

## 40 tonnes of bespoke equipment manufactured and delivered

**NIS has recently completed delivery of a £1.1million project to supply Sellafield Ltd with two identical 20 tonne gamma gates and ancillary equipment.**



The mechanical and electrical systems of the gates underwent full testing at NIS' factory.

The gates will be used in the Vitrified Product Store at Sellafield in order to increase operational flexibility and throughput. The store holds high level waste, sealed in shielded containers, where it can be safely stored for over 50 years. This waste material arises during the chemical separation of spent fuel and is processed through the Windscale Vitrification Plant where it is mixed with glass to produce a vitrified product.



Project Managers from Sellafield Ltd and NIS shake hands after another successful job completed for the companies.

High level waste that stems from the reprocessing of fuel from overseas customers must be returned to its country of origin, in line with UK legislation. This increases the need to move waste through the plant, into and out of storage, and the additional gamma gates are needed to achieve this.

The gates require complex machining, fabrication and assembly and it was imperative for the equipment to be manufactured in strict compliance with drawings and tolerances, due to the hazardous nature of its function. Specialist exotic materials, unusual in both their characteristics and availability for supply, were also needed for shielding; adding to the difficulty of procurement and construction. NIS provided project management, manufacture, assembly, inspection and testing for this high level engineering task.

## NSG on site at LLWR

**As part of its mandated role as the Nuclear Decommissioning Authority's Low Level Waste management contractor, LLWR Ltd is responsible for the decommissioning of legacy site facilities related to the prior storage of radioactive contaminated materials from within five previous ordnance magazines on the site. The magazines were provided with retrieval facilities and equipment to repack and size reduce packages for onward transport.**

These activities are now complete in Magazine 4 and NSG has been awarded the contract to decommission the retrieval



NSG will be on site at LLWR in early 2012 and will begin to remove the contaminated ductwork from within the facility.

facility extract ventilation system. The contract also contains options for the decommissioning of the extract ventilation systems from Magazines 9 and 10.

This was a great achievement for NSG who competed for the works with other nuclear contractors with existing experience of working at the LLWR. NSG secured the contract by providing an alternative innovative approach to the decommissioning strategy which was based on experience gained from similar operations at AWE. This provided a safer and quicker methodology. Much of the up-front documentation has now been completed, with NSG having agreed the decommissioning methodology and ventilation philosophy with LLWR. They are currently in the process of completing the Safety Case documentation in partnership with AREVA RMC, who are supporting in the preparation of the overall Facility Safety Case for both Decommissioning Operations and the Care & Maintenance phase following project completion. The site team is set to mobilise for decommissioning operations in February 2012.

The project is progressing well, on schedule and a good working relationship is being developed with the LLWR project team. 'It is great that the project is going well and even better that LLWR have approached us regarding taking up the options for further work, we look forward to a long and successful relationship for all parties.', Andy Deall, NSG Project Manager.

## Lending a hand for recovery at Fukushima

**NIS and NSG are supporting the recovery operations at the Fukushima Power Plant in Japan, which was badly damaged by the earthquake and tsunami earlier this year.**

The Pile Fuel Storage Pond team at Sellafield has arranged for ten drums of ion exchange medium to be transferred to the Fukushima plant to allow the early commencement of water clean-up activities at the site.

Sellafield uses the material in its Local Effluent Treatment Plant, which NIS manufactured. The plant uses filtration cartridges which NIS also has an on-going contract to supply. NSG provide a service

to fill the cartridges with the ion exchange medium.

The medium known as IONSIV IE-911 is used to remove radioactive caesium from liquid streams and is usually only manufactured from a company called UOP LLC. The factory, which is based in Alabama USA, requires a long lead time as it has to be specially set up to produce this material.

Representatives of UOP contacted Sellafield Ltd to ask if they would 'loan' some of the stock of the material to support the Fukushima works, on the basis that it could be replaced in October this year.

