ELECTRICITY INDUSTRY PARTICIPATION CODE DISTRIBUTED UNMETERED LOAD AUDIT REPORT



For

WHAKAPAPA VILLAGE – DOC AND MERIDIAN ENERGY NZBN:9429037696863

Prepared by: Rebecca Elliot Date audit commenced: 5 September 2022 Date audit report completed: 18 November 2022 Audit report due date: 1 December 2022

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EXECUTIVE SUMMARY

This audit of the **Whakapapa Village - DoC 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 scope of the audit encompasses the collection, security, and accuracy of the data, including the preparation of submission information.

The **Department of Conservation (DoC)** manages the streetlights directly. Meridian maintains a spreadsheet database which records the items of load. No changes have been advised by DOC, but the field audit found some discrepancies. I have recommended that the change management process be reviewed.

The DUML load is settled using the UML profile using the database load and 11.9 on hours per day.

All 41 items of load recorded in the database were surveyed in the field and found a small number of errors. The field wattage was estimated to be 106.54% of the database wattage, indicating that the installed capacity is 6.54% higher than the database. This falls just outside the allowable ±5.0% accuracy level and will be resulting in an estimated minor under submission of 1,025 kWh per annum.

This audit found five non-compliances and makes two recommendations. The future risk rating of ten indicates that the next audit be completed in 12 months. Taking into consideration that this is a very small database, and there were only a minor number of discrepancies found, I recommend that the next audit is completed in a minimum of 18 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 database is not up to date resulting in an estimated minor under submission of 1,025 kWh p.a. Changes are not tracked at a daily level as required by the code.	Moderate	Low	2	Identified
Description and capacity of load	2.4	11(2)(c) and (d) of Schedule 15.3	Two LED driver notification signs do not have wattage information recorded.	Moderate	Low	2	Identified
All load recorded in the database	2.5	Clause 11(2A) of Schedule 15.3	Two additional lights were found in the field.	Moderate	Low	2	Identified
Database accuracy	3.1	15.2 and 15.37B(b)	The database is not up to date resulting in an estimated minor under submission of 1,025 kWh p.a.	Moderate	Low	2	Identified
Volume information accuracy	3.2	15.2 and 15.37B(c)	The database is not up to date resulting in an estimated minor under submission of 1,025 kWh p.a. Changes are not tracked at a daily level as required by the code.	Moderate	Low	2	Identified
Future Risk Rati	ng	l	1	l		10	

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	Recommendation	Issue
Description and capacity of load	2.4	Diver notification sign wattages	Confirm the wattages for the two LED driver notification signs and update the database.
Database accuracy	3.1	Change management	Review change management process with DOC to ensure changes are recorded in the database.

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

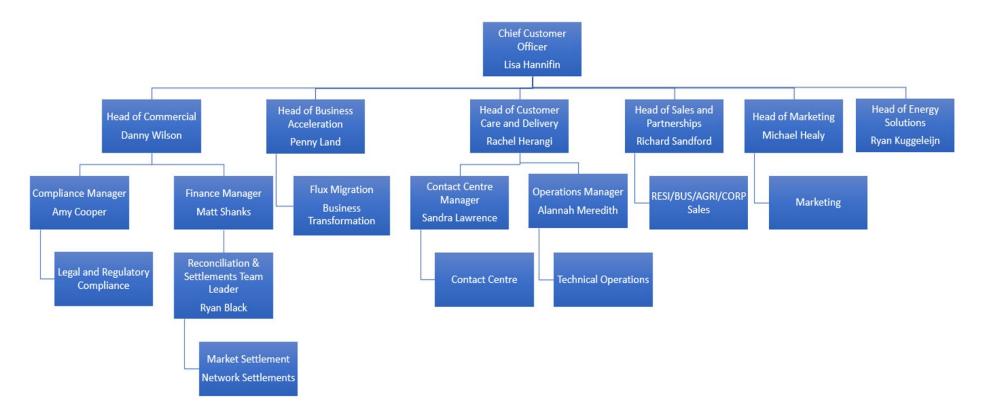
Section 11 of the Electricity Industry Act provides for the Electricity Authority to exempt any participant from compliance with all or any of the clauses.

