ELEXON

CP Progression Paper

Mandating Calibration Checks to Main and Check Meters

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About This Document

You can find the definitions of the terms and acronyms used in this document in the BSC Glossary[1].

This document provides information on a new Change Proposal (CP) and outlines our proposed progression timetable for this change, including when it will be issued for CP Consultation in the next suitable Change Proposal Circular (CPC) batch.

We are presenting this paper to the ISG on 7 November 2023 and the SVG on 7 November 2023 to capture any comments or questions from Committee Members on this CP before we issue it for consultation.

There are three parts to this document:

- This is the main document. It provides a summary of the solution, impacts, anticipated costs, and proposed implementation approach, as well as our proposed progression approach for this CP.
- Attachment A contains the CP proposal form.
- Attachment B contains the proposed redlined changes to deliver the CP solution.

Committee

Imbalance Settlement Group (ISG) and Supplier Volume Group (SVG)

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[1] https://www.elexon.co.uk/glossary/?show=all

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1. Summary

Why change?

Code of Practice (CoP) 4[2] details the requirements for calibration, testing and commissioning of Metering Equipment used for Settlement purposes. The frequency and timing of Meter calibrations is specified in CoP4 as well as the required test points.

There is a lack of industry reporting to confirm whether Meter calibration checks are being carried out on the relevant Metering Equipment which poses a risk to Settlement where a lack of data being reported does not allow any analysis to highlight concerns about Meter accuracy to be carried out.

There is also no process for Elexon to follow in BSCP601[3] to take action should it be identified that there is an issue with the long term accuracy of a particular Meter Type or, as required, notify the Office of Product Safety and Standards in the Department for Business and Trade where the Meter Type is on Schedule 4[4]

Solution

This CP will look to create a new section 5.2A in CoP4 to detail the requirements and timescales for end of life sample calibrations. These will focus on Meter Types used in CoP3[5] and CoP5[6], Metering Systems.

Impacts and costs

This CP is proposed to be a document only change and the estimated central implementation costs for this CP will be approximately <£2,000.

Implementation

This CP is proposed for implementation on 29 February 2024 as part of the Standard February BSC Release.

Not sure where to start?

We suggest reading the following sections:

- Have 5 minutes? Read section 1
- Have 15 minutes? Read sections 1, 4, 5 and 6
- Have 30 minutes? Read all sections
- Have longer? Read all sections and the annexes and attachments

[2] CoP4 'Code of Practice for the Calibration, Testing and Commissioning Requirements of Metering Equipment for Settlement Purposes'
[3] BSCP601: Metering Protocol Approval and Compliance Testing
[4] Electricity Act 1989: Statutory register of all pattern approved electricity meters suitable for billing purposes in the UK - Schedule 4: UK nationally approved electricity meters
[5] Code of Practice 3 'The Metering of Circuits with a Rated Capacity not exceeding 10MVA for Settlement Purposes'
[6] Code of Practice 5 'The Metering of Energy Transfers with Max Demand of up to (and including) 1MW for Settlement Purposes'

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2. Why Change?

What is the issue?

Code of Practice (CoP) 4[7] details the requirements for calibration, testing and commissioning of Metering Equipment used for Settlement purposes. The calibration requirements for Meters are split into a Type A initial calibration and a Type B or C periodic calibration. The frequency and timing of Meter calibrations is specified in CoP4 as well as the required test points.

There is a lack of Industry reporting to confirm whether Meter calibration checks are being carried out on the relevant Metering Equipment which poses a risk to Settlement where a lack of data being reported does not allow any analysis to highlight concerns about Meter accuracy to be carried out.

Appendix A of CoP4 specifies that for CoP3 and CoP5, after the initial calibration of the Meter pre-installation, there isn't a requirement for a periodic calibration until year 15 for a Type B and year 20 for a Type C. With the low level of capital expenditure, compared to calibration testing, for CoP3 and CoP5 compliant Meters Registrants and Meter Operator Agents (MOAs) are choosing to replace the Meter prior to year 15, or year 10 if subject to a certification period[8] rather than perform a periodic calibration. As a consequence of this Elexon (BSCCo) has no data on the performance of the Meter, in terms of the errors and the drift from the initial calibration, to determine if there is a risk to Settlement posed by the use of a particular Meter Type.

There is also no process for Elexon to follow in BSCP601[9] to take action should it be identified that there is an issue with the long term accuracy of a particular Meter Type or, as required, notify the Office of Product Safety and Standards in the Department for Business and Trade where the Meter Type is on Schedule 4[4].

Background

The Issue 93[10] Review of the BSC metering Codes of Practice group discussed an aspect with the intent of defining a process to deal with determining if Meter sample and periodic calibration checks are required to confirm the performance of particular Meter Types. The Workgroup highlighted the need for this requirement to trigger a recognition of a higher risk of failure at end of life and potentially inaccuracy.

The Workgroup arrived at the following areas to consider/progress:

- Parties must adhere to the requirement for completing a calibration (sample and periodic) check, if it is clearly set out in CoP4; and
- It was important to ensure Meter accuracy was known, if Meters were being replaced prior to their periodic calibration check, End of Life testing should be required.

