NATIONAL NUCLEAR LABORATORY

innovate

ISSUE 1 SEPTEMBER 2012

Opening the Door to the Future

If you have the best facility in the world, then why not share it? The NNL flagship – the Central Laboratory – has the potential to become the most advanced nuclear research facility in the world.

Major investments are being made by NNL to unlock the full potential of the Central Laboratory. When fully operational, it will provide the most comprehensive and unique suite of nuclear technology services in the world. Active and non active laboratories and active rig hall are already fully operational.

Around 10% of the Central Laboratory capacity is reserved for academic research and access is available to any UK universities. A new agreement with the University of Manchester has extended their existing access to the facilities while another new deal also means access for The University of Liverpool.

NNL has opened the doors of the Central Laboratory to leading academics from a host of other universities too. An open day attracted around 25 representatives from 17 different universities looking to enter into new access agreements.

continued from front cover

Opening the Door to the Future

'Licence to Occupy' arrangements have been developed by NNL, the Nuclear Decommissioning Authority (NDA) and The University of Manchester's Dalton Nuclear Institute. The strategy is aimed at broadening access to any UK academic research groups who wish to do work with radioactive materials but are unable to do so in their own smaller scale facilities.

The Central Laboratory is entering a new and exciting era as commissioning of plutonium laboratories gathers momentum. Once completed, these laboratories will carry out mixed oxide fuel development and general plutonium related work. In addition, high active alpha/beta/gamma cells are available to begin commissioning in the future.

NNL Facilities and Safety Director Leigh Wakefield said: "I am delighted that so many academics have shown interest in following in the footsteps of Manchester and Liverpool.

"NNL has a specific remit from the Department of Energy and Climate Change to enable the use of our unique facilities by others and the open day was another major step towards that goal."

Director of the Dalton Nuclear Institute Professor Andrew Sherry said: "We have already had the chance to do some important work in the Central Laboratory and have found the experience to be very valuable.

"It allows us to boost the quality, quantity and impact of the research work we do in the nuclear field. We have been very impressed with the level of training and supervision which our researchers have received from NNL."

Contents

NNL operates at six locations in the UK:

Sellafield, Cumbria

Workington, Cumbria

Preston, Lancashire

Warrington, Cheshire

Harwell, Oxfordshire

Stonehouse, Gloucestershire

Innovate Editor - Peter O'Brien
Communications Manager
National Nuclear Laboratory
Tel: 01925 289967/07801 856257
Email: peter.o'brien@nnl.co.uk

Mike the RSC Star

Strong relationships have been established between NNL and the leading professional institutes.

The majority of NNL's already chartered employees belong to these organisations, including the Royal Society of Chemistry (RSC). Featuring over 40,000 members, the RSC is the largest organisation in Europe for advancing the chemical sciences.

Mike Edmondson helps to co-ordinate the NNL accreditation scheme with the RSC. As an active chartered member of the Society, Mike has been very active in the 'MyRSC' network. This has led to a close involvement with local RSC group activities.

His enthusiasm for the chemical sciences and his input into the various nuclear related issues on behalf of the RSC has led to him being nominated and subsequently invited to join the Council of the Society's Environment, Sustainability and Energy Division (ESED).

Formed in 2003, the RSC ESED supports, manages and co-ordinates the various important activities that take place related to health and safety, environmental chemistry, toxicology, hazard management, green chemical technology, energy and sustainability.

ESED is one of nine separate divisions in the RSC and has a Council which oversees activities. Members commit to serve on the Council for a three-year term. They attend committee meetings three times a year at RSC HQ in London and actively support activities in the environment, sustainability and energy area.

The RSC uses expert working groups to tackle particular issues, with participation and advice sought from committee members. ESED are also asked to assist with RSC responses to policy consultations.

Mike's involvement on the Council has already led to him being involved in some high profile consultations. These include RSC submissions to the Research Councils (RCUK) energy roadmap for research council funding and a review by the Engineering and Physical Sciences Research Council (EPSRC) covering centres for doctoral training.

Mike has also been involved with input from the RSC into the Nuclear R&D Roadmap and Nuclear R&D Advisory Board led by Government Chief Scientific Adviser Sir John Beddington.

Clearly, Mike is making an excellent contribution to RSC and its reputation. As NNL builds levels of influence as a trusted advisor, roles in great institutions like the RSC are a tremendous opportunity to share vision and contribute to future nuclear strategy.

