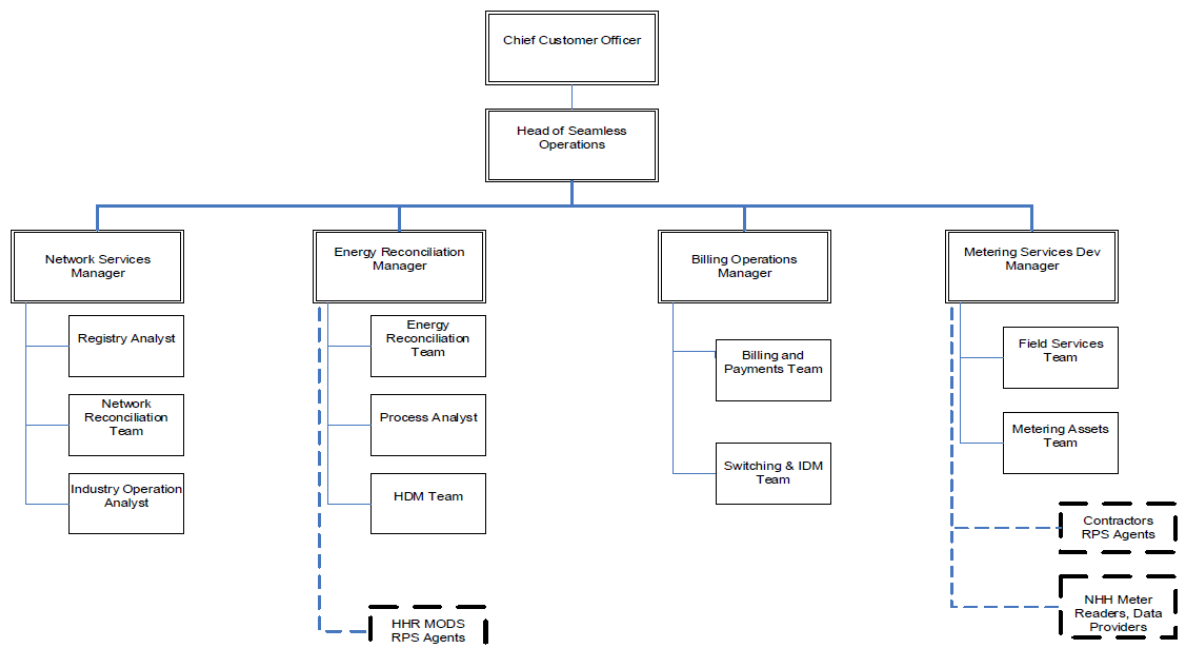
- Exemption No. 177. Exemption to clause 8(g) of schedule 15.3 of the Electricity Industry Participation Code 2010 (“Code”) in respect of providing half-hour (“HHR”) submission information instead of non-half-hour (“NHH”) submission information for distributed unmetred load (“DUML”). This exemption expires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

Audit commentary

Compliance is confirmed.

1.2. Structure of Organisation

Contact Energy provided a copy of their organisational structure.



1.3. Persons involved in this audit

Auditor:

Steve Woods

Veritek Limited

Electricity Authority Approved Auditor

Other personnel assisting in this audit were:

Name	Title	Company
Bernie Cross	Energy Reconciliation Manager	Contact Energy
Penny Lawrence	Operations Services	Orion

1.4. Hardware and Software

Orion use a purpose-built Oracle system for the management of the DUMML information. Backup and restoration procedures are in accordance with normal industry protocols.

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	RPS	84	6,964

1.7. Authorisation Received

All information was provided directly by Contact or Orion.

