

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

For

**CENTRAL HAWKE'S BAY DISTRICT COUNCIL
AND GENESIS ENERGY**

Prepared by: Tara Gannon

Date audit commenced: 8 March 2019

Date audit report completed: 29 April 2019

Audit report due date: 1 June 2019

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EXECUTIVE SUMMARY

This audit of the **Central Hawke's Bay District Council (CHBDC)** DUML database and processes was conducted at the request of **Genesis Energy (Genesis)**, 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.

A RAMM database is held by CHBDC. Fieldwork is completed by Pope Electrical, except for under verandah lighting which is maintained by another contractor. Pope Electrical maintain the RAMM database information and report to Genesis monthly. CHBDC communicates any changes to unmetered under verandah lights to Pope Electrical so that RAMM can be updated.

New connections are rare. A new subdivision is in the process of being created, and CHBDC and Pope Electrical plan to work together to ensure that RAMM is updated promptly once the lights are connected.

Genesis submits the DUML load as NHH using the CST profile. On hours are derived using data from the Astronomical Society.

The audit found full compliance, and previous audit issues have been cleared. One recommendation is raised, as detailed below.

The future risk rating of zero indicates that the next audit be completed in 36 months.

AUDIT SUMMARY

NON-COMPLIANCES

Subject	Section	Clause	Non Compliance	Controls	Audit Risk Rating	Breach Risk Rating	Remedial Action
			Nil				
Future Risk Rating						0	

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
Tracking of load changes	2.6	Comparison between CHBDC and NZTA Waipukurau RAMM records	Compare the lights recorded against CHBDC and NZTA Waipukurau in RAMM to ensure that all load is accounted for and recorded against the correct entity and ICP.

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.

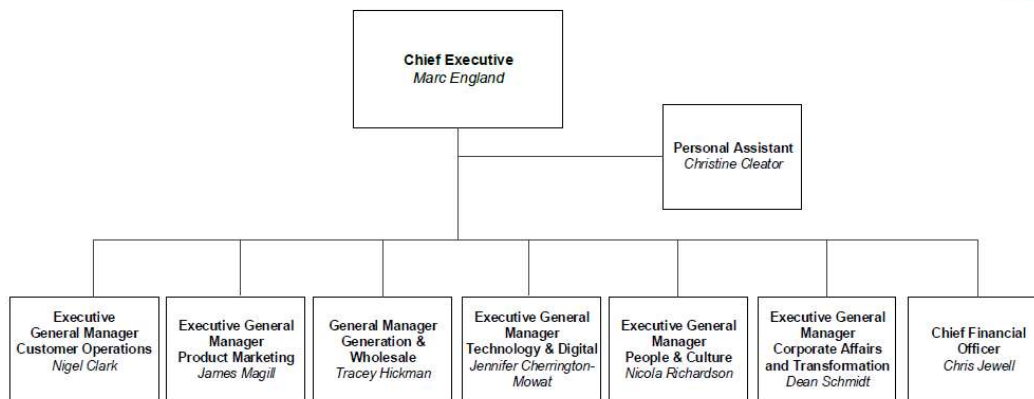
Audit commentary

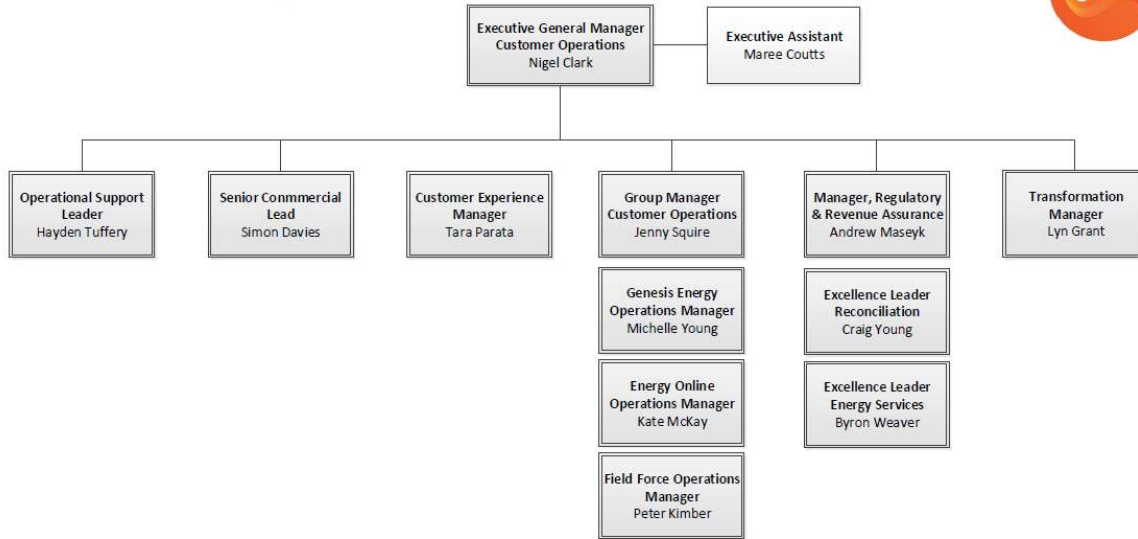
There are no exemptions in place relevant to the scope of the audit.