In the Frame

NNL has been shortlisted in the 'Excellence in Health and Safety' category of Britain's Energy Coast Business Cluster (BECBC) Business Awards. Major credit for the compilation of an excellent submission goes to the Environment, Health, Safety and Quality team led by Mark Edmiston.

NNL will compete for the award with another Cumbria based firm NSG Environmental. BECBC is investing in filming at each nominee company's Cumbrian locations to reinforce the entry submissions. Winners will be announced at the gala dinner and awards ceremony at the Energus Centre in Workington in November.

Britain's Energy Coast Business Cluster (formerly West Cumbria Business Cluster) is a private sector led group of over 180 organisations ranging from small and medium companies up to global businesses. The Cluster was founded in 2003 in response to the challenges faced in the decommissioning of civil nuclear facilities and placed on the supply chain and economy of West Cumbria.

Now firmly established, BECBC supports member companies in sharing knowledge and market intelligence and builds links with research and development and business support organisations.

Good luck to the NNL team at the awards ceremony.

BRITAIN'S ENERGY COAST™
BUSINESS CLUSTER

NNL Appoints Chief Technologists

To help support and expand technical leadership and capability, NNL has appointed Chief Technologists in key areas. The new posts represent main businesses Waste Management and Decommissioning (WM&D) and Reactor Operations Support (ROS).

Anthony Banford (WM&D) and Jon Hyde (ROS) will provide a technical overview of major technical bids and proposals and identify technical solutions to customer challenges. Anthony and Jon will also lead NNL input to the external technical community and drive contributions to the internal NNL R&D programme.

In addition, Mike Angus has been appointed Chief Technologist for the corporate area. Mike will provide support to future R&D strategy development for NNL and oversee overall capability development. Mike also leads on NNL Knowledge Management. An additional Chief Technologist appointment for NNL's Fuel Cycle Services (FCS) business will be announced soon.

These new roles are an essential component in driving the future direction and growth of NNL. They reflect the determination in NNL to identify and deliver the best available science and technology to serve customers and other key stakeholders.

Chief Technologists will become core members of a new NNL Science and Technology Committee led by Chief Science and Technology Officer Graham Fairhall. This new forum will take an overview of technical strategy and activities across NNL.

Mike Angus

Jon Hyde

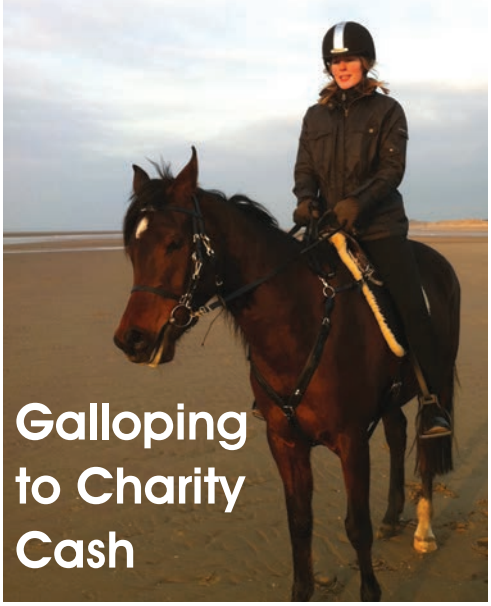
Skills Institute Launched

A new and exciting joint venture featuring NNL will offer a major contribution to plugging the global nuclear skills gap.

It is a feature of the global nuclear renaissance that a number of countries who have not previously operated nuclear plants are expressing an interest in building reactors. A challenge they face is their lack of nuclear infrastructure, such as a nuclear regulatory system and limited experience of operating nuclear facilities.

A new joint venture recently launched in London will offer a major contribution to bridging this nuclear skills gap. The new venture - the Global Nuclear Skills Institute (GNSI) – is a partnership between NNL and the British Institute of Technology and E-Commerce (BITE).

GNSI is located in London's Oxford Street and will offer a range of customised professional programmes aimed at providing the essential nuclear skills for the future leaders of nuclear industries in new and emerging nuclear nations. BITE acts as a catalyst organisation, bringing together talent, industry, the UK Government and University partners to offer a wide range of courses which fill the gap between industry and higher education.



Galloping to Charity Cash

Linking endurance to horse riding will probably bring tears to the eyes of most observers.

Keen rider Gemma Johnson organised a very ambitious and intense horse ride to delight enthusiasts while also raising much needed cash for a cause close to her heart.

NNL Project Engineer Gemma managed proceedings and enabled nearly a hundred riders to tackle a long distance competition that supported the fantastic work of the Breakthrough Breast Cancer Charity.

