ELECTRICITY INDUSTRY PARTICIPATION CODE RECONCILIATION PARTICIPANT AUDIT REPORT

For

Orange Services Ltd

Material Change Audit

Prepared by: Allan Borcoski Borcoski Energy Services Ltd
Date audit commenced: 13 March 2023
Date audit report completed: 15 June 2023
Audit report due date: 30-Jun-23

TABLE OF CONTENTS

Executive summary 6
Audit summary 7

Non-compliances 7
Recommendations 7
Issues 7

1. Administrative 8

1.1. Exemptions from Obligations to Comply with Code (Section 11) 8
1.2. Structure of Organisation 8
1.3. Persons involved in this audit 8
1.4. Use of Agents (Clause 15.34) 8
1.5. Hardware and Software 9
1.6. Breaches or Breach Allegations 10
1.7. ICP Data 10
1.8. Authorisation Received 10
1.9. Scope of Audit 10
Summary of previous audit 10
1.10. 10

2. Operational Infrastructure 11

2.1. Relevant information (Clause 10.6, 11.2, 15.2) 11
2.2. Provision of information (Clause 15.35) 11
2.3. Data transmission (Clause 20 Schedule 15.2) 12
2.4. Audit trails (Clause 21 Schedule 15.2) 12
2.5. Retailer responsibility for electricity conveyed - participant obligations (Clause 10.4) 15
2.6. Retailer responsibility for electricity conveyed - access to metering installations (Clause 10.7(2),(4),(5) and (6)) 16
2.7. Physical location of metering installations (Clause 10.35(1)&(2)) 16
2.8. Trader contracts to permit assignment by the Authority (Clause 11.15B) 17
2.9. Connection of an ICP (Clause 10.32) 18
2.10. Temporary Electrical Connection of an ICP (Clause 10.33) 18
2.11. Electrical Connection of Point of Connection (Clause 10.33A) 19
2.12. Arrangements for line function services (Clause 11.16) 19
2.13. Arrangements for metering equipment provision (Clause 10.36) 20
2.14. Connecting ICPs then withdrawing switch (Clause 10.33A(5)) 20
2.15. Electrical disconnection of ICPs (Clause 10.33B) 20
2.16. Removal or breakage of seals (Clause 48(1C), 48 (1D), 48 (1E), 48 (1F) of Schedule 10.7) 21

3. Maintaining registry information 22

3.1. Obtaining ICP identifiers (Clause 11.3) 22
3.2. Providing registry information (Clause 11.7(2)) 22
3.3. Changes to registry information (Clause 10 Schedule 11.1) 22
3.4. Trader responsibility for an ICP (Clause 11.18) 22
3.5. Provision of information to the registry manager (Clause 9 Schedule 11.1) 22
3.6. ANZSIC codes (Clause 9 (1(k) of Schedule 11.1) 22
3.7. Changes to unmetered load (Clause 9(1)(f) of Schedule 11.1) 22

3.8. Management of “active” status (Clause 17 Schedule 11.1) 22
3.9. Management of “inactive” status (Clause 19 Schedule 11.1) 22
3.10. ICPs at new or ready status for 24 months (Clause 15 Schedule 11.1) 22

4. Performing customer and embedded generator switching 23

4.1. Inform registry of switch request for ICPs - standard switch (Clause 2 Schedule 11.3) 23
4.2. Losing trader response to switch request and event dates - standard switch (Clauses 3 and 4 Schedule 11.3) 23
4.3. Losing trader must provide final information - standard switch (Clause 5 Schedule 11.3) 23
4.4. Retailers must use same reading - standard switch (Clause 6(1) and 6A Schedule 11.3) 23
4.5. Non-half hour switch event meter reading - standard switch (Clause 6(2) and (3) Schedule 11.3) 23
4.6. Disputes - standard switch (Clause 7 Schedule 11.3) 23
4.7. Gaining trader informs registry of switch request - switch move (Clause 9 Schedule 11.3) 23
4.8. Losing trader provides information - switch move (Clause 10(1) Schedule 11.3) 23
4.9. Losing trader determines a different date - switch move (Clause 10(2) Schedule 11.3) 23
4.10. Losing trader must provide final information - switch move (Clause 11 Schedule 11.3) 23
4.11. Gaining trader changes to switch meter reading - switch move (Clause 12 Schedule 11.3) 23
4.12. Gaining trader informs registry of switch request - gaining trader switch (Clause 14 Schedule 11.3) 23
4.13. Losing trader provision of information - gaining trader switch (Clause 15 Schedule 11.3) 23
4.14. Gaining trader to advise the registry manager - gaining trader switch (Clause 16 Schedule 11.3) 23
4.15. Withdrawal of switch requests (Clauses 17 and 18 Schedule 11.3) 23
4.16. Switch protection (Clause 11.15AA to 11.15AB) 23

5. Maintenance of unmetered load 24

5.1. Maintaining shared unmetered load (Clause 11.14) 24
5.2. Unmetered threshold (Clause 10.14 (2)(b)) 24
5.3. Unmetered threshold exceeded (Clause 10.14 (5)) 24
5.4. Distributed unmetered load (Clause 11 Schedule 15.3, Clause 15.37B) 24

6. Gathering raw meter data 25

6.1. Electricity conveyed & notification by embedded generators(Clause 10.13, Clause 10.24 and 15.13) 25
6.2. Responsibility for metering at GIP(Clause 10.26 (6), (7) and (8)) 25
6.3. Certification of control devices (Clause 33 Schedule 10.7 and clause 2(2) Schedule 15.3) 26
6.4. Reporting of defective metering installations (Clause 10.43(2) and (3)) 26
6.5. Collection of information by certified reconciliation participant (Clause 2 Schedule 15.2) 28
6.6. Derivation of meter readings (Clause 3(1), 3(2) and 5 Schedule 15.2) 29
6.7. NHH meter reading application (Clause 6 Schedule 15.2) 30
6.8. Interrogate meters once (Clause 7(1) and (2) Schedule 15.2) 31

6.9. NHH meters interrogated annually (Clause 8(1) and (2) Schedule 15.2) 32
6.10. NHH meters 90% read rate (Clause 9(1) and (2) Schedule 15.2) 32
6.11. NHH meter interrogation log (Clause 10 Schedule 15.2) 33
6.12. HHR data collection (Clause 11(1) Schedule 15.2) 35
6.13. HHR interrogation data requirement (Clause 11(2) Schedule 15.2) 35
6.14. HHR interrogation log requirements (Clause 11(3) Schedule 15.2) 36

7. Storing raw meter data 38

7.1. Trading period duration (Clause 13 Schedule 15.2) 38
7.2. Archiving and storage of raw meter data (Clause 18 Schedule 15.2) 38
7.3. Non metering information collected / archived (Clause 21(5) Schedule 15.2) 39

8. Creating and managing (including validating, estimating, storing, correcting and archiving) volume information 41

8.1. Correction of NHH meter readings (Clause 19(1) Schedule 15.2) 41
8.2. Correction of HHR metering information (Clause 19(2) Schedule 15.2) 42
8.3. Error and loss compensation arrangements (Clause 19(3) Schedule 15.2) 42
8.4. Correction of HHR and NHH raw meter data (Clause 19(4) and (5) Schedule 15.2) 43

9. Estimating and validating volume information 46

9.1. Identification of readings (Clause 3(3) Schedule 15.2) 46
9.2. Derivation of volume information (Clause 3(4) Schedule 15.2) 47
9.3. Meter data used to derive volume information (Clause 3(5) Schedule 15.2) 48
9.4. Half hour estimates (Clause 15 Schedule 15.2) 48
9.5. NHH metering information data validation (Clause 16 Schedule 15.2) 49
9.6. Electronic meter readings and estimated readings (Clause 17 Schedule 15.2) 50

10. Provision of metering information to the GRID OWNER in accordance with subpart 4 of Part 13 (clause 15.38(1)(f)) 53

10.1. Generators to provide HHR metering information (Clause 13.136) 53
10.2. Unoffered & intermittent generation provision of metering information (Clause 13.137) 53
10.3. Loss adjustment of HHR metering information (Clause 13.138) 54
10.4. Notification of the provision of HHR metering information (Clause 13.140) 54

11. Provision of submission information for reconciliation 56

11.1. Buying and selling notifications (Clause 15.3) 56
11.2. Calculation of ICP days (Clause 15.6) 56
11.3. Electricity supplied information provision to the reconciliation manager (Clause 15.7) 57
11.4. HHR aggregates information provision to the reconciliation manager (Clause 15.8) 58

12. Submission computation 60

12.1. Daylight saving adjustment (Clause 15.36) 60
12.2. Creation of submission information (Clause 15.4) 60
12.3. Allocation of submission information (Clause 15.5) 61
12.4. Grid owner volumes information (Clause 15.9) 62
12.5. Provision of NSP submission information (Clause 15.10) 62
12.6. Grid connected generation (Clause 15.11) 63
12.7. Accuracy of submission information (Clause 15.12) 63
12.8. Permanence of meter readings for reconciliation (Clause 4 Schedule 15.2) 65
12.9. Reconciliation participants to prepare information (Clause 2 Schedule 15.3) 66

12.10. Historical estimates and forward estimates (Clause 3 Schedule 15.3) 67
12.11. Historical estimate process (Clause 4 and 5 Schedule 15.3) 68
12.12. Forward estimate process (Clause 6 Schedule 15.3) 68
12.13. Compulsory meter reading after profile change (Clause 7 Schedule 15.3) 69

13. Submission format and timing 71

13.1. Provision of submission information to the RM (Clause 8 Schedule 15.3) 71
13.2. Reporting resolution (Clause 9 Schedule 15.3) 72
13.3. Historical estimate reporting to RM (Clause 10 Schedule 15.3) 73

Conclusion 75

Participant response 75

EXECUTIVE SUMMARY

Orange Services Ltd (ORSL) currently uses JC Consulting (JCC) to create and submit files to the reconciliation manager (RM). In the near future it is ORSL's intention to cease using the JCC services and carry out the creation and submission of files to the reconciliation manager themselves. ORSL have recently custom developed a software system to deliver the creation and submission of files to the reconciliation manager.

Clause 16A.11 of Part 16 requires that, if a reconciliation participant intends to make a "material" change to any certified facilities, processes, or procedures, then the changes must be subject to an audit prior to the change taking place. This audit was performed at the request of Orange Services Ltd so that it can be supplied to the Electricity Authority to satisfy the requirements of clause 16A.11(1). The relevant rules audited are as required by the Guidelines for Reconciliation Participants Audits V 7.2 issued by the Electricity Authority.

The purpose of this audit is to confirm the recently developed ORSL systems and processes meet code requirements.

The new ORSL System is a custom-developed software system using Java, Javascript and Python technologies. The ORSL System uses MySQL database to store all ICP data and downloaded meter reading files from MEP SFTP servers. All ORSL System functions & modules including the Windows and Linux operating systems run on cloud servers. Along side the custom-developed ORSL system "FileZilla" will be used as the SFTP client to submit and download files. All files to be uploaded to the Reconciliation Manager(RM) SFTP server are stored in the Windows and Linux file systems.

Whilst the meter reading validation, Reconciliation submission calculation and file creation are performed by the ORSL system, file transfers are carried out manually.

The ORSL System has been implemented for some time and operating in parallel to the JC Consulting Reconciliation service to confirm the system file output is accurate and robust. Test RM Submission files have been produced and compared to actual RM Submission files for more than 6 months.

ORSL staff provided supporting system design, operational, UAT test plan documentation and test results for evaluation. A live demonstration was also presented on 24 March 2023. It was noted that the quantity of test data was very small and was based on the 2 ICPs ORSL currently trade.

The test plan (UAT) and test results the ORSL System documentation examined along with live demonstration of functionality established compliance is likely to be achieved when the ORSL System is goes live. The ongoing certified Reconciliation Participant audits will provide further assurance.

This is based on the very small number of ICPs currently traded. It is recommended that further testing is completed to confirm the system maintains compliance once ICP numbers go beyond 50.

AUDIT SUMMARY

NON-COMPLIANCES

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

RECOMMENDATIONS

Subject	Section	Description	Recommendation

ISSUES

Subject	Section	Description	Issue

1. ADMINISTRATIVE

1.1. Exemptions from Obligations to Comply with Code (Section 11)

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

Orange did not apply for any exemptions.

Audit commentary

The Electricity Authority website was checked and it was confirmed that there are no exemptions in place.

1.2. Structure of Organisation

The company consists of General Manager – Nero Yang and Managing Director – Viking Zhou.

1.3. Persons involved in this audit

Name	Title	Company
Nero Yang	General Manager	Orange Services Ltd
Viking Zhou	Managing Director	Orange Services Ltd
Allan Borcoski	Electricity Authority Approved Auditor	Borcoski Energy Services Ltd

1.4. Use of Agents (Clause 15.34)

Code reference

Clause 15.34

Code related audit information

A reconciliation participant who uses am agent

- *remains responsible for the contractor's fulfilment of the participant's Code obligations*
- *cannot assert that it is not responsible or liable for the obligation due to something the agent has or has not done*

Audit observation

ORSL currently uses JC Consulting (JCC) to create and submit files to the reconciliation manager (RM). In the near future it is ORSL's intention to stop using the JCC services and carry out the creation and submission of files to the reconciliation manager themselves.

The purpose of this audit is to confirm the recently developed ORSL systems and processes meet code requirements.

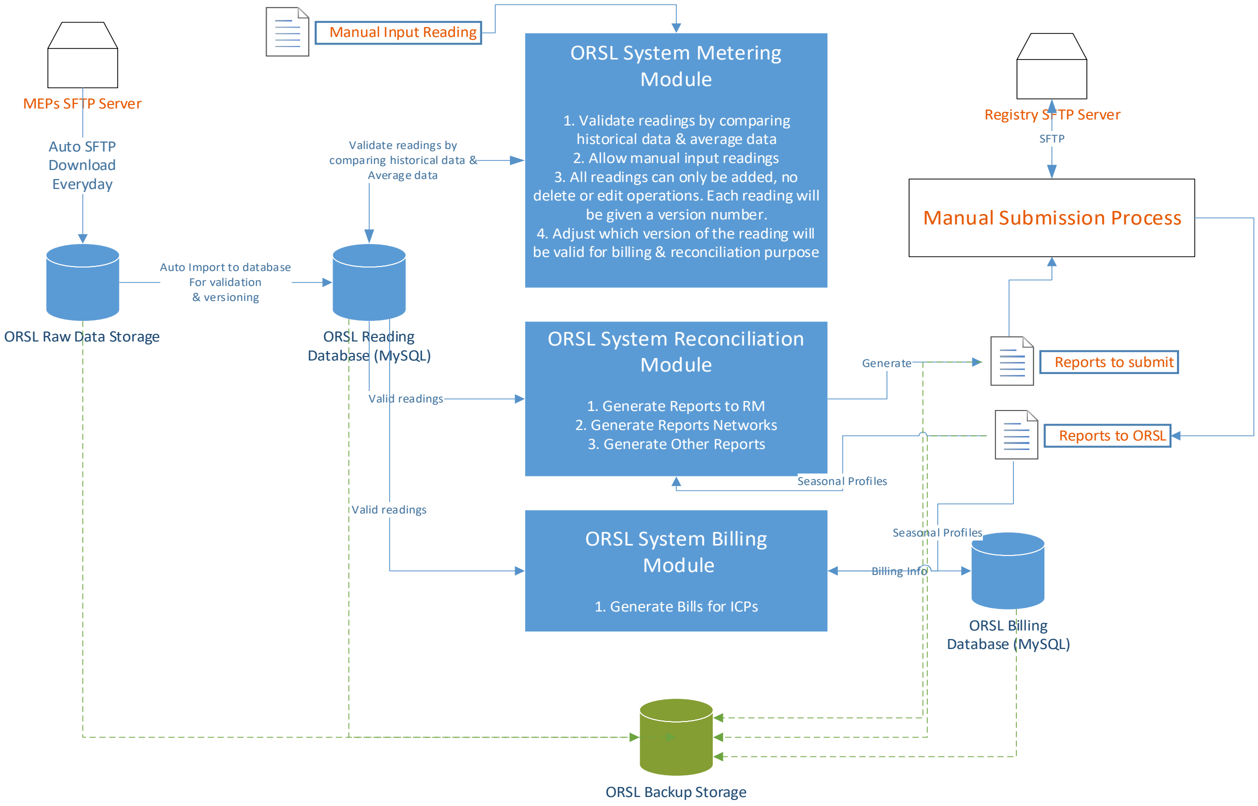
Audit commentary

ORSL have recently custom developed a software system to deliver the creation and submission of files to the reconciliation manager.

The Software system has been developed tested and implemented in house with no external contractors used.

1.5. Hardware and Software

System Architecture


Manual Input Reading
ORSL System Metering Module
1. Validate readings by comparing historical data & average data
2. Allow manual input readings
3. All readings can only be added, no delete or edit operations. Each reading will be given a version number.
4. Adjust which version of the reading will be valid for billing & reconciliation purpose
MEPs SFTP Server
Auto SFTP Download Everyday
Validate readings by comparing historical data & Average data
Registry SFTP Server
SFTP
Manual Submission Process
Auto Import to database For validation & versioning
ORSL Raw Data Storage
ORSL Reading Database (MySQL)
ORSL System Reconciliation Module
1. Generate Reports to RM
2. Generate Reports Networks
3. Generate Other Reports
Generate
Reports to submit
Reports to ORSL
Valid readings
Seasonal Profiles
Valid readings
ORSL System Billing Module
1. Generate Bills for ICPs
Seasonal Profiles
Billing Info
ORSL Billing Database (MySQL)
ORSL Backup Storage

Hardware

ORSL System uses cloud servers to run all functions & modules including the Windows and Linux operating systems.

ORSL System uses MySQL database to store data including all downloaded files from MEP SFTP servers. All files to be uploaded to the RM SFTP server are stored in the Windows and Linux file systems.

Software

The ORSL System is a custom-developed software system using Java, Javascript and Python technologies.

Along side the custom-developed ORSL system “FileZilla” will be used as the SFTP client to submit and download files.

As is the current process switching will be conducted using the Electricity Authority web interface.

1.6. Breaches or Breach Allegations

The Electricity Authority (EA) Website indicates there were no breaches or breach allegations lodged against ORSL in the period covered by the last audit. A check of the EA Website confirms there were no breaches or alleged breaches reported since the last audit.

1.7. ICP Data

Metering Category	19 May 2022	April 2020	June 2019
1	3	3	3

Status	Number of ICPs 19 May 2022	Number of ICPs April 2020	Number of ICPs June 2019
Active (2,0)	3	3	3

1.8. Authorisation Received

ORSL provided authorisation to Borcoski Energy Services Ltd to conduct this audit.

1.9. Scope of Audit

The scope of the Material Change audit:

(b) Gathering and storing raw meter data

(c)(ii) Creation and management of NHH volume information

(d)(i) Calculation and delivery of ICP days under clause 15.6

(d)(ii) Delivery of electricity supplied information under clause 15.7

(e) Provision of submission information for reconciliation

The purpose of the audit regime is to evaluate the participants' compliance with the Code obligations, with respect to ORSL's intention to cease using JCC services and carry out the creation and submission of files to the reconciliation manager themselves using the recently developed ORSL systems and processes.

1.10. Summary of previous audit

Not applicable

2. OPERATIONAL INFRASTRUCTURE

2.1. Relevant information (Clause 10.6, 11.2, 15.2)

Code reference

Clause 10.6, 11.2, 15.2

Code related audit information

A participant must take all practicable steps to ensure that information that the participant is required to provide is:

- a) *complete and accurate*
- b) *not misleading or deceptive*
- c) *not likely to mislead or deceive.*

If the participant becomes aware that in providing information under this Part, the participant has not complied with that obligation, the participant must, as soon as practicable, provide such further information as is necessary to ensure that the participant does comply.

Audit observation

This was discussed with ORSL Staff. The system documentation was checked and the UAT plan and results were also checked. A live demonstration of the system was observed.

Audit commentary

The ORSL System will not have any impact on sections 2,3,4,5, and 10.

Based on the checks above and test results provided it was confirmed that the ORSL Reconciliation System was capable of generating correctly formatted and accurate submission files including revision files.

This will need to be verified at the next CRP audit.

Audit outcome

Compliant

2.2. Provision of information (Clause 15.35)

Code reference

Clause 15.35

Code related audit information

If an obligation exists to provide information in accordance with Part 15, a participant must deliver that information to the required person within the timeframe specified in the Code, or, in the absence of any such timeframe, within any timeframe notified by the Authority. Such information must be delivered in the format determined from time to time by the Authority.

Audit observation

This was discussed with ORSL Staff. The system documentation was checked and the UAT plan and results were also checked. A live demonstration of the system was observed.

Audit commentary

The ORSL System will not have any impact on 2,3,4,5, and 10.

Based on the checks above and test results provided it was confirmed that the ORSL Reconciliation System was capable of generating correctly formatted and accurate submission files including revision files.

This will need to be verified at the next CRP audit.

Compliant

2.3. Data transmission (Clause 20 Schedule 15.2)

Code reference

Clause 20 Schedule 15.2

Code related audit information

Transmissions and transfers of data related to metering information between reconciliation participants or their agents, for the purposes of the Code, must be carried out electronically using systems that ensure the security and integrity of the data transmitted and received.

Audit observation

This was discussed with ORSL Staff. The system documentation was checked and the UAT plan and results were also checked. A live demonstration of the system was observed.

Screenshots of stored data files within the ORSL System were provided along with archived RM log files.

Audit commentary

“FileZilla” is used as the SFTP client to submit and download files. The live ORSL System demonstration provided evidence of secure electronic data transmission this was supported by system test documentation showing screenshots of received files. FileZilla also holds transmission logs.

Meter reading information (both register readings and HHR) is collected automatically from MEPs SFTP servers at 0200h daily. The ORSL system imports the reading files into a MySQL database, and stores the files as originals that remain unchanged for backup & tracking.

Reconciliation files are submitted manually via the RM portal. The RM portal stores transmission logs.

Audit outcome

Compliant

2.4. Audit trails (Clause 21 Schedule 15.2)

Code reference

Clause 21 Schedule 15.2

Code related audit information

Each reconciliation participant must ensure that a complete audit trail exists for all data gathering, validation, and processing functions of the reconciliation participant.

The audit trail must include details of information:

- *provided to and received from the registry manager*
- *provided to and received from the reconciliation manager*
- *provided and received from other reconciliation participants and their agents.*

The audit trail must cover all archived data in accordance with clause 18.

The logs of communications and processing activities must form part of the audit trail, including if automated processes are in operation.

