

Posting Port

Client: Cavendish Nuclear



Remote Handling

Aims and objectives

Aquila was awarded the contract to design, supply and factory test the Posting Port for the Berkeley Intermediate Level Waste (ILW) Project. The Posting Port is a system that provides a contained environment that allows the reprocessing of packaged waste from the active vaults, prior to being stored in Ductile Cast Iron Containers (DCICs).

Cyclife EDF Group - Subsidiaries



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The client

Cavendish Nuclear offers experience and specialist knowledge across all aspects of the nuclear energy life cycle, from design and build, through operations and maintenance, to decommission, waste management and remediation.

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Project overview

As part of the Berkeley Intermediate Level Waste (ILW) Project there was a requirement to recover and process the entire packaged mobile waste stored within the Berkeley Active Waste Vaults (AWVs) and store this waste in Ductile Cast Iron Containers (DCICs). Amongst the waste streams that are stored in this vault are approximately 1400 sludge canisters containing mixed aqueous sludge and solid waste.

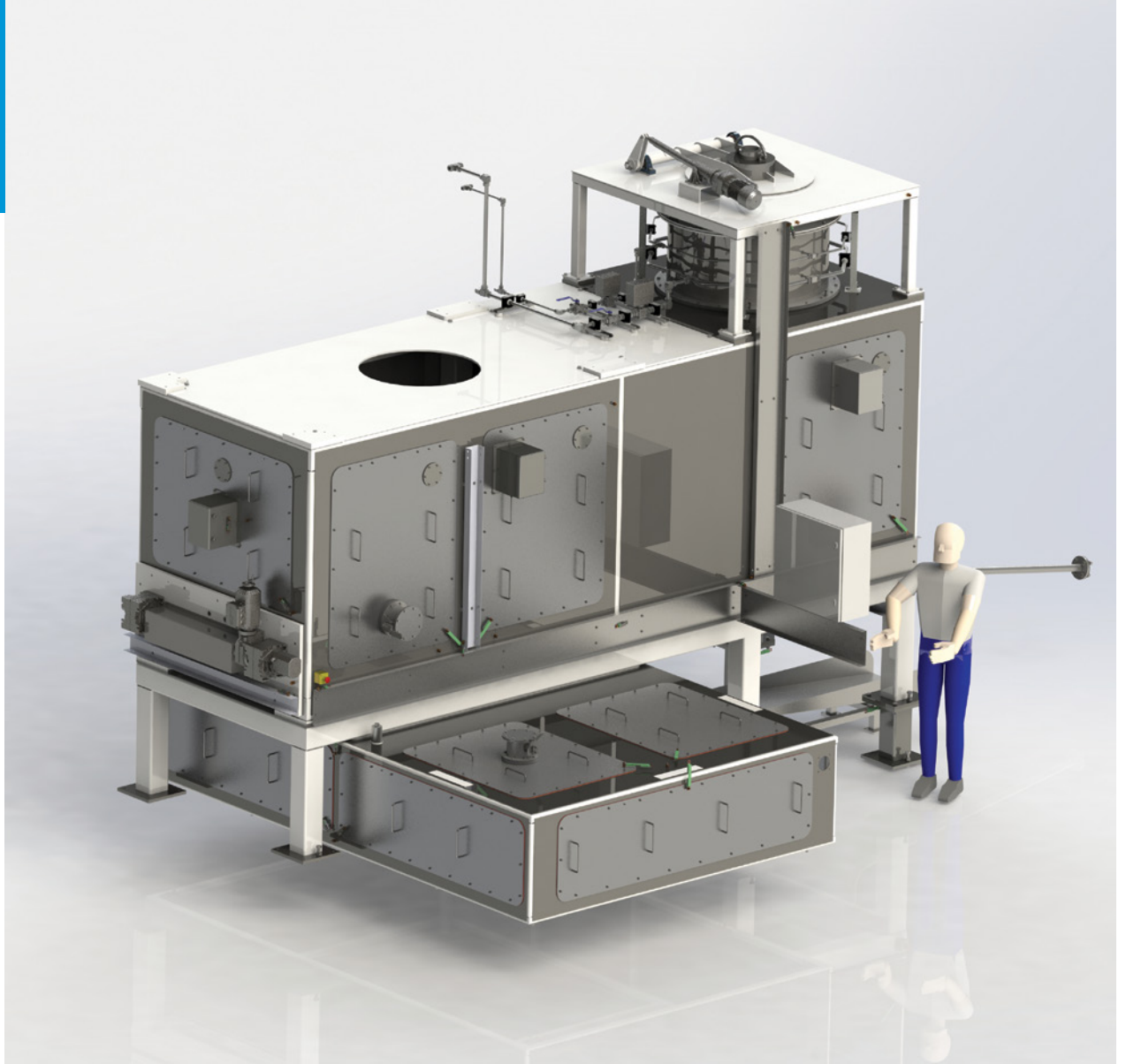
The project involved removal of the sludge cans from the AWV through a posting port before being loaded into the processing skid for sludge removal and processing.

Cavendish Nuclear had completed a concept scheme for the equipment and Aquila developed this into a detailed scheme before producing detailed manufacturing drawings.

The key parts of the equipment included:

- Posting Port containment
- Carriage assembly and transfer system
- Wash out containment

A full suite of operational and functional tests were undertaken during the Factory Acceptance Testing (FAT) at Aquila which confirmed plant operation, culminating in Cavendish Nuclear's acceptance of the plant.



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Equipment Description

The Posting Port is a major assembly in a suite of assemblies which are part of the R4 project. The Posting Port is a system that is designed to provide a containment environment into which the sludge cans are retrieved from the AWWs using a dedicated lifting system and a motive platform used to transfer sludge cans between classified areas.

Posting Port Structure

The Posting Port Structure consists of a 'Base Frame Fabrication' and main 'Posting Port Fabrication' which forms the main body of the Posting Port. The Posting Port houses the carriage assembly, transfer system, wash out assembly and also supports the sludge can lifting system.

Carriage Assembly & Transfer System

The Carriage Assembly houses the assembly for can washing, tray assembly for loading of a second can and waste pipework assemblies. The carriage is mounted onto a bogie which is traversed through the posting port using a Serapid drive system.

Wash Out Assembly

The wash assembly sits on top of the Posting Port fabrication and provides an enclosed area to house the wash nozzles, seal against the Can Bogie and provides a removable lid which is used to retrieve cans for further processing.

Gamma Gate Cover Assembly

The Gamma Gate Cover assembly is a large fabrication which sits around the gamma gate that is currently installed on site. This cover offers a means of sealing and ventilating the Posting Port area and Gamma Gate.

Factory Trials

Aquila carried out extensive functional testing of the equipment as well as factory trials utilising dummy sludge cans filled with simulant sludge. This work included loading and unloading sludge cans and operation of the wash out system.

Electrical Controls & Instrumentation

A dedicated control system was required to allow the Posting Port to be remotely operated. This included manual controls, semi-automated sequences and interlock hold points. A CCTV system was also mounted internally to allow operator viewing of the process.

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Summary

Aquila's design engineers took the concept scheme and developed this into a fully functioning piece of equipment, meeting the client's requirements and specifications prior to being installed on site.

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