



## Required Skills and Qualifications

Users will be required to demonstrate prior training and competencies of robot operation

## Additional considerations

- CAD models of the rig are available
- NNL can provide sample objects for trials
- Users can deploy their own tools and sensors
- Further training and support can be provided upon request

## Sort and Segregation Facility from Jun '21

Available: 1 Test Rig

Full size industrial test facility aimed at bringing autonomy to robotic operations for Nuclear Decommissioning. The facility can be operated with autonomous or teleoperated control.

### [\[Factsheet\]](#)

#### Kit contents

- 2 KUKA KR 180 Robot Arms
- DEHACO Grab
- SCHUNK Grippers
- Replica Plant Joystick Controllers
- Sorting Table
- HOLMATRO Cutters
- ESENSO Camera N35-602-16-BL

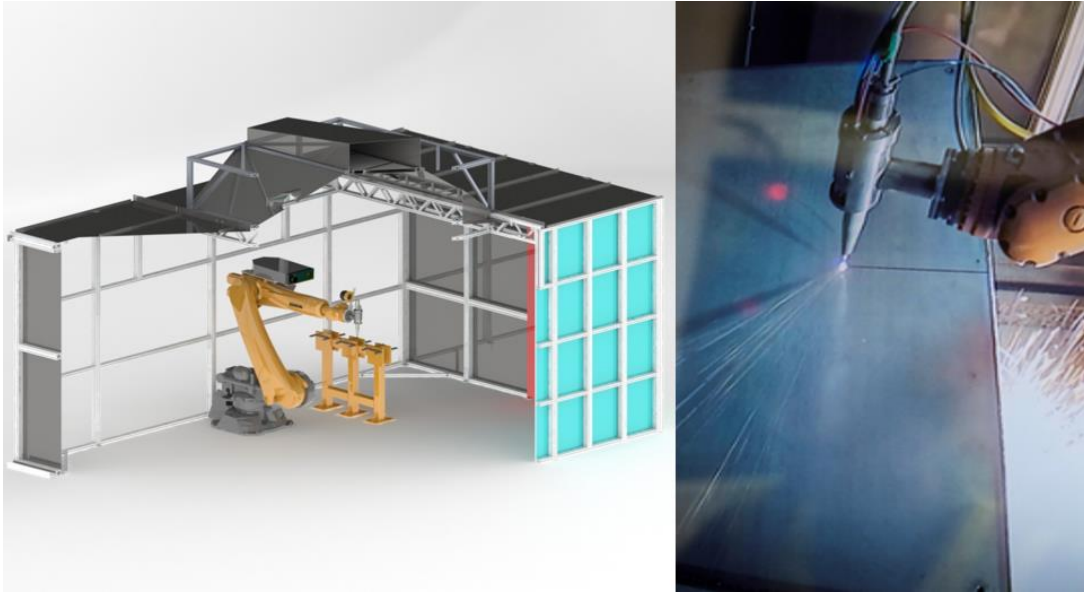
Facility capable of:

- State-of-the-art waste and object identification
- Autonomous learning for reactive robot grasping
- Autonomous trajectory planning for robot grasping and size reduction capability

## Cost

Dependant on duration of hire, support required & options selected





## Size Reduction and Laser Cutting Robotic Facility

**from Jun '21**

Available: 1 Test Rig

Test facility available for: material cutting tests, cut path planning and collision avoidance, object recognition, system architecture deployment, fume management, and laser ablation trials. Industrial robot with tool change operation for camera/laser head/mechanical tooling exchange.

Aluminium/graphite operating enclosure measuring 6.6m long x 4.4m wide x 2.9m high.

Replica test platform for active demonstrators based on the Sellafield site.

### [\[Factsheet\]](#)

#### **Kit contents**

- KUKA KR 120 Robot Arm with Tool Changer
- ENSENSO Camera N35-602-16-BL
- SCHUNK Gripper
- Dummy Laser Head
- 5 kW Laser
- Makita Tooling
- Control Room

#### **Cost**

Dependant on duration of hire, support required & options selected

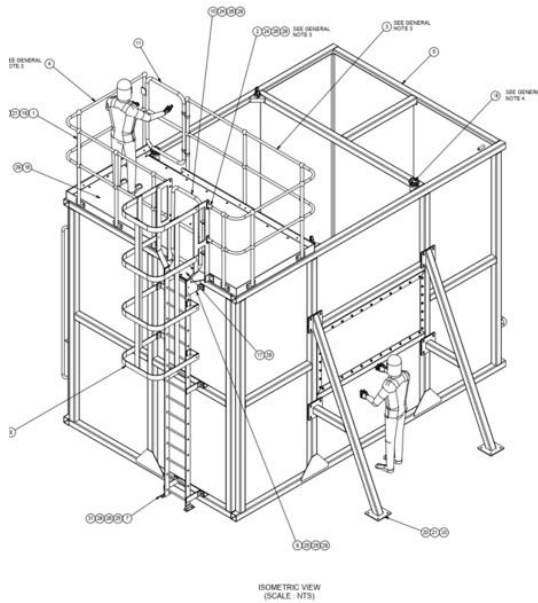
## Required Skills and Qualifications

Users will be required to demonstrate prior training and competencies of robot operation

## Additional considerations

- CAD models of the rig are available
- NNL can provide sample objects for size reduction trials
- Users can deploy their own tools and sensors
- Further training and support can be provided upon request





## Required Skills and Qualifications

As a first step, please email [nnuf-hr@uknnl.com](mailto:nnuf-hr@uknnl.com) to contact NNL for a discussion about the practical feasibility of your proposed research project

## Additional considerations

- CAD models of the tank are available
- NNL can provide sample objects for trials
- Users can deploy their own tools and sensors
- Further training and support can be provided upon request

## Water Dive Tank

**from Jun '21**

Available: 1 Test Rig

**3.2m wide x 5.2m long x 3.58m high**

Non-active dive tank with side viewing window for ROV deployment testing.

