

## **AVDS Transformer Description for Early Tenderer Engagement**

In the near future electrical power supplies from Nuclear Restoration Services' (NRS) Oldbury site's main reactor buildings will be disconnected. This will cut off electrical supplies to the north of the site. At present, it is known that the new Advanced Vacuum Drying System building will require 450A during operation. Extra capacity will be required for surrounding new-builds and existing infrastructure. To ensure new and existing processes can be powered, a new substation comprising an 11kV/415V, 1MVA transformer (including switchboard, civil works, substation enclosure, filters, protection & monitoring devices, all supports, metering, auxiliaries, services, tank/bund and all other necessary accessories) is to be installed. NRS are seeking a tenderer to supply quotations for two options noted below. NRS will then decide on a preference and a contract will be awarded to the preferred tenderer. The two options to be quoted for are the supply, installation and commissioning of:

1. An indoor substation with cast-resin transformer
2. An outdoor hermetically-sealed, Midel-filled transformer

Tenderers shall also quote for installation of Medium Voltage (MV) cabling between the new transformer and the 11kV switchgear located circa. 100m from the existing hardstanding for the substation (see figure 1). It is to be noted that the existing hardstanding does not include trenches. Survey and site visits are expected to be required by the tenderers before the contract is awarded.

Tenderers may also propose alternative substation options if they believe that they may offer a more cost-effective solution. In proposing options, prospective tenderers should note that proposals involving mineral oil insulated transformers with open breathers are unlikely to be acceptable.

Figure 1 shows the layout of the proposed installation. The green line denotes the proposed MV cable route between the 11kV switchgear room and the slab that will locate the new substation. The tenderer will be required to dig cable trenches to accommodate underground MV cabling. There is an active effluent drainage system that the cable route will have to cross. Option for crossing this system should be proposed by the tenderer and discussed with NRS. There are existing ducts and manholes that span the road that can be utilised. The tenderer should include an earthing and lightning protection systems in their quotation. Infrastructure works and any other necessary services/works that need to be considered should also be included in the tenderer's quotation.

This note is a description of the proposed works for early tenderer engagement. It is not to be treated as a technical specification. Some details of the requirements may be subject to change.

