Submarine Dismantling Project - In Dock Installation (IDI) Modules
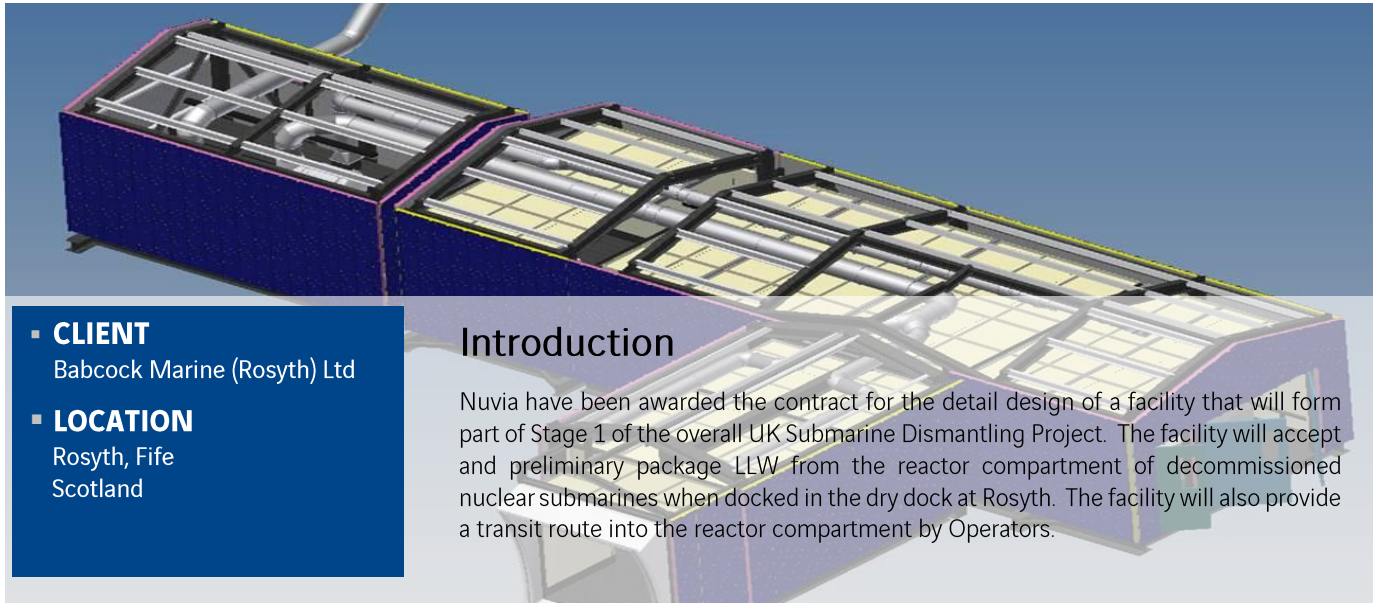

- **CLIENT**
  Babcock Marine (Rosyth) Ltd

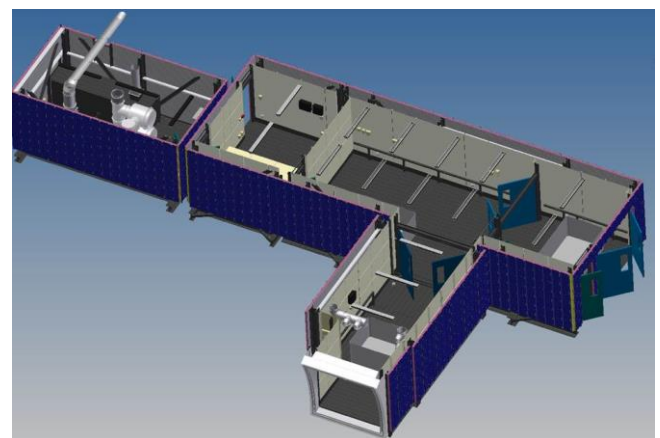- **LOCATION**
  Rosyth, Fife
  Scotland

Introduction

Nuvia have been awarded the contract for the detail design of a facility that will form part of Stage 1 of the overall UK Submarine Dismantling Project. The facility will accept and preliminary package LLW from the reactor compartment of decommissioned nuclear submarines when docked in the dry dock at Rosyth. The facility will also provide a transit route into the reactor compartment by Operators.

This SDP In Dock Installation (IDI) Modules Project (IDI) forms part of the overall UK Submarine Dismantling Programme (SDP) where laid up submarines will be decommissioned and dismantled at Rosyth Dockyard. The agreed strategy for these submarines is for the decommissioning and dismantling to be split in two stages where Stage 1 comprises the docking and removal of Low Level Waste (LLW) primarily from the reactor compartment. Stage 2 will involve removing the reactor pressure vessel and surrounding shield tank. These decommissioning and dismantling works are being carried out by Babcock Marine (Rosyth) Ltd (Babcock) on behalf of the UK MoD (The Authority).

This project forms an integral part of Stage 1 whereby the modules will be mounted on a support structure (outside of the scope of this contract) adjacent to the submarine when docked down in Dock No.2 and will provide total containment and a transit route for removed LLW items through the modules before being transferred to a separate treatment/storage facility elsewhere on the Rosyth site.

A concept design with relative order of magnitude costs has earlier been prepared by Nuvia as part of a previous separate MOD contract and accepted by Babcock and the MoD as forming the basis for the design of this project.

Scope of Work

The project scope includes the detail design, procurement, fabrication, assembly, integrated testing, delivery to site, assembly and commissioning of the modules to the supporting structure. It is intended for the full integrated testing to be carried out off-site to minimize the amount of time required for commissioning at the dockside location.

The fixed-price contract between Babcock and Nuvia Ltd for the IDI works will initially cover the detail design stage only up to the point of acceptance of the design by Babcock. The later stages of; procurement, fabrication, assembly, integrated testing, delivery to site, assembly and commissioning are currently included as a budgetary amount that will be

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reassessed and converted to a fixed-price once the detailed design has been approved and the Babcock 'Authority to proceed with manufacture' has been received.

The IDI will comprise of four separate modules joined together to form a weatherproof outer shell and 'clean' containment internally for handling of the removed LLW. Module 1 will form the interface and bridge with the submarine providing a route for man operator access and plant removal by use of an overhead lifting beam, the module will be mounted on the support structure adjacent to the newly formed aperture in the hull of the reactor compartment (by Babcock) and provide the weatherproof and containment seal with the submarine's pressure hull. Module 2A will adjoin Module 1 and will form the main working area for the preliminary processing of LLW before packaging and transferring to a separate treatment/storage facility elsewhere on the Rosyth site. Module 2B comprises the personnel entry point and boot barrier and adjoins both Modules 2A & 3. Module 3 will adjoin Module 2B and will house the HVAC and utility services for the overall IDI facility. All three modules will be of similar construction and together form a weatherproof totally sealed and contained facility. In between LLW removal campaigns the modules will be separately removed from the in dock support structure and temporarily stored adjacent to the dock awaiting the next campaign.

Challenges

The Project has a very challenging timescale to meet the requirements of the overall UK Submarine Dismantling Programme. The completion of the commissioned facility is planned for end 2016.

Expectations

Right first time philosophy and delivery to Programme

Conclusion

As of May'16 the Detailed Design is approaching completion and negotiations are underway for contractual cover for the next stage of the works

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