Logs must be printed and filed as hard copy or maintained as data files in a secure form, along with other archived information.

The logs must include (at a minimum) the following:

- *an activity identifier (clause 21(4)(a))*
- *the date and time of the activity (clause 21(4)(b))*
- *the operator identifier for the person who performed the activity (clause 21(4)(c)).*

Audit observation

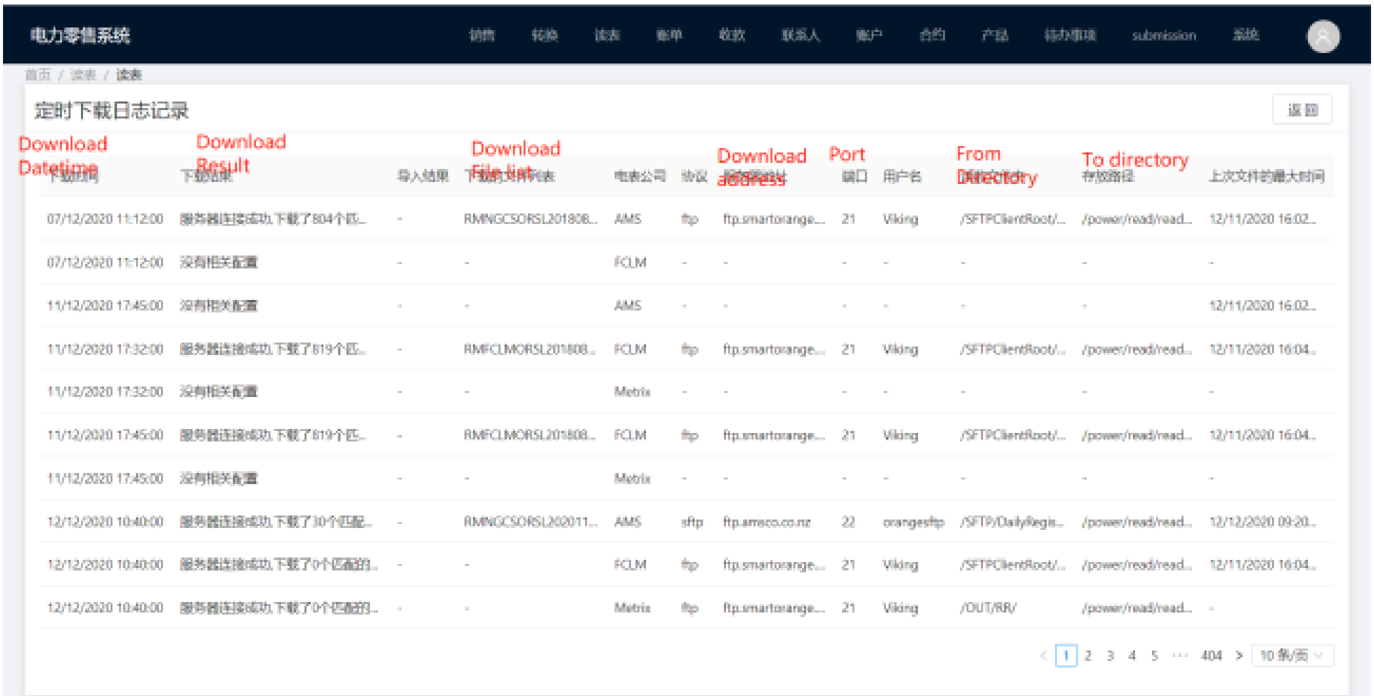
This was discussed with ORSL Staff. The system documentation was checked and the UAT plan and results were also checked. A live demonstration of the system was observed.

Screenshots of stored data files within the ORSL System were provide along with archived RM log files.

Audit commentary

"FileZilla" will be used as the SFTP client to submit and download files. The live ORSL System demonstration provided evidence of secure electronic data transmission supported by system test documentation screenshots of received files. FileZilla also holds transmission logs.

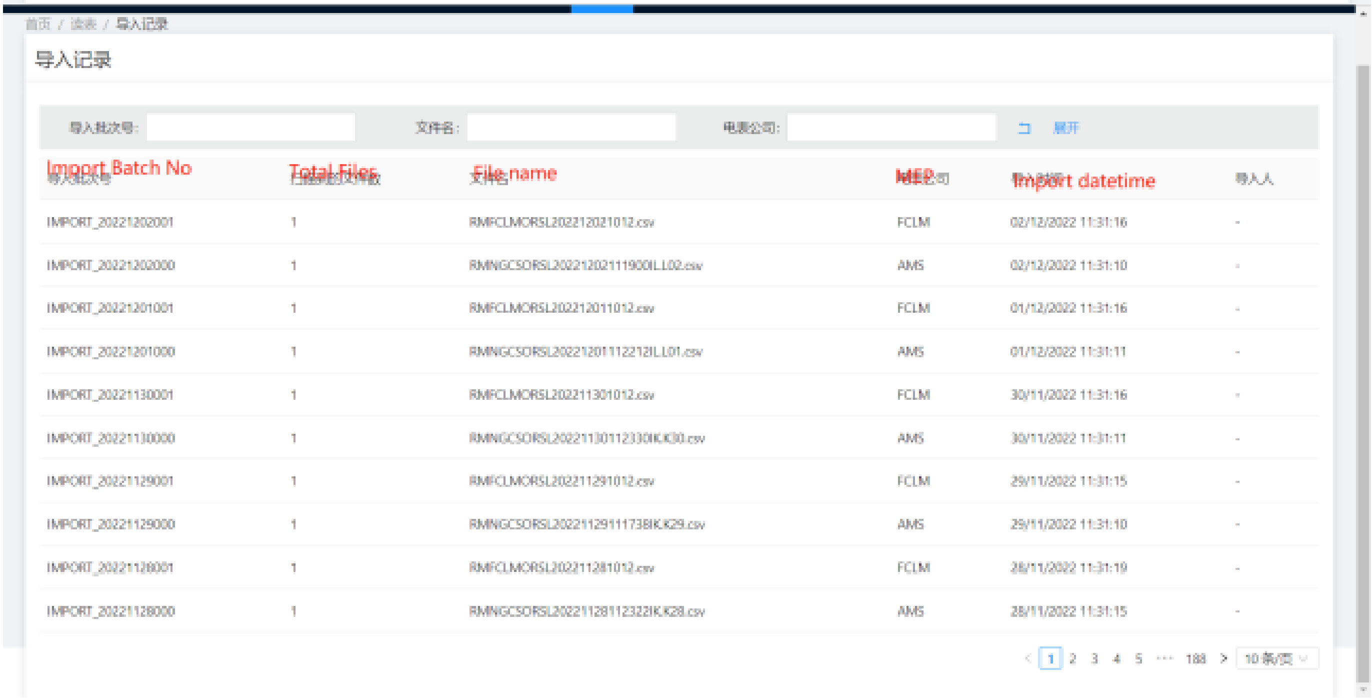
Sample Meter Reading File Log Information:


电力零售系统
销售
转换
读表
账单
收款
联系人
账户
合约
产品
待办事项
submission
系统
首页 / 读表 / 读表
返回
Download Datetime
Download Result
Download File list
Download address
Port
From Directory
To directory

定时下载日志记录

下载时间	下载结果	导入结果	下载的文件列表	电表公司	协议	服务器地址	端口	用户名	源文件路径	存放路径	上次文件的最大时间
07/12/2020 11:12:00	服务器连接成功,下载了804个匹...	-	RMNGCSORSL201808...	AMS	ftp	ftp.smartorange...	21	Viking	/SFTPClientRoot/...	/power/read/read...	12/11/2020 16:02...
07/12/2020 11:12:00	没有相关配置	-	-	FCLM	-	-	-	-	-	-	-
11/12/2020 17:45:00	没有相关配置	-	-	AMS	-	-	-	-	-	-	12/11/2020 16:02...
11/12/2020 17:32:00	服务器连接成功,下载了819个匹...	-	RMFCLMORSL201808...	FCLM	ftp	ftp.smartorange...	21	Viking	/SFTPClientRoot/...	/power/read/read...	12/11/2020 16:04...
11/12/2020 17:32:00	没有相关配置	-	-	Metrix	-	-	-	-	-	-	-
11/12/2020 17:45:00	服务器连接成功,下载了819个匹...	-	RMFCLMORSL201808...	FCLM	ftp	ftp.smartorange...	21	Viking	/SFTPClientRoot/...	/power/read/read...	12/11/2020 16:04...
11/12/2020 17:45:00	没有相关配置	-	-	Metrix	-	-	-	-	-	-	-
12/12/2020 10:40:00	服务器连接成功,下载了30个匹配...	-	RMNGCSORSL202011...	AMS	sftp	ftp.amsco.co.nz	22	orangesftp	/SFTP/DailyRegis...	/power/read/read...	12/12/2020 09:20...
12/12/2020 10:40:00	服务器连接成功,下载了0个匹配的...	-	-	FCLM	ftp	ftp.smartorange...	21	Viking	/SFTPClientRoot/...	/power/read/read...	12/11/2020 16:04...
12/12/2020 10:40:00	服务器连接成功,下载了0个匹配的...	-	-	Metrix	ftp	ftp.smartorange...	21	Viking	/OUT/RR/	/power/read/read...	-

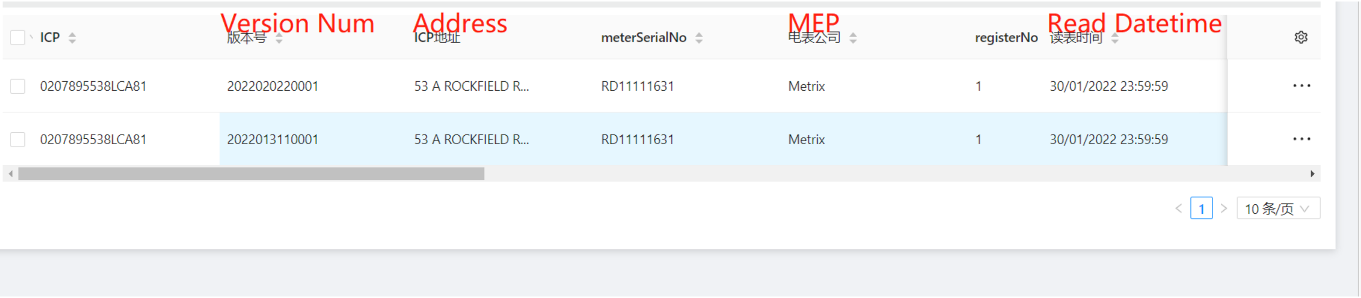
< 1 2 3 4 5 ··· 404 >
10 条/页


首页 / 读表 / 导入记录
导入批次号:
文件名:
电表公司:
展开
Import Batch No
Total Files
File name
MEP
Import datetime

导入记录

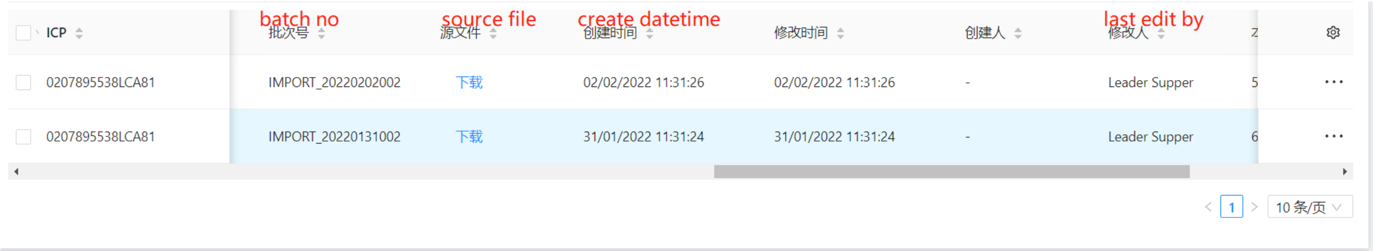
导入批次号	[illegible]	文件名	电表公司	导入时间	导入人
IMPORT_20221202001	1	RMFCLMORSL202212021012.csv	FCLM	02/12/2022 11:31:16	-
IMPORT_20221202000	1	RMNGCSORSL20221202111900ILL02.csv	AMS	02/12/2022 11:31:10	-
IMPORT_20221201001	1	RMFCLMORSL20221201 1012.csv	FCLM	01/12/2022 11:31:16	-
IMPORT_20221201000	1	RMNGCSORSL20221201112212ILL01.csv	AMS	01/12/2022 11:31:11	-
IMPORT_20221130001	1	RMFCLMORSL20221130 1012.csv	FCLM	30/11/2022 11:31:16	-
IMPORT_20221130000	1	RMNGCSORSL20221130112330IKK30.csv	AMS	30/11/2022 11:31:11	-
IMPORT_20221129001	1	RMFCLMORSL20221129 1012.csv	FCLM	29/11/2022 11:31:15	-
IMPORT_20221129000	1	RMNGCSORSL20221129111738IKK29.csv	AMS	29/11/2022 11:31:10	-
IMPORT_20221128001	1	RMFCLMORSL20221128 1012.csv	FCLM	28/11/2022 11:31:19	-
IMPORT_20221128000	1	RMNGCSORSL20221128112322IKK28.csv	AMS	28/11/2022 11:31:15	-

< 1 2 3 4 5 ··· 188 >
10 条/页


Version Num
Address
MEP
Read Datetime

☐ ICP	版本号	ICP地址	meterSerialNo	电表公司	registerNo	读表时间	
☐ 0207895538LCA81	2022020220001	53 A ROCKFIELD R...	RD11111631	Metrix	1	30/01/2022 23:59:59	···
☐ 0207895538LCA81	2022013110001	53 A ROCKFIELD R...	RD11111631	Metrix	1	30/01/2022 23:59:59	···

< 1 >
10 条/页

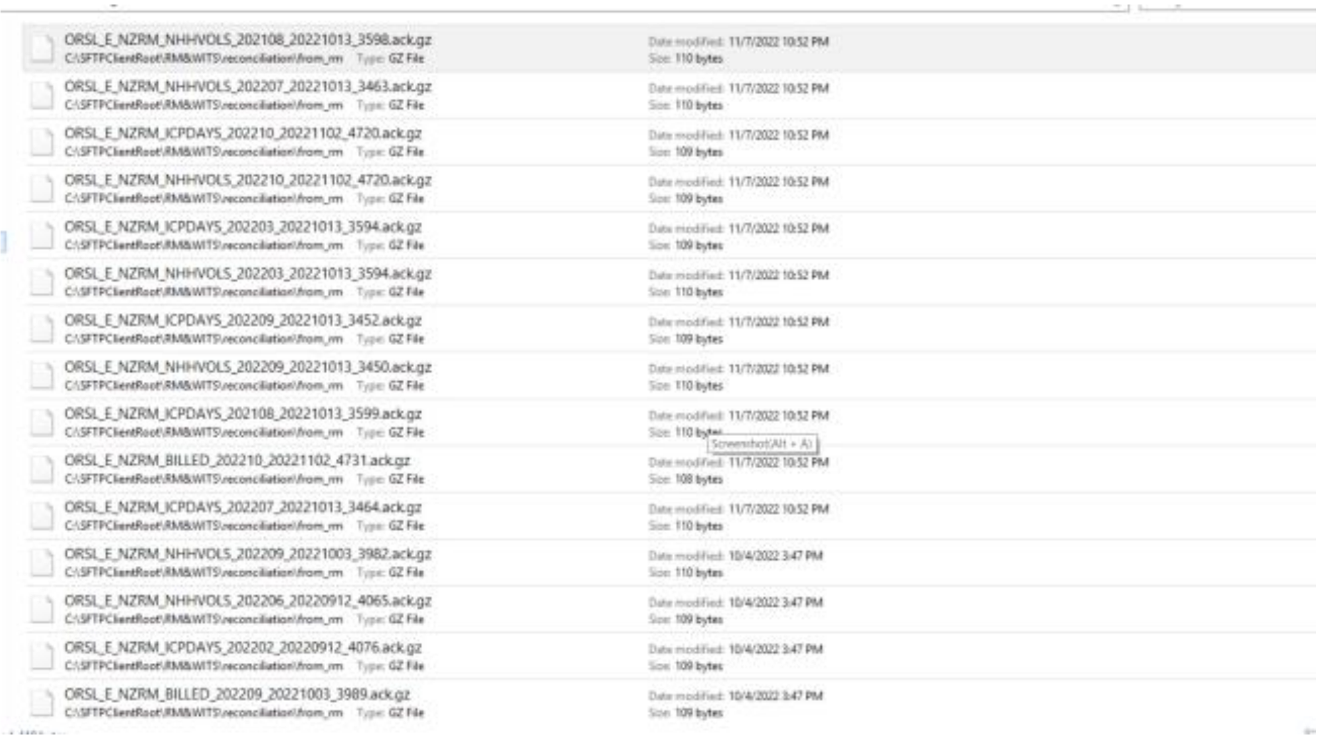


☐ ICP	batch no 批次号	source file 源文件	create datetime 创建时间	修改时间	创建人	last edit by 修改人	Z
☐ 0207895538LCA81	IMPORT_20220202002	下载	02/02/2022 11:31:26	02/02/2022 11:31:26	-	Leader Supper	5
☐ 0207895538LCA81	IMPORT_20220131002	下载	31/01/2022 11:31:24	31/01/2022 11:31:24	-	Leader Supper	6

The ORSL System supports changes to data if required with logs created showing the date and time of the activity, an activity identifier, and the operator identifier.

The RM portal will record the audit trail of reconciliation files submitted and received by ORSL

Sample RM File Logs



```
ORSL_E_NZRM_NHHVOLS_202108_20221013_3598.ack.gz                         Date modified: 11/7/2022 10:52 PM
C:\SFTPClientRoot\RM&WITS\reconciliation\from_rm   Type: GZ File         Size: 110 bytes
ORSL_E_NZRM_NHHVOLS_202207_20221013_3463.ack.gz                         Date modified: 11/7/2022 10:52 PM
C:\SFTPClientRoot\RM&WITS\reconciliation\from_rm   Type: GZ File         Size: 110 bytes
ORSL_E_NZRM_ICPDAYS_202210_20221102_4720.ack.gz                         Date modified: 11/7/2022 10:52 PM
C:\SFTPClientRoot\RM&WITS\reconciliation\from_rm   Type: GZ File         Size: 109 bytes
ORSL_E_NZRM_NHHVOLS_202210_20221102_4720.ack.gz                         Date modified: 11/7/2022 10:52 PM
C:\SFTPClientRoot\RM&WITS\reconciliation\from_rm   Type: GZ File         Size: 109 bytes
ORSL_E_NZRM_ICPDAYS_202203_20221013_3594.ack.gz                         Date modified: 11/7/2022 10:52 PM
C:\SFTPClientRoot\RM&WITS\reconciliation\from_rm   Type: GZ File         Size: 109 bytes
ORSL_E_NZRM_NHHVOLS_202203_20221013_3594.ack.gz                         Date modified: 11/7/2022 10:52 PM
C:\SFTPClientRoot\RM&WITS\reconciliation\from_rm   Type: GZ File         Size: 110 bytes
ORSL_E_NZRM_ICPDAYS_202209_20221013_3452.ack.gz                         Date modified: 11/7/2022 10:52 PM
C:\SFTPClientRoot\RM&WITS\reconciliation\from_rm   Type: GZ File         Size: 109 bytes
ORSL_E_NZRM_NHHVOLS_202209_20221013_3450.ack.gz                         Date modified: 11/7/2022 10:52 PM
C:\SFTPClientRoot\RM&WITS\reconciliation\from_rm   Type: GZ File         Size: 110 bytes
ORSL_E_NZRM_ICPDAYS_202108_20221013_3599.ack.gz                         Date modified: 11/7/2022 10:52 PM
C:\SFTPClientRoot\RM&WITS\reconciliation\from_rm   Type: GZ File         Size: 110 bytes
ORSL_E_NZRM_BILLED_202210_20221102_4731.ack.gz                          Date modified: 11/7/2022 10:52 PM
C:\SFTPClientRoot\RM&WITS\reconciliation\from_rm   Type: GZ File         Size: 108 bytes
ORSL_E_NZRM_ICPDAYS_202207_20221013_3464.ack.gz                         Date modified: 11/7/2022 10:52 PM
C:\SFTPClientRoot\RM&WITS\reconciliation\from_rm   Type: GZ File         Size: 110 bytes
ORSL_E_NZRM_NHHVOLS_202209_20221003_3982.ack.gz                         Date modified: 10/4/2022 3:47 PM
C:\SFTPClientRoot\RM&WITS\reconciliation\from_rm   Type: GZ File         Size: 110 bytes
ORSL_E_NZRM_NHHVOLS_202206_20220912_4065.ack.gz                         Date modified: 10/4/2022 3:47 PM
C:\SFTPClientRoot\RM&WITS\reconciliation\from_rm   Type: GZ File         Size: 109 bytes
ORSL_E_NZRM_ICPDAYS_202202_20220912_4076.ack.gz                         Date modified: 10/4/2022 3:47 PM
C:\SFTPClientRoot\RM&WITS\reconciliation\from_rm   Type: GZ File         Size: 109 bytes
ORSL_E_NZRM_BILLED_202209_20221003_3989.ack.gz                          Date modified: 10/4/2022 3:47 PM
C:\SFTPClientRoot\RM&WITS\reconciliation\from_rm   Type: GZ File         Size: 109 bytes
```

Audit outcome

Compliant

2.5. Retailer responsibility for electricity conveyed - participant obligations (Clause 10.4)

Code reference

Clause 10.4

Code related audit information

If a participant must obtain a consumer's consent, approval, or authorisation, the participant must ensure it:

- *extends to the full term of the arrangement*
- *covers any participants who may need to rely on that consent.*

Audit observation

This was discussed with ORSL Staff.

Audit commentary

The ORSL System will not have any impact on this activity.

This clause is not applicable to this audit.

Audit outcome

Not applicable

2.6. Retailer responsibility for electricity conveyed - access to metering installations (Clause 10.7(2),(4),(5) and (6))

Code reference

Clause 10.7(2),(4),(5) and (6)

Code related audit information

The responsible reconciliation participant must, if requested, arrange access for the metering installation to the following parties:

- *the Authority*
- *an ATH*
- *an auditor*
- *an MEP*
- *a gaining metering equipment provider.*

The trader must use its best endeavours to provide access:

- *in accordance with any agreements in place*
- *in a manner and timeframe which is appropriate in the circumstances.*

If the trader has a consumer, the trader must obtain authorisation from the customer for access to the metering installation, otherwise it must arrange access to the metering installation.

The reconciliation participant must provide any necessary facilities, codes, keys or other means to enable the party to obtain access to the metering installation by the most practicable means.

