CP Assessment Report

CP1550 'Updates to monitoring of voltage failure alarms requirements'

Contents

About This Document

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- Have 15 mins? Read sections 1, 4, 5 and 6
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This document is the Change Proposal (CP) Assessment Report for CP1550 which Elexon will present to the ISG at its meeting on 7 December. The ISG will consider the proposed solution and the responses received to the CP Consultation before making a decision on whether to approve CP1550.

There are five parts to this document:

- This is the main document. It provides details of the solution, impacts, costs, and proposed implementation approach. It also summarises the ISG's initial views on the proposed changes and the views of respondents to the CP Consultation.
- Attachment A contains the CP1550 proposal form.
- Attachments B and C contain the proposed redlined changes to deliver the CP1550 solution.
- Attachment D contains the full responses received to the CP Consultation.

Committee

Imbalance Settlement Group (ISG)

Recommendation

Approve

Implementation Date

30 June 2022 (June 2022 standard Release)

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1 Summary

Why change?

Section 5.1.3 of Code of Practice (CoP) 1 'The metering of circuits with a rated capacity exceeding 100 MVA for Settlement purposes' and CoP2 'The metering of circuits with a rated capacity not exceeding 100 MVA for Settlement purposes' outlines the requirement for monitoring voltage transformers and creating failure alarms at CoP1 and CoP2 sites.

Currently, there is a lack of clarity around the technical requirements of monitoring Voltage Transformers (VTs) and whether voltage monitoring (i.e. phase failure) can or cannot be combined with other prevailing conditions before the phase failure alarm is activated. This lack of clarity recently led to a large Trading Dispute, DA1110, which had a financial impact of £12 million on Settlement.

Also, the obligation where a separate Outstation (a data logger) is used that requires a phase failure alarm to be flagged in a manned location is obsolete for CoPs 1 and 2 Metering Systems. This is because most new Power Stations do not use separate Outstations nor have manned locations at site.

Solution

This CP proposes to make changes to Section 5.1.3 of CoPs 1 and 2 to clarify when a phase failure alarm should be flagged and remove the obsolete requirement.

This includes clarifying that a phase failure alarm should be flagged if one phase, a combination of phases, or all phases go down and should not be combined with any other conditions (e.g. no current).

Removing the obligation, which requires a phase failure alarm to be flagged in a manned location, will ensure that all phase failures are reported, via the Outstation, for the CDCA, or HHDC, to see and immediately alert the Registrant and Meter Operator Agent (MOA).

Impacts and costs

This CP is expected to have a positive impact on Settlement by strengthening the VT monitoring requirements whereby faults are reported and are more likely to be resolved quicker.

MOAs will be expected to update their process which directs how Meters should be programmed with unconditional phase failure monitoring.

A document change will be required in CoPs 1 and 2, and no changes to the central systems.

The central implementation cost for this CP will be less than £1,000 to update the relevant documents.

Implementation

The CP is proposed for implementation on 30 June 2022 as part of the standard June 2022 Balancing and Settlement Code (BSC) Release.

Central Data Collection Agent (CDCA)

The CDCA retrieves, validates and processes metering data metered data from Half Hourly Meters comprised in Central Volume Allocation (CVA) Metering Systems.

Recommendation

We invite the **ISG** to:

- **APPROVE** the proposed changes to CoPs 1 and 2 for CP1550; and
- **APPROVE** CP1550 for implementation on 30 June 2022 as part of the standard June 2022 BSC Release.

2 Why Change?

What is the issue?

At the second meeting of Issue 93 'Review of the BSC metering Codes of Practice', the workgroup agreed to raise a CP that addresses the 'Monitoring of voltage failure alarms' aspects of Issue 93.

Section 5.1.3 of CoPs 1 and 2 details the requirement for monitoring of VTs. It states that where a common mode fault, such as a VT fuse failure, could cause incorrect voltages on both the main and check Meters, Meters combining integral Outstations shall provide for the data to be identified with an alarm indicating phase failure. Section 5.1.3 further specifies that for separate Outstations (that do not have a spare channel) the alarm must provide notification of a phase failure by the next Working Day at a point which is normally manned.

Currently, it is not clear to MOAs whether the phase failure alarm can or cannot be combined with other prevailing conditions before the phase failure alarm is activated, i.e. if current and voltage are not present. In this situation, if the secondary wiring to the Meters is totally severed, no phase failure alarm is recorded even though the primary circuit may still be energised and on load.

Additionally, the requirement to flag a phase failure to a manned location in Section 5.1.3 of CoPs 1 and 2 is no longer relevant to modern Metering Systems.