1.2. Structure of Organisation

Genesis provided a copy of their organisational structure:

Genesis Energy
Executive Team





1.3. Persons involved in this audit

Auditor:

Tara Gannon

Veritek Limited

Electricity Authority Approved Auditor

Other personnel assisting in this audit were:

Name	Title	Company
Brian Steed	Area Engineer	Central Hawke's Bay District Council
Tim Bateman	Consultant	Central Hawke's Bay District Council
Martin Hunter	Consultant	Central Hawke's Bay District Council
Ronan Galvin	Streetlight Manager	Pope Electrical
Craig Young	Excellence Leader - Reconciliation	Genesis Energy
Grace Hawken	Technical Specialist - Reconciliation Team	Genesis Energy

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”.

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)
7012016000CH5A1	STREETLIGHTING CENTRAL HAWKES BAY DC WAIPUKURAU	HWA0331	CST	889	91,377
7012036000CHC6C	UNDER VERANDAH COMMUNITY LIGHTING RUATANIWHA STREET WAIPUKURAU	HWA0332	CST	126	7,726
Total				1,015	99,103

The 2018 audit recorded five ICPs with unmetered speed signs. At the time of the 2018 audit, three of the speed signs were excluded from the database, and two were recorded against ICP 7012016000CH5A1.

I confirmed that one speed sign has been removed and four are still in use; each has an ICP and is supplied by Contact Energy as standard unmetered load. These speed signs fall outside the scope of the audit, because they are standard unmetered load, supplied by another retailer, and none of the speed signs are now recorded in the DUML database.

The affected ICPs are:

Location	ICP	Daily unmetered kWh	Trader unmetered load details	Trader
45 Bibby St, Waipawa	0000033686CHB8A	4.800	0.2KW;24HRS;200W SPEED INDICATOR SIGN	CTCT
Tikokino Road, Waipawa	0000033687CH7CF	4.800	0.2KW;24HRS;200W SPEED INDICATOR SIGN	CTCT

Location	ICP	Daily unmetered kWh	Trader unmetered load details	Trader
196 Porongahau Road, Waipukurau	0000033689CH454	4.800	0.2KW;24HRS;200W SPEED INDICATOR SIGN	CTCT
90 Racecourse Road, Waipukurau	0000033447CHA27	4.800	0.2KW;24HRS;200W SPEED INDICATOR SIGN	CTCT

1.7. Authorisation Received

All information was provided directly by Genesis, CHBDC, and Pope Electrical.

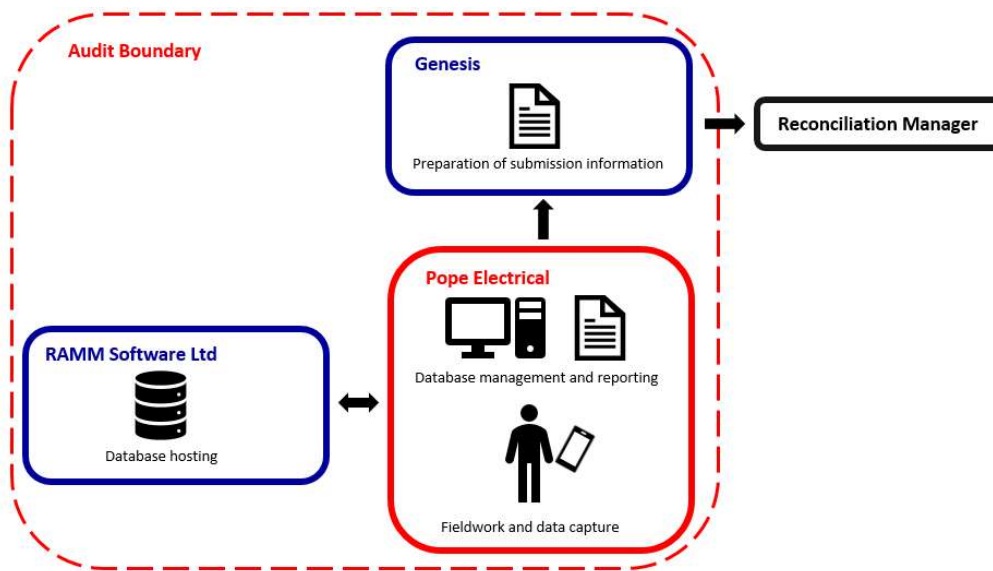
1.8. Scope of Audit

This audit of the CHBDC DUML database and processes was conducted at the request of Genesis, 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.

