Nuclear Decommissioning Authority | Sellafield Ltd | Nuclear Management Partners

Evaporator D

The Modules

Fabrication, Delivery and Installation

Primary Contractor COSTAIN

Marine Access Development

In order to safely deliver the modules by sea to the Sellafield site, a temporary development has been constructed adjacent to the Sellafield rail station.

The development provides a steady incline between the beach and railway level crossing by the construction of a ramp across a section of the Sellafield beach, the cutting of a section from the Ehen Spit, and the erection of a bridge across the River Ehen.

Primary Contractor COSTAIN

Thorp Link Bridge Removal

In addition to the offsite works, significant onsite works have taken place in order to move the modules to the Evaporator D site.

A number of modifications have been required to the Sellafield site infrastructure. The most notable of these is the temporary removal of sections of the Thorp Link Bridge to provide enough height on the road to move the modules. Over 300 panels were removed ranging from 0.9m to 1.8m high and 1.2m wide.

Primary Contractor COSTAIN

Gantry Erection Sequence

Another significant onsite work was the erection of the gantry system.

Installation of the modules requires the gantry system to move them from their transporter into the final resting position within the Evaporator D building.

Gantry erection was undertaken in a number of distinct phases – the four legs being installed using a smaller (200 Te) crane and the latter sections (the beams and housings containing the lifting mechanisms) using a larger 500 Te crane.

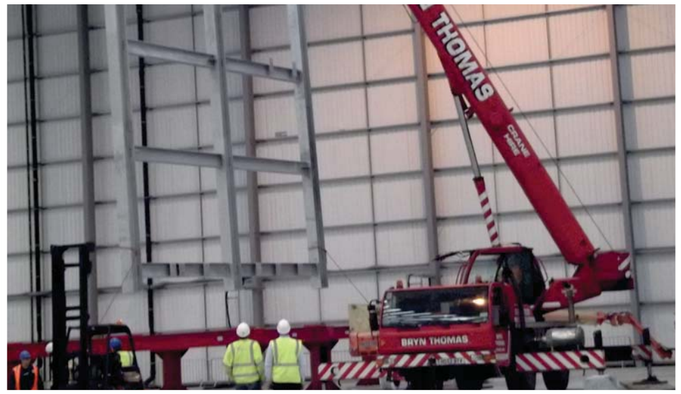
Primary Contractor COSTAIN

Modules Fabrication

The Evaporator D building is made up of 11 primary cells in which will be installed 11 prefabricated modules of varying sizes ranging from 60 to 500 tonnes.

The modules are being assembled at Ellesmere Port, Cheshire. A dedicated indoor facility with a floor space of 230,000 sq ft which is the equivalent of 3 Wembley football pitches. Each module consists of structural steel, stainless steel.

pipework, vessels and other equipment. The modules are built on support stools and loadspreader beams to allow clearance from the ground in order for the self propelled module transporter units (SPMT) to lift the module when completed.

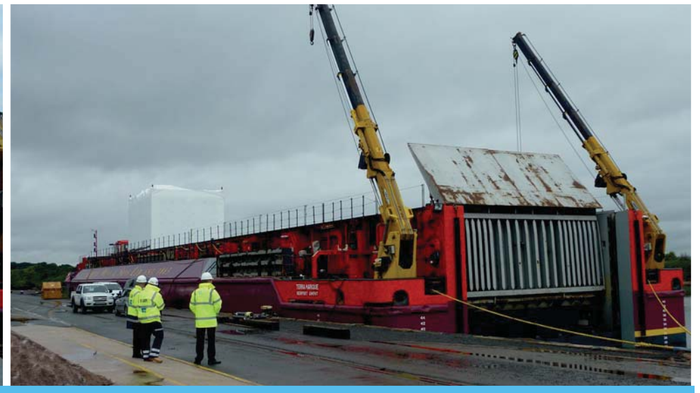


Primary Contractor COSTAIN

Inactive Drains Module Shipment to Barge

Once the first two modules were fabricated and packaged for transport a self propelled modular transporter (SPMT) was driven under the module support system and then driven out of the facility.

The SPMT transported the modules the short distance to the dock at Ellesmere Port and onto the Terra Marique (barge) where they were secured.



Primary Contractor COSTAIN

Low Active Effluent Module Shipment to Barge

The modules were escorted to the dock with the support of the Cheshire Police Constabulary.

