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| <b>Change Proposal – BSCP40/02</b>  | <b>CP No:1519</b><br><i>Version No: 1.0</i> |
| <b>Title (mandatory by originator)</b><br>Treatment of Low Capacity Connections for Site Specific Line Loss Factor Calculations   |   |
| <b>Description of Problem/Issue (mandatory by originator)</b><br><br><p>Line Loss Factors (LLFs) are calculated and applied to Metered Volumes to account for distribution losses. LLFs are calculated on an individual basis for sites connected at Extra High Voltage (EHV<sup>1</sup>) and on a generic basis for all other connections.</p> <p>There are an increasing number of EHV Sites with a ‘main’ connection and a subordinate small-scale connection. The subordinate connection is often 1 MVA or less and the majority are ancillary import connections for Generating Plant and Apparatus e.g. to power aircraft avoidance lights on wind turbines when the turbine is not Generating its own power. Subordinate connections have low maximum demand and consumption and, if they were single connections in their own right, would be connected at lower voltage levels with generic LLFs.</p> <p>Power-flow modelling is used when performing variable losses calculations where maximum demand values are key parameters. Low maximum demand can produce low signal-to-noise ratios during power-flow modelling, which can distort resulting LLF values, increasing their volatility. This adds the risk of misrepresenting the losses calculation accuracy and increasing loss value volatility as an issue with the losses applied to the subordinate requirement.</p> <p>In addition to low maximum demand, subordinate connections often have low (kWh) volumes, so associated losses have negligible material significance compared to the energy volumes for the main connection. Due to the potential for distortion in the LLF values, and subordinate connections having comparatively low overall losses, the use of site-specific calculations for subordinate connections would not provide any obvious benefits.</p> |   |
| <b>Proposed Solution (mandatory by originator)</b><br><br><p>Apply generic losses appropriate to the voltage of connection to sites with a capacity less than 1 MVA. There are already voltage boundary limits to qualify as EHV; this could be extended to applying a capacity boundary (e.g. low capacity sites less than 415V) as a proxy for determining subordinate connections. This would formalise a default replacement process for low consumption sites within principle 17 of the LLF calculation principles.</p>   |   |
| <b>Justification for Change (mandatory by originator)</b><br><br><p>This would address situations where low energy volumes and maximum demands potentially result in LLFs that do not reflect the appropriate losses and where assigning generic LLF values would provide greater consistency and transparency. Subordinate connections tend to have LLF fluctuations that do not have large material impact in absolute terms when compared to the losses for the main Plant and Apparatus e.g. where the main site is a large Power Station. The use of Generic LLF values would reduce signal-to-noise volatility and are likely to be as reflective as site-specific LLFs.</p>  |   |

<sup>1</sup> BSCP128 requires each LDSO to define EHV for the purpose of calculation of LLF in the LDSO’s approved LLF methodology. In most methodology statements EHV is defined as a nominal voltage of 22,000 volts or above.

Creating a threshold of 1 MVA would improve consistency and transparency while reducing operating costs.

**To which section of the Code does the CP relate, and does the CP facilitate the current provisions of the Code?** (mandatory by originator)

BSC Section K – ‘[Classification and Registration of Metering Systems and BM Units](#)’

**Estimated Implementation Costs** (mandatory by BSCCo)

£600

**BSC Configurable Items Affected by Proposed Solution(s)** (mandatory by originator)

BSCP128 – ‘[Production, Submission, Audit and Approval of Line Loss Factors](#)’

BSCP128 Appendix 1 – ‘[Methodology Self Assessment Document \(MSAD\) for Host LDSOs and Embedded LDSOs that do not Mirror](#)’

BSCP128 Appendix 3 – ‘[Calculation Self Assessment Document \(CSAD\) for Host LDSOs and Embedded LDSOs that do not Mirror](#)’

BSCP128 Appendix 10 – ‘[Calculation Self-Assessment Document \(CSAD\) for mid-year LLF submissions](#)’

**Impact on Core Industry Documents or System Operator-Transmission Owner Code** (mandatory by originator)

Nil

**Related Changes and/or BSC Releases** (mandatory by BSCCo)

Nil

**Requested Implementation Date** (mandatory by originator)

Date: 27 February 2020 (February 2020 BSC Release)

**Reason:** This will ensure new arrangements are in place ahead of Settlement year 2020/21

**Version History** (mandatory by BSCCo): 0.1

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| Attachments: No                      (If Yes, No. of Pages attached: .....)<br>(delete as appropriate) |
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