NUCLEAR SOLUTIONS

NNL: Multi-Function Rig

National Nuclear Laboratory Ltd, UK

VEOLIA

| The challenge

The client operates a number of facilities offering research, development and consulting services to the nuclear industry.

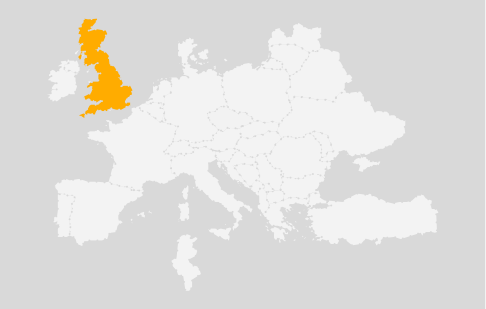
The challenge was to design, build and supply the NNL with a multi-function rig to house and deploy numerous measurement heads to record visual, profile and surface roughness data on highly irradiated materials in a hot cell 'cave' environment which is no man-accessible.

KEY CHALLENGES

- The rig was taken from concept design to final design, build and inactive commissioning at our facilities.
- The rig will be used for a number of years in a highly radioactive environment where precise scientific data will be recorded.
- Our knowledge of remote handling and expertise in specifying and delivering radiation tolerant equipment was key to the successful delivery of this contract.
- Multi-disciplinary project design and build project utilising mechanical, control and electrical engineers.
- Managing of contractors and suppliers.

| Veolia's solution

We carried out concept studies to assess the best design for the test rig to cover the range of tasks required. This included assessing the current systems in place and if improvements could be made.



National Nuclear Laboratory, UK

***Contract Facts*:**

Duration: 2015-2016

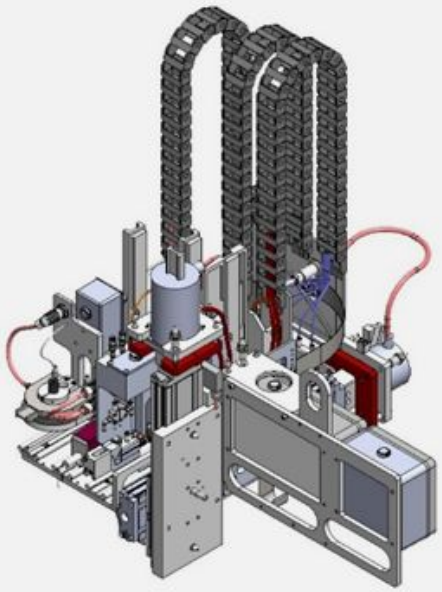
Scope: Design and build

Activity: Decommissioning & Remote Handling

Testing

Installation

Concept to Design and Manufacturing



| The benefits

Ability to examine radioactive samples safely and collect data in a controlled manner without damage to the samples or risk to personnel, including fully remote installation and maintenance.

| System description

The Multi-Function Rig is a piece of in cave equipment for operation in the Windscale laboratories at the Sellafield site. The system is designed for remote installation and assembly, including connection of service cables, within the ‘cave’. The system is operated using through the wall manipulators and controlled remotely from the cave face.

The Multi-Function Rig is designed to inspect two types of sample plates, Type A and Type B. These sample plates can be inspected visually using a Camera Head, inspected for thickness and surface temperature using a Profilometry Head and inspected for surface roughness using a Surface Roughness Head.

The samples can be inspected on both sides and are mounted so that they can be turned from one side to the other or positioned vertically using a through the wall manipulator.

We produced operational manuals and maintenance manuals and lifetime quality records.

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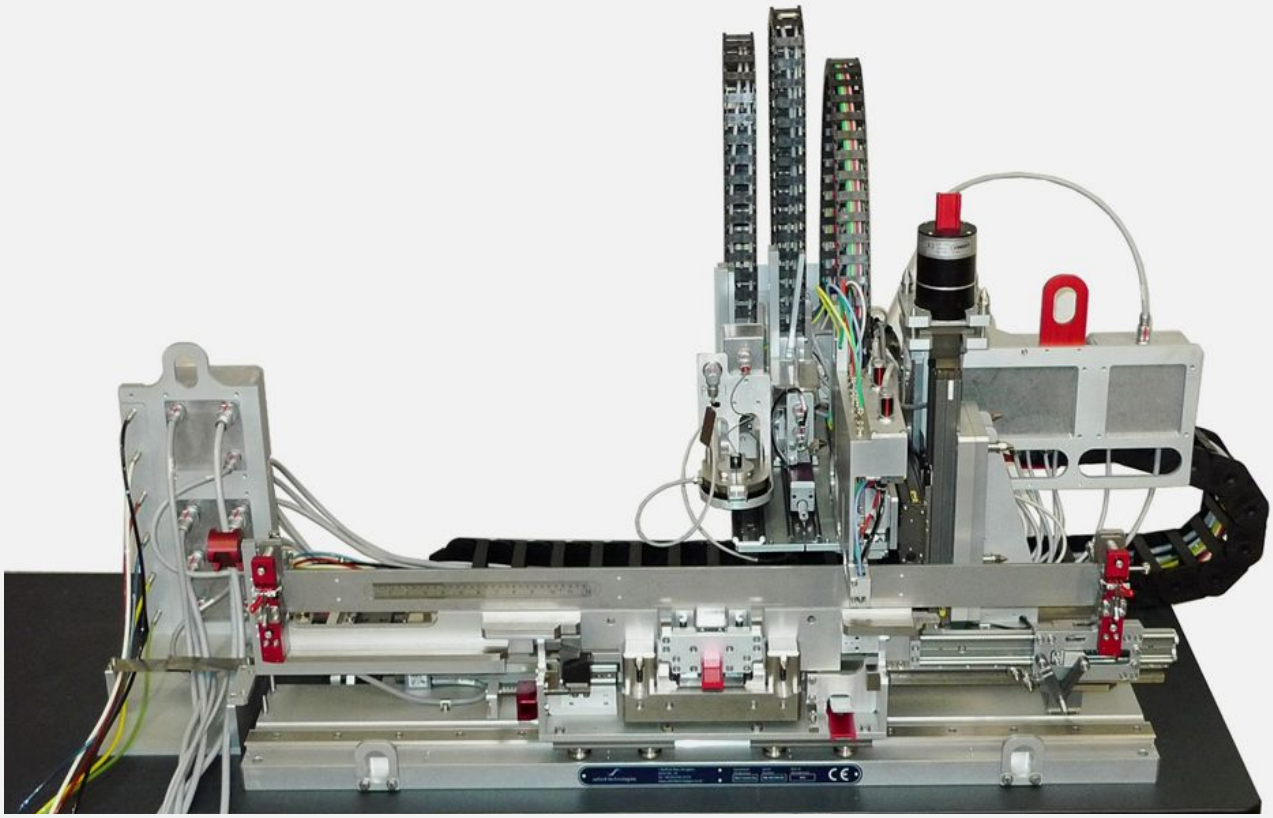

PLANET, REGIONS & CITIES

The Windscale Laboratory operates a range of radiation shielded facilities where nuclear materials are processed and examined.

WOMEN & MEN

System designed to keep human operators at a safe distance from the radioactive environment.