The conclusion from the Issue 93 workgroup provided the below recommendations that were noted and agreed by the Workgroup:

- Continue and reinforce the current calibration check process (periodic and sample calibrations);
- Introduce CoP specific End of Life testing; and

[7] CoP4 'Code of Practice for the Calibration, Testing and Commissioning Requirements of Metering Equipment for Settlement Purposes

[8] Electricity Act 1989: Statutory register of all pattern approved electricity meters suitable for billing purposes in the UK - Schedule 4: UK nationally approved electricity meters

[9] BSCP601: Metering Protocol Approval and Compliance Testing

[10] Issue 93 'Review of the BSC metering Codes of Practice'

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- Introduce End of Life testing (CoP specific sample testing of existing Meter Types e.g. CoP3 and CoP5).

The recommendations were presented to, and noted by, the BSC Panel on 8 September 2022[11].

[11] BSC Panel 330/08

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3. Solution

Proposed solution

This CP will look to create a new section 5.2A in CoP4 to detail the requirements and timescales for end of life sample calibrations. These will focus on Meter Types used in CoP3 and CoP5 Metering Systems.

The Office for Product Safety & Standards (OPSS) In Service Testing (IST) Handbook[12] (May 2022 v3.61) section 7.0 'Sampling plan and criteria for meter populations requiring replacement' specifies the number of samples required for a known population size, as shown in the table below. Columns have been added to detail the percentage of the population range for the upper and lower limit.

Population	Sample Size	Lower % of Population	Upper % of Population
1,201 to 3,200	50	4.2%	1.6%
3,201 to 10,000	75	2.3%	0.75%
10,001 to 35,000	100	1.0%	0.29%
35,001 to 150,000	150	0.43%	0.1%
>150,000	200	0.13%	N/A

The CoP4 end of life sample testing population ranges and sample sizes will be based on the population of a Meter Type an individual Meter Operator Agent is responsible for. As the Meter Types that do not fall under IST Handbook (i.e. over 100 kW and current transformer operated Meters) have significantly lower volumes the population ranges have been amended for the end of life testing sample calibration. The following limits and sample sizes have been developed:

Population	Sample Size	Lower % of Population	Upper % of Population
100 to 500	5	5.0%	1.0%
501 to 2,000	10	2.0%	0.5%
2,001 to 10,000	20	1.0%	0.20%
>10,001	40	0.40%	N/A

An additional process has been added into BSCP601 section 2 'Interface and Timetable Information' for where BSCCo has identified an issue with errors following the analysis of end of life sample calibration test results. This will involve notifying and liaising with the Office of Product Safety and Standards and then making a recommendation to the Panel. This recommendation can be to instruct Parties to remove a particular Meter Type over a transitional period or prevent its continued installation.

[12] Office for Product Safety & Standards In Service Testing Handbook

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Should this CP be approved Elexon will develop a process to identify the volumes of Meter Types a MOA is responsible for in CoP3 and CoP5 and develop a technique to analyse calibration test results to make an assessment, and if required a recommendation, on the accuracy performance of a Meter Type.

Proposer's rationale

This CP will provide an assurance process to confirm whether a Meter Type is still operating within the allowed accuracy limits or is drifting towards, or beyond, the extreme end of the limits. It will also define the steps to be taken where an issue is identified mitigating the risk to Settlement.

Proposed redlining

The CP proposes to update CoP4 and BSCP601. The redlining to support this change can be found in Attachment B.

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4. Impacts and Costs

BSC Party & Party Agent impacts and costs

The only impact is identified on Meter Operator Agents.

BSC Party & Party Agent Impacts	
BSC Party/Party Agent	Impact
Meter Operator Agents	Medium

Central impacts and costs

Central impacts

The solution in this CP only affects BSC documentation. No BSC Central Systems or Agents will be impacted.

Central Impacts	
Document Impacts	System Impacts
• CoP4 ‘Code of Practice for the Calibration, Testing and Commissioning Requirements of Metering Equipment for Settlement Purposes'; • BSCP601 'Metering Protocol Approval and Compliance Testing'	• None

Impact on BSC Settlement Risks

Impact on BSC Settlement Risks
None

Impact on Market-wide Half Hourly Settlement (MHHS)

Impact on MHHS
None

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Central costs

The central implementation costs for this CP will be approximately <£2,000.

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5. Implementation Approach

Recommended Implementation Date

This CP is proposed for implementation on 29 February 2024 as part of the Standard February BSC Release.

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6. Proposed Progression

Progression timetable

The table below outlines the proposed progression plan for this CP:

Progression Timetable	
Event	Date
CP Progression Paper presented to ISG for information	07 November 2023
CP Progression Paper presented to SVG for information	07 November 2023
CP Consultation	13 November 2023 – 08 December 2023
CP Assessment Report presented to ISG for decision	09 January 2024
CP Assessment Report presented to SVG for decision	09 January 2024
Proposed Implementation Date	29 February 2024 Release

CP Consultation questions

We intend to ask the standard CP Consultation questions for this CP. We do not believe any additional questions need to be asked for this CP.

Standard CP Consultation Questions
Do you agree with the proposed solution?
Do you agree that the draft redlining delivers the proposed solution?
Will this CP impact your organisation?
Will your organisation incur any costs in implementing this CP?
Do you agree with the proposed implementation approach for this CP?

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7. Recommendations

We invite you to:

- **NOTE** the proposed progression timetable for the CP; and
- **PROVIDE** any comments or additional questions for inclusion in the CP Consultation.
- **NOTE** that this CP will be presented to:
    - the ISG on 07 November 2023; and
    - the SVG on 07 November 2023.

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