



Temporary Shielded Cell for Cropping Control Rods

Client: ICL Consort Reactor

Aims and objectives

The objective was to design, manufacture and install a temporary, cost effective solution for cropping control rods. The cropped control rods were being loaded into a 3726 Waste Flask used for transportation off site.



Shielded Facilities

Cyclife EDF Group - Subsidiaries



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Client

For almost 50 years, the Imperial College London CONSORT reactor, provided facilities for the University and other educational institutions, in support of teaching and research, in many fields of nuclear science and technology, such as reactor physics, reactor engineering, neutron physics, solid state physics, radiochemistry and activation analysis. The reactor was shut down for the final time in December 2012, in preparation for decommissioning.

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Project overview

Cyclife Aquila was awarded the contract to provide a concept design solution followed by complete turnkey supply, including site installation and commissioning.

- A Hydraulic Cutter with 2 degrees of movement cut the control rods at optimum lengths to be placed into the 3726 flask for transport off-site.

The solution was as follows:

- Lower control rods via shielded tube into steel shielded cell
- The operation uses standard tong manipulators and COTS cameras for viewing
- A 3726 transport flask is presented into the cell with a manual bogie on a lead screw
- For simplicity, a simple lift on/off shield door was employed in place of a hinged door



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Summary

An excellent example of staged optioneering through to full detail design, manufacture, FAT and SAT. The design incorporated Commercially Off The Shelf (COTS) components throughout.



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