The event was led by the North Wales Group of Sport Endurance, the national organisation set up by riders looking to enjoy organised long-distance horse riding. Gemma put in the hours to make sure this latest ride was a success and even worked long hours the night before the start to clear bridal paths of undergrowth.

The event began near Chester and covered a bruising 30 miles, regarded as the peak of endurance for horse riding. The distance takes the best participants in the sport around three hours to complete. Having won the full distance prize at the same event in 2011, Gemma sacrificed her title to make sure things ran smoothly.

Each horse generated a donation to charity and the competition went extremely well with four competitive classes each featuring a very close final result.

NNL Research Technologist James Murphy was the official photographer and donated cash from selling photographs of the competitors. James took considerable risks on the day as he is allergic to horses!

Landmark Arrival at NNL's Windscale Laboratory

Located between the original 'Pile' reactors at Windscale, the open air Pile Fuel Storage Pond (PFSP) is a 60 year old facility that presents an ongoing and major remediation challenge at the Sellafield site.

NNL has played a vital role in helping major customer Sellafield Ltd to achieve a significant milestone in the clean-up of the PFSP. The facility contains a variety of nuclear fuel much of which has been stored over decades. The retrieval and re-packaging of the fuel is recognised as a priority area on the road to overall hazard reduction and the eventual emptying of the PFSP facility.

The first consignment of retrieved fuel has been safely delivered to the NNL Windscale Laboratory on the Sellafield site. Celebrated for its levels of versatility and technical practicality, the Windscale Laboratory is equipped to deal with technical challenges of this nature.

The fuel is unpacked, its inventory confirmed and then repackaged into suitably sealed new packaging. The fuel will then be transferred for treatment in the Thorp reprocessing plant on site.

NNL has secured a multi-million pound contract to carry out the work for Sellafield Ltd. This contract covers the first phase of oxide fuel removal. Once that is completed, the next phase will be the removal and processing of the uranium metal fuel.

Sellafield Ltd Director of Decommissioning Jim French said:
"NNL have worked in very close partnership with Sellafield Ltd over the past year to ensure that their facilities would be ready in time for fuel shipment to begin."

NNL Managing Director Paul Howarth added:
"I'm delighted that we have been able to rise to the challenges posed by this complex but vital work for Sellafield.

"Over the past 12 months we have worked tirelessly to ensure our facility would be ready. That has included the design, installation and commissioning of a criticality system - in itself a major challenge in an old facility which is heavily utilised on important work for EdF Energy in support of the UK's operating nuclear fleet.

"We have also designed and installed a lot of new equipment to deal with this fuel, plus we had to make a comprehensive and detailed safety case for carrying out this work to the regulators."

New Position Paper Published

With over 10,000 years of accumulated experience of the nuclear fuel cycle and associated science and technology, NNL is in an ideal position to advise decision makers on key topics which are important when considering the UK's ability to meet nuclear challenges.

NNL's view on these topics is being set out as a series of 'Position Papers'. These papers reflect the independent and authoritative view of NNL and are supported by underpinning studies. The most recent position paper 'Small Modular Reactors – Their Potential Role in the UK' has been published.

With the growth of nuclear energy world-wide, there has been a resurgence of interest in new reactor designs. These include a substantial number of SMR concepts for a range of applications including electricity production, district heating, desalination and plutonium management.

NNL's latest position paper introduces some of the potential SMR designs and technologies and provides an insight into the benefits and potential role of SMRs in the UK. The paper only considers land-based SMRs, although there is potential for their use in maritime propulsion.

Copies of all position papers are available to download at **www.nnl.co.uk/positionpapers**

MP Mark's Visit to Preston Lab

Local Conservative Member of Parliament Mark Menzies made his first visit to the Preston Laboratory recently. Hosted by External Relations Director Adrian Bull, Mark was briefed on NNL and progress to date during a tour of the facility.

Mark has been MP for Fylde since the 2010 general election when he succeeded the long serving Michael Jack. The Fylde constituency includes the Springfields site, which accommodates the NNL Preston Laboratory. Mark also lives close to the site.

He is Parliamentary Private Secretary (PPS) to Charles Hendry MP, Minister of State for Energy and Climate Change, and a key decision-maker in a wide range of issues affecting the UK nuclear industry. Mark's appointment as a PPS was one of only seven given to newly elected MPs after the 2010 general election.