1.8. Scope of Audit

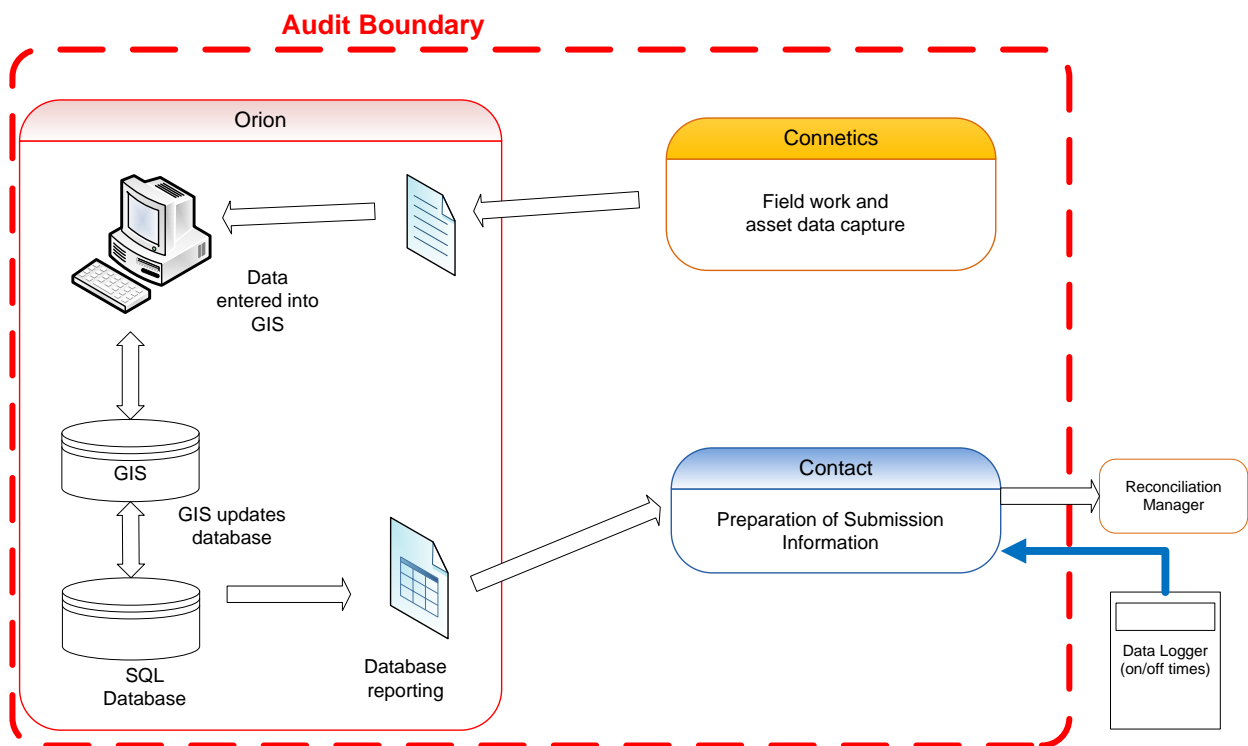
This audit of the Burnham DUML database and processes was conducted at the request of Contact, in accordance with clause 15.37B. The purpose of this audit is to verify that the volume information is being calculated accurately, and that profiles have been correctly applied.

The audit was conducted in accordance with the audit guidelines for DUML audits version 1.1, which became effective on 1 June 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 boundary is part of the Orion Network. Orion manage their database for Burnham. Monthly reporting is supplied to Contact by Orion. This audit covers the Orion database.

The diagram below shows the audit boundary for clarity.



The field audit was undertaken of the entire database of 84 items of load on 23rd April 2018.

1.9. Summary of previous audit

Contact provided a copy of the last audit report undertaken by Allie Jones of Contact Energy, completed in March 2017. This report confirmed compliance with the Code.

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

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 the Orion 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 and the application of profiles was checked. The database was checked for accuracy.

Audit commentary

Contact reconciles this DUML load using the HHR profile, in accordance with exemption number 177. This exemption is discussed further in **section 1.1**.

The registry shows RPS profile for the Burnham ICPs but should show HHR. Contact usually manually corrects the profiles on business day four each month, but the corrections in recent months were missed due to a staff member being on leave. This is recorded as non-compliance below.

