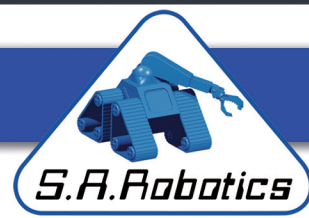
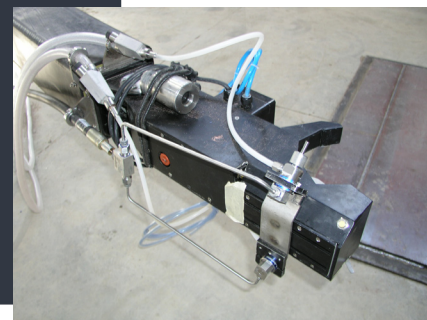


Sellafield SIXEP Tank Optimization Project



S.A. Robotics provided a Pipe Cropping Manipulator (PCM) to remotely cut riser pipes inside two 1000 m³ Bulk Storage Tanks (BSTs) in the British Nuclear Group's Sellafield Ion eXchange Effluent Processing (SIXEP) facility. The PCM included a telescoping mast, Ultra High Pressure (UHP) Cutting Heads, pneumatic supply, video capability, simple joystick control panel and associated software.

The BSTs are used to settle out and store magnox sludge and their capacity was limited by increasing sludge levels. The PCM remotely cropped the lower section of five decant pipes within each BST, thereby successfully increasing their effective storage capacity.



Client/Location	British Nuclear Group/RTS Nuclear Seascale, Cumbria, CA20 1PG
Technical Point of Contact	Robert Surrell +44 (0) 161.222.5500 Seascale, Cumbria, CA20 1PG
Period of Performance	October 2005 - July 2006
Contract Value	\$1.2M

- Telescoping mast included three carbon fiber tubes with two hydraulic cylinders
- Telescoping arm had horizontal reach of 20 feet
- The vertical motion of the mast was recoverable by the use of a powered auxiliary winch
- The tubes were supported with Ultra High Molecular Weight Polyethylene sliders
- Performance: The PCM successfully cut pipes ranging from 1-1/2 to 4-inch diameter, schedule 40, stainless steel, without damaging the adjacent tank walls
- The mast was rotated via a mast rotate and slew ring assembly. Additionally, a 90 degree shoulder joint and bicep extension features allowed all pipes to be accessed and cut while avoiding obstructions
- Cutting operations were completed within a single shift in each of the two tanks
- High pressure piping and tubing was routed via the PCM mast and along the top of the manipulator bicep to the cropping head
- The PCM was operator controlled with easy joystick and touch screen Human Machine Interface controls. A programmable logic controller handled all interlock and precision motion controls



Complies with ASME, 10CFR50
Appendix B/NQA-1 Quality Requirements

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S.A. Robotics
3985 S. Lincoln Ave, Ste. 100
Loveland, CO 80537
Phone: 970.663.1431
Email: Info@sarobotics.com