

insight



Contents



Robotic Pick & Place with Potential

Contract Success

Signed, Sealed and Delivered

More Gloveboxes!

**NIS Automate
CRT Rimbanding Process**

**Philips Choose NIS
to Manufacture Flow Coating Mills**

Long Service Award for Petrie Man

NEWS FLASH!

**NSG Environmental
Hit Royal Ordnance Target**

**And Now - an Automated
Rimband Removal Machine!**

**Apprentices Complete Training
Programme**

**Replacement Servo Manipulator
System for Thorp BHC**

**Automated CRT Taping Process
Developed by NIS**



Robotic Pick and Place System with Potential

NIS has recently integrated a Mitsubishi MELFA RV-2AJ compact industrial robot into a component insertion system. Linked to two bowl feeders, the system automatically feeds components to a known orientation and location.

The robot will then place the components into an injection moulding core.

The standard control system supplied with the robot is integrated into a bespoke process control system designed specifically for this application by NIS' EC&I department. Product and programme selection is controlled automatically from a single MHI which controls the entire system.

Although this first system was developed and programmed for a specific client application, the concept is inherently flexible. A similar system

could, cost effectively, be integrated into many other applications, for example: to automate a repetitive manual process or enhance the efficiency of work flow in an existing semi-automated process line. In fact, it could be used in a myriad of existing manual/automated processes, from first step automation through to a fully integrated automated/robotic environment.

For more information contact: sales at NIS.





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Philips Choose NIS to Manufacture Flow Coating Mills

Philips, one of the foremost consumer electronics organisations in the world, recently awarded NIS a contract to design and manufacture six flow coating mills for installation in a number of their CRT (cathode ray picture tube) plants situated at a variety of sites around the world.

Each flow coating mill operates on a rotary indexing concept and is designed to handle both 29" RF and 32" WSSF screen panels at the same time. It consists of twelve static stations, each self contained for cleaning and maintenance purposes. The process applies

the various layers (including phosphors) individually at each point to the inside of a glass panel which ultimately forms the face or screen of a colour picture tube.

Although the application technology was developed by Philips, NIS has been responsible for the design and manufacture of the transfer equipment and the turntables, as well as the design and development of two of the process stations involving dosing and suspension reclamation. NIS is also responsible for installation and commissioning.

The first mill has already been installed at a Philips' development plant in Holland and is

currently under test. Delivery of the remaining five units is scheduled to begin in July.

The cathode ray tube, in various forms, has been in existence for more than seventy years, and continues to be a practical and cost effective

technology for high quality visual displays systems in the mass market. The CRT has over the years come a long way in terms of technological development and manufacturing techniques, and NIS is one of very few companies in the world with the knowledge, experience and capability to design, build and install the latest generation CRT process lines.



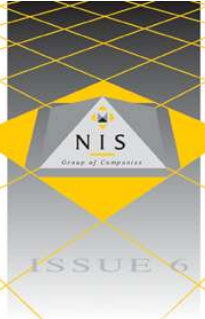
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Automated CRT Taping Process Developed by NIS

NIS has developed an automated rim taping machine for placing a protective single sided mono adhesive tape around the glass seal between the cone of the tube and the glass panel, a procedure which is performed at the final stages of the CRT production process.

The fully programmable, two station, PLC machine is designed to accept the full range of tube sizes fed at random, 24 hours a day, 7 days a week, 320 days per year. Accurate to ± 2 mm positional tolerance, it also monitors the presence of tape on the reel and identifies the tube size in situ.



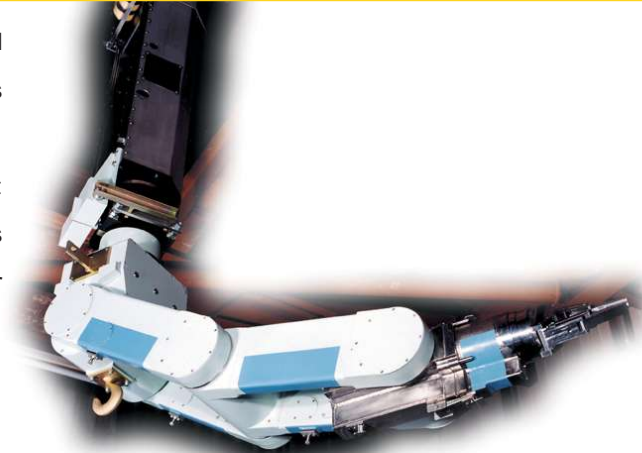


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Signed, Sealed and Delivered

NIS Invotec, UK agent for PaR Systems, has delivered two PaR type 6000 manipulators and telescopic masts (featured in Insight 4) to MHI in Japan, on behalf of BNFL. The two systems are being installed by MHI at Rokkasho and a joint team of BNFL and PaR systems engineers will join the MHI teams in June and September 2001 to undertake systems commissioning and final acceptance trials.