Given the importance of the recovery works, both Sellafield and the Nuclear

Decommissioning Authority (NDA) agreed to the release of the material on behalf of the programme. NSG organised the packing and delivery of the drums from where they were held in storage. The efforts of NIS project staff also helped to accelerate the transportation logistics and managed to deliver the material to the Japanese plant in under a week

In addition to the above, NSG's Health Physics teams have been supporting the Department for Transport and the Maritime Coastguard Agency by monitoring vessels and cargo upon arrival into the Ports of Felixstowe and Tyne and Wear from the Bay of Tokyo. Derek Whittingham, NSG Project Manager said, 'We were very pleased to be able to support the UK Governmental

Departments in their efforts to confirm that there were no residual radiological issues resulting from the vessels being in Tokyo at the time of the recent events in Japan'.



NSG's Health Physics teams were engaged to monitor vessels upon arrival in the Port of Felixstowe

## Appointments and promotions

The Group is pleased to welcome the following new team members:

### NIS

- ▶ Brian Thornton  
*Senior Mechanical Engineer*
- ▶ Peter Baron  
*Estimator*
- ▶ Simon Fox  
*Trainee Commercial Officer*
- ▶ Steven Foster  
*Proposals & estimating engineer*
- ▶ Barry Nelson  
*Interim Head of Projects*
- ▶ Mark Maudsley  
*Project Engineer*
- ▶ Claire Harrison  
*Proposals Support Officer*
- ▶ Howard Connelly  
*Supplier Expeditor*
- ▶ Judy Olah  
*HR Administrator (part-time)*
- ▶ Andrew Abrams  
*Graduate Engineer*
- ▶ Duncan Riley  
*Stress Engineer*
- ▶ Jack Cowgill  
*Apprentice*
- ▶ Jack Waddington  
*Apprentice*
- ▶ Daniel Mawson  
*Machinist/Inspector*
- ▶ Paul Jones  
*Production Planner*
- ▶ Sarah Nordman  
*Commercial Manager*

### NSG

- ▶ Jonathan Cox  
*Senior Consultant*
- ▶ Tom Hibbert  
*Lead Consultant*

The Group also congratulates the following people on their promotions:

### NIS

- ▶ Marc Green  
*Principal Mechanical Engineer*
- ▶ Michael Swift  
*Principal Mechanical Engineer*
- ▶ Mark Pritchard  
*Business Development Manager*
- ▶ John Haydock  
*Senior Production Planner*
- ▶ Robbie Brooks  
*Fabrication Charge-hand*
- ▶ Tim Watts  
*IT Manager*

### NSG

- ▶ Andrew Leigh  
*Technician to Team Leader*
- ▶ Richard Plumb  
*Proposals Engineer*
- ▶ Rebecca Giles  
*Contract worker to permanent staff (PA/Admin)*
- ▶ Andrew Jones  
*Contract worker to permanent staff (General Worker)*

# New consultancy service at NSG

**NSG has recently established a Consultancy Service to support the civil and defence nuclear decommissioning and waste management industry.**

The team, headed by Michelle Wise, contains some of the UK's leading nuclear remediation specialists with over 20 years of experience in the nuclear clean-up and decommissioning sectors together with a reputation for delivering high quality technical services including:

- Waste management – advice on waste characterisation, treatment and conditioning; waste packaging to meet RWMD requirements; LoC submission preparation and support; polymer encapsulation techniques and processes; interactions with RWMD; Radioactive Waste Management Case development.
- Strategy development – site wide integrated waste management and technical/engineering strategy development, international best practice reviews and BPEO, BPM and BAT studies.
- Decommissioning – assessment of methods, tools and approaches, expert advice on size reduction and decontamination techniques.
- Environmental restoration – environmental impact assessments.

The team has just moved into the new Group offices on Calleva Park in Aldermaston where they are working on a number of contracts supporting the NDA, RWMD, AWE and Babcock.

