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To: RSR.Rotherham2.NE@environment-agency.gov.uk

Date: 03/10/2025

Our Ref: EA/NFPP/1447/Y

Your Ref: EPR/NB3230DP/V004

Dear Sir / Madam,

## **Nuclear Fuel Production Plant Permit Variation Application**

**Permit Reference: EPR/NB3230DP/V004**

**Operator: Rolls-Royce Submarines Limited**

**Facility: Nuclear Fuel Production Plant**

This cover letter provides the detail of a request to vary the Nuclear Radioactive Substances Regulations (RSR) permit for the Nuclear Fuel Production Plant (NFPP).

The requested variation covers the following items as explained fully in the subsequent sections:

- a) the disposal outlet for aqueous wastes,
- b) the "operating techniques to protect the environment and optimise the protection of people",
- c) the site plan for the NFPP,
- d) the limit of specified activities, and
- e) the introductory note.

No variation to any other parts, conditions or limits within the permit are requested.

### **Part 1- Introduction of new discharge outlet from DPF**

The NFPP Dreadnought Production Facility (DPF) Wetside will be receiving fuel modules that have undergone testing at the Neptune Reactor Raynesway (NRR); these modules may have become contaminated with very low levels of radioactive contamination from the moderator water. The modules will undergo a first cleaning/rinsing operation in DPF Wetside to remove radioactive contamination. The demineralised water utilised in this first cleaning/rinsing operation will potentially become contaminated with very low levels of radioactivity. This has resulted in the requirement to dispose of radioactive water from DPF Wetside direct to sewer in the same way that the site currently discharges beta emitting radionuclides to sewer under the NRR RSR permit. RRSL is therefore requesting an update to Table 3.2 "Disposals to sewer" under Schedule 3 of the existing permit as follows:

- 1) The inclusion of a disposal outlet of "DPF Wetside direct to sewer" in Table 3.2 of Schedule 3.
- 2) The inclusion of "beta/gamma-emitting radionuclides" with an annual limit of 2 MBq to Table 3.2 of Schedule 3. RRSL are not requesting a change to the annual limit of alpha-emitting radionuclides.

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The options for the disposal of radioactive effluent generated at DPF Wetside were subject to thorough assessment and direct disposal to sewer was determined to be the Best Available Technique.

### **Part 2 – A new discharge route to Sewer**

The Penstock Tank, Fire Water Hold Tank (FWHT), Contact Muster Point and the Embedded Muster Point waste tanks have the potential to contain radioactive contamination in the unlikely event of a radiological incident. The areas are not located on the RRSL NFPP permitted site. The potential for these tanks to contain radioactive effluent has resulted in the requirement to dispose of radioactive water from the FWHT, Contact Muster Point and the Embedded Muster Point direct to sewer. RRSL is requesting an update to Table 3.2 “Disposals to sewer” under Schedule 3 of the existing permit, to include these additional disposal outlets. Such Disposals via these outlets will only take place following an unlikely incident and where monitoring of the water shows that no radioactive contamination is detectable. Where contamination is detected above measurement thresholds, the waste water will be transferred to the Contact Shop Disposal Yard Tank Farm to ensure suitable treatment before disposal.

The variation is requested as:

- 1) The inclusion of a disposal outlet of the “FWHT direct to sewer” in Table 3.2 of Schedule 3. The radioactive effluent will avoid the Contact Shop Disposal Yard Tank Farm.
- 2) The inclusion of a disposal outlet of the “Contact Muster Point” and the “Embedded Muster Point” direct to sewer in Table 3.2 of Schedule 3. The radioactive effluent will avoid the Contact Shop Disposal Yard Tank Farm.

The options for the disposal of radioactive effluent in the FWHT, Contact Muster Point and the Embedded Muster Point were subject to thorough assessment and direct disposal to sewer was determined to be the Best Available Technique.

### **Part 3 – Removal of Named Analytical Instruments from Permit**

RRSL’s arrangements for the use of equipment in the monitoring of radioactive aqueous effluent is documented in our “Register of Techniques for the Analysis of Radioactive Waste Materials at the Raynesway Nuclear Licenced Sites”. RRSL requests that all references to specific, named monitoring equipment in Table S 3.4 are removed and that a statement in section (b) “As detailed in the Register of Techniques” is added in each row. This change is to ensure RRSL has sufficient flexibility to manage the use of suitable monitoring equipment under local governance arrangements without the need for permit variations.

This variation is requested as:

- 1) Removal of specific named equipment listed in Table S 3.4.
- 2) Addition of “As detailed in the Register of Techniques into section (b) of Table S 3.4.

RRSL’s monitoring techniques are listed and substantiated within its current Register of Techniques which is authored, technically reviewed, and approved by those trained in radioactivity monitoring and Radioactive Waste Advisers. Before any changes are made to this document and implemented with regards to RSR permit monitoring techniques, they are discussed and agreed in writing with the Environment Agency.

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**Part 4 – Update to the Scope of Activities**

RRSL would like to request a change to the introductory note and Schedule 1 Table S1.1 of the NFPP RSR Permit which currently states that “*At the Nuclear Fuel Production Plant reactor cores and other components are manufactured for Britian’s nuclear submarine fleet as part of the UK Naval Nuclear Propulsion Programme (NNPP)*”. A change to this wording is required to reflect the extent of the activities RRSL will be supporting such as the AUKUS submarine agreement.

The variation is requested as:

- 1) Update the introductory note to include the following: “*At the Nuclear Fuel Production Plant reactor cores and other components are manufactured for Britian’s nuclear submarine fleet as part of the UK Naval Nuclear Propulsion Programme (NNPP) and other defence-related projects*”.
- 2) Update the limit of specified activity column of Table S1.1 activities, Schedule 1 to read: “*Manufacture of nuclear fuel as part of the UK Naval Nuclear Propulsion Programme (NNPP) and other defence related projects*”.

**Part 5 – Update to the Site Map**

RRSL would like to update Schedule 7 – Site Plan as part of this permit variation application. The updated map is included in the documents to support this application.

To support this application, the following documents are included:

- a) NFPP Permit variation application cover letter (this document)
- b) Form EP-RSR: Application for an environmental permit – Part RSR-A
- c) Form EP-RSR: Application for an environmental permit – Form RSR-C3
- d) Form EP-RSR: Application for an environmental permit – Part RSR-F
- [Redacted]
- [Redacted]
- [Redacted]
- [Redacted]
- h) EDNS9701778281 RRSL Register of Techniques
- i) NFPP site boundary outline

It is hoped that the information provided in the application will be sufficient to facilitate the variation, however, please do not hesitate to get in contact with us if you require anything further.

Yours sincerely,

[Redacted Signature]

[Redacted Name]  
Director – Safety, Security & Licensee Authority  
For Rolls-Royce Submarines Limited