Audit 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 Limited	
Melanie Matthews	Quality and Compliance Advisor	Meridian Energy Limited	

1.4. Hardware and Software

Meridian maintains a spreadsheet database which records the items of load; and seeks information from DoC on any changes to the unmetered load details monthly. There have been no changes to the database information since Meridian took responsibility.

The DUML load is settled using the RPS profile using the database load and 11.9 on hours per day.

Access to the directory where the spreadsheet is saved is restricted to the reconciliation and settlements team through password protection. Meridian confirmed that this directory is backed up as part of Merdian's standard ICT processes with daily, weekly, and monthly backups conducted.

Systems used by the trader 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

ICP Number	Description	NSP	Number of items of load	Database wattage (watts)
0088055801WMB6F	Streetlighting	NPK0331	41	3,670
Total			41	3,670

1.7. Authorisation Received

All information was provided directly by Meridian.

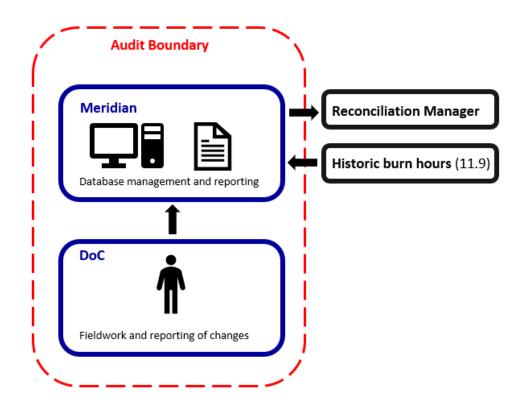
1.8. Scope of Audit

This audit of the Whakapapa Village - DoC 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.

DoC manages the streetlights directly. Meridian maintains a spreadsheet database which records the items of load, and requests information from DoC on any changes to the unmetered load details on a regular basis.

The DUML load is settled using the UML profile using the database load and 11.9 on hours per day.

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.



A field audit was undertaken of all 41 items of load on 15 November 2022.

1.9. Summary of previous audit

The previous audit of this database was undertaken by Tara Gannon of Veritek Limited in November 2020. The summary table below shows the statuses of the non-compliances raised in the previous audit. Further comment is made in the relevant sections of this report.

Subject	Section	Clause	Non-compliance	Status
Deriving submission information	2.1	11(1) of Schedule 15.3	Two LED driver notification signs do not have wattage information recorded.	Still existing
Description and capacity of load	2.4	11(2)(c) and (d) of Schedule 15.3	Two LED driver notification signs do not have wattage information recorded.	Still existing
Database accuracy	3.1	15.2 and 15.37B(b)	Two LED driver notification signs do not have wattage information recorded.	Still existing
Volume information accuracy	3.2	15.2 and 15.37B(c)	Two LED driver notification signs do not have wattage information recorded.	Still existing

Table of Non-compliances

Table of Recommendations

Subject	Section	Recommendation	Issue	Status
Description and capacity of load	2.4	Diver notification sign wattages	Confirm the wattages for the two LED driver notification signs and update the database.	Still existing
Database accuracy	3.1	Lights near Chateau Tongariro also recorded in the RDC database	Work with the RDC DUML database owner to ensure that lights in the area are recorded and assigned to the correct ICP in either the Whakapapa Village – DoC DUML database or the RDC DUML database.	Cleared

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.

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

Meridian reconciles the DUML load as NHH using the RPS profile. Submissions are based on the database load and 11.9 on hours per day.

I checked the submission information for October 2022 and confirmed that the calculation and submission values were correct.

