

TECHNICAL NOTE Virtus SCR Rev1

DATE:	26 March 2025	CONFIDENTIALITY:	Public
SUBJECT:	EPR/BP3945QX/V003 Environmental Permitting Application		
PROJECT:	UK0040654.2960 Virtus LON12	AUTHOR:	Derek Schoehuys
CHECKED:	КР	APPROVED:	Karen Phillipson

VIRTUS LON 12 SCR UPDATE

An application for a permit variation was submitted to the Environment Agency on 05/09/2024 then withdrawn and subsequently re-submitted with the final noise and air quality impact assessment reports on 24/10/2024.

A Duly Making e-mail was received on 22/11/2024 with reference 'EPR/BP3945QX/V003 Environmental Permitting Application is Duly Made CRM:0099087'.

The Facility address is provided as LON4 Data Centre, 14 Liverpool Road, Slough, SL1 4QZ. This address provides the Campus address for the three data centres Virtus LON 3, Virtus LON 4, Virtus LON 10. The application for variation is to include Virtus London 12 (referred to as LON 12) in the Data Centre Campus permit.

At the time of making the application the use of Selective Catalytic Reduction (SCR) hadn't been agreed or finalised and the application submission was made without. SCR installation has since been agreed for the project and a commitment made that SCR will be fitted to all generator sets in LON12.

The following texts have been updated, with amendments shown in red:

The design details have been provided in 'TClarke' Technical Submission Document LON12-AVK-ZZ-GA-TS-X-500108 rev P03 dated 13 March 2025 and key specifications are summarised below.

- Generators: 16 x MTU 20V4000G74F NEA (Singapore ORDE) diesel fuelled. Emissions data sheets and generator information sheets were provided as Appendix D to the application for variation.
- The SCR system is designed to provide a reduction in NOx emissions from 3576mg/Nm³ @ 5% O₂ (see footnote below¹) down to less than 100mg/Nm³ @ 5% O₂ to exceed MCPD requirements. This is a 97% reduction.
- SCR will be available to achieve full emissions reduction within 10 minutes of the engine starting and under at least 40% load, or 330°C continuous exhaust gas temperature.
- Urea injection is controlled by a system which measures NOx, temperature and back pressure before the catalytic reactor, as well as NOx and temperature sensors post-reactor. Data is updated every second during operation.

¹ The emission of 3576 mg/Nm³ is a "not to exceed emission value" provided in the data sheet. The measured data sheet value for 100% load and used for the air quality modelling is 2751 mg/Nm³



- The urea is delivered via electrically operated micro dosing pumps providing precise delivery of the ammonia solution to the solenoid operated injectors. The injectors are specifically designed for this high temperature application and have their own water/glycol cooling circuit with a 7 litre tank with a working capacity of 5 litres.
- A data logger will record 250 hours of operation of pre- and post-SCR NOx values, exhaust gas temperatures, and reactor back pressure, along with urea consumption and daily average values.
- Each generator will have a urea tank of 2000 litres, allowing 48 hours of operation at 65% load and reducing the NOx emission to <100mg/Nm³ @ 5% O₂, based on a dosing rate of 54.21 litres per hour. The design figure however is 85mg/Nm³ @ 5% O₂ equating to approximately 31.9mg/Nm³ @ 15% O₂.

Air Quality Assessment report 70114956-Virtus LON12 - AQA Report v1.0 dated October 2024 submitted with the application for variation is being updated and will be submitted in due course.

Trust this meets with your requirements Kind regards

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