Submissions are based on the database information, with on and off times derived from data logger information. There is some inaccurate data within the database used to calculate submissions. This is recorded as non-compliance and discussed in **sections 2.4** and **3.1**.

I recalculated the submissions for March 2018 for 0006432514RNA15 using the data logger and database information. I confirmed that the calculation method was correct. Festive lights were correctly excluded from the calculation because they were not connected.

I checked the March 2018 extract provided by Orion against the submission totals supplied by Contact and found that submission matched the database.

The methodology for deriving submission information is compliant.

Audit outcome

Non-compliant

Non-compliance	Description
Audit Ref: 2.1 With: Clause 11(1) of Schedule 15.3 From: unknown To: 23-Apr-18	Incorrect profile is recorded on the registry. Potential impact: Low Actual impact: Low Audit history: None Controls: Moderate Breach risk rating: 2
Audit risk rating	Rationale for audit risk rating

Low	<p>Controls ensure the correct profile is used; it's just that the registry is incorrect. The controls are recorded as moderate because they could be improved.</p> <p>Contact's submission is calculated using the correct profile information, therefore the audit risk rating is low.</p>		
Actions taken to resolve the issue		Completion date	Remedial action status
The incorrect profile on the registry issue is a result of a system defect – currently a fix is underway to prevent this issue from occurring. A manual work around is currently in place to update the registry where required		July 2018	Identified
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 the correct 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 DUML database must contain the location of each DUML item.

Audit observation

The database was checked to confirm the location is recorded for all items of load.

Audit commentary

The Orion database contains fields for the street address and also 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

Orion's database contains the manufacturers rated wattage and the ballast wattage. The extract provided has a field for 'Lamp Type' and an additional table was provided which contained more detail for each lamp type – description, amps, wattage (incl ballast) & lamp type category.

The Orion database was found to contain one inaccurate lamp type wattage when matched to the published standardised wattage table. The difference found was one lamp type and wattage difference, affecting one lamp with an overall wattage difference of 2W, which equates to 8.5 kWh per annum. This is recorded as a non-compliance.

Lamp Type	Description	Wattage	Lamp Type Category	Orion database	Correct wattage	Lamps affected	wattage difference	total difference
2*30W FF	2*30W FF	75	Fluorescent	2*30W FF	77	1	2	2
						1		2W

Audit outcome

Non-compliant

Non-compliance	Description
<p>Audit Ref: 2.4</p> <p>With: Clauses 11(2)(c) and (d) of Schedule 15.3</p> <p>From: unknown</p> <p>To: 23-Apr-18</p>	<p>One lamp type has incorrect lamp wattage recorded, affecting one lamp.</p> <p>The expected wattage is 77 W and not the 75 W recorded in the database, expected under reporting is 8.5 kWh per annum.</p> <p>Potential impact: Low</p> <p>Actual impact: Low</p> <p>Audit history: None</p> <p>Controls: Strong</p> <p>Breach risk rating: 1</p>

Audit risk rating	Rationale for audit risk rating		
Low	The controls are rated as strong because only one of the 84 lamps in the database had incorrect wattage information. The impact is low; the expected wattage for the lamp type is 77 not 75.		
Actions taken to resolve the issue		Completion date	Remedial action status
Contact will work with Orion to get the DUML database updated with these correct values		July 2018	Identified
Preventative actions taken to ensure no further issues will occur		Completion date	

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 the entire database of 84 items of load on 23rd April.

Audit commentary

The field audit findings for Orion's Burnham database are detailed in the table below:

Address	Database Count	Field Count	Count differences	Wattage differences
Chaytor Av	2	2	-	-
Cottage Ln	1	1	-	-
Darby Cr	1	1	-	-
Godley Rd	1	1	-	-
Godley Rd School	1	1	-	-
Grenville Rd	2	2	-	-
Huia St	2	2	-	-
Kahu St	10	10	-	-
Kea St	3	3	-	-
Kea St/Weka St	1	1	-	-
Kotare Pl	2	2	-	-
Matuku Pl	2	2	-	-
Moa St	2	2	-	-
Pukeko St	7	7	-	-
Pukeko St opp	3	3	-	-
Pukeko St/Moa St	1	1	-	-

Queens Dr by Pukeko St	1	1	-	-
Rowllings Cr	5	5	-	-
Ruru St	2	2	-	-
Ruru St Kindergarten	1	1	-	-
Ruru St/Pukeko St	1	1	-	-
Russell Rd	1	1	-	-
Russell Rd opp	1	1	-	-
Russell Rd Supermarket	2	2	-	-
Takahe Cr	3	3	-	-
Takahe r	1	1	-	-
Tawaki St	4	4	-	-
Toanui St	3	3	-	-
Toanui St opp	1	1	-	-
Tui St	7	7	-	-
Tui St opp	1	1	-	-
Weka St	1	1	-	-
White Rd	8	8	-	-
Total	84	84	0	0

I found zero lamp type or wattage differences in the Burnham 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 DUML database must track additions and removals in a manner that allows the total load (in kW) to be retrospectively derived for any given day.

Audit observation

The process for tracking of changes in the database was examined.

Audit commentary

The process was reviewed for new lamp connections and the tracking of load changes due to faults and maintenance. Spotless are responsible for the Network maintenance at Burnham and they can choose their own contractor licensed to work on the Orion Network. Outage patrols are conducted on a regular basis. Lamp outages are notified to Spotless at Burnham and passed to their contractor.

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

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.

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

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 Burnham items of load is the same. The database has one Class for all lights of 'Street'.
Area units	I completed a field audit of the entire database.
Total items of load	84 items of load were checked.

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

Audit commentary

The Orion field audit found zero lamp type and wattage differences.

The field data was 100% of the database data for the sample checked. The total wattage recorded in the database for the sample was 6,964 watts. The total wattage found in the field for the sample checked was 6,964 watts, no difference of watts. This will result in no submission of difference.

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

Contact reconciles this DUML load using the HHR profile, in accordance with exemption number 177 discussed in **section 1.1**. The registry shows RPS profile for the Orion Burnham ICP but should show HHR. Contact normally manually corrects the profiles on business day four each month, but the corrections were recently missed due to a staff member being on leave, this is recorded as a non-compliance in **section 2.1**.

Submissions are based on the database information, with on and off times derived from data logger information.

I recalculated the submissions for March 2018 for Orion ICP 0006432514RNA15 using the data logger and database information. I confirmed that the calculation method was correct.

Audit outcome

Compliant

CONCLUSION

Orion use a purpose-built Oracle system for the management of the DUML information.

The Burnham boundary is part of the Orion Network. Orion manage their database for Burnham. Monthly reporting is supplied to Contact by Orion.

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

The field audit was undertaken of the entire database of 84 items of load on 23rd April 2018.

The future risk rating of three indicates that the next audit be completed in 24 months. Two non-compliances were identified, and no recommendations were raised.

PARTICIPANT RESPONSE

APPENDIX A - TEMPLATE FOR NON-COMPLIANCE, ISSUES AND RECOMMENDATIONS.

NON-COMPLIANCE

Non-compliance	Description		
Audit Ref: With: From: Click here to enter a date. To: Click here to enter a date.	Potential impact: Choose an item. Actual impact: Choose an item. Audit history: Controls: Choose an item. Breach risk rating:		
Audit risk rating	Rationale for audit risk rating		
Choose an item.			
Actions taken to resolve the issue		Completion date	Remedial action status
[Participant comment]		[proposed or actual completion date]	Choose an item.
Preventative actions taken to ensure no further issues will occur		Completion date	
[Participant comment]		[proposed or actual completion date]	

RECOMMENDATION

Description	Recommendation	Audited party comment	Remedial action

ISSUE

Description	Issue	Remedial action