The field audit found a number of inaccuracies including two from the previous audit which have not been corrected. These are detailed in **section 2.5**. The database fell just outside of the allowable ±5.0% accuracy level and will be resulting in an estimated minor under submission of 1,025 kWh per annum. I have recommended that the change management process is reviewed in **section 3.1**. This is recorded as non-compliance below and in **sections 3.1** and **3.2**.

A snapshot of the database is used and does not take into account changes made at a daily level as required by the code.

Audit outcome

Non-compliant

Non-compliance	Desc	ription			
Audit Ref: 2.1 With: Clause 11(1) of	The database is not up to date resulting in an estimated minor under submission of 1,025 kWh p.a.				
Schedule 15.3	Changes are not tracked at a daily level a	as required by the	code.		
	Potential impact: Low				
	Actual impact: Low				
	Audit history: Twice				
From: 10-Nov-20	Controls: Moderate				
To: 05-Sep-22	Breach risk rating: 2				
Audit risk rating	Rationale for	audit risk rating			
Low	The controls are moderate but there is room for improvement.				
	The audit risk rating is low because there	e is a minor impact on settlement.			
Actions ta	aken to resolve the issue	Completion date	Remedial action status		
	been corrected for the inaccuracies its are in the relevant sections of this	24/11/2022	Identified		
Preventative actions take	en to ensure no further issues will occur	Completion date			
historic lamp installatic daily level. There are cl month data to identify	processes and tools to account for ons and changes to the database at a necks in place comparing month to any material changes and confirm e are accounted for in monthly	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 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 was recorded against each item of load.

Audit commentary

All items of load relate to one ICP, which is recorded against each item of load in the 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 addresses and GPS coordinates 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 light type and wattage capacity,
- wattage capacities include any ballast or gear wattage, and
- each item of load has a light type, light wattage, and gear wattage recorded.

Audit commentary

The database contains a lamp description, model, gear wattage and lamp wattage. As reported in the last audit, these fields are populated for every item of load except two LED driver notification signs, which do not have wattages recorded.

Recommendation	Description	Audited party comment	Remedial action
Diver notification sign wattages	Confirm the wattages for the two LED driver notification signs and update the database.	The wattages have been applied to the database.	Identified

Lamp and gear wattages were confirmed to be accurate for all other items of load in section 3.1.

Audit outcome

Non-compliant

Non-compliance	Description			
Audit Ref: 2.4	Two LED driver notification signs do not have wattage information recorded.			
With: Clause 11(2)(c)	Potential impact: Low			
and (d) of Schedule 15.3	Actual impact: Low			
From: 10-Nov-20	Audit history: Once previously			
To: 05-Sep-22	Controls: Moderate			
	Breach risk rating: 2			
Audit risk rating	udit risk rating Rationale for audit risk rating			
Low	The controls are moderate. Most items of load are correctly recorded. The driver notification signs are recorded in the database, but their wattages are missing.			
	The audit risk rating is low because there	e is a minor impac	t on settlement.	
Actions t	aken to resolve the issue	Completion date	Remedial action status	
The wattages have bee	n applied to the database.	24/11/2022	Identified	
Preventative actions tak	en to ensure no further issues will occur	Completion date		
	with DOC each quarterly to ensure nstallation are updated on the	Ongoing		

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 all items of load was undertaken on 15 November 2022.

Audit commentary

The field audit discrepancies are detailed in the table below:

Street	Database count	Field count	Light count difference	Wattage recorded incorrectly	Comments
Driver notification signs	2	2	-	2	As reported in the last audit, the signs were recorded with 0 W in the database. The correct wattages were unable to be confirmed and are estimated to be 200 W per sign.
Flood light for sign 250w at the corner of SH48 and Ngauruhoe Tce	1	-	-1	-	As reported in the last audit, the flood light was not located on the street. GPS co-ords: -39.200599, 175.539445
SH48 & Holiday Park Entrance	1	0	-1		The streetlight has been removed and replaced with a roading sign. GPS co-ords:-39.202113, 175.540212
Holiday Park driveway lighting	4	5	+1		Additional camp lighting GSP co-ords :-39.2018058, 175.5392708
Bruce Road	24	25	+1		Additional light n Bruce Road by Pub Export GPS co-ords: -39.2018058, 175.5392708
Total	41	40	4(+2-2)	2	

Two additional lights were found in the field. This is recorded as non-compliance below. The database accuracy is discussed in **section 3.1**.