Audit observation

This was discussed with ORSL Staff.

Audit commentary

The ORSL System will not have any impact on this activity.

This clause is not applicable to this audit.

Audit outcome

Not applicable

2.7. Physical location of metering installations (Clause 10.35(1)&(2))

Code reference

Clause 10.35(1)&(2)

Code related audit information

A reconciliation participant responsible for ensuring there is a category 1 metering installation or category 2 metering installation must ensure that the metering installation is located as physically close to a point of connection as practical in the circumstances.

A reconciliation participant responsible for ensuring there is a category 3 or higher metering installation must:

a) *if practical in the circumstances, ensure that the metering installation is located at a point of connection; or*
b) *if it is not practical in the circumstances to locate the metering installation at the point of connection, calculate the quantity of electricity conveyed through the point of connection using a loss compensation process approved by the certifying ATH.*

Audit observation

This was discussed with ORSL Staff.

Audit commentary

The ORSL System will not have any impact on this activity.

This clause is not applicable to this audit.

Audit outcome

Not applicable

2.8. Trader contracts to permit assignment by the Authority (Clause 11.15B)

Code reference

Clause 11.15B

Code related audit information

A trader must at all times ensure that the terms of each contract between a customer and a trader permit:

- *the Authority to assign the rights and obligations of the trader under the contract to another trader if the trader commits an event of default under paragraph (a) or (b) or (f) or (h) of clause 14.41 (clause 11.15B(1)(a)); and*
- *the terms of the assigned contract to be amended on such an assignment to—*
- *the standard terms that the recipient trader would normally have offered to the customer immediately before the event of default occurred (clause 11.15B(1)(b)(i)); or*
- *such other terms that are more advantageous to the customer than the standard terms, as the recipient trader and the Authority agree (clause 11.15B(1)(b)(ii); and*
- *the terms of the assigned contract to be amended on such an assignment to include a minimum term in respect of which the customer must pay an amount for cancelling the contract before the expiry of the minimum term (clause 11.15B(1)(c)); and*
- *the trader to provide information about the customer to the Authority and for the Authority to provide the information to another trader if required under Schedule 11.5 (clause 11.15B(1)(d)); and*
- *the trader to assign the rights and obligations of the trader to another trader (clause 11.15B(1)(e)).*

The terms specified in subclause (1) must be expressed to be for the benefit of the Authority for the purposes of the Contracts (Privacy) Act 1982, and not be able to be amended without the consent of the Authority (clause 11.15B(2)).

Audit observation

This was discussed with ORSL Staff.

Audit commentary

The ORSL System will not have any impact on this activity.

This clause is not applicable to this audit.

Audit outcome

Not applicable

2.9. Connection of an ICP (Clause 10.32)

Code reference

Clause 10.32

Code related audit information

A reconciliation participant must only request the connection of a point of connection if they:

- *accept responsibility for their obligations in Parts 10, 11 and 15 for the point of connection; and*
- *have an arrangement with an MEP to provide 1 or more metering installations for the point of connection.*

Audit observation

This was discussed with ORSL Staff.

Audit commentary

The ORSL System will not have any impact on this activity.

This clause is not applicable to this audit.

Audit outcome

Not applicable

2.10. Temporary Electrical Connection of an ICP (Clause 10.33)

Code reference

Clause 10.33(1)

Code related audit information

A trader may temporarily electrically connect a point of connection, or authorise a MEP to temporarily electrically connect a point of connection, only if:

- *for a point of connection to the grid – the grid owner has approved the connection*
- *for an NSP that is not a point of connection to the grid - the relevant distributor has approved the connection.*
- *for a point of connection that is an ICP, but is not as NSP:*
    - *the trader is recorded in the registry as the trader responsible for the ICP or has an arrangement with the customer and initiates a switch within 2 business days of electrical connection*
    - *if the ICP has metered load, 1 or more certified metering installations are in place*
    - *if the ICP has not previously been electrically connected, the relevant distributor has given written approval of the temporary electrical connection.*

Audit observation

This was discussed with ORSL Staff.

Audit commentary

The ORSL System will not have any impact on this activity.

This clause is not applicable to this audit.

Audit outcome

Not applicable

2.11. Electrical Connection of Point of Connection (Clause 10.33A)

Code reference

Clause 10.33A(1)

Code related audit information

A reconciliation participant may electrically connect or authorise the electrical connection of a point of connection only if:

- *for a point of connection to the grid – the grid owner has approved the connection*
- *for an NSP that is not a point of connection to the grid - the relevant distributor has approved the connection.*
- *for a point of connection that is an ICP, but is not as NSP:*
  - *the trader is recorded in the registry as the trader responsible for the ICP or has an arrangement with the customer and initiates a switch within 2 business days of electrical connection*
  - *if the ICP has metered load, 1 or more certified metering installations are in place*
  - *if the ICP has not previously been electrically connected, the relevant distributor has given written approval of the electrical connection.*

Audit observation

This was discussed with ORSL Staff.

Audit commentary

The ORSL System will not have any impact on this activity.

This clause is not applicable to this audit.

Audit outcome

Not applicable

2.12. Arrangements for line function services (Clause 11.16)

Code reference

Clause 11.16

Code related audit information

Before providing the registry manager with any information in accordance with clause 11.7(2) or clause 11.18(4), a trader must ensure that it, or its customer, has made any necessary arrangements for the provision of line function services in relation to the relevant ICP

Before providing the registry manager with any information in accordance with clause 11.7(2) or clause 11.18(4), a trader must have entered into an arrangement with an MEP for each metering installation at the ICP.

Audit observation

This was discussed with ORSL Staff.

Audit commentary

The ORSL System will not have any impact on this activity.

This clause is not applicable to this audit.

Audit outcome

Not applicable

2.13. Arrangements for metering equipment provision (Clause 10.36)

Code reference

Clause 10.36

Code related audit information

A reconciliation participant must ensure it has an arrangement with the relevant MEP prior to accepting responsibility for an installation.

Audit observation

This was discussed with ORSL Staff. The last audit report was checked.

Audit commentary

Checks confirm ORSL has appropriate agreements with: AMS, FCLM and MTRX.

Audit outcome

Compliant

2.14. Connecting ICPs then withdrawing switch (Clause 10.33A(5))

Code reference

Clause 10.33B

Code related audit information

If a trader connects an ICP it is in the process of switching and the switch does not proceed or is withdrawn the trader must:

- *restore the disconnection, including removing any bypass and disconnecting using the same method the losing trader used*
- *reimburse the losing trader for any direct costs incurred*

Audit observation

This was discussed with ORSL Staff.

Audit commentary

The ORSL System will not have any impact on this activity.

This clause is not applicable to this audit.

Audit outcome

Not applicable

2.15. Electrical disconnection of ICPs (Clause 10.33B)

Code reference

Clause 10.33B

Code related audit information

Unless the trader is recorded in the registry or is meeting its obligation under 10.33A(5) it must not disconnect or electrically disconnect the ICP, or authorise the metering equipment provider to disconnect or electrically disconnect the ICP.

Audit observation

This was discussed with ORSL Staff.

Audit commentary

The ORSL System will not have any impact on this activity.

This clause is not applicable to this audit.

Audit outcome

Not applicable

2.16. Removal or breakage of seals (Clause 48(1C), 48 (1D), 48 (1E), 48 (1F) of Schedule 10.7)

Code reference

Clause 48(1C), 48 (1D), 48 (1E), 48 (1F) of Schedule 10.7

Code related audit information

A trader can remove or break a seal without authorisation from the MEP to:

- *r*eset a load control switch, bridge or unbridge a load control switch – if the load control switch does not control a tome block meter channel
- *electrically connect load or generation, of the load or generation has been disconnected at the meter*
- *electrically disconnect load or generation, if the trader has exhausted all other appropriate methods of electrical disconnection*
- *bridge the meter*

A trader that removes or breaks a seal in this way must:

- *ensure personal are qualified to remove the seal and perform the permitted work and they replace the seal in accordance with the Code*
- *replace the seal with its own seal*
- *have a process for tracing the new seal to the personnel*
- *update the registry (if the profile code has changed)*
- *notify the metering equipment provider*

Audit observation

This was discussed with ORSL Staff.

Audit commentary

The ORSL System will not have any impact on this activity.

This clause is not applicable to this audit.

Audit outcome

Not applicable

3. MAINTAINING REGISTRY INFORMATION

3.1. Obtaining ICP identifiers (Clause 11.3)

3.2. Providing registry information (Clause 11.7(2))

3.3. Changes to registry information (Clause 10 Schedule 11.1)

3.4. Trader responsibility for an ICP (Clause 11.18)

3.5. Provision of information to the registry manager (Clause 9 Schedule 11.1)

3.6. ANZSIC codes (Clause 9 (1(k) of Schedule 11.1)

3.7. Changes to unmetered load (Clause 9(1)(f) of Schedule 11.1)

3.8. Management of “active” status (Clause 17 Schedule 11.1)

3.9. Management of “inactive” status (Clause 19 Schedule 11.1)

3.10. ICPs at new or ready status for 24 months (Clause 15 Schedule 11.1)

The current processes will not change as a result of the RM system implementation.

These clauses are not applicable to this audit

4. PERFORMING CUSTOMER AND EMBEDDED GENERATOR SWITCHING

4.1. Inform registry of switch request for ICPs - standard switch (Clause 2 Schedule 11.3)

4.2. Losing trader response to switch request and event dates - standard switch (Clauses 3 and 4 Schedule 11.3)

4.3. Losing trader must provide final information - standard switch (Clause 5 Schedule 11.3)

4.4. Retailers must use same reading - standard switch (Clause 6(1) and 6A Schedule 11.3)

4.5. Non-half hour switch event meter reading - standard switch (Clause 6(2) and (3) Schedule 11.3)

4.6. Disputes - standard switch (Clause 7 Schedule 11.3)

4.7. Gaining trader informs registry of switch request - switch move (Clause 9 Schedule 11.3)

4.8. Losing trader provides information - switch move (Clause 10(1) Schedule 11.3)

4.9. Losing trader determines a different date - switch move (Clause 10(2) Schedule 11.3)

4.10. Losing trader must provide final information - switch move (Clause 11 Schedule 11.3)

4.11. Gaining trader changes to switch meter reading - switch move (Clause 12 Schedule 11.3)

4.12. Gaining trader informs registry of switch request - gaining trader switch (Clause 14 Schedule 11.3)

4.13. Losing trader provision of information - gaining trader switch (Clause 15 Schedule 11.3)

4.14. Gaining trader to advise the registry manager - gaining trader switch (Clause 16 Schedule 11.3)

4.15. Withdrawal of switch requests (Clauses 17 and 18 Schedule 11.3)

4.16. Switch protection (Clause 11.15AA to 11.15AB)

The current processes will not change as a result of the RM system implementation.

These clauses are not applicable to this audit

5. MAINTENANCE OF UNMETERED LOAD

5.1. Maintaining shared unmetered load (Clause 11.14)

5.2. Unmetered threshold (Clause 10.14 (2)(b))

5.3. Unmetered threshold exceeded (Clause 10.14 (5))

5.4. Distributed unmetered load (Clause 11 Schedule 15.3, Clause 15.37B)

The current processes will not change as a result of the RM system implementation.

These clauses are not applicable to this audit

6. GATHERING RAW METER DATA

6.1. Electricity conveyed & notification by embedded generators(Clause 10.13, Clause 10.24 and 15.13)

Code reference

Clause 10.13, Clause 10.24 and Clause 15.13

Code related audit information

A participant must use the quantity of electricity measured by a metering installation as the raw meter data for the quantity of electricity conveyed through the point of connection.

This does not apply if data is estimated or gifted in the case of embedded generation under clause 15.13.

A trader must, for each electrically connected ICP that is not also an NSP, and for which it is recorded in the registry as being responsible, ensure that:

- *there is 1 or more metering installations*
- *all electricity conveyed is quantified in accordance with the Code*
- *it does not use subtraction to determine submission information for the purposes of Part 15.*

An embedded generator must give notification to the reconciliation manager for an embedded generating station, if the intention is that the embedded generator will not be receiving payment from the clearing manager or any other person through the point of connection to which the notification relates.

Audit observation

This was discussed with ORSL Staff. The last audit report was reviewed. The ORSL system documentation was checked along with the UAT plan and test results .A live demonstration of the system was observed.

Audit commentary

Checks confirm ORSL has appropriate agreements with: AMS, FCLM and MTRX.

The test process used actual ORSL ICP metering information compared to actual historical readings used by JC Consulting (JCC) during the last audit period. In all tests the ORSL system results matched those produced by JCC. The results confirmed that the ORSL system used meter readings from a single metering installation per ICP, all electricity conveyed was quantified in accordance with the Code and did not use subtraction to determine submission information for the purposes of Part 15.

ORSL does not currently trade installations with embedded generation.

Audit outcome

Compliant

6.2. Responsibility for metering at GIP(Clause 10.26 (6), (7) and (8))

Code reference

Clause 10.26 (6), (7) and (8)

Code related audit information

For each proposed metering installation or change to a metering installation that is a connection to the grid, the participant, must:

- *provide to the grid owner a copy of the metering installation design (before ordering the equipment)*
- *provide at least 3 months for the grid owner to review and comment on the design*
- *respond within 3 business days of receipt to any request from the grid owner for additional details or changes to the design*
- *ensure any reasonable changes from the grid owner are carried out.*

The participant responsible for the metering installation must:

- *advise the reconciliation manager of the certification expiry date not later than 10 business days after certification of the metering installation*
- *become the MEP or contract with a person to be the MEP*
- *advise the reconciliation manager of the MEP identifier no later than 20 days after entering into a contract or assuming responsibility to be the MEP.*

Audit observation

This was discussed with ORSL. The last audit report was reviewed.

Audit commentary

This clause is not applicable. Compliance was not assessed.

Audit outcome

Not applicable

6.3. Certification of control devices (Clause 33 Schedule 10.7 and clause 2(2) Schedule 15.3)

Code reference

Clause 33 Schedule 10.7 and clause 2(2) Schedule 15.3

Code related audit information

The reconciliation participant must advise the metering equipment provider if a control device is used to control load or switch meter registers.

The reconciliation participant must ensure the control device is certified prior to using it for reconciliation purposes.

Audit observation

This was discussed with ORSL. The last audit report was reviewed.

Audit commentary

Checks confirm ORSL currently submits volumes to the Reconciliation Manager using the RPS Profile only. Control Devices are not required for Reconciliation purpose.

This clause is not applicable. Compliance was not assessed.

Audit outcome

Not applicable

6.4. Reporting of defective metering installations (Clause 10.43(2) and (3))

Code reference

Clause 10.43(2) and (3)

Code related audit information

If a participant becomes aware of an event or circumstance that lead it to believe a metering installation could be inaccurate, defective, or not fit for purpose they must:

- *advise the MEP*
- *include in the advice all relevant details.*

Audit observation

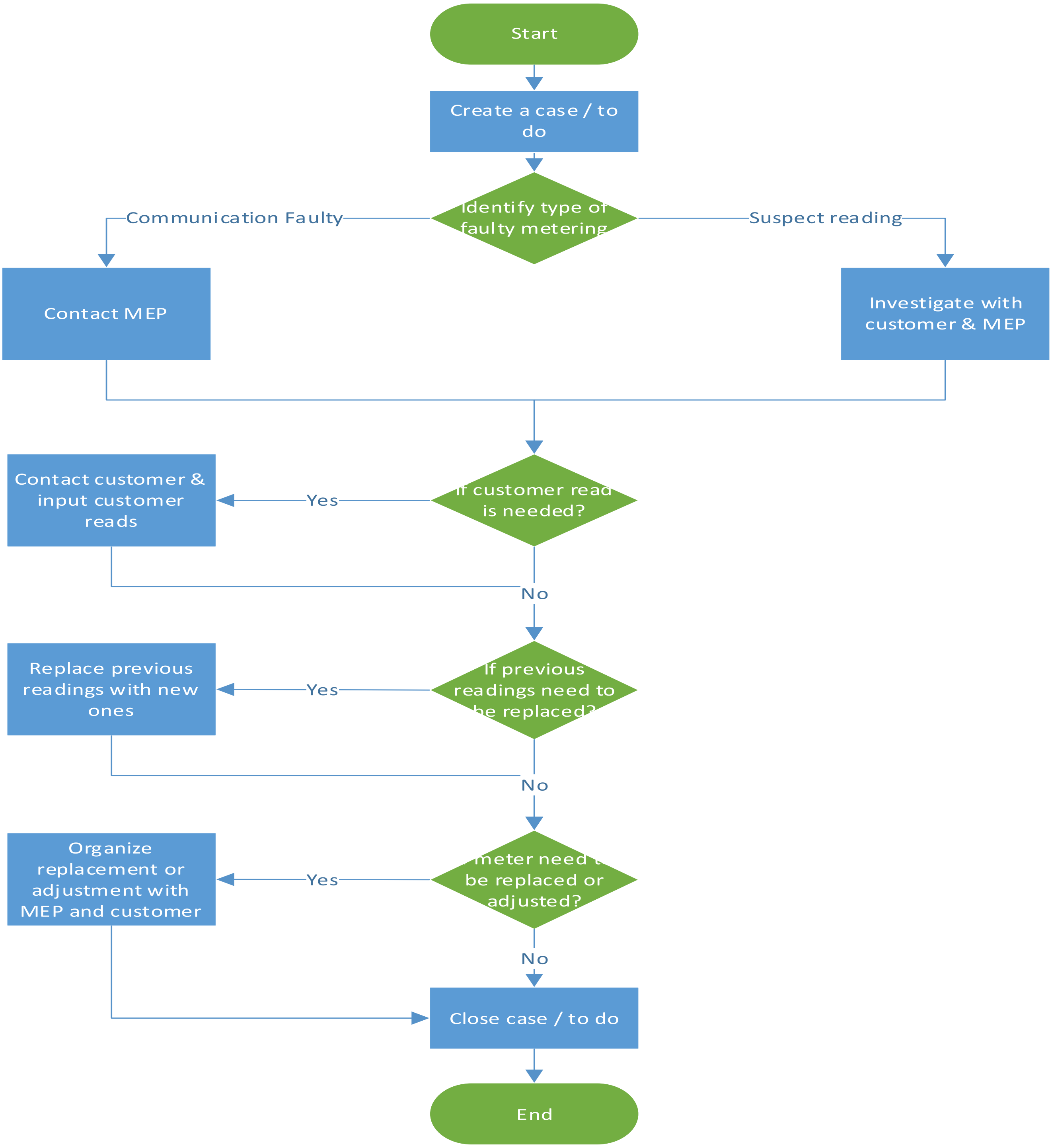
This was discussed with ORSL Staff. The last audit report was reviewed. The ORSL system documentation was checked along with the UAT plan and test results. A live demonstration of the system was observed.

Audit commentary

Checks confirm ORSL has appropriate agreements with: AMS, FCLM and MTRX.

The ORSL system has a two part validation process. The first validation occurs at reading file import from the MEP by checking if the file format meets the specified format. If not the file will not be imported into the ORSL system. The second validation checks the imported readings for abnormalities. This is a batch process initiated manually on each batch of imported readings. The validation compares the current reading with historical and average readings. The system function checks the consumption/day is consistent with the historical average within a tolerance set by the system operator. If a reading is outside the tolerance then it is marked as abnormal in the system and cannot be used. The system operator must investigate the reading and validate the reading to enable it to be used.

The process of verifying a suspected abnormal reading or faulty meter is outlined below:


Start
Create a case / to do
Identify type of faulty metering
Communication Faulty
Suspect reading
Contact MEP
Investigate with customer & MEP
If customer read is needed?
Yes
Contact customer & input customer reads
No
If previous readings need to be replaced?
Yes
Replace previous readings with new ones
No
meter need to be replaced or adjusted?
Yes
Organize replacement or adjustment with MEP and customer
No
Close case / to do
End

Audit outcome

Compliant

6.5. Collection of information by certified reconciliation participant (Clause 2 Schedule 15.2)

Code reference

Clause 2 Schedule 15.2

Code related audit information

Only a certified reconciliation participant may collect raw meter data, unless only the MEP can interrogate the meter, or the MEP has an arrangement which prevents the reconciliation participant from electronically interrogating the meter:

> *2(2) - The reconciliation participant must collect raw meter data used to determine volume information from the services interface or the metering installation or from the MEP.*
>
> *2(3) - The reconciliation participant must ensure the interrogation cycle is such that is does not exceed the maximum interrogation cycle in the registry .*
>
> *2(4) - The reconciliation participant must interrogate the meter at least once every maximum interrogation cycle.*
>
> *2(5) - When electronically interrogating the meter the participant must:*
>
> *a) ensure the system is to within +/- 5 seconds of NZST or NZDST*
> *b) compare the meter time to the system time*
> *c) determine the time error of the metering installation*
> *d) if the error is less than the maximum permitted error, correct the meter's clock*
> *e) if the time error is greater than the maximum permitted error then:*
> *i) correct the metering installation's clock*
> *ii) compare the metering installation's time with the system time*
> *iii) correct any affected raw meter data.*
> *f) download the event log.*
>
> *2(6) – The interrogation systems must record:*
>
> - *the time*
> - *the date*
> - *the extent of any change made to the meter clock.*

Audit observation

This was discussed with ORSL Staff. The last CRP audit report was reviewed. The ORSL system documentation was checked along with the UAT plan and test results. A live demonstration of the system was observed.

Audit commentary

Checks confirm ORSL has appropriate agreements with: AMS, FCLM and MTRX. Raw meter data is collected by the MEPs. ORSL only accept ICPs with remotely read meters.

Meter reading information (both register readings and HHR) is collected automatically from MEPs SFTP servers at 0200h daily. The ORSL system imports the reading files into a secure raw data file storage database, and stores them as originals that remain unchanged for backup & tracking. The ORSL system imports then the meter reading information into the ORSL Reading database (MYSQL).

The arrangements with the MEPs include ensuring the maximum interrogation cycles are met and metering time and interrogation time is synchronised appropriately. The Metering event logs are downloaded to the cloud server manually from SFTP server using 'FileZilla'.

Audit outcome

Compliant

6.6. Derivation of meter readings (Clause 3(1), 3(2) and 5 Schedule 15.2)

Code reference

Clause 3(1), 3(2) and 5 Schedule 15.2

Code related audit information

All meter readings must in accordance with the participants certified processes and procedures and using its certified facilities be sourced directly from raw meter data and, if appropriate, be derived and calculated from financial records.

All validated meter readings must be derived from meter readings.

A meter reading provided by a consumer may be used as a validated meter reading only if another set of validated meter readings not provided by the consumer are used during the validation process.