He was also accompanied on his NNL tour by Steve Napier, Strategic Business Development Manager. Mark's visit proved very successful and he went away with a positive impression and clear messages about NNL and plans for the future.

Commenting on his visit, Mark said:

"I was very pleased to pay my first visit to the National Nuclear Laboratory's Preston Laboratory. My support for the nuclear industry and those in my constituency, who work in the industry, is well known, and it was fascinating to see the wide range of facilities which NNL have here and the variety of work being carried out.

"I knew beforehand that NNL were doing work to support Westinghouse on the Springfields site, but it was also pleasing to see how much work NNL are doing for other customers such as Sellafield Limited.

"I was also delighted to hear about the good work NNL are doing on skills, training and their apprentice programme. It's very important to me that we see new high-quality jobs being created in the region, alongside the existing employment opportunities."

NNL People: Myrian Wood

Cleaning up after you has become a pivotal factor in modern industrial management. This applies especially to the nuclear industry as legacy clean up has moved up the business, environmental and political agenda.

NNL's Waste Management and Decommissioning business has focused its products and services on helping customers manage their liabilities in the safest and most cost effective way possible.

As Waste Management and Technology Business Leader in WM&D, Myrian Wood plays a key role in supporting customers, especially Sellafield Ltd. "It's a really interesting area of work with a great deal of technical challenge," she said.

Myrian is one of four Business Leaders in WM&D. Each area is self contained and responsible for sales, proposals, technical delivery, project management and controls. Myrian leads a team of over 80 people and all of them are focused on providing quality, value and service and delivering for customers.

Immobilisation, Encapsulation and Decommissioning

Work carried out by Myrian's Waste Management and Technology team includes waste immobilisation development and the team offers services to customers in both cement based encapsulation and high temperature processes. With treatment of legacy and process wastes required on an ongoing basis, particularly at Sellafield, NNL's experience and knowledge is a key contributor to the management of wastes.

"We led on development of the first industrial intermediate level waste encapsulation processes based on cementation in the world and these are now used around the globe," said Myrian. "The team provides customers with services based on a comprehensive understanding of behaviour across a wide range of cements and wastes and offers technical advice on how to deal with them."

NNL remains heavily involved in cement based encapsulation product performance and offers engineering design services and a full scale inactive rig to look at various components in the process. These include options such as grouting, in-drum mixing, direct encapsulation mixing and environmental conditions as well as completely bespoke rigs tailored to the requirements of individual customers.

New and innovative immobilisation techniques are also being investigated. A new high temperature encapsulation process provides a means of dealing with challenging plutonium based residues. Hot Isostatic Pressing (HIP) converts residues into a form suitable for safe interim storage and ultimate disposal in a UK geological disposal facility.

"We've already demonstrated exceptional durability in trials," said Myrian. "And successful deployment will increase the options available for the immobilisation of similar wastes."

High Level Service

The team also provides close support to the Sellafield Ltd Highly Active Liquor Evaporation and Storage (HALES) plant. High active waste is produced from the reprocessing of used nuclear fuel and is stored as liquid in high integrity tanks.

Myrian said: "The team is a close supporter across all HALES operations looking at the storage of high level waste and supporting plant and equipment. In addition to the core HALES chemistry support required, we also examine operational performance, limitations and other issues such as corrosion management.

"Work in support of HALES is very important to us and we're also involved in other areas. In particular we're looking at corrosion and failure mechanisms and environmental monitoring of engineered waste stores.

"We also assess the long term corrosion of the numerous powder and waste containers used for intermediate and long term storage. This includes the containers filled with high active waste as a glass based product."

The method used to convert high active liquid radioactive waste into glass based waste product is called Vitrification. Myrian's team supports the operation of the key Waste Vitrification Plant (WVP) located on the Sellafield site.

Support to WVP is carried out through the excellent Vitrification Test Rig (VTR) operated by NNL. The rig and the people working on it have provided invaluable support to WVP over the years aimed at improving plant availability and throughput.

Myrian said: "The WVP is such a vital facility and lies at the centre of supporting operations at Sellafield. The close support provided by VTR has seen WVP performance improve constantly. We have the capability to accurately simulate the chemistry of high level waste in the VTR and examine glass product quality.

"VTR is a key support facility and, alongside the highly active waste chemistry experts, is also carrying out work to investigate the operational impact of post operational clean out of highly active storage tanks once residual waste material has been retrieved and fed through WVP. We also measure and assess vitrified product performance especially glass chemistry."