PaR Systems and NIS Invotec have also delivered a type 6000 manipulator with two telescopic masts and ancillary equipment to a major UK client. This propriety system is the latest in a long line of remote handling equipment and systems designed and built by PaR for use in the nuclear process sector.



Contract Success

NIS secured a target cost incentivised contract to modify the Pour Station for the Waste Vitrification Plant (WVP) Line 3. The Waste Vitrification Plant incorporates radioactive liquid waste into glass for long-term safe storage. During the cycle molten glass product is poured repeatedly into stainless steel containers.

The modification involved repositioning the load cells to improve weighing performance. To meet the window of opportunity within the installation programme, project duration from inception to delivery had to be less than 14 weeks.

Working in very close liaison with BNFL critical issues were identified, addressed and

More Gloveboxes!

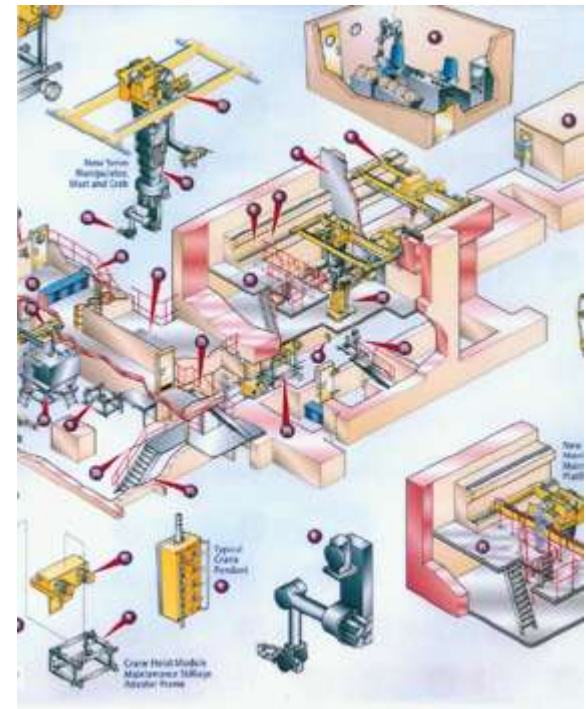
NIS Ltd has recently secured a target cost incentivised contract for the design and manufacture of a suite of gloveboxes for the BNFL Technology Centre (BTC) at Sellafield. The primary function of the system is to carry out research and development intended to improve existing processes and assist in the design of future fuel processing plants.

This is the second order for BTC gloveboxes from BNFL. The first was placed in August 1998 and consisted of 10 stand-alone modules and 3 linked modules. Each box end, base, front and rear being shielded to give enhanced operator protection. The first project was completed in October 1999.

Replacement Servo Manipulator System for Thorp BHC

Working in partnership with BNFL, NIS has been commissioned to provide a replacement manipulator system for the Thorp Basket Handling Cave.

It comprises a master/slave manipulator manufactured by Telerob in Germany together with a PaR mast. NIS are responsible for integrating the new system with the existing cell facilities and for producing a new state of the art control system.





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NSG Environmental Hit Royal Ordnance Target

Royal Ordnance Special Metals (ROSM) at Featherstone is a Division of British Aerospace involved in the machining of depleted uranium for producing components for the weapons industry. Following a fire in one of the machine shops there was extensive damage and contamination to the building and machines. ROSM needed a rapid response to make the building safe, and to rescue the machines to enable machining operations to continue.

Having worked with RO previously, NSG Environmental Ltd were commissioned as a specialist contractor to provide both consultancy

and site services to remediate this facility. The scope of the contract involved carrying out a detailed radiological survey of the damaged area; liaison with the local Environment Agency; the procurement of specialist equipment; the decontamination and release of machine tools; the decommissioning and demolition of the damaged part of the facility, and waste packaging and disposal.

Because of the nature of the damage, NSG personnel had to use specialist remote controlled equipment and operate in air fed suits to dismantle some of the badly damaged areas. Careful planning and liaison with the

client and other contractors was essential to ensure the safe implementation of the decommissioning programme.

Ian McKintosh, Project Manager for ROSM commented: "We needed a contractor with a proven track record who could work alongside ourselves and other contractors on site. But, above all we needed someone we could trust to solve our problem. That company was NSG and our choice has been proven correct. NSG worked in a professional and responsible way to ensure our plant was back in operation with the minimum of delay".