During the manual interrogation of each NHH metering installation the reconciliation participant must:

- *a) obtain the meter register*
- *b) ensure seals are present and intact*
- *c) check for phase failure (if supported by the meter)*
- *d) check for signs of tampering and damage*
- *e) check for electrically unsafe situations.*

If the relevant parts of the metering installation are visible and it is safe to do so.

Audit observation

This was discussed with ORSL Staff. The last CRP audit report was reviewed. The ORSL system documentation was checked along with the UAT plan and test results. A live demonstration of the system was observed.

Audit commentary

Checks confirm ORSL has appropriate agreements with: AMS, FCLM and MTRX. Raw meter data is collected by the MEPs. ORSL only accept ICPs with remotely read meters.

Meter reading information (both register readings and HHR) is collected automatically from MEPs SFTP servers at 0200h daily. The ORSL system imports the reading files into a secure raw data file storage database, and stores them as originals that remain unchanged for backup & tracking. The ORSL system imports then the meter reading information into the ORSL Reading database (MYSQL).

The ORSL system will allow operators to manually input readings such as consumer provided. Evidence such as photos showing the meter reading may be linked to the entry. The system will assign a discrete version number to identify those readings. The validation process compares the consumer reading with actual historical and average readings. The system function checks the consumption/day is consistent with the historical average within a tolerance set by the system operator. If a reading is outside the tolerance then it is marked as abnormal in the system and cannot be used. The system operator must investigate the reading and validate the reading to enable it to be used.

Audit outcome

Compliant

6.7. NHH meter reading application (Clause 6 Schedule 15.2)

Code reference

Clause 6 Schedule 15.2

Code related audit information

For NHH switch event meter reads, for the gaining trader the reading applies from 0000 hours on the day of the relevant event date and for the losing trader at 2400 hours at the end of the day before the relevant event date.

In all other cases, All NHH readings apply from 0000hrs on the day after the last meter interrogation up to and including 2400hrs on the day of the meter interrogation.

Audit observation

This was discussed with ORSL Staff. The last CRP audit report was reviewed. The ORSL system documentation was checked along with the UAT plan and test results. A live demonstration of the system was observed.

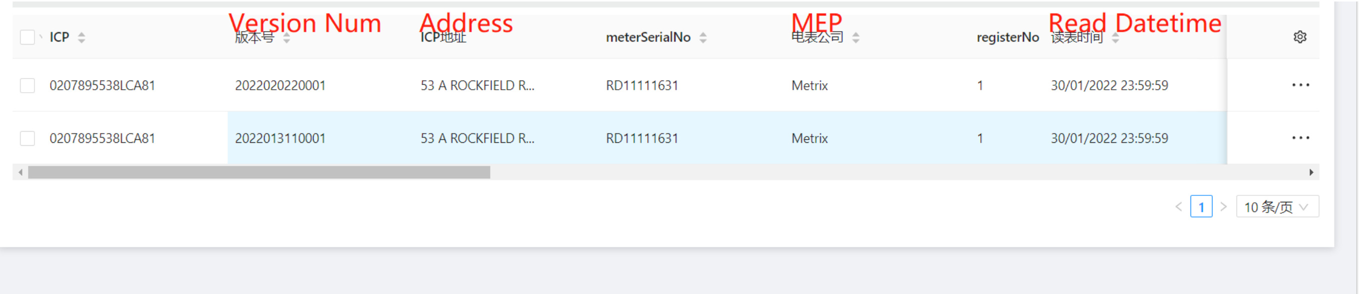
Audit commentary

Checks confirm ORSL has appropriate agreements with: AMS, FCLM and MTRX. Raw meter data is collected by the MEPs. ORSL only accept ICPs with remotely read meters.

Meter reading information (both register readings and HHR) is collected automatically from MEPs SFTP servers at 0200h daily. The ORSL Reading database stores the NHH meter readings with sufficient data to meet the requirements of this clause.

ORSL Staff advised ORSL intends to carry out switching manually using the Electricity Authority web based services. The checks confirm ORSL system will provide the necessary functionality to meet this code requirement.

A database sample:



☐ ICP	Version Num 版本号	Address ICP地址	meterSerialNo	MEP 电表公司	registerNo	Read Datetime 读表时间
☐ 0207895538LCA81	2022020220001	53 A ROCKFIELD R...	RD11111631	Metrix	1	30/01/2022 23:59:59
☐ 0207895538LCA81	2022013110001	53 A ROCKFIELD R...	RD11111631	Metrix	1	30/01/2022 23:59:59

Audit outcome

Compliant

6.8. Interrogate meters once (Clause 7(1) and (2) Schedule 15.2)

Code reference

Clause 7(1) and (2) Schedule 15.2

Code related audit information

Each reconciliation participant must ensure that a validated meter reading is obtained in respect of every meter register for every non half hour metered ICP for which the participant is responsible, at least once during the period of supply to the ICP by the reconciliation participant, and used to create volume information.

This may be a validated meter reading at the time the ICP is switched to, or from, the reconciliation participant.

If exceptional circumstances prevent a reconciliation participant from obtaining the validated meter reading, the reconciliation participant is not required to comply with clause 7(1).

Audit observation

This was discussed with ORSL Staff. The last CRP audit report was reviewed. The ORSL system documentation was checked along with the UAT plan and test results. A live demonstration of the system was observed.

Audit commentary

Checks confirm ORSL has appropriate agreements with: AMS, FCLM and MTRX. Raw meter data is collected by the MEPs. ORSL only accept ICPs with remotely read meters.

Meter reading information (both register readings and HHR) is collected automatically from MEPs SFTP servers at 0200h daily. The ORSL Reading database stores the NHH meter readings with sufficient data to meet the requirements of this clause.

ORSL Staff advised ORSL intends to carry out switching manually using the Electricity Authority web based services. The checks confirm ORSL system will provide the necessary functionality to meet this code requirement.

Audit outcome

Compliant

6.9. NHH meters interrogated annually (Clause 8(1) and (2) Schedule 15.2)

Code reference

Clause 8(1) and (2) Schedule 15.2

Code related audit information

At least once every 12 months, each reconciliation participant must obtain a validated meter reading for every meter register for non half hour metered ICPs, at which the reconciliation participant trades continuously for each 12 month period.

If exceptional circumstances prevent a reconciliation participant from obtaining the validated meter reading, the reconciliation participant is not required to comply with clause 8(1).

Audit observation

This was discussed with ORSL Staff. The last CRP audit report was reviewed. The ORSL system documentation was checked along with the UAT plan and test results. A live demonstration of the system was observed.

Audit commentary

Checks confirm ORSL has appropriate agreements with: AMS, FCLM and MTRX. Raw meter data is collected by the MEPs. ORSL only accept ICPs with remotely read meters.

Meter reading information (both register readings and HHR) is collected automatically from MEPs SFTP servers at 0200h daily.

A Meter Read Frequency Report will be generated monthly. A sample was provided.

Audit outcome

Compliant

6.10. NHH meters 90% read rate (Clause 9(1) and (2) Schedule 15.2)

Code reference

Clause 9(1) and (2) Schedule 15.2

Code related audit information

In relation to each NSP, each reconciliation participant must ensure that for each NHH ICP at which the reconciliation participant trades continuously for each 4 months, for which consumption information is required to be reported into the reconciliation process. A validated meter reading is obtained at least once every 4 months for 90% of the non half hour metered ICPs.

A report is to be sent to the Authority providing the percentage, in relation to each NSP, for which consumption information has been collected no later than 20 business days after the end of each month.

If exceptional circumstances prevent a reconciliation participant from obtaining the validated meter reading, the reconciliation participant is not required to comply with clause 9(1).

Audit observation

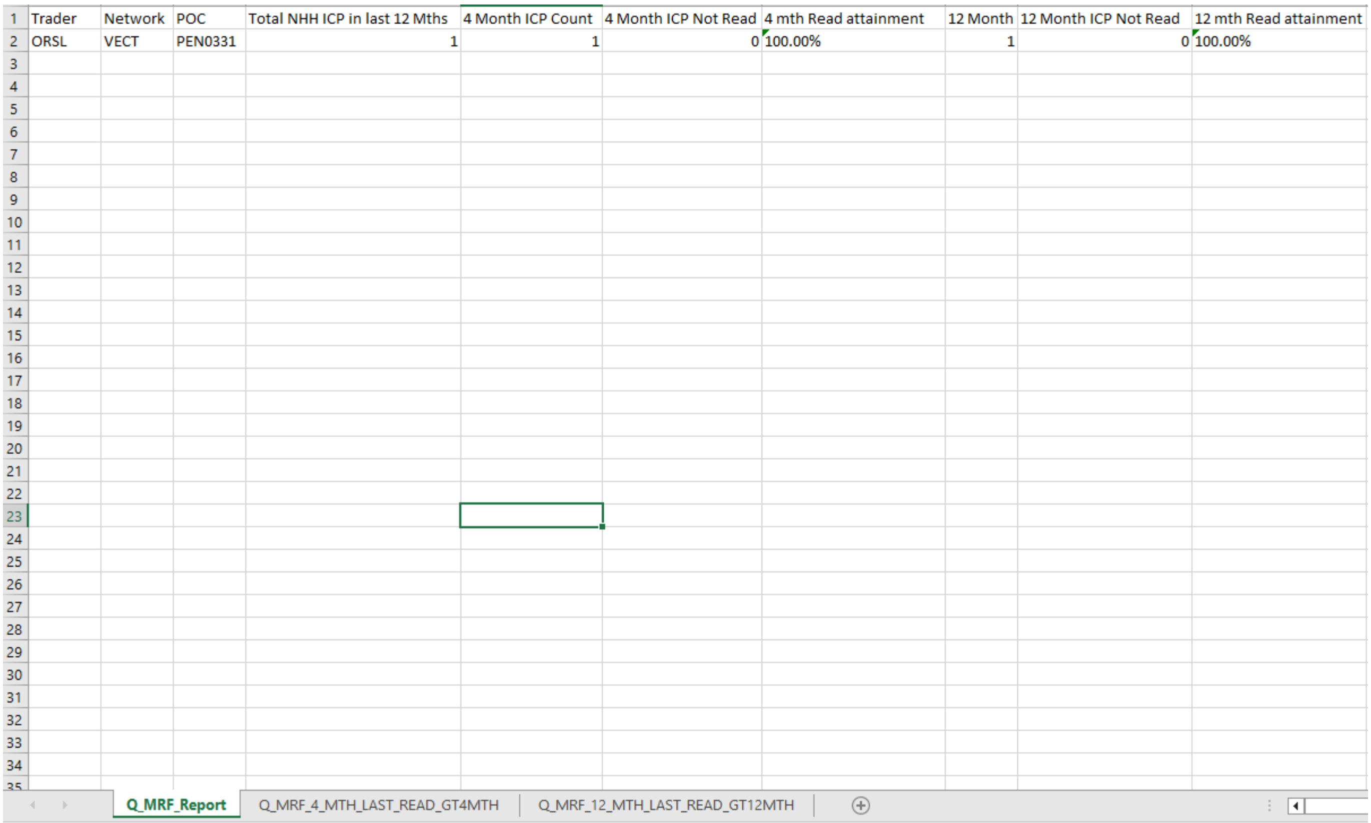
This was discussed with ORSL Staff. The last CRP audit report was reviewed. The ORSL system documentation was checked along with the UAT plan and test results. A live demonstration of the system was observed.

Audit commentary

Checks confirm ORSL has appropriate agreements with: AMS, FCLM and MTRX. Raw meter data is collected by the MEPs. ORSL only accept ICPs with remotely read meters.

Meter reading information (both register readings and HHR) is collected automatically from MEPs SFTP servers at 0200h daily.

A Meter Read Frequency Report will be generated monthly. A sample was provided.



Trader	Network	POC	Total NHH ICP in last 12 Mths	4 Month ICP Count	4 Month ICP Not Read	4 mth Read attainment	12 Month	12 Month ICP Not Read	12 mth Read attainment
ORSL	VECT	PEN0331	1	1	0	100.00%	1	0	100.00%

Audit outcome

Compliant

6.11. NHH meter interrogation log (Clause 10 Schedule 15.2)

Code reference

Clause 10 Schedule 15.2

Code related audit information

The following information must be logged as the result of each interrogation of the NHH metering:

10(a) - the means to establish the identity of the individual meter reader

10(b) - the ICP identifier of the ICP, and the meter and register identification

10(c) - the method being used for the interrogation and the device ID of equipment being used for interrogation of the meter.

10(d) - the date and time of the meter interrogation.

Audit observation

This was discussed with ORSL Staff. The last CRP audit report was reviewed. The ORSL system documentation was checked along with the UAT plan and test results. A live demonstration of the system was observed.

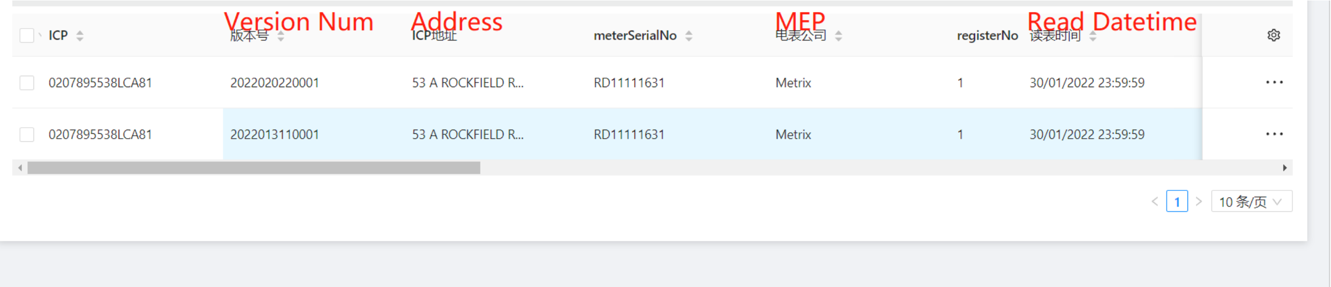
Audit commentary

Checks confirm ORSL has appropriate agreements with: AMS, FCLM and MTRX. Raw meter data is collected by the MEPs. ORSL only accept ICPs with remotely read meters.

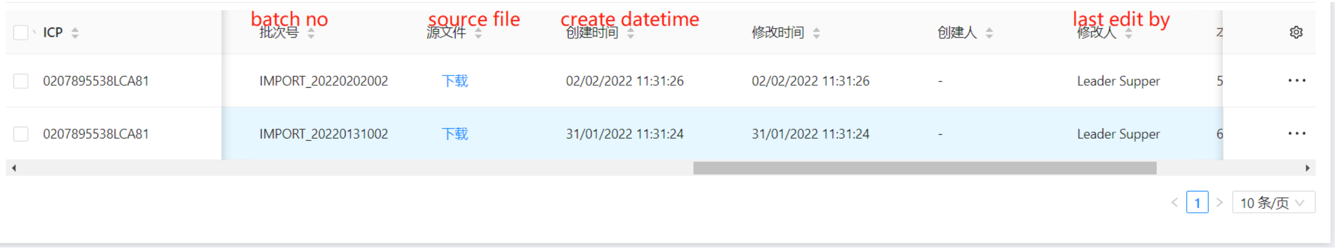
Meter reading information (both register readings and HHR) is collected automatically from MEPs SFTP servers at 0200h daily. The ORSL system imports the reading files into a secure raw data file storage database, and stores them as originals that remain unchanged for backup & tracking. The ORSL system imports then the meter reading information into the ORSL Reading database (MYSQL).

The arrangements with the MEPs include ensuring the maximum interrogation cycles are met, metering time and interrogation system time is synchronised appropriately and interrogation logs are made available. The Metering interrogation and event logs are downloaded to the cloud server manually from SFTP server using ‘FileZilla’.

Sample of interrogation log data held in the ORSL system:

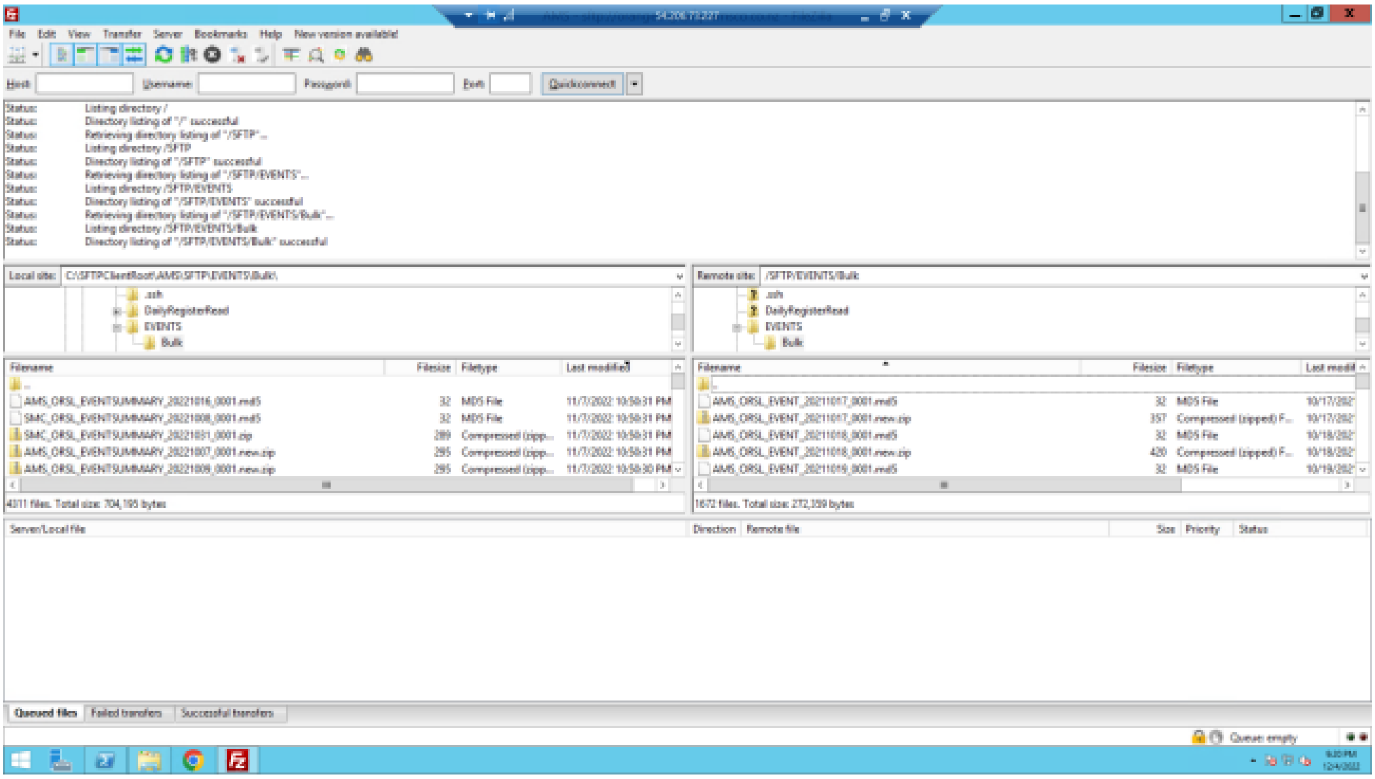


☐	ICP	Version Num 版本号	Address ICP地址	meterSerialNo	MEP 电表公司	registerNo	Read Datetime 读表时间	⚙
☐	0207895538LCA81	2022020220001	53 A ROCKFIELD R...	RD11111631	Metrix	1	30/01/2022 23:59:59	···
☐	0207895538LCA81	2022013110001	53 A ROCKFIELD R...	RD11111631	Metrix	1	30/01/2022 23:59:59	···



☐	ICP	batch no 批次号	source file 源文件	create datetime 创建时间	修改时间	创建人	last edit by 修改人	Z	⚙
☐	0207895538LCA81	IMPORT_20220202002	下载	02/02/2022 11:31:26	02/02/2022 11:31:26	-	Leader Supper	5	···
☐	0207895538LCA81	IMPORT_20220131002	下载	31/01/2022 11:31:24	31/01/2022 11:31:24	-	Leader Supper	6	···

Sample event log download:



File Edit View Transfer Server Bookmarks Help New version available!
Host: Username: Password: Port: Quickconnect
Queued files Failed transfers Successful transfers
Queue: empty

```
Status:     Listing directory /
Status:     Directory listing of "/" successful
Status:     Retrieving directory listing of "/SFTP"...
Status:     Listing directory /SFTP
Status:     Directory listing of "/SFTP" successful
Status:     Retrieving directory listing of "/SFTP/EVENTS"...
Status:     Listing directory /SFTP/EVENTS
Status:     Directory listing of "/SFTP/EVENTS" successful
Status:     Retrieving directory listing of "/SFTP/EVENTS/Bulk"...
Status:     Listing directory /SFTP/EVENTS/Bulk
Status:     Directory listing of "/SFTP/EVENTS/Bulk" successful
```

```
Local site: C:\SFTPClientRoot\AMS\SFTP\EVENTS\Bulk\
      .ssh
    + DailyRegisterRead
    - EVENTS
        Bulk

Filename                                          Filesize  Filetype            Last modified
..
AMS_ORSL_EVENTSUMMARY_20221016_0001.md5                 32  MD5 File            11/7/2022 10:50:31 PM
SMC_ORSL_EVENTSUMMARY_20221008_0001.md5                 32  MD5 File            11/7/2022 10:50:31 PM
SMC_ORSL_EVENTSUMMARY_20221031_0001.zip                289  Compressed (zipp...  11/7/2022 10:50:31 PM
AMS_ORSL_EVENTSUMMARY_20221007_0001.new.zip            295  Compressed (zipp...  11/7/2022 10:50:31 PM
AMS_ORSL_EVENTSUMMARY_20221009_0001.new.zip            295  Compressed (zipp...  11/7/2022 10:50:30 PM
4311 files. Total size: 704,195 bytes
```

```
Remote site: /SFTP/EVENTS/Bulk
      .ssh
      DailyRegisterRead
    - EVENTS
        Bulk

Filename                                   Filesize  Filetype              Last modifi
..
AMS_ORSL_EVENT_20211017_0001.md5                 32  MD5 File              10/17/202
AMS_ORSL_EVENT_20211017_0001.new.zip            357  Compressed (zipped) F...  10/17/202
AMS_ORSL_EVENT_20211018_0001.md5                 32  MD5 File              10/18/202
AMS_ORSL_EVENT_20211018_0001.new.zip            420  Compressed (zipped) F...  10/18/202
AMS_ORSL_EVENT_20211019_0001.md5                 32  MD5 File              10/19/202
1672 files. Total size: 272,359 bytes
```

```
Server/Local file                Direction  Remote file                Size  Priority  Status
```

Audit outcome

Compliant

6.12. HHR data collection (Clause 11(1) Schedule 15.2)

Code reference

Clause 11(1) Schedule 15.2

Code related audit information

Raw meter data from all electronically interrogated metering installations must be obtained via the services access interface.