Background

This issue was raised as an aspect of the Issue 93 'Review of the BSC metering Codes of Practice' to address the ambiguity in the VT monitoring requirement currently specified in Section 5.1.3 of CoPs 1 and 2.

A voltage failure occurs when there is a loss of power supply to a Metering System (e.g. a VT failure or VT fuse failures). When this happens, the voltage failure alarm is either tagged to the Outstation data or notified to a point which is normally manned by the next Working Day.

VT monitoring - lack of clarity in the phase failure alarm requirements

Currently, the perceived ambiguity in the wording around VT monitoring has led to some MOAs combining voltage monitoring and current monitoring, resulting in no phase failure alarm is flagged in a situation where no current is seen by the meter, but is still flowing in the primary circuit. The primary circuit reps the physical conductors that carry power to and from a site. The Secondary rep the wiring carrying measurement signals from the CTs and VTs to the Meters.

This lack of clarity recently led to a large Trading Dispute, DA1110, which had an impact of £12 million on Settlement. The MOA combined current monitoring and voltage monitoring such that the voltage failure alarm would not be triggered if a circuit was de-energised (i.e. no current or voltage signals were present at the Settlement Meters). However, in this particular case, the secondary wiring from the measurement transformers to the Settlement Meters was severed, leaving only the primary cables energised. This resulted in the Meter not recording a voltage failure alarm (because no current was registered and

therefore, the Meter and its Outstation did not alert the CDCA and the Registrant/MOA accordingly).

Clarifying this requirement in CoPs 1 and 2 by requiring phase failure of one or more phase and not combining this with any other condition will strengthen the VT monitoring process. This will help ensure the CDCA or HHDC is aware of a voltage failure, irrespective of current.

VT monitoring – obsolete requirement for notification at manned points

Notification at a manned location of voltage failure, by the next Working Day is accommodated for in CoPs 1 and 2. This means that the CDCA or HHDC may not be aware of any potential incorrect Settlement data because they are dependent on the staff at the manned location to inform them. This requirement reflects a legacy arrangement for Metering Equipment which does not promptly alert the CDCA or HHDC to a potential error that could negatively impact Settlements. Also, this requirement is not mentioned in CoPs 3, 5 and 10, making CoPs 1 and 2 not aligned.

Removing this arrangement from CoPs 1 and 2 will strengthen the requirement to notify phase failure via the Meter's Outstation for the CDCA or HHDC to see and report to the Registrant and MOA. It will also align the requirement across all CoPs.

3 Solution

Proposed solution

This CP proposes to make changes to Section 5.1.3 of CoPs 1 and 2 to clarify to MOAs how phase failure alarms should be managed and to remove the outdated requirements. This document change includes the following:

- Update CoPs 1 and 2 to clarify that an alarm should be flagged if one phase, a combination of phases, or all phases go down. It will also specify that the phase failure alarm must be dedicated to the monitoring of only voltage transformers.
- Remove the obsolete arrangement which requires a phase failure is flagged to a manned location.

Proposer's rationale

This change will enable the CDCA, or relevant HHDC, to report phase failure alarms to Registrants of Metering Systems and their MOAs. As a result, MOAs will be able to investigate phase failures and, with the help of the VT owners, resolve them.

By specifying that alarms should be flagged if one phase, a combination of phases, or all phases go down and phase failure alarms must be dedicated to voltage transformer monitoring, the risk of a large Trading Dispute similar to **Trading Dispute DA1110** from occurring in the future, will be lowered.

Proposed redlining

The CP proposes to update CoPs 1 and 2. Please see Attachments A and B for the proposed redlining.

4 Impacts and Costs

BSC Party & Party Agent impacts and costs

Participant impacts

BSC Party & Party Agent Impacts	
BSC Party/Party Agent	Impact
Meter Operator Agents	Programming new Meters with unconditional phase failure monitoring, using integral Outstations or separate Outstations which have the facility to record phase failures.

Participant costs

Three consultation respondents noted no cost incurred as a result of the change.

Central impacts and costs

Central impacts

Central Impacts	
Document Impacts	System Impacts
CoP1 'The metering of circuits with a rated capacity exceeding 100MVA for Settlement purposes'	None
CoP2 'The metering of circuits with a rated capacity not exceeding 100MVA for Settlement purposes'	

Impact on BSC Settlement Risks

Impact on BSC Settlement Risks
Elexon anticipates an impact on Risk 020 'CVA Metering Equipment is installed, programmed or maintained incorrectly including where Commissioning is performed incorrectly or not at all'.

Central costs

The central implementation costs for this CP will be less than £1,000 to implement the relevant document changes.