Audit outcome

Non-compliant

Non-compliance	Description				
Audit Ref: 2.5	Two additional lights were found in the field.				
With: Clause 11(2A) of	Potential impact: Low				
Schedule 15.3	Actual impact: Low				
	Audit history: None				
From: 10-Nov-20	Controls: Moderate				
To: 05-Sep-22	Breach risk rating: 2				
Audit risk rating	Rationale for audit risk rating				
Low	The controls are moderate but there is room for improvement.				
	The audit risk rating is low because there is a minor impact on settlement.				
Actions ta	aken to resolve the issue	Completion date	Remedial action status		
The two addition lights have been applied to the database.		24/11/2022	Identified		
Preventative actions tak	en to ensure no further issues will occur	Completion date			
Meridian will follow up with DOC each quarterly to ensure all lamp changes and installation are updated on the database.		Ongoing			

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

Meridian maintains a spreadsheet database which records the items of load and seeks information from DoC on any changes to the unmetered load details intermittently.

The database contains fields for lamp installation and removal dates, as well as a lamp status which shows lamps which have been removed or replaced.

No changes have been advised since the last audit but when advised, Meridian intends to record the required details, including installation and change dates, and keep a compliant manual audit trail on a separate sheet of the workbook. Lamp changes would be processed by recording inactive status and a removal date for the old lamp and adding a new row with the new installation date for the replacement lamp.

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

The data is contained in a spreadsheet.

There have been no changes to the database information during the audit period. When changes are required, Meridian intends to keep a compliant manual audit trail on a separate sheet of the workbook.

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

Meridian reconciles this DUML load using the using the database load and 11.9 on hours per day.

A database extract was provided in September 2022, and I assessed the accuracy of this by checking all active items of load. The table below shows the survey plan.

Plan Item	Comments	
Area of interest	Whakapapa Village streetlights	
Strata	The database contains 41 items of load connected to ICP 0088055801WMB6F. All 41 items of load were checked.	
Area units	Not applicable, all 41 items of load were checked.	
Total items of load	All 41 items of load were checked.	

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

The change management process and timeliness of database updates was evaluated.

Audit commentary

Field audit findings

All 41 items of load recorded in the database were surveyed in the field and found a number of errors as detailed in **section 2.5**. The field wattage was estimated¹ to be 106.54% of the database wattage, indicating that the installed capacity is 6.54% higher than the database. This falls just outside the allowable ±5.0% accuracy level and will be resulting in an estimated minor under submission of 1,025 kWh per annum. This is recorded as non-compliance below and **sections 2.1** and **3.1**.

Light description and capacity accuracy

As discussed in **section 2.4**, the database contains a lamp description, model, gear wattage and lamp wattage. As reported in the last audit, these fields are populated for every item in the spreadsheet except two LED driver notification signs, which have zero recorded.

Wattages for all items of load except the driver notification signs were checked against the published standardised wattage table produced by the Electricity Authority and found to be correct.

¹ This includes the wattage for two driver notification signs was unable to be confirmed prior to the audit report being issued; and was estimated to be 200 W each based on LED signs of a comparable size.

Change management process findings

Meridian maintains a spreadsheet database which records the items of load. No changes have been advised by DOC, but the field audit found some discrepancies. I recommend that the change management process be reviewed to ensure that changes made in the field are recorded in the database.

Recommendation	Description	Audited party comment	Remedial action
Change management	Review change management process with DOC to ensure changes are recorded in the database.	Meridian will follow up with DOC each quarterly to ensure all lamp changes and installation are updated on the database.	Identified

Festive and private lights

There are no private or festive lights for Whakapapa Village.

