BSCP32/4.1 Application for a Metering Dispensation

Part A – Applicant Details

To: BSCCo	**Date Sent:** 02/02/2023
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: Hey1 – Unit 1 & Unit 2
Name of Authorised Signatory: Authorised Signature:	Password:

Confidentiality:

Does any part of this application form contain confidential information?

Request for Confidentiality YES

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. (Appendix 1) Operational Diagrams provided are NGC property and classified confidential.(Appendix 2)

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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: Customer Account Manager	
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	
Gallow 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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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 1 Power Station (Heysham 1) was constructed in the 1970s and first began generation in 1983. 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 1 and Gen Tx 2) - see Appendix 1 Single Line Diagram & Appendix 2 Hey 1 400kV Sub Station Operational Diagram. 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 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). The 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. Following the issues identified with the Heysham 2 legacy CVT on the 400kV side of Gen Units 7 & 8 in October 2022, a further issue was identified with Heysham 1 Units 1 & 2 CVTs. Monitoring is currently in place and the CVTs will be disconnected at the next available opportunity in March 2023, for Unit 1, & July 2023, for Unit 2. The CVTs are to class 0.5, not class 0.2, as currently required by CoP1 Issue 3 (30 June 2022 –). EDF has been unable to procure wire wound class 0.2 VTs at short notice (current timescales are approximately a year to procure, manufacture and install (subject to station outage)). However, it has secured replacement CVTs for the Unit 1 & 2 Reactive Energy Meters, which are located at the NGET substation at Heysham 1. The replacement CVTs are brand new Trench TCVT 420 supplied from NGET stock and to class 0.5, with a single secondary winding, as are the original CVTs. During March 2022 and December 2022, due to CVT failures on Unit 7 & 8 at Heysham 2, replacement CVTs were installed and commissioned (Dispensation Ref D/543 & D/556) and EDF is seeking to use the same model of CVT for the replacement of Unit 1 & 2 at Heysham 1. The intention is to install and commission the replacement CVTs during scheduled outages in late March 2023, for Unit 1, and Mid July 2023, for Unit 2, and in doing so are seeking a Metering Dispensation with the following mitigating circumstances:-	

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- EDF is unable to procure a wire wound class 0.2 VT to meet the requirements of CoP1 within reasonable timescales. Whilst the replacements are class 0.5 CVTs, Reactive Energy metering requires ±5% accuracy as per section 4.3.1 of CoP1, which will be met with the proposed replacement CVTs.

- The next scheduled outage on Unit 1 commences on 19th March 2023 with a return to service scheduled for 1st April 2023 and the Unit 2 scheduled outage commences on 17th July 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 certificates for the replacement CVTs are provided (Attachment 3). The CVTs comply with BS EN/IEC 61869-5[2] and also the accuracy limits set out in BS EN/IEC 61869-3[3].

- EDF proposes to carry out periodic testing (during scheduled planned outages) of the replacement CVT for both Unit 1 & 2 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 replacement CVTs due the following factors:-

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 (per VT). 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 for Heysham 1 is March 2024, this may change and possibly be extended for a further three years (subject to approval) however, given the cost and timeframes involved it is not considered be to financially viable to procure new wire wound VTs.

[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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The replacement CVTs are a like-for-like of the original installed CVTs. Whilst these do not meet the current CoP1 Issue 3 requirements, Reactive Energy metering requires +/-5% accuracy, as per section 4.3.1 of CoP1, which EDF believes will be met with these proposed replacement CVTs.

In addition, EDF proposes to carry out in-situ calibrations on the Unit 1 and 2 CVTs (currently not a requirement) to ensure accuracy limits are met, 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.

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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?
£600k	Procurement of two wire wound class 0.2 VTs and installation.
What is the cost of the proposed solution?	What does this cost entail?
£200k	Procurement of two capacitive class 0.5 VTs and installation.
What is the impact to Settlement of your proposed solution?	Why?
None	Whilst the replacement VTs are class 0.5 CVTs, Reactive Energy metering requires ±5% accuracy as per section 4.3.1 (ii) of CoP1, which will be met with these proposed replacement CVTs.
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 1 Power Station
Site Address:	Heysham, Morecambe, Lancashire, LA3 2XH
MSID(s) / ~~AMSID~~(s):	6010
Registered in: CMRS / ~~SMRS / AMRS~~*:	CMRS
For SMRS, please advise of SMRA in space provided.	N/A

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Manufacturer Details (for Generic Metering Dispensation)

Manufacturer Name:	N/A
Metering Equipment / Asset 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 15.0) updated 17/11/2022 P437
If against Code of Practice 11 against which Asset Metering Type	N/A
Capacity of Metering Circuits/Site Maximum Demand (MW/MVA):	Generator Transformer 1 and 2 ratings - 400MVA each
(Proposed) Commissioning Date of Metering:	Unit 1 CVT installation date – Late March 2023 Date of commissioning – Early April 2023 Unit 2 CVT installation date – Mid July 2023 Date of commissioning – Mid August 2023
Accuracy at Defined Metering Point:	CoP1 (Reactive Energy only ±5%)
Accuracy of Proposed Solution (including loss adjustments):	As per CoP1 (Reactive Energy only ±5%)
Outstanding non-compliances on Metering Systems or Asset Metering Systems*:	N/A
Deviations from the Code of Practice (reference to appropriate clause):	1) 5.1 - Capacitive VTs (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

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EDF is providing brand new like-for-like replacements using class 0.5 CVTs, with a single winding for main and check Reactive Energy Meters. Factory calibration test certificates are provided (Appendix 3). EDF proposes to carry out periodic testing of both the replacement CVTs on Unit 1 & 2 at Heysham 1, to ensure accuracy. If any of these results are outside the accuracy limits of the wire wound VT standard (BS EN/IEC 61869-3), we will notify the ISG and seek resolution.

Appendix 1 & 2 provides schematics of the electrical 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 02/02/2023*

Password:

Duly 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: 3 February 2023*

Duly authorised for and on behalf of BSCCo

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