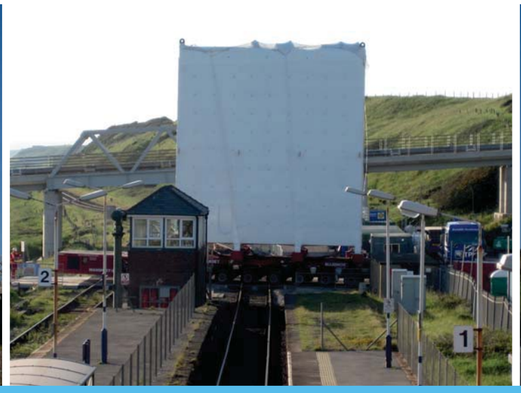
Once the two modules were on the barge they were secured and ready for shipment. Once all checks were completed the barge set sail to the beach adjacent to the Sellafield site.

Primary Contractor COSTAIN

Module Delivery to the Sellafield Site

The two modules were conveyed to the Sellafield beach, off loaded from the barge and driven across a purpose built bridge across the River Ehen and over the Carlisle to Barrow rail line.

The final stage of the module delivery project involved the SPMTs transporting the modules onto site and placed in a purpose built storage area awaiting installation in the Evaporator D building.



Primary Contractor COSTAIN

On-Site Module Movement

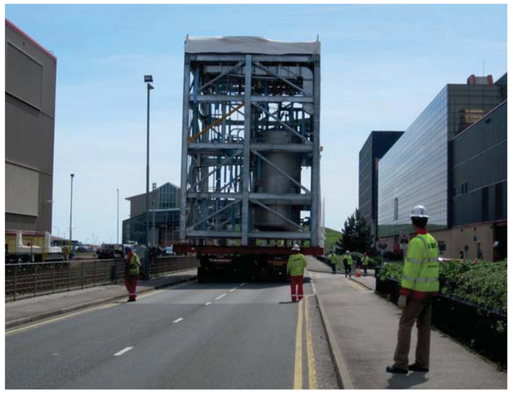
The on-site module delivery project involved the SPMTs transporting the two modules to the Evaporator D building.

The modules delivered were wider than a two carriageway road. That meant that there were a number of modifications made to street furniture such as road signs and rail gates to enable the wide loads to move through the site.

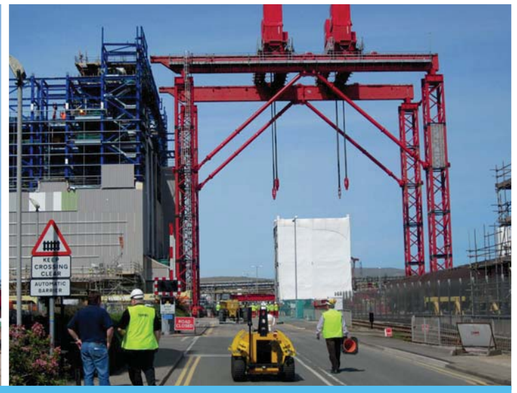










Primary Contractor

Low Active Effluent Module Lift

The first module installation involved lifting the Low Active Effluent module on a lift and skid table assembly and then sliding it into its cell.

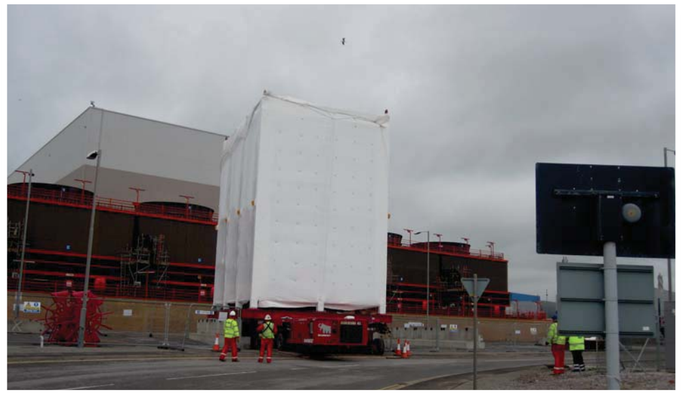
Pre-installed strand jacks were attached to the module and hoisted clear of the skid table, the skid and lift table were removed to allow the module to be lowered to final position.

Primary Contractor

Non Active Drain Module Lift

Heavy lift specialists Mammoet were responsible for design, supply and operation of the equipment including delivery to and installation of the modules within the building.

Clearance between the modules and the cell walls is particularly tight and careful setting out of the equipment was assisted by the site survey team. The operatives observed all manoeuvres closely from vantage points on the lift and skid tables or concrete structure.



Primary Contractor COSTAIN

For project overviews guides, videos, newsletters, progress images and much more go to the internal Evaporator D sharepoint page or www.toobigforroad.com

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