Managing Sludge and Slurry

Legacy storage facilities, particularly on the Sellafield site have stored nuclear materials using water as a radiation barrier. Many of these facilities including the Pile Fuel Storage Pond and the First Generation Magnox Storage Pond require waste retrieval operations to take place prior to decommissioning.

With priorities placed on hazard removal and risk reduction, Myrian's team provides a key service for customers with support to the development of new plant designed to deal with retrieved radioactive sludge. These plants include the Sludge Packaging Plant (SPP1) buffer store and the Silos Direct Encapsulation Plant (SDP), both at Sellafield.

Myrian said: "Corroded fuel elements have produced contaminated sludges and slurries in the legacy facilities. The range of properties and handling and disposal makes this area of work extremely challenging. NNL has great experience of supporting customers in characterisation of the wastes, handling and sludge simulant production."

Mechanical Engineer

Now over two decades into her career with NNL and its predecessors, Myrian first arrived via a couple of stints with UKAEA at Sellafield while still a student. "I was studying mechanical engineering and spent two summers and a nine month placement at Sellafield," she said. "I fell in love with the work, the site and the area."

She is settled in Braystones in Cumbria and has two sons. Her eldest teaches English in Thailand while her youngest is still at school.

Originally born in Liverpool, Myrian had quite a nomadic experience as a child travelling and living in a number of locations across the UK and Europe including stints in Germany and Belgium.

"My dad was in the forces," she said. "I was ten years old before we put down any roots and I lived in London until I was 18. I've lived in Cumbria for a long time now and I feel very settled. It's a great place to live and I love the outdoors and we have easy access to some of the most stunning countryside in the world.

"I first joined BNFL Research and Technology in 1989 and worked on waste management projects supporting plants such as Magnox Swarf Storage Silos (MSSS) and the First Generation Magnox Storage Pond (FGMSP) at Sellafield.

Bright Future

Myrian predicts a bright future for NNL with some great challenges to overcome. "We've got ourselves organised and are already making good progress with the Government and customers," she said. "Our role as a national lab is vital in linking basic research to industry.

"There are tremendous technical challenges still to be overcome in the industry and I'm happy to be a part of providing the solutions to solve them.

"We need to make sure we deliver in our day to day work but keep focused on NNL as a whole and avoid the silo mindset. The talent and commitment around NNL means we have the tools necessary to deliver and make NNL a great place to work."

Top Scientist at NNL

NNL was delighted to welcome Sir John Beddington CMG FRS to our facilities on the Sellafield site.

Sir John is the Government's Chief Scientific Adviser (GCSA) and has key responsibility to the Prime Minister and the Cabinet to ensure that the best science and engineering advice is considered when making decisions on Government policy. He is supported by a network of Chief Scientific Advisers across all major science-using Government departments.

Hosted by Paul Howarth, Sir John was accompanied during his visit by Sir Adrian Smith, Director General of Knowledge and Innovation at the Department for Business, Innovation and Skills (BIS).

Sir John's visit was connected to his role as leader of the Nuclear R&D Advisory Board. This group was set up as part of the recommendations process following a short inquiry by the House of Lords Science and Technology Select Committee in 2011. The inquiry examined the UK's nuclear research and development capability and whether it is sufficient to meet future nuclear energy requirements to 2050.

NNL participates and is an influential voice on the Advisory Board, which is made up of industry, academic and Government partners. The Board is developing the Government's R&D Roadmap and is looking to improve the co-ordination of R&D activities. This will help protect vulnerable areas of research and close gaps in capabilities. It presents an opportunity to understand and help determine the future nuclear R&D landscape in the UK.

A number of major companies are supporting Government on this work and NNL has been invited to assist the Advisory Board on three separate strands of work.

- **Nuclear R&D Landscape Review**

Led by the Government Office for Science (GO-Science), the Landscape Review has involvement from NNL via a dedicated secondment (Chris Holmes) and additional input led by Zara Hodgson. The review is comprehensive and aims to paint a detailed picture of the UK's existing R&D capability within industry and academia. This will act as a baseline for future R&D development.

- **Nuclear R&D Roadmap**

The R&D Roadmap is being led and produced by the Department of Energy and Climate Change (DECC) and NNL has provided resource via another secondment (Dave Ross). The Roadmap will establish the civil nuclear R&D programme, infrastructure, skills and technology development required to support the forthcoming long-term nuclear energy strategy. NNL is using its unique ORION fuel cycle software to model a number of energy scenarios to the year 2050. This includes combinations of Generation III and Generation IV reactor systems and open or closed fuel cycles to underpin the development of the Roadmap. At least ten separate scenarios are being modelled.

