RACE lends a hand to Sellafield robotic dog trials

UKAEA's robotics team RACE was at Sellafield recently to advise and support on how canine-like robots could help the clean-up of Western Europe's largest nuclear site.

Sellafield Ltd held a three-day trial of Spot, the agile mobile robot developed by Boston Dynamics, at the Calder Hall nuclear power station, which is now being decommissioned.

The building offers challenging terrain in a risk-managed environment, providing ideal conditions to test Spot's agility, scanning and radiation detection capabilities.

If successful, Spot could be deployed at locations across the Sellafield site to carry out routine tasks like inspections, mapping, data capture and characterisation. The four-legged robot is able to perform autonomous missions and can be controlled remotely via an operator, which significantly improves safety by allowing the robot to enter hazardous, contaminated areas in lieu of a person.

Spot is also expected to speed up inspection times, as robots do not require as much personal protective equipment, and help save money by ensuring more frequent data collection and better predictive maintenance.

RACE – the Remote Applications in Challenging Environments centre at UKAEA's Culham site – owns two Spot devices and has been working on applications for them in industrial locations where it's difficult or unsafe to send humans. One of its Spots last year carried out a radiation mapping project at Chernobyl for the University of Bristol.

RACE's Guy Burroughes commented: "We've been using Spot for over a year in our work to develop robotics for challenging environments like nuclear facilities. We were delighted to bring this experience to support the trials at Sellafield and hope it can lead to safer, more efficient decommissioning."

The demonstration of the Spot unit was held in conjunction with Cumbria-based engineering consultant Createc and UKAEA. If the trial phase proves successful, Createc would be Boston's Dynamics' preferred UK partner for Spot operations at Sellafield and UKAEA would continue its role of providing expertise on robotics deployments in nuclear environments.

Demonstrating quadrupedal robots for nuclear applications