

Change Proposal – F40/01

CP No: 1051

Version No: 2.0

Title: Review of Metering Code of Practice 2: Code of Practice for the Metering of Circuits with a rated Capacity not exceeding 100 MVA for settlement purposes

Description of Problem/Issue

Version 1.0 of this CP was raised on 26 March 2004 by Scottish Power which requested a review of Code of Practice 2 (CoP2) (v1.05) on the grounds that CoP2 was out of date and not consistent with industry practice and advancements in metering technology. It was subsequently determined that the rationale for such a review equally applied to Metering Equipment conforming to Code of Practice 1 (CoP1) (v1.00). Industry support for a review was received and ELEXON conducted a series of four meetings with a number of industry metering experts with representatives for Ofgem, Meter Operators and the Association of Meter Operators, Meter Manufacturers, Suppliers, NGT and ELEXON.

The group considered the issues relating to CoPs 1 and 2 over the course of the four meetings and the recommendations of the group are provided in this version 2.0 of CP 1051.

Proposed Solution(s)

The detailed changes recommended by the expert group may be found in the attachments to this CP. However, the following list provides a high-level summary. These recommended changes are also applicable to CoP1 unless otherwise stated:

- The group considered the use of summation CTs and concluded (largely based on previous work conducted by the Metering and Data Collection sub-Committee) that summation CTs represent an additional error that in most instances cannot be maintained within the requirements for overall accuracy of the CoPs. Further consideration was given to the use of interposing CT which were considered suitable for use in Settlement;
- Four-Quadrant Metering is to be a requirement. This is currently a function of most electronic Metering Equipment; however, the current option to only enable applicable quadrants has resulted in a number of instances where energy has been unrecorded. The group considered this to be a significant Settlement safeguard (currently applicable to CoP1);
- The group gave consideration to the use of Meter passwords and concluded that due to the volume of energy that Metering System Outstations store and therefore the inherent risk, it was necessary to include this functionality. Meters with integral Outstations will require four levels of passwords as currently required for SVA Metering Systems, whilst separate Outstations will require the use of a single password;
- Dedicated measurement transformers shall be provided for main Meters. Whilst check Meters may be connected to these, non-Settlement burdens may not. This was to ensure that non-Settlement burdens would not affect the metering of the circuit;
- For accuracy and transparency, the actual CT/VT ratios are to be used and displayed;
- Mandatory displays are to be specified so as to ensure Settlement functionality. Further display capabilities are recommended for SVA Metering Equipment;
- References to reverse-running are to be removed given that Four-Quadrant metering is proposed;

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- The group gave consideration to the requirements for the provision of metering data for the purposes of energy management for example, and concluded that modern metering is capable of communications beyond simple output pulsing. Output pulsing should continue to be specified where used but not mandatory as a method;
- Integration Periods are to be specified as being 30 minutes duration with one demand period per hour ending on the hour;
- It was recognised that Meters with integral Outstations have the facility to identify Settlement Periods where a phase imbalance has occurred. Change is recommended to utilise this functionality.
- Clarification is to be provided that Metering Equipment should meet the requirements of BSCP601 'Metering Protocol Approval and Compliance Testing';
- The lower limit (and therefore the upper limit for CoP3) is to be raised to 30 MVA Circuit Capacity (not applicable to CoP1). The group determined that there is little material difference between Metering Systems operating on circuits rated at CoP3, and those operating between 10MVA and 30MVA where the costs of CoP2 Metering Equipment are significant;
- It was decided that clarification to the term Material Change should be provided within CoPs 1 and 2. The current definition is provided in the BSC and in some instances is open to interpretation. The definition relates to changes to:
 - Switchgear containing measurement transformers; and/or
 - The primary plant associated with the Metering System i.e. measurement transformers;

Where a Metering Dispensation applies, for reasons that the Actual Metering Point (AMP) is not at the Defined Metering Point (DMP), a Material Change affecting the DMP may not affect the Metering Equipment at the AMP. This is to reflect the view that a change to primary plant at the DMP may not impact the Metering Equipment;

- Outstations are to have an auxiliary supply input which is supplied separate from the measurement circuits, for purposes of interrogation in situations where the main circuit may be lost;
- References to 'Central Despatch' are to be removed, as this system no longer exists (not applicable to CoP1);
- For consistency, power-of-10 prefixes should be 'mega', not 'kilo'. This applies to Active and Reactive energy measurements (not applicable to CoP1);
- All measurement transformers should be of a wound construction, as other types of measurement transformer (e.g. optical) are yet to be proven suitable for long term use in Settlements;
- Meters are required to be of a specific accuracy at low loads only if operating at those loads. This requirement is to be removed, ensuring that Meters are accurate across their ranges regardless of prevailing operating conditions;
- A new appendix is to be added providing guidance for the use of multi-core cables;

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<ul style="list-style-type: none"> • Clarification is to be provided regarding the use of fusing and isolation. This is to incorporate example diagrams and include circular CEO00438 with minor modifications for high voltage metering; • For clarity, amendments are to be made to the References to state which requirements should be enforced; • Separate Outstations storing data from a number of different circuits may be cascaded on to one communication line, as is currently enacted. Requirements for data storage for integral Outstations will be described. It is proposed that data is not required to be duplicated across the main and check integral Outstations, as this is expensive and unnecessary; and • It was proposed that guidance be given on ensuring that Metering Systems operate within specified ranges of accuracy, to ensure accuracy of metering. For Metering Systems that represent low burdens on measurement transformers, consideration should be given as to whether that operating burden is within the operating range of the measurement transformers. In such cases, it may be necessary to add additional burden. 	
<p>Justification for Change</p> <p>The original CoP2 was implemented as part of the “1998 Programme” and has not kept pace with metering technology, resulting in the operational version being out of date and no longer fit for use. CoP1 was deemed to be similar enough to CoP2 to warrant its being reviewed at the same time.</p>	
<p>Configurable Items Potentially Affected by Proposed Solution(s) <i>(optional by Originator)</i></p> <p><i>Codes of Practice 1 and 2</i></p>	
<p>Impact on Core Industry Documents <i>(optional by originator)</i></p> <p><i>None</i></p>	
<p>Related Changes and/or Projects <i>(mandatory by BSSCo)</i></p> <p><i>None</i></p>	
<p>Requested Implementation Date</p> <p>The next suitable opportune release after a decision has been reached – as proposed by the established Working Group.</p> <p>Reason:</p> <p>The most appropriate implementation date can only be reached following completion of the relevant reviews and “due process”.</p>	

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Agreed Release/Implementation Date (mandatory by BSCCo)	
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Attachments: Y (No. of Pages attached: 20)	