ISG197/04 – METERING DISPENSATION APPLICATION D/476

MEETING NAME	ISG 197
Date of meeting	22/08/2017
Owner/author	Christopher Day
Purpose of paper	Decision
Classification	Public
Summary	EDF Energy is installing a new circuit connection to construct Hinkley Point C Power Station. The circuits for Hinkley Point A and Hinkley Point B are currently fed from the same Station Transformers and are metered on the low voltage side as opposed to the high voltage side of these station transformers. These Metering Systems are currently subject to Metering Dispensations D/362 and D/363 respectively. EDF wish to use the same LV busbar connection for the Hinkley Point C circuit which will similarly, require a Metering Dispensation against CoP2 Appendix A for the Metering System not being located at the Defined Metering Point.

1. BSC Requirements

1.1 Section L 'Metering' 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; or
- Be the subject of, and comply with, a Metering Dispensation.

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

1.3 The process for applying for a Metering Dispensation is set out in BSCP32 'Metering Dispensations.'

1.4 BSCP 32 allows parts or attachments to an application to be treated as confidential. The applicant has asked that the supporting attachments for this application be treated as confidential due to the commercial nature of the information contained in the application.

2. Metering Dispensation D/476

2.1 EDF Energy is installing a new circuit connection to construct Hinkley Point C Power Station. The circuits for Hinkley Point A and Hinkley Point B are currently fed from the same station transformers (1M and 2M) and are metered on the low voltage (LV) side of the connection to EDF's Private Wire Network. These Metering Systems are currently subject to Metering Dispensations D/362 and D/363 respectively. EDF wish to use the same LV busbar connection for the Hinkley Point C circuit which will similarly, require a Metering Dispensation against CoP2 Appendix A for the Metering System not being located at the Defined Metering Point (DMP).

2.2 EDF Energy believes the impact of not installing Settlement Metering Equipment at the DMP is limited to the calculation of losses from the Actual Metering Points of the connected parties (Hinkley Point A and Hinkley Point B).

2.3 The applicant proposes to split the station transformers' no load (iron) losses via a ratio which has been commercially agreed between all Affected parties. This ratio will be 30:5:5 (i.e. 30/40th, 5/40th and 5/40th of the total no load losses) based on the 40 MVA load capacity of each station transformer.

2.4 The applicant proposes that the load (copper) losses will be apportioned dynamically by each party independently based on the load on each feeder. This will be achieved by programming suitable compensation factors into the Settlement Meters so that as the load on each feeder changes, the proportion of load losses attributable to each Metering System varies accordingly[1].

2.5 The applicant will install the more accurate class 0.2s Meters (i.e. main and check), instead of class 0.5 Meters, as required by CoP2, for the Hinkley Point C feeders. This will ensure that measurement transformer losses will not have a material effect on the accuracy of the overall Metering System.

2.6 The applicant is applying for a lifetime Metering Dispensation on the grounds that the construction of Hinkley Point C will take approximately 15 years. Furthermore, the supply will endure past its construction requirement as an independent (from the generation and safety auxiliary systems) supply for future project needs.

2.7 The applicant states that to achieve compliance would cost about £300,000, and would involve re-modelling the existing site design to move the Metering Systems for all 3 Affected parties to the high voltage (HV) side of the Station Transformer (as the existing design prevents Hinkley Point C independently metering on the HV side of the transformer due to the other affected parties' circuits.)

2.8 The application quotes MSIDs 1272210534000 and 1272210534082 in relation to affected party Hinkley Point A. ELEXON queried these MSIDs with the applicant who later confirmed they were irrelevant to the application and should have quoted MSID 7721 under T_HINPA-D.

3. MDRG Comments

3.1 Two out of five MDRG members responded to ELEXONs request for comment on D/476.

3.2 One MDRG member supported the application on the grounds that the applicant has accounted for all the no load losses and providing that different parts of the Transmission System are not inadvertently connected via the station electrical system then there should be no risk to settlement.

[1] Load losses are proportional to the current (I) flowing in the windings, squared, multiplied by the resistance of the transformer windings. The resistance of the windings will remain relatively constant at a constant (operating) temperature and each Metering System will therefore dynamically calculate the amount of load losses (I^2R), from the current it sees, to work out its contribution to the load losses within the windings themselves.

3.3 One MDRG member did not support the application on the grounds that the information provided in the application was poor and resulted in several queries from the MDRG member (detailed in the below points).

3.4 Both MDRG members who provided comments to ELEXON mentioned that the detail within the application and supporting information was poor and hard to follow.

3.5 Both MDRG members queried why effort was not taken to install metering at the DMP when the site layout was re-designed for the station transformers' replacement. ELEXON noted this query but considered it outside the scope of this Metering Dispensation. This Metering Dispensation application concerns the Hinkley Point C circuit and the installation of non-compliant Metering Equipment, whereas the re-design of the site layout would be a decision for all parties connected to the busbar, including National Grid.

3.6 Both MDRG members had queries around the National Grid substation loads connected to the LV side of the station transformers. One MDRG member queried whether the applicant had taken this circuit into account when allocating the ratio for the no-load losses. The applicant confirmed that as the station transformers are owned by Hinkley Point C and not National Grid, the applicant and Affected parties had agreed to split all of the no-load losses between them. The other MDRG member queried whether the National Grid load was metered. The applicant responded that there was no metering on the NG circuit that they were aware of. This would mean that the station transformer load losses caused by the NG substation loads would not be accounted for in Settlement and would therefore be attributed to Transmission System losses.

