ELEXON

Metering Dispensations D/537 – Grain Synchronous Compensation Units

Imbalance Settlement Group (ISG)

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Summary

Uniper UK (Uniper) has applied for a lifetime Metering Dispensation (D/537) from Code of Practice (CoP) 1. Uniper is installing two Synchronous Compensation Units (SCUs) on the site of the former Grain oil fired Power Station. A Metering Dispensation is required due to the two Actual Metering Points (AMP) being remote from the Defined Metering Point (DMP). The SCUs will be connected to the National Grid Electricity Transmission's 400kV sub-station via a common connection, using an existing bay. The applicant proposes to remotely meter each SCU to CoP1 standards and not compensate the Meters for the electrical losses, between the AMPs and the DMP, as they are not material. We invite the ISG to approve Metering Dispensation D/537 on a lifetime basis.

1. BSC requirements

1.1 Section L[1] of the Balancing and Settlement Code (BSC) requires all Metering Equipment to either:

- comply with the requirements set out in the relevant Code of Practice (CoP) at the time the Metering System is first registered for Settlement under the BSC (L3.2.2); or
- Be the subject of, and comply with, a Metering Dispensation (L3.4).

1.2 Section L allows the Registrant of a Metering System to apply for a Metering Dispensation if, for financial or practical reasons, Metering Equipment will not or does not comply with some or all the requirements of a CoP.

1.3 The process for applying for a Metering Dispensation is set out in BSCP32[2].

2. Background to Metering Dispensation D/537

2.1 Uniper UK (Uniper) is installing two Synchronous Compensation Units (SCUs) at the site of the former Grain oil fired Power Station which is located approximately 262m away from the National Grid 400kV sub-station.

2.2 The high voltage (HV) side of each SCU's 400/15kV step-up transformer is connected to an air insulated aluminium busbar. The aluminium busbar is then connected to the National Grid 400kV sub-station via a common connection, using an existing bay (ex. Unit 4). This is the location of the Defined Metering Point (DMP), the point of connection to the Transmission System.

[1] 'Metering'
[2] 'Metering Dispensations'

3. Metering Dispensation D/537 – Grain SCUs

3.1 Uniper has applied for a lifetime Metering Dispensation (D/537) from CoP1[3] (Attachment A). This is for the location of the Metering Equipment related to the Grain SCUs.

3.2 In order to measure the Imports and Exports for each SCU separately, the proposal is to meter each SCU using Metering Equipment located on the circuits from the HV side of their respective step-up transformers, to the aluminium busbar (Attachment B). These are the locations of the Actual Metering Points (AMPs). It is approximately 130m from the AMP of transformer 4B to the DMP, and approximately 80m from the AMP for transformer 4A to the DMP. There is approximately 60m of shared busbar.

3.3 Using the manufacturer's data, the applicant has calculated that the maximum resistance of the busbar as 0.000647Ω, at a maximum busbar length of 130m. The maximum current used by a single SCU machine is 4,226A at its 15kV terminals (manufacturer's data). This equates to a maximum phase current of 166A per phase at the HV (400kV) side of the transformer. Therefore the 'per phase losses' (I^2R) will be in the order of 18 Watts. This is based on one SCU running. The losses would increase to 27 Watts per phase if both SCU machines were running at the same time. The losses wouldn't double if both SCU machines were running as one of the SCU machines wouldn't be running at full capacity. The losses are small and will have no material impact on Settlements. Therefore, the applicant does not intend to compensate the SCU Meters for these losses.

3.4 The cost of creating an additional DMP for one of the SCUs, so that Metering Equipment could be located at the DMP for each SCU, is £250k. The proposed solution costs £60k.

4. MDRG comments

4.1 We circulated the Metering Dispensation application and its attachment to the Metering Dispensation Review Group (MDRG) for comments (Attachments A - B).

4.2 All four MDRG Members responded and stated their support for this Metering Dispensation as the Metering Equipment complies with CoP1 and the unaccounted for losses between the AMP and the DMP are sufficiently small to not affect Settlement.

5. NETSO comments

5.1 We circulated Metering Dispensation application and its attachment to the National Electricity Transmission System Operator (NETSO) for comments (Attachments A - B).

5.2 The NETSO has no concerns with the Metering Dispensation application.

6. Elexon's view

6.1 Elexon supports this lifetime Metering Dispensation application as accuracy will be maintained for each Metering Sub-System, within CoP1 limits at the DMP, without compensation for the losses from the AMPs to the DMP being applied.

7. Recommendation

7.1 We invite the ISG to:

a) **APPROVE** Metering Dispensation D/537 from CoP1, for the location of the Metering Equipment associated with the Grain SCUs, on a lifetime basis.

Attachments

Attachment A – Metering Dispensation application D/537 – Grain SCUs

Attachment B – Single line diagram for Grain SCUs

For more information, please contact:

[3] 'Code of Practice for the metering of circuits with a rated capacity exceeding 100MVA for Settlements purposes'

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