BSCP32/4.1 Application for a Metering Dispensation

Part A – Applicant Details

To: BSCCo	**Date Sent:** 03/11/2022
From: Requesting Applicant Details	
Name of Sender:	
Contact email address	
Contact Tel. No.	Contact Fax. No.
Name of Applicant Company: EDF Energy Nuclear Generation (Registrant BEGL001)	
Address: Barnett Way,	
Barnwood	
Gloucester	
Post Code: GL4 3RS	Our Ref: HEY2U8-2022
Name of Authorised Signatory:	
Authorised Signature:	Password:

Confidentiality:

Does any part of this application form contain confidential information?

Request for Confidentiality YES ***Delete as applicable***

If 'YES', please state the parts of the application form that are considered confidential, including justification below. Information that is considered confidential: Single Line Diagrams and Operational Diagrams attached.
Reasons for requesting confidentiality: Single Line Diagrams are commercially sensitive as they are used for our participation in the Capacity Market. (Attachment 1) Operational Diagrams provided are NGC property and classified confidential.(Attachment 2)

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BSCP32/4.1 Application for a Metering Dispensation (Cont.)

Part B - Affected Party Details

Number of Affected parties___2__[1]
Does this Metering Dispensation affect the metering arrangements for a generator that has applied for/obtained a CFD Agreement? ☐Yes ☒No
If Yes, you must contact the Low Carbon Contracts Company and advise them of your Metering Dispensation application and include them as an Affected Party.
Have you notified all Affected Parties? ☒Yes ☐No

Contact Name at Affected party:	
Contact email address:	
Contact Tel. No.	Contact Tel. No.
Company Name of Affected party: National Grid Electricity System Operator (NGESO)	
Address: Faraday House, Warwick Technology Park, Gallow Hill, Warwick	
Warwick Technology Park	
Gallow Hill	
Warwick	
Post Code: CV34 6DA	

Contact Name at Affected party:	
Contact email address:	
Contact Tel. No:	Contact Tel. No.
Company Name of Affected party: National Grid Electricity Transmission (NGET)	
Address: Faraday House,	
Warwick Technology Park	
Gallows Hill	
Warwick	
Post Code:CV34 6DA	

[1] For more than one Affected party, Part B should be completed for each, using additional copies of Part B as required.

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BSCP32/4.1 Application for a Metering Dispensation (Cont.)

Part C – Reason for Application

If the application is an extension or update for an existing Metering Dispensation, enter existing ref: D/……..

Site Specific

Heysham 2 Power Station (Heysham 2) was constructed in the 1980s and first began generation in 1988. The Metering Equipment was first registered under the Pooling and Settlement Agreement for England and Wales in the 1990s. There are currently two 400kV generator circuit connections (via Gen Tx 7 and Gen Tx 8) and two 132kV station transformer connections (via Stn Tx 7 and Stn Tx 8) - see Attachment 1 & Attachment 2.

For the generator circuits, Active Energy Metering Equipment is installed on the lower voltage side (23kV) of the generator and unit transformers against the Alpha Codes of Practice (1990-1993) and compensated for losses (Generator Transformer only) to the Commercial Interface on the higher voltage side (400kV) – no Metering Dispensation was/is required to do this under Code of Practice (CoP) E. The generator circuit Reactive Energy Metering Equipment is compliant with CoP1 Issue 1 (1993-2006) and were deemed acceptable under paragraph 5.1.3.(i) at the time.

The Reactive Energy Metering Equipment is located on the higher voltage side (400kV) of the generator transformers and the Reactive Energy Meters are fed by capacitive voltage transformers (CVTs).

For the station transformer circuits, Active and Reactive Energy Metering Equipment is installed on the lower voltage side of the 132/11kV station transformers to the Alpha Codes of Practice (CoPE) and are compensated for losses to the 132kV side – again no Metering Dispensation was/is required to do this under CoPE.

Issues began with the Heysham 2 legacy CVT on the 400kV side of Gen Tx 8 in October 2022. The CVT is to class 0.5, not class 0.2 as currently required by CoP1 Issue 3 (30 June 2022 –). Initial investigations by National Grid Electricity Transmission (NGET) discovered a failure of the CVT. Further investigations by EDF led to Unit 8 being disconnected at 00:30 on 6th October 2022.

