



Remotely Operated Cutting Rig

Client: National Nuclear Laboratory (NNL)

Aims and objectives

The Remotely Operated Cutting Rig (ROCR) was required to support operations within one of NNL's several radiation shielded facilities, known as caves.



Remote Handling

Cyclife EDF Group - Subsidiaries



01

The client

The National Nuclear Laboratory (NNL) is a government owned organisation, operating a number of facilities offering research, development and consultancy services, primarily to clients in the nuclear industry. The NNL Windscale Active Handling Facility (AHF) has a range of highly active shielded facilities, known as caves, where nuclear materials can be processed and examined. Typically, each cave has multiple viewing windows and two Master Slave Manipulators (MSMs) per window.

02

Project overview

NNL approached Aquila to design a ROCR required to satisfy the functions specified by the client. The equipment has been delivered in bespoke packaging, in accordance with Aquila's procedure 'Delivery and Project Closedown'. The packaging also provides protection and stability during transit. The ROCR was designed to be imported into the cave via the FET tray.

The equipment will be imported fully assembled and will then require positioning with the cave crane.

The ROCR consists of 5 vertically orientated, modified vices. The vices have been made MSM operable, with jaws suited for receiving the material from which the sample should be cut. The vices are mounted to a linear rail, with each vice fitted with a manual brake.

This arrangement allows for each vice to be individually positioned along the rail, as required. The brake handles are operated by a MSM friendly tool which is mounted to the base plate.

At either end of the linear rail is an end clamp assembly, the purpose of which is to clamp and retain the 3mm thick sample after cutting actions have been completed.

The clamps are MSM friendly and are operated using the same MSM friendly tool used to operate the brake handles.

Each end clamp assembly is mounted to a short travel linear rail. A modified, Commercial Off The Shelf (COTS) toggle clamp is attached to each end clamp assembly and is used to remove the 3mm thick sample from the ROCR using the cave crane.

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03 Summary



A robust and fit for purpose ROCR which satisfies all functions required by the client, and delivered by providing a pragmatic and cost-effective solution.