This may be carried out by a portable device or remotely.

Audit observation

This was discussed with ORSL. The last audit report was reviewed.

Audit commentary

ORSL stated it does not trade HHR ICPs. Checks confirm this.

Although ORSL collects HHR data it will not use it for reconciliation purposes.

This clause is not applicable. Compliance was not assessed.

Audit outcome

Not applicable

6.13. HHR interrogation data requirement (Clause 11(2) Schedule 15.2)

Code reference

Clause 11(2) Schedule 15.2

Code related audit information

The following information is collected during each interrogation:

11(2)(a) - the unique identifier of the data storage device

11(2)(b) - the time from the data storage device at the commencement of the download unless the time is within specification and the interrogation log automatically records the time of interrogation

11(2)(c) - the metering information, which represents the quantity of electricity conveyed at the point of connection, including the date and time stamp or index marker for each half hour period. This may be limited to the metering information accumulated since the last interrogation

11(2)(d) - the event log, which may be limited to the events information accumulated since the last interrogation

11(2)(e) - an interrogation log generated by the interrogation software to record details of all interrogations.

The interrogation log must be examined by the reconciliation participant responsible for collecting the data and appropriate action must be taken if problems are apparent or an automated software function flags exceptions.

Audit observation

This was discussed with ORSL. The last audit report was reviewed.

Audit commentary

ORSL stated it does not trade HHR ICPs. Checks confirm this.

Although ORSL collects HHR data it will not use it for reconciliation purposes.

This clause is not applicable. Compliance was not assessed.

Audit outcome

Not applicable

6.14. HHR interrogation log requirements (Clause 11(3) Schedule 15.2)

Code reference

Clause 11(3) Schedule 15.2

Code related audit information

The interrogation log forms part of the interrogation audit trail and, as a minimum, must contain the following information:

11(3)(a)- the date of interrogation

11(3)(b)- the time of commencement of interrogation

11(3)(c)- the operator identification (if available)

11(3)(d)- the unique identifier of the meter or data storage device

11(3)(e)- the clock errors outside the range specified in Table 1 of clause 2

11(3)(f)- the method of interrogation

11(3)(g)- the identifier of the reading device used for interrogation (if applicable).

Audit observation

This was discussed with ORSL. The last audit report was reviewed.

Audit commentary

ORSL stated it does not trade HHR ICPs. Checks confirm this.

Although ORSL collects HHR data it will not use it for reconciliation purposes.

Audit outcome

Not applicable

7. STORING RAW METER DATA

7.1. Trading period duration (Clause 13 Schedule 15.2)

Code reference

Clause 13 Schedule 15.2

Code related audit information

The trading period duration, normally 30 minutes, must be within ±0.1% (±2 seconds).

Audit observation

This was discussed with ORSL. The last audit report was reviewed.

Audit commentary

ORSL stated it does not trade HHR ICPs. Checks confirm this.

Although ORSL collects HHR data it will not use it for reconciliation purposes.

This clause is not applicable. Compliance was not assessed.

Audit outcome

Not applicable

7.2. Archiving and storage of raw meter data (Clause 18 Schedule 15.2)

Code reference

Clause 18 Schedule 15.2

Code related audit information

A reconciliation participant who is responsible for interrogating a metering installation must archive all raw meter data and any changes to the raw meter data for at least 48 months, in accordance with clause 8(6) of Schedule 10.6.

Procedures must be in place to ensure that raw meter data cannot be accessed by unauthorised personnel.

Meter readings cannot be modified without an audit trail being created.

Audit observation

This was discussed with ORSL Staff. The last three CRP audit reports were reviewed. The ORSL system documentation was checked along with the UAT plan and test results. A live demonstration of the system was observed.

Audit commentary

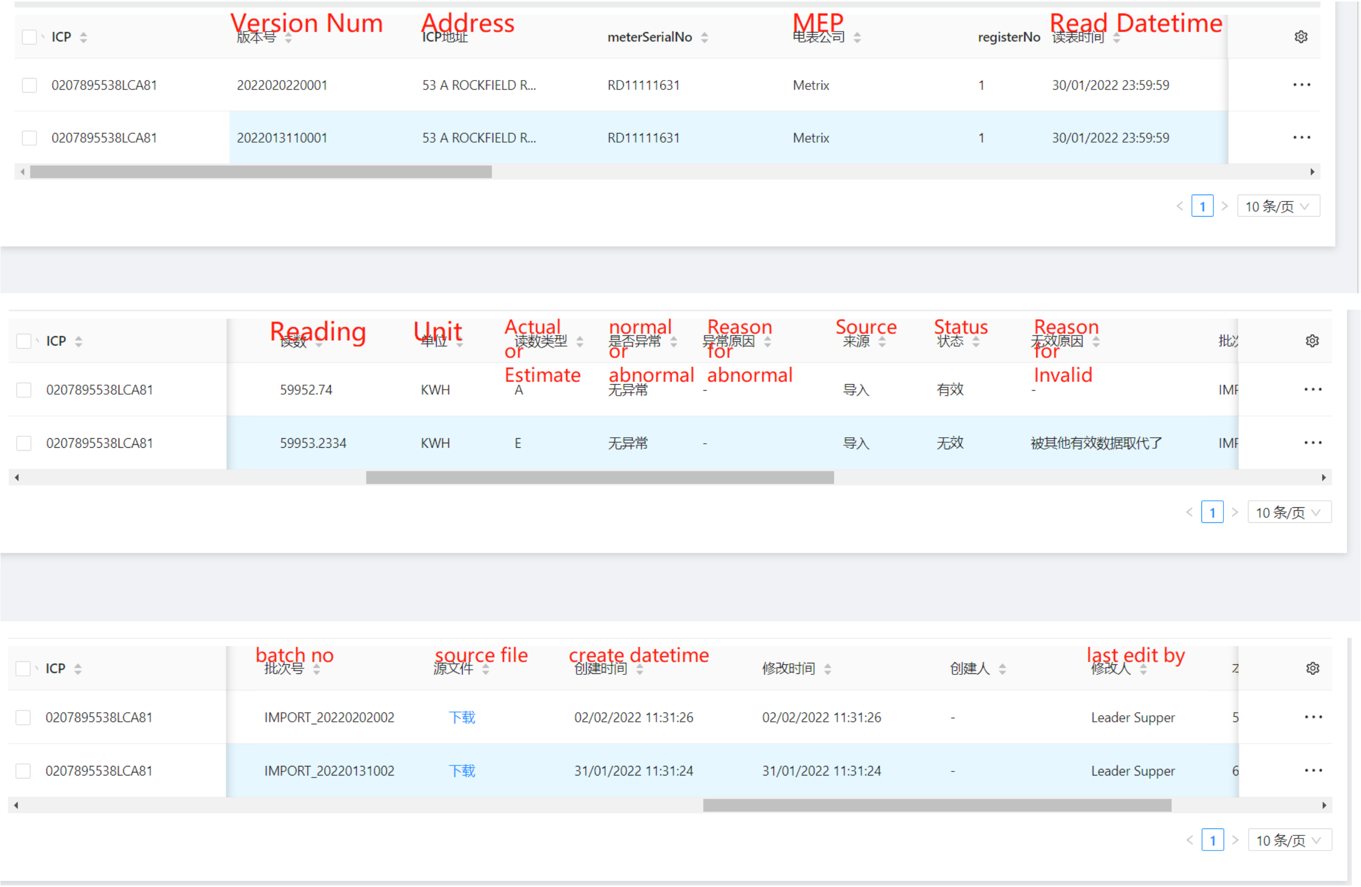
Checks confirm ORSL has appropriate agreements with: AMS, FCLM and MTRX. Raw meter data is collected by the MEPs. ORSL only accept ICPs with remotely read meters.

The arrangements with the MEPs include ensuring the maximum interrogation cycles are met, metering time and interrogation system time is synchronised appropriately, raw meter data archived for at least 48 months and interrogation logs are made available. Checks of previous audit reports confirm raw data archive meet code requirements.

The ORSL system demonstration confirmed appropriate data security is in place. Meter reading information (both register readings and HHR) is collected automatically from MEPs SFTP servers at 0200h daily. The ORSL system imports the reading files into a secure raw data file storage database, and stores them as originals that remain unchanged for backup & tracking. The ORSL system imports then the meter reading information into the ORSL Reading database

(MYSQL). Once a meter reading is entered (either by file import or manual entry) it cannot be changed or deleted. The ORSL system allows an operator to manually add another reading for the same meter register for the same date and time but an audit trail will be created by assigning a discrete version number and the system operators name will be logged along with a reason for any changes. The status of the meter reading will be set as valid or invalid as appropriate. For each ICP meter register date time there can only be one valid meter reading.

Sample meter reading file entry:



☐ ICP	Version Num 版本号	Address ICP地址	meterSerialNo	MEP 电表公司	registerNo	Read Datetime 读表时间
☐ 0207895538LCA81	2022020220001	53 A ROCKFIELD R...	RD11111631	Metrix	1	30/01/2022 23:59:59
☐ 0207895538LCA81	2022013110001	53 A ROCKFIELD R...	RD11111631	Metrix	1	30/01/2022 23:59:59

< 1 > 10 条/页

☐ ICP	Reading 读数	Unit 单位	Actual or Estimate 读数类型	normal or abnormal 是否异常	Reason for abnormal 异常原因	Source 来源	Status 状态	Reason for Invalid 无效原因	批
☐ 0207895538LCA81	59952.74	KWH	A	无异常	-	导入	有效	-	IMP
☐ 0207895538LCA81	59953.2334	KWH	E	无异常	-	导入	无效	被其他有效数据取代了	IMP

< 1 > 10 条/页

☐ ICP	batch no 批次号	source file 源文件	create datetime 创建时间	修改时间	创建人	last edit by 修改人	Z
☐ 0207895538LCA81	IMPORT_20220202002	下载	02/02/2022 11:31:26	02/02/2022 11:31:26	-	Leader Supper	5
☐ 0207895538LCA81	IMPORT_20220131002	下载	31/01/2022 11:31:24	31/01/2022 11:31:24	-	Leader Supper	6

< 1 > 10 条/页

Audit outcome

Compliant

7.3. Non metering information collected / archived (Clause 21(5) Schedule 15.2)

Code reference

Clause 21(5) Schedule 15.2

Code related audit information

All relevant non-metering information, such as external control equipment operation logs, used in the determination of profile data must be collected, and archived in accordance with clause 18.

Audit observation

This was discussed with ORSL. The last audit report was reviewed.

Audit commentary

Checks confirm ORSL currently submits volumes to the Reconciliation Manager using the RPS Profile only. Control Devices, operation logs or other profile determination are not required for Reconciliation purposes.

This clause is not applicable. Compliance was not assessed.

Audit outcome

Not applicable

8. CREATING AND MANAGING (INCLUDING VALIDATING, ESTIMATING, STORING, CORRECTING AND ARCHIVING) VOLUME INFORMATION

8.1. Correction of NHH meter readings (Clause 19(1) Schedule 15.2)

Code reference

Clause 19(1) Schedule 15.2

Code related audit information

If a reconciliation participant detects errors while validating non-half hour meter readings, the reconciliation participant must:

19(1)(a) - confirm the original meter reading by carrying out another meter reading

19(1)(b) – replace the original meter reading the second meter reading (even if the second meter reading is at a different date)

19(1A) if a reconciliation participant detects errors while validating non half hour meter readings, but the reconciliation participant cannot confirm the original meter reading or replace it with a meter reading from another interrogation, the reconciliation participant must:

- *substitute the original meter reading with an estimated reading that is marked as an estimate; and*
- *subsequently replace the estimated reading in accordance with clause 4(2)*

Audit observation

This was discussed with ORSL Staff. The last three CRP audit reports were reviewed. The ORSL system documentation was checked along with the UAT plan and test results. A live demonstration of the system was observed.

Audit commentary

Checks confirm ORSL has appropriate agreements with: AMS, FCLM and MTRX. Raw meter data is collected by the MEPs. ORSL only accept ICPs with remotely read meters.

The arrangements with the MEPs include ensuring the maximum interrogation cycles are met, metering time and interrogation system time is synchronised appropriately, raw meter data archived for at least 48 months and interrogation logs are made available. Checks of previous audit reports confirm raw data archive meet code requirements.

The ORSL system demonstration confirmed appropriate data security is in place. Meter reading information (both register readings and HHR) is collected automatically from MEPs SFTP servers at 0200h daily. The ORSL system imports the reading files into a secure raw data file storage database, and stores them as originals that remain unchanged for backup & tracking. The ORSL system imports then the meter reading information into the ORSL Reading database (MYSQL). Once a meter reading is entered (either by file import or manual entry) it cannot be changed or deleted. The ORSL system allows an operator to manually add another reading for the same meter register for the same date and time but an audit trail will be created by assigning a discrete version number and the system operators name will be logged along with a reason for any changes. The status of the meter reading will be set as valid or invalid as appropriate and identified as actual or estimated. For each ICP meter register date time there can only be one valid meter reading.

As outlined above the ORSL system has the functionality to correct meter readings as required by this clause.

Audit outcome

Compliant

8.2. Correction of HHR metering information (Clause 19(2) Schedule 15.2)

Code reference

Clause 19(2) Schedule 15.2

Code related audit information

If a reconciliation participant detects errors while validating half hour meter readings, the reconciliation participant must correct the meter readings as follows:

> *19(2)(a) - if the relevant metering installation has a check meter or data storage device, substitute the original meter reading with data from the check meter or data storage device; or*
>
> *19(2)(b) - if the relevant metering installation does not have a check meter or data storage device, substitute the original meter reading with data from another period provided:*
>
> > *(i) The total of all substituted intervals matches the total consumption recorded on a meter, if available; and*
> >
> > *(ii) The reconciliation participant considers the pattern of consumption to be materially similar to the period in error*

Audit observation

This was discussed with ORSL. The last audit report was reviewed.

Audit commentary

ORSL stated it does not trade HHR ICPs. Checks confirm this.

Although ORSL collects HHR data it will not use it for reconciliation purposes.

This clause is not applicable. Compliance was not assessed.

Audit outcome

Not applicable

8.3. Error and loss compensation arrangements (Clause 19(3) Schedule 15.2)

Code reference

Clause 19(3) Schedule 15.2

Code related audit information

A reconciliation participant may use error compensation and loss compensation as part of the process of determining accurate data. Whichever methodology is used, the reconciliation participant must document the compensation process and comply with audit trail requirements set out in the Code.

Audit observation

This was discussed with ORSL. The last audit report was reviewed.

Audit commentary

ORSL stated it does not trade any ICPs requiring error or loss compensation.

Checks confirm this.

This clause is not applicable. Compliance was not assessed.

Audit outcome

Not applicable

8.4. Correction of HHR and NHH raw meter data (Clause 19(4) and (5) Schedule 15.2)

Code reference

Clause 19(4) and (5) Schedule 15.2

Code related audit information

In correcting a meter reading in accordance with clause 19, the raw meter data must not be overwritten. If the raw meter data and the meter readings are the same, an automatic secure backup of the affected data must be made and archived by the processing or data correction application.

If data is corrected or altered, a journal must be generated and archived with the raw meter data file. The journal must contain the following:

19(5)(a)- the date of the correction or alteration

19(5)(b)- the time of the correction or alteration

19(5)(c)- the operator identifier for the person within the reconciliation participant who made the correction or alteration

19(5)(d)- the half-hour metering data or the non half hour metering data corrected or altered, and the total difference in volume of such corrected or altered data

19(5)(e)- the technique used to arrive at the corrected data

19(5)(f)- the reason for the correction or alteration.

Audit observation

This was discussed with ORSL Staff. The last three CRP audit reports were reviewed. The ORSL system documentation was checked along with the UAT plan and test results. A live demonstration of the system was observed.

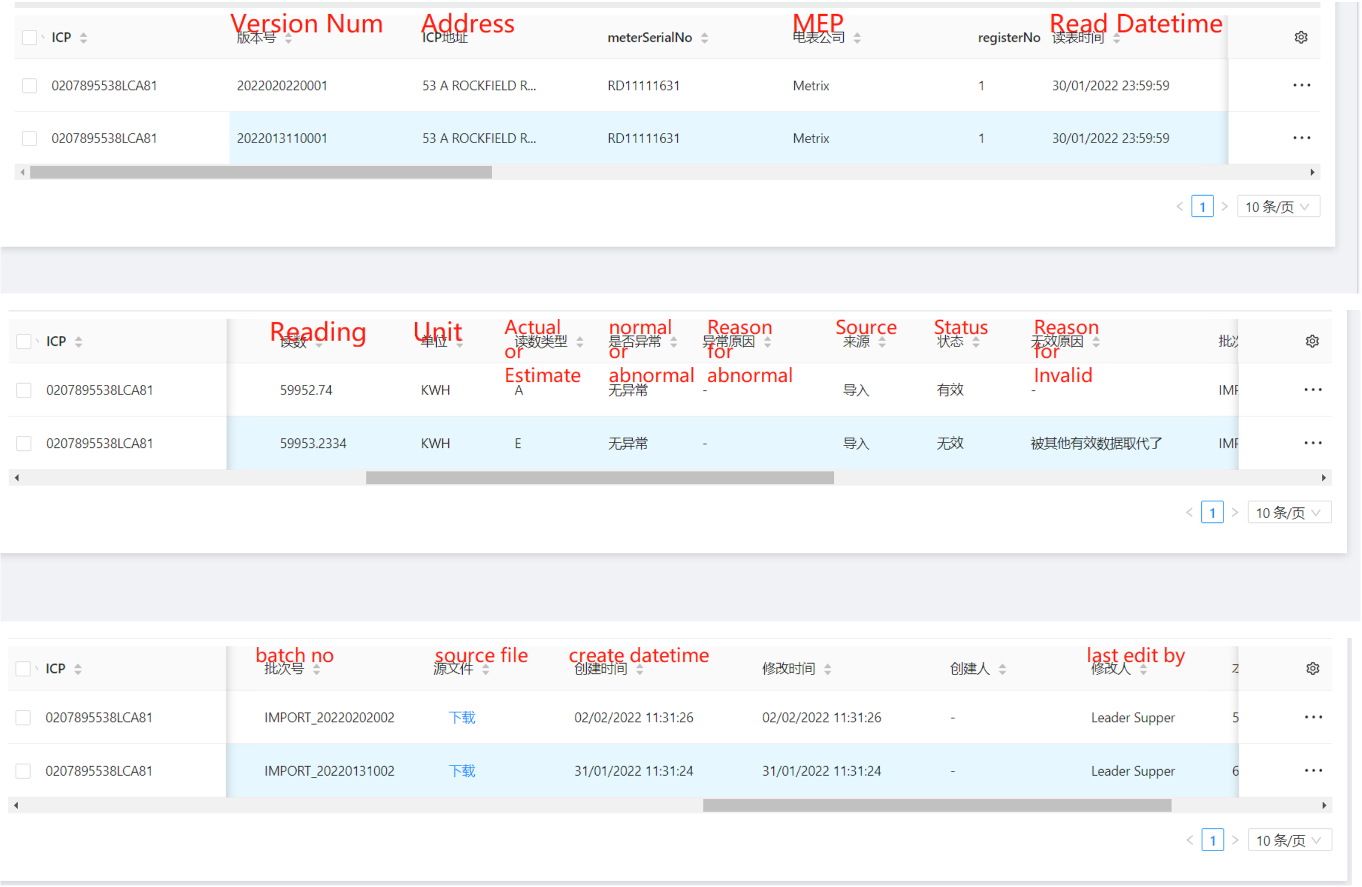
Audit commentary

Checks confirm ORSL has appropriate agreements with: AMS, FCLM and MTRX. Raw meter data is collected by the MEPs. ORSL only accept ICPs with remotely read meters.

The arrangements with the MEPs include ensuring the maximum interrogation cycles are met, metering time and interrogation system time is synchronised appropriately, raw meter data archived for at least 48 months and interrogation logs are made available. Checks of previous audit reports confirm raw data archive meet code requirements.

The ORSL system demonstration confirmed appropriate data security is in place. Meter reading information (both register readings and HHR) is collected automatically from MEPs SFTP servers at 0200h daily. The ORSL system imports the reading files into a secure raw data file storage database, and stores them as originals that remain unchanged for backup & tracking. The ORSL system imports then the meter reading information into the ORSL Reading database (MYSQL). Once a meter reading is entered (either by file import or manual entry) it cannot be changed or deleted. The ORSL system allows an operator to manually add another reading for the same meter register for the same date and time but an audit trail will be created by assigning a discrete version number and the system operators name will be logged along with a reason for any changes. The status of the meter reading will be set as valid or invalid as appropriate and identified as actual or estimated. For each ICP meter register date time there can only be one valid meter reading.

Sample meter reading file entry:



☐ ICP	Version Num 版本号	Address ICP地址	meterSerialNo	MEP 电表公司	registerNo	Read Datetime 读表时间
☐ 0207895538LCA81	2022020220001	53 A ROCKFIELD R...	RD11111631	Metrix	1	30/01/2022 23:59:59
☐ 0207895538LCA81	2022013110001	53 A ROCKFIELD R...	RD11111631	Metrix	1	30/01/2022 23:59:59

< 1 > 10 条/页

☐ ICP	Reading 读数	Unit 单位	Actual or Estimate 读数类型	normal or abnormal 是否异常	Reason for abnormal 异常原因	Source 来源	Status 状态	Reason for Invalid 无效原因	批
☐ 0207895538LCA81	59952.74	KWH	A	无异常	-	导入	有效	-	IMP
☐ 0207895538LCA81	59953.2334	KWH	E	无异常	-	导入	无效	被其他有效数据取代了	IMP

< 1 > 10 条/页

☐ ICP	batch no 批次号	source file 源文件	create datetime 创建时间	修改时间	创建人	last edit by 修改人	Z
☐ 0207895538LCA81	IMPORT_20220202002	下载	02/02/2022 11:31:26	02/02/2022 11:31:26	-	Leader Supper	5
☐ 0207895538LCA81	IMPORT_20220131002	下载	31/01/2022 11:31:24	31/01/2022 11:31:24	-	Leader Supper	6

< 1 > 10 条/页

Relevant Attributes in the ORSL System for each meter reading

Attributes	Comment
ICP	ICP no
MeterSerialNo	Meter Serial No
Register No	Register No
Version No	The version of the reading. Managed & Assigned by system. To identify different readings for the same icp same meter same register at the same time.
MEP	MEP
Read Datetime	The datetime of the reading represent for
Reading	The reading figure
Actual or Estimated	‘A’ for Actual reading and ‘E’ for Estimated Reading

Normal or Abnormal	Normal or Abnormal. The attribute was managed and assign by system when ‘Automatic Check Readings’ function was processed.
Abnormal Reason	This attribute will log the reason when the reading is abnormal after ‘Automatic Check Readings’ function was processed.
Source	Imported or input
Status	Status of the reading. There are 4 status for the reading. “Imported”, “Input”, “Valid”, “Invalid”. This is managed & assign by System or by manual input.
Reason for Invalid	The reason of a Invalid reading. This is managed & assign by System or by manual input.
Usage since last read	Usage since last read, calculated in real-time, not stored in database
Days since last read	Days since last read, calculated in real-time, not stored in database
Usage / Day since last read	Usage since last read / Days since last read, calculated in real-time, not stored in database

Audit outcome

Compliant

9. ESTIMATING AND VALIDATING VOLUME INFORMATION

9.1. Identification of readings (Clause 3(3) Schedule 15.2)

Code reference

Clause 3(3) Schedule 15.2

Code related audit information

All estimated readings and permanent estimates must be clearly identified as an estimate at source and in any exchange of metering data or volume information between participants.

