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Case Ref: - PRM-IOP-330

EIN/UK/62/2019/0004

Date 21<sup>st</sup> October 2019

**Contact: Mark Gough  
HM Inspector of Railways**

ORR, 3rd Floor, Mallard House, Kings Pool,  
1-2 Peasholme Green, York.  
YO1 7PX

Dear Jamie

**THE RAILWAYS (INTEROPERABILITY) REGULATIONS 2011, AS AMENDED  
DONCASTER INTERCITY EXPRESS PROGRAMME TRACTION FEED**

Further to your application for authorisation received on the 30<sup>th</sup> September 2019 with Technical File reference:

**NCB\_IC4242\_NoBo-DeBo AR\_3481 Doncaster Intercity Express Programme  
Traction Feed**

Following review of your application, I can confirm that ORR grants authorisation under regulation 4(1)(a) of the Railways (Interoperability) Regulations 2011, as amended. This authorisation is for the placing in service of the Doncaster IEP Traction feed project. The power supply system will deliver power to the East Coast Main line to support scheduled train services and independently provide power to the IEP Doncaster depot. The new power supply system consists of introducing a static frequency convertor traction power supply substation capable of supplying continuous power up to 30.5MW, with a peak capacity of 46.5MW for two seconds.

The normal feeding arrangements will be between the neutral sections at Bawtry TSC and Doncaster feeding station:

ELR	Mileage From	Mileage To	Geographical Area
ECM1	147m 58ch	156m 50Ch	Bawtry TSC to Doncaster feeding station Neutral Sections

The restrictions or limitations of use on the structural subsystem are those contained in the Declaration of Verification 140319-NWR-LET-MPM-000058 dated 27/9/2019 and Declaration of Control of Risk 140319-NWR-LET-MPM-000062 A01Ver 2 dated 18/10/219. The

Eastern Region System Review Panel have endorsed this project and are satisfied that any identified hazards both legacy and residual have been adequately closed and/or transferred to the appropriate body before placing in service in accordance with declaration of control of risk 140319-NWR-LET-MPM-000062 A01Ver 2 dated 18/10/2019. There were no derogations from the TSIs. There were no applicable National Notified Technical Rules.

The project demonstrated compliance with CDM/CSM taking positive steps to improve compliance with Electricity at Work Regulations 1989 Regs 4, 12, 13 and 14.

- The independent feed to the depot enables isolations of the line and the depot to be taken independently.
- Footpath, anti-slip walkway and handrail is being installed in the vicinity of the East Coast Mainline Overhead Line and Depot Equipment structures to improve access conditions.
- Traction distribution equipment has been installed that would facilitate the implementation of remote securing in the future.

The Static Frequency Converter is the first to be installed in the UK. Rather than taking the whole load from a single phase as occurs at a traditional Network Rail feeder station, the SFC can utilise all 3 phases. This has several advantages

- The connection can be made from a 33kV supply reducing connection costs and increasing flexibility of supply
- The load can be balanced over 3 phases reducing interference and ongoing charges
- Two or more systems can be integrated giving greater flexibility such as the removal of neutral sections

### **Restrictions and Conditions**

**Restriction 1** The static frequency convertor is to be operated and locked in 'Island Mode'. The static frequency convertor is the first to operate in the UK and full operational flexibility will not be realised until two or more SFC's are integrated. Other modes can be utilised following a successful assessment by the NoBo and by following Network Rails procedures for entry into service

**Condition 1 Provisions for Maintenance (clause 4.5 Section ref 7.7 and 8.4.8)** The SFC is the first in the country and is subject to a 14 month maintenance contract. During this time maintenance rules, file and plan are to be agreed. This will be agreed by October 2020 following Network Rails Safety Management System V 4.6 and endorsement by the NoBo

The infrastructure subsystem authorised by this letter must be operated and maintained in accordance with Regulation 20.

You should be aware that any future modifications to the authorised subsystem may constitute a further 'renewal' or an 'upgrade' as defined in Regulation 2. If a project entity, in relation to the project, considers that the modification meets either of these definitions they may apply, in accordance with the provisions of Regulation 13, to the Department for Transport (DfT) for a decision on whether a new authorisation will be required. Should DfT decide that an authorisation is not required they must consult with ORR whether authorisation is required on safety grounds.

As the project entity you are responsible for retaining the technical file, keeping it up to date and making it available to the ORR in accordance with Regulations 18 and 19.

If you are not the owner of the authorised subsystem you shall within 60 days, in accordance with Regulation 19(3), transfer the technical file, certificate of verification and verification declaration to the owner of the subsystem and the owner shall then be regarded as the project entity. If the owner, in accordance with Regulation 19(4), disposes of his interest in the authorised subsystem, he shall within 60 days of the disposal transfer the technical file, certificate of verification and verification declaration to the person acquiring that interest and that person shall be regarded as the project entity.

Please note that the person who applied for the authorisation shall send particulars to the owner of the infrastructure to enable the owner of the infrastructure to enter the items on the Register of Infrastructure in accordance with Table 1 Commission Implementing Decision 2011/633/EU. This will include such further information as the registration entity may reasonably require set out in the relevant standard.

The person who applied for the authorisation to place in service may apply to the ORR for a determination of type. You will receive the type authorisation after providing the relevant data to the ORR.

If you are the operator, may I remind you of the need to have adequate arrangements within your Safety Management System to control the risks associated with this renewed infrastructure subsystem.

**This decision letter will be published on ORR's website**

Yours sincerely



Steve Fletcher

**Deputy Director of Engineering & Asset Management**

Copies: Mr Ian Jones, Rail Standards & Safety, DFT, Zone32, 4th Floor, Great Minster House, 76 Marsham Street, London. SW1P 4DR.

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