NIS Automate CRT Rimbanding Process

NIS, in conjunction with Petrie Technologies, has developed an automated CRT rimbanding machine. Designed to select different sizes of rimband automatically, the machine, using low frequency electrical induction (400 Hz), is capable of heating rimbands uniformly from ambient to 400 °C in less than 12 seconds. Once this has been achieved it then transports the rimband to the tube insertion point, installs the tube accurately within the rimband and then shrinks it onto the glass by blowing cool air onto it.



And Now - an Automated Rimband Removal Machine!

The cost of materials used in the manufacture of CRTs represent a significant proportion of the cost of the finished product, so if a fault occurs during production, reclamation of the material - in particular the glass - is a worthwhile practice.

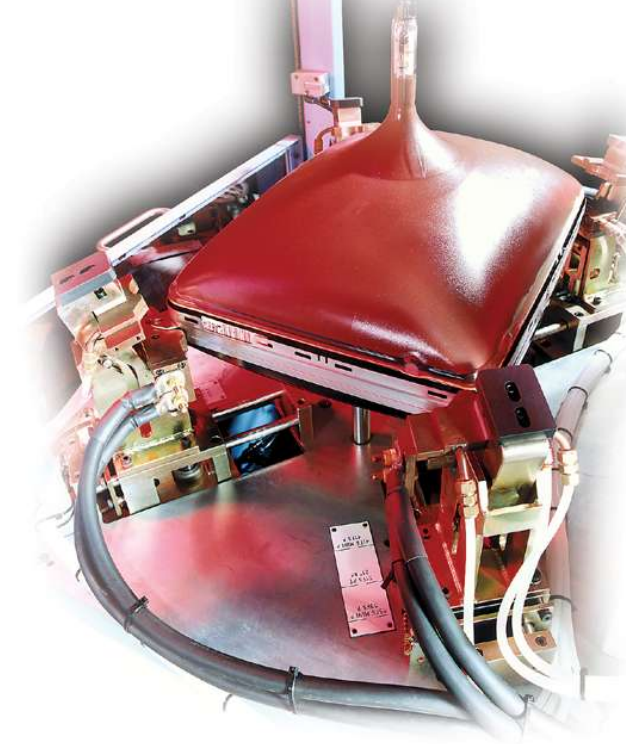
NIS have successfully developed a stand alone machine that automates the removal of the metal

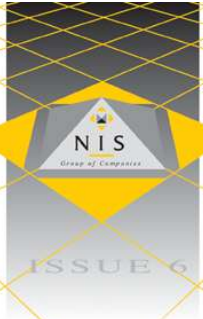
rimband from around the tube, a first step in the reclamation process. Capable of removing rimbands from up to 6 different types of tubes, with minimal setup time, the machine also eliminates the potential danger to the operator of shattering tubes.

Traditionally the rimband is removed manually by an operator forcing wooden wedges between the tube

and the band (to lift the band away from the tube) and then cutting it. This method is dangerous for the operator - shattered tubes are commonplace! There are also instances whereby the tube is damaged, but even slight scratches can render the tube unrecoverable.

The new NIS machine uses an electrical thermal process using resistant heat to expand the





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Apprentices Complete Training Programme

NEWS FLASH!

Dry Size Reduction System

NIS Invotec Ltd, agents in the UK for PaR Systems Inc, are pleased to alert the UK nuclear market that PaR have built a Dry Size Reduction System for the US DoE for size reduction of stainless steel gloveboxes and ancillary equipment.

PaR's DSRS is a modular system comprising of a gantry robot, telescopic manipulator and a range of cutting tools that are deployed by the gantry and manipulator. The system is currently



NIS congratulates Daniel Shepherd, Ian Ashworth and James Hough for successfully completing their modern apprenticeship programme.

Daniel, Ian and James were recruited onto the NIS engineering programme in July 1997. As part of their training, they have followed an

individually structured training plan, with practical skills training being supplemented by day release to college. Their progress and development has been monitored and assessed by instructors from the Training Skills Centre at BNFL Springfields, who are NIS' training provider for the Engineering Modern Apprenticeship Programme. We wish them every success for their future.

Long Service Award for Petrie Man

Gary Green, who is responsible for running Petrie Technologies' test and development centre, has just celebrated twenty five years of continuous service with the company. In the time honoured tradition, he was awarded with a watch!

His road to Petrie was quite convoluted. Gary first joined Slumberland Developments, then a member of the Dupont Group, in March 1974. Soon after, the company changed its name to Crownflex Engineering. Here Gary became responsible for commissioning on-site slitting and panel cutting machinery involving him in travel throughout the UK and Continental



Following three changes of ownership and a change of location, he eventually found himself working on radio frequency and ARFA machines. At this point, the company was called Petrie & McNaught. But not for long, the name was changed to Petrie Technologies and subsequently acquired by the NIS Group in 1995.