5 Implementation Approach

Recommended Implementation Date

CP1550 is recommended for implementation on 30 June 2022 as part of the standard June 2022 BSC Release.

6 Initial Committee Views

ISG's initial views

CP1550 was presented to the ISG committee on Tuesday 5 October 2021, with comments and views from two members.

One ISG member asked if the impacted CoP documents (CoPs1 and 2) will make it clear to the CDCA that they are to report the phase failure alarms from CVA Metering Systems to the relevant Registrants and MOAs, when they receive them. Elexon noted this comment and confirmed that the process to report faults raised from alarm flags on data are already part of the process in BSCP06 'CVA Meter Operations for Metering Systems Registered in CMRS'.

Another ISG member commented that Elexon should consider what voltage level will be accepted as a valid failure alarm report as a fuse failure would not necessarily result in zero volts being present at the Meter. Elexon noted this comment and confirmed that some redlining will be done to clarify that a phase failure is any drop in voltage from nominal level and does not have to be to zero volts.

There were no further comments and the committee were comfortable with the proposed progression plan, providing no additional questions to include in the consultation.

7 Industry Views

This section summarises the responses received to the CP Consultation. You can find the full responses in Attachment C.

Summary of CP1550 CP Consultation Responses				
Question	Yes	No	Neutral/ No Comment	Other
Do you agree with the CP1550 proposed solution?	3	0	0	0
Do you agree that the draft redlining delivers the intent of CP1550?	2	1	0	0
Will CP1550 impact your organisation?	1	2	0	0
Will your organisation incur any costs in implementing CP1550?	0	3	0	0
Do you agree with the proposed implementation approach for CP1550?	3	0	0	0
Do you have any further comments on CP1550?	1	2	0	0

Consultation Overview

We received three responses to CP1550, two from Supplier Agents and one from a Trade Body. All respondents were in favour of progressing CP1550 and agreed with the proposed solution, with one Supplier Agent noting a low impact to their organisation.

Comments on the proposed redlining

One Supplier Agent disagreed with the proposed draft redlining, noting a slight change to the wording of the solution might be required to better deliver the intention. The respondent argued that the proposed solution will only suit Meters with an auxiliary supply (i.e. most CoP 1 and 2 meters). However, when a Meter has no auxiliary supply and the voltage on all phases fail, the meter will only flag a power outage, making the Meter non-compliant with proposed requirements as drafted in the redlining.

Elexon agreed with the respondent's view and noted that a footnote will be added to clarify the expectation if all phases are lost.

An email which included our proposed footnote was sent to the respondent, to which they acknowledge and confirmed that their concerns were addressed by the proposed footnote.

8 Recommendations

We invite the **ISG** to:

- **AGREE** the amendments to the proposed redlining for CoPs 1 and 2 for CP1550 made following the CP Consultation;
- **APPROVE** the proposed changes to CoPs 1 and 2 for CP1550; and
- **APPROVE** CP1550 for implementation on 30 June 2022 as part of the standard June 2022 BSC Release.

Appendix 1: Glossary & References

Acronyms

Acronyms used in this document are listed in the table below.

Acronyms	
Acronym	Definition
BS	British Standard
BSC	Balancing and Settlement Code
BSCCo	Balancing and Settlement Code Company
CoP	Code of Practice
CP	Change Proposal
CPC	Change Proposal Circulars
ISG	Imbalance Settlement Group
VT	Voltage Transformer

External links

A summary of all hyperlinks used in this document are listed in the table below.

All external documents and URL links listed are correct as of the date of this document.

External Links		
Page(s)	Description	URL
2, 3, 7	CoP1 'The metering of circuits with a rated capacity exceeding 100MVA for Settlement purposes'	https://www.elexon.co.uk/bsc-and-codes/bsc-related-documents/codes-of-practice/
2, 3, 7	CoP2 'The metering of circuits with a rated capacity not exceeding 100MVA for Settlement purposes'	https://www.elexon.co.uk/csd/code-of-practice-2-the-metering-of-circuits-with-a-rated-capacity-not-exceeding-100-mva-for-settlement-purposes/
4	Issue 93 'Review of the BSC metering Codes of Practice'	https://www.elexon.co.uk/smg-issue/issue-93/
5	Trading Dispute, DA1110	https://www.elexon.co.uk/documents/operations-settlement/trading-disputes-decisions/register-of-determinations/
8	ISG committee	https://www.elexon.co.uk/group/imbalance-settlement-group-isg/
8	BSCP06 'CVA Meter Operations for Metering Systems Registered in CMRS'.	https://www.elexon.co.uk/csd/bscp06-cva-meter-operations-for-metering-systems-registered-in-cmrs/