Ruapehu District Council DUML

The last audit found DoC lights present in both the Ruapehu District Council database and this database. This has been resolved and all the lights in the Whakapapa village have been confirmed to belong to DoC and these are no longer recorded in the Ruapehu District Council RAMM database.

Audit outcome

Non-compliant

Non-compliance	Description			
Audit Ref: 3.1 With: Clause 15.2 and 15.37B(b)	The database is not up to date resulting in an estimated minor under submission of 1,025 kWh p.a. Potential impact: Low Actual impact: Low			
From: 10-Nov-20	Audit history: Once previously			
To: 05-Sep-22	Controls: Moderate			
	Breach risk rating: 2			
Audit risk rating	Rationale for audit risk rating			
Low	The controls are moderate but there is room for improvement. The audit risk rating is low because there is a minor impact on settlement.			
Actions t	aken to resolve the issue	Completion date	Remedial action status	
The database has now been corrected for the inaccuracies and comments are in the relevant sections of this audit.		24/11/2022	Identified	
Preventative actions tak	en to ensure no further issues will occur	Completion date		
No comments provided				

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 process for calculation of consumption was examined and the application of profiles was checked. The database was checked for accuracy.

Audit commentary

Meridian reconciles the DUML load as NHH using the RPS profile. Submissions are based on the database load and 11.9 on hours per day.

I checked the submission information for October 2022 and confirmed that the calculation and submission values were correct.

The field audit found a number of inaccuracies including two from the previous audit which have not been corrected. These are detailed in **section 2.5**. The database fell just outside of the allowable ±5.0% accuracy level and will be resulting in an estimated minor under submission of 1,025 kWh per annum. I have recommended that the change management process is reviewed in **section 3.1**. This is recorded as non-compliance below and in **sections 2.1** and **3.1**.

A snapshot of the database is used and does not take into account changes made at a daily level as required by the code.

Audit outcome

Non-compliant

Non-compliance	Description				
Audit Ref: 3.2 With: Clause 15.2 and	The database is not up to date resulting in an estimated minor under submission of 1,025 kWh p.a.				
15.37B(c)	Changes are not tracked at a daily level as required by the code.				
	Potential impact: Low				
	Actual impact: Low				
	Audit history: Once				
From: 10-Nov-20	Controls: Moderate				
To: 05-Sep-22	Breach risk rating: 2				
Audit risk rating	Rationale for audit risk rating				
Low	The controls are moderate but there is room for improvement.				
	The audit risk rating is low because there is a minor impact on settlement.				
Actions ta	aken to resolve the issue	Completion date	Remedial action status		
	een corrected for the inaccuracies are in the relevant sections of this audit.	24/11/2022	Identified		
Preventative actions take	en to ensure no further issues will occur	Completion date			
lamp installations and characteristic terms of the second se	ocesses and tools to account for historic anges to the database at a daily level. comparing month to month data to nges and confirm details for these. These thly submission.	Ongoing			

CONCLUSION

The **Department of Conservation (DoC)** manages the streetlights directly. Meridian maintains a spreadsheet database which records the items of load. No changes have been advised by DOC, but the field audit found some discrepancies. I have recommended that the change management process be reviewed.

The DUML load is settled using the UML profile using the database load and 11.9 on hours per day.

All 41 items of load recorded in the database were surveyed in the field and found a small number of errors. The field wattage was estimated to be 106.54% of the database wattage, indicating that the installed capacity is 6.54% higher than the database. This falls just outside the allowable \pm 5.0% accuracy level and will be resulting in an estimated minor under submission of 1,025 kWh per annum.

This audit found five non-compliances and makes two recommendations. The future risk rating of ten indicates that the next audit be completed in 12 months. Taking into consideration that this is a very small database, and there were only a minor number of discrepancies found, I recommend that the next audit is completed in a minimum of 18 months.

PARTICIPANT RESPONSE

Meridian have reviewed this report and their comments are recorded in the report. No firther comments were provided.