Since 6th October 2022 there has been no CVT in place to feed the Unit 8 Reactive Energy Meters. EDF have been unable to procure a wire wound class 0.2 VT at short notice (current timescales are approximately a year to procure, manufacture and install (subject to station outage)). However, it has secured a replacement CVT for the Unit 8 Reactive Energy Meters which are located at the NGET substation at Heysham 2.

The replacement CVT is a brand new Trench TCVT 420 supplied from NGET stock and to class 0.5, with a single secondary winding, as is the original CVT.

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During March 2022, due to CVT failure on Unit 7, a replacement CVT was installed and commissioned (Dispensation Ref D/543) and EDF are seeking to use the same model of CVT for the replacement of Unit 8

The intention is to install and commission the replacement CVT during a scheduled outage in early January 2023 and in doing so are seeking a Metering Dispensation with the following mitigating circumstances:-

- EDF is unable to procure a wire wound class 0.2 VT to meet the requirements of CoP1 within reasonable timescales. Whilst the replacement is a class 0.5 CVT, Reactive Energy metering requires ±4% accuracy as per section 4.3.1 of CoP1, which will be met with this proposed replacement CVT.

- The next scheduled outage commences in early January 2023 with a return to service scheduled for mid to late January 2023, any delay in installation of the replacement CVT would require waiting for the next scheduled outage (circa 12 months plus). To plan an outage to specifically carry out these works would be commercially unviable.

- Original factory calibration test certificate for the replacement CVT is provided (Attachment 3). The CVT complies with BS EN/IEC 61869-5[2] and the accuracy limits set out in BS EN/IEC 61869-3[3].

- EDF proposes to carry out periodic testing (every 3-4 years during scheduled planned outages) of the replacement CVT for Unit 8, and the recently replaced CVT on Unit 7 site, to ensure accuracy. If any of these results are outside the accuracy limits of the standard BS EN/IEC 61869-3, we will notify the ISG and seek resolution.

Period of Metering Dispensation required

If temporary, indicate for how long the Metering Dispensation is required.	Lifetime

Provide justified reasoning for the period of Metering Dispensation requested in the box below:

Rationale for duration of Metering Dispensation:

EDF is proposing a lifetime Metering Dispensation for the CVT replacement due the following factors:-

[2] 'Instrument transformers – Part 5: Additional requirements for capacitive voltage transformers'
[3] 'Instrument transformers – Part 3: Additional requirements for inductive voltage transformers'

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Current timescales to procure, manufacture and install a wire wound, class 0.2 VT (subject to station outage), could be up to 18 months. The costs to procure & install are approximately £300k. This would give an estimated installation date of a brand new, wire wound, class 0.2 VT, of 2023/2024. The end of generation date (2028) is subject to change and may be earlier than anticipated. Given the cost and timeframes involved it is not considered be to financially viable to procure a new wire wound VT. The replacement CVT is a like for like of the original installed CVT. Whilst these do not meet the current CoP1 Issue 3 requirements, Reactive Energy metering requires +/-4% accuracy as per section 4.3.1 of CoP1, which EDF believe will be met with this proposed replacement CVT. In addition, we propose to carry out in-situ calibrations on both Unit 7 and Unit 8 CVT's (currently not a requirement) to ensure accuracy limits are as laid out in BS EN/IEC 61869-3.

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Part D1 - Loss Adjustments for Power Transformer and/or Cable/Line Losses

Where loss adjustments are proposed and applied (or are to be applied) to the Metering System or Asset Metering System for power transformer and/or cable/line losses, provide the following information:

Describe how do you propose to correct the Metering System, or Asset Metering System, to account for the losses of this power transformer?

N/A. The CVT is located at the Defined Metering Point in CoP1 Issue 3.

In order to validate the loss adjustments applied (or to be applied) to the Metering System, or Asset Metering System, please provide the following information together with supporting data (e.g. power transformer test certificates):

What are the iron losses for this power transformer?

What are the copper losses for this power transformer?

Are there any other losses that have been taken into account? Yes/No*. If Yes what are they?

Demonstrate how these elements of loss have been used in the corrections to the Metering System.