- **Nuclear Industrial Vision Statement**

Another full time secondment from NNL (Andy Howarth) is supporting the Department for Business, Innovation and Skills (BIS) in the production of a Nuclear Industrial Vision Statement. Andy is co-ordinating contributions from a number of leading industry stakeholders with the aim of helping Government to understand the commercial aspirations of industry, both domestically and globally in all nuclear sectors. This covers various stages over the next 40 years as well as examining the enablers that are required to deliver success.

International Sub Group

NNL is also contributing to the International Sub Group of the Nuclear R&D Advisory Board. Paul Howarth chairs the group, which is also supported by NNL's Cassie Staines. The Group has prepared profiles of R&D programmes in a selected group of nations and compared them to the UK. This work will form the basis of a series of recommendations to the Advisory Board about future direction for the UK.

During his visit to NNL in Cumbria, Sir John was keen to see how delivery of the Nuclear R&D Roadmap will affect NNL and the Sellafield site. He and Sir Adrian Smith toured the Central Laboratory and inspected Phase 2 (plutonium laboratories currently undergoing commissioning) and Phase 3 (high active cells awaiting the start of commissioning).

The Nuclear R&D Advisory Board is due to report back to Government around the end of the year.

Summer School is a Hit

NNL has hosted the 2012 Actinet Plutonium Futures Summer School in Whitehaven, West Cumbria.

The school provided students with the opportunity to explore the physical, chemical and radiological properties of plutonium and other actinides. It also provided an early introduction to the programme for 'Plutonium Futures – The Science 2012' international conference that was subsequently held in Cambridge.

The event was planned and run by NNL Research Technologist Liam Abrahamsen. Liam, who works in the Environmental Services team in the Waste Management and Decommissioning business, assumed responsibility for the international group of delegates attending the school.

Forty-eight enthusiastic students from Europe, Russia, Japan and Korea were in Whitehaven to see presentations by distinguished speakers from NNL, AWE, CEA, SUBATECH and the Universities of Manchester, Bristol and Edinburgh.

The students were given an introduction to the nuclear fuel cycle and learned about a series of plutonium and actinide related topics. These included reprocessing and chemical separations, actinide co-ordination chemistry, condensed matter physics, radiolysis and radiation chemistry, atomistic simulation techniques, detection of actinide species and the practicalities of storing separated plutonium.

In addition to lectures, the programme also included some more interactive elements held at the University of Manchester's Dalton Cumbrian Facility. These included the chemical analysis of irradiated polymers, exploring actinide chemistry using computational methods and developing strategies for the disposition of plutonium.

An opportunity to visit the NNL Central Laboratory at Sellafield was also available. The students observed a live lab based demonstration of the dissolution of a UO_2 pellet and the method of separation of uranium and plutonium from spent nuclear fuel used in the PUREX process.

Liam made sure it wasn't all work and his programme featured some relaxation including a visit to the famous Muncaster Castle. Students enjoyed some West Cumbrian hospitality and a fine three course meal.

By hosting the event, NNL again cemented its extensive links with the academic sector and introduced its world class facilities to the new generation of scientists.

Questions and Answers

Joanne Pritt

PA to Managing Director and Chief Science and Technology Officer

What does your job involve?

Providing support to NNL Managing Director Paul Howarth and Graham Fairhall, Chief Science and Technology Officer to help them achieve their objectives. This includes diary management, arranging meetings with customers and stakeholders and organising visits. In other words, it's a question of bringing Paul and Graham's attention to the right things at the right time to get their priorities right and looking at what can be handled on their behalf.

The nature of the industry and the queries we receive means I often have to be in a kind of 'detective mode' acting on quite small amounts of background information to trace people in various organisations and then arrange dialogue or meetings at the right levels. I'm often on the phone for long periods talking to Paul and Graham to make sure we're all at the same level of understanding and progress.

They both travel a lot in the UK and abroad so I also make sure they're in the right place at the right time. The job of a PA can never be formally defined, which makes the work extremely varied and interesting and usually throws up at least one new challenge every day.

How long have you been with NNL?

I'm the third generation in my family to work in the nuclear industry at Sellafield. My grandfather worked on the famous Pile 1 reactor during the 1950s. He was involved in the team that helped extinguish the Pile 1 fire in 1957. My dad was a graduate engineer and came to Sellafield in the 1980s. I've always found the industry fascinating and have been here for five years.

How did you come to be doing the job you have now?