Michelle Wise, Head, Consultancy Services said, "It's great to be in at the start of an exciting new venture that's flexible enough to respond quickly to clients needs".

If you would like some further information on the skills and capabilities of this new business area please contact Michelle Wise at [michelle.wise@nsgconsultancy.com](mailto:michelle.wise@nsgconsultancy.com).



Michelle and her Consultancy team working out of the new group offices at Calleva Park.

## New building takes shape at NIS Chorley

**A brand new rig hall facility is currently being constructed at NIS' main base in Chorley. The new building will extend the capacity of the existing workshop, high bay, and test tower, adding an extra 600m<sup>2</sup> of space to over 4000m<sup>2</sup> presently available. The building will also house a new crane capable of**

**lifting loads up to 20 tonnes, which will allow NIS to handle even larger projects more comfortably and without the need to hire a mobile crane in many cases.**

The decision to add more room to the premises at Chorley comes as part of NIS' ambitious growth plan for the next several years. The number of staff, particularly

skilled engineers, is being very quickly ramped up to help deal with an increasing workload. In anticipation of further growth and with several major projects on the horizon, the new facility is being built to provide the supplementary space that is required.

As part of the work, more space will be cleared for car parking and an access road will be put into place linking the new building directly to the front entrance of

the site. At the time of writing the project is ahead of schedule, with the foundations and steel structure completed, and work due to begin on the installation of the roof and wall cladding. Construction began on the project in July and is due for completion in November. To celebrate the opening of the new building and officially unveil the new facility before the first projects are moved in, there will be an event held for employees of NIS and their families.



The hall will provide additional capacity to house test and simulation rigs, research and development work, and large fabrications.

## Golf day raises further monies for Oxford Children's Hospital

**NSG are delighted to be able to announce that thanks to the help and support of their clients at AWE, they were able to raise £1,510 at their Annual Corporate Golf Day which took place in June at Wokefield Park – Reading. This year marks the 4th consecutive Charity Golf Day which to date has raised over £3,000 for Oxford Children's hospital.**

Penny Hambridge, Children's Development Officer stated, "We are immensely grateful to NSG for raising this amazing amount of funds for the Day Care Ward in Oxford Children's Hospital. Donations such as this support the ongoing need to invest in the latest equipment before it becomes standard in the NHS, as well as the continuing need to enhance the patient and family environment".

# Fabrication of the Diverter vessel for the Evaporator D project

**A project to design and build three different diverter vessels and drive units for Sellafield Ltd has just been completed. NIS handled many aspects of the scope including the detail design, purchase of materials and proprietary components, manufacture, inspection, and testing. NIS has also previously supplied gamma pots and ancillary equipment as part of the Evaporator 'D' contract.**

Evaporator 'D', which is currently being constructed at Sellafield, is a new highly active liquid evaporator that will provide additional capacity to existing equipment. This part of the plant plays a pivotal role in the delivery of reprocessing, historic clean up and hazard reduction missions across the site. The diverter vessels are vital to the processes involved in this, and therefore the equipment needed to be manufactured to the very highest quality standards, as well as addressing all foreseeable safety and security concerns.

The through-wall drive assemblies and the diverter vessels were assembled

in a purpose built rig and tested to demonstrate their safe and controlled operation. The whole assembly was then subjected to functional testing to ensure the operational sequence was compliant.



A specially designed rig was used to test the equipment using a water load.



Manufacturing the vessels involved complex fabrication and high integrity welding.

# NSG undertake Fleetlands land remediation

**NSG have successfully completed land remediation works for SKM Enviros at the former Defence Aviation Repair Agency site at Fleetlands in Hampshire. Works included the excavation, segregation and removal of artefacts containing Radium-226 (typically WWII aircraft dials) and Radium-226 impacted soil and ash.**

The Site Team, led by Site Supervisor Gary Mitchell, completed a Gamma

Survey of the site and marked out any areas that exhibited signs of radiological activity before recording the areas on a map and taking note of count rates. There was also a requirement to complete an Alpha and Beta survey and removal of a disused fuel storage tank and associated containment following the discovery that radiological activity extended beneath the tank.

Areas identified for remediation work had all impacted material excavated, segregated and sentenced based on activity levels to the correct waste stream for appropriate disposal as either low

# Group gets involved in European safety week 2011

**To further enhance the strong safety culture that is promoted across the group, the companies will be supporting European Safety week which is taking place in October. The week aims to raise awareness to make both work and homes safer and healthier for all employees.**

Personnel based at NSG's Head Office in Chorley will be taking part in a variety of exercises throughout the week including a mock up contamination exercise aimed at increasing awareness of the challenges faced by their Site Operation's teams on a daily basis. One major challenge associated with completing decommissioning and clean up projects within controlled environments is the control of contamination therefore the exercise will attempt to highlight this for all who take part.

Additional exercises will include hazard spotting, team building and fire safety awareness.

Graham Rogers, NSG's Director of Health and Safety commented "Contamination control is pivotal in our site operations - just imagine the potential mess that can be made at home using flour in the kitchen - it gets everywhere, now consider controlling that flour without even being able to see it! Our "flour" is radioactive dust (contamination) and our teams on site control this potential hazard every day through the use and more importantly ownership of good working practices and procedures."

NIS will be running a health and safety quiz during the week as well as distributing safety themed promotional merchandise, literature and personal first aid kits to employees. The 5S system of organisation is also presently being encouraged to remove any potential hazards, and help to create a safer workplace environment.

The activities planned for the week are in addition to the regular toolbox talks that are held within each department to raise safety concerns and discuss topics related to preserving health and wellbeing.

# Fostering future careers in engineering



Nationally coordinated by STEMNET

**Helping to develop an interest in engineering amongst young people, particularly in the local communities, is something that has been strongly ingrained in the values at NIS for the past several years. To date the company has successfully trained 20 Science, Technology, Engineering and Maths (STEM) ambassadors, and this team have provided active support to events across Lancashire, Cumbria and Berkshire. The aim of work undertaken within the STEM network is to promote these subjects as a career choice for young people to consider.**

Recent activities have included an after school club at Parklands High School in Chorley, where three of the ambassadors attended to help run an exercise engaging the pupils with the idea of engineering and mechanics. The purpose of the activity was to get the pupils to design and make a functioning paper rollercoaster so they could gain a clearer understanding of how the ride worked, before a planned trip to a theme park.

Two more upcoming 'Engineering Your Future' events for the mentoring of students are being scheduled to take place in October and November, and plans are also in place to appoint even more people to the STEM Net scheme within the next year, with the opportunity open to any NIS employee to join up.



The former DARA site at Fleetlands following successful remediation

allowed us to keep to a minimum the amount of material that needed to be disposed of as low level waste.

## Supporting local communities...

**As part of the group's corporate social responsibility commitment, the companies regularly carry out work to help local causes and re-invest in the surrounding communities. Recently a group of volunteers from NIS and NSG spent the day doing maintenance work at Seascale Primary School in Cumbria.**

The team carried out painting and decorating throughout the facility in preparation for the start of the new term. This is the second occasion that members of the Group have supported the primary school. Seascale Primary Head teacher Gill Hartley commented, 'I would just

like to thank you and your colleagues for coming into our school during the summer, to paint the corridors and doors etc. It was very kind of you to give up your time and it is very much appreciated, the school décor is much improved thanks to your hard work.'



Volunteers from all levels of the organisation at NIS and NSG helped out with painting at Seascale School

## NIS help to keep Sellafield's drains clear!



Various equipment including through-wall manipulators and a deployment mechanism were used

**NIS has recently completed a project worth around £750k to help Sellafield Ltd with another unusual challenge.**

Pond 5 is the UK's only nuclear Fuel Handling Plant (FHP) so it is essential that the facility remains operational to allow fuel to continue to be brought to Sellafield for reprocessing. NIS were engaged to design, develop and manufacture tools and equipment to ensure the drain system of the FHP decanner remains fully functional. This keeps the operation safe by providing an outlet for water to keep the process cooled.

In order to assist with the development work, a test rig was built in NIS' workshop in Chorley. This was constructed to simulate the aquatic environment, ensuring that the tools were proven prior to deployment in the harsher radioactive conditions on the Sellafield site.



A mock-up of the room was constructed in NIS' high bay facility, to simulate the installation site

## In short...

### Repeat business with Pilkington

Another order for an additional 10 evaporators, destined for sites around the globe, has been received from Pilkington, bringing the total number of units manufactured to 34. NIS provides on-going support for this key client in the supply of high quality equipment for the glass coating process. As well as offering the fabrication, machining, assembly and testing of two different types of evaporator, NIS have also recently completed the re-design of new reduced volume assemblies.

### Exploring fusion energy in Europe

NIS has completed the pre-qualification process for F4E, the European Union's Joint Undertaking for the development of Fusion Energy. The Barcelona based company recently visited NIS to discuss possible work packages on the ITER project, currently being constructed in France.

### The pursuit of continuous improvement

Business Improvement Techniques (BIT) training has been initiated at NIS, with 12 employees completing the BIT Levels 2 and 3 qualifications earlier this year. Three BIT facilitators have now been appointed and a further 12 employees have started the NVQ course, ensuring the momentum of change is accelerated across the business.

### NIS win productivity award

The improvements made to NIS' efficiency and operations were recognised at the Annual Yorkshire Productivity Awards in May, following a project to conduct an internal audit and implement the 5S system of organisation.

### Promoting the value of I.Eng

Following NIS Business Delivery Manager John Clarke's 'guest speaker' role at a ceremony for the Institute of Engineering and Technology (IET), he has now been asked to be the subject of a public case study, to help raise the awareness of the value of being an Incorporated Engineer. This is one part of the on-going support John provides to the industry as a highly active member of the institute.

### New Group Offices at Calleva Park

Due to the recent establishment of NSG's Consultancy Services division together with the Group's greater involvement at AWE, they have recently moved into larger premises at Calleva Park in Aldermaston. The new offices will provide the team with the facilities required for further expansion whilst enabling them to support upcoming projects and new opportunities at AWE, Harwell and Winfrith.

### Hold working to support the group

Hold Engineering have recently been supporting their sister companies within the group; providing NSG with support steelwork for test tanks on the Pulse Jet Mixer project test rig, and also supplying NIS with the grouting rig support assembly and guard barriers.

### New Hold engineering website launched

A brand new site has now gone live at [www.holdltd.com](http://www.holdltd.com), replacing the old information page, and bringing it in line with the other two websites for the group. The site currently provides details on the company, typical projects, facilities, standards and contacts. Plans are to add more content soon, so check back regularly for updates.

### NSG decommissioning expertise

Michelle Wise, NSG's Head - Consultancy Services, recently gave a presentation in the William Penney lecture theatre at Aldermaston to the Central England Branch of the Nuclear Institute. The presentation was entitled "Waste Driven Decommissioning" and she discussed how the requirements for waste assay, packaging and disposal could influence a project's approach to decommissioning a facility. The presentation was well attended and there was a lively Q and A session afterwards.

### Qualification gained for NSG

Roberto Salamanca, NSG Scientific Support Officer at Scientia House, recently completed his NEBOSH qualification after two years of hard work and commitment on a part time basis. Roberto now understands the current Health and Safety Laws and regulations and different controls to minimise risks.

**aspire**

Bringing you the latest news from NIS, NSG and Hold Engineering.



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