A RAMM database is held by CHBDC. Fieldwork is completed by Pope Electrical, except for under verandah lighting which is maintained by another contractor. Pope Electrical maintain the RAMM database information and report to Genesis monthly. CHBDC communicates any changes to unmetered under verandah lights to Pope Electrical so that RAMM can be updated.

Genesis submits the DUML load as NHH using the CST profile, based on the monthly reports from RAMM. On hours are based on data from the Astronomical Society.

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 field audit was undertaken of a statistical sample of 98 items of load on 8 March 2019.

1.9. Summary of previous audit

Genesis provided a copy of the report of the previous audit conducted in March 2018 by Tara Gannon of Veritek Limited. Five non-compliances were found, and two recommendations were made. The status of the non-compliances and recommendations are detailed below:

Subject	Section	Clause	Non-compliance	Status
Deriving submission information	2.1	11(1) of Schedule 15.3	The database used to prepare submissions contains some inaccurate information.	Cleared
ICP identifier and items of load	2.2	11(2)(a) and (aa) of Schedule 15.3	Five ICPs associated with unmetered speed signs are excluded from the database. The load connected to two of these ICPs is recorded in the database against ICP 7012016000CH5A1.	Cleared, now outside scope
Description and capacity of load	2.4	11(2)(c) and (d) of Schedule 15.3	Two speed signs do not have model information recorded and have the lamp wattage recorded in the gear wattage field. Six lamps do not have a gear wattage populated.	Cleared, now outside scope Cleared
Database accuracy	3.1	Clause 15.2 and 15.37B(b)	369 items of load have incorrect or missing lamp or gear wattages. Three speed sign ICPs are excluded from the database. Two speed signs are included with incorrect ICP numbers.	Cleared Cleared, now outside scope
Volume information accuracy	3.2	15.2 and 15.37B(c)	The database used to prepare submissions contains some inaccurate information.	Cleared

Subject	Section	Clause	Recommendation	Status
Location of each item of load	2.3	Clause 11(2)(b) of Schedule 15.3	Update the road name for lamps on Ennislaire Place currently recorded against Mt Herbert Road.	Cleared

Subject	Section	Clause	Recommendation	Status
Description and capacity of load	2.4	11(2)(c) and (d) of Schedule 15.3	<p>I recommend that the lamp and gear wattage fields are updated to reflect the correct values.</p> <p>LED lamps are recorded with the full wattage in the gear field in the summarised data.</p> <p>Two speed signs (poles 955 and 305) are recorded with 0 lamp wattage, and the full wattage in the gear field in the detailed data.</p>	<p>Cleared</p> <p>Cleared</p> <p>Cleared, now outside scope</p>

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

Genesis 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. DUMML 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:

- *DUMML 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

This clause requires that the distributed unmetered load database must satisfy the requirements of schedule 15.5 regarding the methodology for deriving submission information. Genesis reconciles this DUMML load as NHH using the CST profile, and on and off times are derived from Astronomical Society data.

I checked the February 2019 submission data for both ICPs against the RAMM information and on hours, and confirmed the calculation was correct.

As discussed in **section 3.1**, the database information was found to be accurate.

Audit outcome

Compliant

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 whether an ICP is recorded for each item of load.

Audit commentary

The analysis found that all items of load had an ICP number recorded.

As discussed in **section 1.6**, the 2018 audit recorded five ICPs with unmetered speed signs, two of which were recorded in the database. I confirmed that one speed sign has been removed and four are still in use; each has an ICP and is supplied by Contact Energy as standard unmetered load. These speed signs fall outside the scope of the audit, because they are standard unmetered load, supplied by another retailer, and none of the speed signs are now recorded in the DUMML database.

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

All items of load have street names recorded, and 889 (87.5%) also have GPS coordinates recorded. The items of load without GPS coordinates recorded have sufficient address information to enable them to be readily located.

The 2018 audit recorded that lights on Ennisclaire Place were recorded on Mt. Herbert Road instead of being separately listed, and I recommended the addresses were updated. I confirmed that this issue has been cleared, and the Ennisclaire Road addresses are correctly recorded.

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

A description of the model, lamp wattage, and gear wattage are recorded for almost all items of load. The accuracy of the populated lamp and gear wattages is discussed in **section 3.1**.

Non-compliances and recommendations identified in the previous audit were followed up:

- speed signs have been removed from the database and are outside the scope of the audit, as discussed in **section 1.6**;
- wattages for 160W SB Mercury Vapour and 24W Compact Fluoro E27 lamp models have been updated in the database; and
- LED lamps now have the full wattage recorded in the lamp wattage field and have a zero gear wattage.

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 sample of 98 items of load was undertaken.