After studying Sociology at Durham University, I decided that West Cumbria was where I wanted to be. I joined the communications team for UKAEA who ran the Windscale site. I worked on the media programme for the 50th anniversary of the Pile 1 Fire, very appropriate given my grandfather's experience. Part of this role was to support the Head of Site for Windscale and that's when I realised that being a PA was the job for me. When the opportunity came to work for the Executive Team at NNL, I jumped at the chance.

What do you hope to be doing in 5 years time?

I would love to develop my role as a PA and improve my technical knowledge to become an Executive Assistant. The more I can learn about the industry, the more I can get involved.

What are you most proud of in your time at NNL?

When I joined NNL I was asked to work for Paul Howarth. He has been great to work with and I was delighted to be asked to carry on when he became MD in 2010. Another proud moment would be the successful visit by members of the House of Lords Science and Technology Committee to the Central Laboratory. It was great to be part of a team that worked really hard to put all of the arrangements in place. It's always good to receive positive feedback.

What does working at the National Nuclear Laboratory mean to you?

I get to work with people who have a wealth of knowledge and passion for the industry.

What aspects of your job do you like the most and the least?

The best thing is never standing still. There isn't a negative side to the job, except perhaps when your boss tries to be helpful while you're on leave by putting things in the diary that do not match the 'plan'!!

Tell us something about yourself that many people don't know.....

Mmmmm.... this is a hard question. I once navigated a light aircraft from Carlisle to Blackpool. However, I told my dad (the pilot) that we were in Wales when we were actually over Lancaster!! I tried to cover my embarrassment by telling him I was joking. Maybe I was getting my own back because a loud alarm had sounded in the plane as we took off from Carlisle and he shouted "WHAT'S THAT!!!?" It really freaked me out - not funny dad!!

Who or what is has been a big influence on your career journey?

I've been very lucky in my career to work with supportive and encouraging people. They have taught me not to be afraid of change and go for what you want in life. I also have good parents who are always there when I need advice.

What advice would you give to someone thinking of joining the nuclear industry?

Do it, get involved.

What do you do to relax outside of work?

I love to spend time with my family and friends. I like getting out and about in the Lake District and I've also decided to take up tennis again. I played a lot when I was younger so I'm hoping I can remember a few things!

What is the first thing you pack to take with you when you travel away from home?

My iPod, I love listening to upbeat music that gets you ready for an adventure.

What famous figure would you most like to meet?

Stephen Fry - his use of language is amazing and he has great knowledge. I wouldn't know which question to ask first!

NNL Strides to Glory – Again!!

Following an inspirational victory last year, NNL once again underlined superiority in the latest Birchwood (Warrington) 10K road race 'Corporate Challenge'.

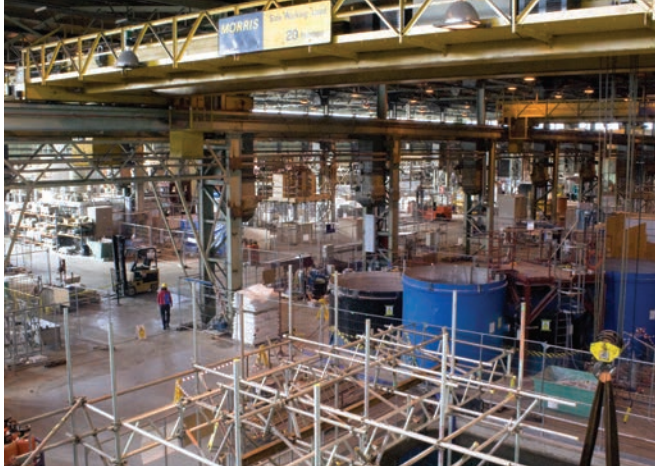
No doubt inspired by the heroics of Team GB track Olympians, the four-strong NNL squad finished in gold medal position in their category. The golden foursome was made up of Phil Rushton, Emma Johnston, Martin Hayes and the sole survivor from last year's victorious team Kevin Hesketh. Phil, Emma and Martin are based in Chadwick House while Kevin joined up from the Preston Laboratory.

Organised by the Spectrum Striders running club, the race is the longest established event on the Birchwood calendar. The course covers roads and tarmac footpaths in Birchwood and Croft. A donation from the funds raised went to Brainwave, the charity that looks to unlock the potential of children with disabilities and special needs.

