

# NUCLEAR

Decommissioning / Inspection



## James Fisher Nuclear

**James Fisher Nuclear** (JFN) supplies specialist engineering, manufacturing, and technical services for decommissioning nuclear facilities. Once nuclear facilities reach the end of their operational life, all nuclear materials, plants, and buildings must be removed and properly disposed of, a process known as “decommissioning”. When done correctly, decommissioning safely and cost-effectively reduces the radiological hazards to the environment in a controlled manner. This is an enormous challenge for operating crews who must also keep their own safety and health in mind.

As part of the decommissioning of a Magnox facility in 2013, JFN used a VideoRay ROV in conjunction with a larger “Seaker” ROV to survey the First Generation Magnox Storage Pond (FGMSP), a pond built to store, cool, and prepare Magnox fuel for reprocessing. Before the facility could be completely decommissioned, the pond had to be drained of nuclear fuel – a process that first required a complete inspection.



With a total volume of 693 sq. meters (2,274 sq. ft), the massive pond contained more than 1,200 storage skips, all of which had to be videoed, mapped, and documented. The VideoRay ROV worked in tandem with the Seaker to access each skip, capture video footage, and record data about its location, condition, and contents. Though the larger Seaker could map large open areas, the VideoRay allowed the team to access lower stacked skips and smaller, more confined areas. Technology developed by JFN specifically for the VideoRay ROV expanded the crew's capabilities, including a boom camera with variable light brightness control, a fail-safe manipulator arm, and additional cameras.

Since this project began in 2013, JFN reports that the VideoRay Pro 4 ROV has survived a cumulative radiation dosage of 100s of Sieverts, with a peak dose of 10 Sieverts.

JFN completed the FGMSP survey through a partnership with Sellafield Ltd., a decommissioning contractor. Both contractors report that using a VideoRay to document detailed information about every centimeter of the FGMSP “removed the biggest challenge of decommissioning – the unknown”.