- Numerous positions available for camera and sensor mountings
- Deployment platform including safety handrails
- Stairway access to deployment platform
- Roof crane with 20 Tonne SWL and 8m lift height available for heavy deployments

### Kit contents

- 60m<sup>3</sup> Volume
- Water filled tank
- Access platform for ROV deployment

## Cost

Dependant on duration of hire, support required & options selected







## Required Skills and Qualifications

Experience in interfacing robots or using ROS is desirable

## Additional considerations

- CAD models are available
- NNL can provide sample objects for trials
- Users can deploy their own tools and sensors
- Further training and support can be provided upon request

## Robot Arm - Kinova KR L53 (Gen3) Ultra

Available: 2 sets

7DOF Manipulator

4kg Payload with 902mm Reach

ROS & Kinova Kortex Software Ready

### [\[Factsheet\]](#)

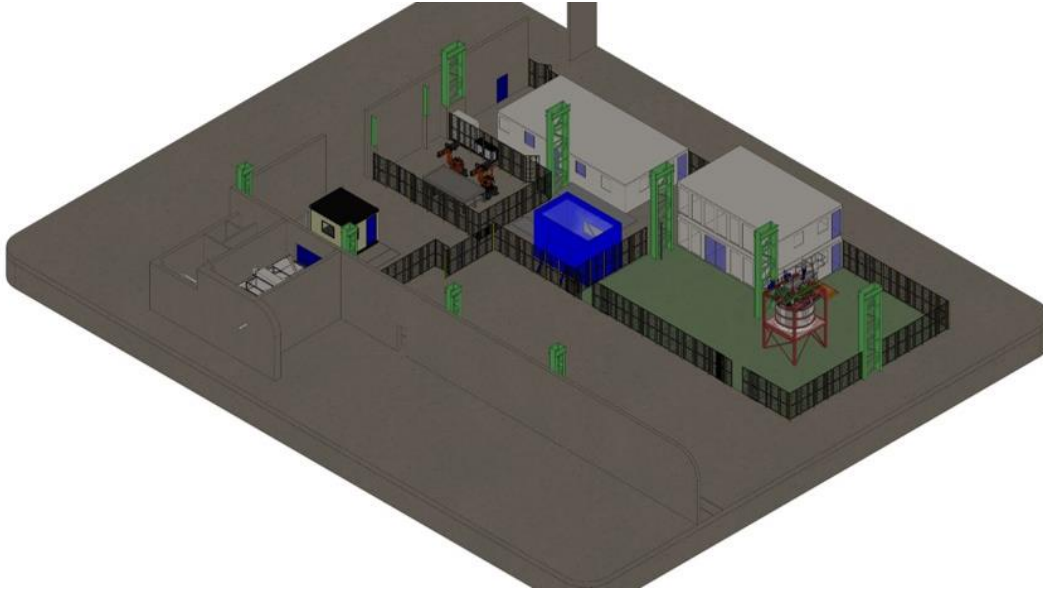
#### Kit contents

- Kinova KR L53 Ultra Arm
- Omnivision OV5640 - Colour Sensor Module
- 2-FINGER ROBOTIQ 2F-85 Gripper
- CONTROLLER
- Reconfigurable Mounting Trolley: with Kinova Gen3 mounting plates (flat and angular bases). Robot can be mounted at 0, 45°, and 90° from the surface on either side. Table surface can be adjusted vertically.
- 2D/3D Vision System
- Intel RealSense Depth
- XBOX ONE

Ideally suited to both research and industrial use. Easy to set up in under 30 minutes and controlled via the provided gamepad controller or alternative control device supplied by the user. The slender size makes the arm highly suited for glovebox work or mounting to UGV platforms.

## Cost

Dependant on duration of hire, support required & options selected



## Required Skills and Qualifications

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## Additional considerations

- CAD models of the tank are available
- NNL can provide sample objects and infrastructure for trials
- NNL can provide access to operators and engineers with decades of nuclear fission expertise

## Decommissioning Cell - Tailored for Plant Representative Mock-Ups

**from Jun '21**

Available: Test Rig

### Description

- Flexible space with infrastructure that is reconfigurable to represent mock-ups of real plant
- Replicate areas of plant and plant type scenario test environments for robotic/remotely deployed device testing
- Inspection trials
- Robotic trials (UAVs, ROVs, UGVs, AGVs)
- Help to enable academics to translate ideas into implementable technology

### Kit contents

Flexible space and infrastructure that is reconfigurable to represent mock-ups of real plant

## Cost

Dependant on duration of hire, support required & options selected





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## Robot Arm – KUKA KR10

Available: 1

6DOF Manipulator

10kg Max Payload with 1101mm Reach

Footprint: 320mm x 320mm

Weight: 55kg

### Kit contents

- KUKA KR10 Arm
- Fixed position mounting trolley with 360° transparent enclosure

The KR 10 is designed for a rated payload of 5 kg in order to optimize the dynamic performance of the robot. With reduced load centre distances, higher loads up to the maximum payload may be used.

## Cost

Dependant on duration of hire, support required & options selected