In the Corporate Challenge, the time for each team member is combined to compare against all other corporate teams in the race. In other words, the lower the total time the higher the team finishes. To qualify for the Corporate Challenge, teams have to include at least one veteran (a man aged 40+ or a woman aged 35+) and at least one woman.

Kevin Hesketh (73rd) was the first male runner aged over 55 to finish the race. Kevin was also the leading NNL Corporate Challenge runner and achieved an excellent time of 38 minutes and 31 seconds. Of the other NNL racers Phil Rushton finished in 46:22, Martin Hayes 1:08:42 and Emma Johnston just one second behind him in 1:08:43.

Throughout the run, Emma acted as a guide to Louise Simpson, a visually impaired runner and Paralympian in the team sport of Goalball. Louise from Walkden in Manchester represented Great Britain at the 2012 Paralympics in London. Emma can now claim to have played a key role in her preparations for the Games.



NNL Hosts SME Event

NNL has joined forces with Britain's Energy Coast (BEC) to present and co-ordinate an exciting opportunity and boost for businesses in the Allerdale and Copeland areas of West Cumbria.

The partners held an event at NNL's Workington Laboratory to highlight business opportunities resulting from an initiative led by the Technology Strategy Board (TSB). The TSB is the UK's innovation agency and aims to accelerate economic growth by stimulating and supporting business-led innovation.

The new initiative will provide up to 75% funding for nuclear sector research and development projects led by small and medium enterprises (SMEs). With an impressive £75,000 maximum grant available, NNL and BEC used the Workington event to promote and publicise the theme 'Developing the Civil Nuclear Supply Chain' among interested businesses.

NNL Strategic Business Development Director Huw Morgan presented an introduction to the event and Technology Commercialisation Manager Sheila Rae outlined NNL's internal innovation programme as a successful working example. Sheila also highlighted previous successes that firms in the BEC area have had since the last TSB nuclear call.

Delegates received a comprehensive information pack and an offer of support from NNL and BEC in developing proposals to the TSB scheme. NNL hosted an enthusiastic and lively discussion around the submission of proposals and followed up a series of queries from delegates after the event.

There was also an opportunity for NNL to present an overview of another initiative, this time sponsored by BEC. The Technology-based Economic Development programme (TbED) is being put in place by NNL and the University of Manchester's Dalton Cumbrian Facility.

The scheme looks to support local companies in developing new technology based products or services via access to facilities and assists in identifying funding routes. Facility access under BEC TbED was very well illustrated at the Workington Laboratory when delegates had the opportunity to examine a rig hall area that will be made available as part of the scheme.

For more information on technology based economic development, please contact Sheila Rae at **sheila.rae@nnl.co.uk**

NNL joins the Festivities

Diamond Jubilee celebrations got underway in West Cumbria when the three-day Whitehaven Festival opened.

NNL was a sponsor at the event, which attracts thousands of visitors to the town, and the company provided a group of 'Science Buskers' who toured the streets sharing science experiments with visitors - plus the odd celebrity guest.

This year's festival, the 13th, was brought forward to coincide with the Queen celebrating her 60 year reign. International classical singing star Katherine Jenkins headlined on the first evening with a concert from the specially erected stage.

Also featuring on the programme were 70s 'summer love sensations' the Bay City Rollers and the Charlatans. The event also featured cookery demonstrations by Ainsley Harriott, Jean Christophe Novelli and former Coronation Street actor Sean Wilson. Other celebrity guests included dancer Anton du Bec, actress Michelle Collins and Titan the Robot. Revellers were also treated to an air show and a firework display to mark the Jubilee.

Over recent years the Whitehaven Festival has grown into one of the UK's largest events of its type. It has become the major centrepiece of the entertainment calendar in the region.

NNL External Relations Director Adrian Bull attended the celebrations.

He said: **"The Whitehaven Festival has steadily grown into a huge event, recognised and anticipated across the North of England and - increasingly - across the whole country.**

"This year's event was the biggest and best ever and I was delighted that NNL, as a major employer in the region, was able to be at the heart of it through our sponsorship and our team of roving scientists.

"The feedback I received from our guests and our own employees who attended was universally excellent. Even the weather was good!

"Huge credit must go to local legend Gerard Richardson and his team who arrange every aspect of the event.

"I'm already wondering how they can top this year's Festival in 2013 - but I'm sure they will make a great effort to do so!"

Strictly Come Dancing star Anton du Bec enjoys an impromptu science lesson from NNL's 'Science Buskers'

innovate

NATIONAL NUCLEAR LABORATORY

NNL is proud to be a member or partner in the following organisations: