Balancing and Settlement Code

Code Subsidiary Document

Limit on SVA Connection for SMRS Registered Primary BM Units where Plant and/or Apparatus is Registered in another (CVA) Primary BM Unit

Version 0.1

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AMENDMENT HISTORY

Version	Implementation Date	Description of Change	Mods/ Panel/ Committee Refs
0.1		Draft for industry review	
1.0	27 June 2019	Approved for implementation by the BSC Panel	[TBC Following approval]

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1 LIMIT

The limit on the Supplier Volume Allocation (SVA) Connection voltage for Supplier Meter Registration Service (SMRS) Registered Primary BM Units where the Plant and/or Apparatus is registered in another Central Volume Allocation (CVA) Primary BM Unit in accordance with the BSC Section K3.1.3A(b), until subsequently changed shall be:

415V

2 BACKGROUND

BSC Section K 'Classification and Registration of Metering Systems and BM Units' paragraph 3.1.3A states that Plant and/or Apparatus in a Primary Balancing Mechanism (BM) Unit, whose Exports and/or Imports are measured by a CVA Metering System, may also be in another Primary BM Unit registered in the SMRS. A different BSC Party from the BSC Party registering the CVA Metering System may register the SMRS Metering System.

There are caveats that must be met before this is allowed. The most relevant to this document is that 'the SVA connection is equal to or less than the limit determined by the BSC Panel (the Panel) from time to time'[1].

This requirement was introduced as part of BSC Modification P364 'Clarifying requirements for registering and maintaining BM Units'. During the development of the P364 solution, the Workgroup identified that that the BSC should cater for 'auxiliary Supply' or 'backup Supply'[2] within a Standard Primary BM Unit. Two examples of what could constitute 'auxiliary Supply' are:

- A Power Station will have its own internal electricity consumption e.g. to energise equipment in the control room. This is normally powered by the Power Station itself however, could be used at times where the Power Station itself is not producing power and the normal connection is open and the control room equipment still needs to be energised; and

- An onshore wind turbine's hazard warning light is normally powered by the turbine Power Park Module itself but, if the Power Park Module is not operating and the normal connection is open; an auxiliary Supply is required to keep the light on.

The auxiliary Supply need only be low voltage and, as such, would have a different Boundary Point possibly on a different System to the normal Import and/or Export associated with the Primary BM Unit. Typically, the main connection would be to the Transmission System and the auxiliary Supply connected to the Distribution System. Alternatively, the main connection would be to a Distribution System and the auxiliary Supply connected to a separate lower voltage cable on the Distribution System.

[1] The other caveats are:
- there is no Export through the SVA Metering System;
- instantaneous through flow of electricity between the SVA and CVA Metering Systems is not possible; and
- instantaneous through flow of electricity between the Transmission System and the Distribution System or between two different Distribution Systems is not possible.

[2] 'auxiliary Supply' and 'back-up Supply' are used alternately as colloquialisms but are taken to be the same thing in this context

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3 JUSTIFICATION FOR CURRENT LEVEL

The P364 Workgroup's key points for consideration were potential gaming (e.g. taking imports through the SVA Meter if cheaper than CVA Meter, then exporting through the CVA Meter in the context of storage) and ensuring controllability of Primary BM Units by the registrant and National Grid ESO. Because of these reasons, it was agreed to set a limit for 'auxiliary Supply'.

The P364 Workgroup noted that of the seven auxiliary Supplies already registered, six are 400V and only one is 415V. If that single 415V auxiliary Supply didn't exist, then the precedent would have been 400V, not 415V. None of the Workgroup members were aware of any auxiliary Supplies above 415V. However, they recognised that this may change in time. In order to future proof the BSC and avoid minor changes to the Code in the future through BSC Modifications, it was suggested that the limit should initially be set to 415V, but the Panel given authority to change this from time to time if required. The Workgroup recommended that the Panel delegates its responsibility of the limit and this document to the ISG.

As well as being based on precedence of existing auxiliary Supplies already registered, this aligns with current engineering standards. Historically the UK operated at 240V while the rest of Europe operated at 220V. However, there is now a standardised voltage across Europe of 230V with a ±10V operational error allowed. This means the UK continued to operate at 240V and the rest of Europe at 220V, but notionally we are standardised at 230V with allowed operational error.

240V is the Root Mean Square (RMS) of the voltage between a single phase and earth. If, instead of taking a single phase to a house and putting it to earth you take two phases, and use the voltage between them, the RMS voltage between the two phases is 240 x $\sqrt{3}$ = 415V. If you take the official legal voltage of 230V rather than the 240V, then you get 230 x $\sqrt{3}$ = 400V.

4 PROCESS FOR AMENDING THE LIMIT

For the purposes of BSC Procedure BSCP40 (Change Management) this document is a Category 3 BSC Configurable item, meaning that it is not subject to the Modification Procedures in Section F 'Modification Procedures' of the BSC, or the Change Proposal process described in BSCP40. The Panel has agreed the following process for amendments to this document:

- It is the Panel, or its delegated authority's, decision whether to review or change the limit, but BSCCo, BSC Parties or the NETSO can request them to do so[3];
- Any change to the limit must not make BSC Parties meeting the previous limit non-compliant with the BSC;
- The Panel, or its delegated authority, may request assistance from the BSCCo e.g. in analysing whether a change is needed;
- The Panel, or its delegated authority, can agree a change to the limit based on recommendations by the BSCCo or the NETSO. It does not need to consult with BSC Parties to introduce a change but may choose to do so; and

[3] The Modification Secretary will advise on the most appropriate means of requesting such review or change

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