Audit commentary

The field audit did not identify any lamp count or wattage differences.

As discussed in **section 2.3**, the 2018 non-compliance relating to incorrect street addresses for Ennisclaire Road has been cleared.

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

On 20th September 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 “snapshot” report is sufficient to achieve compliance. The database tracks additions and removals as required by this clause.

The processes were reviewed for new lamp connections and the tracking of load changes due to faults and maintenance.

Fault, maintenance, and upgrade work is completed by Pope Electrical, except for under verandah lighting which is maintained by another contractor. Pope Electrical maintain the RAMM database information and report to Genesis monthly. CHBDC communicates any changes to unmetered under verandah lights to Pope Electrical so that RAMM can be updated.

There are very few new connections. No new subdivisions had streetlights connected during the audit period. A new subdivision is being created in Otane; Pope Electrical has created the streetlight design but the lights have not been installed by the developer yet. Once installed, Pope Electrical will check the lights and update the database.

CHBDC and Pope Electrical plan to work together to ensure that Pope Electrical is promptly notified of any new connections where they are not responsible for completing the electrical work, so that RAMM can be updated.

Some LED upgrades have been completed, but there are currently no plans to complete a major LED rollout.

As far as CHBDC and Pope Electrical are aware, there is no unmetered private lighting in the area. Festive lights are not used.

Ten outage patrols are conducted each month. These patrols help to identify any additional or removed items of load.

The NZTA Waipukurau DUMML database was audited at the same time as CHBDC, and I found some items of load were recorded in both databases. I recommend that this investigated to ensure that load is recorded against the correct ICP, and not double counted or missed.

Description	Recommendation	Audited party comment	Remedial action
Comparison between CHBDC and NZTA Waipukurau RAMM records	Compare the lights recorded against CHBDC and NZTA Waipukurau in RAMM to ensure that all load is accounted for and recorded against the correct entity and ICP.	Genesis will approach the Waipukurau NZTA office to request a NZTA RAMM download. Once Genesis have acquired the dataset Genesis will compare datasets. Any exceptions will then need to be investigated as to which dataset is then deemed inaccurate	Identified

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

The database has a complete audit trail.

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 lights around the wider Waipukurau region, encompassing Central Hawke's Bay.
Strata	The database contains 1015 items of load located in the Central Hawke's Bay. All lights in the database have the same owner, and the management process is the same. I created two strata: <ul style="list-style-type: none">• ICP 7012016000CH5A1; and• ICP 7012036000CHC6C
Area units	I created a pivot table of the roads in each strata, and used a random number generator in a spreadsheet to select a total of 12 sub-units.
Total items of load	98 items of load were checked, making up approximately 10% of the entire database wattage.

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

Audit commentary

Database accuracy based on the field audit

The field audit found the database to be highly accurate, no lamp count or type differences were identified.

Wattage accuracy

The database was checked against the published standardised wattage table, and manufacturer's specifications where available. Where differences to expected values were present, they were verified against Pope Electrical's wattage information.

All lamp and gear wattages were confirmed to be correct, and issues identified in the 2018 audit were resolved:

- speed signs have been removed from the database and are outside the scope of the audit, as discussed in **section 1.6**;
- the incorrect gear wattages have been updated in the database; and

- LED lamps now have the full wattage recorded in the lamp wattage field and have a zero gear wattage.

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 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

This clause requires that the distributed unmetered load database must satisfy the requirements of schedule 15.5 regarding the methodology for deriving submission information. Genesis reconciles this DUML load as NHH using the CST profile, and on and off times are derived from Astronomical Society data. The correct profile and submission type is recorded on the registry for both ICPs.

I checked the February 2019 submission data for both ICPs against the RAMM information and on hours, and confirmed the calculation was correct.

As discussed in **section 3.1**, the database information was found to be accurate.

Audit outcome

Compliant

CONCLUSION

This audit of the **Central Hawke's Bay District Council** (CHBDC) DUML database and processes was conducted at the request of **Genesis Energy (Genesis)**, 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.

A RAMM database is held by CHBDC. Fieldwork is completed by Pope Electrical, except for under verandah lighting which is maintained by another contractor. Pope Electrical maintain the RAMM database information and report to Genesis monthly. CHBDC communicates any changes to unmetered under verandah lights to Pope Electrical so that RAMM can be updated.

New connections are rare. A new subdivision is in the process of being created, and CHBDC and Pope Electrical plan to work together to ensure that RAMM is updated promptly once the lights are connected.

Genesis submits the DUML load as NHH using the CST profile. On hours are derived using data from the Astronomical Society.

The audit found full compliance, previous audit issues have been cleared and one recommendation is raised. The future risk rating of zero indicates that the next audit be completed in 36 months.

PARTICIPANT RESPONSE

Genesis has no objections.