Audit observation

This was discussed with ORSL Staff. The last three CRP audit reports were reviewed. The ORSL system documentation was checked along with the UAT plan and test results. A live demonstration of the system was observed.

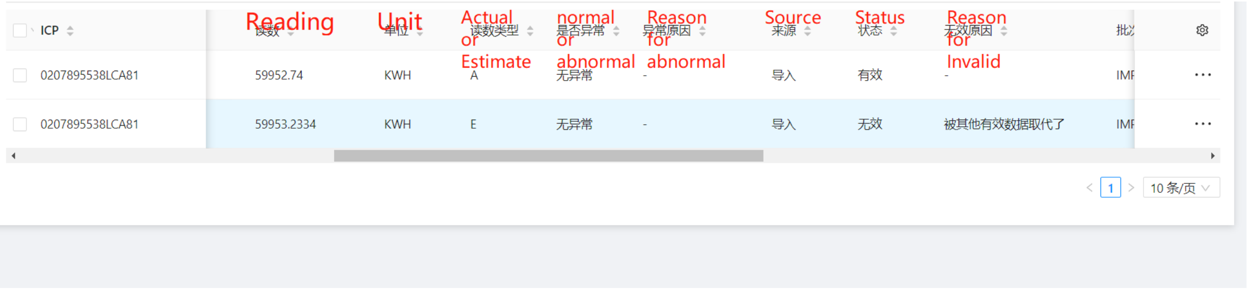
Audit commentary

Checks confirm ORSL has appropriate agreements with: AMS, FCLM and MTRX. Raw meter data is collected by the MEPs. ORSL only accept ICPs with remotely read meters.

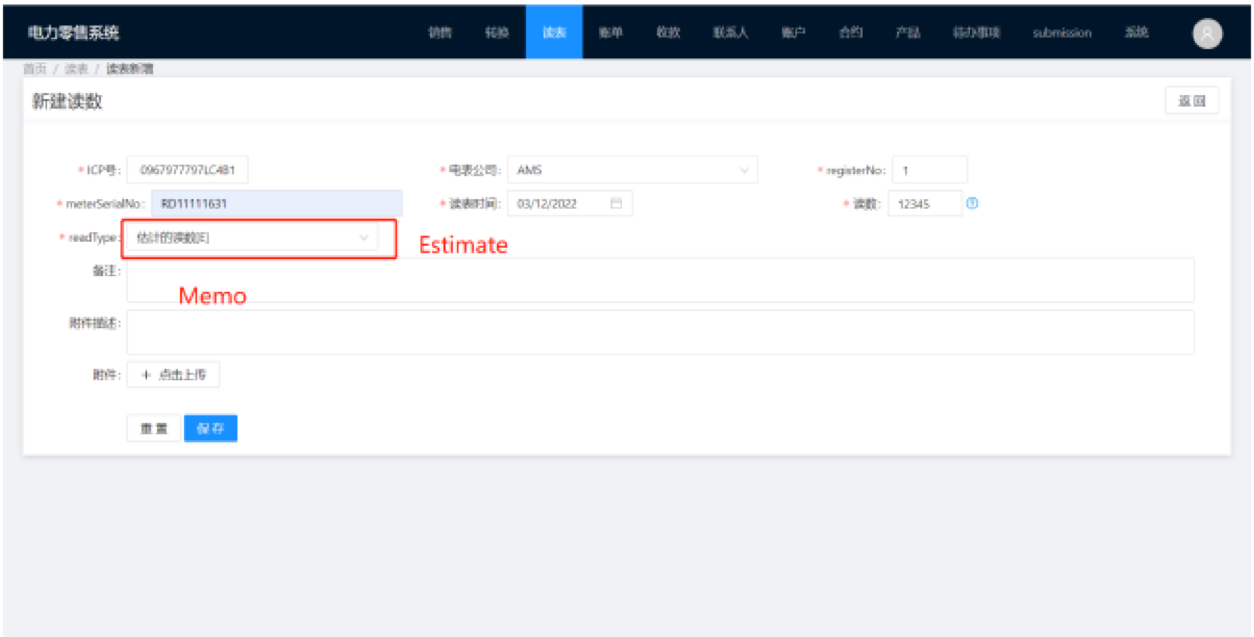
The arrangements with the MEPs include ensuring the maximum interrogation cycles are met, metering time and interrogation system time is synchronised appropriately, raw meter data archived for at least 48 months and interrogation logs are made available. Checks of previous audit reports confirm raw data archive meet code requirements.

The ORSL system demonstration confirmed appropriate data security is in place. Meter reading information (both register readings and HHR) is collected automatically from MEPs SFTP servers at 0200h daily. The ORSL system imports the reading files into a secure raw data file storage database, and stores them as originals that remain unchanged for backup & tracking. The ORSL system imports then the meter reading information into the ORSL Reading database (MYSQL). Once a meter reading is entered (either by file import or manual entry) it cannot be changed or deleted. The ORSL system allows an operator to manually add another reading for the same meter register for the same date and time but an audit trail will be created by assigning a discrete version number and the system operators name will be logged along with a reason for any changes. The status of the meter reading will be set as valid or invalid as appropriate and identified as actual or estimated. For each ICP meter register date time there can only be one valid meter reading.

Estimated meter reading sample



☐ ICP	读数 Reading	单位 Unit	读数类型 Actual or Estimate	是否异常 normal or abnormal	异常原因 Reason for abnormal	来源 Source	状态 Status	无效原因 Reason for Invalid	批
☐ 0207895538LCA81	59952.74	KWH	A	无异常	-	导入	有效	-	IMP
☐ 0207895538LCA81	59953.2334	KWH	E	无异常	-	导入	无效	被其他有效数据取代了	IMP



* ICP号: 0967977797LC4B1

* 电表公司: AMS

* registerNo: 1

* meterSerialNo: RD11111631

* 读表时间: 03/12/2022

* 读数: 12345

* readType: 估计的读数[E]

Audit outcome

Compliant

9.2. Derivation of volume information (Clause 3(4) Schedule 15.2)

Code reference

Clause 3(4) Schedule 15.2

Code related audit information

Volume information must be directly derived, in accordance with Schedule 15.2, from:

3(4)(a) - validated meter readings

3(4)(b) - estimated readings

3(4)(c) - permanent estimates.

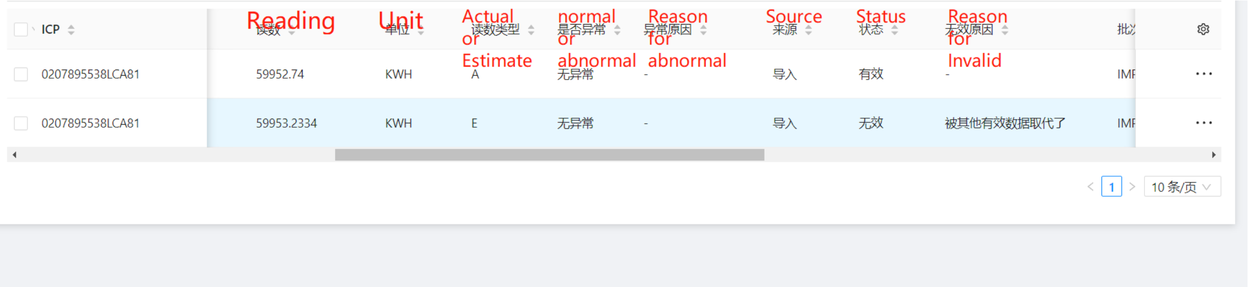
Audit observation

This was discussed with ORSL Staff. The last three CRP audit reports were reviewed. The ORSL system documentation was checked along with the UAT plan and test results. A live demonstration of the system was observed.

Audit commentary

Meter reading information (both register readings and HHR) is collected automatically from MEPs SFTP servers at 0200h daily. The ORSL system imports the reading files into a secure raw data file storage database, and stores them as originals that remain unchanged for backup & tracking. The ORSL system imports then the meter reading information into the ORSL Reading database (MYSQL). Once a meter reading is entered (either by file import or manual entry) it cannot be changed or deleted. The ORSL system allows an operator to manually add another reading for the same meter register for the same date and time but an audit trail will be created by assigning a discrete version number and the system operators name will be logged along with a reason for any changes. The status of the meter reading will be set as valid or invalid as appropriate and identified as actual or estimated. For each ICP meter register date time there can only be one valid meter reading.

Reading type sample:



ICP	Reading 读数	Unit 单位	Actual or Estimate 读数类型	normal or abnormal 是否异常	Reason for abnormal 异常原因	Source 来源	Status 状态	Reason for Invalid 无效原因	批
0207895538LCA81	59952.74	KWH	A	无异常	-	导入	有效	-	IM
0207895538LCA81	59953.2334	KWH	E	无异常	-	导入	无效	被其他有效数据取代了	IM

A check of a NHHVOLS Trail file displayed the an appropriate reading type.

Audit outcome

Compliant

9.3. Meter data used to derive volume information (Clause 3(5) Schedule 15.2)

Code reference

Clause 3(5) Schedule 15.2

Code related audit information

All meter data that is used to derive volume information must not be rounded or truncated from the stored data from the metering installation.

Audit observation

This was discussed with ORSL Staff. The last three CRP audit reports were reviewed. The ORSL system documentation was checked along with the UAT plan and test results. Test NHHVOLS files were also checked. A live demonstration of the system was observed.

Audit commentary

The ORSL system has a two part validation process. The first validation occurs at reading file import from the MEP by checking if the file format meets the specified format. If not the file will not be imported into the ORSL system. The second validation checks the imported readings for abnormalities. This is a batch process initiated manually on each batch of imported readings. The validation compares the current reading with historical and average readings. The system function checks the consumption/day is consistent with the historical average within a tolerance set by the system operator. If a reading is outside the tolerance then it is marked as abnormal in the system and cannot be used. The system operator must investigate the reading and validate the reading to enable it to be used. Raw meter reading data is not truncated or rounded.

Audit outcome

Compliant

9.4. Half hour estimates (Clause 15 Schedule 15.2)

Code reference

Clause 15 Schedule 15.2

Code related audit information

If a reconciliation participant is unable to interrogate an electronically interrogated metering installation before the deadline for providing submission information, the submission to the reconciliation manager must be the reconciliation participant's best estimate of the quantity of electricity that was purchased or sold in each trading period during any applicable consumption period for that metering installation.

The reconciliation participant must use reasonable endeavours to ensure that estimated submission information is within the percentage specified by the Authority.

Audit observation

This was discussed with ORSL. The last audit report was reviewed.

Audit commentary

ORSL stated it does not trade HHR ICPs. Checks confirm this.

Although ORSL collects HHR data it will not use it for reconciliation purposes.

This clause is not applicable. Compliance was not assessed.

Audit outcome

Not applicable

9.5. NHH metering information data validation (Clause 16 Schedule 15.2)

Code reference

Clause 16 Schedule 15.2

Code related audit information

Each validity check of non half hour meter readings and estimated readings must include the following:

> *16(2)(a) - confirmation that the meter reading or estimated reading relates to the correct ICP, meter, and register*
>
> *16(2)(b) - checks for invalid dates and times*
>
> *16(2)(c) - confirmation that the meter reading or estimated reading lies within an acceptable range compared with the expected pattern, previous pattern, or trend*
>
> *16(2)(d) - confirmation that there is no obvious corruption of the data, including unexpected 0 values.*

Audit observation

This was discussed with ORSL Staff. The last three CRP audit reports were reviewed. The ORSL system documentation was checked along with the UAT plan and test results. Test NHHVOLS files were also checked. A live demonstration of the system was observed.

Audit commentary

Meter reading information (both register readings and HHR) is collected automatically from MEPs SFTP servers at 0200h daily. The ORSL system imports the reading files into a secure raw data file storage database, and stores them as originals that remain unchanged for backup & tracking. The ORSL system imports then the meter reading information into the ORSL Reading database (MYSQL).

The arrangements with the MEPs include confirmation that each meter reading or estimated reading relates to the correct ICP, meter, register, ensuring the maximum interrogation cycles are met and metering time and interrogation time is synchronised appropriately.

The ORSL system has a two part validation process. The first validation occurs at reading file import from the MEP by checking if the file format meets the specified format. If not the file will not be imported into the ORSL system. The second validation checks the imported readings for abnormalities. This is a batch process initiated manually on each batch of imported readings. The validation compares the current reading with historical and average readings. The system function checks the consumption/day is consistent with the historical average within a tolerance set by the system operator. The validation process will identify issues such as; high/low consumption, register rollover quantity, zero readings/non advancing registers, consumption on de energised sites, missing reads and negative consumption and bridged meters.

If a reading is outside the tolerance then it is marked as abnormal in the system and cannot be used. The system operator must investigate the reading and validate the reading to enable it to be used.

Audit outcome

Compliant

9.6. Electronic meter readings and estimated readings (Clause 17 Schedule 15.2)

Code reference

Clause 17 Schedule 15.2

Code related audit information

Each validity check of electronically interrogated meter readings and estimate readings must be at a frequency that will allow a further interrogation of the data storage device before the data is overwritten within the data storage device and before this data can be used for any purpose under the Code.

Each validity check of a meter reading obtained by electronic interrogation or an estimated reading must include:

17(4)(a) - checks for missing data

17(4)(b) - checks for invalid dates and times

17(4)(c) - checks of unexpected 0 values

17(4)(d) - comparison with expected or previous flow patterns

17(4)(e) - comparisons of meter readings with data on any data storage device registers that are available

17(4)(f) - a review of the meter and data storage device event log for any event that could have affected the integrity of metering data

17(4)(g) – a review of the relevant metering data where there is an event that could have affected the integrity of the metering data

If there is an event that could affect the integrity of the metering data (including events reported by MEPs, but excluding where the MEP is responsible for investigating and remediating the event) the reconciliation must investigate and remediate any events.

If the event may affect the integrity or operation of the metering installation the reconciliation participant must notify the metering equipment provider.

Audit observation

This was discussed with ORSL Staff. The last three CRP audit reports were reviewed. The ORSL system documentation was checked along with the UAT plan and test results. Test NHHVOLS files were also checked. A live demonstration of the system was observed.

Audit commentary

Checks confirm ORSL has appropriate agreements with: AMS, FCLM and MTRX. Raw meter data is collected by the MEPs. ORSL only accept ICPs with remotely read meters.

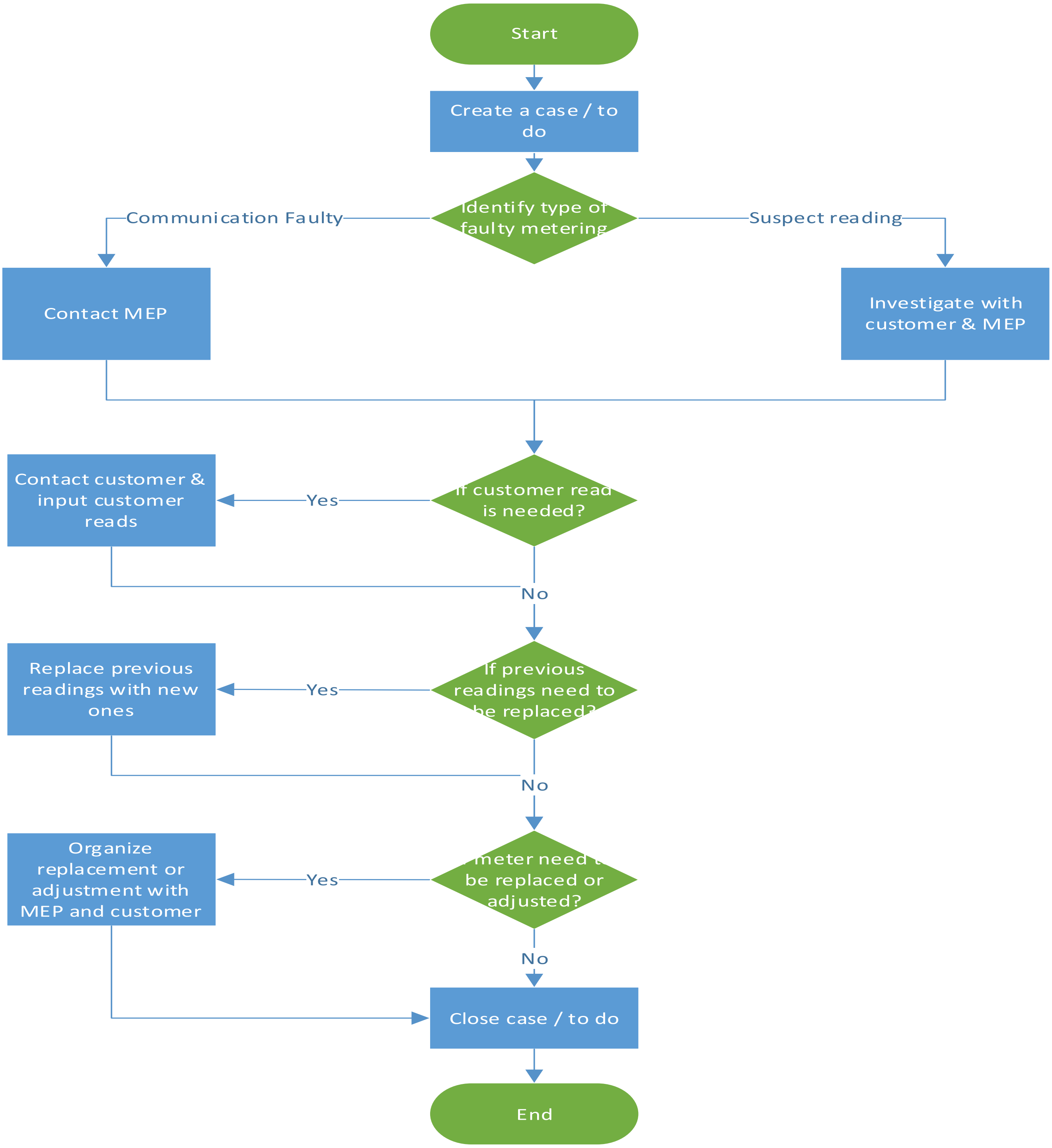
Meter reading information (both register readings and HHR) is collected automatically from MEPs SFTP servers at 0200h daily. The ORSL system imports the reading files into a secure raw data file storage database, and stores them as originals that remain unchanged for backup & tracking. The ORSL system imports then the meter reading information into the ORSL Reading database (MYSQL).

The arrangements with the MEPs include confirmation that each meter reading or estimated reading relates to the correct ICP, meter, register, ensuring the maximum interrogation cycles are met and metering time and interrogation time is synchronised appropriately and interrogation logs are made available. The Metering interrogation and event logs are downloaded to the cloud server manually from SFTP server using 'FileZilla'.

The ORSL system has a two part validation process. The first validation occurs at reading file import from the MEP by checking if the file format meets the specified format. If not the file will not be imported into the ORSL system. The second validation checks the imported readings for abnormalities. This is a batch process initiated manually on each batch of imported readings. The validation compares the current reading with historical and average readings. The system function checks the consumption/day is consistent with the historical average within a tolerance set by the system operator. The validation process will identify issues such as; high/low consumption, register rollover quantity, zero readings/non advancing registers, consumption on de energised sites, missing reads and negative consumption and bridged meters.

If a reading is outside the tolerance then it is marked as abnormal in the system and cannot be used. The system operator must investigate the reading and validate the reading to enable it to be used.

The process of verifying a suspected abnormal reading or faulty meter is outlined below:


Start
Create a case / to do
Identify type of faulty metering
Communication Faulty
Suspect reading
Contact MEP
Investigate with customer & MEP
If customer read is needed?
Yes
Contact customer & input customer reads
No
If previous readings need to be replaced?
Yes
Replace previous readings with new ones
No
meter need to be replaced or adjusted?
Yes
Organize replacement or adjustment with MEP and customer
No
Close case / to do
End

Audit outcome

Compliant

10. PROVISION OF METERING INFORMATION TO THE GRID OWNER IN ACCORDANCE WITH SUBPART 4 OF PART 13 (CLAUSE 15.38(1)(F))

10.1. Generators to provide HHR metering information (Clause 13.136)

Code reference

Clause 13.136

Code related audit information

The generator (and/or embedded generator) must provide to the grid owner connected to the local network in which the embedded generator is located, half hour metering information in accordance with clause 13.138 in relation to generating plant that is subject to a dispatch instruction:

- *that injects electricity directly into a local network; or*
- *if the meter configuration is such that the electricity flows into a local network without first passing through a grid injection point or grid exit point metering installation.*

Audit observation

This was discussed with ORSL. The last audit report was reviewed.

Audit commentary

ORSL trade NHH category 1 ICPs only.

ORSL stated it does not operate any Generation.

Checks confirm this.

This clause is not applicable. Compliance was not assessed

Audit outcome

Not applicable

10.2. Unoffered & intermittent generation provision of metering information (Clause 13.137)

Code reference

Clause 13.137

Code related audit information

Each generator must provide the relevant grid owner half-hour metering information for:

- *any unoffered generation from a generating station with a point of connection to the grid 13.137(1)(a)*
- *any electricity supplied from an intermittent generating station with a point of connection to the grid. 13.137(1)(b)*

The generator must provide the relevant grid owner with the half-hour metering information required under this clause in accordance with the requirements of Part 15 for the collection of that generator's volume information. (clause 13.137(2))

If such half-hour metering information is not available, the generator must provide the pricing manager and the relevant grid owner a reasonable estimate of such data. (clause 13.137(3))

Audit observation

This was discussed with ORSL. The last audit report was reviewed.