*Delete as applicable.

Describe how do you propose to correct the Metering System, or Asset Metering System, to account for the losses of the power cable/line?

N/A. The CVT is located at the Defined Metering Point in CoP1 Issue 3.

In order to validate the loss adjustments applied (or to be applied) to the Metering System, or Asset Metering System, please provide the following information together with supporting data (e.g. cable/line manufacturer's data sheet):

What is the type of power cable/line?

What is the length of this power cable/line?

What is the DC resistance of this power cable/line?

What is the impedance of this power cable/line?

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What is the capacitance of this power cable/line?

Are there any other losses that have been taken into account? Yes/No*. If Yes what are they?

Demonstrate how these elements of loss have been used in the corrections to the Metering System, or Asset Metering System.

*Delete as applicable.

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Materiality

Please complete the following:

What is the cost of providing compliant Metering Equipment or Asset Metering Equipment?	What does this cost entail?
£300K	Procurement of a wire wound class 0.2 VT and installation.
What is the cost of the proposed solution?	What does this cost entail?
£100K	Procurement of a capacitive class 0.5 VT and installation.
What is the impact to Settlement of your proposed solution?	Why?
None	Whilst the replacement VT is a class 0.5 CVT, Reactive Energy metering requires ±4% accuracy as per section 4.3.1 (ii) of CoP1, which will be met with this proposed replacement VT.
What is the impact to other Registrants of your proposed solution?	Why?
None	As above

Site Details (for Site Specific Metering Dispensation)

Site Name:	Heysham 2 Power Station
Site Address:	Morecombe, Lancashire, LA3 2XH
MSID(s) / AMSID(s): *Delete as applicable.	6012
Registered in: CMRS / SMRS / AMRS*: *Delete as applicable.	CMRS
For SMRS, please advise of SMRA in space provided.	N/A

Manufacturer Details (for Generic Metering Dispensation)

Manufacturer Name:	N/A
Metering Equipment / Details*:	N/A

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Part D - Technical Details

Code of Practice details

Metering Dispensation against Code of Practice*	CoP1
Issue of Code of Practice*:	Issue 3 (Version 14.0)
If against Code of Practice 11 against which Asset Metering Type	N/A
Capacity of Metering Circuits/Site Maximum Demand (MW/MVA):	Generator Transformer 8 rating 800MVA
(Proposed) Commissioning Date of Metering:	Installation Date - Jan 2023 Date of commissioning - Late January 2023
Accuracy at Defined Metering Point:	CoP1 (Reactive Energy only ±4%)
Accuracy of Proposed Solution (including loss adjustments):	As per CoP1 (Reactive Energy only ±4%)
Outstanding non-compliances on Metering Systems or Asset Metering Systems*: *Delete as applicable	N/A
Deviations from the Code of Practice (reference to appropriate clause):	1) 5.1 - Capacitive VT (not wire wound). 2) 5.1.2 - Class 0.5 to BS EN/IEC 61869-5 (not class 0.2 to BS EN/IEC 61869-3). 3) 5.1.2 - Single secondary winding feeding main/check Reactive Energy Meters (not one secondary winding dedicated to main Meter with check Meter on another secondary winding)

Any Other Technical Information

EDF are providing a brand new like-for-like replacement using a class 0.5 CVT, with a single winding main/check Reactive Energy Meter. Factory calibration test certificates are provided (Attachment 3). EDF proposes to carry out periodic testing of both the replacement CVT on Unit 8 and Unit 7 (CVT replaced Dispensation ref D /543) to ensure accuracy. If any of these results are outside the accuracy limits of the standard 61869-3, we will notify the ISG and seek resolution.

Attachments 1&2 provides a schematic of the system.

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Declaration

We declare that other than as set out above we are in all other respects, in compliance with the requirements of the relevant Code of Practice and the BSC. A schematic is attached to this application for clarification of the metering points involved.

Signature: ..... Date: 03/11/2022

Password:

*D*uly authorised for and on behalf of Applicant Company

Confirmation of Receipt and Reference

BSCCo acknowledges receipt of this document and has assigned the reference number as indicated on the first page.

Signature: M Smith Date: 03 November 2022

Duly authorised for and on behalf of BSCCo

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