3.7 Both MDRG members queried whether there were any other independent supplies to the site that could inadvertently connect the site to the local Distribution System or the Transmission System. The applicant confirmed that there are no other separate supplies to the site. Temporary circuits do exist, but these are derived from the same source as the construction supply and are segregated, meaning "back-feed" could not occur.

3.8 The MDRG member who supported the application queried whether the supplies to the existing sites and the proposed new supply were to be initially for construction and then endure as small supplies independent of the generator circuits and auxiliary supplies. ELEXON confirmed this to be the case.

3.9 The MDRG member who supported the application queried the overall accuracy document provided by Kenda, who are providing the compensation value calculations. (Attachment H). The MDRG member noted that the document only provided accuracy calculations based on the class accuracy of the measurement transformers and did not take the transformer losses into account. The MDRG member asked for a more comprehensive document explaining the allocation of the no-load losses and incorporating the compensation values to be programmed into the Meter. ELEXON noted that the Kenda document was intended to demonstrate the Metering System was within the limits of accuracy defined in CoP2 pre-compensation but

agree that this is not clear. ELEXON have requested a more comprehensive explanation of the overall accuracy calculation of the Metering System post-compensation. [2]

3.10 The MDRG member who supported the application queried whether the no load losses would be reviewed as the load of Hinkley Point C decreases. As circuit loads change, the current setup may result in an unfair allocation of no-load losses between BSC parties. ELEXON have noted this concern and raised it with the applicant. ELEXON also note however that this does not constitute a risk to settlement as all no-load losses will still be accounted for in relevant Metering Systems under the 30:5:5 ratio.

3.11 The MDRG member who did not support the application commented on the lateness of the application in relation to the proposed energisation date. The applicant noted that the application was significantly outside of the timescales suggested in BSCP32 and gave the following response:

3.11.1 "Our position is that the postponement decision on building the station had caused a lengthy demobilisation and upon re-mobilisation a new team has picked up the work, including the connection of the construction supply. With the programme to do this now somewhat condensed and our readiness to make the application delayed, we find the need to energise the feed is somewhat in advance of the normal response of the application process."

3.12 The MDRG member who did not support the application queried why the allocation of load losses should be split be a 30:5:5 ratio as load will change over time and so the allocation of losses should be reviewed. ELEXON clarified that the 30:5:5 ratio was only to be applied to the no-load losses. Load losses would be accounted for on each feeder dynamically based on their respective loads.

3.13 The MDRG member who did not support the application queried why the applicant had applied for a lifetime Metering Dispensation for a construction supply. ELEXON noted that construction was estimated to last approximately 15 years and that the supply was intended to endure as an independent supply post-construction. ELEXON deems these to be appropriate reasons for the Metering Dispensation to be applied for on a lifetime basis. ELEXON also notes that should the use of the site change post construction, in such a way that required a material change to the Metering Equipment, then the Dispensation would no longer be valid and an updated application would be prompted.

3.14 The MDRG member who did not support the application queried whether the replacement of the station transformers and subsequent re-design of the site layout constituted a material change, which should have prompted an updated Metering Dispensation application from the other affected parties. ELEXON noted that a Metering Dispensation is granted against the Settlement Metering Equipment which in the case of Hinkley Point A and B supplies has remained unchanged and in situ and so does not believe that updated Metering Dispensations were required. ELEXON also notes that this is outside of the scope of the D/476 Metering Dispensation application as it relates to the Affected parties' Metering Dispensations, not the applicant's.

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[2] ELEXON will review the updated explanation of the overall accuracy calculation and provide feedback to ISG in the meeting.

4. Transmission Company Comments

4.1 The Transmission System noted they have no issues or objections to this application.

5. ELEXON's View

5.1 ELEXON support this application on the grounds that overall accuracy of the Metering System will be maintained within the limits detailed in CoP2 and all transformer losses in relation to this application will be accounted for; (subject to receipt of an updated and satisfactory explanation of the methodology for calculating the compensation values for the power transformer losses).

5.2 ELEXON notes the concerns of the MDRG member who did not support the application, however believes their concerns are more around the quality of the application and not the technical solution. ELEXON does not deem this reason enough to reject the application. ELEXON believes that all the necessary and relevant information was provided by the applicant in order to make a decision on the technical solution of the application.

5.3 ELEXON notes that similar Dispensations have already been granted for Hinkley Point A and Hinkley Point B respectively.

6. Recommendations

6.1 We invite you to:

a) **APPROVE** the site specific Metering Dispensation application (D/476) on a lifetime basis.

Attachments

Attachment A – Metering Dispensation application (D/476)

Attachment B – CT test certificates board A

Attachment C - CT test certificates board B

Attachment D – VT test certificates board 1

Attachment E – VT test certificates board 2

Attachment F – Single Line Diagram Hinkley Point C 275-11kV system (feeder 1)

Attachment G – Single Line Diagram Hinkley Point C 275-11kV system (feeder 2)

Attachment H – Overall accuracy document

Attachment I - Station transformer test certificate.

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