Audit commentary

ORSL trade NHH category 1 ICPs only.

ORSL stated it does not operate any Generation.

Checks confirm this.

This clause is not applicable. Compliance was not assessed

Audit outcome

Not applicable

10.3. Loss adjustment of HHR metering information (Clause 13.138)

Code reference

Clause 13.138

Code related audit information

The generator must provide the information required by clauses 13.136 and 13.137,

13.138(1)(a)- adjusted for losses (if any) relative to the grid injection point or, for embedded generators the grid exit point, at which it offered the electricity

13.138(1)(b)- in the manner and form that the pricing manager stipulates

13.138(1)(c)- by 0500 hours on a trading day for each trading period of the previous trading day.

The generator must provide the half-hour metering information required under this clause in accordance with the requirements of Part 15 for the collection of the generator's volume information.

Audit observation

This was discussed with ORSL. The last audit report was reviewed.

Audit commentary

ORSL stated it does not trade HHR ICPs. Checks confirm this.

Although ORSL collects HHR data it will not use it for reconciliation purposes

Audit outcome

Not applicable

10.4. Notification of the provision of HHR metering information (Clause 13.140)

Code reference

Clause 13.140

Code related audit information

If the generator provides half-hourly metering information to a grid owner under clauses 13.136 to 13.138, or 13.138A, it must also, by 0500 hours of that day, advise the relevant grid owner.

Audit observation

This was discussed with ORSL. The last audit report was reviewed.

Audit commentary

ORSL stated it does not trade HHR ICPs. Checks confirm this.

Although ORSL collects HHR data it will not use it for reconciliation purposes

Audit outcome

Not applicable

11. PROVISION OF SUBMISSION INFORMATION FOR RECONCILIATION

11.1. Buying and selling notifications (Clause 15.3)

Code reference

Clause 15.3

Code related audit information

Unless an embedded generator has given a notification in respect of the point of connection under clause 15.3, a trader must give notice to the reconciliation manager if it is to commence or cease trading electricity at a point of connection using a profile with a profile code other than HHR, RPS, UML, EG1, or PV1 at least five business days before commencing or ceasing trader.

The notification must comply with any procedures or requirements specified by the reconciliation manager.

Audit observation

This was discussed with ORSL Staff. The last three CRP audit reports were reviewed. The ORSL system documentation was checked along with the UAT plan and test results. Test NHHVOLS files were also checked. A live demonstration of the system was observed.

Audit commentary

NHH volume submissions will be submitted to the Reconciliation Manager using the RPS Profile only. ORSL is an existing Retailer and has no plans to cease trading.

ORSL will not give Notice to the Reconciliation Manager for this clause as it is not required for the RPS profile.

Audit outcome

Compliant

11.2. Calculation of ICP days (Clause 15.6)

Code reference

Clause 15.6

Code related audit information

Each retailer and direct purchaser (excluding direct consumers) must deliver a report to the reconciliation manager detailing the number of ICP days for each NSP for each submission file of submission information in respect of:

> *15.6(1)(a) - submission information for the immediately preceding consumption period, by 1600 hours on the 4th business day of each reconciliation period*
>
> *15.6(1)(b) - revised submission information provided in accordance with clause 15.4(2), by 1600 hours on the 13th business day of each reconciliation period.*

The ICP days information must be calculated using the data contained in the retailer or direct purchaser's reconciliation system when it aggregates volume information for ICPs into submission information.

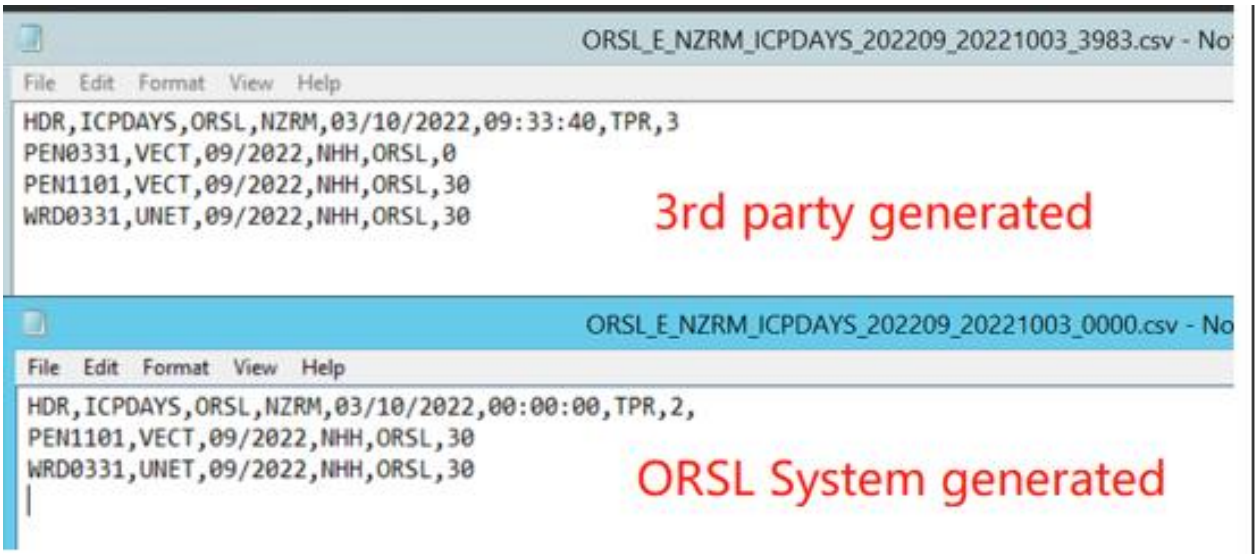
Audit observation

This was discussed with ORSL. The ORSL system documentation was checked along with the UAT plan and test results. Test ICPDAYS files were also checked. A live demonstration of the system was observed.

Audit commentary

The reconciliation module is run on a windows cloud server. This module generates the file ICPDAYS (AV-110), using Python scripts from the ORSL Reading database (MYSQL) where metering data & billing data is stored. The ICP list and associated attributes are obtained from the registry and the downloaded file is stored in a discrete directory on the cloud server ready for use to generate the ICPDAYS file. Once the ICPDAYS file has been created it is also stored in a discrete directory on the cloud server ready for submission to the RM. Submission to the RM SFTP server is carried out manually using FilZilla. The ICPDAYS file can be generated on a specified date or on demand as required. If the file is generated after the 6th of the month the system operator has the option of creating revision files.

The following screen shot demonstrates test results of an ICPDAYS file generated by the ORSL reconciliation module compared to an actual file submitted.


ORSL_E_NZRM_ICPDAYS_202209_20221003_3983.csv - No
File Edit Format View Help
3rd party generated
ORSL_E_NZRM_ICPDAYS_202209_20221003_0000.csv - No
File Edit Format View Help
ORSL System generated

```
HDR,ICPDAYS,ORSL,NZRM,03/10/2022,09:33:40,TPR,3
PEN0331,VECT,09/2022,NHH,ORSL,0
PEN1101,VECT,09/2022,NHH,ORSL,30
WRD0331,UNET,09/2022,NHH,ORSL,30
```

```
HDR,ICPDAYS,ORSL,NZRM,03/10/2022,00:00:00,TPR,2,
PEN1101,VECT,09/2022,NHH,ORSL,30
WRD0331,UNET,09/2022,NHH,ORSL,30
```

Audit outcome

Compliant

11.3. Electricity supplied information provision to the reconciliation manager (Clause 15.7)

Code reference

Clause 15.7

Code related audit information

A retailer must deliver to the reconciliation manager its total monthly quantity of electricity supplied for each NSP, aggregated by invoice month, for which it has provided submission information to the reconciliation manager, including revised submission information for that period as non- loss adjusted values in respect of:

> *15.7(a) - submission information for the immediately preceding consumption period, by 1600 hours on the 4th business day of each reconciliation period*
>
> *15.7(b) - revised submission information provided in accordance with clause 15.4(2), by 1600 hours on the 13th business day of each reconciliation period.*

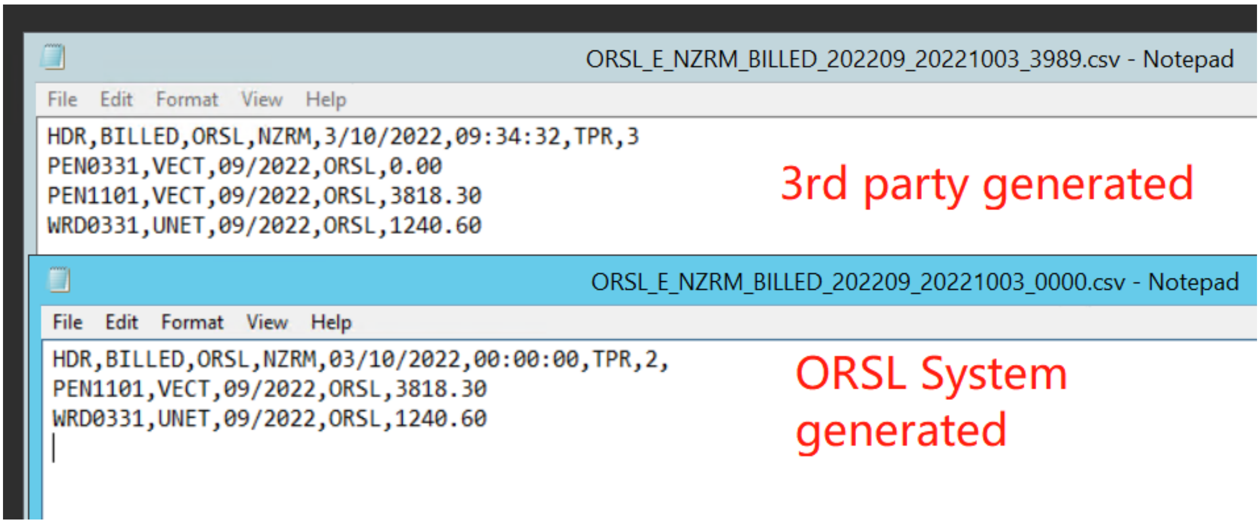
Audit observation

This was discussed with ORSL. The ORSL system documentation was checked along with the UAT plan and test results. Test BILLED files were also checked. A live demonstration of the system was observed.

Audit commentary

The reconciliation module is run on a windows cloud server. This module generates the file BILLED (AV-120), using Python scripts from the ORSL Reading database (MYSQL) where metering data & billing data is stored. The ICP list and associated attributes are obtained from the registry and the downloaded file is stored in a discrete directory on the cloud server ready for use to generate the BILLED file. A trial BILLED report is produced to check for accuracy. Once the BILLED file has been created it is also stored in a discrete directory on the cloud server ready for submission to the RM. Submission to the RM SFTP server is carried out manually using also using FilZilla. The BILLED file can be generated on a specified date or on demand as required. If the file is generated after the 6th of the month the system operator has the option of creating revision files.

The following screen shot demonstrates test results of a BILLED file generated by the ORSL reconciliation module compared to an actual file submitted.


ORSL_E_NZRM_BILLED_202209_20221003_3989.csv - Notepad
File Edit Format View Help

```
HDR,BILLED,ORSL,NZRM,3/10/2022,09:34:32,TPR,3
PEN0331,VECT,09/2022,ORSL,0.00
PEN1101,VECT,09/2022,ORSL,3818.30
WRD0331,UNET,09/2022,ORSL,1240.60
```

3rd party generated

ORSL_E_NZRM_BILLED_202209_20221003_0000.csv - Notepad
File Edit Format View Help

```
HDR,BILLED,ORSL,NZRM,03/10/2022,00:00:00,TPR,2,
PEN1101,VECT,09/2022,ORSL,3818.30
WRD0331,UNET,09/2022,ORSL,1240.60
```

ORSL System generated

Audit outcome

Compliant

11.4. HHR aggregates information provision to the reconciliation manager (Clause 15.8)

Code reference

Clause 15.8

Code related audit information

A retailer or direct purchaser (excluding direct consumers) must deliver to the reconciliation manager its total monthly quantity of electricity supplied for each half hourly metered ICP for which it has provided submission information to the reconciliation manager, including:

> *15.8(a) - submission information for the immediately preceding consumption period, by 1600 hours on the 4th business day of each reconciliation period*
>
> *15.8(b) - revised submission information provided in accordance with clause 15.4(2), by 1600 hours on the 13th business day of each reconciliation period.*

Audit observation

This was discussed with ORSL. The last audit report was reviewed.

Audit commentary

ORSL stated it does not trade HHR ICPs. Checks confirm this.

Although ORSL collects HHR data it will not use it for reconciliation purposes

Audit outcome

Not applicable

12. SUBMISSION COMPUTATION

12.1. Daylight saving adjustment (Clause 15.36)

Code reference

Clause 15.36

Code related audit information

The reconciliation participant must provide submission information to the reconciliation manager that is adjusted for NZDT using 1 of the techniques set out in clause 15.36(3) specified by the Authority.

Audit observation

This was discussed with ORSL. The last audit report was reviewed.

Audit commentary

ORSL stated it does not trade HHR ICPs. Checks confirm this.

Although ORSL collects HHR data it will not use it for reconciliation purposes

Audit outcome

Not applicable

12.2. Creation of submission information (Clause 15.4)

Code reference

Clause 15.4

Code related audit information

By 1600 hours on the 4th business day of each reconciliation period, the reconciliation participant must deliver submission information to the reconciliation manager for all NSPs for which the reconciliation participant is recorded in the registry as having traded electricity during the consumption period immediately before that reconciliation period (in accordance with Schedule 15.3).

By 1600 hours on the 13th business day of each reconciliation period, the reconciliation participant must deliver submission information to the reconciliation manager for all points of connection for which the reconciliation participant is recorded in the registry as having traded electricity during any consumption period being reconciled in accordance with clauses 15.27 and 15.28, and in respect of which it has obtained revised submission information (in accordance with Schedule 15.3).

Audit observation

This was discussed with ORSL. The ORSL system documentation was checked along with the UAT plan and test results. Test NHHVOLS files were also checked. A live demonstration of the system was observed.

Audit commentary

A calendar function is used to set reminders for file generation and submission. The reminders are sent by email to the persons responsible for submitting the files to the RM.

Checks as above and test results provided confirmed that the ORSL Reconciliation System was capable of generating correctly formatted and accurate submission files and the reminder function as observed. However the delivery of the files on day 4 and 13 could not be verified. This will need to be confirmed at the next CRP audit.

Audit outcome

Unable to determine

12.3. Allocation of submission information (Clause 15.5)

Code reference

Clause 15.5

Code related audit information

In preparing and submitting submission information, the reconciliation participant must allocate volume information for each ICP to the NSP indicated by the data held in the registry for the relevant consumption period at the time the reconciliation participant assembles the submission information. Volume information must be derived in accordance with Schedule 15.2.

However, if, in relation to a point of connection at which the reconciliation participant trades electricity, a notification given by an embedded generator under clause 15.13 for an embedded generating station is in force, the reconciliation participant is not required to comply with the above in relation to electricity generated by the embedded generating station.

Audit observation

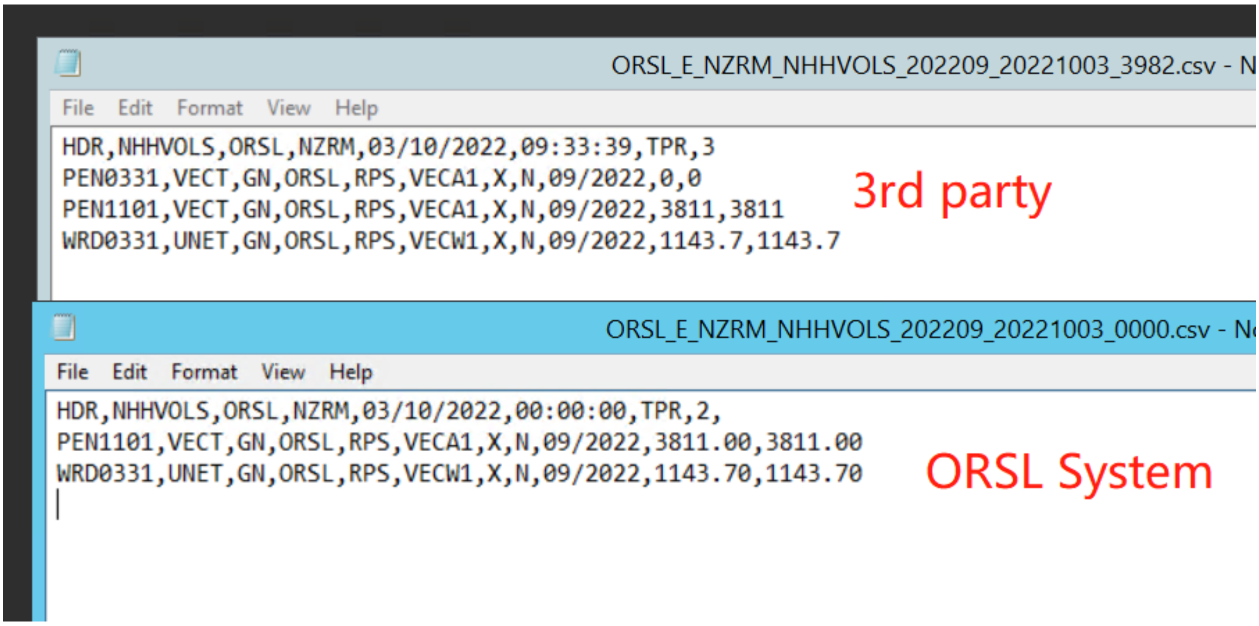
This was discussed with ORSL Staff. The ORSL system documentation was checked along with the UAT plan and test results. Test NHHVOLS files were also checked. A live demonstration of the system was observed.

Audit commentary

ORSL trade NHH category 1 ICPs only.

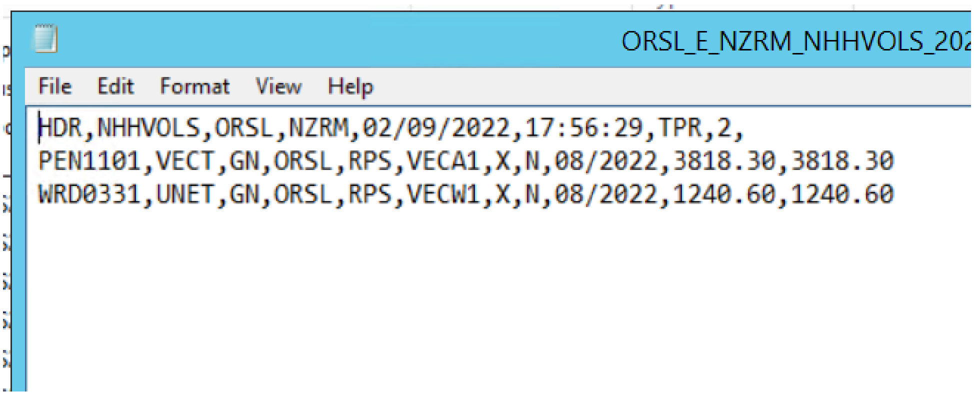
ICP information required by the reconciliation module to generate the NHHVOLS file is stored in the ORSL Reading database (MYSQL). This information is validated against the Registry regularly to ensure that information and statuses are correct.

A check of the test submission NHHVOLS file confirmed ICPs and consumption volume was allocated to the correct NSPs.


ORSL_E_NZRM_NHHVOLS_202209_20221003_3982.csv - N
File Edit Format View Help
3rd party
ORSL_E_NZRM_NHHVOLS_202209_20221003_0000.csv - N
File Edit Format View Help
ORSL System

```
HDR,NHHVOLS,ORSL,NZRM,03/10/2022,09:33:39,TPR,3
PEN0331,VECT,GN,ORSL,RPS,VECA1,X,N,09/2022,0,0
PEN1101,VECT,GN,ORSL,RPS,VECA1,X,N,09/2022,3811,3811
WRD0331,UNET,GN,ORSL,RPS,VECW1,X,N,09/2022,1143.7,1143.7
```

```
HDR,NHHVOLS,ORSL,NZRM,03/10/2022,00:00:00,TPR,2,
PEN1101,VECT,GN,ORSL,RPS,VECA1,X,N,09/2022,3811.00,3811.00
WRD0331,UNET,GN,ORSL,RPS,VECW1,X,N,09/2022,1143.70,1143.70
```



```
HDR,NHHVOLS,ORSL,NZRM,02/09/2022,17:56:29,TPR,2,
PEN1101,VECT,GN,ORSL,RPS,VECA1,X,N,08/2022,3818.30,3818.30
WRD0331,UNET,GN,ORSL,RPS,VECW1,X,N,08/2022,1240.60,1240.60
```

Audit outcome

Compliant

12.4. Grid owner volumes information (Clause 15.9)

Code reference

Clause 15.9

Code related audit information

The participant (if a grid owner) must deliver to the reconciliation manager for each point of connection for all of its GXPs, the following:

- *submission information for the immediately preceding consumption period, by 1600 hours on the 4th business day of each reconciliation period (clause 15.9(a))*
- *revised submission information provided in accordance with clause 15.4(2), by 1600 hours on the 13th business day of each reconciliation period. (clause 15.9(b))*

Audit observation

This was discussed with ORSL. The last audit report was reviewed.

Audit commentary

ORSL trade NHH category 1 ICPs only.

ORSL stated it is not a Grid Owner.

Checks confirm this.

This clause is not applicable. Compliance was not assessed

Audit outcome

Not applicable

12.5. Provision of NSP submission information (Clause 15.10)

Code reference

Clause 15.10

Code related audit information

The participant (if a local or embedded network owner) must provide to the reconciliation manager for each NSP for which the participant has given a notification under clause 25(1)

Schedule 11.1 (which relates to the creation, decommissioning, and transfer of NSPs) the following:

- *submission information for the immediately preceding consumption period, by 1600 hours on the 4th business day of each reconciliation period (clause 15.10(a))*
- *revised submission information provided in accordance with clause 15.4(2), by 1600 hours on the 13th business day of each reconciliation period. (clause 15.10(b))*

Audit observation

This was discussed with ORSL. The last audit report was reviewed.

Audit commentary

ORSL trade NHH category 1 ICPs only.

ORSL stated it does not operate or own an embedded Network.

Checks confirm this.

This clause is not applicable. Compliance was not assessed

Audit outcome

Not applicable

12.6. Grid connected generation (Clause 15.11)

Code reference

Clause 15.11

Code related audit information

The participant (if a grid connected generator) must deliver to the reconciliation manager for each of its points of connection, the following:

- *submission information for the immediately preceding consumption period, by 1600 hours on the 4th business day of each reconciliation period (clause 15.11(a))*
- *revised submission information provided in accordance with clause 15.4(2), by 1600 hours on the 13th business day of each reconciliation period. (clause 15.11(b))*

Audit observation

This was discussed with ORSL. The last audit report was reviewed.

Audit commentary

ORSL trade NHH category 1 ICPs only.

ORSL stated it does not operate or own any Grid Connected Generation.

Checks confirm this.

This clause is not applicable. Compliance was not assessed

Audit outcome

Not applicable

12.7. Accuracy of submission information (Clause 15.12)

Code reference

Clause 15.12

Code related audit information

If the reconciliation participant has submitted information and then subsequently obtained more accurate information, the participant must provide the most accurate information available to the reconciliation manager or participant, as the case may be, at the next available opportunity for submission (in accordance with clauses 15.20A, 15.27, and 15.28).

Audit observation

This was discussed with ORSL. The ORSL system documentation was checked along with the UAT plan and test results. Test NHHVOLS files were also checked. A live demonstration of the system was observed.

Audit commentary

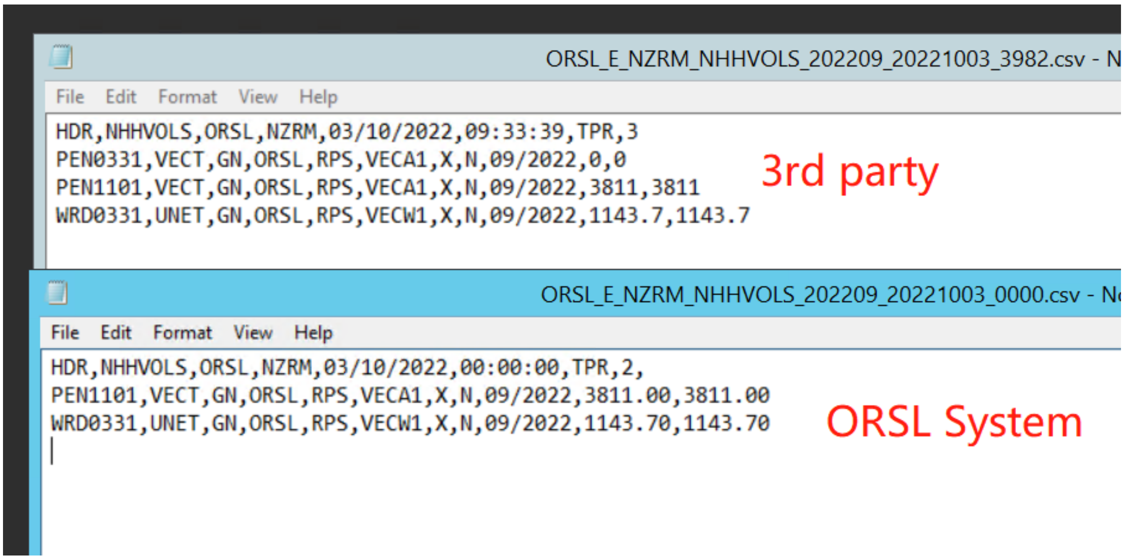
ICP information required by the reconciliation module to generate the NHHVOLS file is stored in the ORSL Reading database (MYSQL). This information is downloaded from the registry and validated monthly prior to file generation to ensure that information and statuses are correct.

A check of the test submission NHHVOLS file confirmed ICPs and consumption volume was allocated to the correct NSPs.

The NHHVOLS file can be generated on a specified date or on demand as required. If the file is generated after the 6th of the month the system operator has the option of creating revision files.

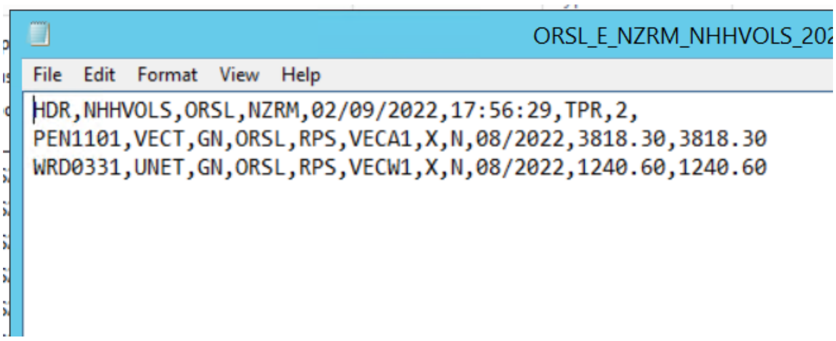
A calendar function is used to set reminders for file generation and submission. The reminders are sent by email to the persons responsible for submitting the files to the RM.

Checks as above and test results provided confirmed that the ORSL Reconciliation System was capable of generating correctly formatted and accurate submission files including revision files. The reminder function was observed. However the delivery of the files on day 4 and 13 could not be verified. This will need to be confirmed at the next CRP audit.


ORSL_E_NZRM_NHHVOLS_202209_20221003_3982.csv - N
File Edit Format View Help
3rd party
ORSL_E_NZRM_NHHVOLS_202209_20221003_0000.csv - N
File Edit Format View Help
ORSL System

```
HDR,NHHVOLS,ORSL,NZRM,03/10/2022,09:33:39,TPR,3
PEN0331,VECT,GN,ORSL,RPS,VECA1,X,N,09/2022,0,0
PEN1101,VECT,GN,ORSL,RPS,VECA1,X,N,09/2022,3811,3811
WRD0331,UNET,GN,ORSL,RPS,VECW1,X,N,09/2022,1143.7,1143.7
```

```
HDR,NHHVOLS,ORSL,NZRM,03/10/2022,00:00:00,TPR,2,
PEN1101,VECT,GN,ORSL,RPS,VECA1,X,N,09/2022,3811.00,3811.00
WRD0331,UNET,GN,ORSL,RPS,VECW1,X,N,09/2022,1143.70,1143.70
```



```
HDR,NHHVOLS,ORSL,NZRM,02/09/2022,17:56:29,TPR,2,
PEN1101,VECT,GN,ORSL,RPS,VECA1,X,N,08/2022,3818.30,3818.30
WRD0331,UNET,GN,ORSL,RPS,VECW1,X,N,08/2022,1240.60,1240.60
```

Audit outcome

Unable to determine

12.8. Permanence of meter readings for reconciliation (Clause 4 Schedule 15.2)

Code reference

Clause 4 Schedule 15.2

Code related audit information

Only volume information created using validated meter readings, or if such values are unavailable, permanent estimates, has permanence within the reconciliation processes (unless subsequently found to be in error).

The relevant reconciliation participant must, at the earliest opportunity, and no later than the month 14 revision cycle, replace volume information created using estimated readings with volume information created using validated meter readings.

If, despite having used reasonable endeavours for at least 12 months, a reconciliation participant has been unable to obtain a validated meter reading, the reconciliation participant must replace volume information created using an estimated reading with volume information created using a permanent estimate in place of a validated meter reading.

Audit observation

This was discussed with ORSL. The ORSL system documentation was checked along with the UAT plan and test results. Test NHHVOLS files were also checked. A live demonstration of the system was observed.

Audit commentary

ICP information required by the reconciliation module to generate the NHHVOLS file is stored in the ORSL Reading database (MYSQL). This information is downloaded from the registry and validated monthly prior to file generation to ensure that information and statuses are correct. Only validated meter readings are stored in the ORSL Reading database, if a meter reading does not pass validation during the download process from the MEP it will be marked as abnormal in the system and cannot be used.

The NHHVOLS file can be generated on a specified date or on demand as required. If the file is generated after the 6th of the month the system operator has the option of creating revision files. A calendar function is used to set reminders for file generation and submission. The reminders are sent by email to the persons responsible for submitting the files to the RM.

A check of the test submission NHHVOLS file confirmed ICPs and consumption volume was allocated to the correct NSPs. Submission volumes use the RPS Profile only, control devices, operation logs or other profile determination are not used to create volumes. ORSL trade NHH category 1 ICPs only.

Checks as above and test results provided confirmed that the ORSL Reconciliation System was capable of generating correctly formatted and accurate submission files including revision files.

Audit outcome

Compliant

12.9. Reconciliation participants to prepare information (Clause 2 Schedule 15.3)

Code reference

Clause 2 Schedule 15.3

Code related audit information

If a reconciliation participant prepares submission information for each NSP for the relevant consumption periods in accordance with the Code, such submission information for each ICP must comprise the following:

- *half hour volume information for the total metered quantity of electricity for each ICP notified in accordance with clause 11.7(2) for which there is a category 3 or higher metering installation (clause 2(1)(a))for each ICP about which information is provided under clause 11.7(2) for which there is a category 1 or category 2 metering installation (clause 2(1)(ac) to 2(1)(ae)):*
  - *a) any half hour volume information for the ICP; or*
  - *b) any non half hour volumes information calculated under clauses 4 to 6 (as applicable).*
  - *c) unmetered load quantities for each ICP that has unmetered load associated with it derived from the quantity recorded in the registry against the relevant ICP and the number of days in the period, the distributed unmetered load database, or other sources of relevant information. (clause 2(1)(c))*
- *to create non half hour submission information a reconciliation participant must only use information that is dependent on a control device if (clause 2(2)):*
  - *a) the certification of the control device is recorded in the registry; or*
  - *b) the metering installation in which the control device is location has interim certification.*
- *to create submission information for a point of connection the reconciliation participant must use volume information (clause 2(3))*
- *to calculate volume information the reconciliation participant must apply raw meter data :*
  - *a) for each ICP, the compensation factor that is recorded in the registry (clause 2(4)(a))*
  - *b) for each NSP the compensation factor that is recorded in the metering installations most recent certification report. (clause 2(4)(b))*

Audit observation

This was discussed with ORSL. The ORSL system documentation was checked along with the UAT plan and test results. Test NHHVOLS files were also checked. A live demonstration of the system was observed.

Audit commentary

ORSL trade NHH category 1 ICPs only. ORSL stated they do not trade any Shared UML or UML.

ICP information required by the reconciliation module to generate the NHHVOLS file is stored in the ORSL Reading database (MYSQL). This information is downloaded from the registry and validated monthly prior to file generation to ensure that information and statuses are correct.

Only validated meter readings are stored in the ORSL Reading database, if a meter reading does not pass validation during the download process from the MEP it will be marked as abnormal in the system and cannot be used.

A check of the test submission NHHVOLS file confirmed ICPs and consumption volume was allocated to the correct NSPs. Submission volumes use the RPS Profile only, control devices, operation logs or other profile determination are not used to create volumes.

Checks as above and test results provided confirmed that the ORSL Reconciliation System was capable of generating correctly formatted and accurate submission files including revision files..

Audit outcome

Compliant

12.10. Historical estimates and forward estimates (Clause 3 Schedule 15.3)

Code reference

Clause 3 Schedule 15.3

Code related audit information

For each ICP that has a non-half hour metering installation, volume information derived from validated meter readings, estimated readings, or permanent estimates must be allocated to consumption periods using the following techniques to create historical estimates and forward estimates. (clause 3(1))

Each estimate that is a forward estimate or a historical estimate must clearly be identified as such. (clause 3(2))

If validated meter readings are not available for the purpose of clauses 4 and 5, permanent estimates may be used in place of validated meter readings. (clause 3(3))

Audit observation

This was discussed with ORSL. The ORSL system documentation was checked along with the UAT plan and test results. Test NHHVOLS files were also checked. A live demonstration of the system was observed.

Audit commentary

ICP information required by the reconciliation module to generate the NHHVOLS file is stored in the ORSL Reading database (MYSQL). This information is downloaded from the registry and validated monthly prior to file generation to ensure that information and statuses are correct. Only validated meter readings are stored in the ORSL Reading database, if a meter reading does not pass validation during the download process from the MEP it will be marked as abnormal in the system and cannot be used.

A check of the test submission NHHVOLS file confirmed ICPs and consumption volume was allocated to the correct NSPs. Submission volumes use the RPS Profile only, control devices, operation logs or other profile determination are not used to create volumes. ORSL trade NHH category 1 ICPs only.

The UAT test results demonstrated the correct methodology and process was used to calculate NHH volume aggregation by NSP. The ORSL Reconciliation System correctly identified estimates and showed that estimates were treated correctly in the generation of NHHVOLs submission files.

Checks as above and test results provided confirmed that the ORSL Reconciliation System was capable of generating correctly formatted and accurate submission files..

Audit outcome

Compliant

12.11. Historical estimate process (Clause 4 and 5 Schedule 15.3)

Code reference

Clause 4 and 5 Schedule 15.3

Code related audit information

The methodology outlined in clause 4 of Schedule 15.3 must be used when preparing historic estimates of volume information for each ICP when the relevant seasonal adjustment shape is available.

If a seasonal adjustment shape is not available, the methodology for preparing an historical estimate of volume information for each ICP must be the same as in clause 4, except that the relevant quantities kWh_{Px} *must be prorated as determined by the reconciliation participant using its own methodology or on a flat shape basis using the relevant number of days that are within the consumption period and within the period covered by* kWh_{Px}*.*

Audit observation

This was discussed with ORSL. The ORSL system documentation was checked along with the UAT plan and test results. Test NHHVOLS files were also checked. A live demonstration of the system was observed.

Audit commentary

ICP information required by the reconciliation module to generate the NHHVOLS file is stored in the ORSL Reading database (MYSQL). This information is downloaded from the registry and validated monthly prior to file generation to ensure that information and statuses are correct. Only validated meter readings are stored in the ORSL Reading database, if a meter reading does not pass validation during the download process from the MEP it will be marked as abnormal in the system and cannot be used.

A check of the test submission NHHVOLS file confirmed ICPs and consumption volume was allocated to the correct NSPs. Submission volumes use the RPS Profile only, control devices, operation logs or other profile determination are not used to create volumes. ORSL trade NHH category 1 ICPs only.

The UAT test results demonstrated the correct methodology and process was used to calculate NHH volume aggregation by NSP. The ORSL Reconciliation System correctly identified estimates and showed that estimates were treated correctly in the generation of NHHVOLs submission files.

Checks as above and test results provided confirmed that the ORSL Reconciliation System was capable of generating correctly formatted and accurate submission files including revision files..

Audit outcome

Compliant

12.12. Forward estimate process (Clause 6 Schedule 15.3)

Code reference

Clause 6 Schedule 15.3

Code related audit information

Forward estimates may be used only in respect of any period for which an historical estimate cannot be calculated.

The methodology used for calculating a forward estimate may be determined by the reconciliation participant, only if it ensures that the accuracy is within the percentage of error specified by the Authority.

Audit observation

This was discussed with ORSL. The ORSL system documentation was checked along with the UAT plan and test results. Test NHHVOLS files were also checked. A live demonstration of the system was observed.

Audit commentary

ICP information required by the reconciliation module to generate the NHHVOLS file is stored in the ORSL Reading database (MYSQL). This information is downloaded from the registry and validated monthly prior to file generation to ensure that information and statuses are correct. Only validated meter readings are stored in the ORSL Reading database, if a meter reading does not pass validation during the download process from the MEP it will be marked as abnormal in the system and cannot be used.

A check of the test submission NHHVOLS file confirmed ICPs and consumption volume was allocated to the correct NSPs. Submission volumes use the RPS Profile only, control devices, operation logs or other profile determination are not used to create volumes. ORSL trade NHH category 1 ICPs only.

The UAT test results demonstrated the correct methodology and process was used to calculate NHH volume aggregation by NSP. The ORSL Reconciliation System correctly identified estimates and showed that estimates were treated correctly in the generation of NHHVOLs submission files.

Checks as above and test results provided confirmed that the ORSL Reconciliation System was capable of generating correctly formatted and accurate submission files including revision files.

Audit outcome

Compliant

12.13. Compulsory meter reading after profile change (Clause 7 Schedule 15.3)

Code reference

Clause 7 Schedule 15.3

Code related audit information

If the reconciliation participant changes the profile associated with a meter, it must, when determining the volume information for that meter and its respective ICP, use a validated meter reading or permanent estimate on the day on which the profile change is to take effect.

The reconciliation participant must use the volume information from that validated meter reading or permanent estimate in calculating the relevant historical estimates of each profile for that meter.

Audit observation

This was discussed with ORSL. The ORSL system documentation was checked along with the UAT plan and test results. Test NHHVOLS files were also checked. A live demonstration of the system was observed.

Audit commentary

ORSL trade NHH category 1 ICPs using the RPS Profile only.

The ORSL System will not have any impact on this activity. This will need to be verified at future CRP audits.

This clause is not applicable to this audit.

Audit outcome

Not applicable

13. SUBMISSION FORMAT AND TIMING

13.1. Provision of submission information to the RM (Clause 8 Schedule 15.3)

Code reference

Clause 8 Schedule 15.3

Code related audit information

For each category 3 of higher metering installation, a reconciliation participant must provide half hour submission information to the reconciliation manager.

For each category 1 or category 2 metering installation, a reconciliation participant must provide to the reconciliation manager:

- *Half hour submission information; or*
- *Non half hour submission information; or*
- *A combination of half hour submission information and non half hour submission information*

However, a reconciliation participant may instead use a profile if:

- *The reconciliation participant is using a profile approved in accordance with clause Schedule 15.5; and*
- *The approved profile allows the reconciliation participant to provide half hour submission information from a non half hour metering installation; and*
- *The reconciliation participant provides submission information that complies with the requirements set out in the approved profile.*

Half hour submission information provided to the reconciliation manager must be aggregated to the following levels:

- *NSP code*
- *reconciliation type*
- *profile*
- *loss category code*
- *flow direction*
- *dedicated NSP*
- *trading period*

The non half hour submission information that a reconciliation participant submits must be aggregated to the following levels:

- *NSP code*
- *reconciliation type*
- *profile*
- *loss category code*
- *flow direction*
- *dedicated NSP*
- *consumption period or day*

Audit observation

This was discussed with ORSL. The ORSL system documentation was checked along with the UAT plan and test results. Test NHHVOLS files were also checked. A live demonstration of the system was observed.

Audit commentary

ORSL trade NHH category 1 ICPs only. ORSL stated they do not trade any Shared UML or UML.

ICP information required by the reconciliation module to generate the NHHVOLS file is stored in the ORSL Reading database (MYSQL). This information is downloaded from the registry and validated monthly prior to file generation to ensure that information and statuses are correct. Only validated meter readings are stored in the ORSL Reading database, if a meter reading does not pass validation during the download process from the MEP it will be marked as abnormal in the system and cannot be used.

A check of the test submission NHHVOLS file confirmed ICPs and consumption volume was allocated to the correct NSPs. Submission volumes use the RPS Profile only, control devices, operation logs or other profile determination are not used to create volumes.

Submission information was provided to the Reconciliation Manager in the appropriate format and aggregated correctly by:

- NSP code
- reconciliation type
- profile
- loss category code
- flow direction
- dedicated NSP
- consumption period

The UAT test results demonstrated the correct methodology and process was used to calculate NHH volume aggregation by NSP. The ORSL Reconciliation System correctly identified estimates and showed that estimates were treated correctly in the generation of NHHVOLs submission files.

Checks as above and test results provided confirmed that the ORSL Reconciliation System was capable of generating correctly formatted and accurate submission files including revision files.

Audit outcome

Compliant

13.2. Reporting resolution (Clause 9 Schedule 15.3)

Code reference

Clause 9 Schedule 15.3

Code related audit information

When reporting submission information, the number of decimal places must be rounded to not more than 2 decimal places.

If the unrounded digit to the right of the second decimal place is greater than or equal to 5, the second digit is rounded up, and

If the digit to the right of the second decimal place is less than 5, the second digit is unchanged.

Audit observation

This was discussed with ORSL. The ORSL system documentation was checked along with the UAT plan and test results. Test NHHVOLS files were also checked. A live demonstration of the system was observed.

Audit commentary

ICP information required by the reconciliation module to generate the NHHVOLS file is stored in the ORSL Reading database (MYSQL). This information is downloaded from the registry and validated monthly prior to file generation to ensure that information and statuses are correct. Only validated meter readings are stored in the ORSL Reading database, if a meter reading does not pass validation during the download process from the MEP it will be marked as abnormal in the system and cannot be used.

A check of the test submission NHHVOLS file confirmed ICPs and consumption volume was allocated to the correct NSPs. Submission volumes use the RPS Profile only, control devices, operation logs or other profile determination are not used to create volumes. Checks verified the test submission NHHVOLS file volume is rounded to not more than 2 decimal places at the end of calculations using a prescribed method.

Checks as above and test results provided confirmed that the ORSL Reconciliation System was capable of generating correctly formatted and accurate submission files including revision files.

Audit outcome

Compliant

13.3. Historical estimate reporting to RM (Clause 10 Schedule 15.3)

Code reference

Clause 10 Schedule 15.3

Code related audit information

By 1600 hours on the 13th business day of each reconciliation period the reconciliation participant must report to the reconciliation manager the proportion of historical estimates per NSP contained within its non half hour submission information.

The proportion of submission information per NSP that is comprised of historical estimates must (unless exceptional circumstances exist) be:

- *at least 80% for revised data provided at the month 3 revision (clause 10(3)(a))*
- *at least 90% for revised data provided at the month 7 revision (clause 10(3)(b))*
- *100% for revised data provided at the month 14 revision. (clause 10(3)(c))*

Audit observation

Audit commentary

ICP information required by the reconciliation module to generate the NHHVOLS file is stored in the ORSL Reading database (MYSQL). This information is downloaded from the registry and validated monthly prior to file generation to ensure that information and statuses are correct. Only validated meter readings are stored in the ORSL Reading database, if a meter reading does not pass validation during the download process from the MEP it will be marked as abnormal in the system and cannot be used.

A check of the test submission NHHVOLS file confirmed ICPs and consumption volume was allocated to the correct NSPs.

The NHHVOLS file can be generated on a specified date or on demand as required. If the file is generated after the 6th of the month the system operator has the option of creating revision files.A calendar function is used to set reminders for file generation and submission. The reminders are sent by email to the persons responsible for submitting the files to the RM. The reminder function was observed.

A check of the test submission NHHVOLS file confirmed ICPs and consumption volume was allocated to the correct NSPs.

Checks as above and test results provided confirmed that the ORSL Reconciliation System was capable of generating correctly formatted and accurate submission files including revision files. However the proportion of submission information per NSP that is comprised of historical estimates at month 3, 7 and 14 revision could not be verified. This will need to be confirmed at the next CRP audit.

Audit outcome

Unable to determine

CONCLUSION

See Executive Summary.

PARTICIPANT RESPONSE